



# Proposal for Design Services for Outdoor Classroom at Grayhawk Elementary School

Prepared for: Grayhawk Elementary School, 7525 E. Grayhawk Dr., Scottsdale, AZ 85255

Prepared by:

MRT Design LLC

340 East Palm Ln. 304

Phoenix, AZ 85004

602-667-9098





Friday, April 9, 2021

Grayhawk Elementary School  
7525 E. Grayhawk Dr.  
Scottsdale, AZ 85255

RE: **Design Services for Outdoor Classroom at Grayhawk Elementary School**

Dear Selection Committee members,

**MRT Design LLC** has successfully completed numerous design projects similar to your proposed Grayhawk Elementary School Outdoor Classroom project. We pride ourselves on being a firm who provides quality results, promptly and with great customer service. We are excited for the opportunity to work with the Grayhawk Elementary School and hope you will entrust us with this project. In reviewing our information, we hope you see:

- Our staff and Consultants have special expertise in designing shading and sustainable spaces specifically in classroom/teaching settings. We share your vision for this space to be a multipurpose educational tool that will enhance your **“Core Knowledge” approach** to education.
- We are committed to design your project **within your available budget**, and specify materials and systems so the operation of the space will be **low cost and low maintenance** in the long run.
- We are committed to listen and work with you to ensure you have complete functional space that can be accomplished in line with your schedule.
- We endeavor to complete an exemplary project that will be **an illustration of education in a sustainable environment**, and publish it as a model of a resource for the Core Knowledge approach.

Thank you for considering MRT. I hope our response conveys to you our genuine interest and commitment to serve the Grayhawk Elementary School. If you are looking for someone who will take responsibility for your projects with the same interest and personal commitment as you do, then you want MRT. **There is no one who will work harder for your success.**

Respectfully,

Akram Rosheidat, RA, LEED® AP, Managing Member  
akram@mrtdesignllc.com

# Outdoor Spaces



## EARLY CHILDHOOD EDUCATION

### TACTILE LEARNING

A child seeks sensorily input. Children learn most effectively when put in a situation where they are able to touch objects and experience sensations at a personal level. By creating haptic sequences throughout a learning space or throughout a lesson plan, children are able to have a hands-on experience with the world they learn in. Children learn more when they are able to touch, see, taste, and smell their surroundings.

### SPATIAL RELATIONSHIP

The idea of varying sizes and shapes of surroundings can be a challenge for young children to comprehend. By providing areas only a child can relate to, i.e. small crawl spaces, cubbies, and larger group spaces, the ability to comprehend changes in spatial relationships is encouraged. A child seeks regulation of movement and order.

### CONNECTIVITY

Providing children with both intimate and group gathering spaces affords them the opportunity to establish social relationships with their peers and with adults. By keeping learning spaces on a smaller scale, a scale in which a child feels comfortable, children are able to connect with the people and experiences occurring around them. Montessori and Reggio Emilia teaching approaches stress the unity of all beings and the interdependence in nature.

### FREEDOM OF EXPLORATION

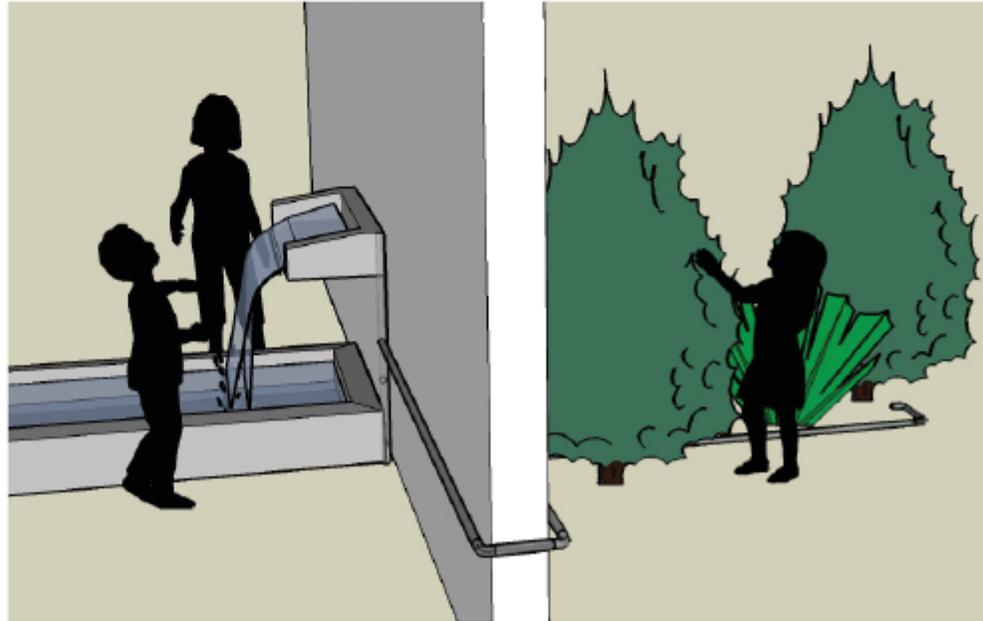
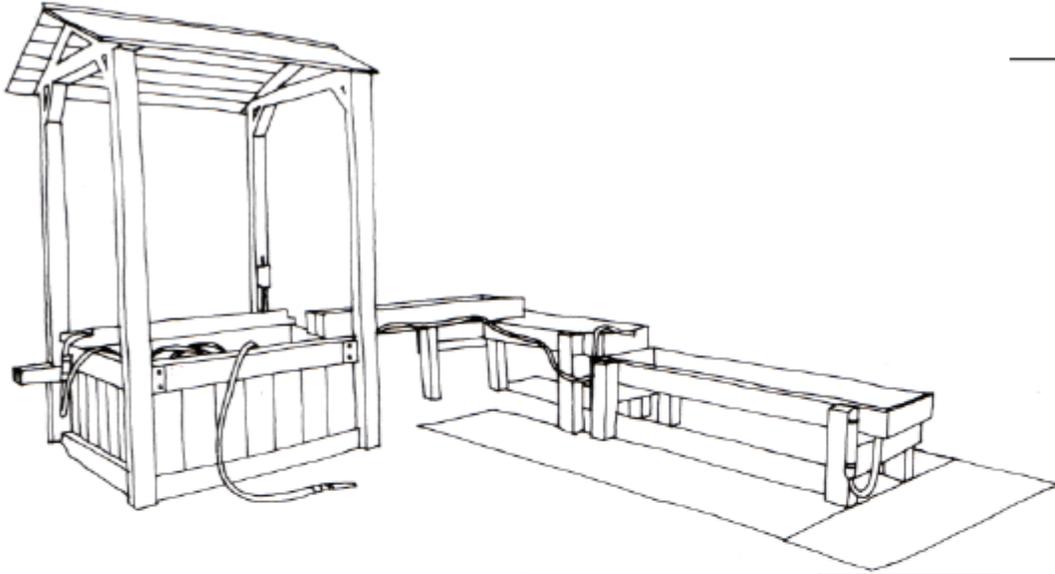
A child's earliest lessons are discovered through their ability to explore the world around them. By allowing them the freedom to discover new experiences on their own, a child develops at a very young age, the ability to explore new surroundings with a healthy curiosity of the unknown. A child seeks freedom to choose their own activities without interruption. Freedom of exploration allows for haptic learning.

