

# Hardscape Design

A series of horizontal lines in various shades of blue and white, extending across the width of the slide below the title.

# Hardscaping

- The parts of the landscape that are set in 'stone'
- Paths, patios, decks, edging, built-in seating, fire pits, patio covers....



# Hardscaping

- Provides order to the space by providing lines that direct the eye
- Interesting surfaces for light and precipitation to play on





# Design Purpose

- Hard textures contrast with the softness of plants and colors that stand out against bare earth
- The repetition of hardscaping materials and patterns can also provide unity to a space





# Vetting the Client

- Client goals
- Establishing theme
- Establishing budget
- Determine scope of work and expectations

- Apply design theory principles to hardscape
  - Line
  - Form
  - Texture
  - Color





# Function of Hardscape

- Practicality: clean, solid surface to get from one point to another
- Allows for the ease of movement and direction in a space
- Creates a flow of traffic, guideline for use





# Function of Hardscape

- Protects property visitors or residents from elements, such as sun or rain



- Enhances user experience

# Function of Hardscape



- Separates areas in a space such as annual beds from a walkway or other landscaping material



# Function of Hardscape

- An entertaining area
  - Patio
  - Outdoor kitchen and living
  - Play surface





# Function of Hardscape

- Specialty features and amenities





# Function of Hardscape

- Erosion control, water diversion and retention





# Function of Hardscape

- Separate and define spaces
- Provide architectural features in the space







*What is the theme?*

# Theme

- What is the character of the space





# Theme

- What existing materials are used on the site





# Theme

- Are there architectural features from the space or building to incorporate within the design
- Are there natural features that can be enhanced
- How visible is the feature



# Budget

**Comparing driveway costs**

Prices may vary, depending on your location, the size of your driveway and the quality of materials. Adding decorative materials also increases the price. However, these prices represent an average range, according to costhelper.com.

Concrete Pavers:	Brick:	Asphalt:	Concrete:
			
Average cost:	Average cost:	Average cost:	Average cost:
\$1,800 to \$14,500	\$3,000 to \$28,800	\$2,300 to \$10,300	\$3,500 to \$7,000

