



Adventures in Mimicry

Enhancing Children's Motor Skills Through Imitation Play and Interactive Habitats in the Kansas City Zoo

*What
Inspired
Me?*

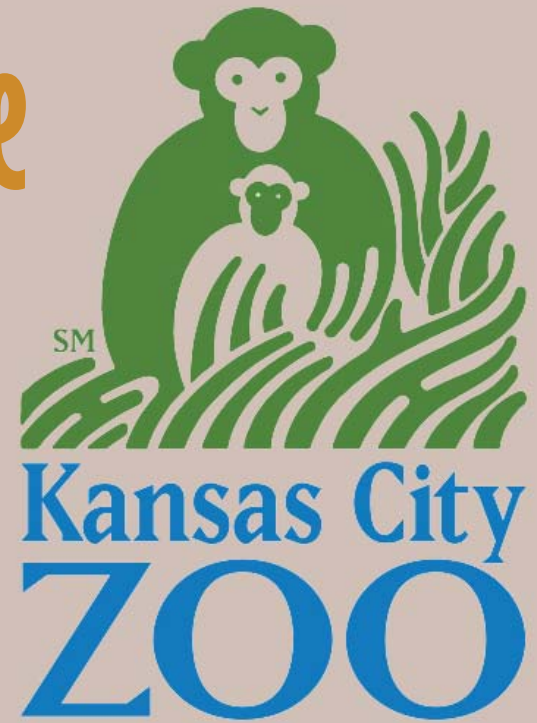


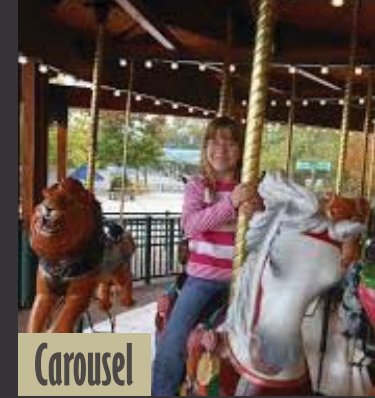
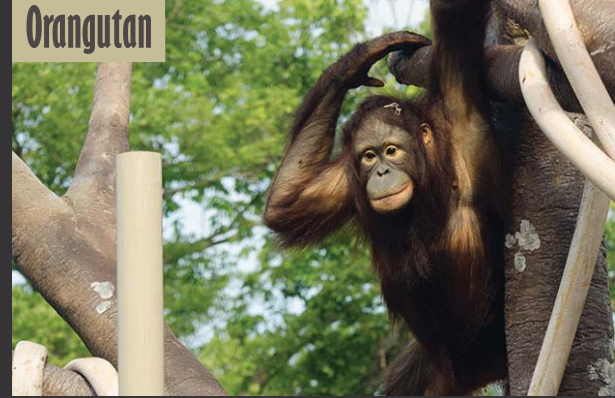


Landscape Architecture
+
Zoology

Path
Through
College

Choosing A Site





Front Entry



Features



2015 - Orangutan Exhibit

2012 - Polar Bear Passage

2000 - Lorikeet Encounter

2013 - Penguin Plaza

2010 - Elephant Exhibit

2011 - Sky Safari

2003 - Chimpanzee Exhibit

- ATM Machine
- Defibrillator
- Food & Beverage
- Gift Shop
- Guest Services
- Mother's Room
- Picnic Area
- Restroom
- Smoking Area
- Ticketing
- Vending Machines

Recent Updates



Most Common Complaints

I respect and love animals and I don't want them to be harassed into activities, but you can just tell the KC zoo inhabitants are bored out of their mind. Other zoo's I've been to the animals are more engaging.

- Becki G.




Size of the zoo-it's quite large, but unlike Omaha or San Diego, it's not dense at all. There are long walks in between exhibits.

- David A.

With the exception of the kangaroos, it felt like everything we looked at was in cage... 'things are better when' they try to recreate an animals natural habitat as much as possible.

- Tanya L.



A stylized illustration of a kangaroo in a naturalistic setting. The kangaroo is depicted in a dark, textured style, standing on a field of green and yellow grass. It is surrounded by several trees with dark, gnarled branches and sparse green leaves. The overall color palette is muted, with greens, yellows, and browns. The illustration is set against a light beige background that curves upwards at the bottom.

Design Question

How can zoo environments be designed to create more interactive exhibit space, therefore enhancing motor skill development in children?



Engaging

Exhibits that challenge their inhabitants both mentally & physically

Imitating

Using mimicry to develop motor skills in children

Connecting

Breaking down visual barriers between animals and visitors

Design Goals

Landscape as Playscape: The Effects of Natural Environments on Children's Play and Motor Development

Ingunn Fjørtoft
Telemark University College

Three Types of Play

- 1 Functional Play
- 2 Constructive Play
- 3 Symbolic Play



Tests	Experimental Group		Comparison Group	
	Pre-Test	Post-Test	Pre-Test	Post-Test
Flamingo (# of instabilities in 30 seconds)	4.7 (0.8)	1.5 (0.3) ***	4.0 (0.6)	3.3 (0.7)
Plate Tapping (time in seconds for 50 taps)	35.0 (1.9)	28.1 (1.2) ***	29.9 (1.1)	27.4 (2.6)
Sit and Reach (cm)	24.9 (0.8)	24.4 (0.8)	25.3 (1.0)	25.5 (0.9)
Standing Broad Jump (cm)	102.8 (2.9)	113.1 (3.6) ***	103.1 (4.3)	111.3 (3.8) **
Sit-Ups (# in 30 seconds)	5.3 (0.6)	6.5 (0.6) **	5.9 (0.8)	7.0 (1.1)
Bent Arm Hang (seconds)	2.6 (0.4)	7.0 (1.0) ***	2.6 (0.6)	5.4 (1.1) ***
Beam Walking (seconds)	11.4 (1.4)	7.5 (0.7) **	7.7 (0.8)	7.2 (1.1)
Indian Skip (# in 30 seconds)	21.8 (2.2)	43.6 (1.9) ***	27.8 (2.4)	37.2 (1.8) ***
Shuttle Run (seconds)	31.9 (0.7)	29.7 (0.5) **	30.7 (0.8)	30.3 (0.7)

