CHRIS WEATHERS
Graduate Student
Master of Landscape Architecture Program
California State Polytechnic University, Pomona

CLAIRE LATANE
Graduate Professor
LA 6121L Design IV: Design of Complex Systems
California State Polytechnic University, Pomona
SECTION ONE

Project Introduction
Context, Conditions, Goals
THE STUDENT

Chris Weathers is a graduate student at California Polytechnic Masters of Landscape Architecture Program. Holds a Bachelors of Health Care Management from SIU at Carbondale, is a former 3LAR 1st Marine Division Corpsman & Risk Consultant with Marsh McLennan Agency. Currently unemployed California Certified Nursery Professional and residential landscape designer.

Email; chreisweathers1412@gmail.com, cweathers@cpp.edu

THE STUDIO

LA 6121L Design IV: Design of Complex Systems, “an exploration of integrating energy, food, water, land, air, habitat, fire, and other key landscape systems as core design requirements for ecological and human health.”

Concepts seek to leverage federal, state, and local initiatives to enhance environmental and socio-economic exposure through improved climate resilience at designated schools.
Willard Elementary is located in east Pasadena. The school is approximately 2.5 miles south east of the Eaton Coyon Nature Center, 1.5 miles west of the LA Arboretum, and 1.75 miles north east of the Huntington Botanical Garden. With the Angeles National Forest's 700,000 acres and the San Gabriel Mountains 2.5 miles to the north the project site is uniquely positioned to function not only as an outdoor classroom and free play space for students but also as a natural habitat that attracts and protects critical native flora and fauna.
URBAN EDUCATIONAL OPPORTUNITIES

American Society of Pediatrics, “play and specifically free play is the most critical aspect of adolescent learning.” The absence of natural autonomous play in both the urban and rural setting, coupled with predominantly digital preoccupations of the young and old alike are leading to unprecedented numbers of learning and psychological maladaptive disorders.

(Right) Env High School

THE LANDSCAPE OF LEARNING

For those living in the middle to low median household incomes there are disproportionately higher socio-economic risk factors for everything from physiological health and discrimination, to developmental disparities and insufficient linguistic stimulation. A lack words spoken in the household, are the reality in working-class homes and this directly correlates to lower lifelong cognitive development and subsequent opportunity. This reality, along with a long list of other risk factors, contributes to maligned Zones of Proximal Development in school aged adolescents.

(Left) Env High School
Piagetian Stage Transitions - Winning is inconsequential, playing the game fairly, so one is invited to an increasing number of future shared games or experiences is the only real solution.

Lev Vygotsky 1896 - 1934, Vygosky developed Theory Zone of Proximal Development challenged the idea of standardized testing to measure intelligence.

Built on Piagetian theory of children being primarily lone and autonomous learners, with distinctions draw between development and teaching.

1943 - Present, Gardener developed Theory of Multiple Intelligences. Aspects of the theory include linguistic, logical-mathematical, musical, spatial, bodily/kinesthetic, interpersonal, intrapersonal, and naturalistic.

Theory is a critique of standardized intellectual theory which over emphasizes ability correlations.
GOALS

Reduce “Particular Environmental Sensitivity” through stressing conservation & natural system cyclic phenomenon.

Climate resilience and individual development through natural connections and fair play.

Create life long learners through natural connection that fosters growth and proximal development.

OBJECTIVES

Student development through risk play and natural engagement

Watershed and ecological education through best environmental practices

Reduce asphalt & edges

Increase natural phenomenological connection and appreciation
SECTION TWO

Framework: Edges, Circulation & Spatial Layout
NEIGHBORHOOD CONTEXT

An assessment of the community surrounding the site and realizing the factors contributing to current site conditions is essential. The site has a long history of upper middle class to affluent residential homes, with mixed use commercial making up most of the zoning. Median household income is $98,948, and mean housing unit prices are >$750,000.00.

East Pasadena is a “Green City”, and recently updated its CAP, which cited schools as “particularly” susceptible to climate change while doubling down on its commitment to enhancing the environmental resilience of these facilities.

