

## SESSION ONE

## Urbanization and Landscape at the Desert Edge

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Last fall a studio of architects, landscape architects and planners worked for the City of Phoenix to study urban form at the desert edge. A planned 21,500 acre desert preserve will have over 150 miles of edge, and in the past low-density single family detached houses have abruptly backed-up to such open spaces. In an effort to offer the public better access and a more attractive edge the City asked us to explore alternative styles of development. The charge to the studio was to explore the possibility of accommodating both urban and ecological functions in a coordinated and spatially merged form that treats both sides of the edge as environmentally and culturally significant. Our proposed zoning and design review changes encourage more variety and higher density development at appropriate locations abutting open space. The City is posed to adopt several of our recommendations. In this paper we review the situation, our study, the political challenges of such an effort, and the educational issues for such a studio.

**BACKGROUND**

The fast growing City of Phoenix has a population of about 1.2 million spread over some 500 square miles. The density is very low. The pattern for urban development is primarily guided by the Jeffersonian grid, which initially served the practice of farming, but is now governing the larger grain of planned community development. Desert mountain preserves, engineered desert washes and rivers regularly interrupt urban development. The preserves appear as islands of landscape in a sea of urbanization. At the edge of the city the distant views of open desert, the mountains, and the sky are extraordinary. Exemplifying the Arcadian tendencies that Peter Rowe discusses in *Making a Middle Landscape*, many people move to Phoenix for the desert climate and enchanting landscape. However the influx of new residents and the low-density sprawling development threatens the delicate desert ecology. Increasingly Phoenicians are voicing concern about sprawl, growth and preservation of open space.

**DESERT PRESERVES**

The city has a relatively long history of setting aside desert areas that began in the 1920s with the South Mountain Park. Known as the largest urban park in the country, South Mountain Park is over 16,000 acres. A number of other smaller well-known preserves, like Camelback Mountain and Squaw Peak, were put in place to protect prominent buttes or peaks from development, saving precious views. Popular hiking trails leading to prominent overlooks are often difficult to access because large houses, whose wealthy owners seek to protect their privacy, surround the peaks. Mountain and desert preserves characterized as "islands of open spaces" literally become enveloped in urban development.

Natural processes like movement of wildlife or natural drainage flows are significantly impacted raising more questions about the long-term ecological health of these areas. Some other open spaces, serving as recreation areas, have sustained extensive damage. As a result, protection of views, access to trails and proper use of open space is hotly debated by political activists in Phoenix.

The City has recently committed to forming a preserve even larger than South Mountain at the northern edge of suburban sprawl. The Sonoran Preserve, a 21,500-acre area of desert, including peaks, saguaro-studded hillsides, creosote flats, and larger desert washes and rivers, represents a departure from prior reservation strategies. For the first time the open space is configured to preserve a system that functions biologically, and the City is committed to protecting the natural systems. At the same time, there is strong political pressure to assure public access, especially for the vast majority of residents not able to buy premium lots and houses right at the desert edge.

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**THE DESERT EDGE**

Despite debate about access and use, there is widespread agreement and enthusiasm for preserving open desert. But there is much less agreement about what to build at the edge of open space. Because Phoenicians are accustomed to the preference for lower densities and detached homes, many automatically assume that to be the preferred development along the urban side of the preserve boundary. There is, furthermore, often an assumption that additional open space

on the private side of the line should be required, lowering the density even further.

The existing urban edge condition consists primarily of detached houses with back yards oriented to the preserve, and concrete block walls at the property line. Some newer developments have introduced the use of "view fences", that at least allow the house occupant to see the preserve. However, both are unattractive from the public side and do little to enhance the value of the open space for anybody. Therefore, while low density is the assumed preference, the actual conditions at the edge of low-density development are not very attractive and in some cases may lead to greater negative impact on the natural environment. The City parks department has a plan for an array of access points to the mountain preserves, but understand that there is both a perceived lack of access and that facilities for parking and pedestrians at trail heads are inadequate. Access points are very far apart and not well identified. In many cases drainage easements serve as access for hikers. Throughout the City, exclusive housing, gated communities, and walls reduce the public's perception of access.