Natural Environment's Effects on Motor Skills

Orangutan Canopy

Kansas City Zoo

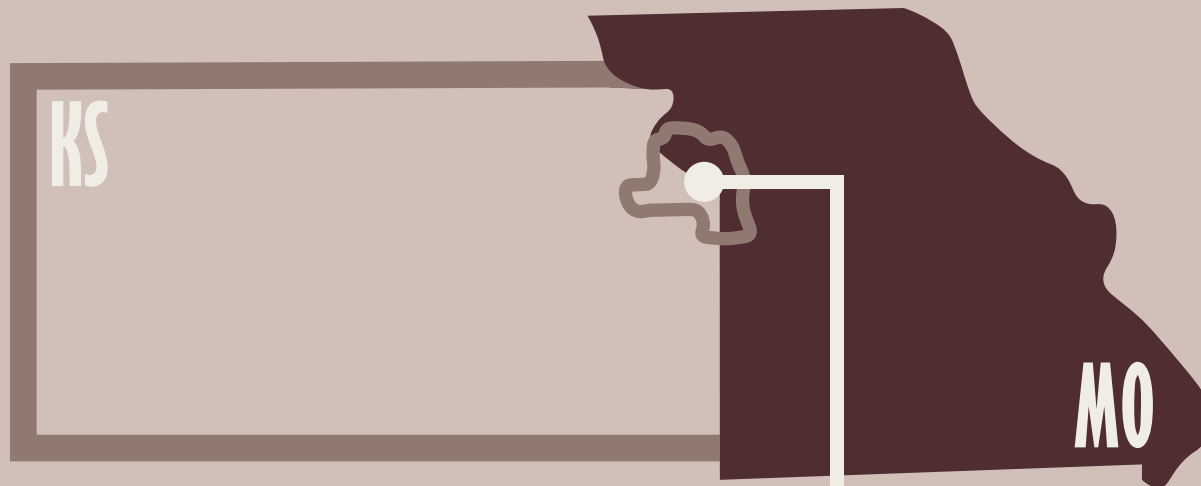
Features

- 1 Outdoor Forest
- 1 Orangutan University
- 3 Orangutan Agility Course



Zoo's Incorporation of Play

Location





1970

1993

1948

1995

1997

Site Timeline

1909 — Zoo Opening

1966 — Ape House Built

1993 — Australia Declared

2003 — Ape House Shut Down

2015 — Ape House Removal

Kansas City Zoo



Unattached Space

Australia

Discovery Zone

Site Map

Issues To Consider

Movement

- Circulation

Inhabitants

- Species Involved
- Barrier Style
- Enrichment Options

Visitors

- What are Motor Skills?
- Motor Skill Table
- Where is Play Encouraged

Issues To Consider

Movement

- Circulation

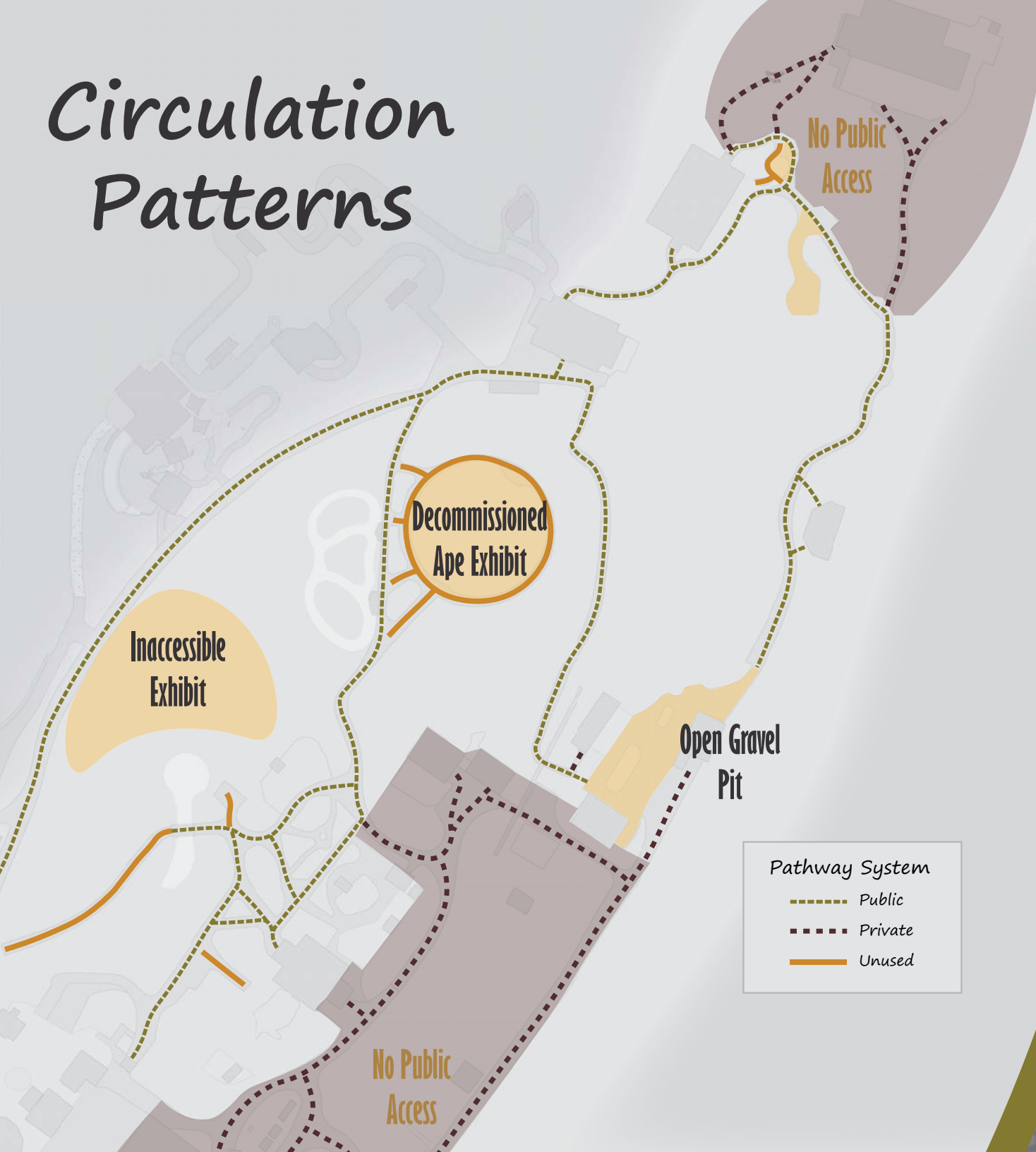
Inhabitants

- Species Involved
- Barrier Style
- Enrichment Options

Visitors

- What are Motor Skills?
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Circulation Patterns