STUDENT DEMOGRAPHICS & SCHOOL CONTEXT

Willard Elementary is an IB Magnet School. The International Baccalaureate (IB) learner profile develops students who are inquirers, thinkers, communicators, risk takers, as well as knowledgeable and caring students who are principled, open-minded, well-balanced, and reflective.

60% of the students at Willard are English learners, foster youth, or qualify for free or reduced price lunches. Neighborhood and student demographics indicate that many students are not part of the typical single family households in and around the site.
SITE CIRCULATION CONTEXT

Pedestrian circulation at Willard Elementary is best conceptualized from two perspectives. Faculty and staff can enter from the several main access points off of Madre St. or they may enter the secured access off of their dedicated parking area. Students, parents, and visitors generally enter through the one of the access points illustrated in these circulation diagrams. With the exception of the east lawn adjacent to Madre St. and the school’s central structure the site is relatively secured through a six-foot chain-link fence circumscribing the entire site.

In each of the concepts included here the current circulation routes are essentially maintained. However, the location of the staff parking is relocated to the north aspect of the site, directly adjacent to Del Mar Blvd in the second. The idea of relocating the parking lot is ideal for several reasons. First, the grade is toward the southern aspect of the site which makes asphalt removal and replanting with native grasses to aid in storm water soil percolation ideal. Second the southern aspect is cooler, has less noise pollution and air particulate concentrations, due in part to the higher moisture levels and reduced traffic adjacency.

VEHICLE CIRCULATION CONTEXT

Vehicular circulation is heavy along Madre St., the area where most students are dropped off, but traffic is heaviest along East Del Mar Blvd. In one the concepts the parking lot stays where it is and current vehicular traffic patterns persist. In the other concept presented here parents would still drop students off along Madre St., but staff would enter the new parking lot off of East Del Mar. The idea being that heavy traffic would be concentrated at the northern aspects of the site while and southern aspect of the site would be more sheltered for student natural free play, staging events etc.

Removing the asphalt lot to make the current parking area and the adjacent hard courts either planted earthen landforms or of permeable paving would drastically change the character and circulation of the site. It would also enhance the climate resilience of the site by enhancing ecosystem services, and areas more suitable native habitats for exploration, teaching related to the watershed health etc.
GARDEN EXPANSION
Expansion of courtyard garden to areas adjacent to building #2 create community connection and environmental awareness

OAK WOODLAND PLANT PALETTE
Plant palette spatial layout to encourage exploration while olfactory stimulation creates lifelong nostalgic association

COOLING SURFACE MODIFICATIONS
Remove asphalt and replace with permeable paving or resurface with climate cooling materials

FREE PLAY LEARNING
Native grass massing’s in bioswale areas and free play areas enhance Sobota soil percolation aiding in watershed remediation

BIOSWALES
Expand watershed awareness through site programming, e.g. native grasses, bioswales, and soil web education

FREE PLAY PROGRAMMING COUPLED WITH AUTONOMOUS ECOLOGICAL CONNECTIONS CREATE TEACHABLE MOMENTS ALIGNED WITH IB LEARNER OBJECTIVES AND PASADENA CAP INITIATIVES
SECTION THREE

Design
Coalescence
DESIGN VISION

Free play programming coupled with autonomous ecological connections create teachable moments aligned with IB learner objectives and Pasadena’s Climate Action Plan initiatives.

Initially a single design concept was developed, while this design has merit the designer felt exploring another design solution would add value to the work. Although the designs diverge in physical form, and the levels of proposed modification they both adhere to the same design vision, goals, and objectives outlined.

In the pages that follow each of concepts are illustrated through preliminary sketches, followed by programing and circulation diagrams, a concept plan, and finally a site plan. Each plan will include an elevation, perspective and plan view render for at least one component of the design with a short description.
CONCEPT SKETCHES

Several concept designs follow; each is a variation of straight lines juxtaposed with naturalistic landforms and plant massings. The intent being for built forms to complement or improve daily process flows involved developing hundreds of young minds, while also allowing for the creative exploration and mastery gained navigating more natural appearing spatial forms.
CONCEPT 1

Elevated Play Structure and Free Play Area

In this initial concept there’s a 1/4 mile track and an elevated play structure that increases play area square footage, while also creating additional shade. Psychologically being above teachers and other classmates creates a sense of empowerment for the user while also maximizing view sheds.

