

Section III

Concept Development

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INTRODUCTION

As the study process unfolded, the study team focused first and foremost on designing an experience at the DDC that would be exceptional. An experience that would be inspiring, engaging, educational, entertaining, one-of-a-kind, and also one that would allow the visitor to experience, to discover, the Sonoran Desert and the Preserve in a way that is befitting its unique character.

Much has been discussed about the DDC through the years and yet often few could define what it wanted to be. The design process endeavored to begin that process by creating a conceptual design that could be tested in focus groups and surveys, as well as understood from the perspective of construction costs, operating costs, and a business plan.

Early in the process, as the interpretive exhibit plan was beginning to unfold, the concept of creating something that was less about a building and more about an experience in the desert began to emerge. The idea that rather than one building, that a series of spaces would be more meaningful as well as spaces that could be woven into the desert landscape rather than one large building placed on this site. Many other comments and suggestions began to surface.

However, before any architectural lines were drawn, the Joint Subcommittee wanted to establish a mission statement and a set of goals that gave clarity to the overall process. The following is a statement of the mission and the goals for the DDC.

Desert Discovery Center Mission Statement

The Desert Discovery Center is a magical place providing a culture of educational wonder, and recreational insights, inspiring both residents and visitors to understand, appreciate, sustain, and return to the McDowell Sonoran Preserve and the worlds richest, most amazing desert, which is it's home.

(revised April 8, 2010)

Desert Discovery Center Goals

- Increase appreciation and understanding of the McDowell Sonoran Preserve and its relationship to the the greater Sonoran Desert.
- Enhance quality of life and tourism.
- Inspire use, enjoyment, and conservation of the McDowell Sonoran Preserve and the Sonoran Desert.
- Promote living sustainably in the desert.
- Serve residents of Scottsdale and greater Phoenix area visitors and tourists.
- Provide a gateway to the McDowell Sonoran Preserve.
- Provide a world-class immersive desert experience.
- Provide a culture of educational wonder.

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SITE ANALYSIS

The Desert Discovery Center (DDC) study area lies on gently sloping terrain just east of Thompson Peak Parkway at the western foothills of the McDowell Sonoran Preserve. An access road ascends from Thompson Peak Parkway (TPP) toward the Gateway Access trailhead facility before turning and providing several aisles of parking that slope back toward TPP. The study area lies just north of both the access drive as well as the existing Gateway Access facility. The size of the study area is approximately ten acres, and is within the Environmental Sensitive Lands (ESL) overlay district. It offers impressive views, and is situated among the unique landforms and natural beauty of the McDowell Mountains.

The ten-acre DDC study area is on the western *bajada* of the McDowell Mountains, generally characterized as an upper desert landform. A gradient average of 4% rises from the Gateway Access facility establishing an approximate grade difference of about 35' from the Gateway facility pavilion to the northern-most reaches of the study area. A significant draw descends from the northeast toward the existing Gateway Access facility, forming a major wash east of the existing facility. A smaller wash branches off from the larger one, which creates the immediate eastern boundary for the study area. From there, several wide ridge forms with equally wide and shallow low-points, creating a typical corrugated desert landform, making up the main portion of the site. Many of these smaller swales eventually join up with others, creating washes of significant importance. These washes are identified as carrying storm-water of 50 cubic feet per second (cfs) or greater, with several such washes to the north and west of the site respectively. These washes create natural clusters of thicker vegetation, which includes much of the tree cover on-site. As such, they serve as naturally occurring visual breaks and buffers to the development to the west, as well as for more proximate service drives and corridors that will serve the DDC. Conversely, the ridges are dotted with majestic saguaros, barrel, and cholla cacti; along with the bursage-brittlebush-creosote community of plants



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that is typical of the upper desert landform.

Views from the site are impressive in all directions. Standing on the proposed site, a 180-degree ridgeline panorama extends from the southwest to northwest. This view opens up the valley floor with vistas stretching as far as South Mountain Park, with many of the signature valley peaks such as Camelback, Mummy, and North Mountains creating an expansive ridge-line panorama, also serving as a silhouette for the signature sunsets Arizona is renowned for. A more proximate and impressive ridgeline lies to the east. The southern ridge of Horseshoe Canyon begins a ridgeline that terminates at a peak just south of the Taliesin Overlook. Along the way, in a clock-wise direction, Tom's Thumb seems perfectly framed at the termination of a draw that stretches up toward the northeast. The Lookout Peak continues ascension of the ridgeline from Tom's Thumb toward Drinkwater Peak and McDowell Peak, which are two of the more recognizable peaks of the McDowell Mountains, and also serve to define the eastern boundary of the Gateway Access Stewardship Area. A prominent peak rises immediately to the east of the site, and although unnamed, it is surrounded at the base by the Gateway Loop trail. A second distant peak just south of this foreground feature is also one of the region's more recognized peaks--Thompson Peak. A series of descending ridges terminate at the Taliesin Overlook saddle, before rising once again to the last peak that lies just to the east of Taliesin, and thus completing an impressive 180-degree panorama from the DDC site.

The study area for the Desert Discovery Center is geographically situated to take advantage of many opportunities. Views from the site are wide and expansive. Distant vistas to the west, as well as proximate panoramic views to the east are impressive. Equally impressive is the site itself, with gently sloping ridge forms, creating a setting that is surrounded by natural buffers of thickly vegetated washes.



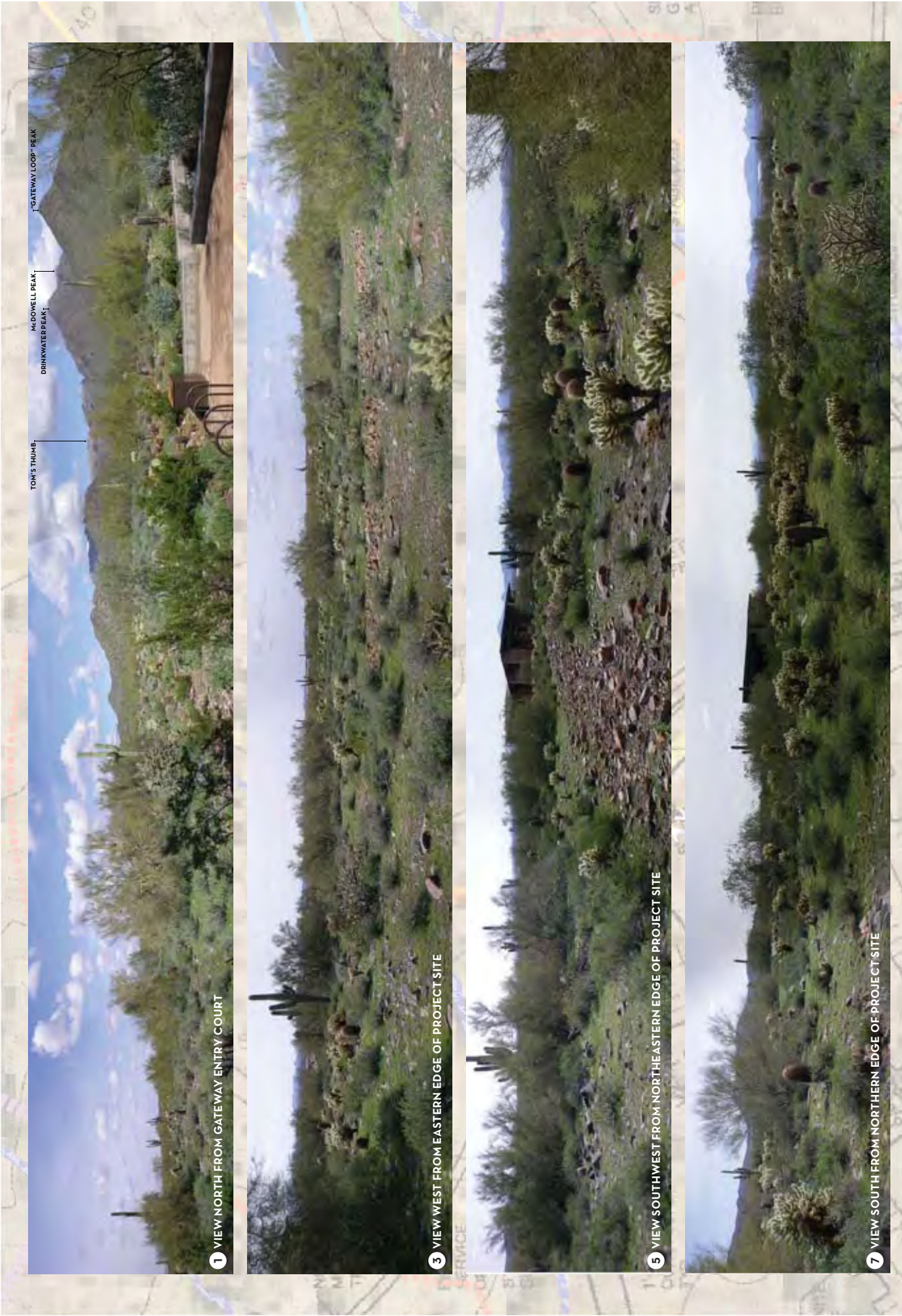
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SITE ANALYSIS

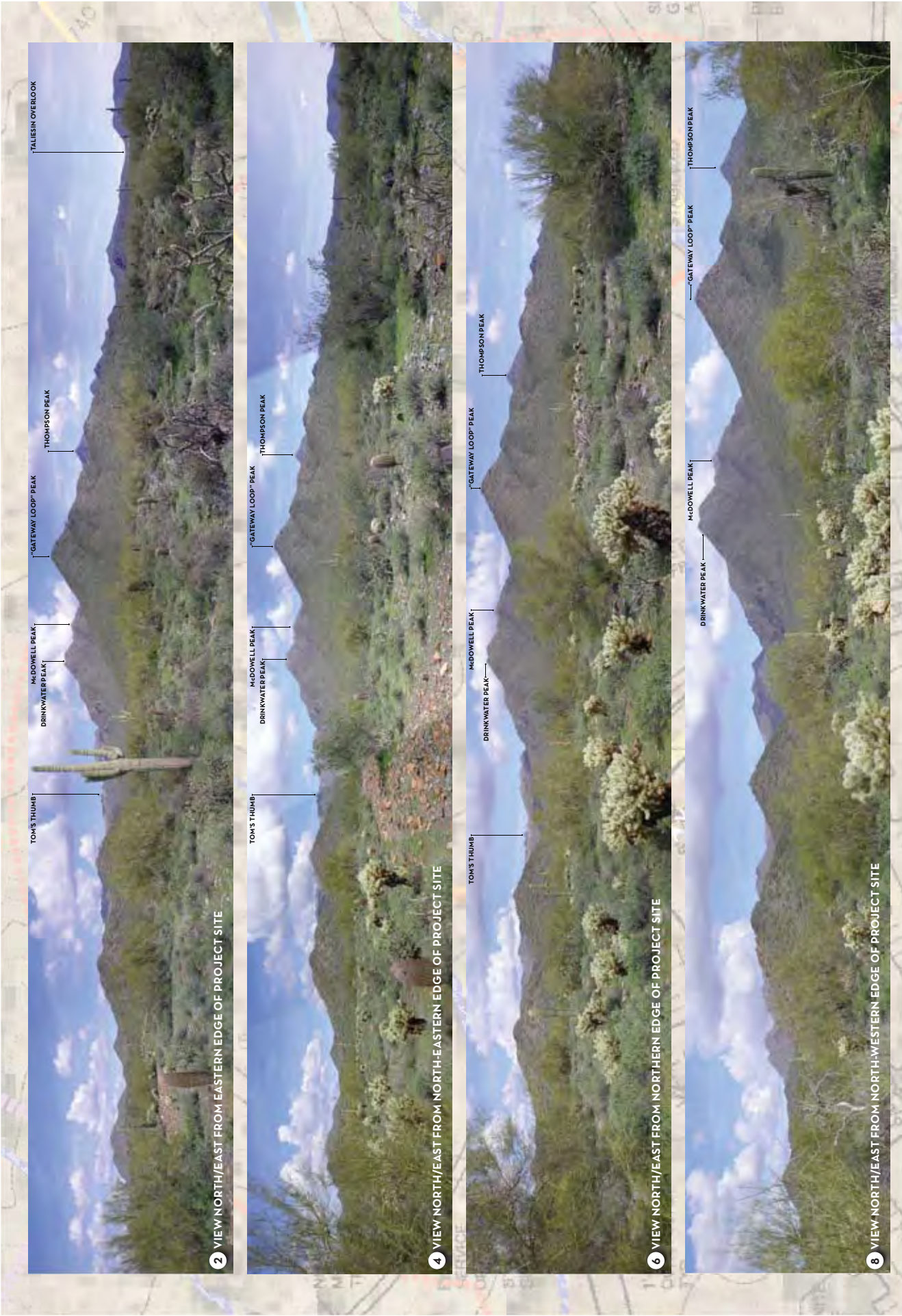
DDC Panorama (Landforms)

