Landscape Architectural Solutions for the Revitalization of Downtown Tucson

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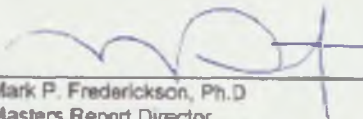2002

Masters Report

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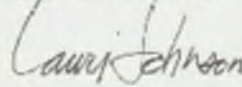
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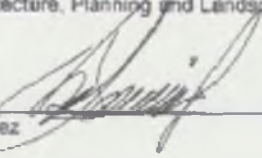APPROVAL BY MASTERS REPORT DIRECTOR ANS COMMITTEE MEMBERS
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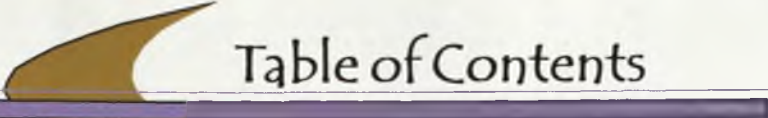College of Architecture, Planning and Landscape Architecture

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Introduction

The purpose of this report is to explore possible landscape architectural solutions to the revitalization of Downtown Tucson.

The Downtown is socially and economically depressed. But after years of decline and degradation, the Downtown is in the midst of a renaissance. The Rio Nuevo Project, Tucson Business Improvement District, and countless other revitalization efforts (Depot renovation, 4th Avenue Underpass, Fox Theater renovation, Scott Avenue Master Plan) are just a few indications of the growing interest in our Downtown and its function as a vital city center.

This report consists of two parts. Part 1 is an analysis and assessment of landscape architectural/urban design theory and case studies. Part 2 is the application of design implications distilled from Part 1 into an urban design framework for Downtown Tucson, with a focus scenario plan on the retail/commercial/entertainment district.

Tucson History

Human habitation in Tucson dates back approximately 12,000 years ago. More permanent settlements formed around 100 A.D. as Native Americans began to inhabit the areas around the Santa Cruz River.

Spanish explorers and missionaries started to arrive and settle in the late 1690's. It was in 1775 that the Presidio of San Agustin del Tucson (located where downtown is today) was founded by Hugo O'Coner. It is that year that signifies the birth of Tucson.

With the establishment of essentially a fortified village, new development began to sprout. This new development was greatly influenced by Spanish and European cultures. The concept of the grid affected street layouts and the formation of the "city block," while the idea of ownership resulted in houses that looked inward to more private courtyards and patios.

In 1853, Tucson became part of the U.S. Its prosperity continued to rise. Early trade commerce with Mexico was augmented by the introduction of the Southern Pacific Railroad in 1880. At first connecting to California, Southern Pacific expanded east to connect with El Paso. The link between east and west provided increased revenues (whether through tourism or supplementing mining, agriculture or mercantile activity) and population. By 1900, Tucson's population was approximately 7,000.

Another source of growth was the opening of the University of Arizona in 1891. The university attracted development as well as public amenities like a mule-car-street railway line (1898) that connected the university campus with the downtown. A portion of the route exists today as the Old Pueblo Trolley.

The introduction of the automobile in 1899 further spurred development, albeit away from the City center. In 1905, Tucson annexed a quarter mile strip to its existing 2 square mile area. This trend continued as population increased, the number of automobiles increased, and Tucson went from the 4 C's (Copper, Cotton, Cattle, and Climate) to the 3 T's (Trade, Tourism, and Technology).

With a population over 20,000 in 1920, Tucson grew to over 212,000 during the 1950's and 60's. Development spread every which way, crossing the Rillito River, northeast to what is now the "foothills," the valley land east towards the Rincons, and more recently northwest.

Now, with Tucson encompassing approximately 226 square miles and a population close to half a million, sprawl continues, as does the desire for low density, detached residences at

(Fig.1) Looking east down Congress St. from Stone Ave.

(Fig.2) Martin Drug Co. Corner of Congress St. and Church Ave.

(Fig.3) Looking west down Congress St. from Toole Ave.

the outskirts of the City center. Amid these trends, there has been growing concerns about decentralization and its adverse effects: the dominance of the automobile, the increase in the urban heat island effect, the increase in air and noise pollution, the increase in infrastructure costs, how these factors (and others) contribute to the inefficient use and depletion of our rich natural resources.

These concerns have concurrently sparked interest in revitalizing Tucson's downtown, another depleted by-product of sprawl. The recently completed Rio Nuevo Master Plan, a plan that seeks to revitalize the downtown, stimulate private development, and improve tourism and sense of place through the restoration of historic buildings and the creation of new ones (museums, aquariums), represents Tucson's unflagging dedication to regain their City center and essentially attract people to it.
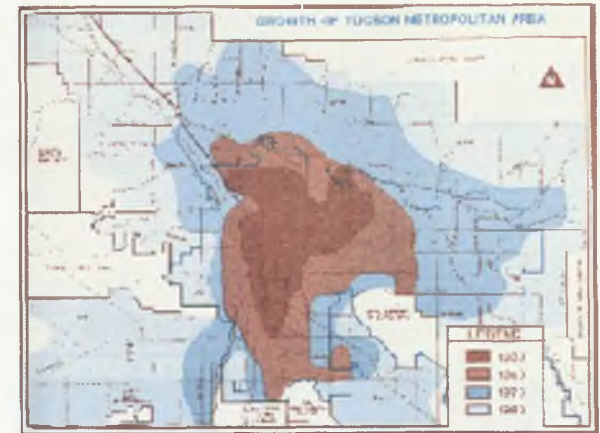
(Fig.4) Metro Tucson Growth further expanding outward.

(Fig.5) Congress Street

(Fig.6) Rio Nuevo Master Plan

(Fig.7) Old Main, University of Arizona

Site Analysis-Tucson

Downtown Tucson Today

Downtown is bounded by Intersate 10 to the West, 6th Sreet/St. Mary's to the North, the railroad to the North-East, and a less than defined edge on the South (Cushing St., the Tucson Convention Center (TCC) and Armory Park Neighborhood being its most distinguishable termini).

There is a established Government Center and Retail District that comprise the "heart" of the Downtown.

The historic neighborhoods of El Presidio and Armory Park are encompassed within the borders of the Downtown yet flank what is truly the central business district.
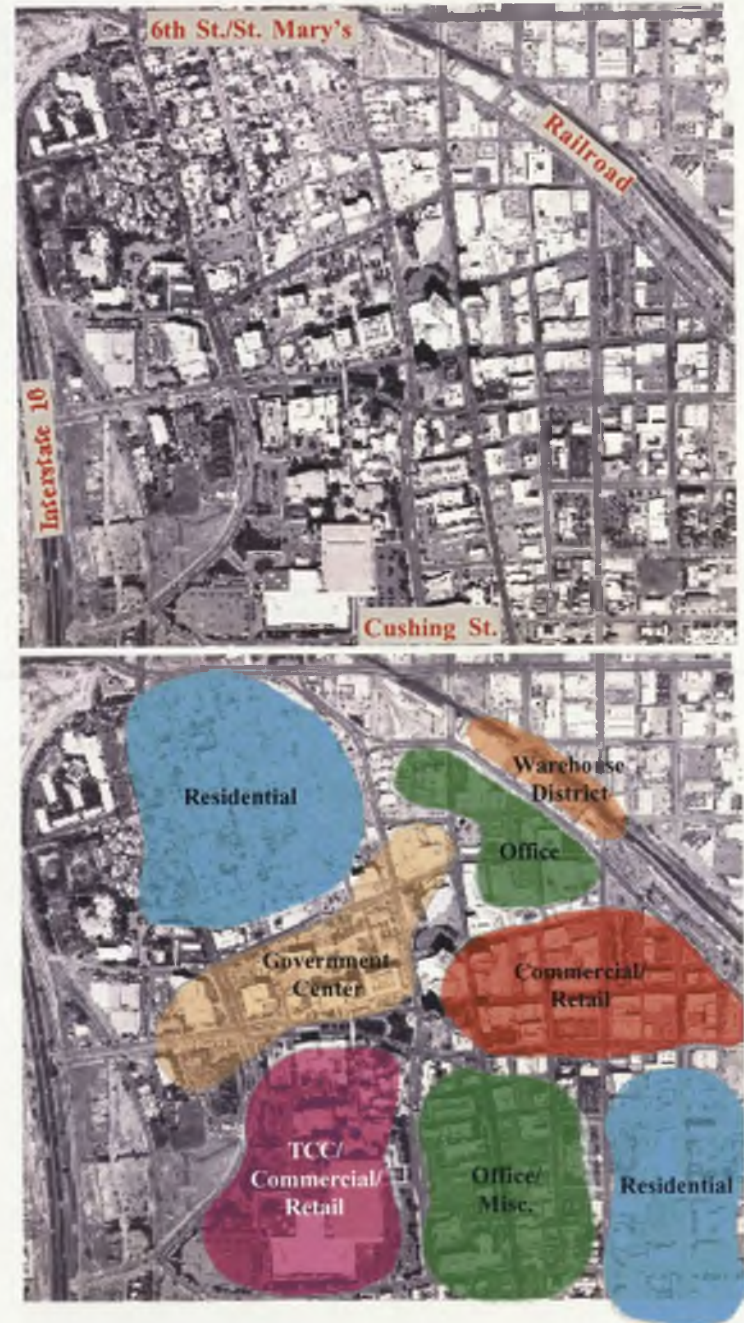
Figure Ground:

1901

2002

The turn of the 20th Century began to show signs of expansion outward from a distinguishably dense urban core. The Southern Pacific Railroad to the north-east starts to show development of that urban core eastward to what would become the Retail District. Residential appeared to constitute much area of the downtown.

The existing urban fabric shows much of the downtown replaced by scattered mega-structures. While densities increased, the distinguishable urban core is lost and residential uses made way for more office-type development. Streets and open space are not as evidently defined by their buildings.

Parking: A major part of the downtown's development is the **surface parking** lot. Surface parking constitutes over 2 million square feet of the downtown's total area. The amount could just about encompass both the areas of Government Center and the Retail District.

The amount of surface parking clues us in on several truths:

1) There is an intense **demand (not need) for parking**. Whether by default or by choice, people are to driving to work, not using public transportation, or living in and around the downtown.

2) As parking infiltrates the downtown core, so do **automobiles**. Traffic volumes continue to be high and dissect the downtown.

3) People are **not walking** in the downtown. With immediate parking facilities, activities like strolling, window shopping and chance gathering are kept to a minimum. Commercial/retail development suffer while failing to help foster a pedestrian environment.

4) There is potential to **make parking more efficient** and replace many of the surface lots with more **attractive uses**.

Open Space:

As noted previously, surface parking swallows up a major portion of the Open Space opportunities in downtown. The top diagram shows those existing open spaces in green. The open spaces are arguably sufficient in quantity.

The bottom diagram shows those open spaces in respect to the general districts of the downtown. A good portion of open space lies in the Government Center and TCC/commercial district. The retail district has a few opportunities, with Armory Park supplying a pocket due south.

The problem is that the quality of these spaces lack, either the physical elements (shade, seating, scale) or surrounding support (connections to attractive commercial, vending, maintenance) for successful public open spaces.
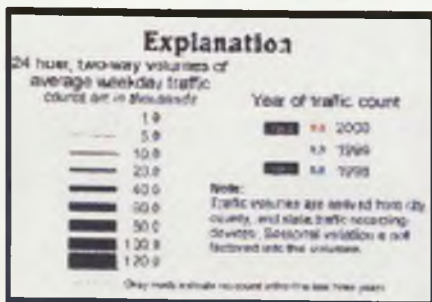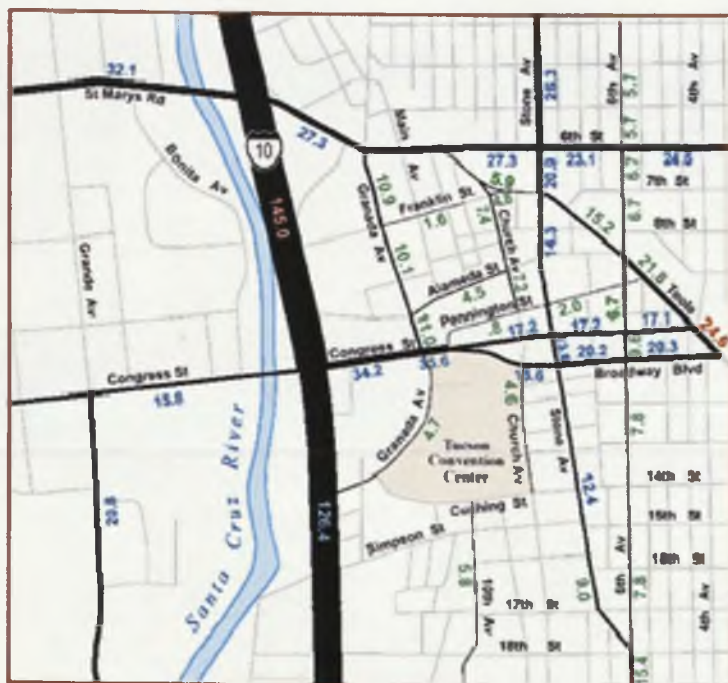

Existing open spaces downtown.

Existing open spaces in respect to downtown districts.

The amount of vehicular traffic that cuts through the downtown further hinders the pedestrian environment (visual sore, noise, air pollution, streets as barrier) and consequently pedestrians' physical and social comfort.

The **high traffic volumes** along Interstate 10 and 6th Street/St. Mary's reinforce the downtown boundary. On the other hand, Congress Street, Broadway Blvd. and Stone Ave. provide high traffic volumes as key entry points into the downtown. The problem is that the volumes continue into the center of the downtown (Stone Ave. **dissecting** East and West halves, and Congress St./Broadway Blvd. creating a **strong edge** to the South) without reinforcing a vibrant and attractive core, and vice versa.

The majority of the streets downtown are one-way. The City has studied the possibility of returning all streets to two-way and plan to do so.

Traffic Volumes:

(Fig.8)

How traffic volumes shape the downtown fabric.

Explanation

Existing parking garages and underground facilities.

✳ Even **existing parking garages and underground facilities** help defeat their purpose as efficient uses by **infiltrating the urban core**, and thus having automobiles infiltrating and dissecting the urban core.

**First Floor Vacancies-Retail
District:**

**First Floor Vacancies/Surface Parking-Retail
District:**

**Activity Centers-
Retail District:**

Activity downtown is sparse. A look at the Retail District shows proof of this. The Retail District is bounded by Pennington St., Toole Ave., Broadway Blvd., and Stone Ave. The top left diagram shows first floor vacancies. Add surface parking to that (top right) and the district seems much more fragmented.

There are a few activites downtown. The bottom left diagram shows nighttime activites in purple. Yellow represents offices and civic buildings that provide downtown worker activity. The few nighttime places that are there, do well. It is the lack of strong connections between those places that make the district indeed fragmented and generally underutilized.

An example of this weak connection is the fact that the walk between existing activity centers will involve walking past vacant storefronts and parking lots. It is that pedestrian experience, especially at night, that creates a fear of crime and avoidance of the retail district.

Stone Ave. and 6th St.

4th Ave. and 9th St.

Interstate 10 and Congress St.

Gateways:

The major gateways into the downtown hardly supply a sense of welcome or arrival. The northern boundary of the downtown is where much arrival, both pedestrian and vehicular, occurs. With a railroad defining that northern boundary, access from the north entails using an underpass (one above ground crossing exists that is not well defined as a major alternative route). While the perception of safety walking through the underpass is an issue, the sequence up to the underpass contributes negatively to that perception.

The points at Stone Ave./6th St. and 4th Ave./9th St. are dominated by vehicular traffic and vacant lots (vs. attractive commercial uses, uses that attract people). Likewise, I-10/ Congress St. is a main entry point along the east-west axis through downtown that is not pedestrian oriented (6 lane street devoid of attractive uses or signage unique to the downtown).

The Broadway Blvd. entry (the east end on the east-west axis) is a positive one, providing a unique experience into the downtown with public art projects (the Diamondback Snake Bridge by Simon Donovan and photo murals - "A Celebration of Our Heritage" by Stephen Farley) and the proposed 4th Ave. Underpass/Rialto Plaza project. The negative aspect of this entry is that it is still dominated by vehicular traffic. With little to connect to from Broadway (in terms of commercial activity), a wide six lane street and a dip in the road to get under the railroad, pedestrians are rarely seen walking through this main entry point into the downtown.

"A Celebration of Our Heritage" by Stephen Farley

Diamondback Snake Bridge by Simon Donovan

4th Avenue Underpass Project. (Courtesy of Wheat Scharf Associates)

Literature Review

With a general analysis of the site, a review of landscape architecture and urban design theory and case studies will begin to shed light on possible resolutions and/or actions that relate to downtown Tucson. The product of the literature review and case studies will be Design and Planning Guidelines specific for downtown Tucson. To try and tie the ideas expressed in the lieterature to downtown Tucson, the literature review will periodically have sidebar notes relating the current literature to examples in downtown Tucson.

Literature Review

Barnett, Jonathan. *An Introduction to Urban Design.* **New York: Harper & Row, Publishers, 1982.**

Barnett offers a broad brush look into urban design, from land use strategies to public policies to streetscape design. Each facet is deemed essential as is the understanding of each facet. The idea is made evident that many urban problems are caused by the misallocation of resources (5). It can therefore be concluded that the social and power structures of a city have great influence on the urban fabric and its physical improvements in the future. Barnett suggests that the influence of urban designers will be based on having a, "strong vision of what ought to happen and the opportunity to be present when the critical decisions are made" (10). Being that a vision can turn into idealistic manifestos and presence in the decision making process may not exist, design and planning guidelines are important components of urban design. Barnett describes these guidelines as, "rules for the significant choices that shape the city, within an institutional framework that can be modified as times, and needs, change" (12). The idea of a framework, or a basis for a more complete structure, is key. Developing a framework makes those rules more meaningful and less arbitrary. For example,

> "Encouraging or requiring a plaza as a part of each building project promotes a disconnected series of spaces that may not relate well to each other or to the basic character of the city" (174).

Concerning land use strategies, Barnett states that first and foremost, objectives must be made clear. Retailing may be the focus. Elsewhere it may be parking, open space, or historic preservation. Four areas in which Barnett cites as universally important are linkages, mixed use development, parking and open space. These issues were relevant 20 years ago in many American cities. Sadly enough, they are relevant today.

Linkages refer to the fact that, "land uses have to relate more closely to transportation corridors" (157) in order to facilitate the pedestrian and bicycle experience to and from an urban center. This could mean an open space system of plazas and parks, or commercial versus industrial development.

Mixed use development is important in that it can provide 24 hour vitality by inhabiting the urban core with people. Mixed use also seeks to utilize the land much more efficiently. Housing can be integrated with commercial buildings, commercial with office buildings, commercial with parking facilities, etc. Mixed use can also provide a more defined transition between adjacent districts, i.e. residential and commercial (161).

Parking is a major issue considering that many U.S. cities are auto-centric and many people live outside the urban core in suburbs. The result has been an abundance of parking lots in American downtowns.

In Respect to
Downtown Tucson

Linkages:

A pedestrian bridge connecting El Presidio Plaza and La Placita facilitates movement between those spaces but similarly renders the street and sidewalks below dominated by vehicular traffic.

"Compared to paying taxes, heating, and other operating costs for a partially occupied building, parking is a most attractive option…We need to invent interim uses for land that are as economically attractive as parking…and we need to take governmental measures to preserve buildings and make tearing them down for parking lots less attractive to owners' (167).