### HUMAN THERMAL COMFORT

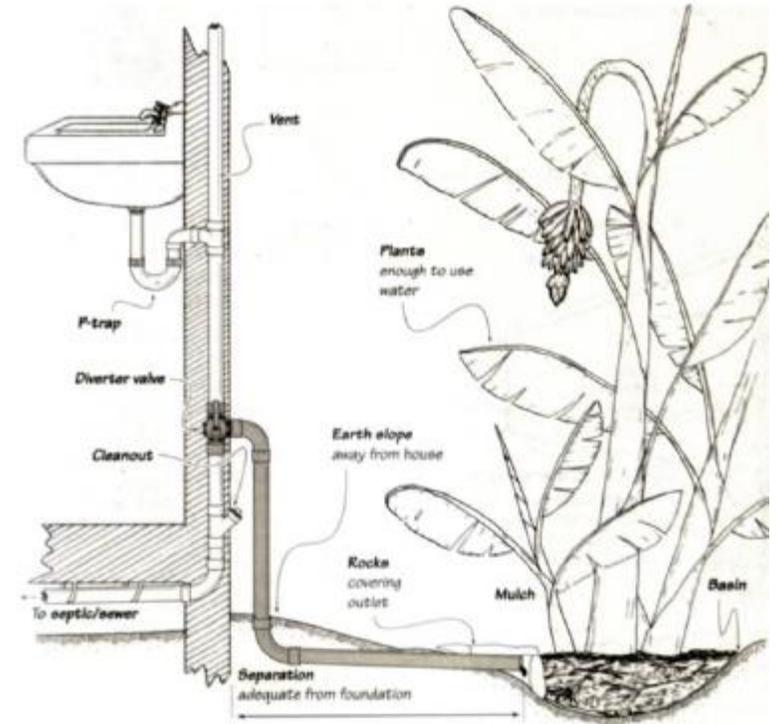
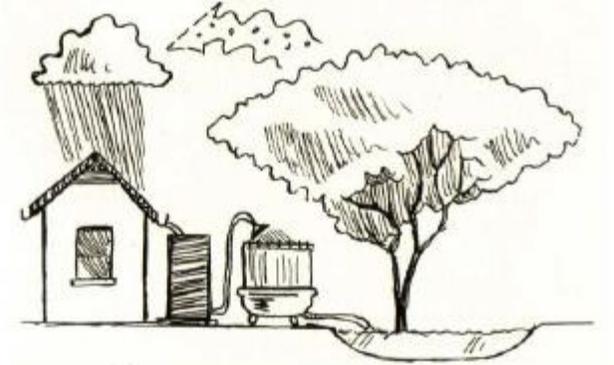
Because a child's early learning experience is generally of a tactile or haptic nature, it is important to provide opportunities for them to discover the ideas behind human comfort at this age. A child is aware of surfaces that are hot or cold, bright or dim, and to give them control over these sensations instills in them a stronger grasp of the idea of human comfort.



## WATER EFFICIENCY



## GREY WATER REUSE



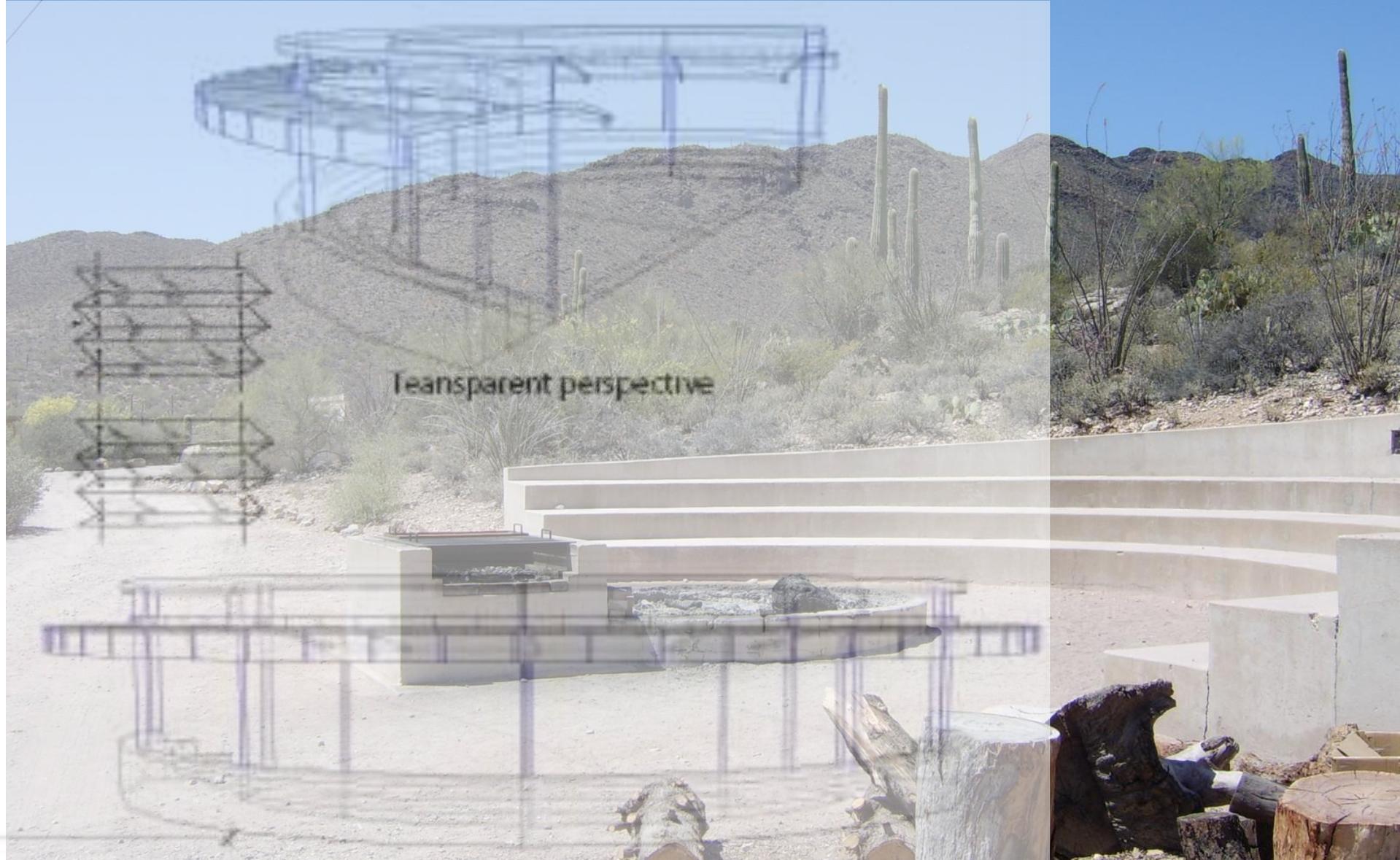
# Environmental Education



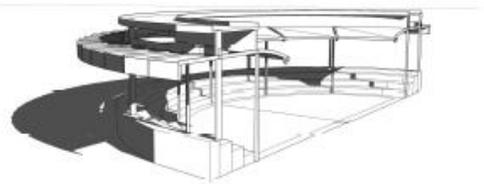


## Skin Experience of Shading

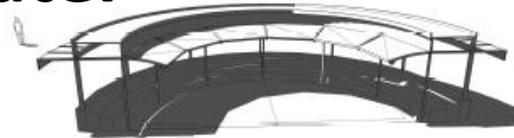
# Cooper Center for Environmental Learning, Tucson Outdoor Amphitheater



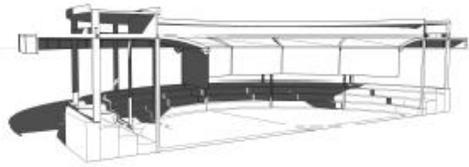
# Cooper Center for Environmental Learning, Tucson Outdoor Amphitheater



