

It's second nature: designing nature play spaces to inspire creativity in early childhood

by

Adyline Ramirez

A REPORT

submitted in partial fulfillment of the requirements for the degree

MASTER OF LANDSCAPE ARCHITECTURE

Department of Landscape Architecture and Regional & Community Planning
College of Architecture, Planning, and Design

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2025

Approved by:

Major Professor
Lee R. Skabelund

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Abstract

Creativity is a vital life skill declining among Americans, disproportionately affecting young children. Creativity is crucial because it empowers individuals and catalyzes societal progress. While creativity is often associated with the arts (painting, drawing, song, dance, performance), it is also evident in critical thinking processes and problem-solving skills. Everybody possesses creative potential; it is not a born trait but rather a skill one can develop. Many argue that creativity should be prioritized in formal education, particularly in preschool or before. In early childhood, a child's play and imagination are considered a manifestation of their creativity because it is the primary way they interact with and explore the world. Playgrounds provide settings in the built environment to play, creating social interaction and physical activity hubs. Nature-based play offers children significant creative development opportunities due to their restorative qualities, living essence, and unique play opportunities. With preschool enrollment at a record high, planners and designers have a growing responsibility to recognize the benefits of nature play and its power to inspire creativity in early childhood settings.

This research explored widely accepted design practices and precedent examples of nature play spaces, investigating landscape strategies to inspire creative thinking in young children. Background conditions were gathered through the literature review, informing a design guidelines review and precedent studies. Findings from the design guidelines review and precedent studies were translated to inform a conceptual re-design of a nature playspace at the Center for Child Development (CCD) at Kansas State University, implementing design techniques to boost creativity in children aged six weeks to five years old. The projective design outcome of the CCD inspires creativity in early childhood by balancing structured play possibilities and open-ended exploration supported by the environment.



it's second nature:

Designing Nature Play Spaces to Inspire
Creativity in Early Childhood

abstract

Creativity is a vital life skill declining among Americans, disproportionately affecting young children. Creativity is crucial because it empowers individuals and catalyzes societal progress. While creativity is often associated with the arts (painting, drawing, song, dance, performance), it is also evident in critical thinking processes and problem-solving skills. Everybody possesses creative potential; it is not a born trait but rather a skill one can develop. Many argue that creativity should be prioritized in formal education, particularly in preschool or before. In early childhood, a child's play and imagination are considered a manifestation of their creativity because it is the primary way they interact with and explore the world. Playgrounds provide settings in the built environment to play, creating social interaction and physical activity hubs. Nature-based play offers children significant creative development opportunities due to their restorative qualities, living essence, and unique play opportunities. With preschool enrollment at a record high, planners and designers have a growing responsibility to recognize the benefits of nature play and its power to inspire creativity in early childhood settings.

This research explored widely accepted design practices and precedent examples of nature play spaces, investigating landscape strategies to inspire creative thinking in young children. Background conditions were gathered through the literature review, informing a design guidelines review and precedent studies. Findings from the design guidelines review and precedent studies were translated to inform a conceptual redesign of a nature playspace at the Center for Child Development (CCD) at Kansas State University, implementing design techniques to boost creativity in children aged six weeks to five years old. The projective design outcome of the CCD inspires creativity in early childhood by balancing structured play possibilities and open-ended exploration supported by the environment.

thank you.

I would like to express my gratitude to all the moving parts that made this project possible. First and foremost, I am thankful for the invaluable knowledge and thoughtful guidance my committee contributed throughout this process. Your time, feedback, and investment in the success of this endeavor did not go unnoticed. I would also like to extend a special thank you to Michaela Coulter, my silly roommate and stellar project partner. Your dedication and passion for nature play were instrumental in the outcome of this project.

I am incredibly grateful to the Center for Child Development (CCD) for welcoming Michaela and me with open arms. Collaborating with such a passionate and encouraging community was a privilege. Your devotion to the children at the CCD is truly inspiring; I feel lucky to have been able to contribute to the organization's mission.