1. Tom's Thumb
2. Lookout Point
3. Drinkwater Peak
4. McDowell Peak
5. "Gateway Loop" Peak
6. Thompson Peak
7. Taliesin Overlook









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ARCHITECTURAL SPACE PROGRAM

Based on the results of the work in the Phase 1 Feasibility study and the input that was received throughout this study process, as well as the expertise of the study team, the following Architectural Space Program was developed. While this is a very thorough program, it is still conceptual in nature. It is envisioned that if the project proceeds into Schematic Design that this program is once again refined as the various detailed spaces are evaluated and the projects systems evolve.

Desert Discovery Center - Program of Spaces				Updated June 16, 2010
Area Description	Net Sq. Ft.	Net %	Gross Sq. Ft.	Notes
Welcome Pavilion	2,775	4.50%	3,330	
Public Restrooms	600	0.97%	720	Locate near entry. Verify count based on final program.
Public Lockers	800	1.30%	960	
Vending	250	0.41%	300	
Concierge Station	500	0.81%	600	
Ticketing	500	0.81%	600	
Security Desk	125	0.20%	150	
Desert Great Room	10,300	16.72%	12,360	
Event Pavilion	6,300	10.23%	7,560	
Catering Kitchen	2,000	3.25%	2,400	Serves Desert Great Room and Desert Terrace.
Bar Storage	400	0.65%	480	
Restrooms	1,300	2.11%	1,560	
Lobby	300	0.49%	360	
Hospitality Pavilion	4,600	7.47%	5,520	
Sonoran Market	2,000	3.25%	2,400	Locate at facility exit, function in tandem with Café. Provide free access to general public.
Desert Café	2,600	4.22%	3,120	80 Seats per Phase I study. Open to Desert Dining Garden with views to Preserve.
Orientation / Introduction	1,500	2.43%	1,800	Orientation Exhibit. Provides context of facility and exhibits.
History of the McDowell Sonoran Preserve				Story of a special place
Orientation to the DDC				Planning an enjoyable visit
Mysterious World	5,000	8.12%	6,000	75-100 Seats per BRC. Locate near Desert Great Room and Amphitheater
Desert Seasons	3,500	5.68%	4,200	
Spiral Sculpture of the Seasons: A Year in the Life				A curving, walk-in sculpture that takes visitors on a tour of a year in the Preserve
Many-Colored Desert				An interactive, raised-relief map of the of the Sonoran Desert
Tom's Thumb Theater				An immersive mini-theater experience focused on geology
Cacti/Agave Gallery				Images of the Cacti of the Preserve, a saquaro sculpture, a learning station and inter. exhibits
Woody Plant Gallery				Images of the woody plants of the Preserve with a learning station and interactive exhibits
Herbaceous Plant Gallery				Images of the flowering plants of the Preserve with a learning station and interactive exhibits

Desert Discovery Center - Program of Spaces				Updated June 16, 2010
Area Description	Net Sq. Ft.	Net %	Gross Sq. Ft.	Notes
Staying Alive	4,500	7.30%	5,400	
The Desert After Dark				A virtual hunting experience at night using vision, smell, and thermal sensing
Airborne Enemy				A virtual hunting experience during the day using vision
Twilight Wall				Large-scale mural of an evening desert scene with multiple interactive elements
Dawn Wall				Large-scale mural of an morning desert scene with multiple interactive elements
Couch's Spadefoot Sculpture				Adaptation elements
Grasshopper Mouse / Darkling Beetle Sculpture				Adaptation elements
Tortoise Combat Sculpture				Adaptation elements
Costa's Hummingbird at Chuparosa Sculpture				Adaptation elements
The Hidden Desert	3,500	5.68%	4,200	
World Beneath Our Feet				Interactive soil profile
Wildlife Cams				Real-time snapshots of Preserve life; on-demand archival footage
Snake's Eye View Theater				A different perspective on the desert world
The Secret Sex Lives of Plants				Basics of pollination and weird/wonderful relationships
Ant Habitat				Underground societies; specialization and cooperation
Bee Habitat				Solitary in Sonora
Reptile Habitat				North America's only venomous lizard, an Arizona icon
Human Adaptation	5,000	8.12%	6,000	
Water Allocation				Marriage of water, art, and interactive learning
Hohokam Environment				Manipulation of water by the first inhabitants of the Valley of the Sun
Cowboy Environment				Importing EuroAmerican land use models into the McDowells
Fifties Environment				Boomtown; air-conditioning and urban sprawl; adapting the desert to human needs
Contemporary/Near-Future Environment (Sustainability)				Adapting human society to meet the extremes of the desert
The Tomorrow Pavilion	3,000	4.87%	3,600	
Walk-in Saguaro Cactus				Enter an icon
Interactive Floor				A view of the world beneath our feet
Time Machine				Encouraging thinking about the past and shaping the future
Free Learning Space				Beyond playground
Terrarium Listening Station				Different ways of observing the desert world
Small Animal Habitats				Engaging in conservation
Rotating Exhibits	2,500	4.06%	3,000	

Desert Discovery Center - Program of Spaces				Updated June 16, 2010
Area Description	Net Sq. Ft.	Net %	Gross Sq. Ft.	Notes
Administration	5,335	8.66%	6,402	
18 Offices	2,160	3.51%	2,592	10'x12', 120 sf each
2 General Work Areas	800	1.30%	960	400 sf each
Reception	125	0.20%	150	
20 Work Spaces	1,300	2.11%	1,560	8'x8' cubicle or equivalent / open office
Staff Breakroom / Kitchen	500	0.81%	600	Provide exterior space at breakroom.
Employee Locker Room	200	0.32%	240	
Staff Bathrooms	250	0.41%	300	Locate near Administration Offices.
Resources	2,400	3.90%	2,880	
Volunteer Room	400	0.65%	480	Locate near Library. Provide easy access to exhibits.
Research / Library	2,000	3.25%	2,400	
Back of House	7,700	12.50%	9,240	
Curatorial / Exhibit Shop	1,200	1.95%	1,440	Locate near Service Entry and Storage. West side of facility.
Storage	2,000	3.25%	2,400	Locate near Exhibit Shop.
Landscape Maintenance Building	1,500	2.43%	1,800	Locate near Shop and Storage
Other Back of House / Mechanical	3,000	4.87%	3,600	Locate on west side of facility.
Total Building Net Square Footage	61,610	100.00%	73,932	
Total Building Gross Square Footage	73,932			Grossing Factor of 20%, includes interior circulation, walls, mechanical.
Phase I Estimate	52,920			
Phase I Low Estimate	42,300			Phase I Net SF -20%
Phase I High Estimate	63,500			Phase I Net SF +20%
Exterior Spaces				
Welcome Terrace	12,000			Incorporate wayfinding exhibit. Exterior Greeter/Concierge station. Served by special
Orientation Courtyard	5,500			Central Plaza including orientation exhibits.
Event Terrace	12,000			Plaza serving Desert Great Room, located to views of preserve.
Connecting Passages	25,000			Numerous landscape and hardscape spaces that flow between Desert Pavilions.
Desert Dining Garden	3,000			On view side of Café. Provide exceptional exterior dining environment.
View Terrace	5,000			Welcome Plaza feature, frames views to foreground preserve mountains.
Amphitheater	5,800			200 Seats per Phase I study.
Group / School Kids' Orientation	2,400			Provide exterior gathering space for children's tours. Incorporate seating.
Total Exterior Spaces	70,700			Phase I Exterior Space Estimate: 70,580 SF

Desert Discovery Center - Program of Spaces			Updated June 16, 2010
Area Description			
Parking			
Existing Gateway Trailhead Parking	216 spaces		25 Existing bicycle parking
Current Gateway Trailhead Parking Expansion (to be completed 09-30-10)	125 spaces		Currently under construction
Total Gateway Trailhead Parking at Full Buildout	341 spaces		
Proposed DDC Parking	428 spaces		
Employee and Volunteer Parking Required	85 spaces		
Typical Saturday Visitor Parking Required	230-300 spaces		
Peak Period Visitor Parking Required	250-325 spaces		
Total DDC Parking Required	410 spaces		
Total Proposed Parking at Full Buildout	769 spaces		
On-Site Bus/Large Vehicle Parking	31 spaces		
Shared/Off-Site Parking for Events and Buses	Potential available at Westworld		Pending final parking management studies
Total New Parking	553 spaces		

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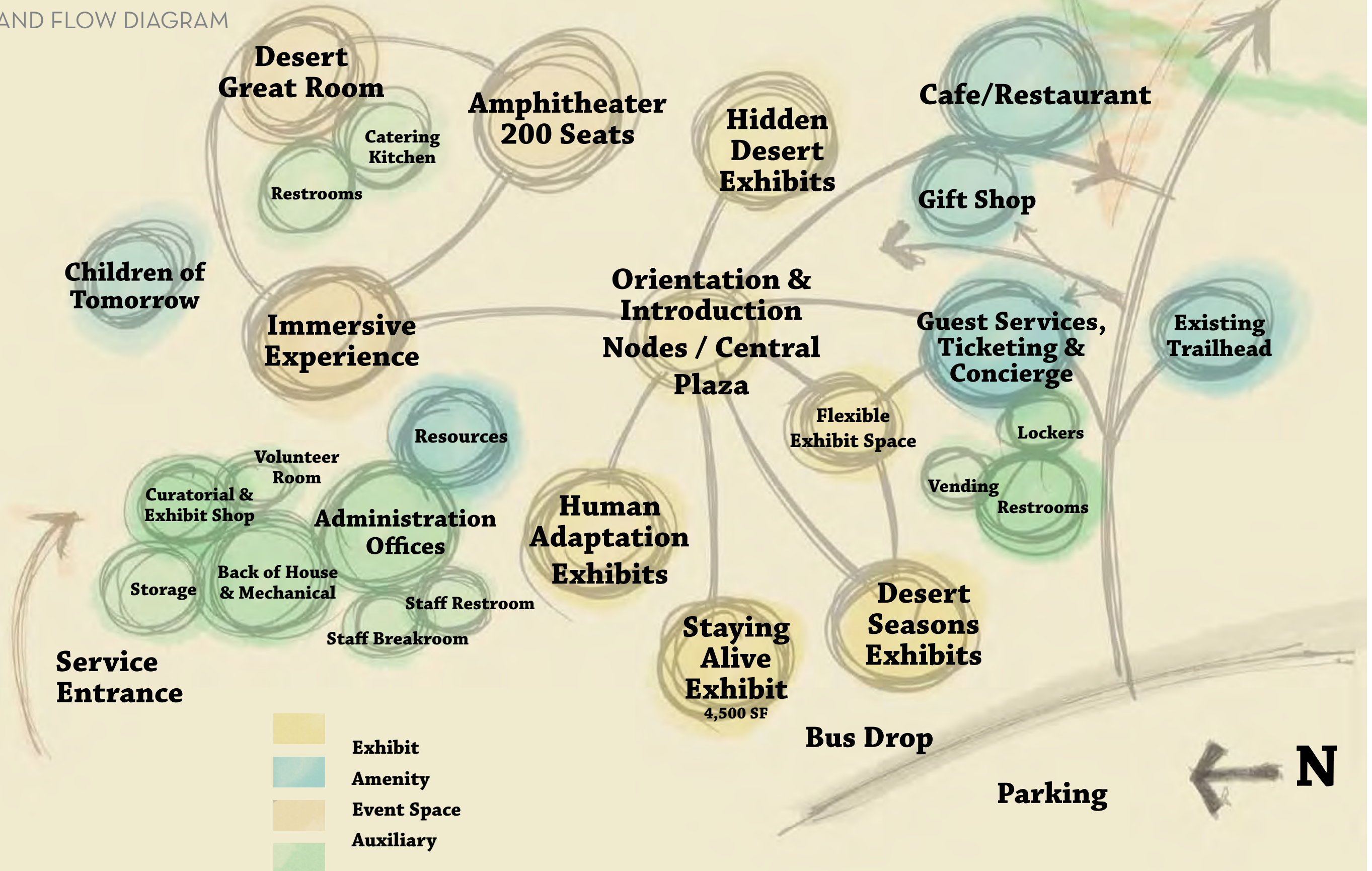
Space and Flow Diagram