Issues To Consider

Movement

- Circulation

Inhabitants

- Species Involved
- Barrier Style
- Enrichment Options

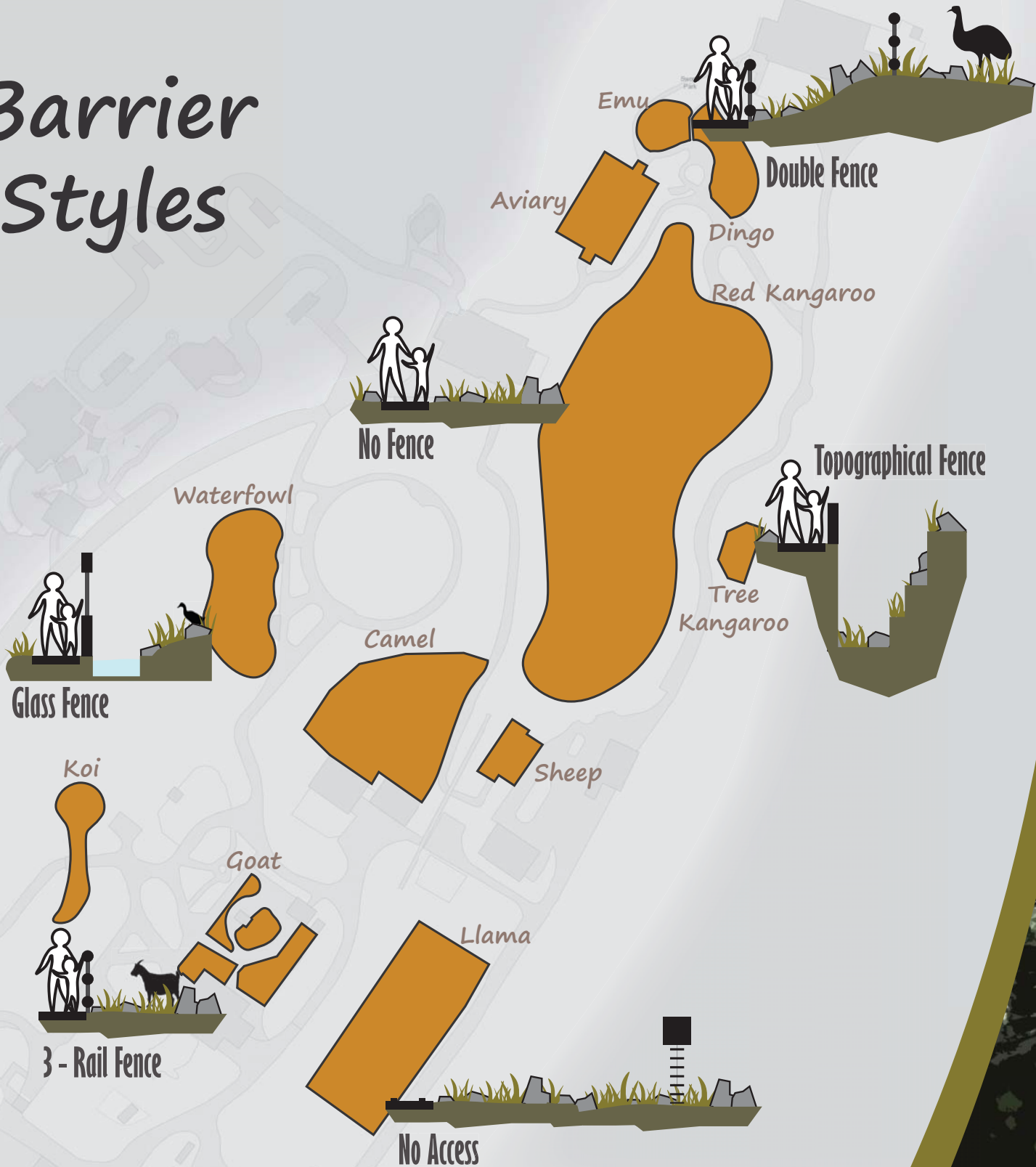
Visitors

- What are Motor Skills?
- Motor Skill Table
- Where is Play Encouraged

Species



Barrier Styles



What is Enrichment?

Physical

Mental

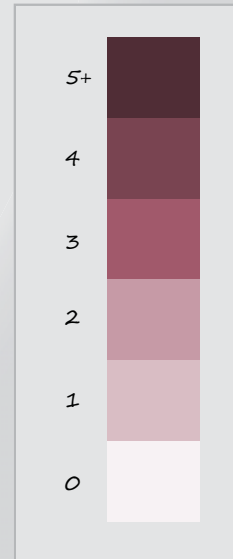
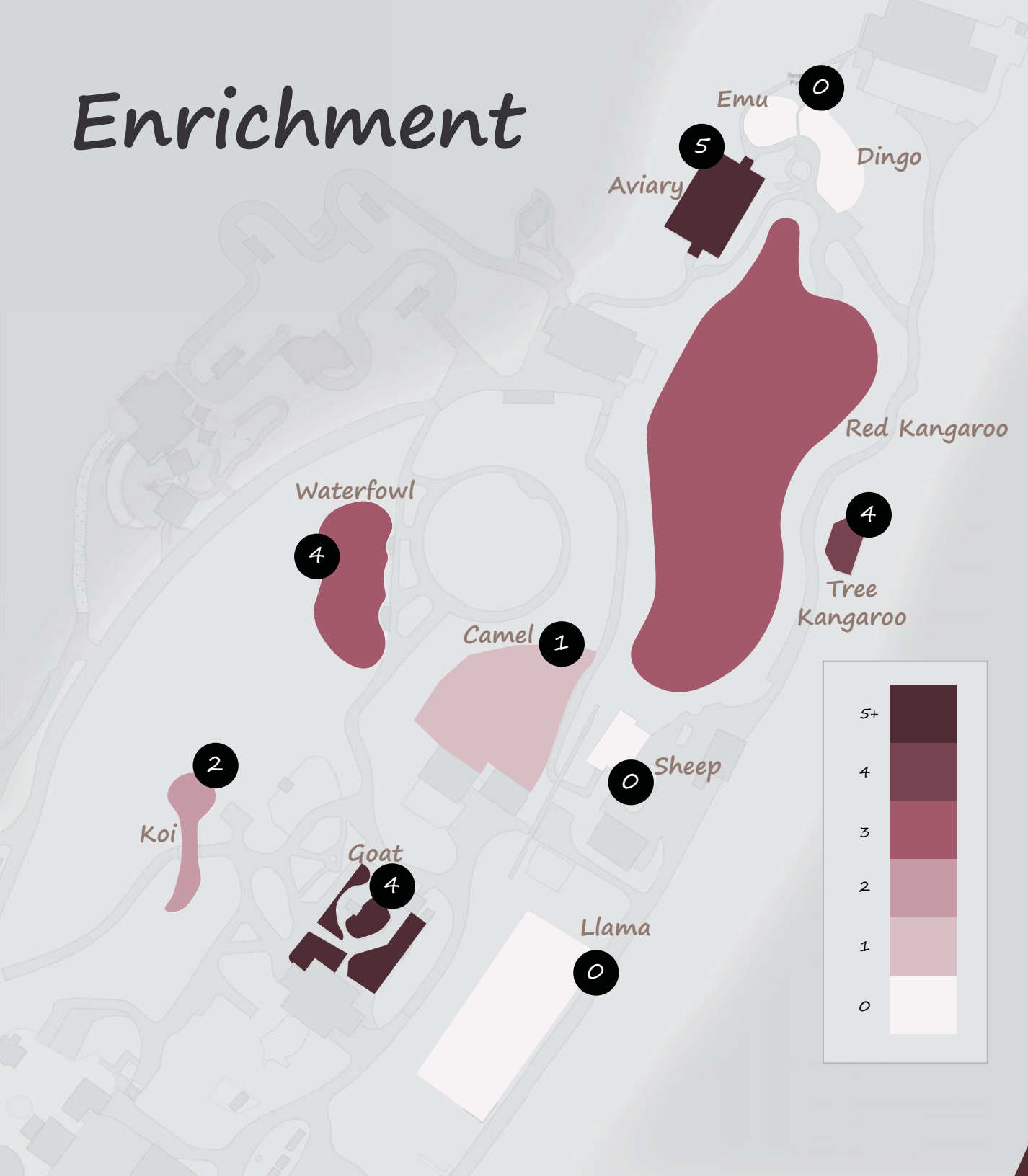
Permanent