To my family, thank you for always supporting me throughout my college experience. And to all my professors at K-State, thank you for investing your time and energy into my academic success and believing in my potential. Finally, I would be remiss if I did not extend my appreciation to the entire class. I am truly grateful to have experienced such a supportive and uplifting studio setting that pushes me to be my best and allows me to learn from my mistakes gracefully.

the 100 languages

No way. The hundred is there.

The child
is made of one hundred.
The child has
a hundred languages
a hundred hands
a hundred thoughts
a hundred ways of thinking
of playing, of speaking.
A hundred always a hundred
ways of listening
of marveling of loving
a hundred joys
for singing and understanding
a hundred worlds
to discover
a hundred worlds
to invent
a hundred worlds
to dream.
The child has
a hundred languages
(and a hundred hundred hundred more)
but they steal ninety-nine.

The school and the culture
separate the head from the body.
They tell the child:
to think without hands
to do without head
to listen and not to speak
to understand without joy
to love and to marvel
only at Easter and Christmas.
They tell the child:
to discover the world already there
and of the hundred
they steal ninety-nine.
They tell the child:
that work and play
reality and fantasy
science and imagination
sky and earth
reason and dream
are things
that do not belong together.

And thus they tell the child
that the hundred is not there.
The child says:
No way. The hundred is there.

by Loris Malaguzzi
creator of the Reggio Emilia Approach



self portrait circa 2007

NATURE PLAY:

/ 'nāCHər / plā /

the form of children’s play
that is unstructured and
takes place in a nature-
based environment, allowing
for the development of
individual play scripts and
the opportunity to discover
how they are part of a
living system

(Dankiw et al. 2020; Prins et al. 2022).

glossary

affordance —

the perceived function and significance of an environmental feature for an individual, each function may have multiple affordances and hierarchical differences
(Gibson 1986; Fjørtoft 2001; Cloward Drown and Christensen 2014).

Attention Restoration Theory (ART) —

humans have an innate tendency to observe and positively respond to natural elements and places because they enabled survival during evolution
(Prins et al. 2022).

biophilia —

"humankind's innate biological connection with nature"
(Browning et al. 2014, 4).

creativity —

“imaginative activity fashioned so as to produce outcomes that are both original and of value”
(NACCCE 1999, 30).

dramatic play —

occurs when a child wields their imagination to imitate reality and turn objects, actions, and their identity into someone or something else
(IPEMA 2021; Cloward Drown and Christensen 2014; Maxwell et al. 2008).

loose parts —

variables in the environment to be manipulated
(Nicholson 1971; Sutton 2011).

play —

the state of mind one has when engaged in a delightful and self-motivated activity
(U.S. Department of Human Health and Services 2024; Brown and Vaughan 2009).

Stress Recovery Theory (SRT) —

since evolution occurred over a long period in nature, humans are more physiologically and psychologically adapted to natural environments, and exposure reduces stress
(Prins et al. 2022).

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introduction

The Creativity Crisis

Problem & Importance

Proposal Overview

Study Relevance

Research Question

dilemma

The Creativity Crisis

Creative thinking is steadily declining among Americans, particularly among kindergartners through third graders (Kim 2011). While problematic for all ages, **it is especially detrimental for young children because** it stunts abilities they are expected to evolve over a lifetime (Kim 2011).

✦ Creativity can maximize human potential and well-being as well as encourage positive societal change (Kiewra and Veselack 2016).

✦ Many argue that creativity is a skill that can be developed and should be prioritized in the education system in preschool or before (Aljarrah 2017; NACCCE 1999; Kiewra and Veselack 2016; Kim 2011).

✦ In early childhood, play can be considered a manifestation of children’s imagination and creativity because it is the primary way they interact with and investigate the world (Aljarrah 2017; Goodliff et al. 2018).

importance

Getting to the Root of the Problem

As preschool enrollment is at a record high, we, as planners and designers, would be doing children a **disservice with design** that solely focuses on physical development at the expense of the interpersonal growth playscapes can facilitate (NIEER 2023; Castro 2016). With playgrounds' immense developmental benefits, they **should also contribute to children’s creative development**, allowing them to reach their full potential.