Open space is described not only as the public plaza but also the streets that encompass and connect public plazas. Barnett describes the theory that public open space can pedestrianize the urban environment, with pedestrianization having the ability to improve retailing and compete with the newer suburban shopping malls (171). The measure of success for public open space is in its usability. One method to create more open space opportunities is through requirements in the zoning ordinances. The problem is that,

"If zoning regulations are to be used as a means of assigning the cost of creating public open space to private real estate investment, then language is needed in the regulations that will specify and coordinate locations" (174).

This "language" refers to methods for successful use of zoning in the creation of public open space. These methods include (1) mandatory standards and/or a point system of zoning incentives, (2) standards for discretionary design review, and (3) tax increment financing. Tax increment financing is more specifically the government taking on the capital costs for, for instance, a public open space and increasing property taxes in the private sector to make up for those costs. The idea is that the increased value of adjacent real estate to a public open space can be taxed (175).

Legislation can also aid in the creation of usable open space. A great example is from New York City (1975-76), in which the Urban Design Group of the City Planning Department, along with William Whyte, prepared legislation. The legislation had requirements for continuity of commercial streets; "Store frontages are required to have retail tenants in half the commercial frontage. Restricting the space available to office, clubs, and banks" (180). Other elements of the legislation included the requirement for primary space to be at least 60% of the building's total plaza area, specifications for sunlight in plaza, minimum requirements for built-in seating, and definitions (the different kinds of space, acceptable amenities, and terms like "continuity") (180).

On more functional and social levels concerning linkages and open space, Barnett offers warning to the ideas of multi-level pedestrian circulation and large internal spaces. Both ideas run the risk of dividing pedestrian flows and, weakening or even losing the value of traditional street and retail frontages (183).

Ultimately, the, "Effectiveness of public open space is related to how well such spaces are integrated into the overall design of the city" (184).

Literature Review

Hedman, Richard and Andrew Jaszewski. *Fundamentals of Urban Design.* **Illinois: Planners Press, American Planning Association, 1984.**

Hedman and Jaszewski cover more of the physical elements of urban design with some insights on approach.

The importance of context and designing in context is made clear early on. Context encompasses the ideas of visual and experiential linkages, cohesive streetscape design, and historic preservation, to name a few. Well proportioned streetscapes (height to width ratios), well proportioned facades, thoughtful choice of materials, and thoughtful choice of style and decorative elements are just a few features that can establish a sense of unity and place (9).

In terms of approach, design guidelines are mentioned as a tool of good intentions that most often fail to be realized come design time. The main problem is,

> "when it comes to design, words are notoriously slippery and a verbally adroit person can be remarkably evasive. Before an audience of non-designers, it is easy to make the thinnest token gestures seem to fully meet the criteria" (21).

The approach of Elective Context is described as an alternative and complement to design guidelines. The author describes elective context as, "composed of drawings and/or photographs of different groups of buildings to serve as the model context for design purposes…A model context could be a good way to achieve some sense of unity where several independent projects are in progress" (22). Elective context not only graphically represents the guidelines, but also the overall vision in which the guidelines contribute. Even with elective context, the legislation of good design is impossible (136).

> "No set of rules can anticipate all the situations and conflicts that will eventually surface and there is a tendency that rules designed to prevent something bad will also prevent something good from happening" (136).

The key to good design is thus design review. Design review not only provides a certain level of quality control, but better initiates clearer and more defined design elements. These elements include what Hedman and Jaszewski consider prerequisites for the efficient functioning of design review:

(1) "Design objectives must be clearly stated,
(2) The design directions should remain consistent over time,
(3) Urban design concerns should provide the primary directions to guide design review,
(4) The basis for exceptions should be clearly stated spelled out and the rationale open to public scrutiny,
(5) Design review committees should be as small as possible and members holding rigid and divergent architectural beliefs should not be appointed" (136-7).

For design review to forge good design means critical participation of its members. The no risk design review, or the "I'll know the answer when I see it" approach, will not yield good design (137).

Literature Review

The first element of urban design discussed is contrast. Contrast is described as an element that can provide a focal point of interest, visual relief from uninteresting areas, and/or definition of distinct districts within the larger cityscape (31). The issue with contrast concerns its appropriate use. Regulating contrast is most effective through design review, rather than hard, fast rules.

Preservation is another element essential to urban design. It is not so much about saving for saving's sake, but for saving because therein still lies functional and structural value. Plus, there are other benefits. Preserving an old building, for an instance, can provide a sense of continuity, preserve a sense of place, and become, "an irreplaceable record of changing vision and values" (35). It is the notion of context that, if dealt with appropriately, realizes the benefits of preservation.

"it is possible to save a building in a situation so at odds with its scale and character that the effect is more a cruel joke than salvation" (41).

Space and spatial definition are also basic components of urban design. The term space refers to outdoor space, how it is and can be defined by its surroundings, and its impact on the vitality of a city. Outdoor space, in turn, can be broken down into more specific types. One obvious type is the streetscape. The streetscape essentially concerns the treatment of the sidewalk. From street trees to street furniture to the amount of sun and shade offered, the sidewalk can be a pedestrian amenity, one of gathering and socializing as well as strolling, wayfinding and getting from place to place. Hedman and Jaszewski focus more on how architecture can help to define the urban streetscape with rather prescriptive height to width ratios. For example, a height to width ratio of 1:2 is considered the minimum ratio to provide, "sufficient spatial containment to permit the creation of intensely three-dimensional space" (58). An increased ratio of 1:1 is possible for strong spatial definition but can start to fully contain peripheral vision and lose the element of the sky (59). Despite these ideal ratios, the character and function of ground floor uses are an important contribution to the liveliness of streets and adjacent spaces.

Such is also pertinent to plazas, a classic type of urban space. Proportions and scale are important in trying to make a plaza, "feel like an outdoor room and possess an intensely 3-dimensional quality" (71). Again, Hedman and Jaszewski have rather prescriptive rules. The larger the area for a plaza the more difficult it is to create and contain the 3-dimensional quality of an outdoor room; a maximum size of approximately 200 by 500 feet has been suggested (72). The height of buildings further define outdoor space. 1:3 is the suggested height to width ratio not to be exceeded. Uniform heights of framing buildings are also optimal, as it facilitates the perception of a ceiling (72). Controlling heights of framing buildings further complement the human comfort of outdoor space by its effects on sunlight and wind patterns. Again, these rules apply when such controls and variables are present.

In Respect to
Downtown Tucson

Contrast:

La Placita provides a bright and lively relief from the urban fabric. Vacancies and a lack of programming have unfortunately made La Placita underutilized as a thriving commercial center.

Preservation:

The Hotel Congress is a successful example of historic preservation. The addition of a bar, nightclub, cafe, and hair salon into the building has made the Hotel Congress a draw all times of the day.

Shape of plaza should, "permit the space to be experienced, in its entirety, from any point within" (76). Simple forms are suggested to provide clear spaces that are easy to comprehend. Many times, forms are defined by buildings. Hedman and Jaszewski mention the opportunity of siting buildings to define outdoor space. An example given is skewing opposing walls at angles to enclose a space (77).
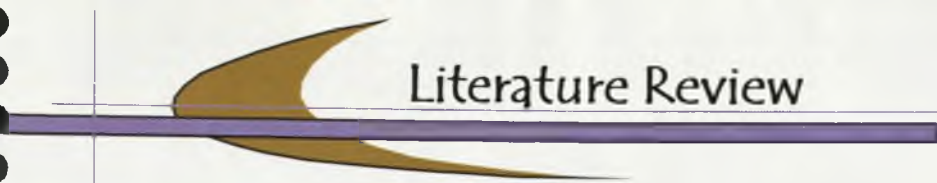
Continuity for a plaza means definition of plaza and its integration with adjacent streets and buildings. While, "clarity of form and closure are weakened when continuity of the plaza frame is broken by wide roadways or other openings," "to think of a plaza as somehow separate from the roadway will yield a muddy concept and cause design errors" (80). Landscape, though, can be the media to help tie and transition the plaza and the roadway. Continuity also concerns use and depends on the architecture's continuity of form, style, and function in regards to the rest of its surroundings (80). Facilitating the transition between plaza and roadway may also be done by changes in elevation, i.e. dropping or elevating the plaza floor from adjacent roadways or buildings (78).

Architectural characteristics can also help to define space. The range of architectural characteristics spans facades to structural objects. Facades can have different textures and materials, indentations, protrusions, and decorations that can help hold and define space. The nature of the elements of a façade can also in defining space create a hospitable and human scale space.

Other structural objects can provide multiple purposes from function to aesthetics. Sculpture has aesthetic connotations but can be a visually and physically organizing element in the plaza. Siting, size, proportions, and the nature of the sculpture are key issues in using sculpture. The nature of sculpture can be as a landmark, point of reference, wayfinding device, and/or an interactive part of the plaza that people are encouraged to touch, listen or walk through. Elements such as flagpoles can also act as sculpture. Flags can add color and be seen from a distance. Within the plaza, a flagpole may just appear to be a pole and merely clutter vision rather than define space (87).

Plants (landscaping) are another media in which to define space. Hedman and Jaszewski describe the role of plants, more specifically trees, as part of a beautification process as well as defining linkages (vehicular, pedestrian, and bicycle). Economically, "trees are probably the best urban design investment a community can make" (91). Design guidelines for planting trees are described as (92):

(1) "Irregular stop and go character by the uneven spacing of clusters and dense constrictions of overhead foliage at intervals," for local streets that want to discourage through and fast traffic.
(2) "Through streets, intended for longer trips, can be approximately expressed by landscaping that maintains a constant character and a continuous even rhythm."
(3) "Tree shape and height can be used to denote different kinds of streets. Slight differences in tree types are not likely to be recognized by most people; to be effective the differences must be sharp."
(4) "Distinctive tree types and planting patterns can help provide a physical identity around which neighborhood organizations can crystallize when strong geographic boundaries are lacking."
(5) Different tree types can maintain an overall rhythm while supplying different functions. Deciduous versus evergreen trees can help to define a distinct district while providing sunlight during the colder months.

Literature Review

The key points from Hedman and Jaszewski concern the importance of design review. In design, there are never single correct answers. Design review can allow us to be discerning in choosing the most suitable answers. For instance, "It is healthy to remember exactly how easily enthusiasms of the moment can blind people to what really is being done" (93-4). Along the same lines of design review, hard and fast rules are rarely successful urban design tools. Rules can provide the basis for good, contextual design, but need site-specific models or frameworks for the rules to exist and be pertinent in the long run. Even then, "Reality is more important than words and concepts" (138).

Literature Review

Shirvani, Hamid. *The Urban Design Process.* **New York: Van Nostrand Reinhold Company, 1985.**

Shirvani covers a comprehensive description of the urban design process from urban design elements to approaches to criteria. It is this process that contributes to the ambiguity which defines the domain of urban design. Shirvani describes the domain as the part of planning that deals with the physical and spatial design of the environment (6). While vague, the definition maintains that the extent and scope of urban design is indeed broad and multi-faceted.

> "urban design is concerned with the management of the physical development of the city. Management is difficult in that the client is multiple, the program indeterminate, control partial, and there is no certain state of completion" (UD Review, 1976: 1)(qtd. in Shirvani 2).

It is thus the definitions of its parts that shed light on what urban design is. The elements of urban design are described as: (1) land use, (2) building form and massing, (3) circulation/parking, (4) open space, (5) pedestrian ways, (6) activity support, (7) signage, and (8) preservation (Shirvani 7).

Land use, "determines the basic 2 dimensional plans which 3 dimensional spaces are created and functions are performed," and, "determines the relationship between plan and policy and provides a basis for assigning appropriate functions to specific areas" (8). Mixed use is described as an integral part of the urban fabric, promoting 24 hour vitality and more efficient use of infrastructure. A key component of mixed use development is housing. Housing supplies the critical mass to support businesses, offers increased safety through increased presence of pedestrians, and better uses infrastructure systems.

Building form and massing refer to the 3 dimensional aspect of land use. Principles according to Paul Speiregen concern scale, urban space, and urban mass (Shirvani 23). Scale is in relation to human vision, circulation, neighboring buildings and neighborhood size. Urban space is the space created by urban mass and its sense of enclosure. Urban mass is buildings, ground surface, objects in space, and their relationship with one another (23). Traditional zoning ordinances usually regulate building heights, setbacks and coverage. Other factors concerning building appearances such as color, texture, materials, and façade are also important considerations. Such factors can be best regulated through guidelines and design review.

Circulation and parking are major issues in the urban environment. Circulation shapes, directs and controls activity patterns in any type of environment. The road is the most basic component of circulation. The 3 major principles described concerning roads are:

(1) "Roads should be positive visual open space elements in themselves,"
(2) "The road is to give orientation to the driver and make the environment legible,"
(3) "Public and private sectors should combine in partnership to achieve these goals" (26).

Examples of guidelines within the 3 major principles include:

(a) "screening and landscape treatment of undesirable visual elements,
(b) height and setback requirements for development adjacent to roads,

(c) right-of-way parkway and median plantings,

(d) enhancing the natural environment as viewed from the road,"

(e) "provide 'landscape palettes' to enhance environmental districts and villages along roads,

(f) establish a streetscape palette of street furnishings and lighting to ensure that the streets are well lit in the night as in the day,

(g) include into the general roadway plan a system of vistas and of general references to adjacent land uses, and so on,

(h) differentiate the order and importance of roads with streetscaping, right-of-ways, adjacent land uses, and so on" (26).

General goals for transportation planning, according to Brambilla and Cianni (1977) are:

(1) Improving mobility in CBD's,

(2) Discouraging the use of private vehicles,

(3) Encouraging use of public transportation,

(4) Improving access to the CBD (Shirvani 27).

In the urban environment, parking is an important component of circulation. Parking is a necessary part of successful downtown activity yet its visual and experiential impact more than often fragments the urban fabric. Two options Shirvani suggests concerning parking are a multiple use program and urban edge parking (25). Multiple use is merely mixed use development with parking as a component. An example is integrating street level retail and commercial with parking structures. Urban edge parking is siting parking facilities at the periphery of congested urban areas. It is a simple idea that promotes walking in the urban core and discourages vehicular circulation to dissect and congest the urban core.

Open space is an element that encompasses all landscape, hardscape (roads, sidewalks), parks and recreational space. Its elements include trees, benches, planters, water, lighting, paving, trash receptacles, kiosks, drinking foundations, sculptures, and clocks, among others. Traditionally, "The design of open space has been an addendum to the design process rather than an integral part of it" (28). At the same time, August Heckscher (1977) observes, "many American downtowns are loosely knit, with as much as half their total area awaiting development or used for parking. In such circumstances, it is enclosure that is principally required, not openness" (qtd. in Shirvani 28). It is thus not quantity but quality and relatedness that is important in urban open space.

Pedestrian ways are a component of open space that is an important system in itself. "A good pedestrian system reduces dependency on automobiles in a downtown area, increases trips downtown, enhances the environment by promoting a human scale, creates more retailing activity, and, finally, helps to improve air quality" (31). The success of pedestrian ways and its success within the greater system of a downtown depend on the elements that provide a comfortable pedestrian environment and the more functional

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Parking:

Parking, especially surface lots, dominates the urban fabric and fragments that fabric visually and experientially.

aspects of delivery service, access and individual property requirements (32). A comfortable pedestrian environment includes human-scale streetscapes, safety, shade, seating opportunities, accessibility to and from, and things to do. Some elements that provide such an environment include benches, planters, trees, lighting, maintenance, attractive public space, informative signage, and circulation management among vehicles, pedestrians, and bicyclists.

The natural environment thus plays a significant part in open space/pedestrian systems. The main goals in dealing with the natural environment are to mitigate harsh or unfavorable climate, mitigate pollution (air, water, noise), and enhance and beautify the surrounding environment. Some techniques dealing with these goals include shading sidewalks with awnings and trees, retaining water on building roofs to cool air through evaporation, using pervious paving to reduce runoff, adjusting building heights to avoid blocking major air corridors, and using vegetation to help clean and cool the air (73). While local government regulates such techniques, incentive strategies that reward energy efficient components beyond the requirements of local code are effective methods to better deal with the natural environment (81).

Vegetation in the urban environment is significant as it affects soil, water and climate conditions. The effect on human comfort is an obvious characteristic of urban vegetation. Providing shade and buffering unsightly views are two attributes that greatly contribute to human comfort. More individualistic features like ornamentation, fragrance, and edibility merely add to comfort levels. Environmentally, plants can cool temperatures through evaportranspiration, help air quality by photosynthesizing and absorbing air pollution, control erosion, help absorb runoff, and support wildlife habitats (91-3). Equally as important are the stresses that have negative impacts on the health of vegetation. These stresses include air pollution, temperature, pollution in runoff, soil compaction, soil erosion, water logging, dehydration, and physical damage from vehicles and pedestrians (91). Ideally, urban vegetation must be thought out thoroughly, managed and maintained to fully benefit the public.

Activity support is another element in a pedestrian friendly environment that also affects the success of public open space, psychological comfort (safety), and the overall downtown. Activity support for the most part refers to retailing and commercial development. In addition to and beyond the needs of physical and psychological comfort, commercial development offers the functional needs of people as consumers and social beings.

> "Making a cold and useless pedestrian plaza without any retailing, or constructing a long corporate building without shops are additional examples of inefficient urban design that does not consider activity support in and near a building" (37).

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Streetscape as Activity Support:

A high activity corner in downtown supports a building that in essence turns its back to the street. Devoid of windows or signage, the building becomes merely a wall to the passing pedestrian experience.

The retail street of Congress St. has vacant storefronts that similarly function as blank facades. New development for such buildings should focus on attractive commercial uses with attractive and unique storefront designs.

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Retailing can further support activity, for instance, through outdoor cafes and creative storefront design that make the streetscape a vibrant place to stroll, window shop, or meet with others.

While retailing and commercial development are described as the main source of activity support, housing is a land use that, if coupled with attractive commercial development, can be an integral part in successful activity support. This goes back to the idea of mixed used development. Mixing housing with commercial development supplies the attraction and the people to support the attraction. Housing does, though, require other, more functional development like grocery stores, libraries, and parks in addition to department stores, restaurants, and entertainment facilities. An example from an urban design study for the City of Charlotte (1978: 19) sums up activity support:

> "The goal should be the allocation of major activity hubs to the most functionally desirable places, intermixing them with complementary uses, then linking them to each other with a pedestrian movement system that is safe, diverse, exciting and designed to pedestrian needs and functions" (qtd. in Shirvani 37-8).

Signage is an inescapable part of a city. Whether as a wayfinding device or merely an advertising tool, signage can have great visual impact, both positive and negative. Therefore, signage should be regulated, not only to lessen negative visual impact, but also to add to an area's sense of place and legibility (40).

Lastly, preservation is important in the urban design process. Existing structures and places that are economically vital, culturally significant, and structurally sound should be preserved. The benefits of preservation include:

(1) Cultural – educational and aesthetic enrichment, sense of place;
(2) Economic – increased property values and tax revenues, increased retail sales and commercial rents, avoidance of replacement costs, tourism;
(3) Social – restoration and strengthening of community confidence and identity (44-5).

The underlying and arguably most important factor of urban design, and its elements, is the human dimension (49). Urban design in fact seeks to serve people. Added to the fact that America evolved to develop pluralistic societies, urban design grew increasingly more complex in trying to serve the human dimension. Shirvani argues that the many shortcomings and failures of urban design in the 20th Century are due to professionals' inability to deal with pluralism (50). The fact that an area's institutional framework and political economy has much influence over urban design exhibits its complexities and limitations. The subject is so complex many professional, as Shirvani argues, are unclear as to the scope of urban

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Activity Support:

The outdoor cafe at Hotel Congress is a popular space all times of the day. The space benefits from access to food, an abundance of shade and a separation from the traffic volumes of Congress Street.