As the study team discussed various options on how visitors would experience the DDC, and how they find themselves through it, or discover it, several space and flow models were debated. Given the fact that there could be large variations in visitation on given days or seasons, a model known as “spoke and hub” flow was chosen. This model gives the visitor freedom to explore the DDC in the way they find most enjoyable. They can go to the different interpretive exhibits or spaces with the environment at their leisure or according to their individual interests. Another model, which was explored, but eliminated was a “linear” flow. It would require you to go to one exhibit and then the next. It has the very real possibility of creating bottlenecks in visitor flow. Also, since our interpretive plan is less about telling a time line or linear story it did not seem appropriate. The diagram on the following page illustrates the DDC space and flow.

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SPACE AND FLOW DIAGRAM

Preserve Views



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INTERPRETIVE EXHIBIT FLOW

The exhibits are grouped into major themes and sub-themes and they are then housed in their various pavilions or within the desert garden spaces between pavilions.

Based upon the study teams Interpretive Plan, several Exhibit flow diagrams were explored in conjunction with the space and flow diagram. The concept began to emerge early in the study to house the exhibits in pavilion type spaces where the major interpretive exhibit themes might occupy the full pavilion, and that through exhibit design and space planning, the sub-themes would be organized within the space of the pavilion. The spaces between these pavilions could then be used for exterior exhibits.

ORIENTATION AND INTRODUCTION NODES

- The Sonoran Desert in context: planetary point of view
- History of McDowell Sonoran Preserve: story of a special place
- Orientation to the DDC: planning an enjoyable visit

DESERT SEASONS

- Spiral of the Seasons: A Year in the Life a curving, walk-in sculpture that takes visitors on a tour of a year in the Preserve
- The Many-Colored Desert: An interactive, raised-relief map of the Sonoran Desert
- Tom's Thumb Theatre: An immersive mini-theater experience focused on geology
- Cactus/Agave Gallery: Images of the cacti of the Preserve, a saguaro sculpture, a learning station and interactive exhibits
- Woody Plant Gallery: Images of the woody plants of the Preserve with a learning station and interactive exhibits
- Herbaceous Plant Gallery: Images of the flowering plants of the Preserve with a learning station and interactive exhibits

STAYING ALIVE

- The Desert After Dark: A virtual hunting experience at night using vision, smell, and thermal sensing
- Airborne Enemy: A virtual hunting experience during the day using vision
- Twilight Wall: A large-scale mural of an evening desert scene with multiple interactive elements
- Dawn Wall: A large-scale mural of a morning desert scene with multiple interactive elements
- Couch's Spadefoot Sculpture: Adaptations include estivation, body morphology, chemical defense, metabolic adjustment, accelerated reproductive cycle
- Grasshopper Mouse/Darkling Beetle Sculpture: Adaptations include chemical defense, territorial defense, immunity to venom(s), hunting/killing techniques similar to large predators
- Tortoise Combat Sculpture: Adaptations include body morphology, urine concentration, hibernation, avoidance, metabolic adjustment

- Costa's Hummingbird at Chuparosa Sculpture: Adaptations include torpor, morphology, migration, posture, plumage compression; shedding leaves, succulence

THE HIDDEN DESERT

- Interactive Soil Profile: The world beneath our feet
- Wildlife Cams: Real-time snapshots of Preserve life; on-demand archival footage
- Pollination Gallery: The secret sex lives of plants; weird and wonderful
- Snake's Eye View Cam: A different perspective on the desert world
- Ant Habitat: Social life and cooperation in the insect world
- Bee Habitat: The world of the cactus bee
- Reptile Habitat: Gila monsters et al.

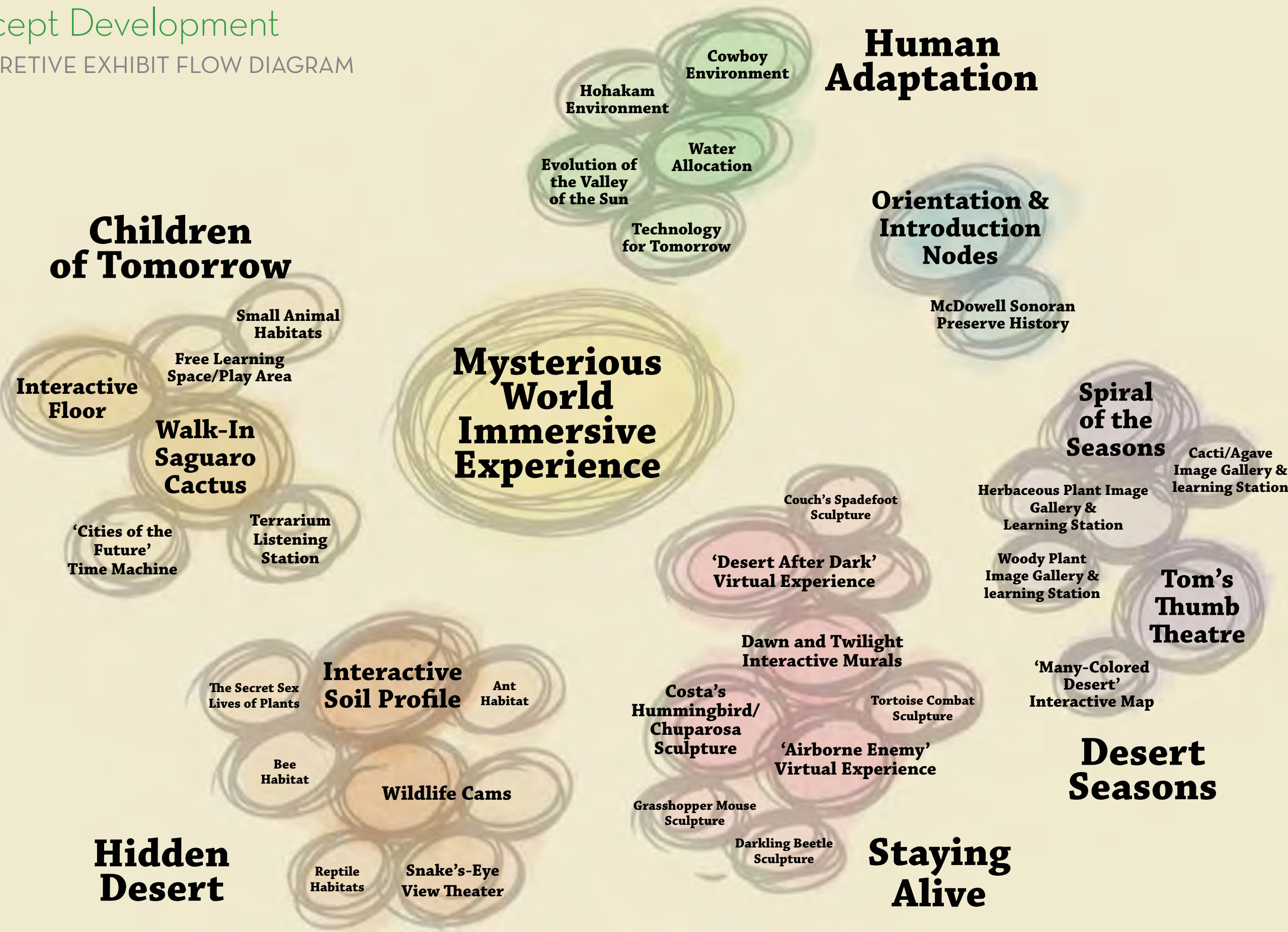
HUMAN ADAPTATION

- Water Allocation: A marriage of water, art and interactive learning
- Hohokam Environment: Manipulation of water by the first human inhabitants of the Valley of the Sun
- Cowboy Environment: The importation of EuroAmerican land use models into the McDowell Mountains
- Fifties Environment: Boomtown, urban sprawl and adapting the desert to meet human needs
- Contemporary/Near-Future Environment: Adapting human society to meet the demands of the desert

CHILDREN OF TOMORROW

- Walk-in Saguaro Cactus: Enter an icon
- Interactive Floor: A view of the world beneath our feet
- Time Machine: Encouraging thinking about the past and shaping the future
- Free-Learning Space: Beyond playground
- Terrarium Listening Station: A different way of observing the desert world
- Small Animal Habitats: Engaging in conservation

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INTERPRETIVE EXHIBIT FLOW DIAGRAM



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CONCEPTUAL DESIGN

After the study team evaluated the experience elements it was trying to achieve, as well as thoroughly studying the space and flow concepts, it began to evaluate several architectural concepts. Many of the rough study sketches that were developed during this period of the study are included within Appendix D. One of the reoccurring concepts was that it began to feel more important for visitors to always be connected to the desert and not be put in one large refrigerated facility removed from the desert. As such, more and more discussion focused on the concept of “linked desert pavilions”. The idea that several pavilions, with an openness to them, an indoor/outdoor feeling to them, could be integrated and woven into the desert site more effectively than one large facility. These pavilions could be oriented to work with the natural site condition, solar exposure, topography and the desired architecture statement. The roof overhangs could be soaring cantilevered forms that give shade. The spaces between could have other shading devices that could help temper the desert heat and thus make the space more temperate and livable during the hot summers.

The Desert Discovery Center will be a new benchmark of green and sustainable desert architecture, and will be a celebration of the beauty of the Sonoran Desert. The buildings will be made of bold forms, built in natural, enduring materials, and set in an oasis of lush, native, desert landscaping.

The following is an overall statement of the architectural concept.

Statement of Architectural Concept

The Desert Discovery Center is the primary gateway into the McDowell Sonoran Mountain Preserve, which is the largest urban nature preserve in the United States, and home to the worlds richest and most amazing desert.