✦ Nature-based play environments provide different and often more beneficial play opportunities (Prins et al. 2022; Kiewra and Veselack 2016).

✦ Nature play offers creative development opportunities due to its restorative qualities and unique play affordances (Kiewra and Veselack 2016; Gurholt and Sanderud 2016; Sutton 2011; Moore 1989; Zamani 2016; Cloward Drown and Christensen 2014; Herrington and Lesmeister 2006; Prins et al. 2022; Fjørtoft 2001; Williams et al. 2018; Plambech and Konijnendijk van den Bosch 2015).



fig. 1.1 The Center for Childhood Development (CCD) at Kansas State University's south playground (Skabelund 2025).

Proposal Overview

The Center for Child Development (CCD) is a child care facility on the Kansas State University campus serving students, parents, staff, and the greater Manhattan, Kansas community. As a program in the Department of Applied Human Sciences, they prioritize nurturing environments, exploration, and evidence-based practices in early childhood development and education. Students at the CCD range from 6 weeks to 5 years old and are encouraged to participate in nature-based play daily. The existing playscape at the CCD was intentionally designed to prompt investigation and build a connection with the outdoors. Critical updates include ground plane resurfacing and a more diverse planting strategy that allows visibility and provides seasonal interest. This proposal addresses the site concerns of the CCD's nature playground while maintaining its original intention and values. The projective design aims to further enhance the play space through landscape strategies that promote creativity.

This study employs a qualitative methods approach to inform a conceptual redesign for the CCD at Kansas State University. Methods to collect information guiding the projective design included reviewing existing nature play design guidelines and conducting precedent studies. The primary focus of the research was to identify landscape design strategies and principles that promote creativity on nature-based playgrounds and apply them to the CCD design.

Study Relevance

Children are impressionable and deserve to play in spaces that foster meaningful learning opportunities and healthy development. Landscape architects must understand the full potential of playscapes for childhood development in order to lend their expertise to create space that supports children's full spectrum of play. The research seeks to offer additional insight into the imaginative and creative development that nature-based playgrounds can facilitate through strategically designed spaces.

RESEARCH QUESTIONS

How can landscape architects implement nature play design strategies to inspire creativity in children aged six weeks to five years old for the Center for Child Development at Kansas State University's playground redesign?

- ✦ How can nature-based play spaces encourage creativity in early childhood?
- ✦ What are design strategies that inspire creativity in preschool-age children?

background

Play, Creativity, & Nature: Nurturing Young Minds

Topic Overview

Literature Map

Literature Review

What is Play?

Cultivating Creativity

The Case for Nature Play



play, creativity, & nature: nurturing young minds

Topic Overview

Play is a universal and integral part of life. Especially crucial for early childhood development, play supports physical, social-emotional, language and literacy, and cognitive development (AAP 2024; Cloward Drown and Christensen 2014; DAurizio and Hoffman 2024; Herrington and Lesmeister 2006; Prins et al. 2022; Studio Ludo et al. 2023). Playgrounds offer settings in the built environment for children to play, creating social and physical activity hubs. Nature play takes place in nature-based environments and is unstructured, allowing children to develop unique play narratives and discover how they are part of a living system (Dankiw et al. 2020; Prins et al. 2022). Play in nature-based environments supports healthy physical, social-emotional, and cognitive development in early childhood, as well as elicits more creative thinking than indoors (Prins et al. 2022; Dankiw et al. 2020; Robson and Rowe 2012).

Creativity is an important life skill that can be encouraged from a young age in school and is expressed artistically and through strategic thinking and ingenuity (Aljarrah 2017; NACCCE 1999; Kim 2011; Robson and Rowe 2012; Kiewra and Veselack; Nicholson 1971). We must capitalize on nature play's opportunities to inspire creativity in early childhood through the unique affordances of nature-based environments. Nature's flexibility, the abundance of loose parts, play diversity, and restorative qualities encourage creativity and imagination (Kiewra and Veselack 2016; Gurholt and Sanderud 2016; Sutton 2011; Moore 1989; Zamani 2016; Cloward Drown and Christensen 2014; Herrington and Lesmeister 2006; Prins et al. 2022; Fjørtoft 2001; Williams et al. 2018; Plambech and Konijnendijk van den Bosch 2015).