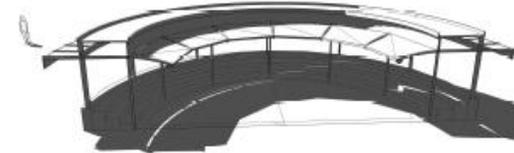
Spring Equinox 9:00 am



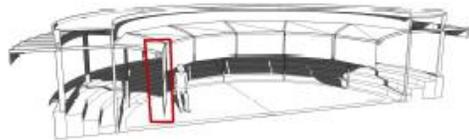
Spring Equinox 1:30 pm



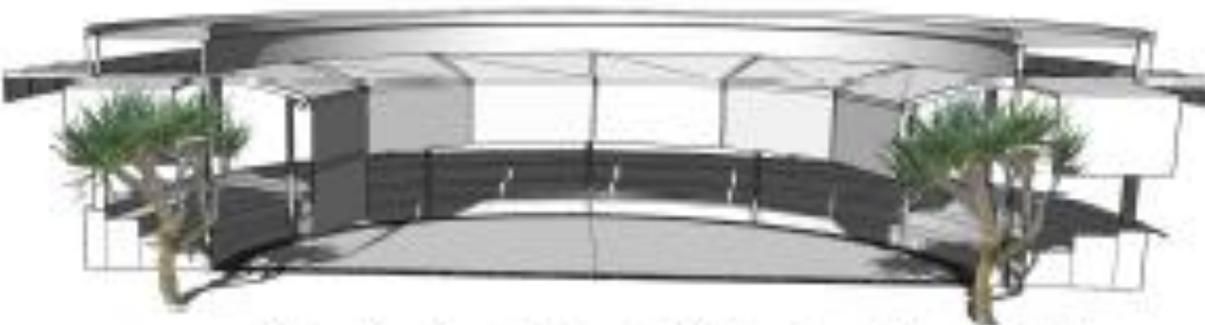
Spring Equinox 9:00 am screen down



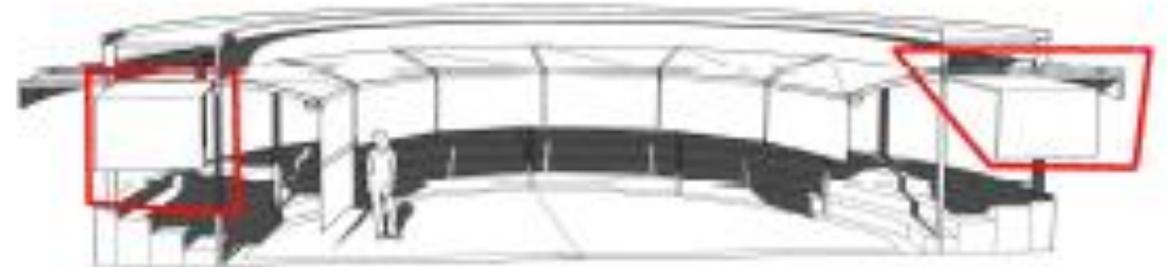
Spring Equinox 2:30 pm



Spring Equinox 2:30 pm



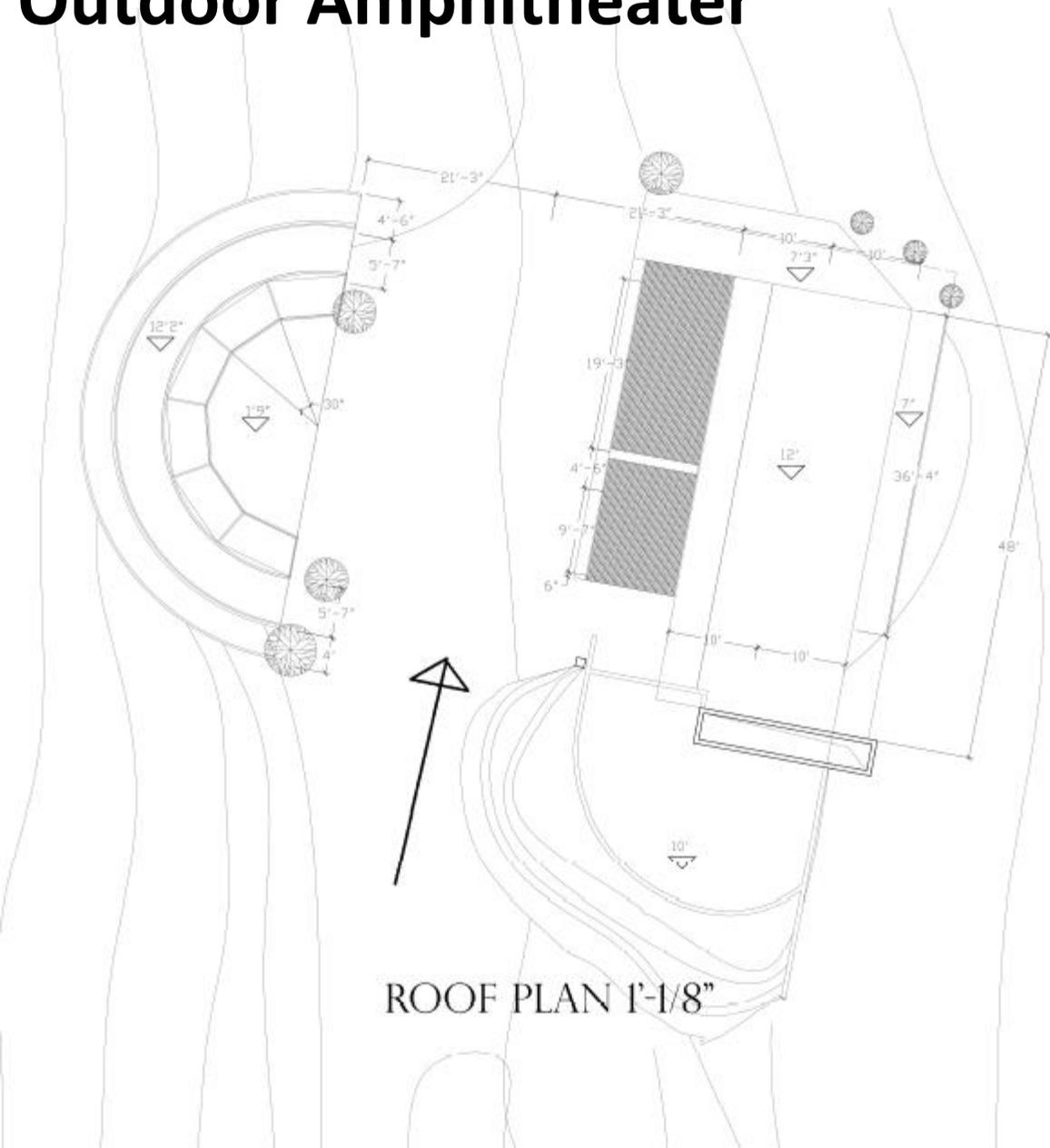
Spring Equinox 9:00 am: Both horizontal and vertical shading screen and tree added as well



