SCOTTSDALE

Unified School District

DESIGN DIRECTION

orcutt | winslow



APRIL 29th, 2019

PROJECT OVERVIEW/INTRO

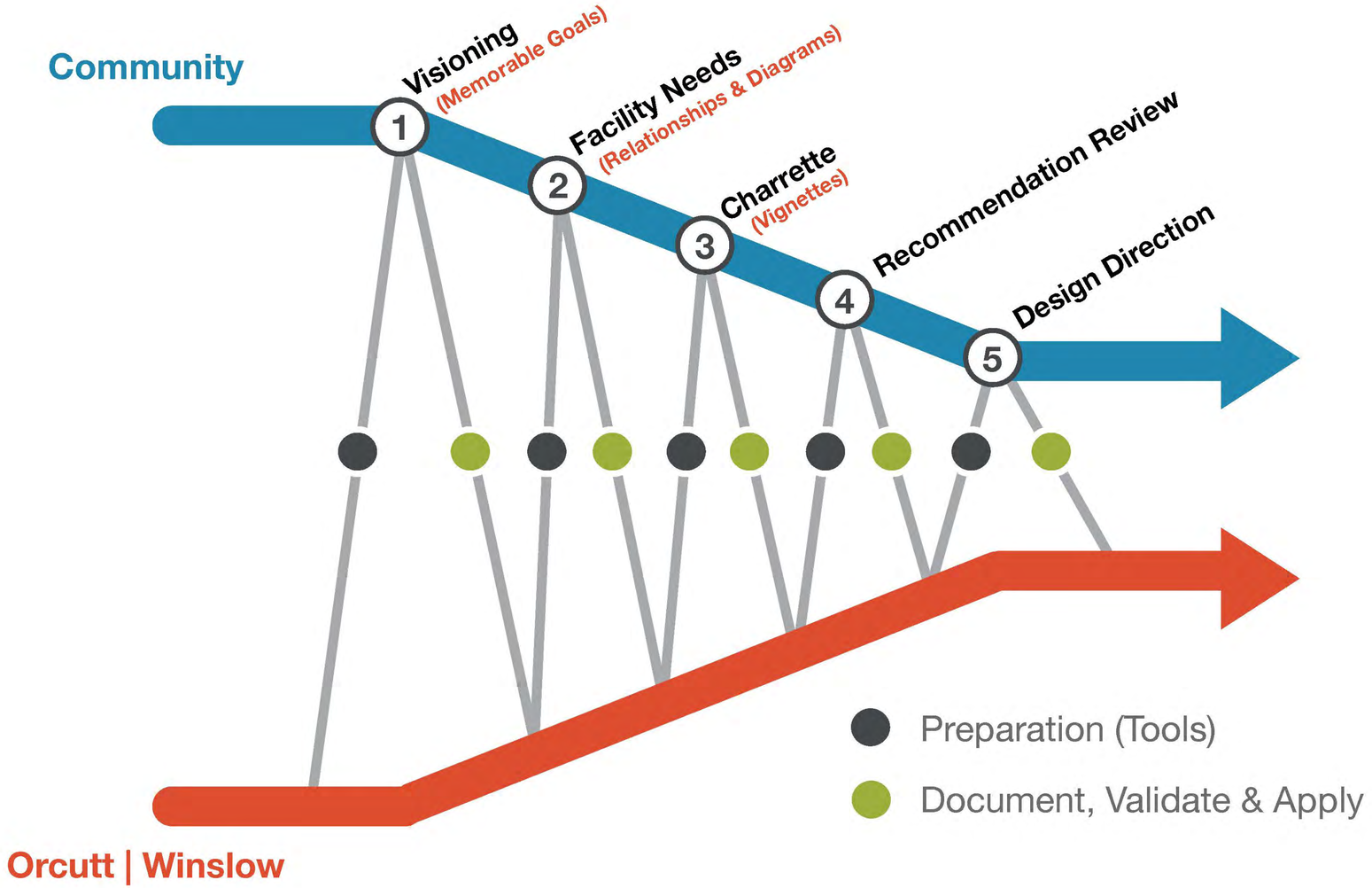


OUR DESIGN
PROCESS BUILDS

TRANSPARENCY
COLLABORATION
CONSENSUS

PROCESS DRIVEN DESIGN

This chart illustrates the process that Orcutt Winslow is currently facilitating in conjunction with the SUSD Administration, Cherokee Staff, Community Members and Visioning Committee to come to resolution on the choice to move forward renovating the existing campus or providing a new facility.



SUSTAINABILITY GOALS

ENERGY

GOAL:

- Target EUI 21 BKTU/SF/YR

STRATEGIES:

- Finding the most efficient mechanical system
- Potential battery capacity added to exiting solar panels
- Daylight harvesting in classrooms

WELLNESS

GOAL:

- Indoor Air Quality based on LEED Gold requirements
- Optimal Learning Environment

STRATEGIES:

- Indoor Air Quality Measurements
- Daylight access and exterior views in all classrooms
- Provide sustainability educational experiences with the building/exterior space

PLACE

GOAL:

- Exterior spaces that are healthy and comfortable for most of the school hours/ days

STRATEGIES:

- Human(student) scale for canopies and windows
- Clean and easy to maintain landscape
- Rainwater collection and harvesting

MATERIALS

GOAL:

- Materials to be healthy, local, re-used or recycled

STRATEGIES:

- Specification of healthy materials during design/ construction
- Tracking of local materials during design/construction
- Tracking of diversion of demolished materials from landfills during construction
- Tracking of re-use of materials during design/ construction

CAMPUS SECURITY PLAN





de·sign

/dəˈzīn/

noun

noun: **design**; plural noun: **designs**

1.1. a plan or drawing produced to show the look and function or workings of a building, garment, or other object before it is built or made.

the·sis

/ˈTHēsis/

noun

noun: **thesis**; plural noun: **theses**

1.1. a statement or theory that is put forward as a premise to be maintained or proved.

BIOPHILIC DESIGN



Biophilia is humankind's innate biological connection with nature.

It helps explain why crackling fires and crashing waves captivate us; why a garden view can enhance our creativity; why shadows and heights instill fascination and fear; and why animal companionship and strolling through a park have restorative, healing effects.



Image courtesy of COOKFOX Architects.