Additional environmental qualities, such as site layout, scale, topography and elevation changes, paths, enclosure, and plant material, can and should be curated to maximize the potential for creative development in nature playscapes (Kiewra and Veselack 2016; DAurizio and Hoffman 2024; Herrington and Lesmeister 2006; Fjørtoft 2001; Bailey et al. 2019; Zamani 2016; Maxwell et al. 2008; Cloward Drown and Christensen 2014; Moore 1989; Sutton 2011; Goodliff et al. 2018; Moore 1989).

fig. 2.1 A child arranging rocks into a pattern, wielding their creativity to make something meaningful to them within a nature-based environment (Cottonbro Studio 2020).

literature review

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- 2. Aljarrah 2017
- 3. Austin 1974
- 4. Bailey et al. 2019
- 5. Brown and Vaughan 2009
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- 12. Fiala 2017
- 13. Gibson 1979
- 14. Goodliff et al. 2018
- 15. Gurholt and Sanderud 2016
- 16. Herrington and Lesmeister 2006
- 17. IPEMA 2021
- 18. Kiewra and Veselack 2016
- 19. Kim 2011
- 20. Maxwell et al. 2008
- 21. Moore 1989
- 22. NACCCE 1999
- 23. Nicholson 1971
- 24. NIEER 2023
- 25. Plambech and Konijnendijk van den Bosch 2015
- 26. Prins et al. 2022
- 27. Robson and Rowe 2012
- 28. Studio Ludo et al. 2023
- 29. Sutton 2011
- 30. Taddei and Budhai 2017
- 31. Tijnagel-Schoenake 2018
- 32. United Nations 1989
- 33. U.S. Department of Human Health and Services 2024
- 34. Williams et al. 2018
- 35. Zamani 2016