Signage:

Integrating art with signage contributes to the downtown's legibility and sense of place.

design. Its limitation lies in its rather small influence over social fabrics (51). As Herbert Gans points out, "He (the planner) can thus affect visual contact and vital social contacts among their occupants, but he cannot determine the intensity or quality of the relationships" (qtd. in Shirvani 51).

Two approaches for urban design stem from this problem: facilitation approaches and advocacy approaches. Facilitation approach is a participatory method. It incorporates society's voice as involvement of a certain but equal expertise (different that of designers) into the design process (52). Advocacy approaches use the designer/planner as the main expertise as, "political resources for the groups they serve, but their primary efforts are directed at helping the disenfranchised and unorganized to unite for planned actions and to jockey for political position in the planning process" (53).

The problems that arise from these approaches trace back to the human dimension. Facilitation approaches bring up the question of, "how precisely is information gleaned from these procedures to be used?" (52). Cutler and Cutler (1976) state that citizens' voices should help guide design, not dictate design (qtd. in Shirvani 52). There is also the issue of preferences varying and at times conflicting. Which citizens are more right than others? The problems with advocacy weigh heavily on both the citizen and planner/designer. Professionals first must recognize the presence of conflicting interests. Shirvani further describes this view as it being unrealistic for planners to suggest solutions for the public good or the best suitable (53). This view is in fact arguable. Secondly, the professional needs to remember that information and education are important characteristics of advocacy. It is easy to misinform and mislead people through rhetoric or bureaucratic language. It is thus up to the planner/designer to be sincere and trustworthy in their intensions. Lastly, there are always the underrepresented that are hard to bring into active participation roles (53). An example of the underrepresented is the poor. Peattie (1968) argues that the lower classes are more likely to, "think in terms of short term costs and specific threats rather than the neighborhood or community's long term interests" (qtd. in Shirvani 53). Planners/designers must deal with the underrepresented so that advocacy leads to decision making, not advising (54).

The products of urban design consist of policies, plans, guidelines, and programs. Policies are indirect design methods, "regulatory means of implementation or investment programs and other means of 'causing direct designs to be implemented'" (144). Policies need flexibility in order for designers, not policies, to design. Plans are an essential product of urban design. "The urban design plan is a 3-dimensional depiction of urban design policies" (145). There are two types of plans: the master, or development, plan and the comprehensive plan. The master plan deals with the physical environment while the comprehensive plan describes general community policies (145). Necessary truths that must be taken into account are the elements of time and change (146). Disregard of this fact usually comes in plans that refer only to completed form. Kevin Lynch (1981: 280) states the importance of process, being that the element of continuous change has in fact no form (Shirvani 146). While contradictions seem to exist with continuous change having no form and the idea of a plan, there is still much virtue in an overall plan. In a study by Allan Jacobs (1978: 219), he observed,

> "2 questions were asked over and over again: 'How would you carry it out?' and 'How realistic is the proposal in terms of its being implemented?' This does not mean that no proposal could or should be made without a surefire way of carrying it out. It does mean thinking continually about means of achieving desired ends" (qtd. in Shirvani 146).

Shirvani adds that, " A valid physical plan, then, can be expressed as a general framework within which incremental changes are made, implemented, and their implications and side effects realized" (146).

Guidelines are an addendum to policies and plans to ensure quality control at the microscale (147). Guidelines can, "present alternative forms or approaches for a specific design element such as a plaza, housing, landscaping and so on," but, "not necessarily result in more control or restriction" (148). Two types of guidelines are performance and prescriptive. Performance guidelines are more flexible in that they offer standards of criteria and measurements, and leave the derivation of physical form to the designer/planner. Prescriptive guidelines are merely more specific in their limitations to design and designers. The type of guideline appropriate is dependent on what the guidelines are meaning to do. Such considerations fall into the elements of urban design guidelines: (1) Purpose and Objectives of Guidelines, (2) Classification of Major/Minor Issues to be Covered, (3) Applicability, and (4) Examples Illustrating Some Applications (152).

Programs as defined by Shirvani are, "those aspects of planning and design that maintain and preserve the existing environment as well as the environments that will be created" (153). Care and maintenance are the two main issues of programs described. Such issues primarily concern post design/planning and construction. Issues of care and maintenance can easily be forgotten in post design and construction phases and in turn become problematic to the original design and function. Handling these issues in the early stages of design is suggested as an essential part of the design process (154). One vehicle to develop and enforce such programs is community associations. The fact that community associations meet regularly allows a certain amount of reassurances that the issues of care and maintenance will be dealt with (154). The question with community associations, then, is who represents the community.

Quality control of the products of urban design is through design review.

> "there is always a need for further explanation of guidelines and regulations regardless of their detail. In addition, the flexibility that is required for designing a piece of built environment is an integral part of the interactive process of negotiation that characterizes effective design review. Guidelines cannot provide a response to every special or unusual proposal. Design review provides the opportunity for such proposals to receive proper scrutiny" (182).

For design review to function properly, a design criterion is necessary. There are 3 basic types of criteria described by Shirvani: measurable, non-measurable, and generic (121). Measurable criterion concerns itself mostly with natural factors (climate, sun/shade patterns, wind, hydrology, drainage, etc.) and the physical form of the urban environment (setbacks, height-to-width ratios, floor area ratios, etc.). Non-measurable criterion is that which requires human judgment. Issues within non-measurable criteria include sense of place, visual interest, amenity, comfort, and contrast. Generic criterion falls under non-measurable as it focuses more on social justice, equality and equity (121). The fact that most of measurable criterion is derived from non-measurable issues, is a testament to the importance of design review. Through a comparative analysis of 3 different criteria (San Francisco Urban Design Plan-1970, Urban Systems Research and Engineering Inc.-1977, and Kevin Lynch-1981) Shirvani concludes with a typical example of non-measurable design criteria: (1) Access, (2) Compatibility, (3) Views, (4) Identity, (5) Sense, and (6) Livability (Shirvani 126).

Whyte, William. *The Social Life of Small Urban Spaces.* **Washington D.C.: The Conservation Foundation, 1980. Reprint, New York: Project for Public Spaces, 2001.**

Through the use of time-lapse filming in New York City, William Whyte studied the social behavior of the urban environment and extracted some worthy design guidelines. Many of the conclusions were obvious truths, while others less self-evident.

A key observation from Whyte's studies is that people attract people (19). The most successful and used spaces are the ones that are lively and sociable. While people in general would not say they prefer to sit in the middle of a crowd, Whyte's time-lapse film studies show that many people actually seek and inhabit areas of relatively high pedestrian congestion (19). Whyte's observations of street activities (conversations, sitters on steps, lunchtime gatherings, etc.) found many of them occurring in the middle of main pedestrian flows, rather than off to the side away from circulation or in a secluded space. Even more interesting is the fact that the pedestrian flows generally don't mind the obstructions and weave through as opposed to making major detours (19-21). This example is also a reminder that the street is a key space for a plaza, as a connector and supplier of pedestrian activity (54). Comparative studies, done by Whyte, with Tokyo and Milan further showed that many of the same successful design elements yielded the same behavioral patterns with Whyte's studies in New York (23).

One element that is a common denominator to successful plazas is seating. Seating is a necessary complement to most of the activities of a plaza: sitting, gathering, eating, reading, people watching, conversing with friends, waiting, etc. The variety of activities should thus reflect in the seating that it supplies. In describing the virtues of wider seating, Whyte sums up the virtues of a variety of seating styles and types, "The benefit of the extra space is social comfort - more room for groups and individuals to sort themselves out, more choices and more perception of choices" (32).

The complements to seating are likewise important elements in themselves. Activity support such as food, retailing and triangulation give added purpose for plaza use. Whyte states, "If you want to seed a place with activity, put out food" (50). Food vendors and built-in snack bars supply a demand that is unique to the typical commercial establishment in that it's fast, immediate and caters to the outdoor environment (50). Retailing is another activity generator that, much like food, can improve the street environment, its relationship to plazas, and the plaza itself. Attractive storefronts and window displays, as opposed to blank facades, are more welcoming, attention getting, and supply the street with people. Triangulation is defined as, "that process by which some external stimulus provides a linkage between people and prompts strangers to talk to each other as though they are not" (94). The stimulus can come

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Activity Support:

The El Presidio Plaza benefits from the weekday presence of a hot dog vendor. The vendor attracts many downtown workers that reside in the surrounding government offices, providing them with quick food opportunities and a familar face everyday.

Seating/Shade:

Despite the positive presence of a hot dog vendor, El Presidio Plaza suffers from a lack of shade for its numerous seating areas.

in the form of public art, a stunning view or street performers. While such stimuli can contribute to a space's sense of place, scale and aesthetic quality, it is the potential for people to bond that is of equal importance (98).

The elements of the natural environment (sun, wind, trees and water) are potentialities that if dealt with appropriately can also contribute to a successful plaza. Both sun and shade are assets to urban spaces. One exception lies in areas of extreme heat (90 degrees or more) where sun pockets are not as welcoming (44). Trees can help mitigate such extremes by providing shade and cooling temperatures. Trees and other plant material can also define space, providing both enclosure for shade and openings for sun. Water, where appropriate, can similarly help cool down the air. Equally as beneficial are the other sensory effects of water: sound and touch. The sound of water (white noise) can be a pleasant addition to a plaza while possibly buffering noise from the street and plaza itself (48). The touch of water is also a pleasing effect that often times is restricted due to safety issues. Whyte believes more trust should be developed in the public to avoid such restrictions (48). While cool breezes and wind passages that circulate the air are beneficial to the urban environment, Whyte's concern with wind is the potential for severe drafts down the side of buildings that can make adjacent open space below uncomfortable. Whyte states that the effects of buildings on wind are measurable and therefore should be tested and considered in the design of a new building and its effects on people below (44).

Creating spaces that are conducive to the comfort of the pedestrian not only helps to attract people who attract more people, but also help to deal with he problem of "undesirables" – homeless, panhandlers, etc. The undesirables generally do not go to highly used areas. If they do, there is enough activity and people that self-polices the area. The focus should then be to create spaces attractive to all (63). Otherwise, as Whyte states, "Places designed with distrust get what they were looking for and it is in them, ironically, that you will most likely find a wino" (60). An additional method to help combat undesirables is the presence of a "mayor" (64). A mayor can be a slew of different kinds of people – a police officer, building guard, food vendor, newsstand operator – that are a daily presence to a space. Such people act as a familiar face that others check in with, that notices suspicious and unusual behavior, and that similarly notices new faces and offers welcome and assistance.

Whyte recognizes the value of zoning in trying to regulate many of the successful elements and guidelines extracted from his studies. Things such as amount of seating, seating height and depth, amount of trees, tree caliper, retail frontage, and food facilities are some examples that can be regulated by zoning. Whyte sides toward being more specific with zoning regulations as a means to ensure a certain level of success. Whyte believes that more general guidelines reinforce convention rather than suffering the potential "hassles" (i.e. special permits) of any sort of innovation (30). At the same token, Whyte realizes that, "zoning is certainly not the ideal way to achieve the better design of spaces. It ought to be done for its own sake" (15).

Literature Review

Marcus, Clare Cooper, Carolyn A. Francis and Rob Russell. *Urban Plazas.* Edited By Clare Cooper Marcus, Carolyn A. Francis. *People Places: Design Guidelines for Urban Open Space.* New York, N.Y. : Van Nostrand Reinhold, 1990.

It has been established that an integral element in urban design is open space. Arguably, the most common form of urban open space is the urban plaza. While definitions vary, the plaza can be generally defined as a,

> "mostly hard surfaced, outdoor public space from which cars are excluded. Its main function is as a place for strolling, sitting eating, and watching the world go by. Unlike a sidewalk, it is a place in its own right rather than a space to pass through" (10).

To better understand and clarify the term "urban plaza," a typology of urban plazas is necessary. The typology has the further purpose of: (1) understanding the variety of spaces within urban plazas, (2) categorizing plaza spaces in specific cities, and (3) developing local design guidelines for the different types of plazas (15). The typology described is based on one developed in San Francisco. Nonetheless, the typology is one that is applicable to most cities. The typology consists of: (1) The Street Plaza, (2) The Corporate Foyer, (3) The Urban Oasis, (4) The Transit Foyer, and (5) The Grand Public Place.

The Street Plaza is an open space, "immediately adjacent to the sidewalk and closely connected to the street...sometimes is a widening of the sidewalk proper or an extension of it under an arcade" (15). Subtypes are: (1) The Sitting Edge – a defined edge, such as a wall or steps, that double as informal seating, (2) The Widened Sidewalk – an expanded sidewalk with street furniture used primarily for people watching, (3) The Bus Waiting Place – a portion of sidewalk where buses stop, often furnished to accommodate seating, shade and waiting, (4) The Pedestrian Link – an outdoor connector of spaces or areas exclusive for pedestrian circulation, (5) The Corner Sun Pocket – a plaza formed by an opening in a building's footprint that encompasses the meeting of two streets and access to sun during peak use hours, and (6) The Arcade Plaza – an expanded sidewalk through the extension of an adjacent building, like an awning or arcade.

The Corporate Foyer is a plaza associated with a corporate, usually high-rise building complex. Its purpose is to provide a grand entry and elegant image for its corporate sponsor (16). Uses such as gathering and seating are not as important as passing through and, as mentioned, providing an image. Subtypes are broken down into the different scales of each type (small, medium and large, respectively): (1) The Decorative Porch, (2) The Impressive Forecourt, and (3) The Stage Set.

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*The Widened Sidewalk/
Arcade Plaza:*

The Ronstadt Transit Center is defined on two sides by a widened sidewalk and covered arcade that offers an interior seatwall, shade, and opportunities to people watch. With little commercial activity on facing sidewalks and bus circulation/stops in the interior of the block, the space is underutilized, even as a bus waiting place.

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The Urban Oasis is a plaza type that offers a little more relief from the harsh urban environment. Its location is usually set farther apart from streets, while vegetation is much more in abundance. The urban oasis is much more conducive (or at least should be) to activities such as socializing, eating, reading, contemplating, etc. Subtypes include: (1) The Outdoor Lunch Plaza – a plaza furnished for comfortable lunchtime use (tables and benches, cafes, food vendors, etc., (2) The Garden Oasis – a plaza that suggests more of a garden with an abundance and variety of vegetation, and (3) The Roof Garden – a rooftop that functions and physically encompasses the elements of a plaza (seating, walking, people watching, sun and shade, etc.).

The Grand Public Place is what is usually considered the "heart of the city" or as Marcus describes, "where an annual Christmas tree might be erected or guests taken for a visit" (18). Such a plaza is typically very big and flexible in its use. Activities such as eating lunch, impromptu performances, rallies, and special events are not uncommon in the grand public place. Subtypes are: (1) The City Plaza – a centrally located, highly visible and predominately hardscape plaza, and (2) The City Square – much bigger than the city plaza, usually encompassing complete city blocks, bound by streets on all sides, and balanced between hardscape and plantings.

General design recommendations are a complement to the typology in regards to the issues in designing an urban plaza. The recommendations are meant to be applicable to any of the types aforementioned.

Siting the location of a plaza or, more realistically, deciding whether a particular site is appropriate for a plaza depends on a whole range of factors. Analysis of surrounding context of a proposed site is important. For instance, does the proposed site tie into an existing pedestrian system, commercial or residential development, or open space system? And is the tie in within what Marcus describes as a catchment area of approximately 900 feet – the maximum distance people will walk in a downtown (based on a San Francisco study)? (18). Location within the block also can affect the plaza. A corner location at grade with its adjacent sidewalks, for instance, can make a plaza very active. Depending on how circulation and edge treatment is handled, such a corner location can be a place people walk through, at the same time, stop to gather or sit informally and people watch. If there exists a considerable grade change between plaza and sidewalk, the plaza may not generate as much passing through traffic and be more of an urban oasis or quiet sitting area (18). A midblock plaza location generally does not extend through the block and functions as a pocket park or urban oasis. Midblock plazas that extend through the block are more conducive to more activity like passing through and people watching. A widened sidewalk, again if done well, can meet its main function of pedestrian movement while creating a comfortable space for people to stop, sit, gather, or just relax (18).
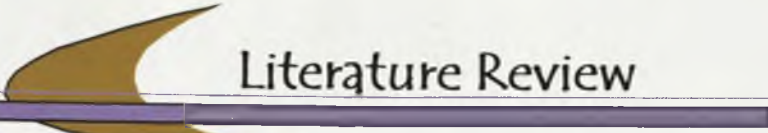
General guidelines concerning plaza size are harder to develop since contexts are different site by site. Kevin Lynch has observed and assessed that 40 feet appears intimate in scale while up to 80 feet offers a scale that is still pleasant (Marcus 19). Likewise, Jan Gehl states that 65 to 80 feet is the maximum distance to see facial expressions, with 230 to 330 feet to watch events comfortably (Marcus 19).

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The Urban Oasis:

The La Placita Courtyard is a successful lunchtime space. It benefits from a strong connection to Government Center, immediate access to cafes and restaurants, a visual buffer from the street, and a variety of seating spaces, both formal and informal, sunny and shady. While outdoor movies on Thursday nights have been drawing some nighttime use, the La Placita Courtyard is still somewhat under-utilized and limited to weekday lunch hours.

Visual complexity is a broad component of the urban plaza that has enormous effects on its success or failure. Joardar and Neill concluded from studies on various downtown plazas in Vancouver, Canada that people most responded to plazas with more variety and density of colors, forms and textures as opposed to sparseness and repetition (Marcus 19). Such variety and density correspond to elements such as plant material, paving, seating, and sculpture. Views looking outward can also be a positive addition to visual complexity. Marcus argues that many downtown workers that constitute the many plaza users will benefit from visual complexity as a welcome relief from the generally predictable environments they work day in and day out (20). Visual complexity can likewise be overdone and create illegibility. Marcus warns that a plaza of high visual complexity may not be used unless in an area of high demand (20).

Use and activity are two basic gauges of a successful plaza. Marcus defines "users" as people who stop and inhabit the plaza as well as pass and linger through (20). Activity is broken down into the physical and social aspects that constitute a plaza's function and success. Both use and activity, therefore, are interrelated, affecting each other in the plaza's success or failure.

A behavior study of Manhattan plazas done by Pushkarev and Zupan (1975) reveal some basic elements in the physical design of a plaza that affect its use and usability. Wider plazas (and ones that help cut corners), no grade changes between sidewalk and plaza, and no strong barriers between sidewalk and plaza are the main conclusions drawn from the study that influence greater plaza use (Marcus 20). Pushkarev and Zupan further observe the simple idea that plazas acting as thoroughfares will be treated as such; likewise, plazas with substantial seating and proportions more conducive to gathering will attract more sitting and gathering (Marcus 20).

Further study of a plaza's physical design exhibits other guidelines that can contribute to a successful plaza. Microclimate is an important contributing of the plaza that can be mitigated or enhanced by design. Marcus describes a, "'comfort zone' – a range of weather conditions physically pleasing to a person who is in shade and in casual clothes," which plazas should strive for (25). This means understanding the microclimate where the plaza is to be built. For instance, sunlight is, in most regions, welcoming and increases use. In arid environments, on the other hand, shade is a commodity and increases the "comfort level." Likewise, temperature plays a big part in determining whether sun pockets or shading devices are more appropriate. The issue of glare further affects the aforementioned elements of microclimate. Being that plazas tend to contain more hardscape results in more reflectivity (not to mention reflective heat). Building surfaces also contribute to glare and reflectivity within the plaza. Sunlight coupled with high reflectivity can be highly uncomfortable to users and even discourage use. Buildings can also affect wind patterns on the plaza. High rise buildings can deflect wind downwards at velocities uncomfortable to the plaza user. Marcus offers the best solution or strategy against wind problems as, "to redesign the building envelope itself or, when possible, to orchestrate the relationship of the sizes and shapes of the building near the effected area" (26). The elements of microclimate are in fact interrelated in its contribution to a plaza's overall comfort. Context is the determinant that dictates how microclimate is addressed and shapes the physical design of the plaza.