14 PATTERNS OF BIOPHILIC DESIGN

Nature in the Space Patterns

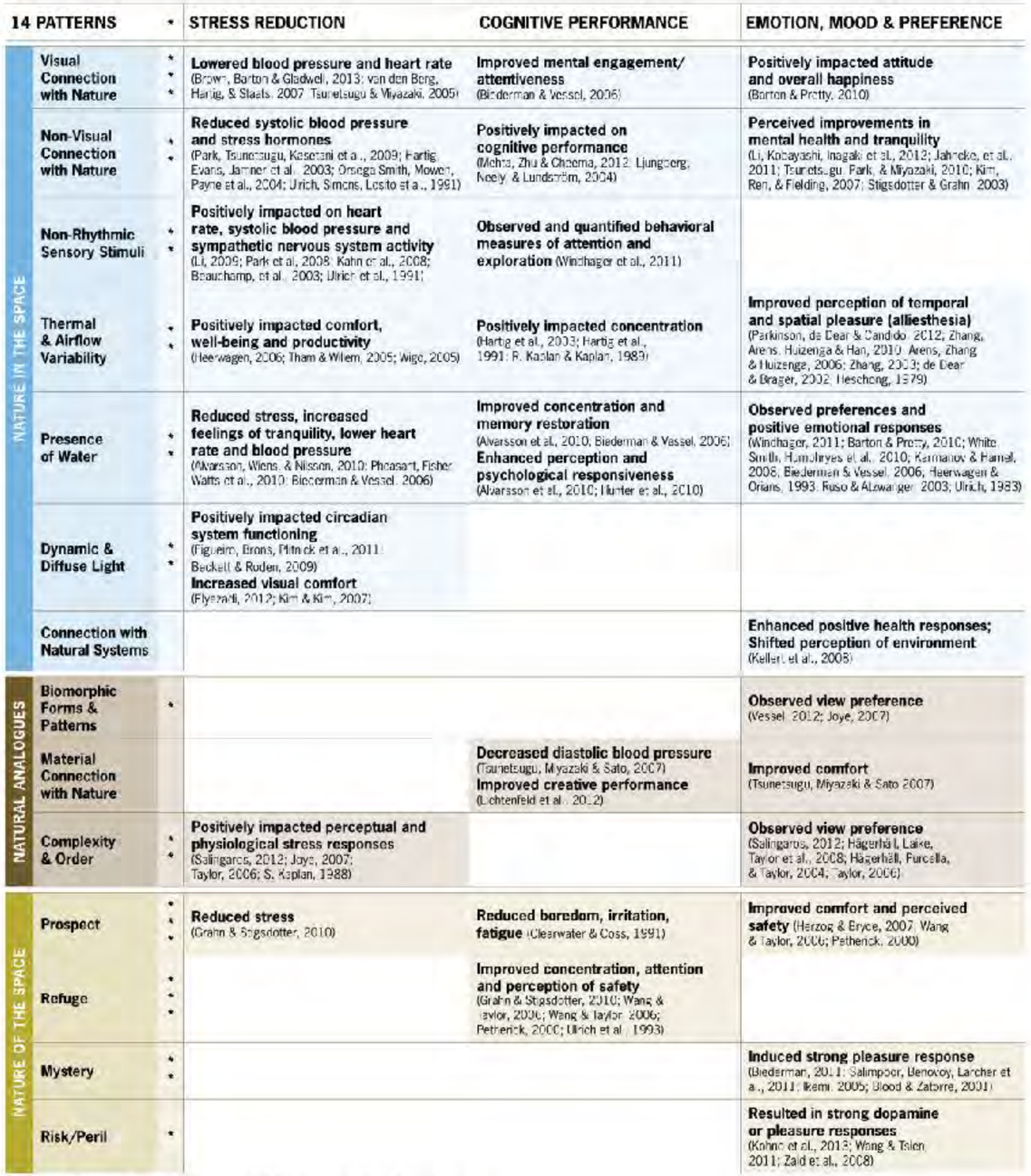
1. Visual Connection with Nature
2. Non-Visual Connection with Nature
3. Non-Rhythmic Sensory Stimuli
4. Thermal & Airflow Variability
5. Presence of Water
6. Dynamic & Diffuse Light
7. Connection with Natural Systems

Natural Analogues Patterns

8. Biomorphic Forms & Patterns
9. Material Connection with Nature
10. Complexity & Order

Nature of the Space Patterns

11. Prospect
12. Refuge
13. Mystery
14. Risk/Peril



14 PATTERNS		STRESS REDUCTION	COGNITIVE PERFORMANCE	EMOTION, MOOD & PREFERENCE
NATURE IN THE SPACE	Visual Connection with Nature	**Lowered blood pressure and heart rate** (Brown, Barton & Gladwell, 2013; van den Berg, Hartig, & Staats, 2007; Tsunetsugu & Miyazaki, 2005)	**Improved mental engagement/ attentiveness** (Biederman & Vessel, 2006)	**Positively impacted attitude and overall happiness** (Barton & Pretty, 2010)
	Non-Visual Connection with Nature	**Reduced systolic blood pressure and stress hormones** (Park, Tsunetsugu, Kasetani et al., 2009; Hartig, Evans, Jamner et al., 2003; Ornega Smith, Mowen, Payne et al., 2004; Ulrich, Simons, Losito et al., 1991)	**Positively impacted on cognitive performance** (Mehta, Zhu & Cheema, 2012; Ljungberg, Neely, & Lundström, 2004)	**Perceived improvements in mental health and tranquility** (Li, Kobayashi, Inagaki et al., 2012; Jahncke, et al., 2011; Tsunetsugu, Park, & Miyazaki, 2010; Kim, Ren, & Fielding, 2007; Stigsdotter & Grahn, 2003)
	Non-Rhythmic Sensory Stimuli	**Positively impacted on heart rate, systolic blood pressure and sympathetic nervous system activity** (Li, 2009; Park et al., 2008; Kahn et al., 2008; Beauchamp, et al., 2003; Ulrich et al., 1991)	**Observed and quantified behavioral measures of attention and exploration** (Windhager et al., 2011)	
	Thermal & Airflow Variability	**Positively impacted comfort, well-being and productivity** (Heerwagen, 2006; Tham & Willem, 2005; Wigo, 2005)	**Positively impacted concentration** (Hartig et al., 2003; Hartig et al., 1991; R. Kaplan & Kaplan, 1989)	**Improved perception of temporal and spatial pleasure (alliesthesia)** (Parkinson, de Dear & Candido, 2012; Zhang, Arens, Huizenga & Han, 2010; Arens, Zhang & Huizenga, 2006; Zhang, 2003; de Dear & Brager, 2002; Heschong, 1979)
	Presence of Water	**Reduced stress, increased feelings of tranquility, lower heart rate and blood pressure** (Akerson, Wiens, & Nilsson, 2010; Pheasant, Fisher Watts et al., 2010; Biederman & Vessel, 2006)	**Improved concentration and memory restoration** (Alvarsson et al., 2010; Biederman & Vessel, 2006) **Enhanced perception and psychological responsiveness** (Alvarsson et al., 2010; Hunter et al., 2010)	**Observed preferences and positive emotional responses** (Windhager, 2011; Barton & Pretty, 2010; White Smith, Humphreys et al., 2010; Kellert et al., 2008; Biederman & Vessel, 2006; Heerwagen & Orians, 1993; Ruso & Alawarger, 2003; Ulrich, 1983)
	Dynamic & Diffuse Light	**Positively impacted circadian system functioning** (Figueiro, Brons, Plitnick et al., 2011; Beckett & Roden, 2009) **Increased visual comfort** (Flyezadi, 2012; Kim & Kim, 2007)		
	Connection with Natural Systems			**Enhanced positive health responses; Shifted perception of environment** (Kellert et al., 2008)
NATURAL ANALOGUES	Biomorphic Forms & Patterns			**Observed view preference** (Vessel, 2012; Joye, 2007)
	Material Connection with Nature		**Decreased diastolic blood pressure** (Tsunetsugu, Miyazaki & Sato, 2007) **Improved creative performance** (Lichtenfeld et al., 2012)	**Improved comfort** (Tsunetsugu, Miyazaki & Sato 2007)
	Complexity & Order	**Positively impacted perceptual and physiological stress responses** (Salingaros, 2012; Joye, 2007; Taylor, 2006; S. Kaplan, 1988)		**Observed view preference** (Salingaros, 2012; Hägerhäll, Laike, Taylor et al., 2008; Hägerhäll, Purcella, & Taylor, 2004; Taylor, 2006)
NATURE OF THE SPACE	Prospect	**Reduced stress** (Grahn & Stigsdotter, 2010)	**Reduced boredom, irritation, fatigue** (Clearwater & Coss, 1991)	**Improved comfort and perceived safety** (Herzog & Bryce, 2007; Wang & Taylor, 2006; Petherick, 2000)
	Refuge		**Improved concentration, attention and perception of safety** (Grahn & Stigsdotter, 2010; Wang & Taylor, 2006; Wang & Taylor, 2006; Petherick, 2000; Ulrich et al., 1993)	
	Mystery			**Induced strong pleasure response** (Biederman, 2011; Salimpoor, Benovoy, Larcher et al., 2011; Ikemi, 2005; Blood & Zatorre, 2001)
	Risk/Peril			**Resulted in strong dopamine or pleasure responses** (Kohno et al., 2013; Wang & Tsien, 2011; Zald et al., 2008)

© 2014 Terrapin Bright Green / 14 Patterns of Biophilic Design

Biophilic design is the designing for people as a biological organism,

respecting the mind-body systems as indicators of health and well-being in the context of what is locally appropriate and responsive.