Temporary



Enrichment





Issues To Consider

Movement

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Visitors

- What are Motor Skills?
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What Are These Examples Of?



What Are Motor Skills?



*Gross
Motor
Skills*



*Fine
Motor
Skills*



*Combined
Motor
Skills*

Motor Skill Match-ups

Species	Gross Motor Skill	Fine Motor Skill
Emu	Digging	Preening
Dingo	Running	Tearing
Aviary	Flying	Opening Small Objects
Red Kangaroo	Jumping	Object Recognition
Tree Kangaroo	Climbing	Puzzles
Waterfowl	Paddling	Holding Breath
Camel	Carrying	Chewing
Sheep	Pushing	Braiding
Llama	Kicking	Braiding
Goat	Jumping	Chewing
Koi	Swimming	N/A



Active



Passive



Structured



Adaptive

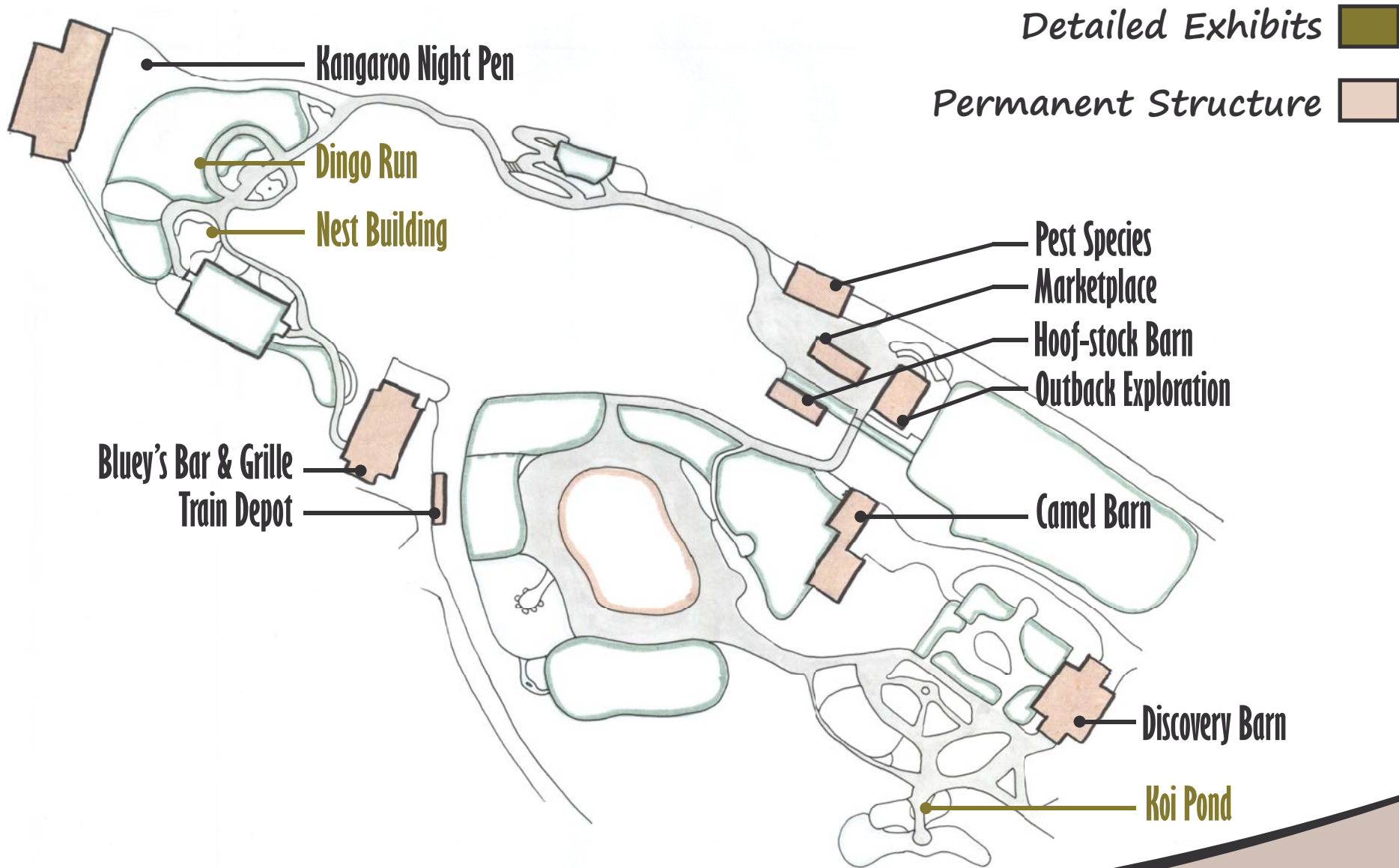
Types of Play

Where Is Play Encouraged?