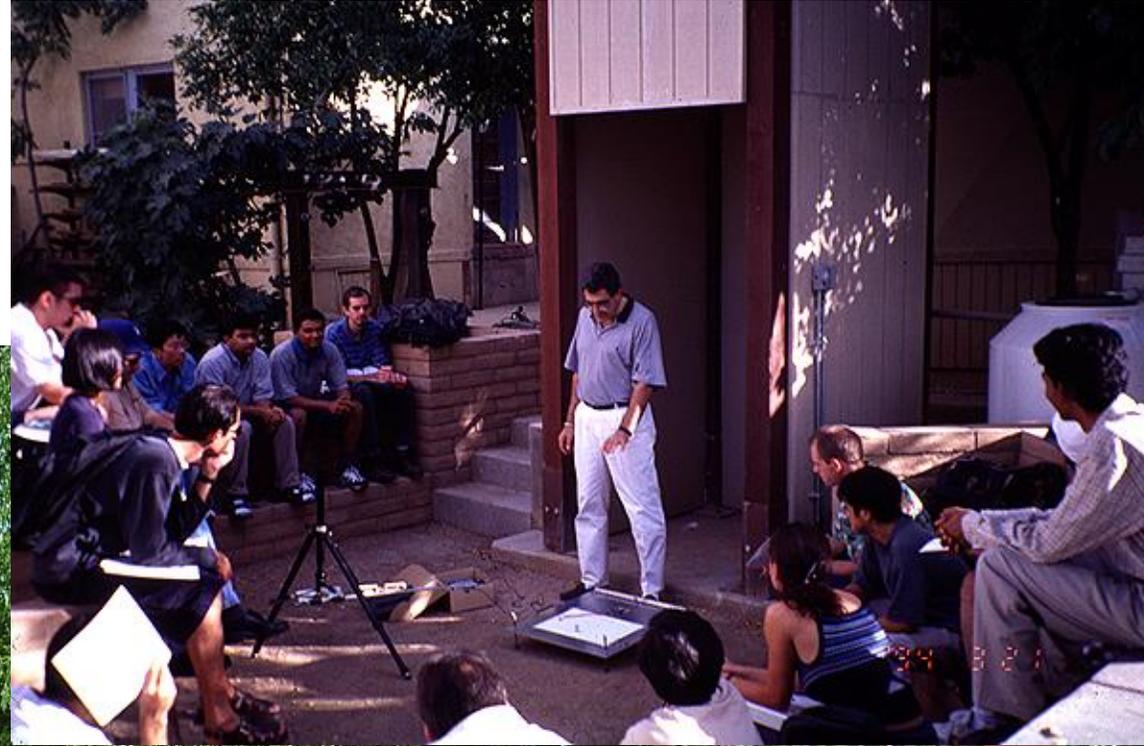
Spring Equinox 9:00 am: Both horizontal and vertical shading screen added. It works well, but leave some corners exposed.

# Cooper Center for Environmental Learning, Tucson

## Outdoor Amphitheater

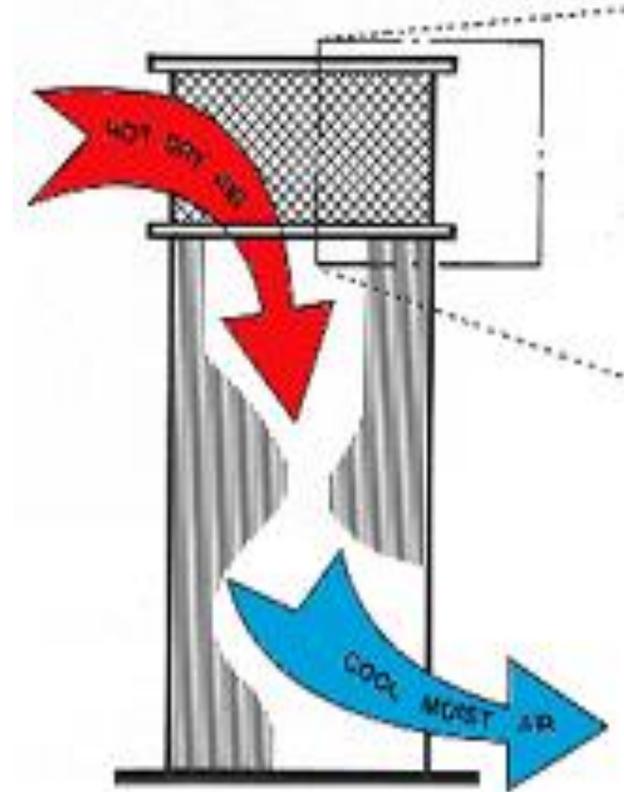


# House Energy Doctor outdoor classroom the University of Arizona

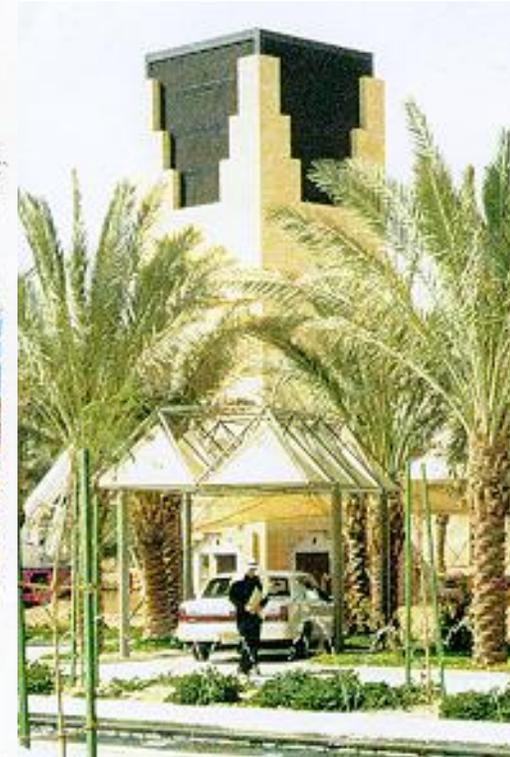
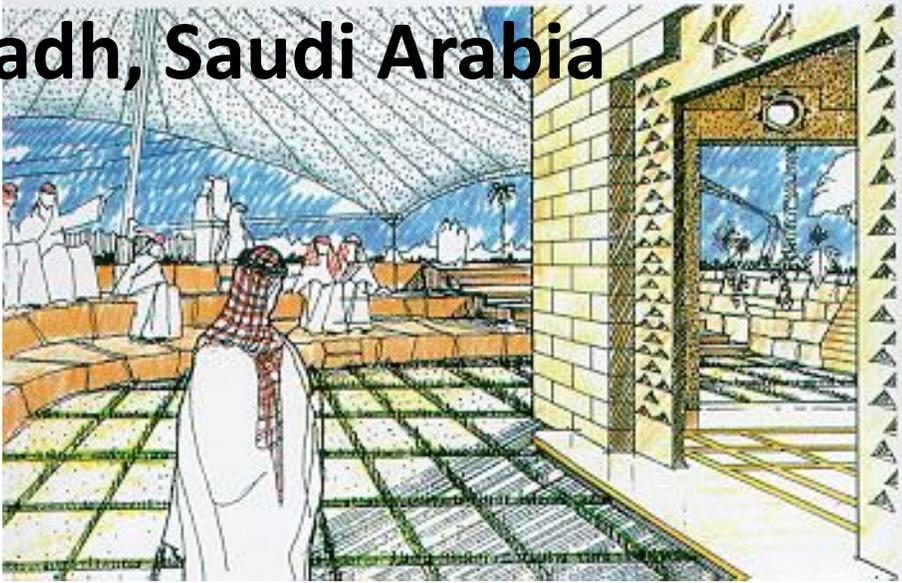


# Environmental Research Laboratory

## Outdoor Thermal Comfort



# MOMRA Outdoor Human Thermal Comfort Riyadh, Saudi Arabia



# Design Integration

Performance of cool towers and air flow rate depends heavily on the following parameters:

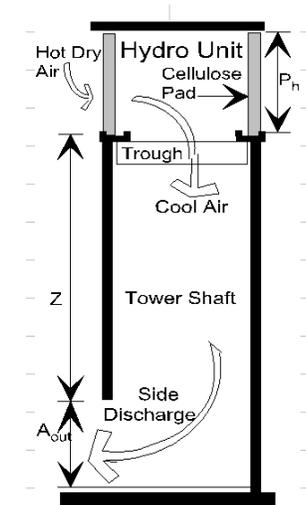
- 1. Climate:** Dryness of air (wet-bulb depression), wind, and air pressure.
- 2. Tower Configuration:** Turret geometry, Pad area and thickness, Effective height ( $z$ ), shaft cross-section, Discharge mode and area, and the resistance to air flow in (a) the cooling device, (b) the tower shaft, and (c) the Structure (if any) into which it discharges.
- 3. Design Integration:** Space size, shading, and the Cool pit



Tower + Shading structure + Cool pit at MOMRA, Riyadh, SA



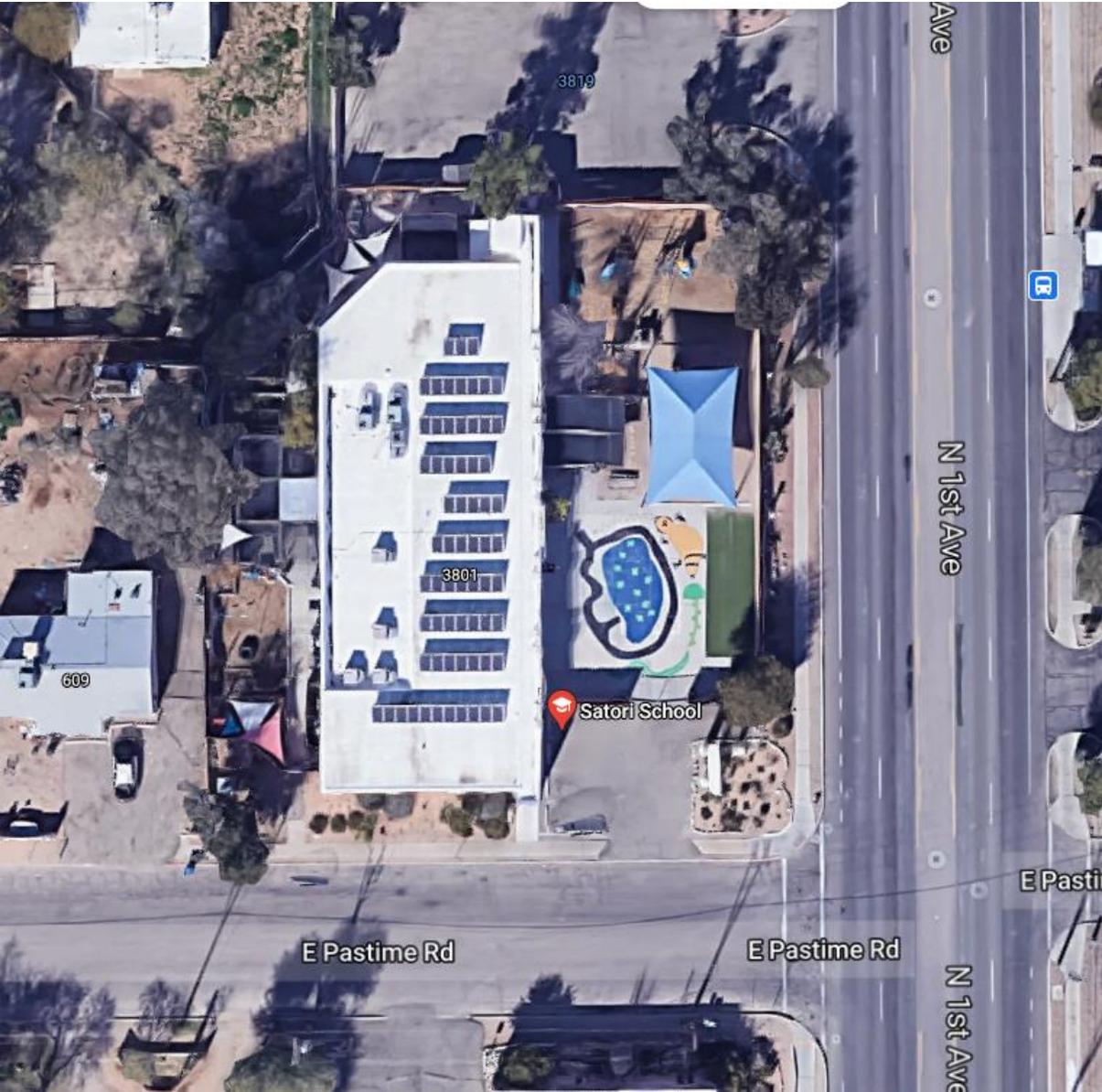
Tower + Shading structure + Cool pit at the U of A, CALA, Tucson, Arizona



# Satori Elementary School, Tucson

3801 N 1<sup>st</sup> Ave. Tucson AZ, 85719

Satorischool.org





## Maricopa County Parks and Recreation Department Visitor Center Prototype

### The Experience:

This LEED accredited building is a prototype that serves as a visitor center in multiple Maricopa County Parks' locations. The goals for Maricopa County Parks Department (MCPD), were to minimize the disturbance of this natural untouched landscape, maximize the design's compatibility with its surroundings and set an example for sustainable design of educational facilities within the Maricopa County Parks environment.

Each part of the building was carefully planned and designed from the overall site selection to the type of fixtures and furniture used. The sites for each building were carefully selected to avoid disturbing natural undeveloped land, preserve wildlife corridors, and salvage native plants. The main roof surface of each building is designed as an extensive garden roof system. The "desert roof" is planted sparingly and only with native species of plants. This will not only visually integrate the building into its surrounding, but add a significant insulative value against heat gain in the summer and heat loss in the winter. The vegetative roof also retains more rainwater than a typical flat roof surface, reducing storm water runoff on the site. Additionally, a solar power generating panel assembly was designed to be installed on the flat roof above the

staff offices to help offset the energy consumption of the building and reduce its carbon emissions.

The building is designed as a "path" to welcome the visitors into the park. The two entry access points, as well as the central skylight, are fully glazed for daylight admission but situated behind deep shade canopies to prevent the access of direct sun in the summer yet allowing it in the winter. The floor of the building is an exposed concrete slab which, along with the 20" thick masonry wall, act as thermal mass. In the winter, when the low sun angle hits it, it absorbs and reradiates the heat into the space, while in the summer, when it is screened from the high sun angle, it stays cool aiding in the comfort of the space. Special care was taken in selecting regional materials, rapidly renewable materials and materials with high recycled content for all finishes and furniture.



LEED for New Construction



### Why it's always personal with **MRT**:

**Akram** - We have been working with the Maricopa County Parks and Recreation Department for a number of years on numerous maintenance and renovation projects. We shared their philosophy of sustainable design and sensitivity in building within the Parks' natural Sonoran desert environment. When the County was funded for designing their prototype Nature Centers, we were excited to design a sustainable building prototype that would be ecologically nestled into the parks' environment. This was the culmination of numerous discussions and dreams between us and the County Parks' staff and was truly a labor of love. We continued to work with MCPRD after the centers opened and helped them in achieving LEED certification.





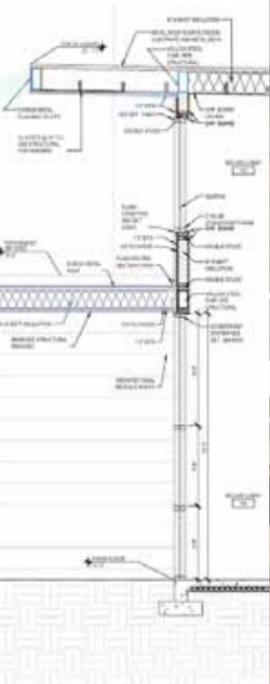
The project was part of a 2 phase project. The first consisting of a 25 Classroom and Administration Quarter building. The second is an 18,000 SF Gymnasium building with regulation size basketball, and volleyball courts. The project timeline was 6 months from schematic to certificate of operation. Plans include a two-story, 38,000-square-foot facility with separate wings for the high school and middle school, along with science labs, a fine arts lab and a media lab. In addition, the MRT team has worked closely with school administrators and contractors to ensure the project timeline and achieve the desired proposal.