CHEROKEE AS A NURSE PLANT





MICRO & MACRO CONTEXT

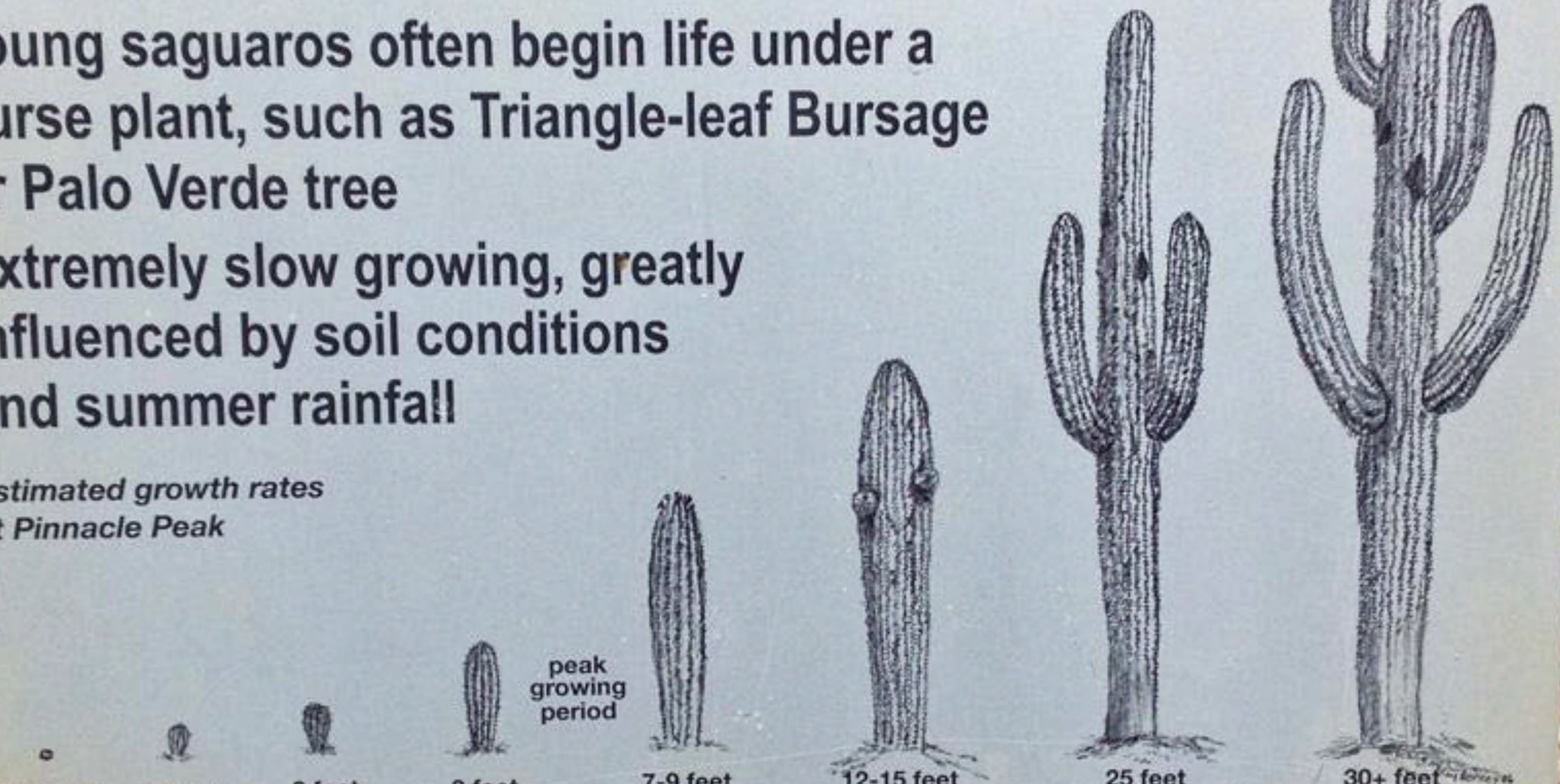


SAGUARO GROWTH

Young saguaros often begin life under a nurse plant, such as Triangle-leaf Bursage or Palo Verde tree

Extremely slow growing, greatly influenced by soil conditions and summer rainfall

Estimated growth rates at Pinnacle Peak







ADAPTATIONS TO THE SONORAN DESERT

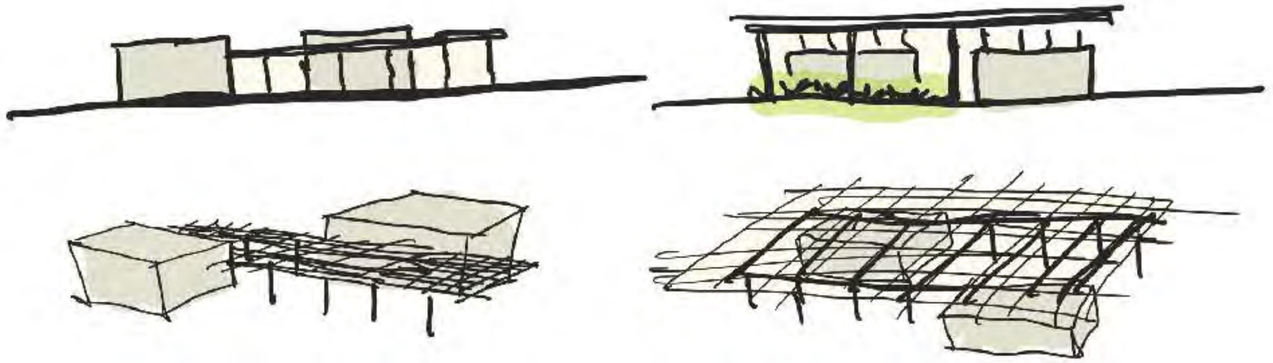
PATHS, PLAY, GATHERING, LEARNING ALL NEED SHADE

Examples of plant and animal adaptations to the harsh conditions of the Sonoran desert:

- Self shading cacti
- Expanding water bladders
- Large ears to dissipate heat

Examples of architectural adaptations to the harsh conditions of the Sonoran desert:

- Nested volumes or ramada houses
- Shaded outdoor space
- Exposed volumes with connective shade tissue



PROTECT THE CYCLE & RHYTHM OF PLAY AND LEARNING













Rock Balancing

Stone Stacking STEAM for Kids



UNIQUE COMMUNITY INFLUENCES:

FOOD, DANCE, TRADITION, CERAMICS, WEAVING PATTERN, SPIRITUALITY, ETC.



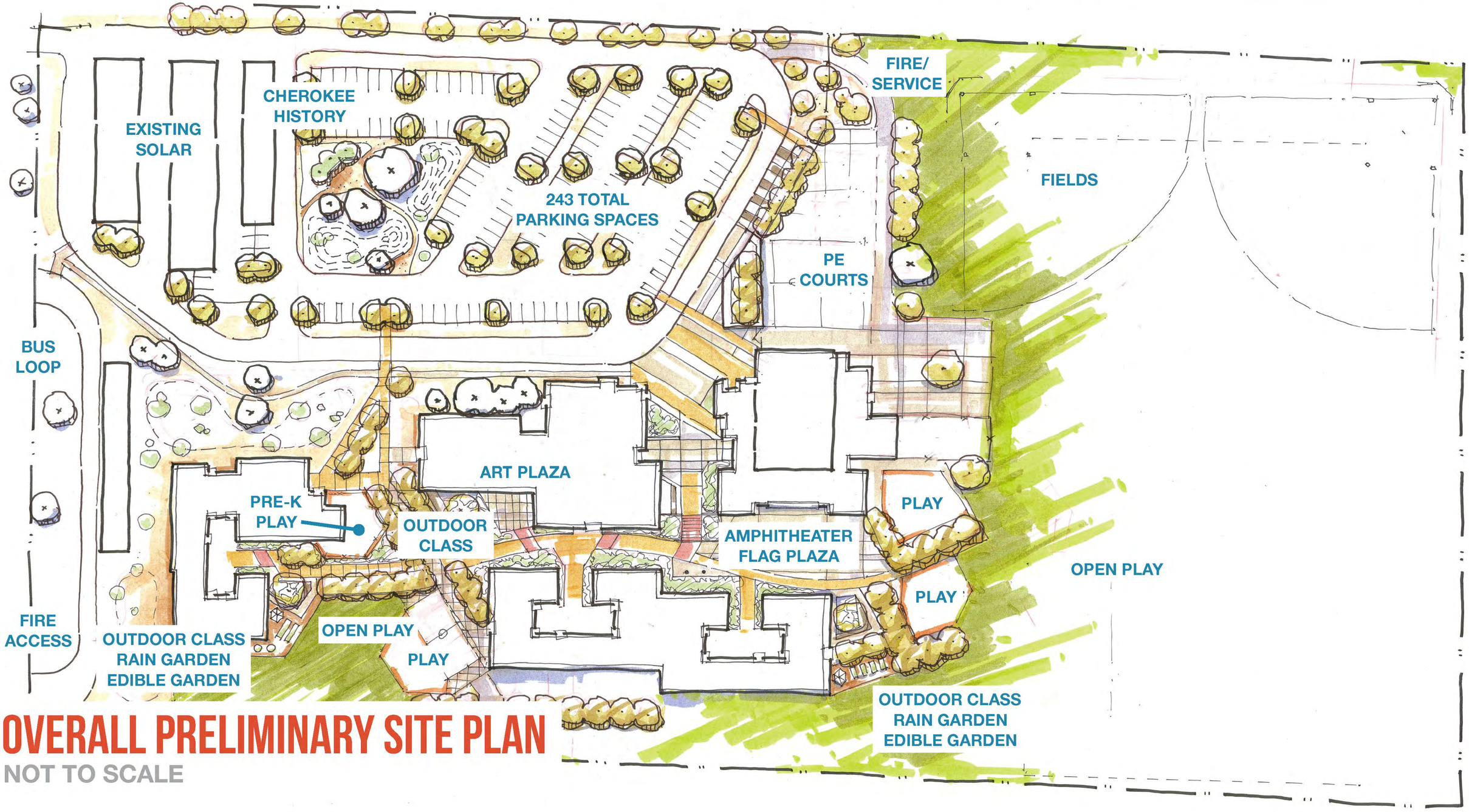
MATERIALS USED IN EDUCATION FACILITY CONSTRUCTION PRIMARILY ARE REQUIRED TO BE DURABLE, EASILY MAINTAINED, AND COST EFFECTIVE.