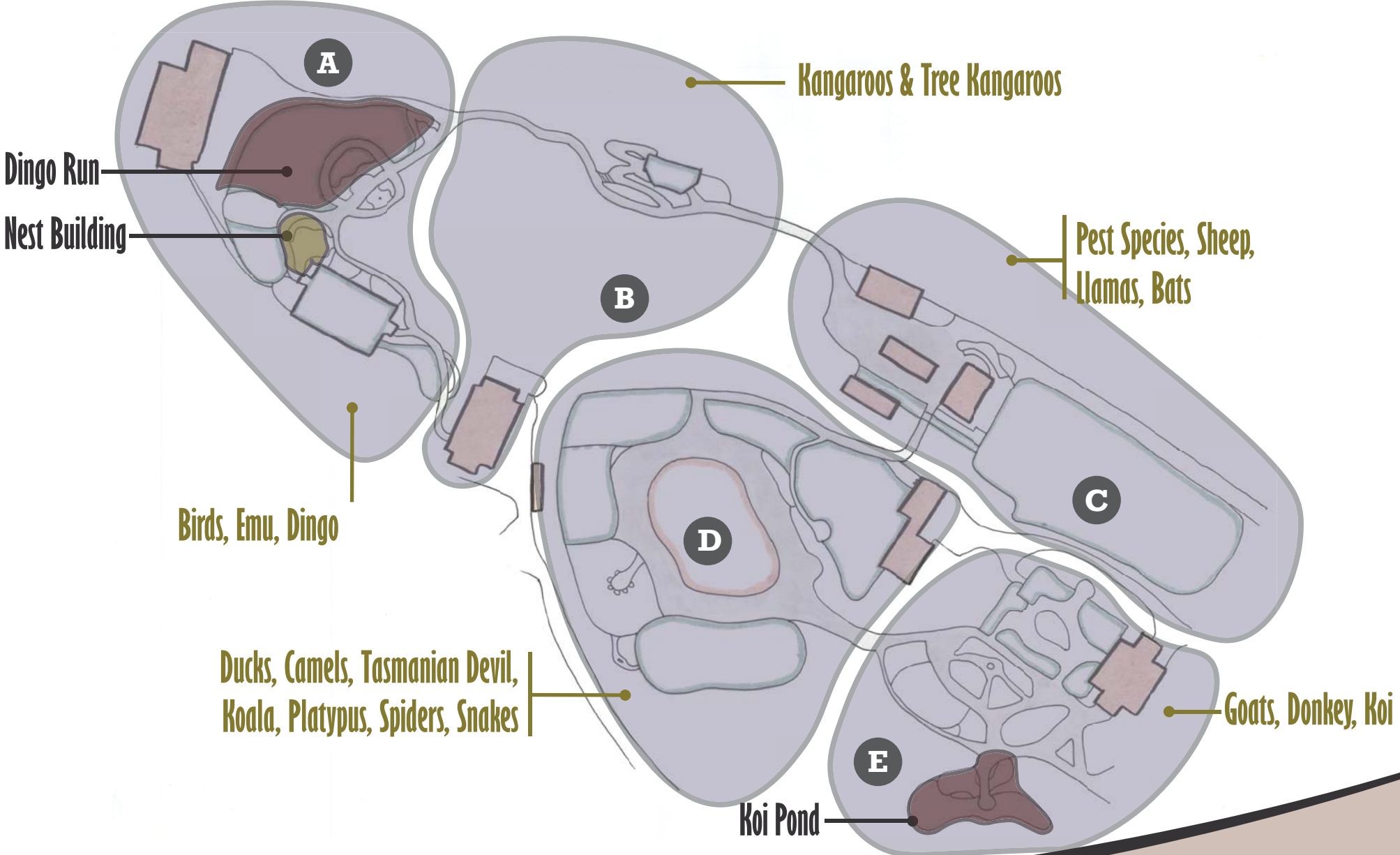


Preliminary Design Work



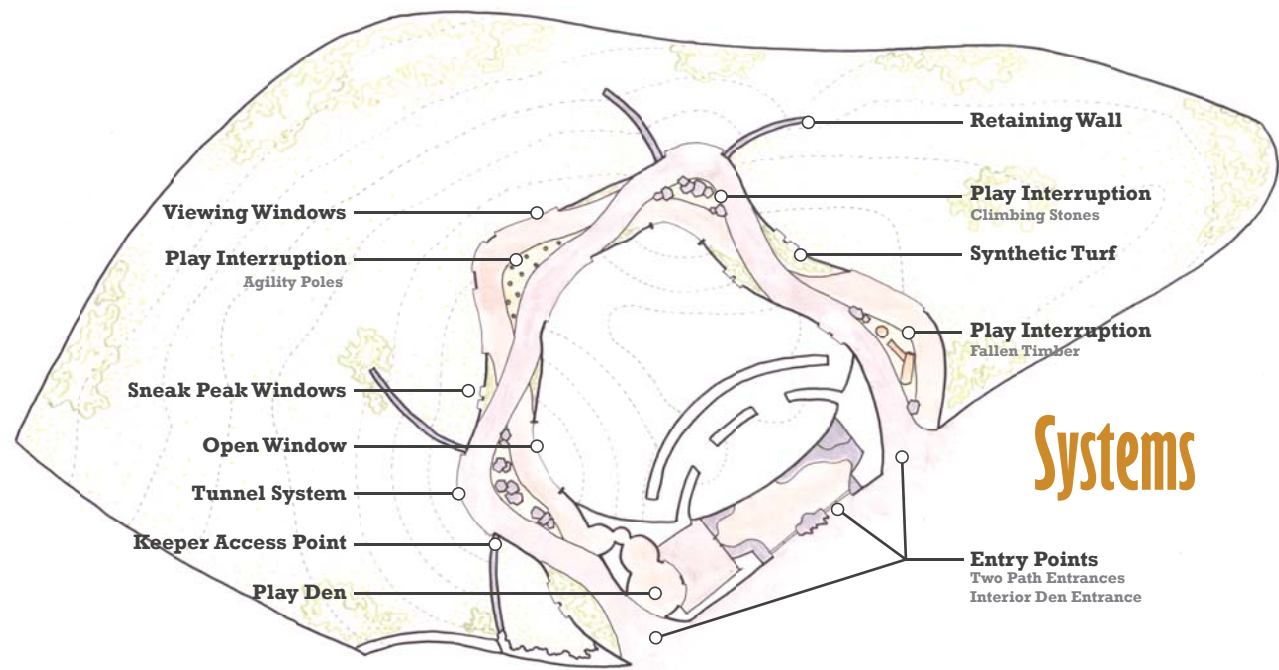


Preliminary Master Plan