Boundaries and transitions are equally important elements of the plaza. A plaza, like any other space, needs definition as its own entity. A plaza similarly needs a strong relationship to public right-of-ways, like sidewalks. Marcus suggests that a plaza has at least one side (preferably two) open or exposed to public right-of-ways (27). Beyond such exposure, the transition between plaza and public right-of-way can be critical in strengthening its relationship. The studies of Pushkarev and Zupan indicated a higher percentage of use where grade changes or strong barriers did not separate the plaza from the sidewalk (Marcus 20). Likewise, Marcus argues that blurring (or rather, facilitating) the transition between plaza and sidewalk can be beneficial: "The

more readily that passersby perceive the plaza as being an extension of that right-of-way, the more likely that they are to feel invited into it; thus, an extension of plaza planting onto the sidewalk may imply to passersby that they are already in the plaza" (27-8).

Furthermore, a seamless transition, visually and physically, between plaza and sidewalk ameliorates access and movement and people watching, (28). Buildings often times form the boundaries of a plaza. The function of adjacent buildings dictates much of the kinds of activity, and volumes of activity, within the plaza. Marcus reiterates the basic idea that retail and food (i.e. cafes and restaurants) provide greater attraction and vitality than office buildings, banks or blank facades (29). William Whyte suggests that 50% of adjacent buildings be dedicated to retail and service (food) establishments (Marcus 29).

Plaza boundaries are in fact plaza edges. Since, as Marcus observes, people tend to gravitate towards edges, rather than the middle, of spaces, an articulated edge not only softens the edge but also provides an opportunity for defined seating and gathering (29).

Depending on scale, context, and function of the plaza, subspaces can encourage use as well as maximize the plaza's total area. Subspaces can offer greater sense of enclosure (as opposed to exposure), utilizing more edge to articulate and provide greater seating and gathering space (29). Scale is an important issue in defining subspaces. A subspace too big may still provide intimidating exposure, while a subspace too small may create a sense of segregation or intrusion when entered upon (30). Methods of defining subspaces include the use of planting, walls, seating, grade changes, etc.

Interrelated to boundaries, transitions, and subspaces are the circulation patterns that guide how people walk in and through the plaza. The function of movement not only is in, out and through, but to more specific destinations like sitting and gathering areas, and commercial and retail uses adjacent or in close proximity to the plaza (30). In designing the plaza with respect to circulation, circulation patterns should be predicted and facilitated through the overall design (30). This entails the definition of spaces, edges, corridors, etc. The media that provide such definition are equally as important. Pushkarev and Zupan's studies deduced that,"Pedestrians totally disregard any color patterns on the walkway, be they different shades of brick or concrete, or painted lines…However, pedestrians respect physical barriers and strong changes in texture" (qtd. in Marcus 31).

Paving elements such as cobblestone, gravel, and ventilation gratings conversely are unfavorable to pedestrian comfort in terms of walking over them (31). Ease of access, but more importantly, access to all, is a necessity for the public plaza. Ramps, therefore, should be an integrated part of the design process where grade changes occur.

Seating supplies a most common activity of a plaza: sitting. William Whyte, through extensive studies, concluded that people sit where there is seating (Marcus 32). It is a basic concept, but one that is often times overlooked. Providing seating is one step; providing amenities to make seating more attractive (shade, sun, plants, fountains, food, etc.) is another. Understanding the types of sitting and sitters will give insight and direction in the design

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Plaza Boundaries:

The Bank of America Plaza is a corner plaza that succeeds in facilitating circulation, providing informal seating (planter edge), and providing an abundance of shade from the building.

The relationship between sidewalk and plaza is strengthened by the planter and seat edge (with at grade openings from three sides) defining the plaza boundary.

of seating and seating areas. Sitters generally break down into people watchers, those waiting for friends, those waiting to get picked up by car or bus, those part of a group gathering in the plaza, and those that seek more quiet, intimate space. Primary seating can accommodate such types of sitters. Primary seating is basically formal seating: benches, chairs, seat walls, etc. Secondary seating is more informal; often times doubled in function, it can be more specific to the variety of sitters.

Benches are the most common form of primary seating. They represent the specific function of sitting and most often functions as such. Marcus recommends a wooden, 3 by 6 foot, backless bench as one that can provide a variety of functions for a variety of sitters (33) (Fig.). The 3 by 6 foot dimensions allow up to four separate individuals to sit on the same bench without infringing on each others' sense of space; likewise, such dimensions can also benefit a group of people, offering enough space to sit and face each other with extra space available for things such as table space (34). As far as materials go, wood is warm and comfortable, as opposed to metal, tile, or stone (36).

With the potential of lunchtime workers, tables and chairs can further increase a plaza's usability. While being able to move tables and chairs can provide a greater sense of freedom to plaza users, tables and chairs can be fixed into the ground in subtle ways that aren't so unattractive. Tastefully bolting tables and chairs, for instance, is much more appealing than using posts and chains (35). Umbrellas for tables can be an additional benefit, providing shade, increased spatial enclosure, and protection from down drafts (caused by high rise buildings).

Secondary seating can come in virtually any form, so long as it provides an opportunity to sit. Some common examples of secondary seating include steps, ledges, and edges of planters, retaining walls, and fountains. One of the major benefits of secondary seating is its multiple function. With multiple functions, seating is provided without the appearance of emptiness when not being used as seating.

For the most part, variety of seating is a plus. Supplying the needs of a variety of sitters can in fact attract, not only a greater number of people, but also a greater diversity of people (36). While variety can be attained as mentioned earlier through the use of both primary and secondary seating, other aspects of the design of seating can make big differences in the users it attracts. Orientation is an important consideration. For instance, views from seating can supply certain needs, whether oriented to activity for people watchers, or water features, public art and distant views for more contemplative sitters. Access to both sun and shade are also important, depending on microclimate and its seasons. Getting down to the level of design of actual seats can further define the types of use. Straight steps, ledges or benches, for instance, are more conducive to those sitting alone while groups of sitters benefit more from seating that form right angles at corners or are curved inward (35). Groups prefer to face each other. Single individuals, on the other hand, do not want to infringe or be infringed upon. Straight seating provides a "natural spacing" between people and thus creates pockets of private space; circular seating facing outwards can act similarly (35). It is, thus, the interaction, or lack thereof, that provides that certain comfort level to groups of people or those sitting alone.

Plants are basic media that can provide a variety of functions to the plaza: aesthetics, climate mitigation, and spatial definition among others. Similar to seating, variety of plant material can be a benefit to a plaza's usability. Variety of colors, textures, massing, aural and olfactory effects can significantly contribute to, not only the visual, but sensory complexity of the plaza (37). Such complexity can attract passersby into the plaza and keep them there to experience the space. Plant material likewise can affect the plaza experience in more functional ways from screening unsightly views and extraneous noise to defining subspaces to scaling down adjacent structures.

The plaza experience can further be enhanced by elements such as level changes. Marcus describes some of the advantages of level changes as separating and defining seating from circulation spaces, utilizing upper levels as staging areas for planned or impromptu performances or speeches, and defining/forming smaller outdoor rooms within a larger plaza (39). Level changes should be subtle as not to create major separations between plaza and street; subtle changes in fact can be enough to have visual and psychological effects on the pedestrian (39).

Public art can contribute to the plaza experience and sense of place, enhancing aesthetic quality, creating interaction and play, and contributing to public comfort (40). Murals and sculptures, for instance, can describe and area's past. More abstract pieces can be more interactive, allowing them to be touched or casting shadows onto the ground. Integrating water as in a fountain can offer evaporative cooling and/or "white noise," while exhibiting an artistic expression. Public art thus must be thought out as far as its nature and placement. For instance, Camillo Sitte observed that placing a sculpture in the center of a space might imply that the space is a showcase for the sculpture and not for the more functional use of people; Sitte suggests off center positioning near major circulation ways (Marcus 43). Likewise, sculpture should not block important views that compromise the safety of pedestrians (42).

Paving is a major component of the plaza, as hardscape tends to compose much of a plaza's surface area. Marcus makes a rather obvious observation that many people are more inclined to take the shortest and easiest route to their destination; such must be taken into account to prevent people shortcutting through areas not intended for circulation (lawns, plantings, gathering areas)(43). Paving can thus help define spaces, transitions and boundaries in subtle ways that either encourage or discourage movement between. For example, as mentioned earlier, surfaces like cobblestones and gravel are uncomfortable and thus discourage walking (31).

While physical aspects of plaza design are important in defining its success or failure, programming plays an equal role of importance. Programming generally refers to the post construction management of the plaza. Even though it is post construction, programming can and should be planned and integrated into the design process. Issues of maintenance and critical mass stem from and sprout other important issues like attractiveness, usability, and safety. An increased use, or presence of people, for example can aid in reducing fear of crime, actual crime, vandalism, and the amount of undesirables that inhabit a particular space. Similarly, special events and increased safety can have healthy impacts to surrounding businesses and greater community. Programs can range in size and quality from one-off performances to seasonal events to licensed street performers to themed festivals that run for several days. Project for Public Spaces provides some general guidelines regarding programming for plazas:

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Public Art:

The Main Library Plaza contains the piece "Sonora" by David Black. The plaza suffers more from the open expanse of hardscape than the arguable appropriateness of the piece.

"A Celebration of Our Heritage" by Stephen Farley is part of the east end gateway sequence that provides a glimpse of Tucson's past and contributes to the downtown's sense of place.

(1) Normal circulation should not be severely obstructed by the event,

(2) Light weight folding chairs should be used, especially to define the distance between audience and performer,

(3) Volume of event should not be too loud as to distance the audience from performer,

(4) Events should coincide with peak activity hours, i.e. lunchtime,

(5) Temporary food concessions for events can supply an added attraction for event goers,

(6) Visible signage should be used to publicize the event (Marcus 45).

Another successful form of programming is vending. Vending concerns itself with selling more specialty kinds of items like flowers, food and knick-knacks from stalls, wagons, handcarts and kiosks. Vending can provide a space with added attraction to pedestrians, improve nearby businesses and raise levels of safety with an increased presence of people. Of course, vending can further enhance spaces that are already successfully used. Regardless of any situation, vending can greatly benefit from regulations concerning location, size, and design of cart, types of goods sold, and permit fees that relate to a specific situation (45). As mentioned earlier, vending like other programs can be planned for and thus affect design details like sidewalk width, circulation, view sheds, sidewalk furnishings, building entrances, bus stops, etc.

Related to programs, food is generally an asset to a plaza. William Whyte sums it up quite nicely, "Food attracts people who attract more people" (qtd. in Marcus 44). The presence of a food cart, kiosk or actual establishment on site can help enliven a plaza, its surrounding area, and make good business for the food concessions (43). Facilities such as trash receptacles, restrooms, water fountains, and telephones can further complement the presence of food and thus should be taken into account.

Literature Review

Golany, Gideon S. *Urban Form Design for Arid Regions.* **Edited By Gideon S. Golany.** *Design for Arid Regions.* **New York: Van Nostrand Reinhold Company, 1983.**

The arid environment presents some unique challenges to the urban fabric. The main constraint is that of heat, but also the amplitude between day and night temperatures. Many of the goals of urban form design in arid regions reflect this. They include: (1) reducing direct sun radiation, (2) reducing strong, harmful and dusty winds, (3) providing plenty of shadowed public and private space, (4) establishing social proximity without sacrificing personal privacy, (5) creating a pleasing outdoor environment, (6) planning proximate land uses for easy pedestrian access to all, and (7) emphasizing conservation principles (8).

Proximity of land uses and compactedness are key ideas that have many other benefits besides helping to mitigate the harsh arid climate. Compactedness of urban form is defined as one that is, "concentrated and firmly unified in its buildings, with consolidated land uses in a close, tight relationship with each other and within themselves, too" (14). While cooling processes are slowed with increased density of structures and pedestrian/vehicular activity, compactedness can help to break strong and abrasive winds, build in cool air and shade, reduce direct radiation, retain humidity, and minimize heat gain during the day and heat loss during the night (15). Proximity and compactedness also translates into social proximity, complementary uses (offices, residences, basic daily needs, food, entertainment, schools, etc.), efficiency of movement and infrastructure, and more self-sufficiency and convenience. The notion of mixed-use again becomes an important land use type, supporting all benefits of proximity and compactedness, but needing complementary uses to function successfully.

Open space is an essential element of the urban fabric, contributing to human comfort with its potential to reduce the stress of the arid climate and urban environment. Shade is arguably the most obvious attribute of a pleasing outdoor space. Adjacent buildings can provide shade, but if too tall and scattered can divert winds and create turbulence (11). Likewise, vacant open space (whether covered in asphalt, without plants, or merely dirt) can support wind movement, dust storms, albedo and heat gain during the day, heat loss during the night.

Vegetation thus plays a big part in the success of open space in the arid environment. Vegetation not only improves ambient air temperature, but air quality through the photosynthetic process. The use of native vegetation merely adds to the area's sense of place and identity while significantly contributing to the human comfort of open space.

Open space, therefore, should be sited deliberately, working with idea of proximity and compactedness. For example, open spaces should be small in size and scattered throughout the city in order to provide that proximity and convenient accessibility to a greater number of different uses (20).

The street as space and connector of space should also be considered. While vegetation and shade devices on buildings can make streetscapes more enjoyable, making streets more narrow and winding can produce minimal heat exchange, reduce the effect of stormy or dusty winds, better retain humidity and decrease ambient temperatures throughout the day (13). Alleys therefore have much potential, reaping the benefits of generally being narrow (13).

Pacelle, Mitchell. "'Traffic Calming': Some Urban Planners Say Downtowns Need a Lot More Congestion." Wall Street Journal, Eastern Edition. New York, August 7, 1996.

Walter Kulash, a traffic engineer at the planning firm Glatting Jackson Kercher Anglin Lopez Rinehart, is one of a handful of people who have found and extol the virtues of traffic calming as a means of facilitating downtown revitalization. It is the idea that congestion can be a healthy aspect of a street. Congestion in this case refers to streets and streetscapes that are attractive so drivers not only want to drive on a particular street but drive slow because the street is pleasant to be on. It is this congestion that similarly makes the street as pedestrian environment more enjoyable and less intimidating from the absence of high-speed traffic. Some methods of traffic calming described are narrowing travel lanes, adding on-street parking, and lining streets with trees. As many other factors (social, economic, political) affect the success or failure of downtown revitalization, such traffic calming and described congestion are argued as a necessary component to the revitalization process. Obviously, commercial/retail is an integral complement, providing the visual vibrancy that justifies and supports traffic calming, and vice versa.

High speeds of traffic through downtowns have been resultant of efficiency-based traffic engineering (widened streets, increased lanes, one way streets, freeways). Such has contributed to the degradation of many downtowns, not only as a reflection of the auto-dependent suburban evolution of society, but by the physical discomfort of high speed traffic adjacent to pedestrian facilities like walkways, open spaces and stores. An example of this decline is St. Paul, Minnesota, whose main commercial street, Wabasha St., was a strip of featureless office building facades and side streets sans storefronts. With little to draw people in, downtown St. Paul became victim to 5 o'clock flight. Even worse, its streets (including Wabasha St.) were so efficient in terms of traffic engineering that "rush hour" lasted only 15 minutes after work got out. Kulash has since worked on downtown St. Paul, removing one lane from Wabash St. while adding on-street parking and a bike lane. The addition of street trees and the restoration of two-way traffic have been in consideration.

Many are still unconvinced by the idea of congestion as a benefit to downtown revitalization. Some believe traffic patterns have no bearing on the decline of downtowns, while others merely see congestion as negative, hazardous and prone to accidents. The point of people like Kulash is to create a balance between pedestrians and automobiles, where the street environment is enjoyable to both. As Toronto urban planner Ken Greenberg states, car should move, "at the speed of a horse and buggy," in successful downtowns. Again, the importance lies in that this kind of congestion is of choice, not convenience.

In Respect to
Downtown Tucson

Traffic Volumes:

The high traffic volumes downtown are not due to downtown as a commercial destination but almost exclusive as worktime entering and leaving.

Literature Review

Milder, N. David. "Crime and Downtown Revitalization"
Urban Land **42 (Sept 87): 16-19.**

Crime and fear of crime are major issues that concern the downtown revitalization process. It is often times the fear of crime rather than actual crime that forms the greater influence on people's perception and use (or non-use) of downtown (16).

The root of this fear is the physical and social quality of the downtown. Lack of an attractive environment with a variety and diversity of activities is both the cause and effect of fear of crime. Empty streets, vacant storefronts, closed stores and restaurants, and the presence of "undesirables" all contribute to the negative perceptions of an area and the perceived possibilities of being hassled, robbed, mugged or physical hurt. Likewise, the fear of crime can discourage the development of new "positive" facilities (retail, food, entertainment, housing) that would help draw people into the downtown.

Suggestions to deal with fear of crime are generally at the planning level. Foot patrols (police, community members, volunteers, cleaning crews) offer a presence and another set of eyes on the street that create a certain peace of mind. Actual crime may not necessarily be reduced, but the perception of heighten security will be increased (19). The establishment of special assessment districts is another tool that can levy special tax assessments for additional municipalities like police, sanitation, parking, planning, etc. (19).

The major idea, though, is for downtown revitalization strategies to be conducive to the attraction of people. This idea is supported by basic concepts, one being the creation of a dense, compact and multi-functional core (18). Density and compacted-ness concentrates people, concentrates activities, shortens pedestrian flows yet increases them at the same time. As different types of activities and uses yield different types of people, housing and mixed-use development are critical types of uses that offer a certain level of pedestrian activity beyond work hours. Such could combat the ubiquitous "5 o'clock flight" that plagues many a downtown. Likewise, uses such as entertainment and food (restaurants) can easily benefit from more downtown residents.

In Respect to
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Fear of Crime:

The presence of "undesirables" in the downtown has made the fear of crime greater than actual crime. The lack of general activity can be attributed to this problem.

It is therefore not just the increase of pedestrian flows but also the quality of the pedestrian ("respectable" and law abiding, office worker, resident) that affects the types of activities, the hours of activity and the general perception of safety (or fear)(18).

Literature Review

Houstoun, Jr., Lawrence O. "Are BID's Working?"
Urban Land **56 (Jan. 1997):   32-36, 57-58.**

Business Improvement Districts (BID's) are a type of assessment district created by business owners in conjunction with the City, where business owners pay an assessed fee to the City who then uses those monies to promote and improve the district. Typical fees are $0.10 to $0.20 per square foot or 4 to 10 percent of property taxes. BID's are a response to the degradation of downtowns and business districts with a focus on revitalization and the re-establishment of standards for attractiveness, cleanliness, and security (32). Such issues span a wide range of topics, all connected and interrelated into the complexity that makes up the downtown fabric.

BID's utilize much of their resources in a handful of ways. A common service is sidewalk cleaning. Since few cities provide such a service, sidewalk cleaning is an asset to make the physical environment visually appealing. An extension of sidewalk cleaning is maintenance in general, i.e. landscaping, the removal of graffiti, trash collection, etc. Often times related to maintenance crews, supplemental security is a common cost of BID's. Uniformed yet unarmed BID personnel can provide informal and subtle surveillance, hospitality services, and ultimately a decreased fear of crime.