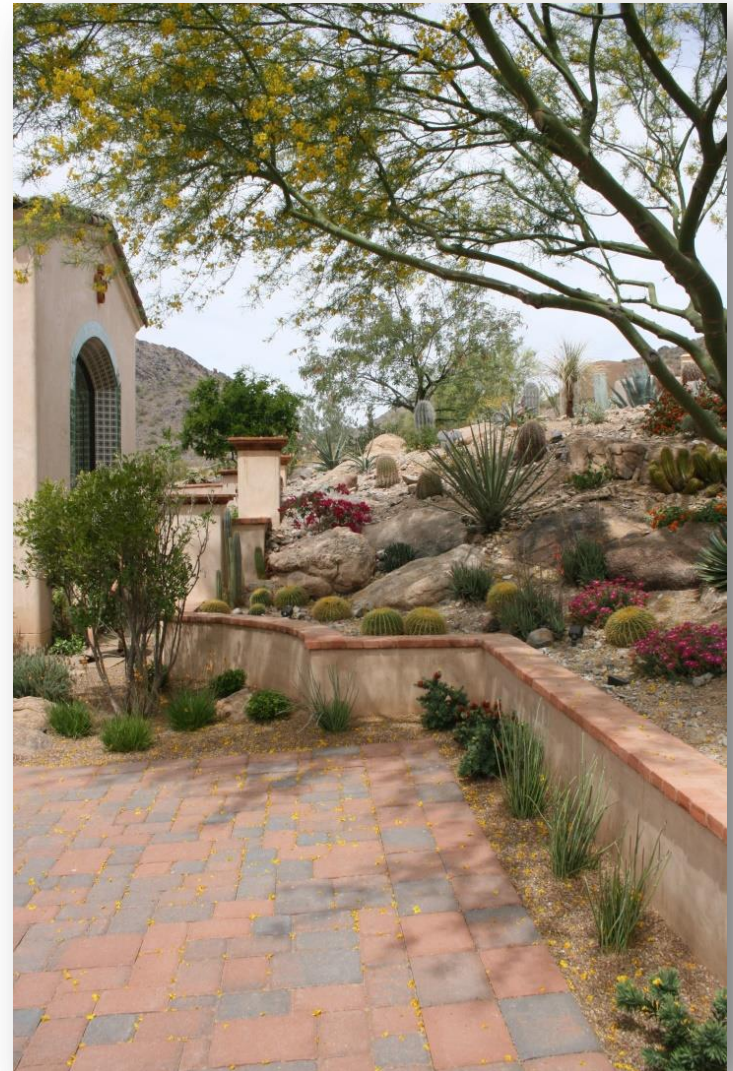


- Is the owner going to pay for the material
- Square footage
- What is the cost of the material



# Design Considerations

- Grading issues
  - Where will the water move?
  - Where will the water collect?
  - Erosion possible?
- Retention, groundwater storage
- Will you require a sump pump



# Landscape Elements

Structures and features in the Landscape



# Outdoor Living

- Patios
  - An extension of the house
  - No longer a backyard feature; front yards are a great option for neighborhood gatherings



# Patio Goals

- Create memories for client
- Increase value of property
- Space for entertaining
- Space for quiet serenity
- Space for utility





# Patio Location

- Close to an entry or as an island in the middle of the yard
- Private patio
  - Place for quite privacy
  - Entertainment
- Public patio
  - Front yard
  - Impromptu social gatherings in neighborhood
  - Waiting area before entry into structure



# Arbors, Trellis, Pergolas & Ramadas

- Adds vertical height, dimension and beauty to the landscape





# Arbors



- Arbors generally are smaller and used at garden entry points
- Vines or plants trained to grow on arbor, providing additional shade



# Trellises

- Architectural structures for climbing vines
- Focal points for statements in design





# Pergolas and Ramadas

- Provide shade and cover
- Sitting areas
- Support outdoor equipment
  - Speakers
  - TVs
  - Lights
  - Ceiling fans
  - Drapes



# Decks

- Elevated patios
- Offer a different vantage point of the landscape
- Make use of challenging grades





- Cedar
  - Does not transfer heat
  - Durable
  - High maintenance in dry environments
- Composite decking
  - Manufactured wood particles and plastic
  - Can be embossed with wood-grain pattern
  - Color fades over time (sun)
- Vinyl decking
  - Hot underfoot
  - More expensive than wood
  - Less maintenance and resists stains



# Fire Features

- Can create a mood, adjust temperature and offer light to a space
- Offers a center for social gathers





# Fire Features

- Material options
  - Brick, stacked stone
  - River rock
  - Flagstone, limestone
  - Concrete
  - Manufactured pavers and blocks



- Fire pits

- More economical than fireplaces
- Can accommodate a larger crowd
- Casual entertaining or party environment







- Fireplaces
  - Ideal for smaller groups
  - Can provide a bold statement
  - Relaxing or romantic mood