The architecture of the Desert Discovery Center is conceived as a world-class statement on how to sensitively integrate a built environment into its pristine Sonoran desert setting, while at the same time providing for all the educational, recreational, and social opportunities the Center affords. Conceived as a collection of indoor/outdoor desert pavilions set within lush desert landscaping, the pavilions will be connected by a series of heavily shaded courtyards to provide an oasis effect in the midst of the desert. Materials will be rugged and desert like, yet refined and all selected to blend with the desert. The various pavilions will be sculptural in nature all reflecting the fractured geometry of their mountain backdrop with soaring cantilevered roof forms. Some will be set low into the earth and some will soar high, all reflecting the character of the desert. Water elements will add to the cooling effect of the courtyards through capturing rainwater and reusing water within the center.

Experiencing the DDC’s various pavilions and courtyards you gain an insightful education about the McDowell Sonoran Mountain Preserve, as well as the Sonoran Desert. Numerous interpretative exhibits, and hands-on demonstrations by Preserve docents will be contained within the courtyards and pavilions geared to all ages and all levels of interest, providing a culture of educational wonder. A theater experience will take you on an immersive, emotional journey through the desert like no other you have ever experienced. It will be a place of constantly changing presentations and events so that one gains a different experience each time you return. Within the DDC one will be able to fully experience the mysteries of the desert and the hidden worlds of the desert plant and animal life.

The DDC will be a place of community gathering and entertainment. A high quality restaurant/and cafe will be featured with a unique desert-dining garden for enjoying a fine meal, gathering for coffee after a hike or having a refreshing drink on a warm day. A shade covered

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amphitheater will feature on-going talks as well as musical entertainment; all with a perfectly framed view of the majestic McDowell Mountains. A retail pavilion will feature a unique blend of desert related items such as gifts, hiking gear, books, desert plants, art, cd's, ect all focused on enjoying the beauty of the desert long after your visit. The Desert Great Room, another community gathering place, will be a multi-purpose, architecturally unique, indoor/outdoor pavilion within the center also set with a majestic view of the mountains that will be used for a variety of presentations, conferences and social gatherings such as weddings, parties and corporate events.

The DDC will most importantly act as a gateway to explore the Preserve, as it will be directly linked a short interpretive path to stroll into the desert or to continue on to enjoy the miles of pathways that take you deep into the desert.

The following is a further description of the conceptual spaces.

Site Plan

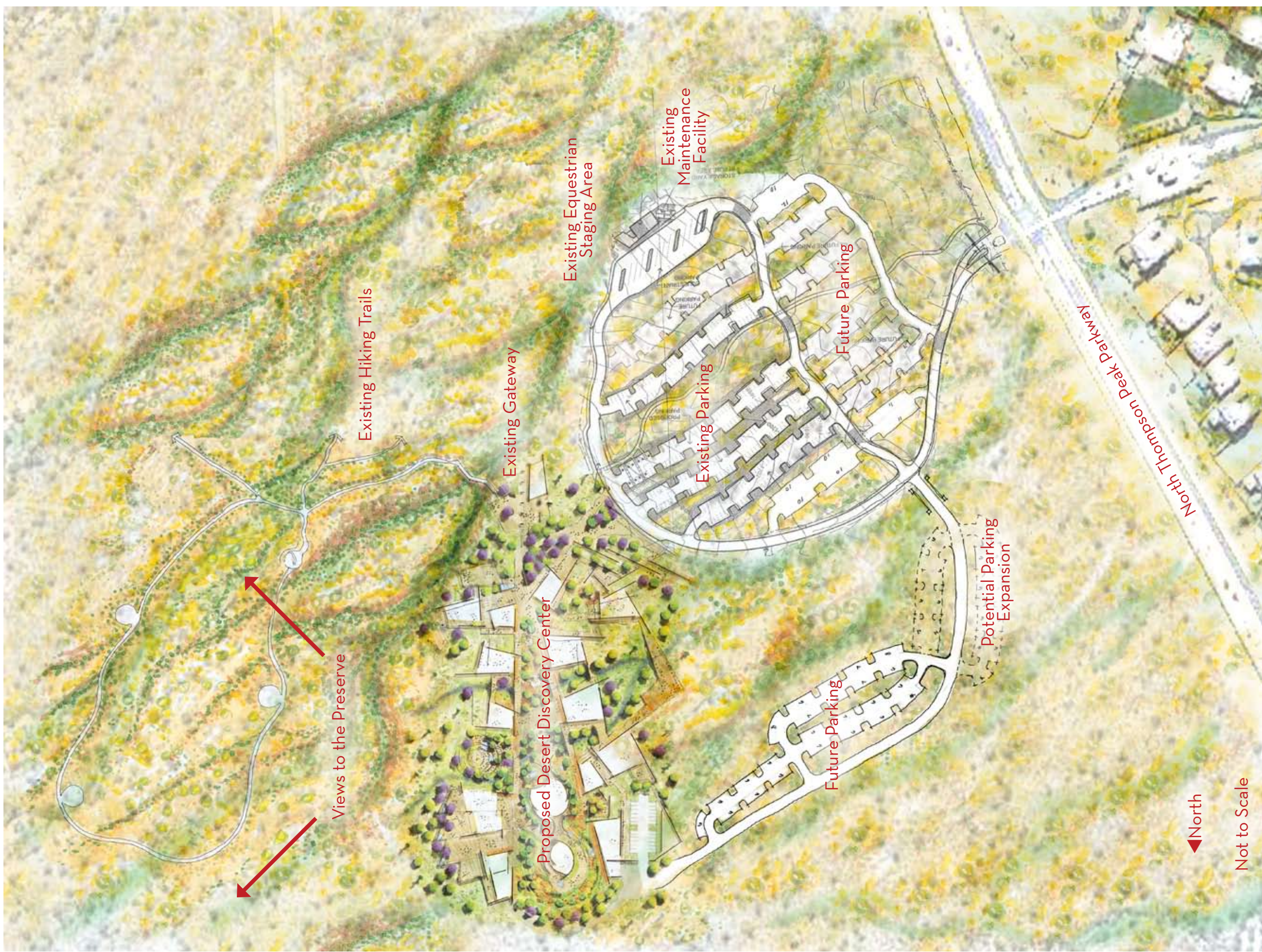
The site plan for the DDC was designed to integrate with the existing Gateway and the existing parking areas and expand upon the concept of integrating into the desert with great care. The multiple pavilion concept allows for a greater ability for the visitor to always have contact with the desert and to help transition them into the preserve. The multiple pavilion concept, while consuming more land than a singular building, will actually have the ability to integrate the pavilions into the desertscape more due to their smaller scale and to control the limits of disturbance with more care by allowing the pavilions to fit within the natural landforms easier than a large building would.

Back of house areas are serviced by a low impact road that feeds around to the north end of the DDC. From the main back of house area smaller electric service vehicles will be able to access the individual pavilions, as well as the other areas that might be used for special events.

The site plan is set up to allow a free flow of hikers through the existing Gateway so their experience is much the same as it is today. The welcome plaza will be the main entry focal point for all arrivals and a major gathering place within the DDC.

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CONCEPTUAL DESIGN - SITE PLAN



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Parking

The Gateway facility is envisioned to be the primary public access to the McDowell Sonoran Preserve. Additionally, the Desert Discovery Center (DDC) is anticipated to be a major tourist attraction to both out-of-town and local visitors alike. It is likely that the majority of these visitors will visit this destination via automobile; so parking will be a critical component in satisfying demand, while carefully planning and developing on the proposed site. The Parking areas will be integrated and blended into the desert with stabilized decomposed granite and trees for shade.

Preliminary estimations accounted for a DDC facility size significantly smaller than the current plan, but did acknowledge and identify the need to accommodate vehicular uses beyond passenger vehicles, including school and touring buses, as well as larger vehicles including those hauling horse trailers. The City of Scottsdale's Parking Ordinance identifies 500 to 600 spaces required for this facility, including those for tour buses and horse trailers. Updated DDC studies, along with market studies, and general observation pursuant to the popularity of the facility updates this figure closer to 750 stalls, although the City of Scottsdale is conducting independent parking studies to confirm this updated estimate.

The initial Gateway master plan for both the Gateway and the DDC anticipated five hundred nine (509) stalls at build-out, with two hundred seventy four (274) provided with phase one. Two hundred sixteen (216) were built, along with the primary circular access drive that presently envelops three parking aisles. The two hundred sixteen (216) spaces includes one hundred ninety-six (196) passenger vehicles—ten of which are accessible stalls, plus an additional twenty (20) stalls for larger vehicles, buses, and horse trailers. With growing demand, plans for immediate expansion are under way, with two additional parking aisles being built, adding one hundred twenty-five (125) stalls to the current capacity, and bringing a total for existing and first phase expansion to three hundred forty-one (341) spaces.

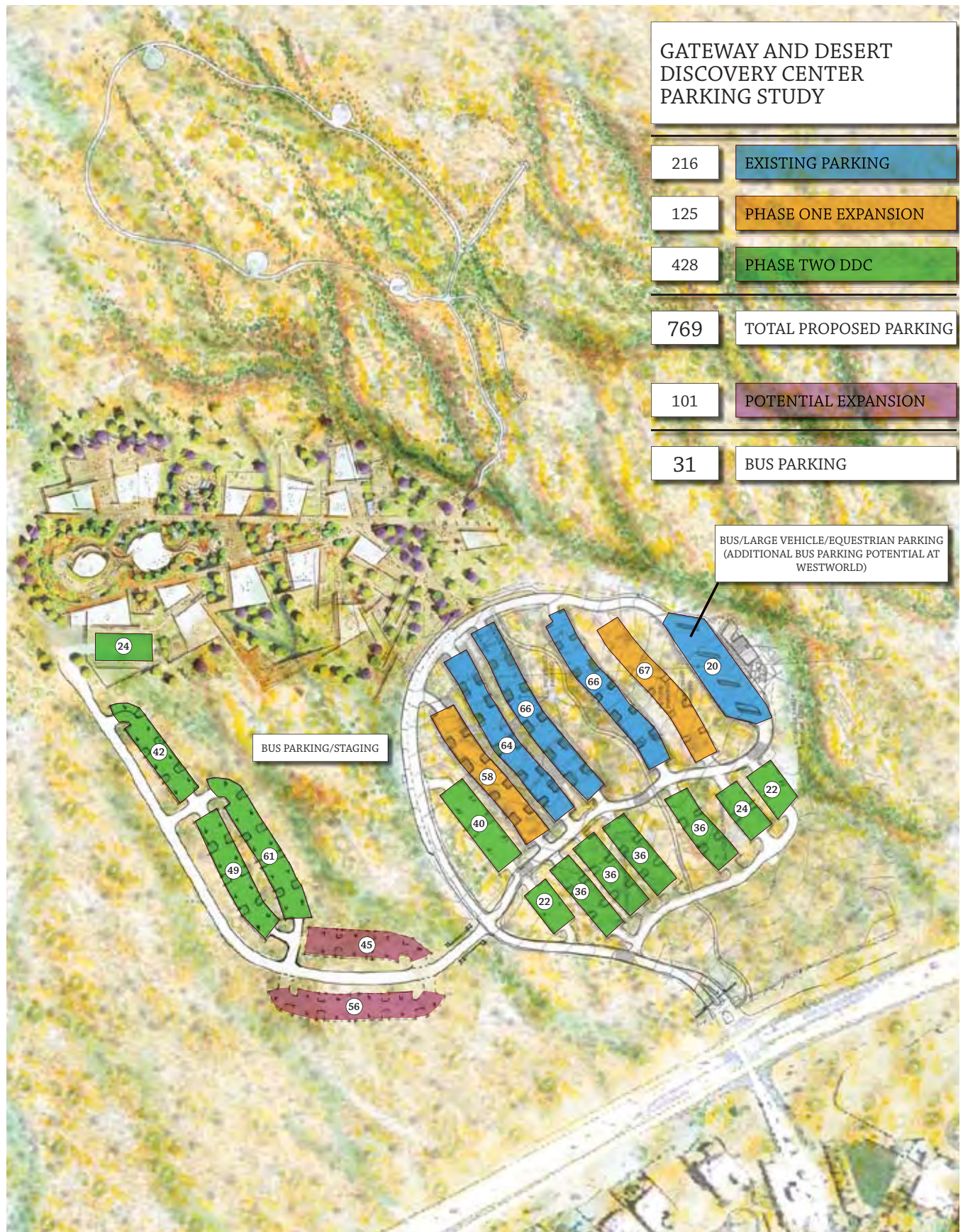
The Gateway master plan design utilizes a site circulation plan that is expandable over time. The current DDC plan expands upon this master plan concept, offering additional phased parking, which expands outside of the primary circulation loop. The secondary loop crosses the existing primary circulation route to the west and is consistent with the initial plan; however, additional parking aisles are proposed to increase capacity within the loop. These additional aisles would be built along with initial phase construction of the DDC, increasing capacity within proximity of the primary circulation loop to five hundred ninety-three (593) stalls.