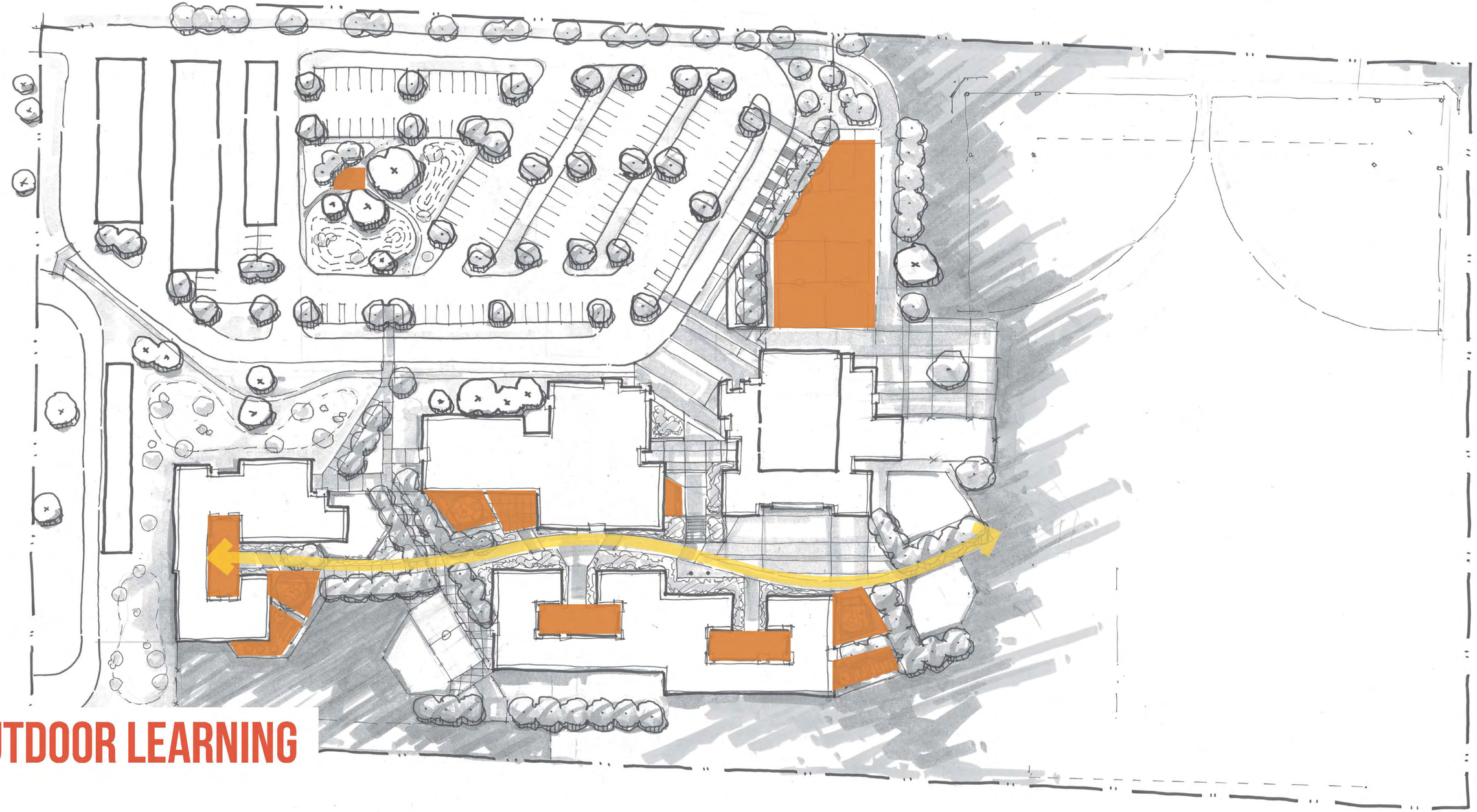


CONCRETE OR MASONRY
WALLS
COLOR
PATTERN
SIZE
TILE OR STONE
VENEER
LOCAL STONE
STUCCO
TEXTURE
PATTERN
COLOR
METAL/STEEL
CANOPY
SIDING
PROFILE
PATTERN
SIZE
FINISH
GLASS
STOREFRONT
HOLLOW METAL FRAME
OVERHEAD DOORS
KALWALL