- Fuel sources

- Wood burning

- No burn days
    - Flexible on location in space

- Propane

- Flexible on location in space

- Gas line

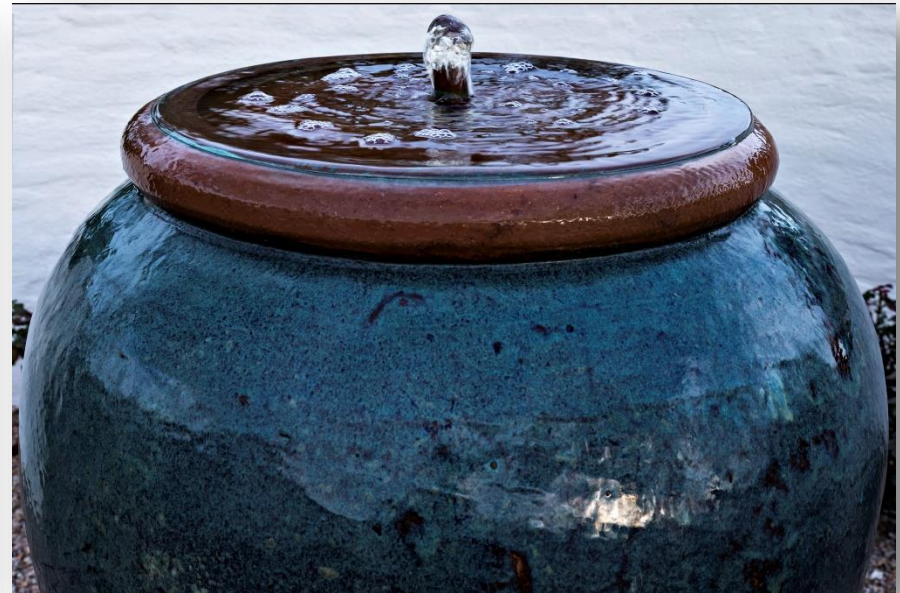
- More costly to install
    - Requires a gas source and plumbing
    - Limits placement in the landscape





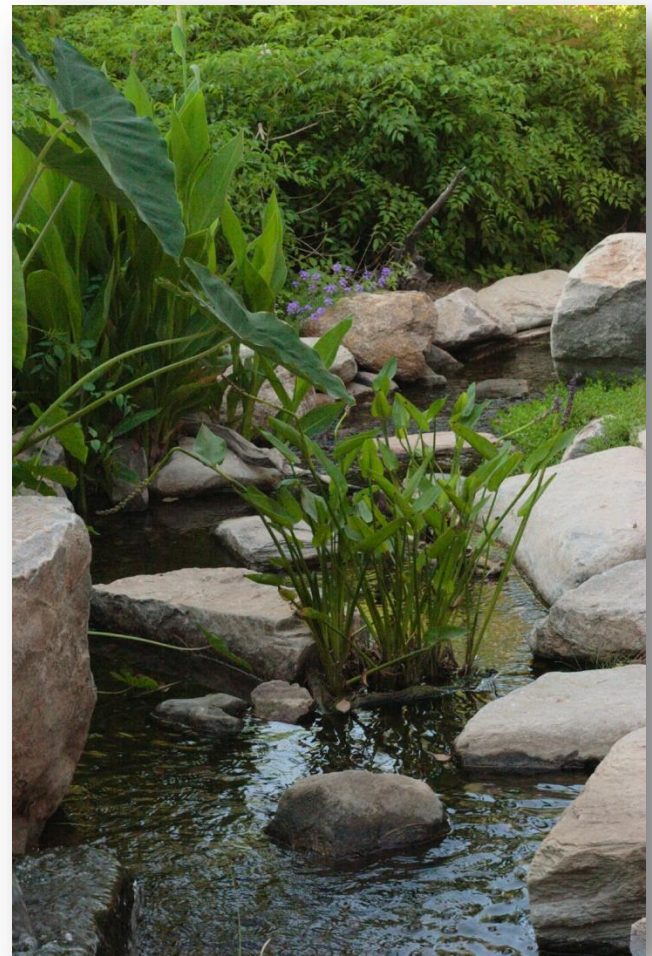
# Water Features

- Can have a calming effect
- Defuse noise of a road or traffic
- Focal point or statement in space



# Water Feature Considerations

- Open water can be a safety concern for children
- May attract wildlife into the area
- Requires maintenance
  - Sanitized water features
  - Living ponds
- Splashing of treated water can impact surrounding plants and hardscape
- Pumps & equipment