A second parking lot is envisioned to the north of the existing one. A service access drive for DDC back-of-house serves double duty to a series of parking bays providing the balance of required parking. Its proximity to the service yard, and administration facilities at the DDC suggests this area to be utilized primarily for staff and employees, as well as serving extra capacity during peak season. This lot, in addition to administration spaces adjacent to the service yard, adds an additional one hundred seventy-six (176) spaces. Thoughtfully site-planned to utilize existing vegetation as a means of visual screening, this parking lot is situated on a gently sloping ridge that is visually screened from the DDC western-viewing terraces. Should demand warrant it, this area could accommodate future expansion.

The Gateway is already a very popular trailhead destination. Parking provided in the initial phase is already being expanded to satisfy a growing demand. Current DDC plans proposes a need to expand the existing Gateway master parking plan, both internal to the existing circulation loop, as well as a secondary lot that is in proximity to the planned administration and service yards of the DDC.

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PARKING



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Overall Floor Plan

The overall floor plan of the DDC features the linked desert pavilions laid out around a central courtyard desert garden that is the location of several interpretive exhibits, as well as the main circulation to the Mysterious World Theater on the north end. The entry to the DDC off of the Welcome Plaza is designed in a way to have a feeling of openness and welcoming. It draws visitors in by the shape of the various angular walls that help organize the pavilions into a strong architectural composition.

The overall plan organization will be clear and understandable to the visitor through just a natural sense of way finding, as well as with various signage techniques. The plan is also influenced by a sense of discovery. There will be an overall sense of mystery as one finds their way through. Space opens up to courtyards, distant views and a refreshing sense of shade and protective coverage reinforcing the “adaptation” theme. Clear passages allow for large crowd circulation to areas such as the Amphitheater and the Desert Great Room to allow for special events to occur during normal operations and for the two to work together.

The plan indicates each individual pavilion form will eventually be designed with 4 strong walls that do not meet. It is at these points, through various design techniques, that the pavilion nature of the building is derived. Large-scale doors, rolling panels, and louvered vents are all details conceived to allow the pavilions to have a strong sense of indoor/outdoor feeling to them. The pavilions, by the way they are juxtaposed to each other create interesting and unique courtyards and areas of preserved desert landscape between them. This allows the visitor to never feel they are detached from the desert.

One pavilion form breaks away from the angularity of the plan. It is the Mysterious World Theater. Its’ architectural character is based on an abstract composition inspired by the cactus flowers. It has layered walls much like the petal of a flower. It is located within the protective nature of the central courtyard; much like a cactus flower is protected by the spines of a cactus.

The plan has a composition of angularity that is reminiscent of the angular geology of the McDowell Mountains. Long straight lines carry through, almost in a subliminal way to organize the composition and to give it a sense of cohesiveness.

The individual areas of the DDC are further explained below.

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CONCEPTUAL DESIGN - FLOOR PLAN



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Welcome Plaza Area and Entry Portal Plan

As a visitor finds their way from the parking area to the Welcome Plaza, they will immediately be focused on a magnificent framed view of the McDowell Mountains. The Welcome Plaza will be a central greeting and meeting area and will be free access to all. Hikers there to enjoy the Preserve will flow right through the Welcome Plaza and go on their way through the Gateway Pavilion just as they do today. The Welcome Plaza will also offer a great opportunity for photos with a picturesque view of the McDowell's as a backdrop. Various introductory exhibits will be on display in the Welcome Plaza as well as several of the ones that are currently within the gateway.

Visitors coming to enjoy the DDC can check in at the Welcome Pavilion for tickets, special tours, restrooms and other guest services. In the center of the Welcome Plaza is the Entry Portal to the DDC. Its' architectural feeling created through a series of angular walls give a sense of welcome. We envision that rather than a turnstile like entry that we will have an open entry with Greeters to welcome visitors and give them a short overview of the daily highlights of the DDC.

Visitors to the DDC who wish to enjoy the Café and the Desert Dining Garden will be able to access those directly off of the Welcome Plaza without having to go through the DDC main entry. The setting for the Café is such that it has one of the premiere desert dining experiences in Scottsdale, which should position it to be very successful on its own. The menu is envisioned to be unique to the setting so that it can develop its own reputation as a great restaurant and central gathering spot. The dining experience is indoor/outdoor and it will provide a quick pick up concept for those in a hurry as well as full table service. The Sonoran Market, which will house a shop of unique DDC products for sale is also conveniently located off of the Welcome Plaza so visitors who might want to come by just to shop for a gift can gain direct access. All visitors to the DDC will exit directly adjacent to the Sonoran Market and the Café so they can stop and eat or shop on their way out.

Concept Development

CONCEPTUAL DESIGN - ENLARGED ENTRY PLAN



Concept Development

Central Courtyard/Linked Desert Pavilions

Once a visitor has entered the DDC through the Entry Portal, they will enter a central courtyard that leads them to the various Pavilions housing the interpretive exhibits. The central courtyard is also the main organizing element for circulating to the Amphitheater, Desert Great Room and Event Terrace, the Sunset Terrace, and the Immersive Theater. Several outdoors exhibits are located within the central courtyard as well many landscape interpretive gardens.

The Central Courtyard is shaded from the sun with a unique set of tensile shade structures that are designed on a grid so they can be easily moved throughout the year and can follow the path of the sun and be most effective in providing a temperate environment. They will also act as coverings for inclement weather during the rainy time of the year.

Concept Development

CONCEPTUAL DESIGN - ENLARGED CENTRAL PLAZA PLAN



Concept Development

The Amphitheater

An approximately 200-seat amphitheater, with a magnificent view of the McDowell's is situated between the Desert Great Room and the Rotating Exhibit pavilion. The amphitheater is covered by a series of shade structures so that it can be used at all times of the day. An informal stage allows for the amphitheater to be utilized in many different ways. It is thought that the amphitheater can be used on a continual basis so that it is a major part of every visitor's experience to the DDC, rather than just for special events. An appropriate sound system and lighting will be incorporated so that it can be used for evening events. The amphitheater is one place where programming can be provided on a very dynamic basis. Programs should vary greatly so that those who are on return visits to the DDC can experience something different each visit.

The Desert Great Room

The Desert Great Room is a highly versatile, creative meeting, event and gathering space. It can serve as a place for special events, special programming, educational experiences, and rotating exhibits. Events as common as weddings, and as special as international conferences can be held in the facility. It is the most dynamic of all spaces within the DDC. It is a pavilion space in which the architectural space plan can vary greatly due to the moveable wall systems that are conceived for it. It has covered and shaded exterior spaces on grand terraces that overlook the preserve. The space can be divided into many different shapes to accommodate a variety of functions. The ceiling space is flexible to allow for the creation of special events. AV and IT systems, as well as lighting are all incorporated to give the space all of the technology it requires to host a large amount of events. Food service will be provided by the catering/dish out kitchen that is part of the facility. By having a catering style kitchen it will allow the DDC to partner with many local catering companies to provide the food service and not require the DDC to get into the food service business. This has been done successfully at the Phoenix Zoo's Stone House Pavilion.

It is thought that if the Desert Great Room is marketed properly it can be the most special meeting environment in Scottsdale, or the Greater Phoenix area, and that it will attract many out of town users due to its very special character. Its adjacency to the amphitheater and the Immersive Theater will provide it with two other very unique venues that can be used in conjunction with the events staged in the Desert Great Room.

The Immersive Theater

The Immersive Theater, which hosts the Mysterious World exhibit, is a major visual focal point in the main courtyard. The space is not a pavilion like the other DDC space. It is a fully enclosed multi-media theater space. The Theater's architecture is an abstraction of the cactus flower and is a curvilinear shape protected by "rugged armor" much like the cactus floor. The exterior walls are conceptually thought to be broken desert rock that is reclaimed from various sources including the underground construction of the DDC. The rock is contained in curvilinear steel nets that are shaped in a very artistic form. The entry will descend in grade and have the feeling of entering a desert canyon.

Concept Development
CONCEPTUAL DESIGN - ENLARGED DESERT GREAT ROOM,
AMPHITHEATER, IMMERSIVE EXPERIENCE PLAN



Concept Development

The Resource Center

A significant amount of educational and intellectual material exists from a variety of sources relating to the Preserve, as well as the Sonoran Desert in general. More will continue to be developed in the future. The idea of a Resource Center for the DDC is based on the concept that staff, future volunteers, and visiting researchers, and presenters will be attracted to the Preserve who will use the Resource Center as a base. This space allows for meeting spaces, library space, classroom space and computer research stations. It acts to some degree as a field office for these activities.

Visitors to the DDC will be able to view certain aspects of the Resource Center and have access on a controlled basis to some of the library and research materials. The policies and concepts for this center will evolve as the character of the DDC evolves.

The Resource Center will really become the intellectual side of the DDC that will help it evolve into an institution of great depth.

Back of House Spaces

The architectural program outlines a full range of back of houses spaces that will be required to make the DDC function as a stand-alone business. All of the necessary staffing spaces, as suggested by the business plan, are housed within two structures linked to the Resource Center. One is more of a warehouse/storage/workshop quality facility and the second is more of an open office plan that is envisioned to be highly flexible to accommodate changes that come about as the DDC operates through the years. A small amount of staff parking is provided adjacent to these buildings to allow easy access to senior staff. The majority of staff parking will be in the remote area of the parking areas.

Roof Plan & Shade Environments

The roof structures of the DDC provide for protection to the individual pavilions as well as cantilever out to provide shade for the spaces between the pavilions and for covering during inclement weather. Additionally, there is a system of shade canopies designed that will provide more shade and coverage during bad weather. The system of shade canopies is envisioned to be able to be moved and adjusted during different parts of the year as the sun moves. The support structure would allow the canopies to be lowered and reassembled with ease on to different support structures at different orientations so that they provide a high degree of flexibility.

Concept Development

CONCEPTUAL DESIGN - ROOF PLAN



Concept Development

Exterior Architectural Character and Materials

Design work within this Feasibility study was focused on creating a very conceptual set of images of the architectural character. The architectural character is a culmination of all the work within the process of this study. It has been refined and updated as the study proceeded.

The following are a series of conceptual architectural sketches that illustrate the character of the DDC. The forms are born in the original architecture of the Gateway, but go beyond to celebrate the bold character of the Sonoran Desert as well as the ruggedness of the desertscape.

Materials will be very compatible and organic in nature. Rammed earth, rusted steel, a variety of glass types that insulate from the sun and filter light. Pervious paving for walkway, colors that are derived from nature and roofs that are capped with the desert soil and living desert wall all give the DDC are very pure and simple organic nature.