#### **POLICY FOR URBANIZATION AT THE DESERT EDGE**

Political activists, pushing for more public access to and public use of open space, have recently convinced the City to adopt a 60%-40% rule for new desert preserves, requiring the edge on the private side be more than half open. What this actually means has yet to be worked out. Developers assume only that 60% of the land at the edge should be open space, but true public access would be the rare exception. Some public sector planners hope that developers will pay for and build public streets and paths along 60% of the edge to enhance access and views for the public. Expectations are contradictory, and, of course, true public access is anathema to developers marketing private exclusivity and often gate-guarded communities. The debate has led to the realization that the design of the urban edge is as important as the preservation of open space. In the past, there has been no consistent effort to make the urban edge meet the expectations and hopes for the open space. This time the planning department and the parks department seek to work together to shape design guidelines and policies for development along both sides of the edge of desert preserves. There is a clear commitment to the preservation of nature, but also a political will to enhance access.

#### **ACCESS, SECURITY, AND DENSITY**

Issues of access are difficult, and there are two opposing arguments beyond the immediate response that access for all is only fair. The purpose of creating the desert preserves is to save the delicate natural systems of the landscape, but large numbers of people using the

desert can cause irreparable damage, so perhaps access is bad. The counterargument is that access for all enhances efforts to educate the public about the desert, leading to more interest, knowledge, and respect for delicate natural systems, and more concern for preservation. The development of adequate entry facilities, well maintained trails, and interpretive centers are essential. It may also help to build parks that are less delicate to attract and contain active recreation at the edge, in sight of the desert but not threatening it.

Another interesting issue is security. The assumption on the part of developers and wealthy homeowners living at the desert edge has been that public access and increased density will increase crime. We are reminded of the writing of Jane Jacobs on cities, and the counter-argument she makes for more people and eyes on the streets to enhance security. A large open space is different than a city street, but some elements of the argument for more use may apply. While density is almost always considered to be bad in Phoenix, it is clear that increasing the density of urban development along the edge of open space will make that space more accessible and perhaps more secure. Our proposal focuses on ways to increase density without creating negative impacts on the desert ecology and its aesthetic.

#### **PRECEDENTS**

Many writers have challenged architects to look more carefully at suburban sprawl. In *Edge City: Life on the New Frontier*, Joel Garreau studies American cities seeking to understand new patterns of urban development in the areas where there is the most growth – the fringes. In *Beyond the Urban Fringe* Peirce Lewis describes contemporary development as "galactic urban tissue". He writes,

*"new metropolitan tissue ... flourishes at great distances from established centers ... the residential subdivisions, the shopping centers, the industrial parks seem to float in space – seen together, they resemble a galaxy of stars and planets, held together by mutual gravitational attraction, but with large empty areas between clusters."*

And in *Making a Middle Landscape* Peter Rowe challenges designers to develop a "poetic" for the emerging American suburb that recognizes Arcadian yearnings.

Perhaps most relevant in this case, Steven Holl, in *Edge of a City*, proposes several interesting theoretical projects that try to make economic, aesthetic and ecological sense out of the opportunity presented by the border between the city and the landscape. His "Stitch Plan" for Cleveland, "Spatial Retaining Bars" for Phoenix, and "Spiroid Sectors" for Dallas-Fort Worth are suggestions for the use of physical form to adjudicate the border, to formally and programmatically sort out how urbanization meets open space.

*"Our exploration ... attempts a celebration of the landscape of natural occurrences, mystery, and transcendent meanings. The phenomenon of place is an objective that can be given new dimensions in the form and material of architecture."*

Holl's efforts are to mark the boundary and make the juxtaposition of denser development and open space both useful and beautiful. Sculptural shapes contain urban uses but primarily frame or mark the edge, supporting the idea that there should be more, not less, density at the edge. Indeed, the border between urbanization and open space should be a symbolic marking of respect for nature and the place of most public access and activity.