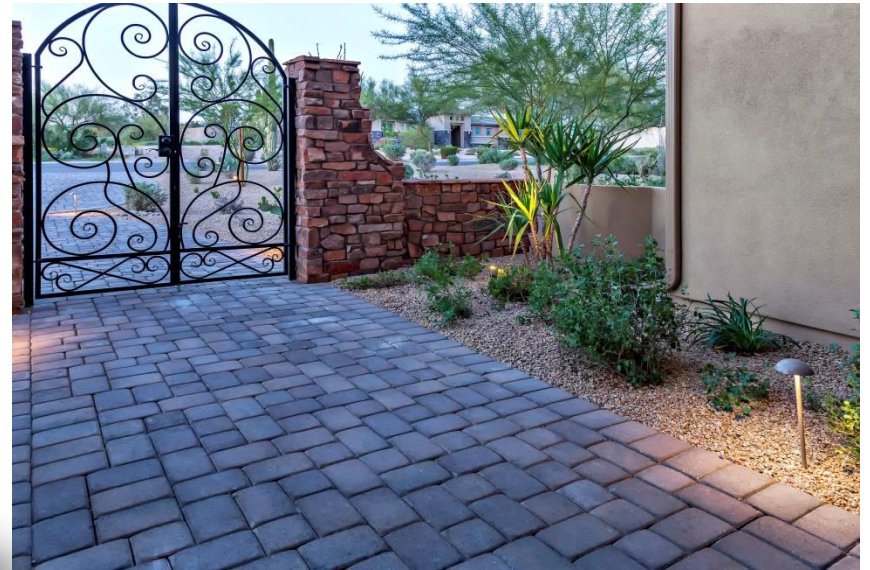






# Pathways

- Gets you to where you need to go





# Granite Trails



- **Stabilized**
  - Prevents erosion
  - Binds aggregate together
  - Creates organic walking surface
  - Suitable for bike traffic
- **Loose**
  - May migrate and show footprints
  - Equestrian trails
  - Lower maintenance
  - More economical

# Architectural Walkways

- Allows designer to showcase creativity
- Offers property unique features





# Barriers, Perimeters and Buffers











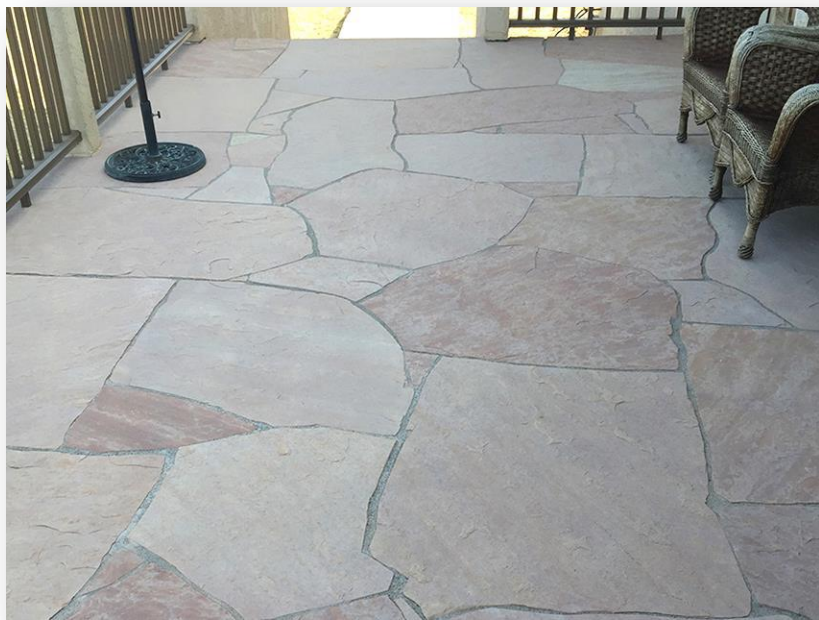
# Natural Stone

- Uncut or cut flagstone
- Sand set or mortared to a concrete base
- Granite
- Marble
- Sandstone
- Limestone
- Blue stone
- Etc.



Softer, more porous limestones and sandstones work well in dry warmer areas.