Colored, Form-lined Concrete



Steel



Rammed Earth Accents



Weathering Steel



Natural Stone

Concept Development

CONCEPTUAL DESIGN ARCHITECTURAL CHARACTER: INTERIOR COURTYARDS

The Desert Discovery Center links Desert Pavilions via courtyard spaces enhanced with sculptural shade structures and tree canopies to make a continuous, cool, shaded environment.



Concept Development

CONCEPTUAL DESIGN - ARCHITECTURAL CHARACTER: DESERT PAVILIONS

The Desert Discovery Center showcases Desert Pavilions that house various exhibits and experiences that entertain and educate visitors to the magic of the Sonoran Desert. In this view two of the pavilions serve as a backdrop to lush desert riparian landscaping and a “sunset terrace” for spectacular views of the Sonoran Desert’s natural wonders.



Concept Development

CONCEPTUAL DESIGN - ARCHITECTURAL CHARACTER: SWEEPING FORMS OF THE IMMERSIVE EXPERIENCE THEATER



Concept Development

CONCEPTUAL DESIGN - ARCHITECTURAL CHARACTER: ENTRY & CENTRAL PLAZA



Concept Development

CONCEPTUAL DESIGN - ARCHITECTURAL CHARACTER: DESERT GREAT ROOM AND EVENT TERRACE



Concept Development

CONCEPTUAL DESIGN - ARCHITECTURAL CHARACTER: THE DESERT PAVILION



Concept Development

CONCEPTUAL DESIGN - ARCHITECTURAL CHARACTER: VIEW FROM THE ENTRY DRIVE



Concept Development

Interior Architectural Character

The following are a series of conceptual interior architecture sketches that show the interior of various pavilions as well as some of the exhibit concepts. The interiors will have a strong sense of controlled day lighting. The ceiling will appear to float by the nature of the structural system supporting it, which is an abstract composition of structural members that take their cue from the ocotillo branch forms. The spaces are bold and simple. They blur the line of indoor and outdoor.

Interior Architecture

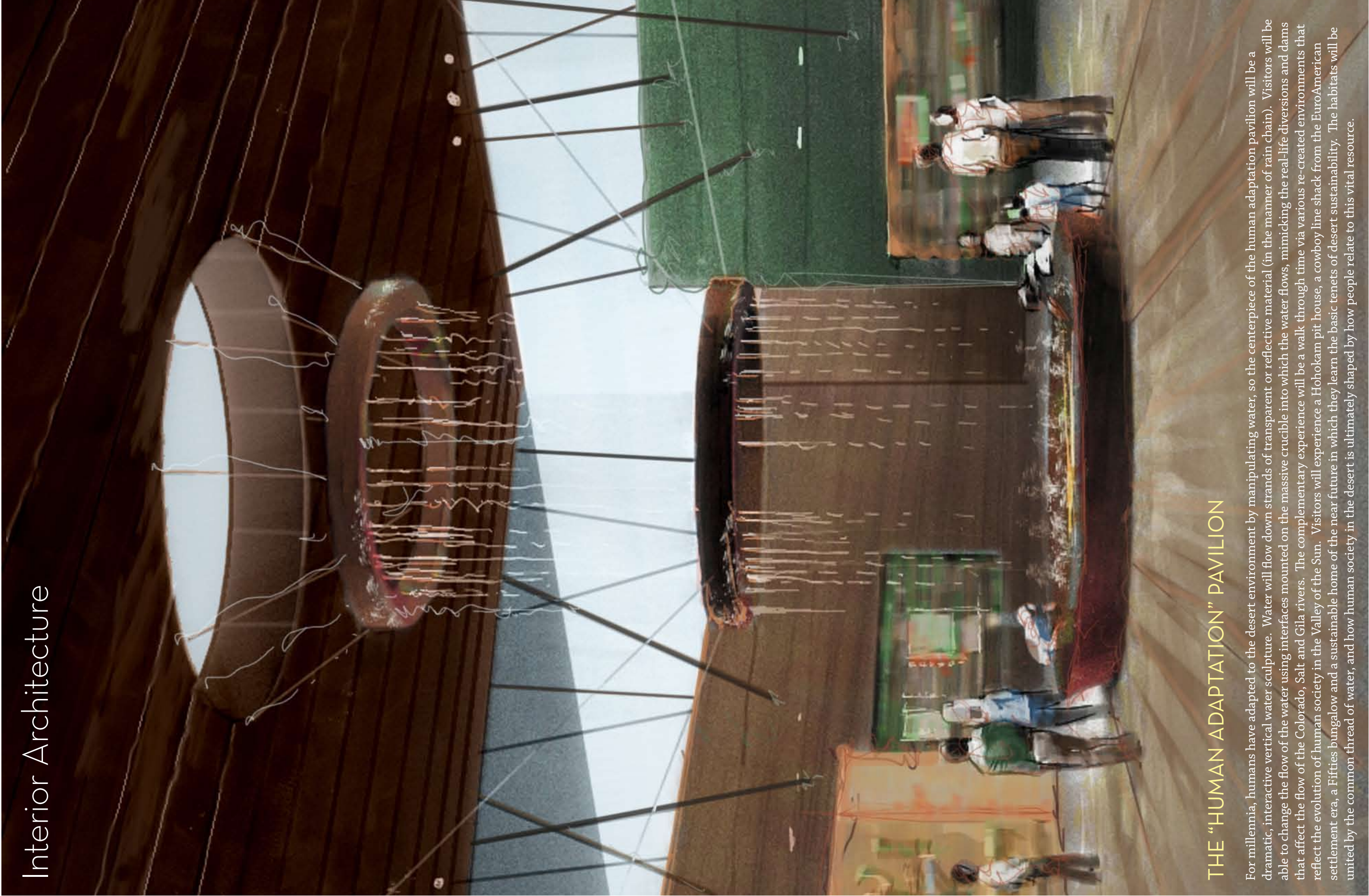
THE “HIDDEN DESERT” PAVILION

The Hidden Worlds pavilion will feature experiences that show visitors glimpses of the desert world that are not typically seen with the naked eye. An entire wall will be made of transparent plexiglass so that a view of the soil behind it is revealed. Visitors will see animals in burrows; activate video that shows microscopic soil life; learn how the caliche layer forms; understand cryptobiotic crust (and why they need to stay on trails to avoid damaging it) and pull out drawers that reveal touchable minerals and other objects that docents can change out to support various programs. A bank of monitors will reveal real-time images from cameras placed at sites throughout the Preserve, including infrared nighttime footage from watering stations. Visitors will be able to access archival footage that ultimately will become a Preserve “life list” of bird sightings and occurrences of other animals. Live reptiles, amphibians and various arthropods will be creatively displayed in small habitats.

A small gallery focused on pollination will fascinate visitors with a micro-focused audiovisual experience about the sex lives of plants, and the wonderful, sometimes bizarre, quirks of the way they reproduce.



Interior Architecture



THE “HUMAN ADAPTATION” PAVILION

For millennia, humans have adapted to the desert environment by manipulating water, so the centerpiece of the human adaptation pavilion will be a dramatic, interactive vertical water sculpture. Water will flow down strands of transparent or reflective material (in the manner of rain chain). Visitors will be able to change the flow of the water using interfaces mounted on the massive crucible into which the water flows, mimicking the real-life diversions and dams that affect the flow of the Colorado, Salt and Gila rivers. The complementary experience will be a walk through time via various re-created environments that reflect the evolution of human society in the Valley of the Sun. Visitors will experience a Hohokam pit house, a cowboy line shack from the EuroAmerican settlement era, a Fifties bungalow and a sustainable home of the near future in which they learn the basic tenets of desert sustainability. The habitats will be united by the common thread of water, and how human society in the desert is ultimately shaped by how people relate to this vital resource.

Interior Architecture



THE “DESERT SEASONS” PAVILION

Visitors entering the Desert Seasons pavilion encounter a spiral-shaped structure of gracefully curving walls that give a tantalizing hint of the experience within. A walk inside the spiral takes the visitor on a tour of a year in the desert, with imagery of the plants that bloom at a certain time, migratory birds that are arriving or leaving, other animals that may be going through mating rituals or bearing young and what sort of weather is typical. Interactive, three-dimensional exhibits spaced at intervals along the spiral will provide opportunities that help visitors understand the adaptations that allow plants to survive the desert’s climatic extremes. The spiral tour will include stories about unusual relationships between plants and pollinators, as well as the way desert microclimates shape species composition.

Other experiences in this pavilion will include secluded galleries, rich in vibrant imagery, that use interactive interfaces to acquaint visitors with the full suite of plants they can see on the Preserve. A mini-theatre will offer an immersive audiovisual experience focused on the geologic forces that shaped the McDowell Mountains.



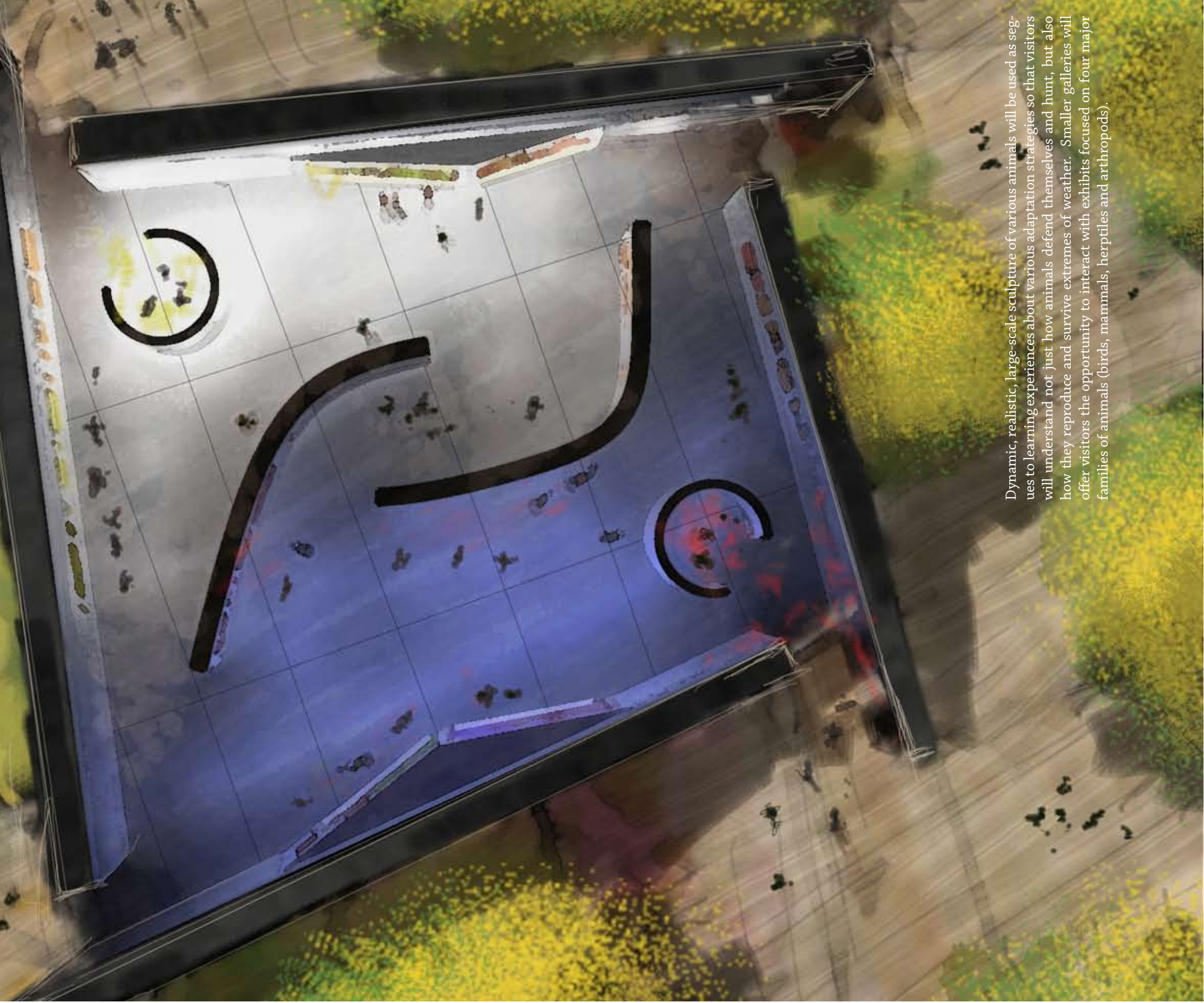
THE “CHILDREN OF TOMORROW” PAVILION

The Children of Tomorrow pavilion will be open to visitors of all ages, but its primary target audience will be kids ten and under. Free play spaces will include a 3D scale model of the McDowell Mountains on which kids can climb. The full suite of learning experiences will offer challenges such as identifying animals by listening to sounds. Kids will be able to enter a walk-in saguaro cactus and activate “rain” to see its ribs swell, how water is transported within the cactus and view a bird’s nest from the inside-out. They will have the opportunity take a trip back in time to witness (for instance) what the Valley of the Sun was like before air-conditioning, or make choices in the present day, then travel into the future to see the consequences.