### MODEST PROPOSALS

Our efforts in the studio, after long meetings with homebuilders, developers, open space advocates, and city officials, were necessarily more modest than Holl's ideas. We quickly realized that we could only expect incremental changes in zoning and development practices. We started with the proposal that because the new preserve was such an incredible opportunity, the edge should be an *example* of the private sector and the public sector working together to create valuable places for more people. The open space creates higher land value for adjacent private land, and development should be sensitive to the needs of the public. Our most important suggestion is that increasing density in appropriate places at the edge could offer more value for developers *and* make a better edge for the public.

To make this suggestion viable, we argued that the City should develop a master edge plan that identifies a tiered system of access points and public facilities for the developers to plan around. We then suggested that in portions of the preserve where natural systems were less sensitive, the City should invite developers to apply for up zoning to higher densities and mixed-use. Finally, we urged the City to consider locating green parks and schools adjacent to the preserve in coordination with higher density development when ever feasible. Following is a passage from our report to the City:

*At the edges of the Preserve, public sector projects and private sector development should be coordinated. A sense of public access to open space that taxpayers purchased is important. That access should be of many different types: distant views, scenic corridors through the Preserve and wide views from streets along the edge, various sizes of trailhead facilities and interpretive centers, active pedestrian edges, and neighborhood pedestrian access points. To intensify the public's awareness of the desert and to generate more pedestrians at the edge, more intensive land uses should be strategically introduced. Such intense use could be channeled to areas of the Preserve that are least sensitive desert, areas that can be partially improved for use and*

*appreciation of nature. This is where we see the public and private sector really working together. Developers should be able to count on City improvements shown in the plan, and the City should ask developers to show how they respond to opportunities presented by public open space. In certain edge situations higher density housing, commercial uses, public buildings, and small amounts of retail could be located to activate desert "paseos" along the edge of the Preserve; and recreational development of the open space by the City could be coordinated with the urban edge.*

### HOUSING AT THE EDGE

We started this study by observing older desert preserves and we found the most common condition to be single-family detached houses backing up to the open space. Especially when these houses are on smaller — albeit more affordable — lots, we feel that this style of urbanization only intensifies the feel of the sprawling city eating away at the landscape. Furthermore, conflicts between public access and community privacy and perceived safety diminish the value of the open space.

In the new Sonoran Preserve the City has taken important steps to prevent repeating what we saw. In the future, developers of new housing communities will be asked to hold development away from major portions of the edge, and to provide access points at regular intervals. Many in the development community see these restrictions as a taking; the Preserve will increase land value but if the edge cannot be built some of that value is lost. Our effort was an attempt to use good design principles to increase value for both the public and the developers. We ask the developers to consider single-family housing types other than detached houses. We ask the City to allow more density at select points along the desert edge, density that is coordinated with non-residential development to increase the feeling of an active community in harmony with nature.

To legally effectuate these trade-offs we suggest amendments to a current Design Review Guideline (DRG) that weights proposed edge treatment by a series of factors. Our effort is to allow developers flexibility while creating more variety. The system will give the developers incentives to try desirable development patterns by allowing more and better use of the edge of open space, challenging public and private interests to work together to create socially viable development that is sensitive to the ecology and beauty of the desert.

### WEIGHTING SYSTEM

The current DRG requires that 60% of the edge along open space be left un-built, assuring visual and physical access for residents of the sub-divisions near the preserve. We propose to fine-tune the DRG to

give developers more flexibility and to ask developers to propose creative visions for living at the edge of the desert. Our proposal is a system of weightings for an expanded number of different open space edge treatments. The weighting system allows us to include all viable treatments while encouraging the most desirable treatments.