- Pros:
  - Highly durable
  - Will outlast many other materials
- Cons:
  - Most expensive of patio materials
  - If installed with mortar, joins typically fail prior to stone degradation







# Clay Pavers

- Timeless material
- Warm, inviting and earthy environment
- Can be installed dry-lay or mortar:
  - Dry-lay is placed on thick layer of sand and gravel, without any bonding agents. Joints filled with sand and compacted.
  - Mortared are placed upon a concrete slab and secured with mortar or grout both beneath and between bricks, creating a solid structure.
- Pros:
  - Withstand fading, lasting centuries of wear
  - Highly durable
  - Fading isn't an issue
- Cons:
  - Only can be found in select colors and shapes
  - May be more susceptible to moss growth







# Manufactured Pavers

- Interlocking concrete pavers
- Dimensional slabs
- Brick-used or new
- Porous pavers





# Interlocking concrete pavers



- Cons:
  - Color may fade over time
  - Older installation may have high tendency for weed growth and ant colonies

- Pros
  - Variety of sizes & styles
  - Resembles natural stone, cobble, marble, granite or wood
  - Very durable
  - Limited-lifetime warranties
  - If settling occurs, pavers can be raised and leveled at minimal cost
  - Very long lifespan
  - Some materials are permeable









# Factors to Consider during Installation

- ICPI standards (Interlocking Concrete Pavement Institute)
- Guidelines for installers
- Permitting
- Sleeves
- Certification for installers available
- Soil type and use to determine base course depth

# Concrete

- Poured in place
  - Tinted
  - Stamped
  - Exposed aggregate
  - Recycled
  - Porous
  - Overlay existing concrete or pool decking





# Concrete

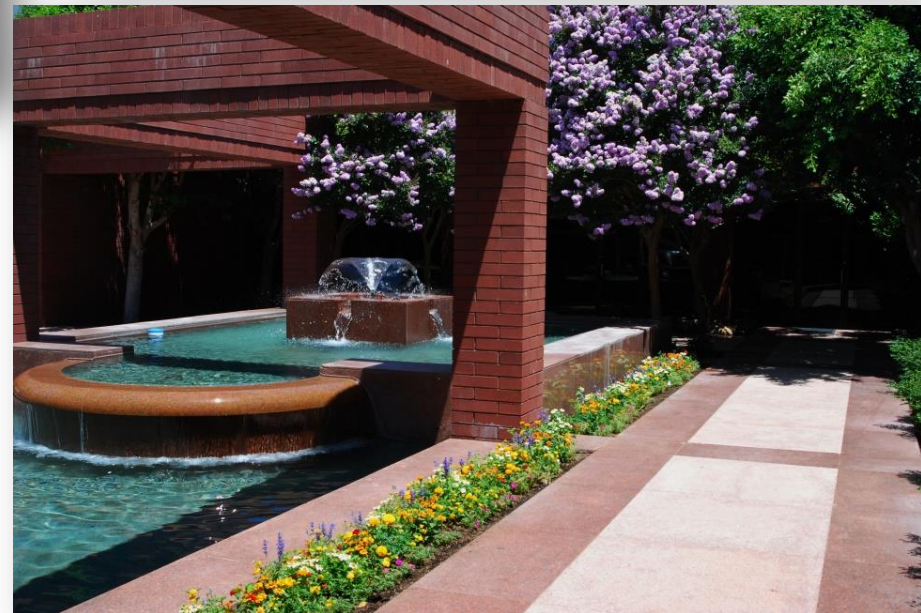


- Cons:
  - Cracking
  - Stamped concrete fades over time

- Pros:
  - Budget- friendly
  - Highly durable
  - Low maintenance
  - Works in varying climates
  - Can be poured into any shape or colored in any style









# Blocks



- Paver blocks
- CMU blocks
- Structural vs. architectural
- Engineered vs. not engineered



# Hardscape Finishes

- Stucco
- Stone Veneer
- Tile
- Natural Stones
- Paint





# Maintenance

- What regular maintenance will be required?
- Will it look great look and function?
- What is the lifespan of the material?