Other services BID's have come to undertake are marketing and advocacy. Promoting attractions, special events, as well as the current dedication to make the downtown a vital and safe place creates an awareness and sense of security to visit. Advocacy can affect public policy, zoning and programs (street maintenance, façade improvements, signage) that are conducive to the revitalization of the downtown. As these services sometimes supplement those of the city's, service agreements are important to clearly define what the municipality and BID are excepted of (57).

The question as to whether BID's are working depends on how success is defined (58). It is safe to say that BID's have no adverse effects, but degrees of success.
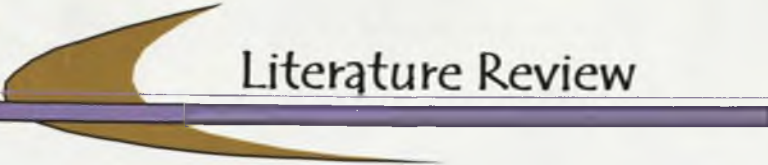
- Philadelphia's Center City District provides round-the-clock sidewalk cleaning and supplemental security, making the streets more attractive and safe. Crime has since gone down, retail and hotel occupancy up.

- Since developing a partnership with local police, the West Palm Beach, Florida, BID has seen a 50 percent drop in narcotics related crime.

- The Red Bank, New Jersey, BID encouraged more stores to open on Sunday that, coupled with special advertising and promotion, resulted in 82 stores (from 22) opening up and thriving on Sunday.

In Respect to
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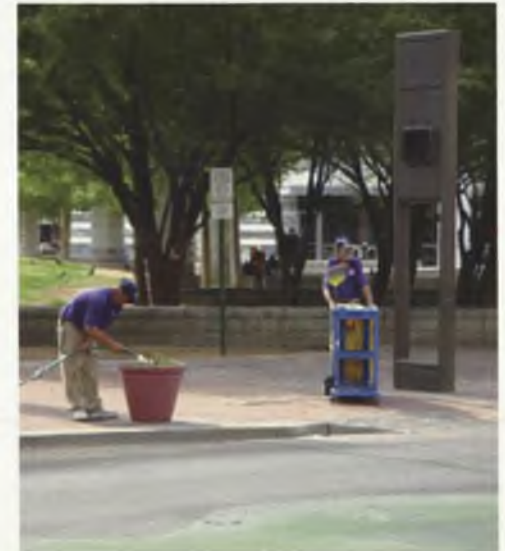
BID's:

The Downtown Tucson Alliance carries out the activites that support the Tucson BID. One of their more visible programs is the "purple people" - a maintenance crew that keeps downtown streets clean and provides secondary surveillance and hospitality.

Even with such improvements, there is much room for BID's to grow. First, downtowns need to recognize and respond to changing times and needs, physical and social. BID's should help facilitate these needs. One opportunity resultant from change that BID's can help through advocacy is redevelopment, more specifically residential. While the virtues of housing as a provider of vitality and use are evident, BID's have hardly acted to promote its realization (58). Second, BID's must advocate aggressively regardless of annual or quinquennial approval dates from elected officials (58). Holding workshops for public agencies on downtown revitalization techniques is an effective method of advocacy. Third, BID's need more business savvy to generate more revenue, expand business services and keep charges to individual owners low (58).

While BID's have yet to be the "be-all, end-all" solution to downtown revitalization, they have at least slowed down the physical, social and economic decline of many of our downtowns. For that, BID's have much merit.

Case Studies

The Metropolitan Museum of Art, Main Entrance
New York City, New York
Designers: Kevin Roche John Dinkeloo Associates
1975

The set of steps that form the entry to the Metropolitan Museum of Art is an important entity in itself as an urban space. The steps were designed by Kevin Roche John Dinkeloo and Associates in 1975, over 70 years after the original façade was designed.

Plazas containing fountains, trees and benches flank both sides of the steps and provide formal areas for gathering. It is the steps, though, that are the most distinguishing feature. The 13 foot high and 154 foot long granite steps not only act as a grand entrance into the museum but as a place of congregation, relaxation, eating and people watching.

Another factor in its success is the location of the museum itself. Centrally located in the city, the museum more specifically lies between Central Park and the townhouses of 5th Avenue. This provides a lot of use from surrounding residents, surrounding workers, and of course, museum goers (approximately 4.9 million per year).

Design Implications:

- More "purely" functional elements, such as stairs, can provide informal gathering spaces. The functionality and informality can reduce the perception of being unused and vacant when the space is indeed empty.

- Integration with museum and proximity to housing, recreation, and offices provide vitality to the space for many hours of the day.

- Retro-fitting can be successful when existing context is understood.

(Fig.9)

(Fig.10)

(Fig.11)

Downtown Crossing
Boston, Massachusetts

Downtown Crossing is one of the few successful pedestrian malls today. The idea of pedestrian malls, i.e. prohibiting vehicular traffic from downtown streets, is one that has dated back to the early 20th century in many European cities centers. The U.S. took to this idea as over 200 pedestrian malls sprung up by the late 1970's. These malls sought to make the streets, " the framework of public open space," and to revitalize the social and economic viability of its respective downtowns (Barnett 168).

The idea of the pedestrian mall soon became irrelevant in most cities as people continued to migrate to the suburbs and become more dependent on automobiles. The malls soon became vacant. Eventually, many malls reintroduced vehicles back to their streets.

Downtown Crossing almost became one of those casualties. In the 1970's, Downtown Crossing (Washington Street) was in decline, as it had been downtown Boston's major thoroughfare and the hub of its retail and transit activity. As vehicular traffic volumes increased over time, the street became pedestrian unfriendly. In 1979, Downtown Crossing was redesigned into a pedestrian mall. It soon became obvious that not only did some activity leave along with the cars, but also the abundance of pedestrian space left much space underutilized.

While Downtown Crossing began to decline, there were still components for success. It was and is still a major retail center. There is a "T" train stop for Downtown Crossing, which supports the retail activities. In 1980, A Project for Public Spaces analyzed and assessed the area, and developed a management program and the Downtown Crossing Association to see it through.

The main part of the plan was a vending program that is run through a private operator. 75 on-street vendors filled up and broke up the vastness of the street and created pockets of activity. Strict guidelines were imposed to the vendors in order to maintain quality of appearance, merchandise, and service. Types of merchandise and their location were also controlled. 25% of the carts can sell food while impulse purchase products are placed near the entrances to the "T" stop. The vending program brought pedestrian activity back to the street and helped to realize Downtown Crossing's full potential.

(Fig.12)

(Fig.13)

Design Implications:

- There is such a thing as too much space. Perceived vacancy can lead to actual vacancy. We must be discerning in any design decision.

- Programming, such as sidewalk vending carts, can help enliven streetscapes by creating defined nooks and crannies of pedestrian activity on the street.

- Integration with major retail and transit stop ensures pedestrian activity to support open space opportunities.

(Fig.16)

(Fig.14)

(Fig.15)

(Fig.17)

Boston Government Center Plaza
Boston, Massachusetts

Government Center Plaza is an example of a plaza that is out of scale with its surrounding environment. The plaza is adjacent to Boston City Hall to the southeast, J.F.K. Federal Office Buildings to the north, Center Plaza Building to the west, and a "T" train stop to it southwest. The key word is "adjacent" as the surrounding buildings fail to define the plaza space. The plaza is in fact too big. While Government Center recalls the plazas of the Italian Renaissance, the plaza could, as Richard Hedman observed, "engulf both piazzas San Marco and Del Campo" (73).

This is a testament to the idea that open space is given meaning in part by the surrounding buildings that define it. Density can be an opportunity, not only to help define spaces but to hopefully provide people to support such spaces.

Design Implications:

- There is such a thing as too much space. Scale of space and adjacent buildings are an important issue. The mass, as well as function of buildings, can give space definition and meaning.

- Density should be seen as an opportunity to make open space more meaningful.

(Fig.19)

(Fig.18) Government Center Plaza.

Existing open space can encompass both piazzas San Marco and Del Campo almost two times over.

Density can create better proportion of space, and ultimately, better use of space.
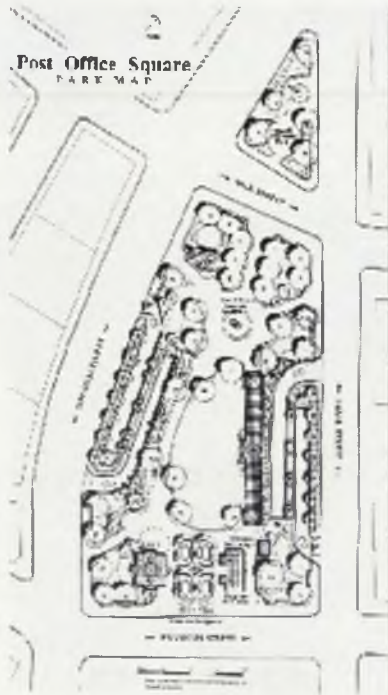

(Fig.20)

Post Office Square Park
Boston, Massachusetts
1990

Post Office Square Park is a 1.7-acre park that sits atop an underground parking garage in the heart of the financial district in downtown Boston. The site was a three story-parking garage. Functionally, it worked albeit during work days and hours. Otherwise the garage was aesthetically unappealing. The vision of developer Norman Leventhal led to the formation of the non-profit group Friends of Post Office Square, the acquisition of the site and the rebuilding of parking as an underground structure with a park on top.

Post Office Square Park is an excellent example of a mixed-use venture that meets the demand of parking while providing open space amid a dense urban fabric. The park has proved to be more than successful by the increased activity and use of workers, tourists, and performers. This success has been in part due to the structure of the park, which includes a fountain, sculpture, colonnade, polished granite walls and landscaped borders. Along with garage attendants who patrol the park and The Milk Street Café operating on site, the park generates a lot of activity through an increased sense of safety and the services provided.

Likewise, the parking garage is a success. Unlike before, the garage is opened 24 hours a day. Sufficient lighting and attendants increase the level of safety for after work-hours use. Parking facilities such as a shoeshine station, clean restrooms, a car wash and an automated checkout system for drivers add to the appeal of the garage. There is constantly a waiting list to reserve a spot in the garage (market rate approximately $310 per month).

The negative of the project was that the parking garage was one of the most expensive ever built. Construction costs were up in the $80 million range. This was in part to the deep excavation of and the extra supports needed to hold the weight of the park above. In light of the costs, Post Office Square Park generates close to $8 million a year.

(Fig.22) Before...

(Fig.23) After.

(Fig.20)

(Fig.24)

(Fig.25)

(Fig.26)

Design Implications:

- Parking, whether a garage or lot, should be integrated into the city fabric by relating the street level with pedestrians. This can be in the form of, for example, a mixed-use structure with commercial development at street level, or moving parking underground with other uses atop.

(Fig.27)

Paley Park
New York City, New York
Designers: Zion and Breen Associates
1967

Paley Park is a 42' by 100' pocket park that was once the site of the Stock Club in midtown Manhattan. William S. Paley, chairman of the board for CBS, bought the site and financed the design and construction as a memorial to his late father, Samuel Paley. It is a successful gathering space functioning as a mini-oasis within a busy commercial area. The park offers all the necessary components of shade (honey locust trees at 12 foot intervals), seating (sitting walls and moveable wire mesh chairs with pedestal tables), enclosure (adjacent buildings), focal point (20 foot tall water wall that also functions as a noise buffer) and miscellaneous amenities like food (a gatehouse with a refreshment stand).

The design is a testament to how retro fitting can be functional and relevant to its surroundings. Stanley Abercrombie describes Paley Park's success righteously for what it doesn't do, "It refrains from visual acrobatics and dramatic effects. It is not colorful. It is not playful or decorative. It is not 'fun.' It is instead something finer and more appropriate, a marvel of restraint, sophistication, and urbanity" (39).

The main shortcoming of Paley Park is that nobody or nothing followed its successful lead. Zion and Breen's Architectural League catalogue commented on this issue, "For such parks to contribute

(Fig.28)
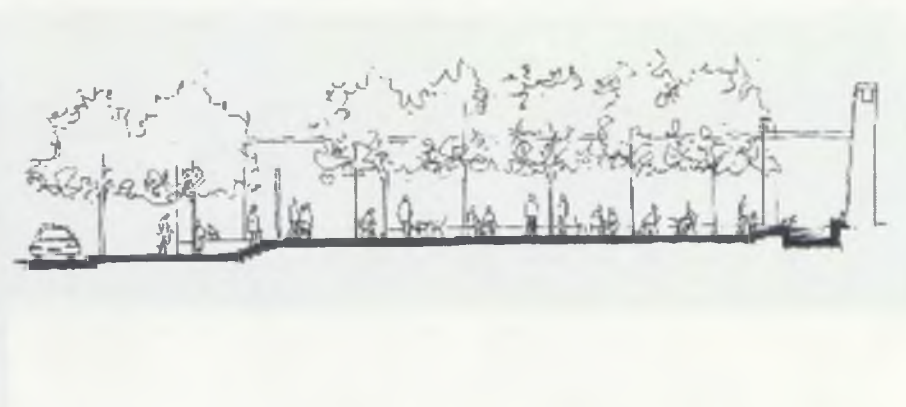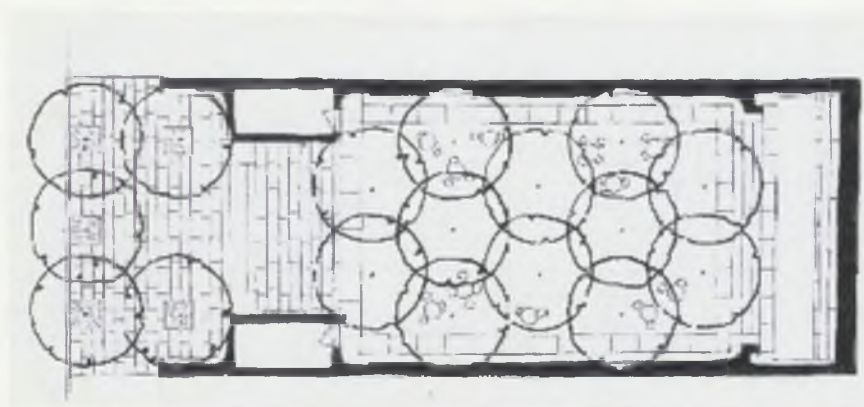
effectively to city life, they must be readily available…if such a system of parks is to succeed, there must be a proximity as well as a profusion. One such park for each square block" (39).

While a critical mass is needed to support such parks, the acquisition and funding of such parks are a main issue. It is either up to community interests and action or private investors like William Paley. The latter are few and far between. It is thus important to create community awareness of what the public good is and what it could be.

Design Implications:

- Basic design elements of shade, seating, food, water, and visual interest satisfy basic human needs regarding comfort of space and gathering.

- Urban open space should not stand alone. Its success and "effectiveness to city life" rely in its integration, as a complementary system of outdoor gathering, recreation, wayfinding, etc., to the larger system of the city.

- Incentives for private and public funding and development need to be created. We need to educate both the public and private realm about the importance of open space to the fabric of the city.

(Fig.29)

(Fig.30)

Case Studies

(Fig.31)

3rd Street Promenade
Santa Monica, California

ROMA Design Group
1986

3rd Street Promenade began as a thriving main street, transformed into a three block pedestrian mall when the area started to decline in the mid 1960's. As with many pedestrian malls developed in the U.S. in the 1960's, 3d Street began to show signs of decline with the development of suburbs and shopping malls (in this case, Santa Monica Place, a successful enclosed shopping center opened in 1980 at the south end of 3d St.).

In 1986, ROMA Design Group was commissioned by the city to revitalize 3rd Street. First, cars were reintroduced in the form of a two-lane street with 30-foot sidewalks, and 3 sculpture gardens and 2 retail pavilions strategically placed in the medians. Even though cars were brought back, the focus of the street was the pedestrian. Widened sidewalks allowed for new sidewalk cafes, kiosks, newsstands, art displays, street furniture, and trees. Such sidewalk and street amenities helped to scale down the 600-foot long blocks and create more nooks and crannies of activities.

The planning policy side of the revitalization process was just as if not more important. Zoning controls were made on commercial development. Priority was given to entertainment and food rather than retail. The result of this was several multiplex theaters and moderately priced restaurants that became magnets for new commercial development. Zoning incentives, increase in floor area ratio, brought housing into 3d Street as apartments above commercial space.

Now with retail sales increasing every year between 1989 and 1997, and 100% occupancy as of 1997, 3d Street only suffers backlash for being a successful urban area.


(Fig.32)

Design Implications:

- Eliminating automobiles from streets does not equate to successful pedestrianization. Vehicular traffic can be integrated with pedestrian-focused streets.

- Introduction of more purely social development, i.e. entertainment and food, can provide more successful magnets for increased pedestrian use and new commercial development than retail development.

- Zoning should be utilized to control the types of new development, encouraging pedestrian activity and mixed used development.
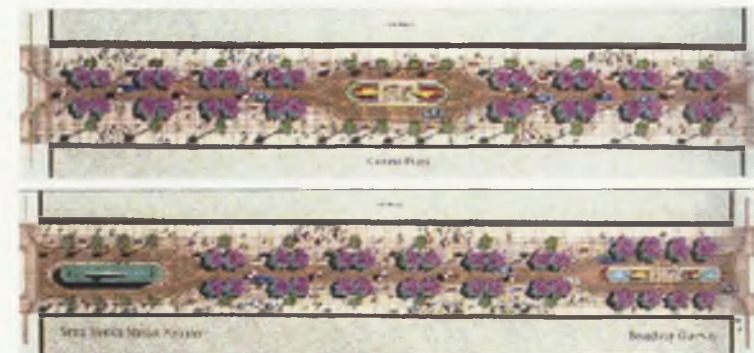
Case Studies

Main Gate Center
800 Block of University Blvd.
Tucson, Arizona

Developers: J.L. Investments, Inc.
Begun in 1994; ongoing

Main Gate Center encompasses the area between Fifth and First Street, and Park Ave. and Euclid. It is a partnership between J.L Investments, Inc. (developers), the University of Arizona (lead tenant), and the Marshall Foundation (land owner). It is an ongoing project that serves as an annex to the university (both functionally and socially) as well as a transition into the West Campus neighborhood. With its mix of student services (administrative offices, Marriott Hotel, pharmacy) and attractive commercial/retail (local brewery, cafes and restaurants, clothes, record shop), Main Gate Center is a vibrant and identifiable gateway into the University.

Physically, Main Gate Center refers back to history through its architecture, streetscape, choice of materials (i.e. building facades, scale, historic five globe street lights, street trees), and the integration of the Old Pueblo Trolley as a connection to the Fourth Avenue retail district. More importantly, Main Gate Center commits itself to the pedestrian by providing generous sidewalks, sidewalk furnishings, outdoor cafes and restaurants, numerous crosswalks and back-in, angled street parking (a feature that actually slows traffic considerably).

Design Implications:

- Proximity to the University of Arizona provides critical mass for higher density infill and development.

- Introduction of popular chain stores like Starbucks and Urban Outfitters provide strong magnets to help fuel local businesses and specialty sores.

- Commitment to pedestrians through streetscape design reclaims street as space and complements higher density environments.

- Variances in current development codes and regulations were required, and often times required, allowing for beneficial development and/or redevelopment.

- Other attractions are needed to fully utilize the Old Pueblo Trolley and its connection to Main Center Gate.

4th Avenue – 100 and 800 Blocks
Tucson, Arizona

4th Avenue is a thriving commercial street that houses a slew of specialty stores (boutiques, arts and crafts, clothing) anchored by highly successful bars, restaurants and nightclubs.