Interior Architecture

THE “STAYING ALIVE ” PAVILION

This pavilion will focus on the adaptations that allow desert animals to survive in a harsh, arid landscape where summer temperatures can exceed 120 degrees. Curving walls will separate the experience into night and day since so many desert animals are nocturnal. Half of the space will be dim, cool and mysterious. The other half will be bright, warm and airy. The gallery walls will be a rich visual cornucopia depicting desert fauna, with various interactive experiences that help visitors understand that, despite its beauty, the desert is a place where the struggle for survival does not cease, a constant battle between predator and prey. Private spaces will offer virtual experiences such as being a raptor floating on the wind, searching for prey, or a mouse on the desert floor, hunting insects while being hunted itself by snakes, coyotes and birds of prey.



Dynamic, realistic, large-scale sculpture of various animals will be used as segments to learning experiences about various adaptation strategies so that visitors will understand not just how animals defend themselves and hunt, but also how they reproduce and survive extremes of weather. Smaller galleries will offer visitors the opportunity to interact with exhibits focused on four major families of animals (birds, mammals, reptiles and arthropods).

Interior Architecture

THE “MYSTERIOUS WORLD” PAVILION

“Mysterious World” is a unique immersive experience that transports guests into a world of wonder, mystery, and excitement. Guests are initiated into the extraordinary wonders of the McDowell Sonoran Preserve. They are not passive spectators in this world – they are immersed in it and caught up in its sights and sounds. Guests suddenly find themselves on top of a cliff helping a fellow rock climber. Or become a water droplet, plummeting from the sky at 100 miles per hour only to be absorbed into a cactus flower opening in the springtime sun. They could experience desert wildlife at night with “night vision.” Or become an eyewitness to half a billion years of geologic history rising up around them in seconds.

The experience utilizes synchronized video, theatrical lighting, background music, sound effects and physical special effects. The main area is dominated by a dynamic composition of projection screens. These screens float in front of a backdrop capable of creating effects such as sunrise, daytime, sunset and nighttime with stars.



Interior Architecture

THE “MYSTERIOUS WORLD” PAVILION

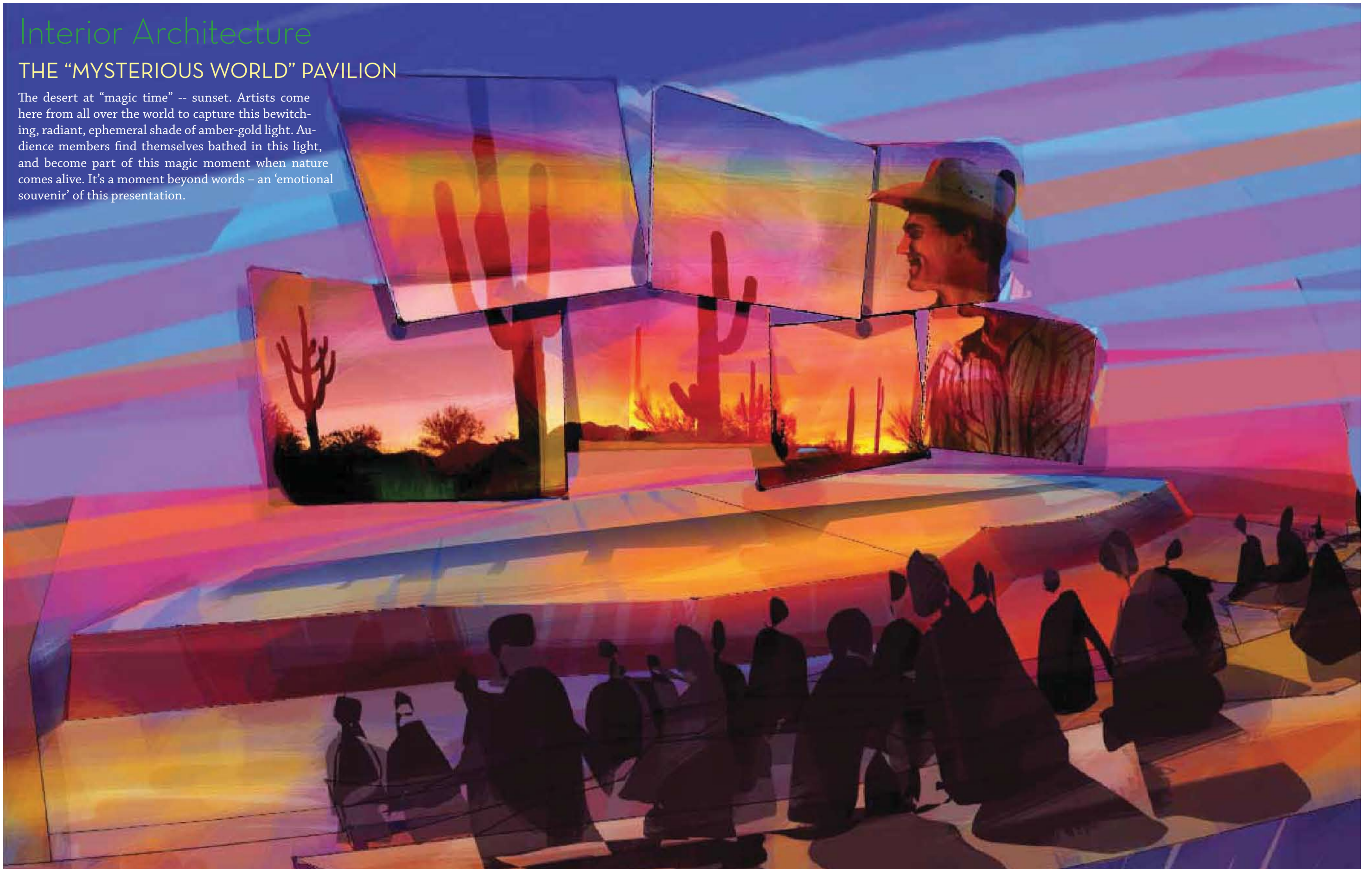
The drama of sunrise in the Sonoran Desert. Vivid sky-shades of cobalt blue and shimmering gold (back screen) shine on a desert filled with radiant wildflowers (front screens) in luminous shades of red, pink, orange, yellow and green. As the sunrise illuminates the desert, the field of flowers grows and grows until it fills the theater – the audience is engulfed in a riotous rainbow of colorful flora.



Interior Architecture

THE “MYSTERIOUS WORLD” PAVILION

The desert at “magic time” -- sunset. Artists come here from all over the world to capture this bewitching, radiant, ephemeral shade of amber-gold light. Audience members find themselves bathed in this light, and become part of this magic moment when nature comes alive. It’s a moment beyond words – an ‘emotional souvenir’ of this presentation.



Interior Architecture

THE “MYSTERIOUS WORLD” PAVILION

How did the Sonoran Desert come to be? The dynamic geologic history of 40 million years is telescoped into seconds. Volcanoes explode with atomic force, generating red-hot liquid rock that flows off the screens into the audience. The spent volcanoes collapse into calderas. The land rumbles and rips apart, producing new mountains and valleys. This whole fiery story is in the rock, if you know how to ‘read’ it...



Concept Development

Sustainability Strategies

The DDC should, be by its very existence, be an environment that demonstrates a great deal about the future of living in the Sonoran Desert. It needs to demonstrate a lot about “adaptation” of man in the desert. As such, strong strategies of sustainable building concepts have been conceptually laid out for the pavilions, the parking and the overall operations of the DDC. The various concepts and diagrams for the pavilions are outlined below.

Concept Development

SUSTAINABILITY CONCEPTS

How will the Desert Discovery Center maintain a **Sustainable Site**?

By Selecting and Developing the Site Wisely

- Construction Activity Pollution Prevention Avoided to the Terms of the National Pollutant Discharge Elimination System*.
- The project has avoided developing land in danger of a 100 year flood, land that serves as habitat for threatened or endangered species, land adjacent to wetlands or any water body as consistent with the Clean Water Act, or land that had previously been public parkland.

By Reducing Emissions Associated with Transportation

- Promotes alternative transportation by providing bicycle storage & shower facilities and priority parking for low-emitting & fuel efficient vehicles.
- Provide Preferred Parking for Alternative Fuel Vehicles.

By Protecting Surrounding Habitats

- Site Disturbance is Limited to Minimal Areas Outside of Building and Hardscape Boundary.

By Managing Stormwater Runoff

- Post-Development Stormwater Discharge Rate Equal or Less Than the Pre-Development Discharge Rate for 1 and 2 Year, 24 Hour Design Storms.
- 90% of Stormwater is Treated to Remove 80% of Contaminants and Pollutants (Total Suspended Solids) via Permeable Paving and Rain Harvesting Strategies.

By Reducing the Heat Island Effect

- Urban Heat Island Reduced by Shading all Hardscape Surfaces with Landscaping, Solar Panels, and High Solar Reflectance Index (SRI) Surfaces.
- Roof Structures Integrate a Combination of Vegetated Surfaces and High SRI Surfaces.

By Eliminating Light Pollution

- Excess Lighting and Glare Avoided Within the Project and at It's Perimeter, Preserving Night Sky Access.

By Planting Sustainable Landscapes

How will the Desert Discovery Center integrate **Water Efficiency**?

By Reducing Indoor Potable Water Consumption

- 1.0 gpf High Efficiency Toilet, Single Flush Power Assist (vs 1.6 gpf)
- 0.0 gpf Waterless Urinals (vs 1.0 gpf)
- 0.25 gpm Public Lavatories with Auto Sensors (vs 0.5 gpm)
- 1.8 gpm Low Flow Showers if applicable (vs 2.5 gpm)
- 1.8 gpm Kitchen and Janitorial Sink Faucets (vs 2.2 gpm)

Concept Development

SUSTAINABILITY CONCEPTS

How will the Desert Discovery Center integrate **Water Efficiency?** (cont.)