# Loose Materials

- Decomposed granite
- Crushed rock
- Tumbled glass
- Pea gravel
- River rock





# Loose Materials

## Pros

- Durable
- Weed control
- Reduces evaporation
- Budget- friendly
- Easy to maintain
- Fits with many styles of landscape
- Permeable
- Easy to install

## Cons

- Needs topdressing every few years
- Smaller stones can migrate
- Weeds can easily grow through stone
- Shows foot/ vehicle traffic

# Decorative Surfaces

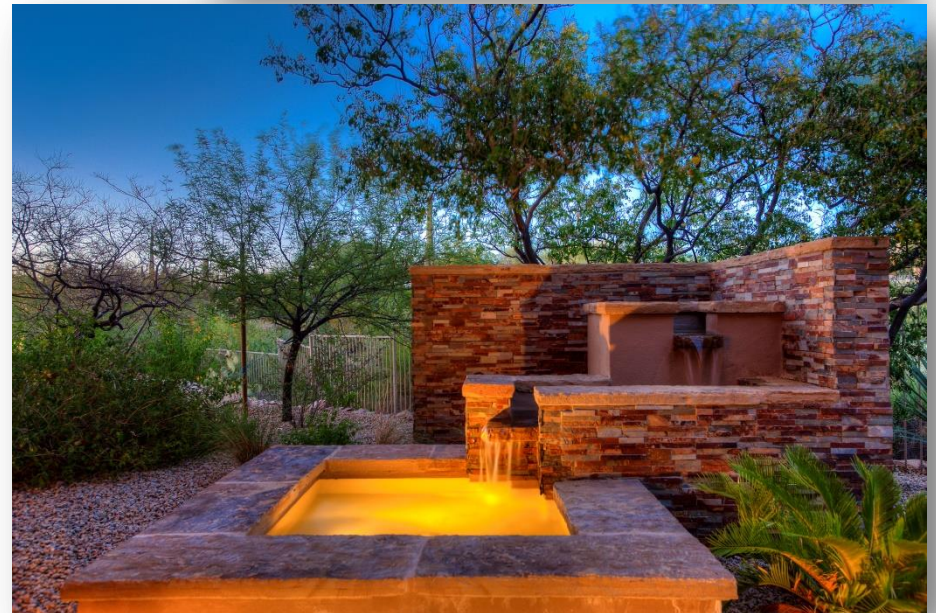
- Pebbles
- Tile





# Combining Materials

- Making transitions
- Adding interest
- Saving money
- Saving time
- Artistic freedom
- Defining spaces for specific use





# Wood

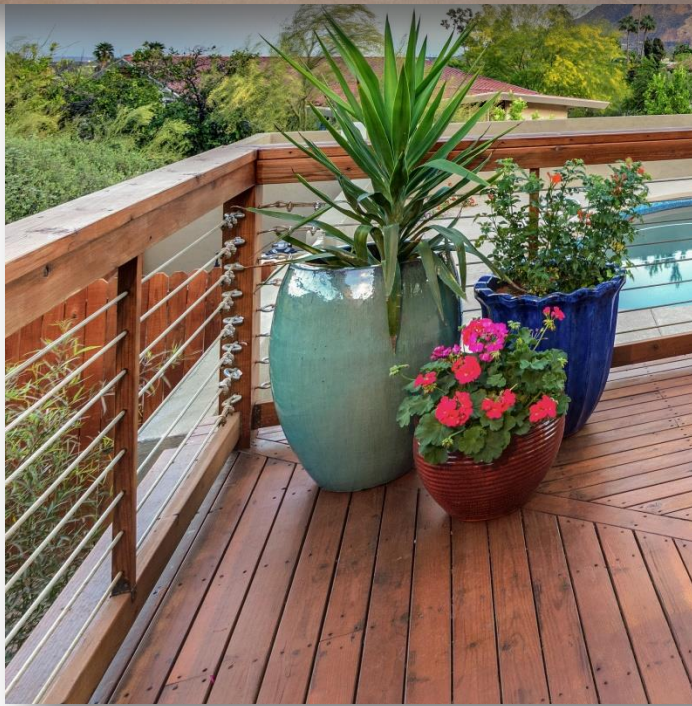
- Flooring
- Structures



What are some issues to consider when using wood in our region?