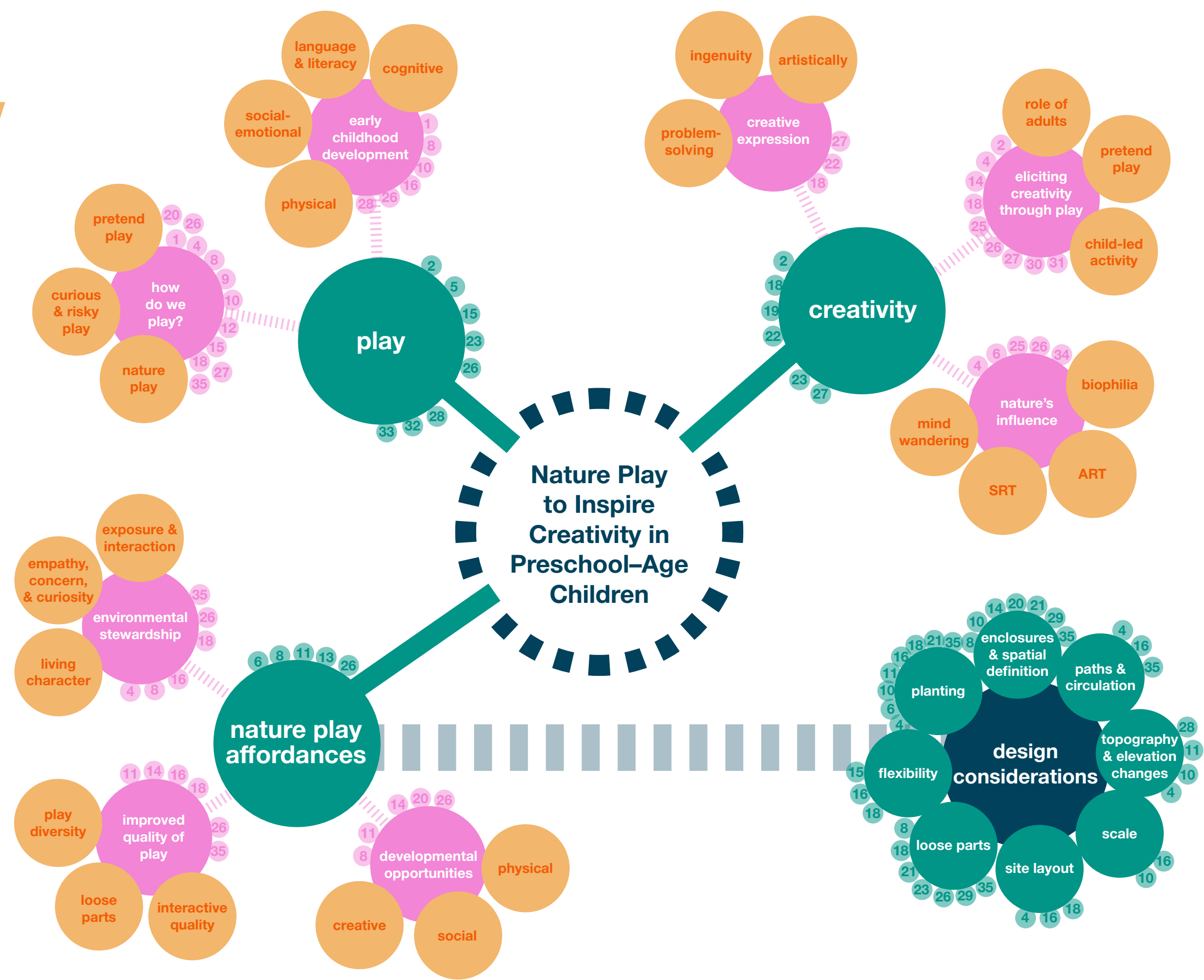


fig. 2.2 Key Concepts identified from the literature review (Ramirez 2025).

PLAY:

/plā/

the state of mind one has
when engaged in a delightful
& self-motivated activity

(U.S. Department of Human Health and Services 2024; Brown and Vaughan 2009).

what is play?

Defining Play

Play is a universal part of life. In fact, play is deemed so necessary that the United Nations declared it a fundamental right, proclaiming that every child deserves the privilege of “rest and leisure, to engage in play and recreational activities appropriate to the age of the child and to participate freely in cultural life and the arts” (1989). Play is unifying, as people are most active and socially engaged with others when playing (Studio Ludo et al. 2023). While it may present itself differently for varying age groups, play can be observed as the state of mind one has when immersed in a delightful and self-motivated activity (U.S. Department of Human Health and Services 2024; Brown and Vaughan 2009). Although freely chosen, others may provide play opportunities, and play can occur anywhere; however, not all play opportunities are equal (U.S. Department of Human Health and Services 2024; Studio Ludo et al. 2023).

In particular, articulating play in early childhood becomes complex because, at this age, “to play means to live life as it is actually lived” (Aljarrah 2017, 24). Play encompasses young children’s interactions with others and their environment; it is their way of existing, questioning, and understanding their surroundings (Aljarrah 2017). In early childhood, play behaviors are intrinsically motivated, voluntary, satisfying, flexible, imaginative, open, ambiguous, and ludic (Prins et al. 2022; Aljarrah 2017; Gurholt and Sanderud 2016). Attributes of play align with modern perspectives on curiosity, wonder, exploration, and creativity, which are innate and deeply linked to children’s play, growth, and learning (Gurholt and Sanderud 2016).