By Reducing Water Consumption to Improve Environmental Well-Being

- Captured Rainwater
- Recycled Gray Water

By Monitoring Water Consumption Performance

By Practicing Water Efficient Landscaping

- Drought Tolerant Native Plant Species
- Efficient Irrigation Delivery Systems
- No Potable Water for Landscape Use
- Harvested Rainwater for Landscape Use
- Recycled Graywater for Landscape Use

How will the Desert Discovery Center conserve **Materials & Resources?**

By Selecting Sustainable Materials

- 20% of Materials (Based on Cost) are Comprised of Recycled Material
- 20% of Materials (Based on Cost) are Extracted, Harvested, or Manufactured within 500 Miles
- 2.5% of Materials (Based on Cost) are Renewable Within a 10 Year Cycle
- 50% of Wood Based Products are Certified by the Forestry Stewardship Council

By Practicing Waste Reduction

By Reducing Waste at Its Source

- 75% of Construction Waste Material Recycled and/or Salvaged

By Reusing and Recycling

- 10% of Materials (Based on Cost) are Salvaged, Refurbished or Reused
- Dedicated Area Provided For Collection and Storage of Recyclables

How will the Desert Discovery Center conserve & protect **Energy & Atmosphere?**

By Improving Energy Performance

- Energy Simulation to Verify 40% Improvement Over ASHRAE 90.1-2007 Appendix G*

By Tracking Building Energy Performance Through Design, Commissioning & Monitoring

- Designated Independent Commissioning Authority Verifies Energy System Design and Integration
- Implement Measurement and Verification Plan to Monitor Energy Use for a One Year Period

By Managing Refrigerants to Eliminate CFC's

- Use Natural Refrigerants Such as Carbon Dioxide, Ammonia, or Propane
- Use Low Ozone Depletion HFC Refrigerants

By Using Renewable Energy

- Photo voltaic and Solar Thermal Systems to Offset 15% of Energy Requirements
- Purchase 35% of Building Energy Supply From Green-e Certified Source**

Concept Development

SUSTAINABILITY CONCEPTS

How will the Desert Discovery Center ensure **Indoor Environmental Quality**?

By Managing Air Contaminants

- Smoking Prohibited Within 25 Feet of All Building Entries
- Monitored Ventilation from Outdoor Air
- Monitored Carbon Dioxide Within Interior Spaces
- Outdoor Air Ventilation Rate 30% Above ASHRAE 62.7-2007 Rates
- Implement Indoor Air Quality Management Plan During Construction
- Flush Out Buildings Prior to Occupancy to Remove Construction Pollutants

By Specifying Less Harmful Materials

- Utilize Low VOC Adhesives, Sealants, Paints, Coatings, Flooring & Composite Wood Products
- Remove Contaminants with Entry Walk Systems
- Exhaust to Provide Negative Pressure in Areas Housing Chemicals

By Allowing Occupants to Control Desired Settings

- Individually Controlled Task Lighting and Adjustable Multi-Occupant Lighting
- Optimize Thermal Comfort Systems for Hot and Mild Seasons
- Monitor Thermal Comfort Performance for 12 Months After Occupancy

By Providing Daylight and Views

- Document 25fc Daylight Illumination for 95% of Occupied Spaces
- Provide Exterior View Between 30"-90" Above Finish Floor For 90% of All Occupied Areas

By Improving Ventilation

- Mechanically Ventilated Interior Spaces
- Manually Ventilated Interior Spaces for Natural Ventilation and Thermal Comfort

How will the Desert Discovery Center propose **Innovation in Design**?

By Proposing Desert Roofscapes

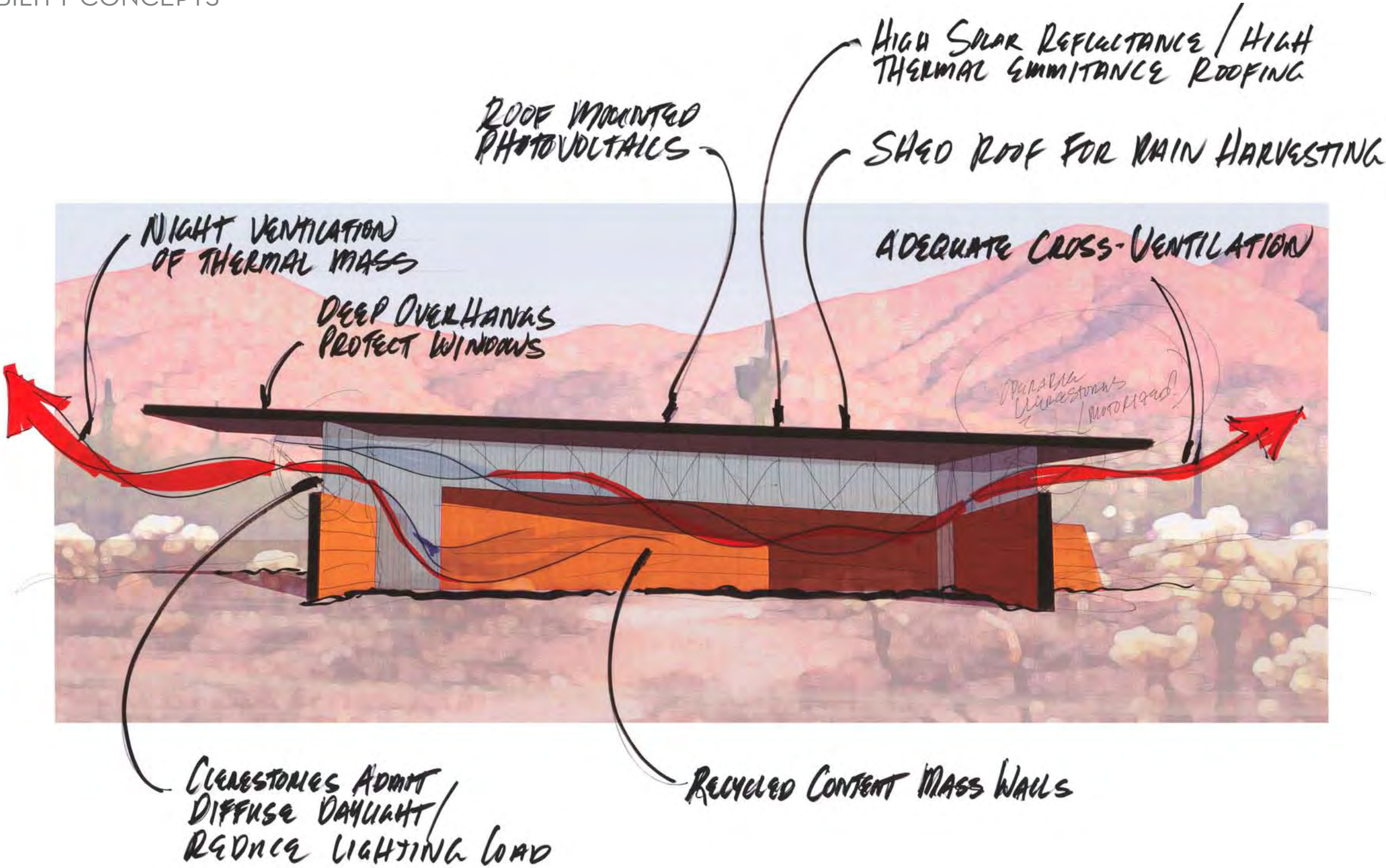
- Shade environments
- Thermal Mass

By Proposing Desert Living Walls

- Tempered shade spaces
- Watered with otherwise unused building 'perspiration'

Concept Development

SUSTAINABILITY CONCEPTS



Concept Development

LANDSCAPE CONCEPTS & THEMES

The visitors' journey through the Desert Discovery Center will be a built experience of a mysterious walk through the desert and its habitats. The following are the most dominant themes of this experiential walk:

Water

The life giving force of the desert is water and this is the underlying theme of the landscape site plan. It shapes the topography, dictates densities and types of vegetation, habitation sites and was/ is the key to desert dwellers ability to survive living in this harsh climate.

- Water harvesting methodology – from simple check dams and grading used for centuries to slow water - to cisterns that hold roof run-off, ac condensate and gray water for re-use in irrigation and judicious water features
- A small pond created by gray water that creates wildlife habitat viewing zones will continue to be studied. Some believe this to be an inappropriate exhibit.

Microclimates

The multitude of outdoor landscape experiences will demonstrate the variations in temperature and sun patterns that determine human comfort at various times of the day and year. Temperature gauges will measure the differences of sheltered vs. exposed spaces and the effects of different surfaces and plant material make to create habitable spaces. The effects of microclimate will also be demonstrated with the plant communities that thrive in different conditions.

Adaptation

The characteristics of desert plants will demonstrate how Sonoran desert plants have adapted to harsh light and temperature conditions. Each plant will be accompanied by descriptions of the traits that allow for their survival and humans will take away potential ideas for human survival from these examples.

Landscape architectural features such as living walls, shaded space, changes in grade, breezes and water harvesting structures will also show human and architectural ways of adaptation for the urban desert dweller.

Plant Biomes

Biomes of the bajada, desert ephemeral arroyo and desert riparian will be demonstrated through created and existing landscape that exemplify these habitats.

Animal Habitats

The nests and homes of desert birds, reptiles and mammals will be demonstrated through larger than life examples built into the sunken living walls of the outdoor space at the children's outdoor play area. These will align with the 'Hidden Worlds' exhibits and be an interpretive and experiential play habitat for children. Kids will see first hand what it is like to sleep in a fox hole and a hummingbird nest and a coyote den to name a few.

Senses of the Desert

The journey through the DDC will convey the multi-sensory experience of the desert. From the smell of creosote to the vibrant flame red living walls of 'Chuparosa Alley' the visitor will be immersed into a desert experience that awakens all of the senses. The entire landscape will be an explosion of native color and texture and shelter with fragrances only found in the desert that identifies this unique place in the world.

Ethnobotanical Gardens

This could be a garden that demonstrates humans' use of native plants for their survival.

Concept Development

LANDSCAPE CONCEPTS AND THEMES

Landscape Themes

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- Water harvesting methodology - from simple check dams and grading used for centuries to slow water - to systems that hold rain run-off, or condensate and gray water for re-use in irrigation and judicious water features
- A small pond created by gray water that creates wildlife habitat viewing zone #1

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Ethnobotanical Gardens

This could be a garden that demonstrates humans' use of native plants for their survival. (The DDC has one of these already - may not want to repeat).

- | | |
|-----------------------------------|-------------------------------|
| A Children orientation | L Amphitheatre |
| B Bus drop off | M Service |
| C Stone check dam wall | N Living wall |
| D Entry paving | O Children's nature play area |
| E Entry kiosk | P Experiential play habitat |
| F Stabilized dg court | Q Rock climbing wall |
| G Condensate mirror water feature | R Outdoor classroom |
| H Overlook | S Water trail |
| I Dining terrace | T Desert sensory garden |
| J Arroyo | U Bridge |
| K Ramp | |

desert discovery center
scottsdale, arizona
conceptual landscape plan
1" = 40'



landscape architecture

28 MAY 2018

Ten Eyck

Concept Development

PHASING AND EXPANSION

The study team believes strongly that for the DDC to create the kind of media attention and initial draw to the public that it should be built out entirely as currently conceptualized in the initial phase. The various component of this are all interlinked and even though this is a multiple pavilion project no one piece of it can be considered without the other. Building the DDC in a smaller form or phased should not be considered unless the initial program is completely rethought and the business model becomes based less on a destination attraction and more as a visitor center.

Should the DDC be successful as the survey and focus groups lead us to believe then the expansion of the facility is a clear probability. The site plan and floor plan concept give many different options for expansion in many different directions. While the overall plan and program currently seems to be conceptually complete as time goes on elements of it may prove to be more attractive to visitors or some unexpected event may occur that would give reason for expansion. It is clear that any expansion needs to be considered carefully so as to not overwhelm the Preserve and be designed to be as integrated to the desert as this current concept and the existing Gateway is.