Creating Zones

Preliminary Dingo Run

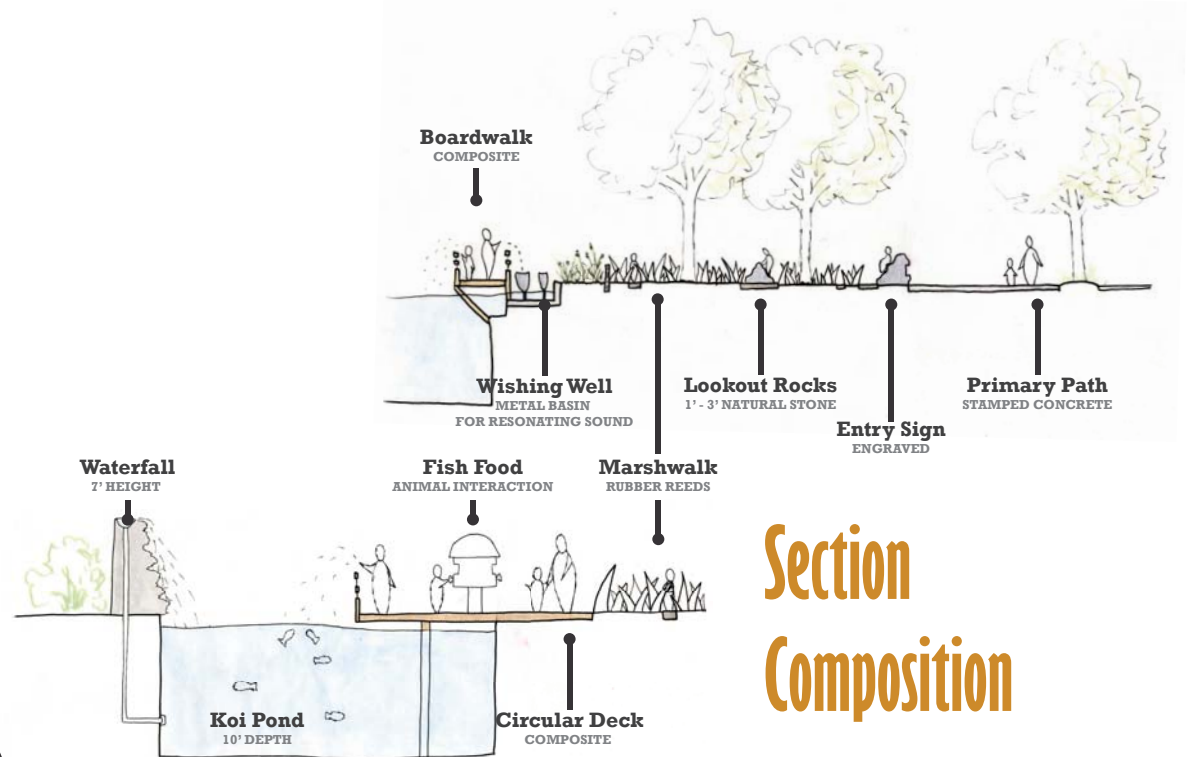
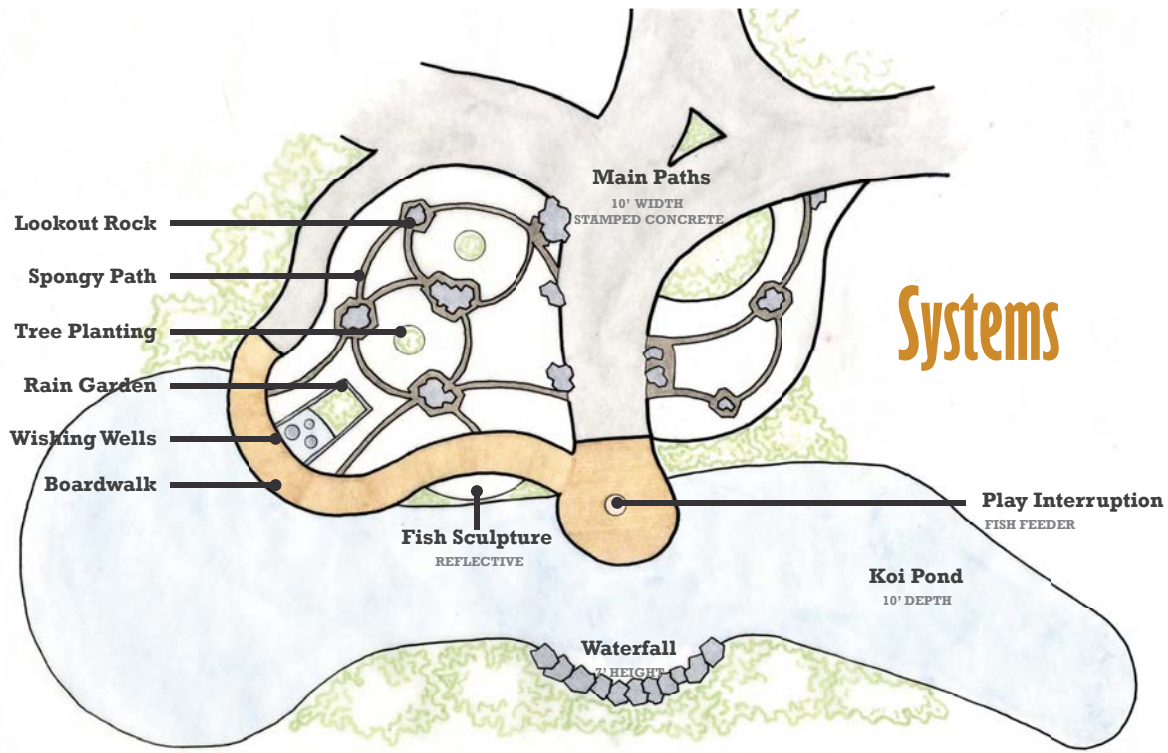