MRT is at the forefront of technology utilizing cutting-edge equipment such as Virtual Reality to revolutionize the design process. Ensuring that the client's vision of the project matches the design. This provides a unique opportunity of effective collaboration between all engaged parties and gives a chance to make changes through a lifelike sense of perspective.

Size: 38,000 sf  
Cost: \$ 4,700,000

- Design/Build
- Administration Quarters
- 25 Classrooms
- Secure Lobby
- Climate Cautious Design Treatments
- Landscape design
- Outdoor Spaces
- Interior Design





The project was part of Phase IV initiated by the United States Agency for International Development (USAID)/Jordan. The entire program was a four-year Jordan School Construction and Rehabilitation Project (JSP) to support efforts to enhance the learning environment and increase access to primary and secondary education in remote areas of the region. JSP's primary focus has been to reduce overcrowding in public schools, replace rented and double-shifted schools, and provide safe and more suitable school environments. Other objectives of the JSP included providing capacity for improved enrollment rates for basic education for the growing population and to improve the design and quality of educational architecture so as to enhance the relationship of the students with their place of learning. All four schools in the Northern Package were all female schools. Although Jordan has eliminated the gender gap in education enrollment, the latest statistics show that in 2009 there was a higher enrollment rate of females than males in primary and secondary education by 4.6%. The overall program showed that 64% of the program's schools were all female schools, while the remaining 36% were all male.



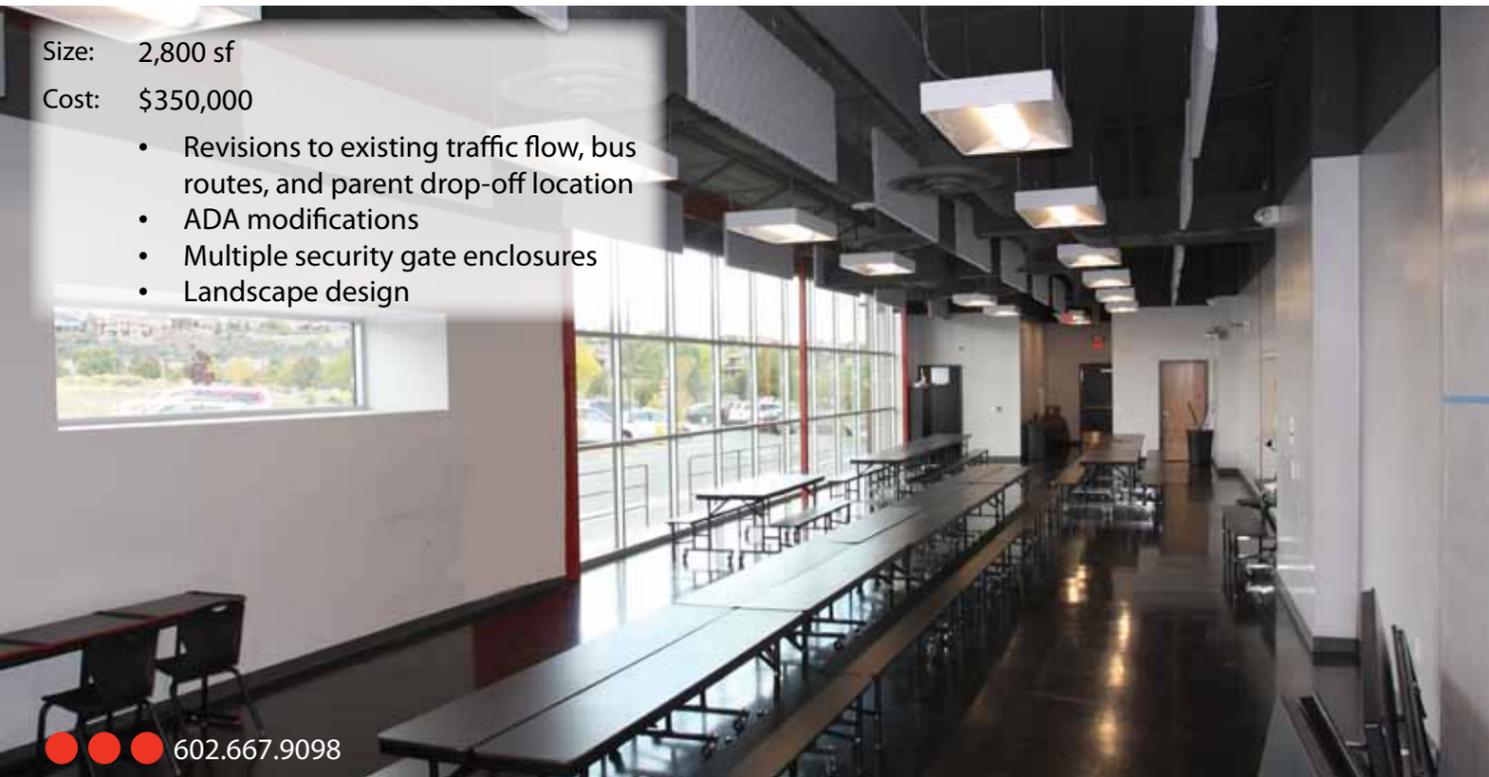
## BASIS - Prescott, AZ

MRT designed and created construction documents for a tenant improvement and addition to an existing BASIS school in Prescott, Arizona. This consisted of a new multi-purpose room for the high school, included an open layout, restrooms, and storage areas. On the exterior, an enclosed outdoor gathering space was designed. In addition, a few existing classrooms were modified into kindergarten rooms. A restroom was added, hallway cubbies, and an adjacent exterior play area.



## Why it's always personal with MRT:

**Akram** - MRT is a woman owned small business, therefore we instantly felt a connection with this project. We strive to empower women locally, and now we had the chance to make a difference in young girl's lives across the world. I haven't been to Jordan in the past 30 years except for family visits and a brief sabbatical spent teaching at the University in Northern Jordan. It was an opportunity to see and spend time with family and friends, while working on a large significant project directly benefiting the people of Jordan. The work was very rewarding, spending most of the time in the very villages the program was targeting. When the schools opened, it was great to feel the happiness and gratitude of the people.



Size: 2,800 sf  
Cost: \$350,000

- Revisions to existing traffic flow, bus routes, and parent drop-off location
- ADA modifications
- Multiple security gate enclosures
- Landscape design



## Arizona Cultural Academy

Designed and supervised the construction of the entire K-12 school in a phased program over 15 years. The total square footage of all buildings on the campus is just over 64,000 sf.

Phase IV, a two-story, 6,000 sf building dedicated to high school student classrooms & library center has recently completed construction.

Phase IV  
Size: 6,000 sf  
Cost: \$850,000

### Full Campus Program:

- Day-care center & pre-school
- Administration/support facilities
- Library/resource center
- Computer & science labs
- Student cafeteria and kitchen
- Three separate playgrounds
- Gymnasium (17,000 sf)
- Athletic fields & courts





## Why MRT?

### UNDERSTANDS THE ISSUES

- We understand the challenges/expectations of the project.
- Cohesive and comprehensive approach and a design responsive to all the programming issues.
- Detailed scheduling and tracking to complete the project on time, within budget and with minimal disruption to school operations.