It is this aspect of food and drink, dancing, music that proves to be the driving force in 4h Avenue's success and vitality. Food is provided from breakfast to dinner. Bars and nightclubs attract people into the wee hours of the night. The sheer volumes of these uses provide an attractive concentration of choices that result in walking (place to place, venue to venue), window shopping (and actual shopping), chance meetings, sidewalk gathering, etc. While vehicular traffic can get congested, the congestion is of choice (people watching, checking out happenings, finding on-street parking) that hardly affects the pedestrian. The lack of major chain stores and food establishments merely add to 4th Avenue's uniqueness and differentiation with the suburban shopping mall. The lack of major housing on and surface parking facing the street (one exception) are a further testament to 4h Avenue's attractiveness and draw as a commercial entity.

On the programmatic side, the 4h Avenue Merchants Association provides maintenance crews to not only make the streets clean, but also offer that secondary security of a uniformed presence on the streets. Seasonal events like the 4th Avenue Street Fair and Bike Swap Meet merely contributes to 4th as a major activity hub, drawing merchants and shoppers from all over Tucson, the state of Arizona and beyond.

The presence of "undesirables" – homeless, vagrants, panhandlers – is a problem, but one that hardly affects the successful function of 4th Avenue. As William Whyte suggests, one way to deal with undesirables is to make places attractive to everyone (63). 4th Avenue definitely has that attraction, and the critical mass to prove it.

Design Implications:

- Unique commercial/retail establishments provide an attractive alternative to the suburban shopping mall.

- People like to eat, drink, dance and socialize. Providing restaurants, bars and nightclubs supplies such a demand, but in close proximity to one another, creates a walkable wealth of choice that is even more attractive.

- Programs like seasonal events, daily maintenance and district promotion offer a clean, safe and high profile environment that attracts locals and tourists alike.

- High pedestrian use either drives undesirables away or deems them insignificant and harmless.

Tucson, Arizona – Business Improvement District
The Tucson Downtown Alliance

The Tucson BID is a 30-square block area encompassing 355 properties and over 130 property owners. The charge to these owners is 10.6 cents per square foot of land plus 5.3 cents per square foot of built space. The Tucson Downtown Alliance, Inc. (TDA) is a non-profit, 501(c)(6) corporation contracted by the City of Tucson to carry out services within the district. These services include security, maintenance and advocacy.

The "purple people" represent their most visible service. The "purple people" are crews that clean and maintain sidewalks as well as being goodwill ambassadors and secondary security. Their distinguishable presence is an asset, but one that needs to be expanded further in terms of hours and weekends. A new operation for Tucson Police to start a Downtown Division (4 phases over 3 years) should help support the efforts of the "purple people" and levels of security in the area.

In terms of advocacy and promotion, TDA has just begun a newspaper, The Downtown Tucsonan, which highlights downtown events as well as issues of vision for the downtown and updates on current revitalization efforts. Their website further promotes happenings downtown as a more general resource of information. Other avenues of advocacy include the discouragement of supporting panhandlers.

With the district in the last year of its 5-year life, renewal should be a serious consideration as it provides a worthy if not beneficial resource.

Design Implications:

- Business Improvement Districts can provide safety, maintenance, advocacy and promotion for the betterment of an area (at little cost to business owners).

Rio Nuevo Project
Tucson, Arizona

Prepared by Hunter Interests Inc.   **2001**

The Rio Nuevo Project is an economic development package that seeks to revitalize the downtown while utilizing, enhancing and respecting Tucson's unique history, culture, community, and environment.

A Master Plan has been created with new museums, an aquarium, urban infill (housing, commercial/retail, office), and improved infrastructure (roads, pedestrian connections) in an attempt to stimulate new private investment and invigorate the downtown. The project district includes the historic Convento Grounds, Anza Trail and Mission Garden sites, the downtown commercial center, and the Broadway commercial corridor east to Park Place. The district is created and funded by tax-increment financing (a financing technique that utilizes expected increases in State sales tax collections over a specified time, within a specified district). In the case of Rio Nuevo, it is $60 million over 10 years.

Community input has been an important aspect in the development of the Master Plan. Numerous public meetings have drawn large attendances and concerns that reflect the general vision of Rio Nuevo. While revitalizing the downtown with new cultural attractions, housing opportunities and commercial development is an important aspect of the plan, staying true to the heritage and unique character of Tucson is equally as important. This means protecting surrounding neighborhoods, respecting the natural environment, and avoiding development that is out of scale and character for Tucson.

Three different areas have been planned, each linked to one another and each containing new cultural attractions, commercial development, housing opportunities and open space. The first is a historical/cultural park that would be west of the I-10 Freeway. This area would contain, among others, a restored Convento and Mission Gardens, Arizona State Museum and Arizona Historical Society. The second area is an urban/cultural one just east of the I-10 Freeway. This area will be designed around a new plaza that is to function as the Downtown's "town square." The third area is an arts and entertainment area that seeks to revitalize the existing retail district that is comprised of the streets of Congress, Broadway and Pennington. The renovated Fox Theater and Rialto Theater are seen as anchors to this area.

(Fig.33)

Design and Planning Guidelines

The literature review and case studies resulted in the formation of Design and Planning Guidelines that are relevant to downtown Tucson. The guidelines broke down into 9 categories:

Planning
Parking
Circulation
Open Space
The Natural Environment

Sense of Place
Human Comfort
Activity Support
Mixed Use

Each guideline is derived from the literature review and case studies, and therefore referenced by author or case study. The following is a list of the books, journals and case studies used and, in parenthesis, the shorthand that will refer to its respective book, journal, or case study.

BOOKS

Barnett, Jonathan. An Introduction to Urban Design. (Barnett)

Hedman, Richard, and Andrew Jaszewski. Fundamentals of Urban Design. (Hedman)

Golany, Gideon S. "Urban Form Design for Arid Regions." Design for Arid Regions. (Golany)

Marcus, Clare Cooper, Carolyn Francis, and Robert Russell. "Urban Plazas." People Places, Design Guidelines for Urban Open Space. (Marcus)

Shirvani, Hamid. The Urban Design Process. (Shirvani)

Whyte, William H. The Social Life of Small Urban Spaces. (Whyte)

JOURNALS

Houstoun, Jr., Lawrence O. "Are BID's Working?" (Houstoun)

Milder, N. David. "Crime and Downtown Revitalization." (Milder)

Pacelle, Mitchell. "Traffic Calming." (Parcelle)

CASE STUDIES

The Metropolitan Museum of Art,
Main Entrance
New York City, New York
(MET)

Downtown Crossing
Boston, Massachusetts
(Downtown Crossing)

Paley Park
New York City, New York
(Paley Park)

Boston Government Center Plaza
Boston, Massachusetts
(Gov. Ctr.)

Post Office Square Park
Boston, Massachusetts
(P.O. Sq. Park)

3rd Street Promenade
Santa Monica, California
(3rd St.)

Main Gate Center
Tucson, Arizona
(Main Gate Ctr.)

4th Avenue Retail District
Tucson, Arizona
(4th Ave.)

Business Improvement District
Tucson, Arizona
(BID)

The Design and Planning Guidelines are numbered within each category. Both category and respective number will be referred to in describing the Urban Design Framework and Scenario Plans.

PLANNING-

1. Have a strong vision (Barnett)

2. Have a framework and guidelines for flexibility of vision, and model context (drawings) to illustrate potential of vision and guidelines (Barnett)(Hedman)

3. Utilize zoning and legislation as tools for regulation of design vision (Barnett)(3rd St.)

4. Design review is necessary for quality control and flexibility (Hedman)(Marcus)(Shirvani)

5. Participation (public and private) is necessary. The "I'll know the answer when I see it" will not yield good design. Need public and private awareness and funding for outdoor spaces(Hedman)(Shirvani)(Marcus)(Paley Park)

6. Consider post design programming, i.e. maintenance and care, foot patrols, a "mayor," special events, vending as nice filler of space. Such can reduce the fear of crime and better the perception of safety (Shirvani)(4thAve.)(Downtown Crossing)(Milder)(Whyte)

7. BID's are an asset. They should advocate and promote more aggressively, i.e. housing, mixed-use development (BID)

8. Revitalization strategies should have the general idea to attract people (Milder)

SENSE OF PLACE-

1. Designing in context is important (Hedman)

2. Contrast creates focal points of interest and visual relief (Hedman)

3. Preservation of buildings, architectural facades and open space, if still viable, can be, "an irreplaceable record of changing vision and values" (35) (Hedman)(Shirvani)

4. Sculpture and Public Art can be indicative of an area's cultural past as well as a landmark and wayfinding device (Hedman)

5. Native vegetation can be used as representative of an area or region

6. Visual complexity is an asset so long it doesn't become chaotic (Marcus)

7. Cultural/Historical facilities, if still viable and appropriate, should be restored and showcased, i.e. Old Pueblo Trolley (Main GateCtr.)(4th Ave.)

CIRCULATION-

1. Linkages, visual and physical, to and from the city center, and connections within (between plazas, plaza and adjacent buildings) should be legible (Barnett)(Hedman)

2. Different types of street trees should be utilized for different types of streets (typology) (Hedman) (Shirvani)

3. Roads should be positive visual open space elements (Shirvani)

4. Improve mobility within and access to the downtown, while discouraging private vehicle use and encouraging walking (Shirvani)(Marcus)

5. Signage is an important element as a wayfinding device (Shirvani)

6. Traffic calming techniques can slow down traffic for a greater balance between pedestrians and vehicles. Vehicular congestion then becomes of choice, because the street is pleasant to be on (Pacelle)(4th Ave.)

7. Narrow streets and alleys can produce minimal heat exchange, retain humidity, reduce the effect of dusty winds (Golany)

8. Eliminating automobile access does not necessarily mean success (3rd St.)

ACTIVITY SUPPORT-

1. Retail/commercial development supports housing, businesses and open space opportunities. Blank facades that don't relate to the street should be avoided (Marcus)(Shirvani)(Barnett)

2. Utilize housing as activity support (Shirvani)

3. People attract people. Food, retailing, and triangulation (stimuli such as public art, street performers, views) will attract people (Whyte)

4. Lack of support (vacant storefronts, empty streets, "undesirables") can contribute to fear of crime and thus affects perception and use (Milder)

5. Exclusively developing entertainment/food instead of retail can draw different people and activities at different times of the day (3rd St.)

6. Unique commercial/retail/food and programming seasonal events for activity and promotion competes with the suburban shopping mall (4th Ave.)

7. Provide social activities like eating, drinking and dancing in close proximity to one another for a wealth of choice (4th Ave.)

MIXED USE-

1. Mixed-use maximizes land use, supplies more hours of vitality (Barnett)(Shirvani)

2. Consider housing as a main component to mixed-use development (Barnett)(Shirvani)(Milder)

3. Dense, multi-functional core that concentrates activities (proximity of land uses) and people shortens yet intensifies movement. Such can combat fear of crime, offer vitality beyond work hours, supply the "right" people, i.e. non-"undesirables," and respond to the harsh arid climate (break strong winds, reduce direct radiation, retain humidity, facilitating movement) (Milder)(Golany)

HUMAN COMFORT-

1. Utilize the benefits of trees (cool temperatures, aesthetics, buffer undesirable views, help improve air quality) (Shirvani)(Whyte)(Marcus)

2. Mitigate harsh or unfavorable climate (shade sidewalks, retain water to cool temps through evaporation, allow major air corridors to circulate air, water features to cools air), beautify the environment (public art, water features, plant design), mitigate pollution, and provide accessibility for all (Shirvani)(Marcus)(Whyte)

3. Seating is an important part of the outdoor environment. More choices supplies more kinds of activities (Whyte)

4. Sunny spots are not as welcoming in areas of extreme heat (90+ degrees). Shade is the key (Whyte)

5. Appropriate open spaces can contribute to human comfort (Arid) (Marcus)

6. Try to provide sun, shade, food, seating, water in the urban environment (Paley Park)

PARKING-

1. Supply parking need for businesses, visitors and residential uses efficiently (land use and circulation standpoint) (Barnett)

2. Minimize surface parking for more attractive uses (Shirvani)

3. Consolidated multi-use structures (commercial/retail at street level) and urban edge parking (at periphery of congested area) are more efficient methods of parking (Shirvani)

4. Parking needs to be integrated with street level (P.O. Sq. Park)

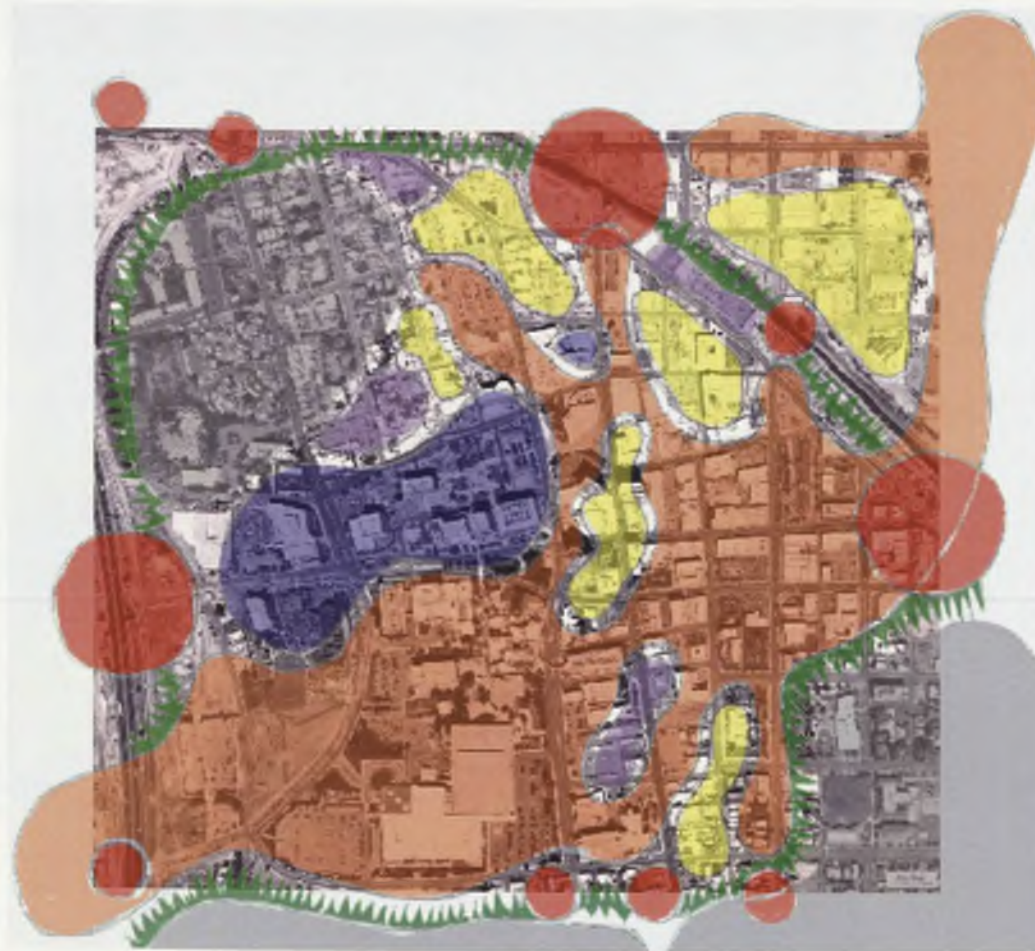5. On-street parking helps calm traffic, supports businesses (Pacelle)(Main Gate Ctr.)(4th Ave.)

OPEN SPACE-

1. Treat street and streetscape as part of open space (Barnett)(Whyte)(Main Gate Ctr.)

2. Effectiveness of open space is in its relation to a system of other open spaces and to the overall downtown (context) (Barnett)(Paley Park)(Shirvani)

3. Vegetation is a key component for the comfort of open space (Shirvani)

4. Making open space opportunities attractive to all will create a critical mass and diminish (even rid) the problem of "undesirables" (Whyte)(4th Ave.)

5. Open spaces should be small and scattered throughout the city to provide proximity and convenient accessibility of a number of uses to facilitate movement in the arid environment (Golany)

6. Open spaces greatly benefit from seating and secondary seating (Marcus)(MET)

7. There is such a thing as too much space. Density can be an opportunity to define space better (Downtown Crossing, Gov. Ctr.)

8. Proximity to major activity centers such as schools, retail, food, major transit stops, and popular chain stores provide critical mass and facilitate use (Main Gate Ctr.)(Downtown Crossing)(MET)(Marcus)

THE NATURAL ENVIRONMENT-

1. Conserve and enhance natural resources, beautify the environment, and mitigate pollution (air, water) and unfavorable climate (Shirvani)

2. Utilize vegetation as a means to beautify the environment, mitigate pollution (air, water) and unfavorable climate, and help improve air quality (Golany)(Shirvani)

3. Retain water to control runoff and erosion, water plants, and cool down temperatures through evaporation (Shirvani)

The Urban Design Framework seeks to provide a flexible structure for future development and re-development. The framework is very much informed by (and exists for) the Design and Planning Guidelines extracted from the literature review and case studies. Design moves will be referenced back to the guidelines. Both category and respective number will be cited (example: *Mixed-Use #1,4*).

The framework includes the general ideas of:

(1) better defining and softening the downtown boundary and edge *(Circulation #2)*,

(2) defining the gateways into downtown with multiple uses that include parking and commercial development *(Circulation #1; Mixed Use #3; Parking #3)*,

(3) protecting the surrounding neighborhoods *(Sense of Place #1,3,7)*,

(4) facilitating movement in, out and within the downtown *(Circulation #1,4)*,

(5) linking the downtown core with existing and proposed activity centers *(Circulation #1, Open Space #1,8)*, and

(6) defining a commercial/mixed use swath that seeks to be that link between activity centers but also an entity in itself that reaches out and ties the urban fabric together *(Activity Support #1; Mixed Use #3)*.

Legend:

- Gateway
- Commercial/Mixed Use
- Government Center
- Office
- Arts
- Residential
- Edge/Buffer

Urban Design Framework

The derivation of the framework resulted from a re-examination of Downtown Tucson's urban fabric and its relation to the design and planning guidelines extracted from the literature review and case studies.

Open Space/Parking-
Existing Conditions

Surface Parking (Red) has naturally gravitated towards the periphery of the dowtown, with Open Space (Green) opportunities inhabiting more of the downtown core.

The abundance of surface parking has resulted from the lack of incentives for developers to supply uses other than surface parking. Policy should reflect and reward development conducive to the vitality of the downtown, making other types of development (commercial, residential) as economically attractive as surface parking (Parking #1-2).

Open space can likewise benefit from new development (that could replace much of the surface parking) in terms of activity support, helping to better define open space, and better linking open spaces together, i.e. street and streetscape as positive open space elements (Circulation #1-3; Open Space #2,7-8).

Activity Support-
Existing Conditions

The Government Center and surrounding office buildings (Yellow) supply much of the daytime/ weekday activity downtown.

Commercial nighttime opportunities (Light Blue) vary in terms of success and intensity, but generally suffer from a lack of density, strong connections to one another, and sufficient programming to have a nightly draw to the downtown.

It is in fact those ideas of density (mix of uses-commercial, residential), connectivity (vibrancy and continuity of streetscape), and programming (scheduled events, daily activities) that need to be strengthened in order to provide a critical mass of users 24 hours a day that supports new and existing development, increases the perception of safety, and facilitates movement and use (Activity Support #1-4,6-7; Circulation #1; Mixed-Use #1-3; Planning #6).