Systems

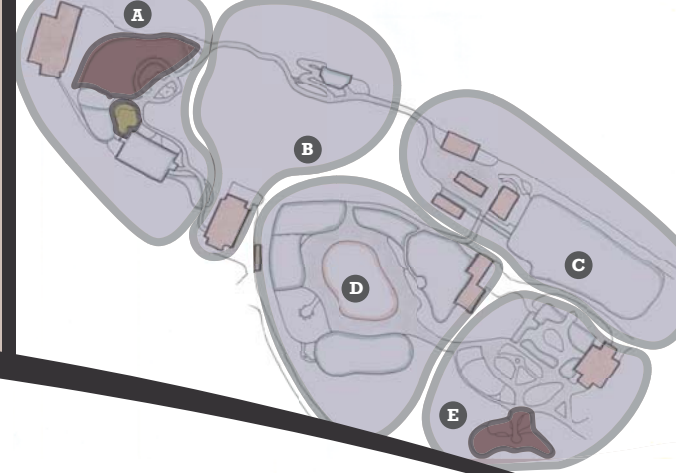


Topography

Preliminary Koi Pond



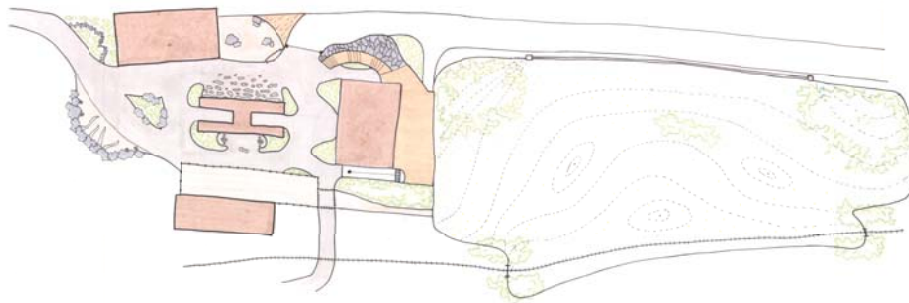
Preliminary Zones



A



C



B



E



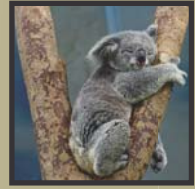
D



Final Design



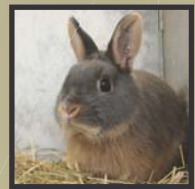
Platypus



Koala



Tasmanian Devil



Rabbit



Bat

New Species

New Exhibits
Existing Exhibits



Exhibit Plan

-  Throwing
-  Pushing
-  Pulling
-  Climbing
-  Running
-  Jumping
-  Swimming

Motor Skills

● Play Intervention



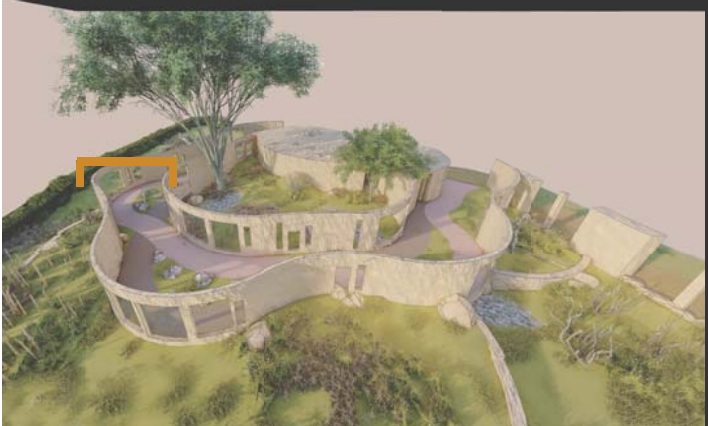
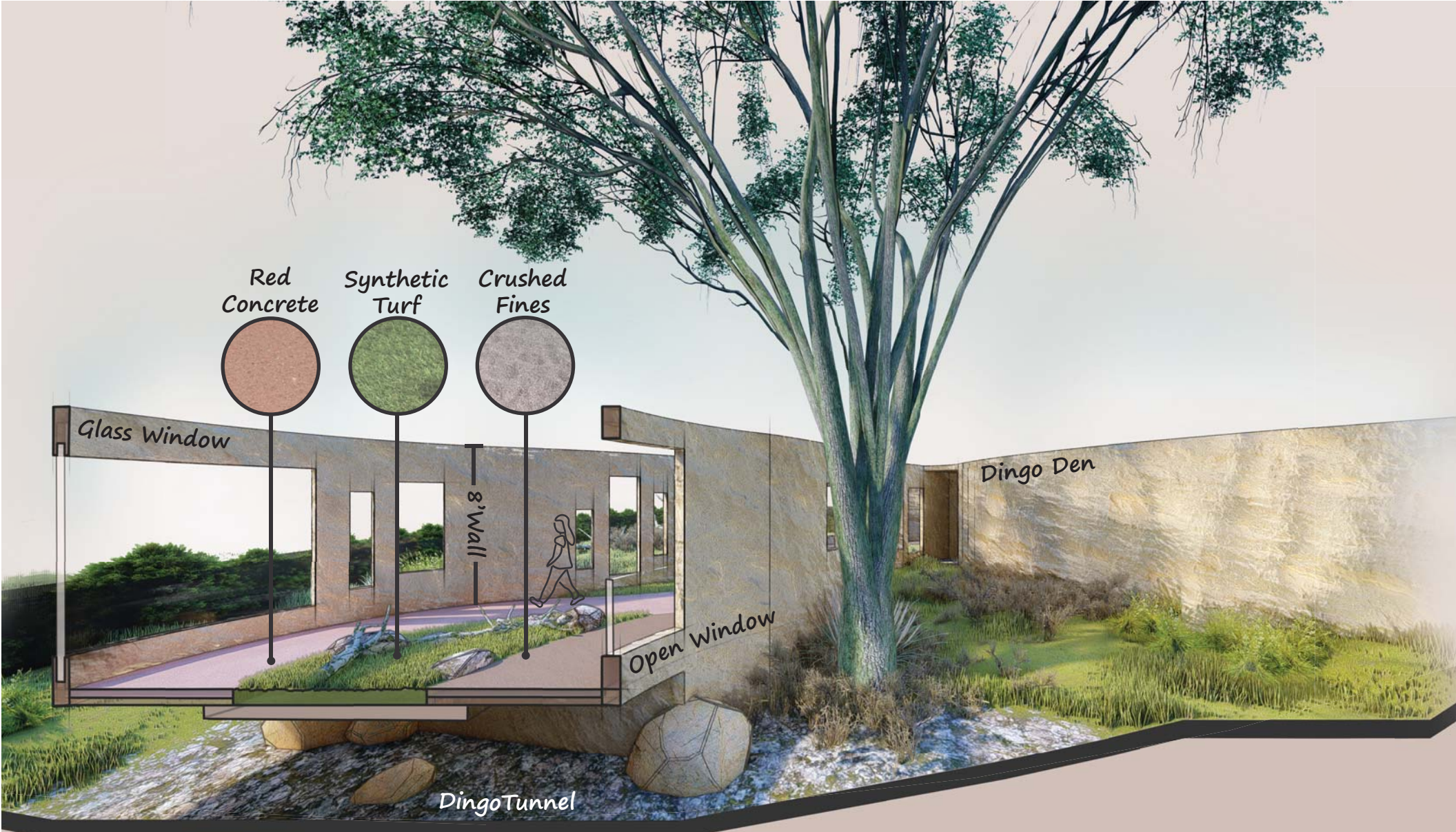
Motor Skill Plan