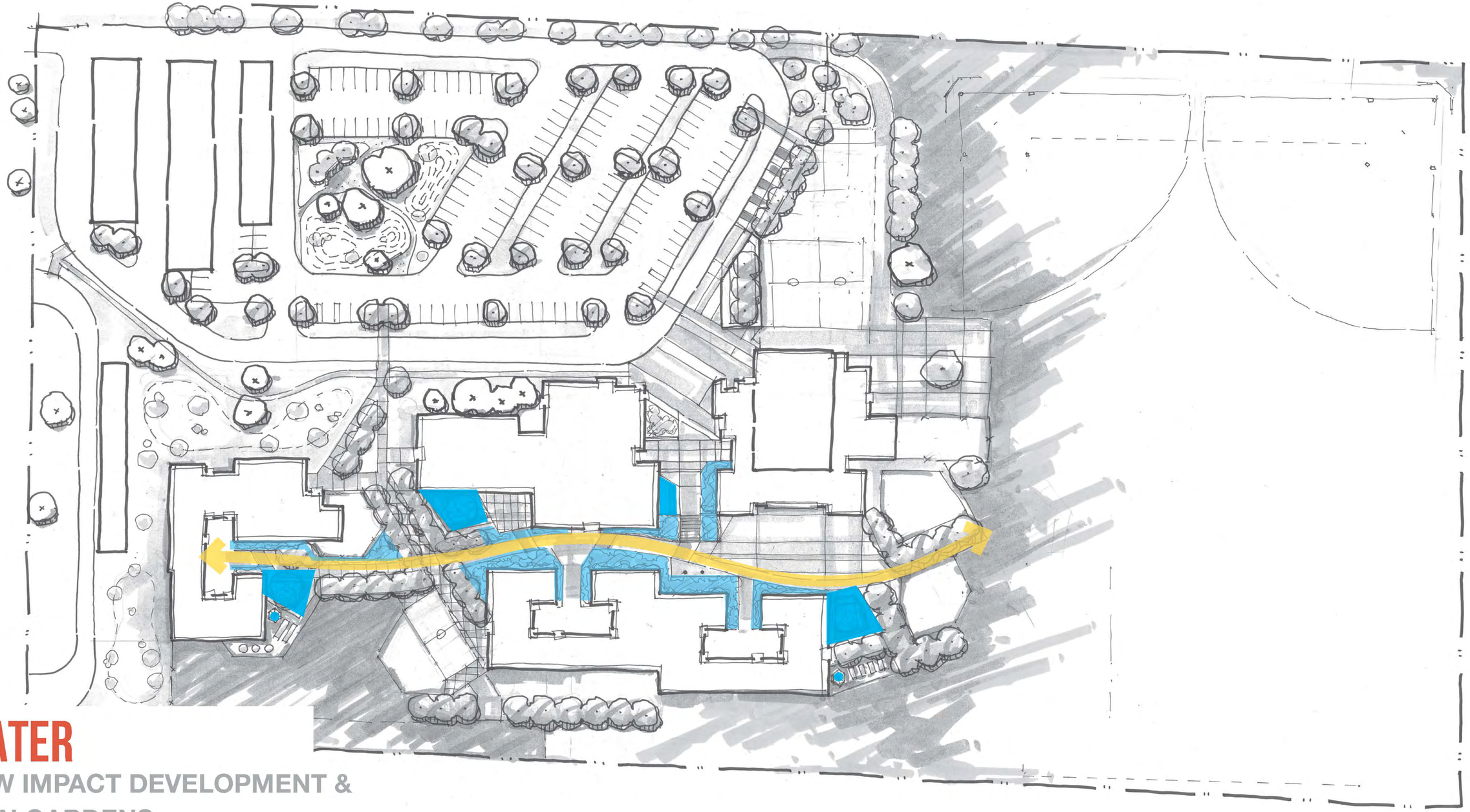


OVERALL PRELIMINARY SITE PLAN

NOT TO SCALE

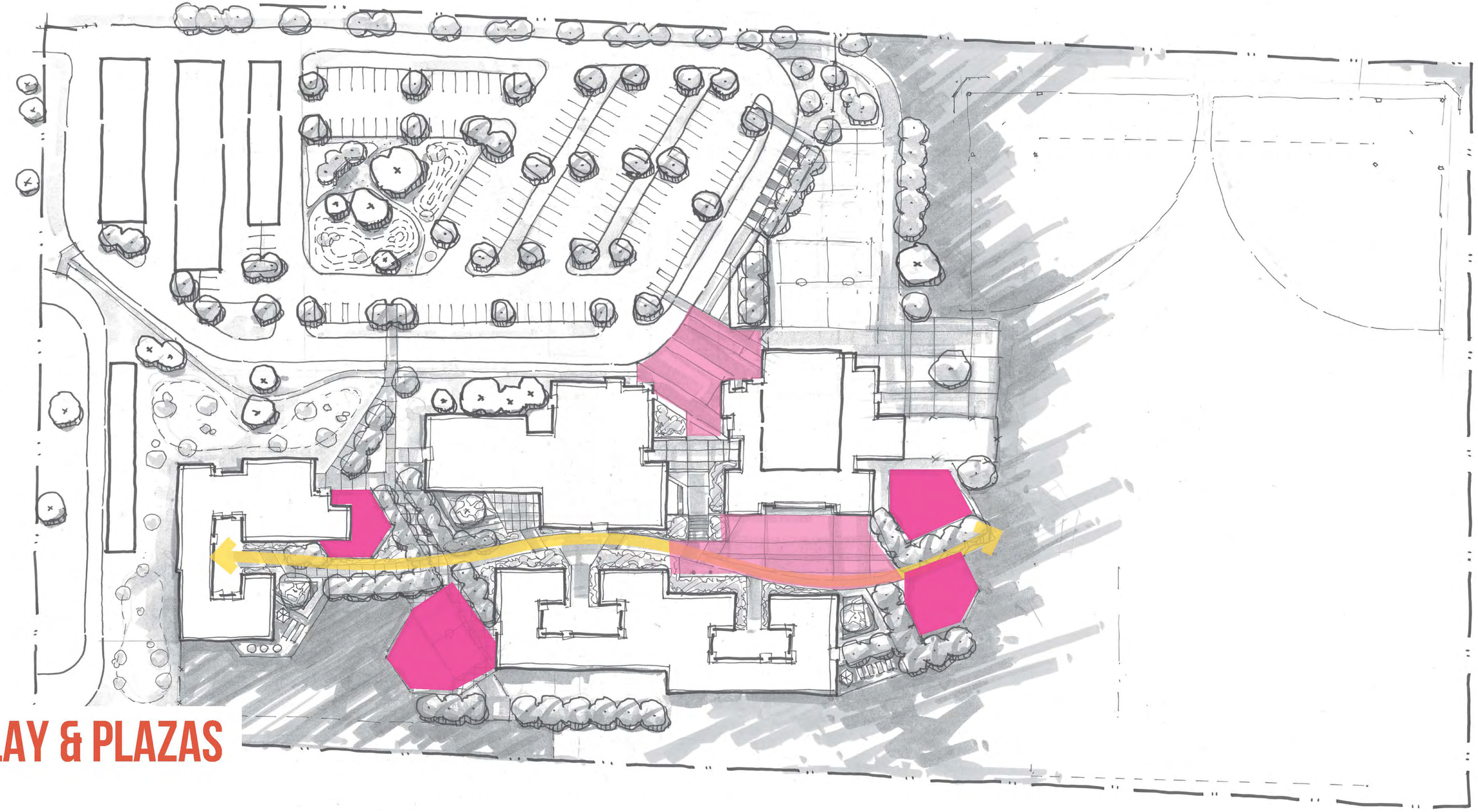


OUTDOOR LEARNING

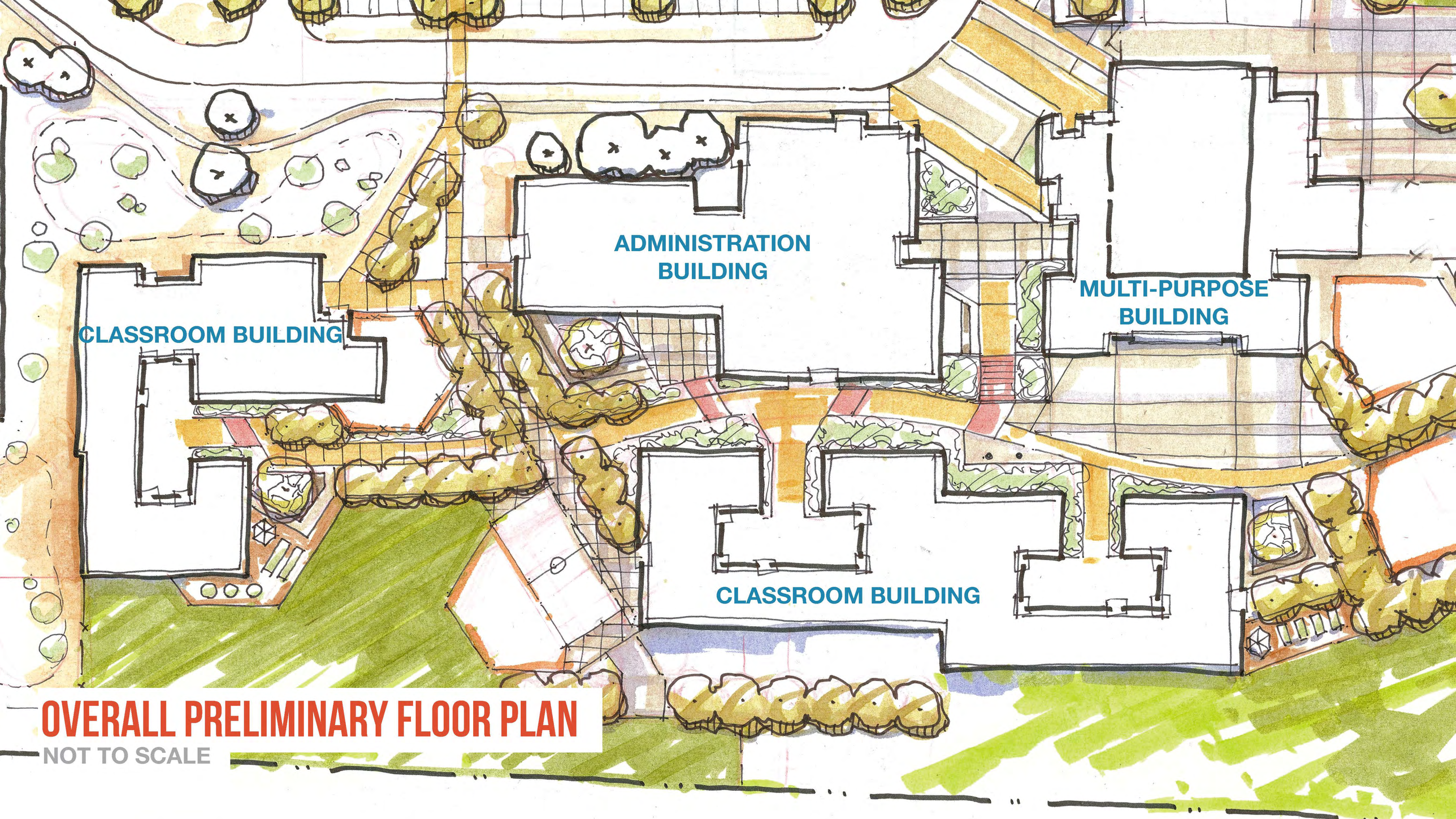


WATER

LOW IMPACT DEVELOPMENT & RAIN GARDENS

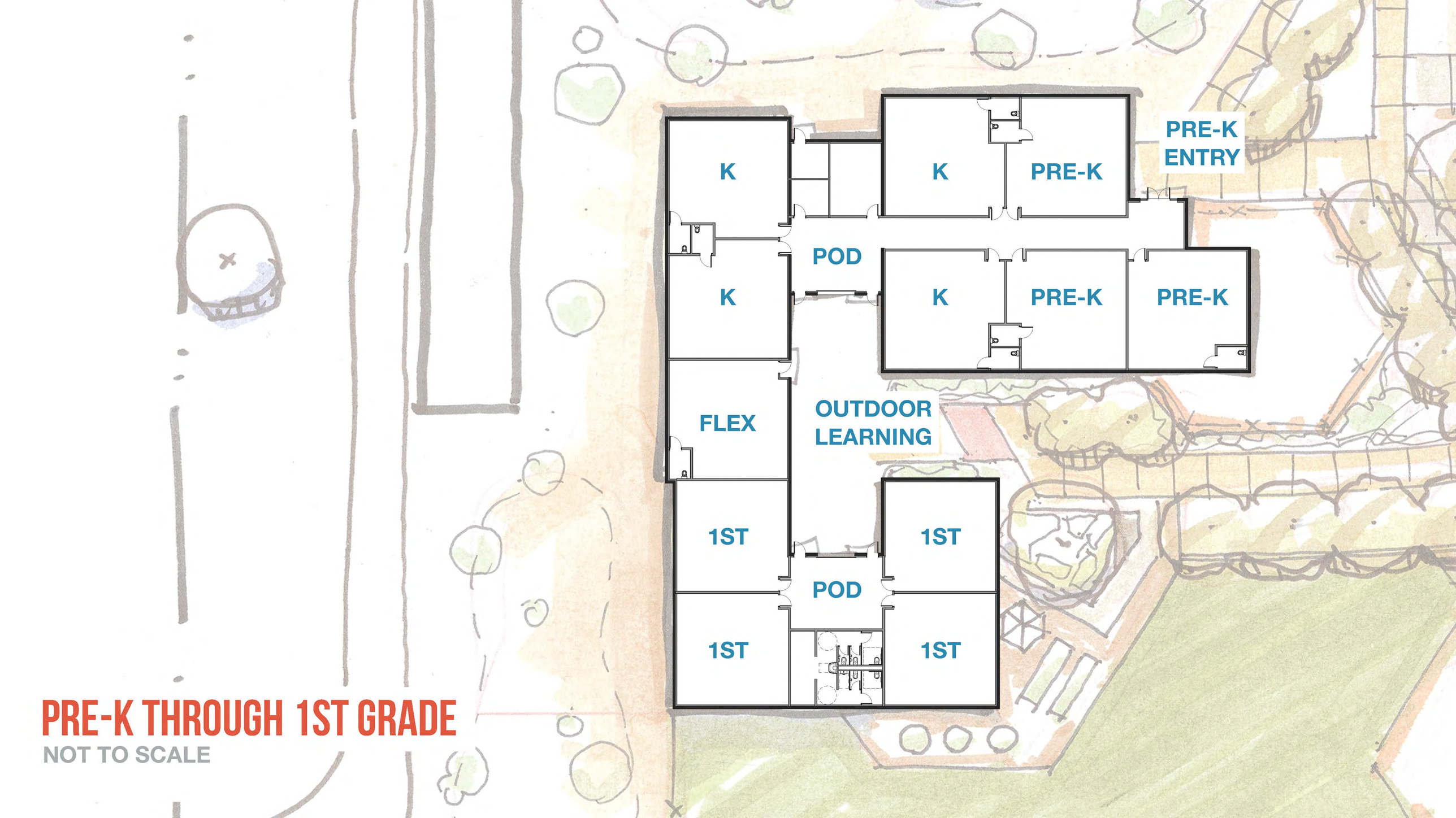


PLAY & PLAZAS



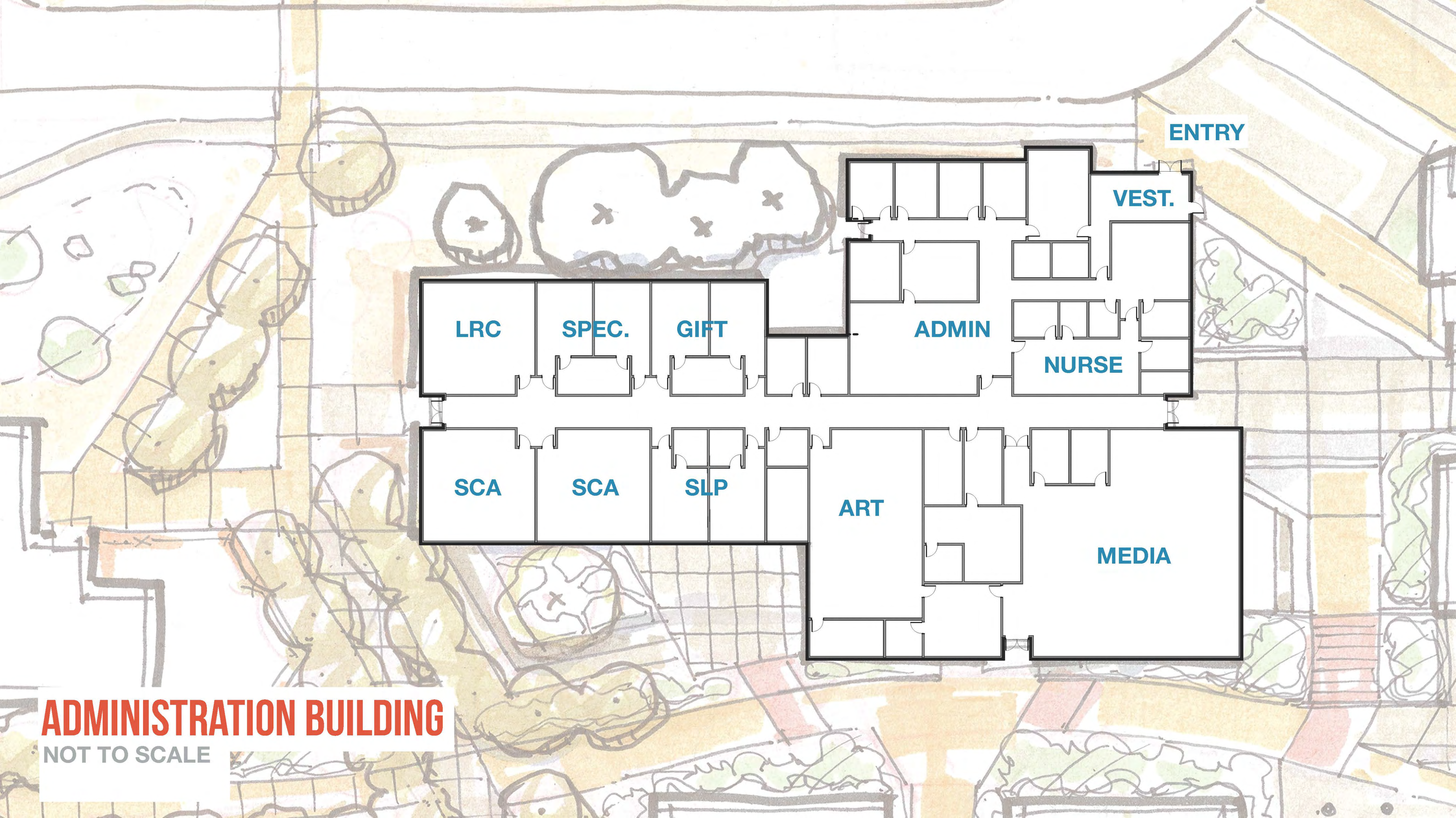
OVERALL PRELIMINARY FLOOR PLAN

NOT TO SCALE



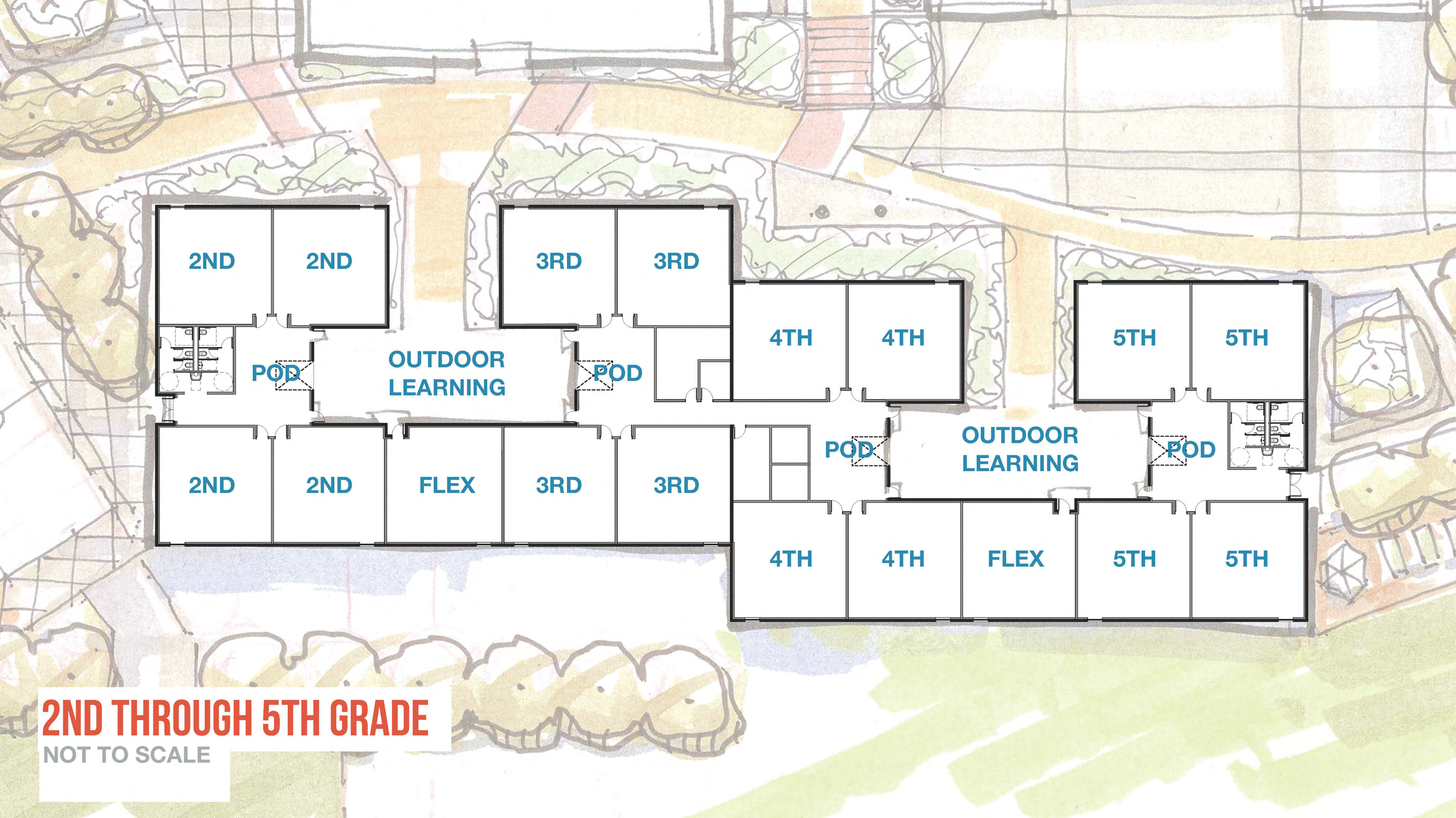
PRE-K THROUGH 1ST GRADE