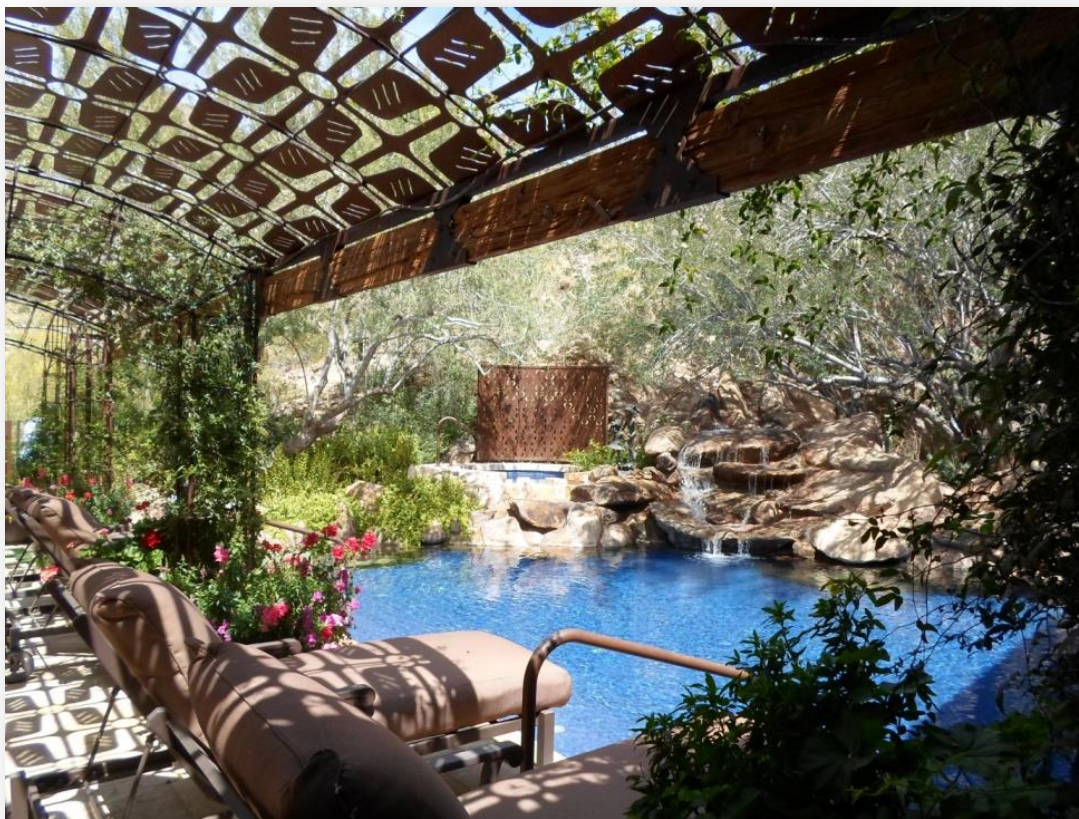








# Metal



Any considerations with metal  
in our climate?





# Temperatures of Surfaces

- High Reflectance Hardscape Materials
  - Materials with high solar reflectance (albedo)
  - SRI (solar reflectance index) ranges from 0-100
  - How much heat is being emitted by a surface
  - Materials with highest SRI are the coolest
    - Asphalt may have a 0, where white cement concrete can have 86-100

# Beauty is in the eye of the beholder

- Be creative
- Consider safety
- Incorporate design elements
- Make clients happy