Dingo Run



Dingo Run



Tunnel To Freedom



P.03
ADA Path

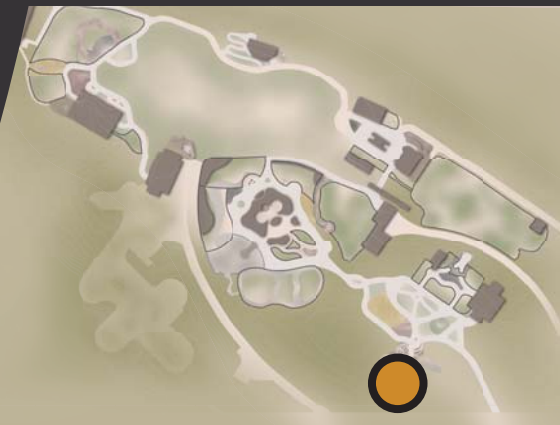
Feeding Station
Limestone Fountain

Naturalized Plantings

P.02

10' Depth

Koi Pond



Marsh Boardwalk



Rubber Reeds

Fish Feeder

Limestone Fountain

Transparent Mesh Reed Panel

Marsh Entrance

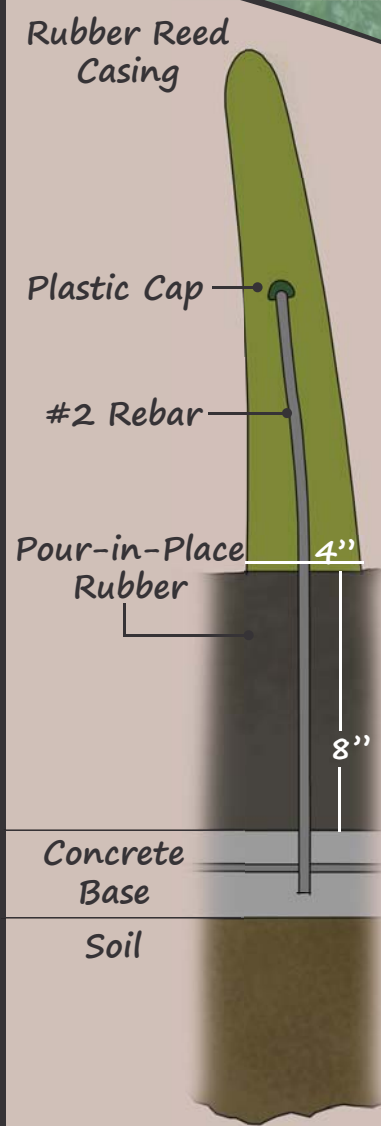
Composite Boardwalk

Rubber Reeds



Limestone Jumping Rocks

Pour-in-Place Rubber Safety Surfacing





Wall Climb

Rope Climb

12'' Rubber Surface

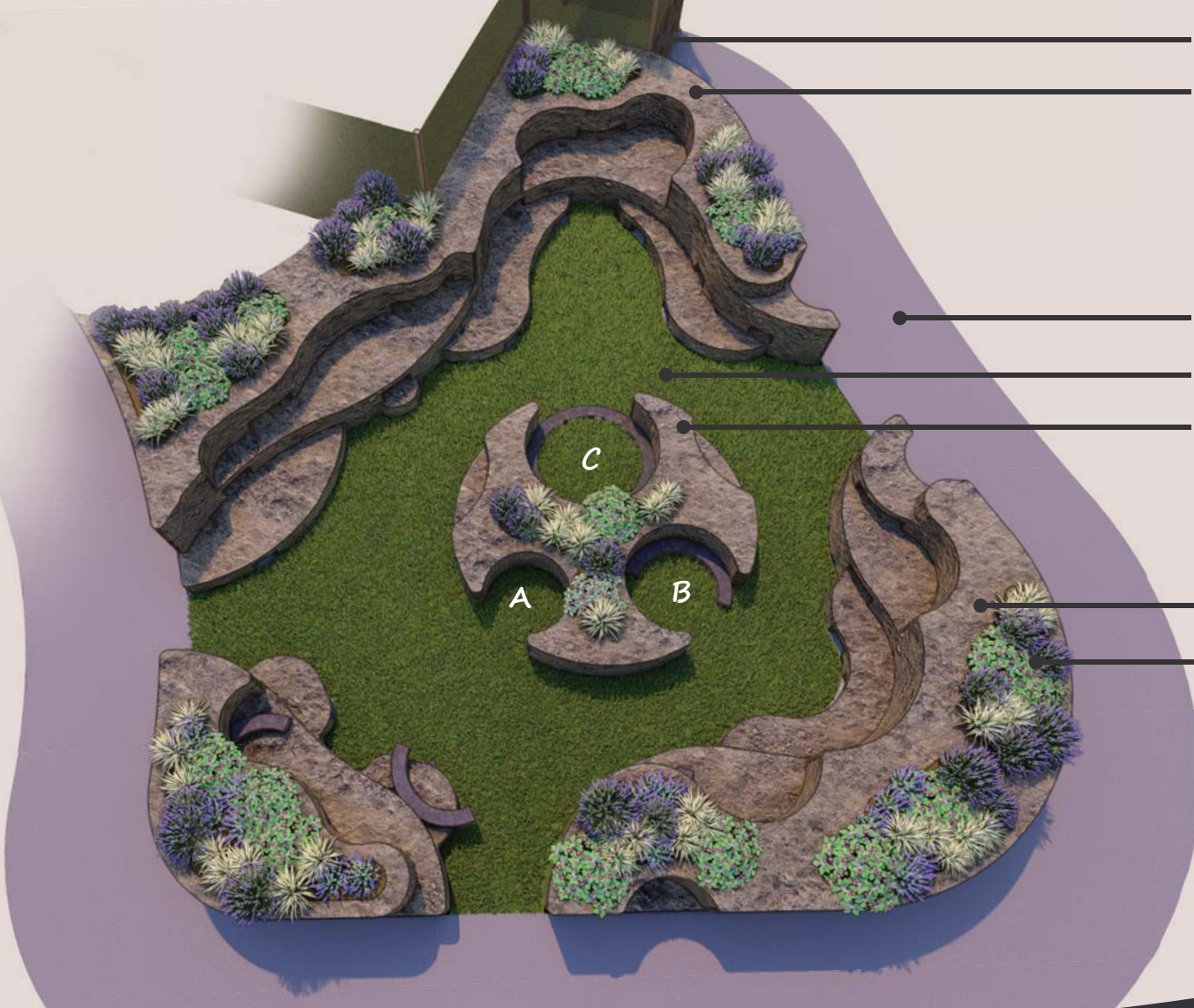
Four - Limb Climb

Primitive Wooden Fence

6'' Rubber Surface



Koala Climb



Aviary Entrance

Cubbies for Nest C

Stamped Concrete

Synthetic Turf

Nest Build Sites

Cubbies for Nest B

Raised Planters



Nest Building



Eye - Level Planters

Nest Build Site

Built-in Seating

Nest Piece

Synthetic Turf



Nest Building

Nest Building Section



Mexican Feather Grass



Dusky Cranesbill Geranium



Cat mint 'Blue Wonder'



English Lavender



Planting Plan

Bat Exhibit

Processes Involved

- 1 Mental Focus
- 1 Body Awareness
- 3 Sensory Perception



A child is jumping joyfully in a grassy field during the golden hour of sunset. The child is wearing a white tank top and red shorts. In the background, there is a large, multi-story stone tower with several windows. The scene is bathed in warm, orange light, and the sky is a mix of orange and blue. The overall mood is peaceful and joyful.

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Can zoo exhibits be designed to create a more interactive exhibit space, therefore enhancing motor skill development in children?