NOT TO SCALE



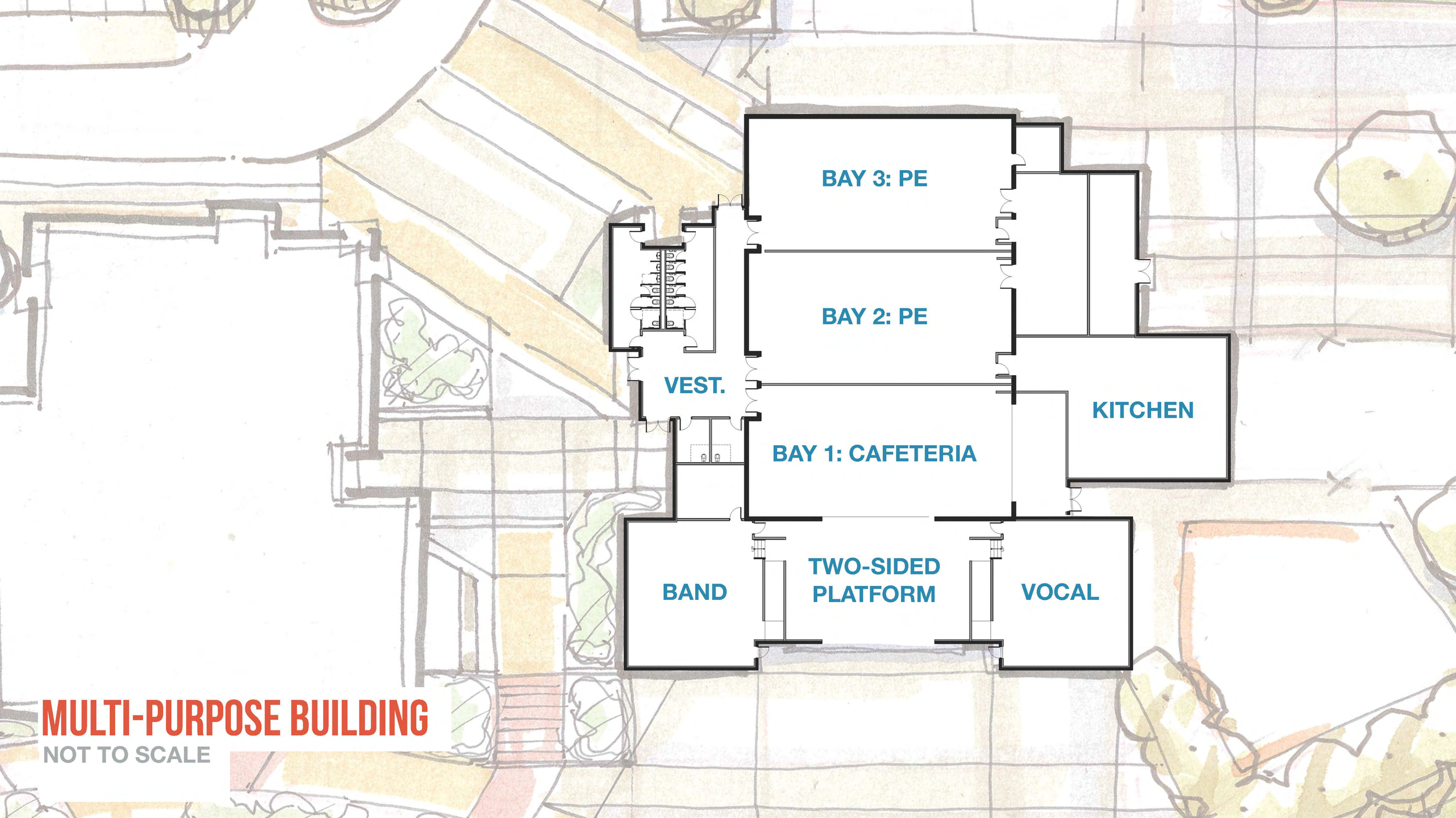
ADMINISTRATION BUILDING

NOT TO SCALE



2ND THROUGH 5TH GRADE

NOT TO SCALE



MULTI-PURPOSE BUILDING

NOT TO SCALE


CONCEPTUAL RENDERING


CONCEPTUAL RENDERING



CONCEPTUAL RENDERING



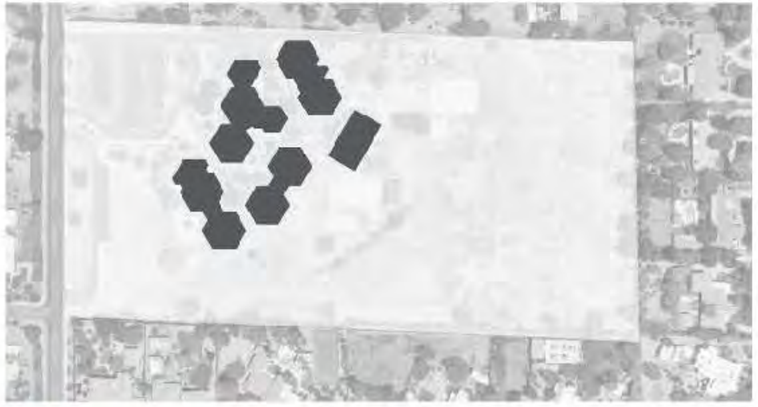
CONCEPTUAL RENDERING



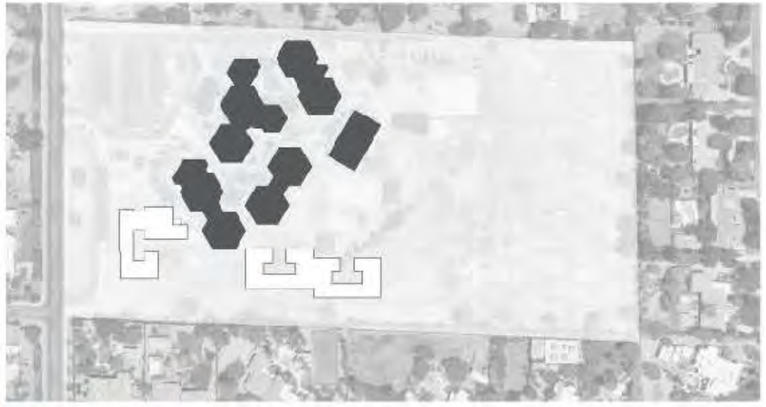
CONCEPTUAL RENDERING



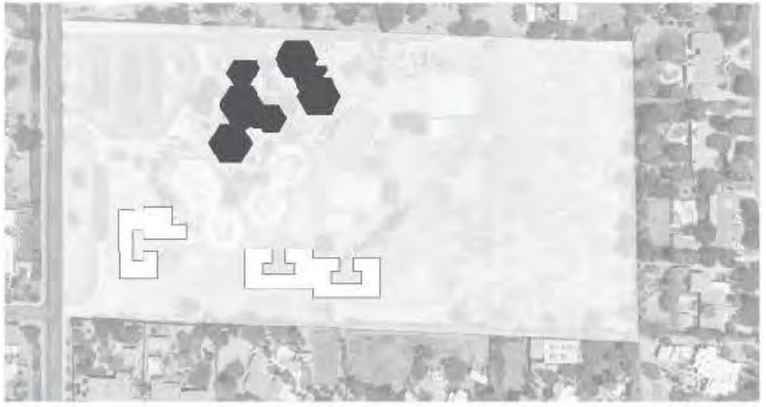
CONCEPTUAL RENDERING