### BEST VALUE

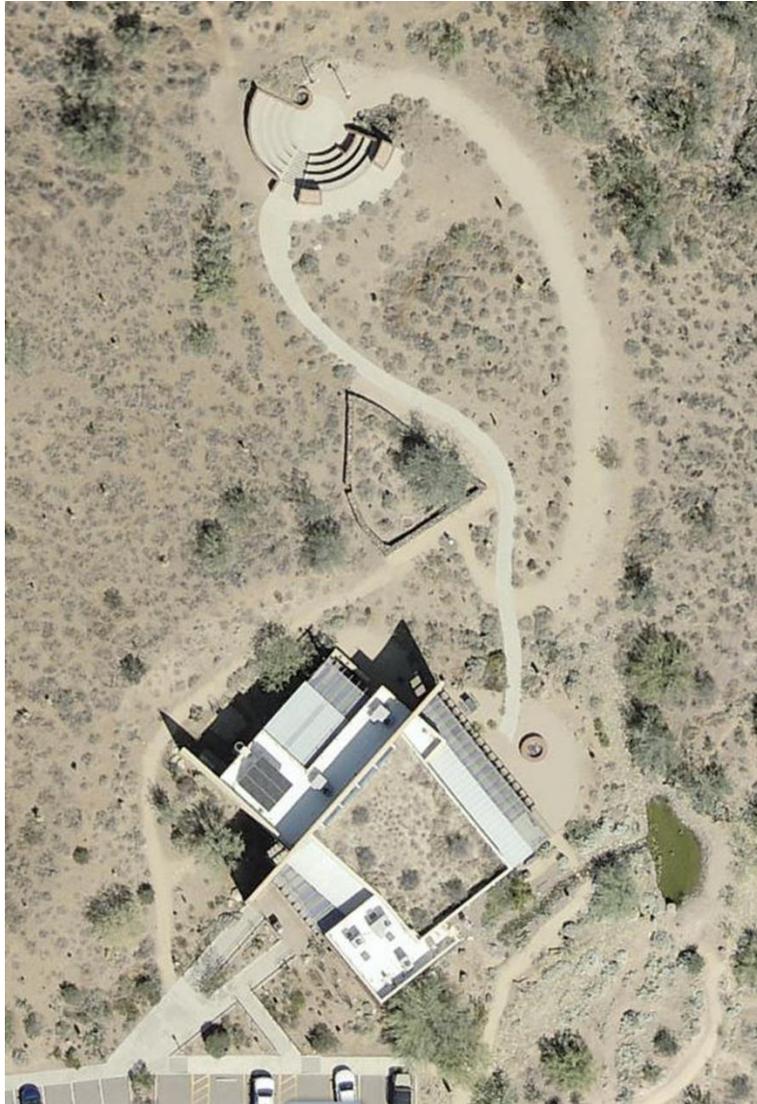
- Deep practical and academic expertise in designing shading and sustainable spaces specifically for classroom/teaching settings.
- Research all items which may impact the project, listen to the School and the contractor, and look for alternatives.
- Regular and on-going value engineering review in collaboration with the contractor with measurable financial analysis.
- Organizational structure ensures success is not dependent upon one person.

### PROVEN TRACK RECORD

- No excuses on time performance.
- Creative solutions to budget constraints.

# APPENDIX

## STAFF RESUMES



MC Cave Creek Park Visitor Center and Amphitheater

# akram rosheidat ●●●

Principal, Registered Architect, LEED AP



*Registered Architect, Arizona No. 27908  
LEED® Accredited Professional/2004*

## Education

*Arizona State University  
Ph.D, College of Architecture & Environmental Design, 2014*

*University of Arizona  
Master of Architecture, 1989*

*University of Tennessee  
Bachelor of Architecture, 1988*

## Professional Experience

*MRT Design LLC  
September 2008 - Present  
Principal/Architect*

*TRK Architecture & Facilities Mgmt  
1992-2008  
Principal/Architect*

Akram is a principal and the lead architect for MRT. He has over 20 years experience in architectural project management for both public and private clients. Whether designing new facilities or renovating existing buildings his focus is to produce design options that provide a balance between the initial construction costs and long-term operating costs. Akram is an expert in performing the computer simulation studies required to obtain LEED credits. Akram has experience with a variety of construction delivery methods.

## Recent Experience

- *Arizona State Capitol 1938 Addition. Current Project for Legislative Council, Prime Architectural Consultant*

Role: Design, Project Management, Programming/Master Planning, Systems Assessment, Facility Condition Assessment, ADA Compliance, Interior Space Planning

Project Owner: Michael Braun, (602) 926-4236, mbraun@azleg.gov

Original contract value: Currently in design process, estimated 1.5 million.

Final Contract value: TBD

Start/completion dates: anticipated June-July 2020

- *Arizona Capitol Museum Elevator Renovation. Rehabilitation of the Capitol Elevator per updated code, and addressing State Elevator Inspectors requests/corrections.*

Role: Design, Project Management, Systems Assessment, Facility Condition Assessment, ADA Compliance, Construction Administration

Project Owner: ADOA, Victoria Edelhoff, PM, (602) 542-0074, victoria.edelhoff@azdoa.gov

Original contract value: \$355,000.

Final Contract value: \$355,000

Start/completion dates: November 2017 - July 2018

- *Maricopa County Parks & Recreation Department Visitor Center, Vulture Mountains  
4,896 sf, New Parks Visitor Center, modifying a LEED certified prototype designed and built in 2010 on various sites in the Maricopa County Parks system. Phoenix, AZ, Project Manager*

Role: Design, Project Management, Community Parks Design, Site Improvements, LEED Consulting, Programming/Master Planning, ADA Compliance, Interior Space Planning, Construction Administration

Project Owner: Ken Vonderscher, MCPRD, Planning and Development Manager, (602) 506-9503, KennethVonderscher@mail.maricopa.gov

Original contract value: The planned initial project budget is \$2 million.

Start/completion dates: Design completion in 2020, Anticipated completion 2021.

# nader v. chalfoun ●●●

Director of Environmental Design



*Registered Environmental Consultant,  
Syndicate of Egyptian Engineers, No.702/2  
Registered Architect, Syndicate of Egyptian  
Engineers, No. 6884/2*

## **Education**

*University of Arizona  
Ph.D Arid Lands Resource Science / 1989*

*University of Arizona  
M. Arch., College of Architecture / 1985*

*St. Étienne University, France  
Diplomat, Solar Studies / 1978*

## **Professional Experience**

*MRT Design LLC*

*2019 - Present*

*Director of Environmental Design*

*College of Architecture, Planning and Landscape  
Architecture, University of Arizona*

*1985 - 2019*

*Professor of Architecture, Director: House  
Energy Doctor program*

Dr. Nader Chalfoun, started at MRT Design LLC in 2019 after a long and distinguished career as a Professor at the University of Arizona as a Professor of Architecture and Environmental Sciences at the College of Architecture, Planning, and Landscape Architecture. He received his Ph.D. from the University of Arizona's Arid Lands Resource Sciences program in 1989, Master of Architecture from the University of Arizona's College of Architecture in 1985, and a Bachelor of Architecture from Cairo University College of Engineering, Architecture Department in 1972. He is a LEED® Accredited professional active in the U.S. Green Building Council. He is heading a number of project design teams in the office.

## **Recent Experience**

- *Arizona State Capitol 1938 Addition. Current Project for Legislative Council, Prime Architectural Consultant*

Role: Design, Project Management, Programming/Master Planning, Systems Assessment, Facility Condition Assessment, ADA Compliance, Interior Space Planning

Project Owner: Michael Braun, (602) 926-4236, mbraun@azleg.gov

Original contract value: Currently in design process, estimated 1.5 million.