For example, in the existing system spaces left between estate houses did not deserve the same credit as large stretches of private open space, so the treatment gets no credit at all. With a weighting system this treatment can still be encouraged, but at an appropriate weight. The weighting system would allow spaces between building envelopes over 50 feet wide to receive 40% credit towards the required open edge.

The current system credits washes that are left natural and extend into private land with only the width of the corridor. These wash corridors, if well designed, could effectively expand the preserve in very important ways. The weighting system allows developers to count the entire length of wash corridors meeting certain criteria at 30% of their length. The system seeks to give incentive for an effective treatment that is under-rewarded in the current DRG.

Another example is the cul-de-sac. The DRG — we feel — gives too much credit for leaving openings at the end of cul-de-sacs. Our fear is that the confusion between the private nature of a cul-de-sac and the use of cul-de-sacs to provide physical access will exacerbate conflicts between visitors and residents. Furthermore, the extended use of this treatment resulting in a long row of open cul-de-sacs with attendant sidewalks is not all that visually preferable to back-up treatment. In the proposed weighting system credit for open cul-de-sacs is retained, but at a 40% rate. There is less incentive to use cul-de-sacs.

On the other hand, the proposed weighting system rewards developers for careful coordination of the design of housing at the open space edge. Single loaded roads with houses that face the open space and reduce the negative visual impact of garages get more credit. Higher density single-family housing is aggressively incented where the preserve is more developed by the City for access and use. We need more people at appropriate points along the edge.

The weighting system is designed to create incentives for encouraging appropriate public visual and physical access to the desert. Careful placement of opportunities for enhanced public access seems appropriate for such an important public resource, and will actually improve the privacy and safety of housing communities near the preserve. If the public has clear access they are not forced to trespass. More public awareness of the desert and its ecological value will also increase a sense of stewardship. Furthermore, in an effort to encourage areas of intensity at appropriate points along the edge of open space, the weighting system gives developers incentive up to double

credit for desert “paseos” with mixed use development. Such places could become great examples of coordination between the public and private sectors. The public benefits from appropriate creative development that puts them in touch with the desert and publicly owned open space, while private enterprise fully capitalizes on the same asset.

### DESIGN, POLICY AND EDUCATION

The City’s new Sonoran Preserve Master Plan calls for “an integration of a preservation ethic into the overall urban form”. This statement lays the groundwork for a departure from the common interpretation that nature starts where the city ends. The City’s charge to the studio was to explore the possibility of accommodating both urban and ecological functions in a coordinated and spatially merged form that treats both sides of the edge as environmentally and culturally significant. We were asked to develop alternative illustrations of what could be built, in order to widen the debate. We also sought to develop a framework for evaluation of alternatives considering ecological impacts, economics, societal issues, and visual impacts. Some planners in this fast growing city see this as perhaps the last chance to establish a holistic design-driven policy that addresses development at the desert edge.

As an educational opportunity for our students, this project has been an adventure. The City looked to us for both fresh ideas and political salve. The studio had meetings with over twenty different groups, including political activists, city departments, lawyers and lobbyists, developers and homebuilders, and residents. Nobody agreed, and all had valid points of view. Students experienced first hand the difficult reality of client demands and public work. While fresh design ideas were our ultimate desired product, the constraints and contradictions at times seemed overwhelming. Furthermore, since we dealt with contentions issues the various “clients” did not always trust our motives or listen carefully to our suggestions. The frustrations with the process are now somewhat mitigated by the fact that we have persevered and the City is poised to adopt several of our ideas into public policy, with backing from the development community. But students do not have evocative drawings for their portfolio and were challenged to problem-solve rather than develop creativity.

In the end, however, the hard work of the studio may do as much or more for Phoenix than the visionary projects of Holl, who the students admire so much. Real engagement with contemporary cities, and the real propensities for new cities to sprawl across the landscape, is a critical national issue. Actual engagement with political problems, economic constraints, and social conflict also seems important for a complete design education. It will be interesting to track the careers of the students from this studio to understand the

value of this experience and the role of such projects in design education.