Vehicular/Pedestrian Circulation-
Existing Conditions

Vehicular Circulation (Blue) dominates many of the downtown's streets and key entry points. Major Pedestrian circulation (Purple) is contained within and associated with the numerous office buildings, Government Center, and Retail District.

With high numbers of surface parking and low numbers of activity support, the high vehicular traffic volumes are less representative of a commercial/residential destination and more of downtown workers entering and leaving from work, and cut through traffic from I-10 to the east side.

Congestion can be embraced if it is of choice, that is, a popular route because of a pleasant streetscape experience, people watching opportunities and attractive commercial development (Activity Support #3; Circulation #1,3,6; Open Space #1).

Composite Map: Surface Parking, Open Space, Circulation, Activity Support

Diagrammatic Study: Multi-Use Hubs

Diagrammatic Study: Connectivity of Activity Centers

The Composite Map shows a general core of activity and open space opportunities, loosely connected by the existing circulation network. The quality of the circulation network with activity and open space as a component of that network should be strengthened and reinforce one another; the network similarly should tie into existing activity centers (UA, Main Gate Center, 4th Avenue) and proposed ones (Rio Nuevo) *(Circulation #1,3; Open Space #1-2,8)*.

Parking, again, encompasses more of the downtown periphery and thus should be consolidated into mixed-use structures (commercial at street level) at the key entry points of the downtown (3 main entry points, 1 secondary at south end). These entry points would function as hubs, including transit sub-stations to alleviate bus circulation through the downtown core. These multi-use hubs would therefore efficiently address parking needs, define the gateways into the downtown and encourage walking from those points into the downtown core. Much of the area taken up by surface parking could thus be replaced by other more attractive uses, i.e. commercial, housing *(Circulation #4; Mixed-Use #1; Parking #1-4)*.

With multi-use hubs at the key entry points and the potential for new development in the downtown core, connections start to form in terms of new development improving streetscapes as positive open space elements reaching out and tying to those mutli-use hubs *(Circulation #1,3; Open Space #1-2; Parking # 3)*.

Likewise, the downtown boundaryshould be better defined in terms of its relation to an open space system. This means softening hard edges (railroad, I-10) and better defining weak edges (south end). The use of a specific tree type could address both of these issues *(Circulation #2; Natural Environment #2; Open Space #2)*.

The connection to existing and proposed activity centers (4th Avenue, UA, Rio Nuevo) is similarly as important in strengthening the draw of downtown *(Activity Support #1; Circulation #1; Open Space #2)*.


Diagrammatic Study:
Composite diagram integrating the ideas of multi-use hubs and connectivity of existing and proposed activity centers.

Urban Design Framework

The idea of street and streetscape as visually positive open space elements is an important one. It is an idea conducive to the pedestrian, and includes elements such as street trees, attractive commercial frontage, attractive uses and activities, legible linkages between uses and activities, and a general quality of walking through the downtown; the green in the diagram to the right represents those elements *(Activity Support #1,3-4,6-7; Circulation #1-4; Human Comfort #1,5; Natural Environment #2; Open Space #1-2, 4,8)*.

The Street as Open Space diagram seeks to connect the many existing use areas that are pretty well established (Government Center - dark blue; El Presidio, Barrio Historico, Armory Park Neighborhoods - grey) and existing uses that are more scattered around the downtown (office - yellow, arts - purple).

Street as Open Space
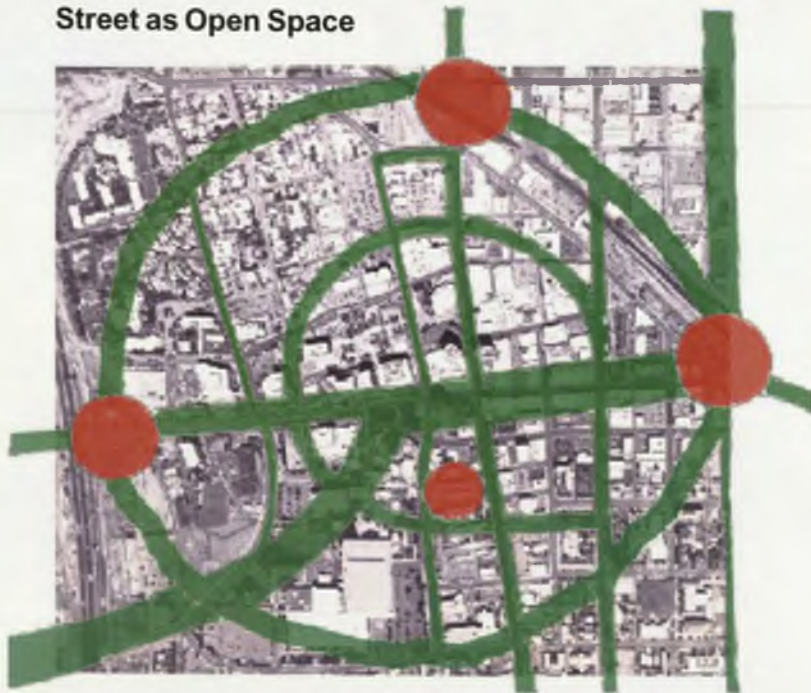
**Street as Open Space-
Connecting Existing Uses**
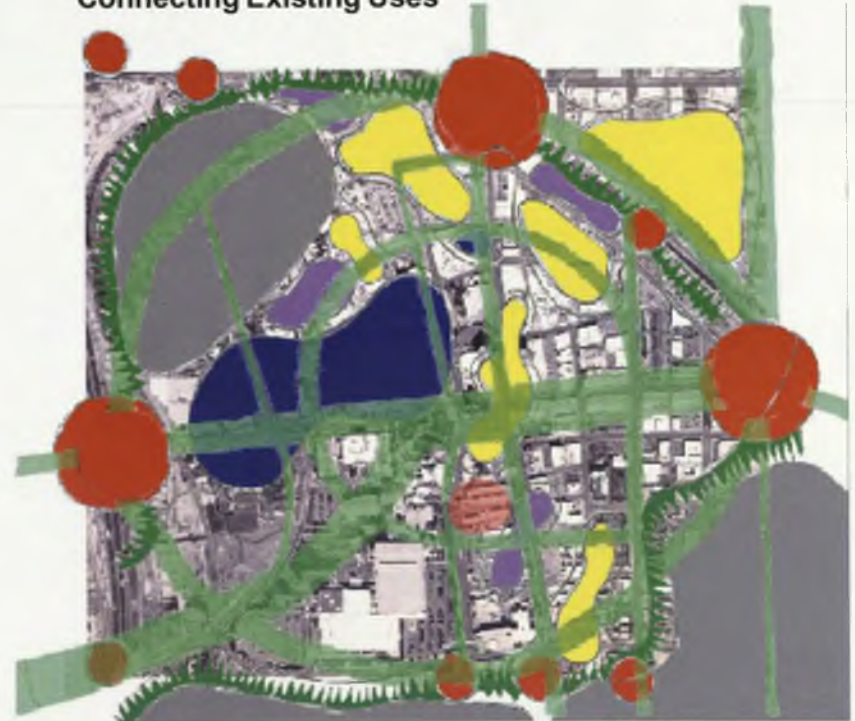
Urban Design Framework

While the mixed-use swath seeks to be the connecting element between existing and proposed activity centers, the swath notes the area in which major development and re-development (open space included) should be occurring.

The previous site analysis and diagrammatic studies led to the idea of two entities: an inner ring of connected activities and open space with a commercial/mixed use corridor that punctures that inner ring as it connects to existing and proposed activity centers (4th Avenue, UA, Rio Nuevo).

The intersection of those two entities (shown as orange circles on the above diagram) hit on existing districts, namely, the Retail District and the area that constitutes the Tucson Convention Center (TCC), and present two important pieces of the mixed-use swath.

Design Implication:
The intersection of activity corridors reveals critical pieces of the revitalization process and lixed-use swath.

The TCC area benefits from its potential for big events and the quality open spaces that surround t it and connect to other parts of the downtown (La Placita, Government Center). Increased programming for the TCC, commercial development (retail/food/office) in La Placita, and medium density housing are elements that could strengthen that southwest section of the downtown, especially as it connets to Rio Nuevo *(Activity Support #1-2; Planning #6)*.

The Retail District has the necessary structure to be the major activity center of downtown. Improved commercial development and frontage on Congress St. and Broadway Blvd., increased housing opportunities through mixed-use development, and a general pedestrianization (i.e. walkable and pleasant streetscapes and its part of an open space system that connects to other districts within the downtown) are the attributes that if realized could be the hub from which revitalization really begins *(Activity Support #1-4,6-7; Circulation #1,3-4; Mixed Use #2-3; Open Space #1-4)*.

4th Ave/UA

Retail District

TCC

Rio Nuevo

Scenario Plans

The Scenario Plans present the **potential impact** of a scenario using the Design and Planning Guidelines, working within the Urban Design Framework.

The plans also have the purpose of validating the worth of the guidelines and framework to the revitalization of downtown Tucson at a site specific scale.

Focus Area-Retail District

The focus area chosen is the retail district. That area is defined by Pennington Street, Toole Avenue, Broadway Blvd., and Stone Avenue.

As mentioned before, this area has the most potential to jump start the revitalization process downtown. The district has an existing commercial structure (including successful activity generators) that is conducive for housing opportunities, room for commercial growth and development, and connections to existing activity centers (4th Avenue, UA). This district revitalized has the potential be the element that ties the downtown fabric together.
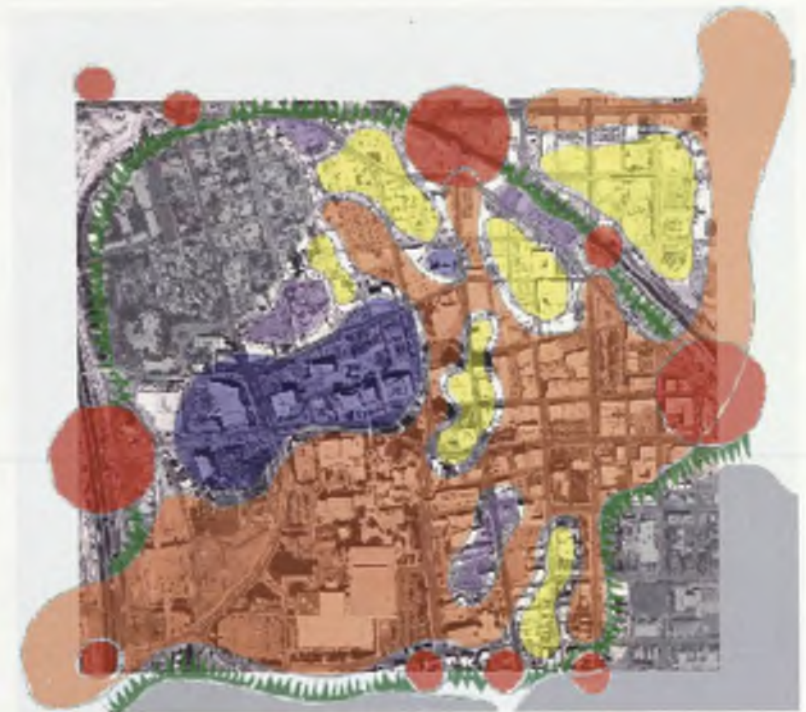
Urban Design Framework

Design moves will be referenced back to the Design and Planning Guidelines. Both category and respective number will be cited.

example: *(Sense of Place #1,3,5)*.

Scenario Plans

Process Sketches

The general plan for the retail district is to create a balance between mixed-use development (commercial, housing) and open space opportunities.

Densifying the district with mixed-use development is in essence providing the critical mass of people and activities in order to support each other *(Mixed Use #1-3, Activity Support #1-4, 7-8)*.

Open space opportunities are to complement development and add to human comfort *(Activity Support #1, 6, Human Comfort #5, Open Space #4)*. Open space is indeed in reference to a system, one that includes street and streetscape *(Circulation #1, Open Space #1-2)*. The possibility of numerous, smaller spaces scattered throught the district was explored and found to be the most appropriate in terms of providing a convenient accessibility of a variety of uses *(Activity Support #6, Open Space #5, 8)*.

Again, most of this new development takes the place of surface parking. It is the idea that the retail district would contain one of the multi-use hubs that has parking as a consolidated, mixed-use structure *(Parking #1-4)*.

The Rio Nuevo Master Plan, by comparison, has the same ideas on densification but lacks strength in an open space system that looks beyond street and streetscape as elements of open space, i.e. providing little nooks and crannies that support new and existing development and positively contribute to human comfort.

(Fig.34) *Rio Nuevo*

Scenario Plans

Existing Surface Parking Lot
Proposed Pedestrian Promenade -
Conversion of Adjacent Parking Garage
Into Commercial Development

Ronstadt Transit Center - Existing
Proposed Pedestrian Promenade-
Redevelopment of Site with Mixed-Use/
Open Space Development and Downsized
Transit Center

Main Library
Plaza-Existing

UniSource
Energy Plaza -
Existing

Proposed Rialto Plaza/Gateway -
In Progress

Grey Signifies New Commercial or
Mixed-Use Development Replacing
Surface Parking

Existing Surface Parking Lot
Proposed Pedestrian Promenade
Proposed Mixed-Use Infill

Three areas within the retail district were chosen as logical places for mixed-use/open space development. They are the existing Ronstadt Transit Center and two existing surface parking lots (shown above).

Each space has the potential to reinforce the commercial quality of the district, add housing opportunities, and supply open spaces that are tied together and improve the quality of new and existing development. The two surface lots have little redeeming value to the downtown fabric and will benefit from street plazas/promenades that are attached to new commercial development. The Ronstadt Transit Center is much more arguable.

The Ronstadt Transit Center is in a prime spot in the heart of the retail district. The site is attractive not only for new commercial development but housing, as it can feed off of and support existing and future development.

The transit center itself functions as a glorified bus stop. A widened sidewalk plaza that defines its southern and western edges are hardly used; people prefer to wait for the bus in a center island where one actually gets on and off the bus. While the center brings many people into the downtown, the mass is hardly critical. Adjacent businesses do not benefit from the many users of the transit center; the center merely acts as a default place for transfers.

Along with the proposed transit sub-stations in the multi-use hubs, the Ronstadt Transit Center can afford to be downsized as one of those sub-stations and usher in newer, more attractive uses that are conducive to the commercial sensibilities of Congress St. and, above all, the attraction of people *(Planning #8)*.
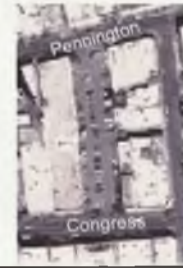
This surface lot takes up half the block. It faces another solid block of surface parking across the street. There is enough room for a building, a widened sidewalk plaza on the interior of the block, and service access for the buildings.

The idea of street and streetscape as positive open space elements is important, especally in helping to define an open space system that ties the urban fabric. That idea is represented in green.

The 4th Avenue Underpass Project (including a Rialto Plaza and Gateway) will be the first major open space on the east side of downtown. It is imperative that any open space system connect to this space.

This surface lot cuts through the entire block. Just west of it is a parking garage. The conversion of the garage to attractive food and retail development could ideally make this lot a successful promenade.

The Ronstadt Transit Center site has the most potential to impact the revitalization effort. This early studied looked at an indoor/ outdoor marketplace that would be a social and cultural attraction to the downtown. Other options were explored and will be looked at.

An early massing concept study looked at how the three areas selected as ideal places for mixed-use/ open space development would relate to one another, as well as within a downtown fabric densified with new development replacing the numerous surface parking lots.

Scenario Plans

Surface Parking Lots

Surface Lot # 1 – lot facing Broadway Blvd. Between Scott Ave. and 6ʰ Ave.

Surface Lot # 2 – through block lot connecting Pennington St. and Congress St., between Scott Ave. and Stone Ave.

Scenario Plans for both Surface Lots # 1 and # 2 include the ideas of:

1) uses that attract people, i.e. food, retailing, housing *(Activity Support #1-3,7; Mixed Use #3; Open Space #4; Parking #2; Planning #8)*,
2) providing a friendly face to the street, i.e. attractive storefronts, street trees, sidewalk furniture *(Activity Support #1-4)*,
3) connectivity to other uses, i.e. commercial, housing, open space *(Circulation #1,3; Mixed Use #3; Open Space #1-2)*, and
4) interior block plazas as extensions or abstractions of alleys, i.e. a design element conducive to the arid environment in terms of minimal heat exchange, retaining humidity, and reducing the effects of dusty winds *(Circulation #7; Human Comfort #2)*.
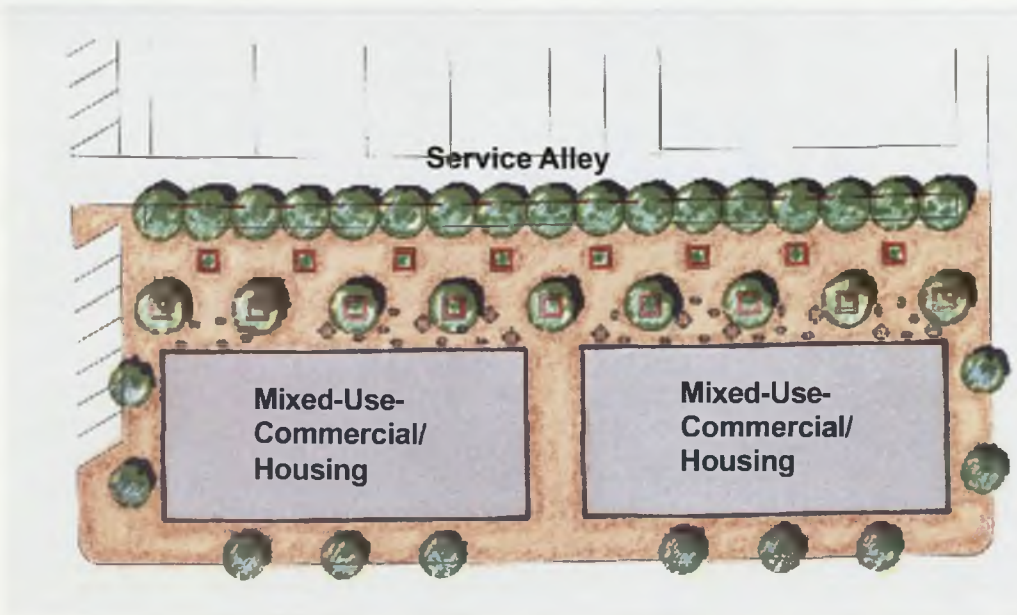
Surface Lot # 1

Surface Lot # 2

Sketch Diagram

Surface Lot # 1

The scenario plan for surface lot # 1 has two mixed-use buildings (one floor housing above commercial) with a wide promenade lined with trees, planters with sitting edges and space for moveable tables and chairs *(Human Comfort #1,3)*. There is sufficient room to maintain the service alley and buffer it with a low staggered wall and row of trees *(Natural Environment #2)*. The promenade serves as a somewhat hidden nook that is waiting to be discovered but still relates to Congress St. through continued themes within the streetscape, i.e. paving materials and patterns, site furnishings, trees and plant material. A mid-block break in the building further relates to the street allowing for through access from Broadway Blvd.