Platform is integrated with existing Jacaranda trees, together the space functions as a wind buffer, and shaded area for respite. Ideally students climb, slide, and explore areas with tactile educational components enhance personal daily development.
CONCEPT 1 CONCEPT DIAGRAM

School Yard Designations

1. World Entry Garden - Pick up and drop off location
2. Play Structure - Demonstrated risk control and independent competency, with view sheds and natural engagement
3. Free Play Open Space - Free play learning and exploration area
4. Oak Woodland Sensory Garden
5. Lunch Nook
6. Central Quad - Seat walls and transitional spaces for passive learning
7. Native Grass Garden - Storm water infiltration, outdoor watershed and sustainable energy educational opportunities.
CONCEPT 1 SITE PLAN

WILLARD ELEMENTARY
Initial Concept Design

Concept Vision: Resilient lessons, embrace and to and channels that connect and encourage student appreciation for natural processes, and their role within.

This concept maintains the overall site character and leverages simple straight lines in an attempt to use, broaden stated sustainability goals of the state and local metropolitan with those outlined by surveyed students, faculty and staff. The idea involves removal of most asphalt & replaces this w/permeable paving. Expansion of the open play area to include an Oak woodland & native planting palette aimed at native ecological education coupled with tactile and sensory stimulation.

Streamlining of the entries to improve pedestrian circulation, and permeable paving allowing for teachable moments about water shed health, Eaton Wash etc. This concept is one of three concepts being fleshed out. Of the three this one is the most developed but the others show promise & I look forward to modeling them also. Of the three, this concept involves the least change to the current infrastructure.

1. World Entry Garden – Pick up and drop off location
2. Elevated Play – Competency development, with view sheds and nature engagement
3. Tree Play Open Space – Free play learning and exploration area
4. Oak Woodland Sensory Garden Plantings, 3/4 mile track
5. Lunch Hook
6. Central Quad – Seat walls and transitional space for passive learning
7. Native Grassy Garden - Storm water infiltration, outdoor, watershed and sustainable energy educational opportunities.

LEGEND
= EXISTING TREES
= TREE REMOVAL
= NEW TREES
= EXISTING SHRUBS
= NEW SHRUBS
= SENSORY PLANTINGS
= SITE BOUNDARY
= PERMEABLE SURFACE
= DG TRACK SURFACE
= BOULDER
= BUILDINGS
= SEATING
= BIO Swale

ECO-Education
Free Play
Elevated Nature
Play Track, Shade
Permeable
Track, Bioswale

PEDESTRIAN CIRCULATION

VEHICLE CIRCULATION W
CONCEPT 1 PERSPECTIVE
CONCEPT 2

Elevated Play Structure and Free Play Area

This concept blends the visual with the ecological by bringing in native flora and fauna. It pays homage to the history of Eaton Wash by incorporating a robust dry stream bed suitable for climbing, digging and exploring the natural landscape.

The design intent is to create free play opportunities while restoring native plant community character and ecological function. Staff parking has been relocated to the north, while permeable paving and shade trees provide teachable moments focused on environmental resilience, and energy intelligence while also creating opportunities for outdoor lessons. Pedestrian circulation is prioritized through generous direct line of sight walkways, and seat walls throughout aid in faculty and student comfort.
CONCEPT 2 CONCEPT DIAGRAM

School Yard Designations

1. Open Space Free Play - Demonstrated risk control and independent competency through natural engagement

2. Oak Woodland Native Plant Community - Free play learning and arroyo sensory exploration area

3. Kinder Play Area - Swings, geodome climber, and outdoor classroom with native grasses and sensory plant massings

4. Structured Play Area - Wall ball, geodome climber, hardcourts for basketball, four square and hopscotch

5. Shaded Lunch Nook - Seat walls and transitional spaces for passive lounging and learning

6. Utility Shed and Vermiculture Outdoor Learning

7. Staff Parking

8. Permeable Paving or Climate Cool Surfacing Transitional Node - Climate resiliance teachalbe moments and logistical improvement

9. Community Garden - Garden expansion and plant potting areas

10. Transitional Pedestrian Circulatory Area
CONCEPT 2 SITE PLAN
CONCEPT 2 SITE PLAN