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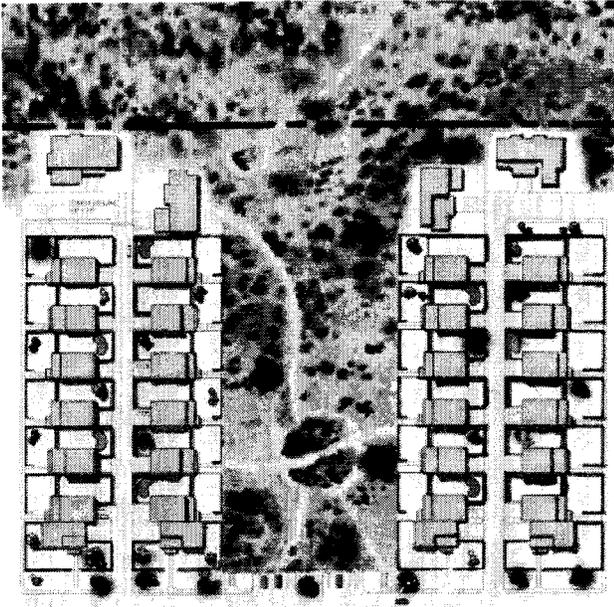
*Desert mountain preserves, like this at Camelback Mountain, are popular hiking places. There are often conflicts between the public seeking access and wealthy homeowners who seek pristine views and privacy near nature.*



*In Phoenix desert preserves appear as islands of open space in a sea of low-density urbanization.*



*A typical desert edge condition where public open space is hemmed in by the back yards of single-family detached houses. This predominate edge treatment neither values nor protects the preserves. The developer is missing an opportunity to feature views and a sense of space, the public is denied access, and urbanization is unattractive from within the preserve.*



*A plan showing zero-lot-line houses with diagonal views to the preserve across semi-private open space, and with garages accessed of alleys. The idea is to both increase density and increase the number of residents living along the edge.*



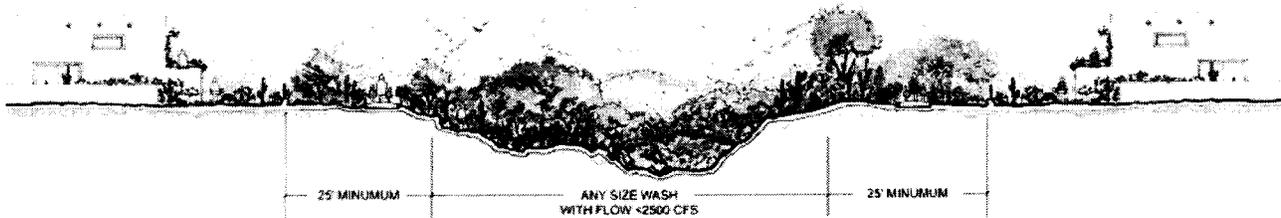
*The City hopes that requiring single-loaded roads at the edge will create better public access. This treatment has two difficulties. First, the edge roads are usually embedded deep in sub-divisions with complex patterns of curving streets so the general public will not find them or feel welcome. Second, the roads will be faced with mostly garage doors (like the example above) unless homebuilders are challenged to consider different house typologies.*



*The City also considers open-ended cul-de-sacs as an improvement along the edge of preserves. We argue that this treatment could become very as monotonous, and that side-yards are even worse than backyards. Furthermore, in many sub-divisions the cul-de-sac is the one place that neighbors use the street. Introducing public access to the preserve will conflict with the use of the cul-de-sac and semi-private space.*



*A proposed "paseo" with public access along the edge of the preserve and with higher-density mixed-use along the pedestrian connection.*



*A section through an enhanced desert wash that leads to the preserve. Housing faces the wash, and semi-public trails along the wash connect private open space to public open space.*