Service Alley

Mixed-Use-
Commercial/
Housing

Mixed-Use-
Commercial/
Housing

Scenario Plan

OUTDOOR CAFES | PROMENADE | | SERVICE
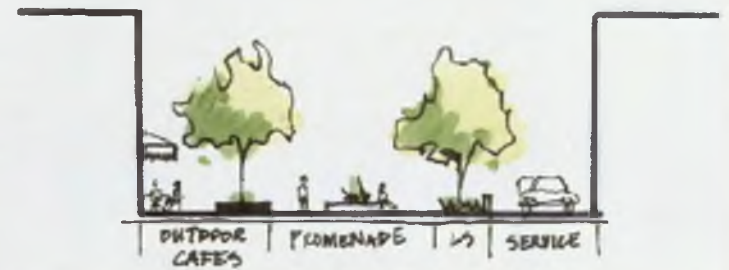
Typical Section

Scenario Plans

Surface Lot # 2

The scenario plan for surface lot # 2 has an adjacent parking garage to the west converted to a strip of new, single story commercial development (food and retail) *(Sense of Place #3)*. The linear quality of the block and development facilitate the idea of a promenade. The promenade is defined by an allee of trees that separates an area for outdoor café space (moveable tables and chairs) that relate to the commercial uses and an area of repeated seating niches that offer more private spaces that are still visible from everyday users *(Human Comfort #1; Natural Environment #2)*. The fact that this mid-block opening includes Congress St. will make this promenade highly visible and passed. It should also serve as a strong connection between the retail district and Government Center.

Scenario Plan

Sketch Diagram
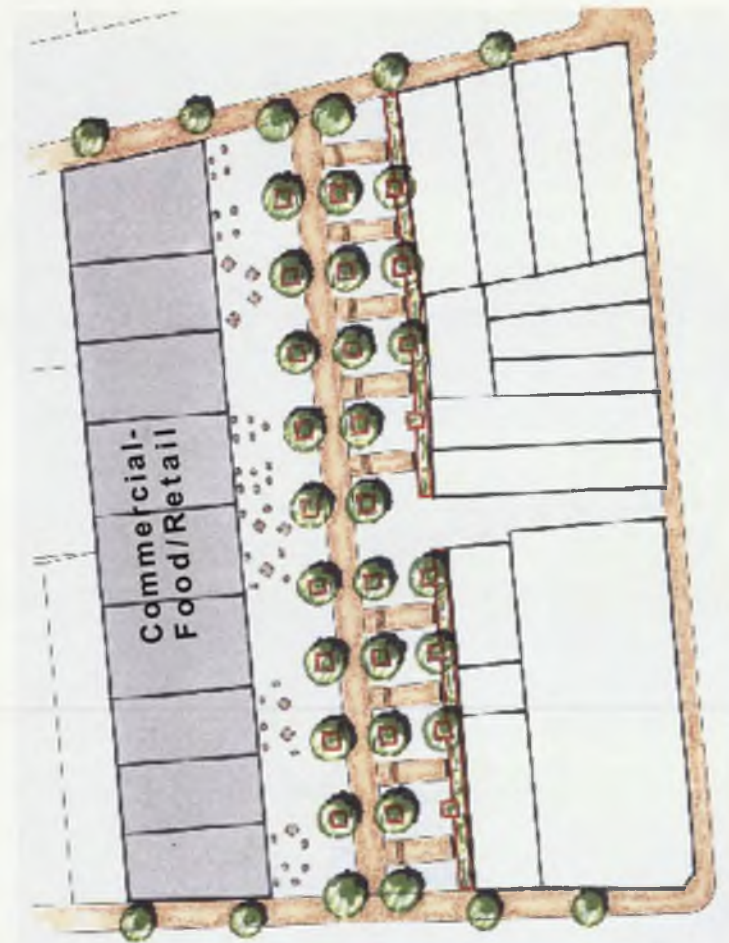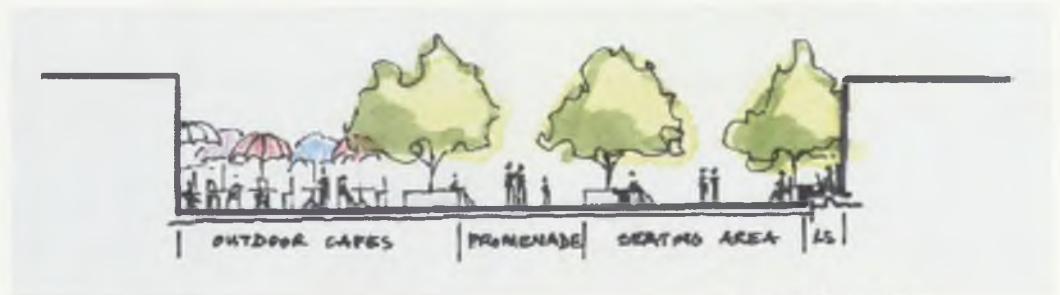
Typical Section

Scenario Plans

Ronstadt Transit Center Site

Several common denominators exist in the scenario plan for the Ronstadt Transit Center site:

1) commercial frontage on Congress St. that also has a face to the interior of the block - to create a continuity of storefront, sidewalk and plaza activity *(Activity Support #1,3-4,6-7; Circulation #1,3)*,

2) housing opportunities – above commercial development on Congress, redevelopment of the Martin Luther King Jr. Building into a mixed-use structure (student housing atop commercial development) *(Activity Support #2,4; Mixed Use #1-3)*,

3) downsize the transit center to the north of the site – to maximize the site in terms of new development and open space, allow new development to face Congress and contribute to its commercial purpose, and maintain convenient access to public transportation *(Activity Support #1; Mixed Use #1)*,

4) remove two vacant buildings situated between the MLK Building and MacArthur Building – for new development, building and/or open space *(Activity Support #1,4)*,

5) require 75% of new commercial development to be for food and entertainment uses – to provide a concentration of nighttime uses and activities *(Activity Support #5)*, and

6) two-way traffic on both Congress St. and 6ᵗʰ Ave. with on-street, parallel parking on 6ᵗʰ Ave *(Circulation #6)*.

The open space opportunities explored likewise have some common denominators:

1) shade – through the use of shade structures, awnings, umbrellas on tables, and/or trees *(Human Comfort #4)*,

2) a variety of seating opportunities *(Human Comfort #3; Open Space #6)*

3) trees – to provide shade, cool down temperatures, help improve air quality; the use of native trees can be a statement of Tucson's unique ecology *(Human Comfort #4; Natural Environment #2; Sense of Place #5)*,

4) space for programmed events, impromptu performances and vendors *(Planning #6)*, and

5) public art opportunities – could include water to help cool down temperatures, provide interaction with the artwork and offer "white noise" to a space *(Sense of Place #4)*.

Option 1

Option 1 has commercial development wrapping around Congress St. and 6th Ave., with parking being supplied by a mixed-use garage off site at a vacant lot on 4th Ave. and Broadway Blvd.

The transit center is oriented north-south off of 6th Ave. with a generous bus waiting area complete with trees, shade structure, variety of seating and room for vendors.

A "city plaza" extends south from the transit center as a space for more informal gathering, special events and impromptu performances.

A bosque of trees forms the transition south to an outdoor dining area that relates to adjacent restaurants and bars.

To the east is a series of recreational courts and public restrooms that support student housing and life, and general neighborhood use.

A promenade separates the recreation area and student housing building, while providing access to ground level commercial and connection east-west between 5th Ave. and the main plaza areas.

Option 2

Option 2 has commercial development only along Congress St., with another mixed-use student housing/commercial building just north of the redeveloped MLK Building and a retail building adjacent to and south of the MacArthur Building. Parking is supplied underground with access on 5^h Ave.

The transit center is oriented east-west with a waiting area directly south (again with trees, shade structure, variety of seating and room for vendors).

An urban park takes up the majority of the area. Grass and informal placing of shade trees, tables and benches dominate this space. A more formal hardscape area forms the transition from the urban park to the commercial development along Congress St.

These spaces are tied together by the preservation of the west portion of the arcade plaza/widened sidewalk that exists today.

The east side of the site contains one recreational court and a more formal, hardscape plaza supporting retail to the north.

Option 3

Option 3 has commercial development wrapping around Congress St. to 6th Ave. The buildings form generous openings, including the corner of Congress St./6th Ave., into the interior space. The buildings also have an intermediate tier of landscape facing the interior of the general space. This tier not only helps to retain water and cool down temperatures but also serves as a sort of buffer between upper level housing and activity in the plaza.

A multi-level parking garage with commercial at ground level, and a pedestrian bridge connecting to the student housing building, defines the eastern edge of the site.

The transit center is oriented east-west with its bus waiting area to the south-east.

A promenade sweeps along the periphery of the interior space, adjacent to commercial development. This area contains a fairly organized layout of trees with outdoor cafes and informal placements of tables and chairs. This promenade serves as the organizing element for which all other open spaces and commercial development are tied to. This includes an urban park that is situated in the middle of the site. The urban park balances hardscape with more park-like elements, i.e. grass, to provide a variety of subspaces for scheduled events, impromptu performances or private contemplation.

Composite Plan

The exploration of a composite scenario plan shows that more density of structure (and the commercial activity that comes with that density of structure) is needed *(Open Space #7)*. The site is in fact rather large. The idea of a large civic plaza turned into a series of smaller sub-spaces each with proximity to commercial development, seating and shade *(Open Space #5)*.

Commercial development wraps around Congress St. to 6ʰ Ave.; its configuration (and landscape tier) taken from Option 3. The arcade plaza/widened sidewalk is kept as a unique feature that speaks of the past as well as creating a nice gateway into the site (southwest corner) *(Sense of Place #3)*. A multi-level parking garage with commercial at ground level is situated at the corner of 5ʰ Ave. and Toole Ave., with two new commercial structures adjacent to the transit center and MacArthur Building *(Activity Support #1,4,6-7; Parking #3-4)*.

The transit center is situated east-west with a bus waiting area to its south. The waiting area is flanked by two commercial structures focused on more impulse purchase products (items conducive to those there merely waiting for the bus). The bus waiting area is one of five sub-spaces.

South of the bus waiting area is a sunken plaza accessed by a generously wide ramp with trees and seatwalls following the procession down. A series of grass steps run adjacent to the ramp, providing access down as well as seating and gathering opportunities. The plaza below has access to food and, tables and chairs *(Activity Support #3; Human Comfort #6; Open Space #3)*. The area extended in front of the grass steps has an articulated edge that utilizes its required retaining with a terrace of planting and seating edge. The remaining space is open
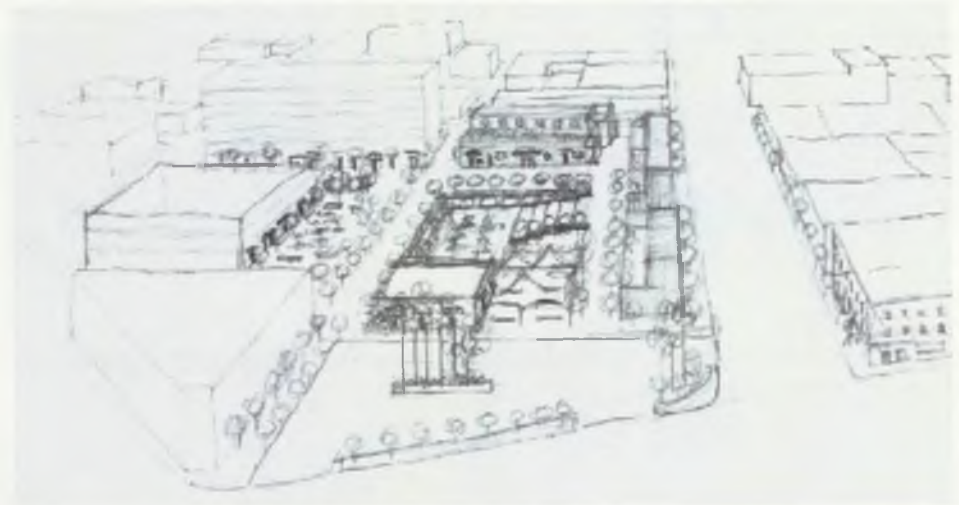
Scenario Plans

Outdoor Eating Area Promenade Sunken Plaza Grass Steps Walkway Commercial/Housing Sidewalk/Arcade Plaza

for medium size events and impromptu performances; the grass steps make for an informal amphitheater.

South of the sunken plaza is a more civic plaza, one that signifies entry and arrival. A generous opening through the plaza, terminated by a fountain, offers a flexible area for events, festivals and performances. The opening is flanked by a series of shade trees, planter/seatwalls, moveable tables and chairs, and access to food and retail *(Human Comfort #1-6; Open Space #6,8)*.

Crossing a main axis (allee of trees) leads to an outdoor eating area with fixed tables and chairs. More of an outdoor food court, this area takes advantage of fast food/cafeteria style eateries that encompass the west side of the mixed-use parking garage and south side of a new food/retail building. The area also looks to serve students that are on the go *(Activity Support #3,6)*.

The last sub-space is a promenade that connects 5ᵗ Ave. and the rest of the plaza. Both sides of the promenade have more formal, defined outdoor cafes that relate to respective restaurants and cafes *(Activity Support #1,3)*.

Massing Study

Perspective Studies

Looking South down 6th Ave.

Looking west down Promenade

Perspective Studies

Corner of Congress St. and 6th Ave.
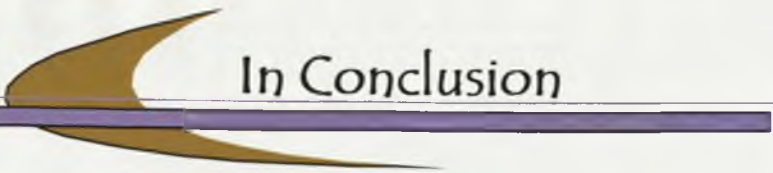
The preceding scenario plans and the process of their development are, as mentioned before, an example of the potentialities of where the framework and guidelines can lead. It must once again be stressed that flexibility is a key component in the successful function of the framework and guidelines.

It is also evident that many of the theories and tools for downtown revitalization are fairly basic ideas that have remained constant over the years. It just goes back to those abstract ideas of having a strong vision of what ought to happen, having flexibility within that vision, and having the framework and guidelines to help realize that vision to its full potential.

In Conclusion

Davis, Irwin L. "Seven Requirements Determine the Success of Downtown Revitalization Projects." *Journal of Housing* 37 (Aug.-Sept. 1980): pg 448-453.

The seven requirements for successful downtown programs are (1) Concern, (2) Optimism and Confidence, (3) Leadership, (4) Knowledge, (5) A Plan, (6) A Public Partner, and (7) The Ability to Make Deals. These represent a baseline of ideas, actions and entities, as other requirements exist in more specific circumstances.

Concern leads to action. Recognizing a problem is the first step, but realizing a needed solution is what concern should ultimately trigger. Some common downtown problems include the loss of businesses, decreased property values, fear of crime, and lack of pedestrian vitality, among others.

Optimism and Confidence are key to turn concern to positive action. There must be a belief that improvement is not only possible but worth the effort (452).

Leadership is the individuals that inspire the aforementioned concern, optimism and confidence, and action. Leaders come in all forms from public officials to community members to business owners. Leaders not only inspire but usually exhibit an intelligence and charisma that can influence important decision making (452).

Knowledge of the downtown fabric and how it functions is an essential complement to leadership and its resultant actions. Facets such as transportation systems, land use, and visual quality must be taken into account and studied. The complexity of a downtown therefore requires the knowledge of many people, not just one (453).

A Plan is the initial product of all the concern, effort, leadership and knowledge. It can be both visionary and realistic, but more importantly, should create excitement and warrant application.

A Public Partner is the necessary partnership with local government to utilize certain programs, policies, funds and other resources for downtown development. Zoning, housing policy, transportation policy, tax increment financing and tax abatement are some examples. Likewise, county, state and federal government involvement is often required.

The Ability to Make Deals refers to those persons that actually make programs and plans a reality – "making the deal" (453). This reality can include the construction of a new park or plaza, streetscape enhancements, façade improvements, building renovations, new commercial development, etc. Whether a mayor, community leader or business leader, the persons who can make deals need to be present when critical decisions are made and able to negotiate rather complex issues (453).

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Photo/Illustration Sources

Fig. 1-3   Photos. Martin Drug Co. Dec. 2002 http://www.library.arizona.edu/images/ronstadt/jan/ss56/ss56phot5.html

Fig. 4   Rio Nuevo Master Plan. Dec. 2002
                http://www.cityoftucson.org/rionuevo/Maps/maps.html

Fig. 5   Growth of Tucson Metropolitan Area Map.
                City of Tucson. **Tucson, the people and the place: Highlights from the 1990 Land Use Survey**. Tucson, Arizona. July 1993.
                        pg 9.

Fig. 6   Photo.
                Snapped on the Street.   Edited by Stephen Farley, Regina Kelly, and the Ward VI Youth History Team. Tucson, Arizona: Tucson
                        Voices Press, 1999. pg 56.

Fig. 7   Photo. Old Main, The University of Arizona. Dec. 2002.
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Fig. 8   2001 Tucson Metropolitan Area Traffic Volume Map, Pima Association of Governments. Dec. 2002.
                http://www.pagnet.org/TPD/DataTrend.html#Traffic%20Volumes%20Map

Fig. 9-11   Photos. The Metropolitan Museum of Art, New York. Dec. 2002.
                http://pps.org/gps/one?public_place_id=58

Fig. 12-17   Photos. Downtown Crossing. Dec. 2002.
                (Fig. 12)   http://www.urbanphoto.org/boston/downtown/B1011.jpg
                (Fig. 13)   http://www.urbanphoto.org/boston/downtown/B1018.jpg
                (Fig. 14)   http://www.urbanphoto.org/boston/downtown/B117.jpg
                (Fig. 15)   http://www.urbanphoto.org/boston/downtown/B1003.jpg
                (Fig. 16-17)   http://pps.org/gps/one?public_place_id=107#

Fig. 18   Diagrammatic Study.
                Hedman, Richard, and Andrew Jaszewski. **Fundamentals of Urban Design**. Illinios: Planners Press, American Planning
                        Association, 1984. pg 73-74.

Fig. 19-20 Photos. Boston Government Center. Dec. 2002.
      http://pps.org/gps/one?public_place_id=148

Fig. 21 Plan. Post Office Square Park. Dec. 2002.
      http://ublib.buffalo.edu/libraries/projects/bruner/1993/post_office/graphics/site1.html

Fig. 22-26 Photos. Post Office Square Park. Dec. 2002.
      (Fig. 22) http://ublib.buffalo.edu/libraries/projects/bruner/1993/post_office/photos/page1.html
      (Fig. 23) http://ublib.buffalo.edu/libraries/projects/bruner/1993/post_office/photos/page2.html
      (Fig. 24) http://ublib.buffalo.edu/libraries/projects/bruner/1993/post_office/photos/page3.html
      (Fig. 25) http://ublib.buffalo.edu/libraries/projects/bruner/1993/post_office/photos/page4.html
      (Fig. 26) http://pps.org/gps/one?public_place_id=20

Fig. 27-28 Photos. Paley Park. Dec. 2002.
      http://www.greatbuildings.com/buildings/Paley_Park.html

Fig. 29-30 Photos. Paley Park. Dec. 2002.
      (Fig. 29) http://www.archnewsnow.com/features/images/Feature0001_10x.jpg
      (Fig. 30) http://pps.org/gps/one?public_place_id=69#

Fig. 31 Photo. 3^d St. Promenade.
      Powell, Kevin. "Finding Common Ground." *Landscape Architecture* 82, no. 7 (July 1992): pg 41.

Fig. 32 Plan and Sections. 3^d St. Promenade.
      Powell, Kevin. "Finding Common Ground." *Landscape Architecture* 82, no. 7 (July 1992): pg 40.

Fig. 33 Rio Nuevo Master Plan. Dec. 2002
      http://www.cityoftucson.org/rionuevo/Maps/maps.html

Fig. 34 Rio Nuevo Master Plan-Retail Focus Area. Dec. 2002
      http://www.cityoftucson.org/rionuevo/Maps/maps.html