Final Contract value: TBD

Start/completion dates: anticipated June-July 2020

# jim koehler ●●●

Director of Architecture, Registered Architect, LEED AP/BD+C



*Registered Architect, Arizona No. 36568  
LEED® Accredited Professional/BD+C*

## **Education**

*University of Nebraska  
Bachelor of Science, Architectural Studies  
Environmental Design / 1994*

## **Professional Experience**

*MRT Design LLC  
May 2015 - Present  
Director of Architecture*

*ADM Group  
Tempe, AZ  
May 2012 - April 2015  
Architect*

*Smith Group  
Phoenix, AZ  
April 2008 - April 2012  
Architect*

Jim is the Director of Architecture at MRT with over 20 years of experience. He is a LEED Accredited Professional in Building Design and Construction. Jim has extensive experience in a variety of building sizes, types and complexity. Examples include education, corporate office, mixed use, laboratories, and healthcare facilities. His forte is delivering a design that is efficient and cost effective. He is motivated by providing excellent customer service and delivering an end product that meets our clients needs.

## **Recent Experience**

- *Caurus Academy, K-12, School, Phoenix, AZ, Architect*

*Role: New classroom and Gym buildings. Design, Project Management, Programming/Master Planning, ADA Compliance, Interior Space Planning, Construction Administration*

*Project Owner: Caurus Academy. Reference: Keith Sabia, Willmeng, (480) 466-2181, ksabia@willmeng.com  
Original contract value: \$12,000,000.00 Final Contract value: \$12,000,000.00*

*Start/completion dates: Start 2019, Completed August 2019 (projected).*

- *Maricopa County Sheriff's Office - Forensic Lab Remodel. The scope included the retro-fit of an existing single story office building into a state of the art forensic crime lab.*

*Role: Design, Project Management, Programming/Master Planning, ADA Compliance, Interior Space Planning, Construction Administration*

*Project Owner: Maricopa County Sheriff's Office, Tom Brody, MCSO, (602) 506-1141  
Original contract value: \$2.7-\$2.9m, Final Contract value: \$2.9m*

*Start/completion dates: November 2010-April 2011*

- *Arizona Water Company Office, 2,500 sf, New office building, Completed November 2016, Oracle, AZ, Architect*

*Role: Design, Project Management, Programming/Master Planning, ADA Compliance, Interior Space Planning, Construction Administration*

*Project Owner: Richard Hacker, Arizona Water Company, (602) 240-6860, rhacker@azwater.com  
Original contract value: \$500,000 Final Contract value: \$500,000.00*

*Start/completion dates: Start 2015, Completed 2016.*

# kate fiegen ● ● ●

Architect



*Registered Architect, Arizona No. 70604  
NCARB AXP (IDP)*

## **Education**

*University of Arizona  
Bachelor of Architecture / 2008*

## **Professional Experience**

*MRT Design LLC  
October 2016 - Present  
Architect*

*MWK Architects  
Phoenix, AZ  
October 2014 - October 2016  
CADD Technician / Job Captain*

*Allied Machine Works  
Phoenix, AZ  
July 2012-October 2016  
CADD Technician*

Kate is an Architect working with clients such as Honeywell, the Arizona Water Company, and various other private clients in creating schematic, design development and construction documents for various projects. In 2008, she graduated with a B.Arch from UofA. Kate has worked in the design industry for over 12 years and is skilled in production, project coordination, technical detailing, construction documents, and architectural rendering.

## **Recent Experience**

- *Honeywell Project Arkan, Construction fit-up relocating factory equipment into an existing industrial plant building + 200k SF. Completion February 2020, Phoenix AZ, Job Captain.*
- *Honeywell Project Greyhawk, Industrial equipment installation, 50k SF. Completion March 2020, Phoenix AZ, Job Captain*
- *Oasis Raspado TI, 1,351 SF, completed March 2018, Phoenix, AZ, Job Captain*
- *Planet Fitness Addition, 1,600 SF, Completed May 2018, Phoenix, AZ, Job Captain*
- *Family Dollar Relocation, 8,000 SF, Completed November 2018, Phoenix, AZ, Job Captain*
- *Chad Jewell Warehouse, 1,600 SF, Completed February 2018, Phoenix, AZ, Job Captain*
- *Medrisk Training Room, 700 SF, Completed May 2017, Phoenix, AZ, Job Captain*
- *Copperpoint 14th Floor Furniture, Phoenix, AZ, 3D rendering, CADD Technician*
- *Copperpoint 10th Floor Test Fit, Phoenix, AZ, CADD technician*

# rhoda darius miller ●●●

Architect-in-Training, Job Captain, Interiors



*Architect-In-Training  
NCARB AXP (IDP)*

## **Education**

*Arizona State University  
Master of Architecture / 2012*

*Arizona State University  
Bachelor of Interdisciplinary Studies /  
2006*

## **Professional Experience**

*MRT Design LLC  
September 2014 - Present  
Job Captain*

*AAD: Fitch, Inc  
Scottsdale, AZ  
February 2013 - September 2013  
Job Captain*

*Dream Catchers Planning & Design, LLC  
Mesa, Arizona  
2006-2008  
Drafter & Submittal Facilitator*

Rhoda is an Architect-In-Training, currently pursuing her architectural license. Her years of experience include retail, tenant improvements, and residential design & construction. In 2012, she graduated from the M.Arch program at ASU. She is highly motivated and her passion for design has brought fresh ideas to the MRT Team. Rhoda is responsible for design, construction documents, code research and coordination with consultants and city officials.

## **Recent Experience**

- *AZ Department of Emergency & Military Affairs CNIO Transfer Facility, 12,180 sf, Completed 2016, Benton, AZ, Job Captain*
- *Arizona Water Company Casa Grande TI, 5,600 sf, Expected completion December 2018, Casa Grande, AZ, Job Captain*
- *Honeywell 503 Cafeteria & Courtyard, 1,500 sf, Expected completion July 2018, Phoenix, AZ, Job Captain*
- *Arizona Water Company Miami Globe TI, 1,800 sf, Completed August 2017, Globe, AZ, Job Captain*
- *Arizona Water Company Office, New Build, 2,500 sf, Completed November 2016, Oracle, AZ, Job Captain*
- *Medrisk Tenant Improvement, 17,500 sf, Completed September 2016, Phoenix, AZ, Job Captain*
- *Kinghorn Office & Warehouse, New Build, 7,660 sf, Mesa, AZ, Job Captain*
- *Allison + Partners Expansion, 5,000 sf, Completed April 2015, Scottsdale, AZ, Job Captain*
- *Origami Owl Headquarters Tenant Improvement, 60,000 sf, Completed February 2015, Chandler, AZ, Job Captain*
- *Limited Brands, Victoria Secret, various sf, Complete 2013, Phoenix, AZ, Job Captain*

# miriam lopez ●●●

Architect-in-training



-  
*MRT Design LLC  
2019 - Present  
Job Captain*

*Polytechnic University of Puerto Rico  
Bachelor of Architecture / 2016*

*University of Puerto Rico  
Bachelor in Marketing, Bussines Administration  
2009*

Miriam is an architect-in-training, who joined MRT in May 2019. She has a passion for design, positive attitude; is a creative thinker and detail oriented. She is responsible for design, construction documents, code research and coordination with consultants. Miriam is currently working on residential design and corporate tenant improvement projects.

- *Clariant Design Visitors Center, Tenant Improvement. +5,00 sf. Phoenix, AZ*  
Role: Job Captain  
Start/completion dates: Current Project
- *Culver Street Quadplex, Residential. + sf. Phoenix, AZ*  
Role: Job Captain  
Start/completion dates: Current Project