1 EXISTING CAMPUS



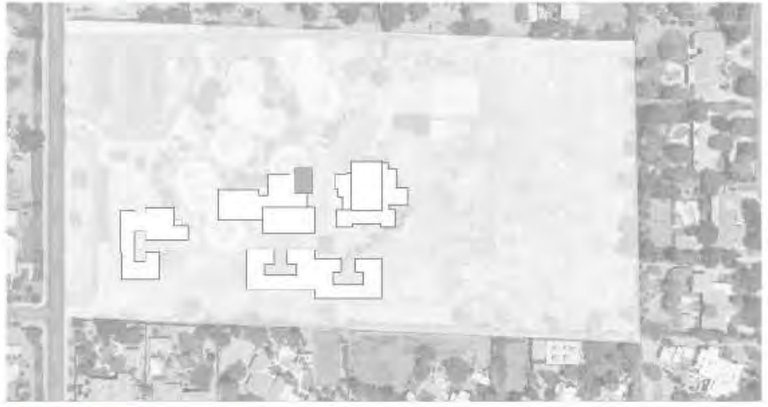
2 PHASE 01



3 DEMO



4 PHASE 02



5 DEMO

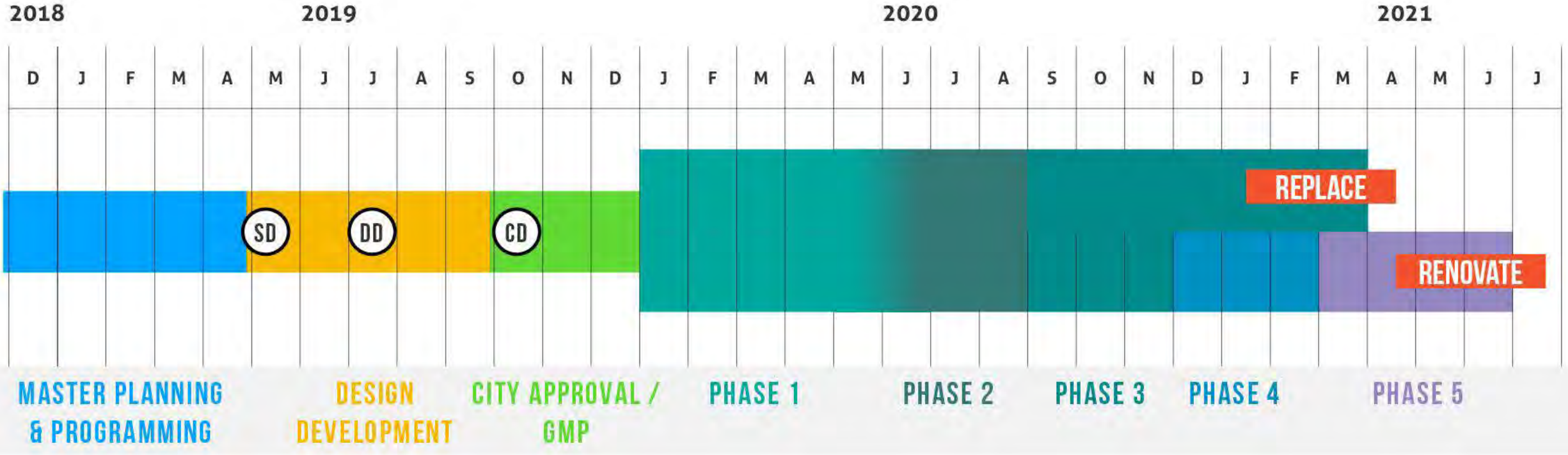


6 COMPLETE CAMPUS

POTENTIAL PHASING

SCHEDULE

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COMMUNITY FORUM MEETINGS

1. DEC 17
2. JAN 7
3. JAN 28
4. MARCH 25
5. APRIL 29

BOARD MEETINGS

- BOARD UPDATE MARCH 7
- CM AWARDED MARCH 19
- STUDY RECOMMENDATION APRIL 11
- BOARD ACTION RENOVATION VS REPLACE APRIL 16
- DESIGN UPDATE JUNE 6
- GUARANTEED MAX CONSTRUCTION COST DEC 12

MILESTONES

- (SD) SCHEMATIC DESIGN MILESTONE MAY 10
- (DD) DESIGN DEVELOPMENT MILESTONE JUNE 26
- (CD) CONSTRUCTION DOCUMENT MILESTONE/ SUBMITTAL TO TOWN OF PV OCTOBER 10

VISIONING MEETINGS

- EVERY WEEK DURING APRIL: 2ND, 10TH, 17TH, AND 24TH
- EVERY OTHER WEDNESDAY THROUGH JUNE 2019 AS NEEDED THERE AFTER.


Questions?
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