Play is Learning

Play involving experimentation, risk-taking, and safely testing boundaries is fundamental to a child's development and growth (AAP 2024; Gurholt and Sanderud 2016). Play is children's primary means of examining, interacting with, and contextualizing the world in early childhood (Kiewra and Veselack 2016; Prins et al. 2022; Cloward Drown and Christensen 2014). The objects and events children layer into their play create a conceptual model of the world around them (Prins et al. 2022). By processing reality through play, children can organize their thoughts, recreate their community culture, and, most importantly, establish a sense of autonomy, empowering them to navigate their surroundings (Cloward Drown and Christensen 2014; Kiewra and Veselack 2016). Additionally, outdoor settings such as playgrounds enable children to learn about the world by offering safe spaces to refine essential life skills in a structured setting (Austin 1974).

Thus, play and learning in early childhood education are inextricably interrelated (Prins et al. 2022; DAurizio and Hoffman 2024). Play is arguably the most effective medium for learning in early childhood education, indoors in a formal classroom and outdoors in a nature-based setting (Aljarrah 2017; Prins et al. 2022). However, nature-based play is routinely under appreciated for its potential to enhance cognitive development due to its common regard for "blowing off steam" and recovering from the learning taking place indoors (Prins et al. 2022). Adults often label play as either/or in early childhood, even though children perceive no confines between play and work, art and science, recreation and education (Nicholson 1971). Play, especially in nature-based environments, should be considered an extension of education, not an escape from the labor of learning to promote cognitive development (Aljarrah 2017; Prins et al. 2022).

PLAY HELPS CHILDREN
PROCESS REALITY



fig. 2.3 Play allows children to organize their thoughts, recreate their community, and develop a sense of autonomy to process their reality (Ramirez 2025).

PLAY IS WORK

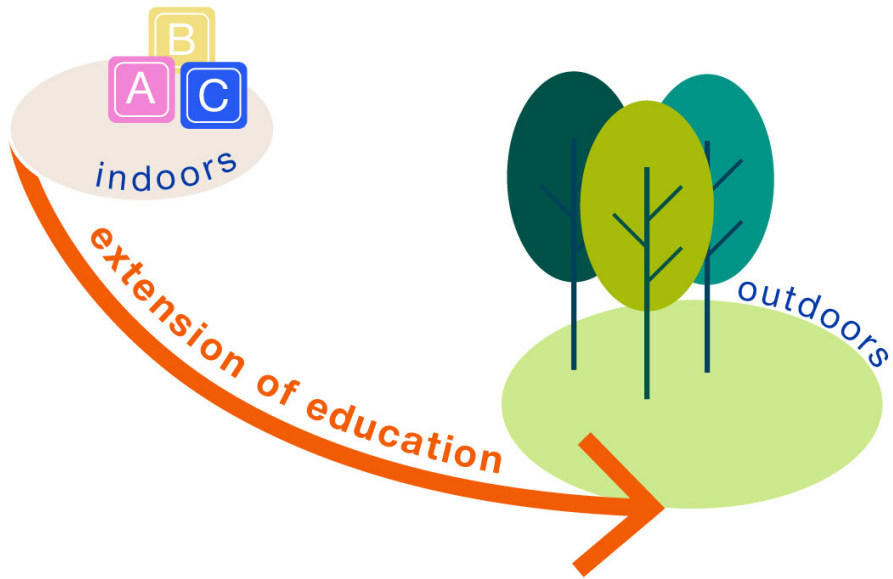


fig. 2.4 The play children do outside is an extension of the learning indoors (Ramirez 2025).

Developmental Benefits

Additionally, play is vital to early childhood because it provides context for critical developmental benchmarks (Prins et al. 2022). Play supports the development of physical skills, social-emotional competency, language and literacy, and cognition in early childhood (AAP 2024; Cloward Drown and Christensen 2014; DAurizio and Hoffman 2024; Herrington and Lesmeister 2006; Prins et al. 2022). Investing in play is one of the most efficient uses of community resources for improving public health because playgrounds serve more visitors with varying ages, abilities, genders, and demographics than nearly any other public space (Studio Ludo et al. 2023).

Physical Development

Play strengthens motor competence, or the muscle coordination required to complete tasks (AAP 2024). Fine and gross motor skills proficiency boosts confidence in infants, toddlers, and preschoolers, ultimately increasing physical activity (AAP 2024; Herrington and Lesmeister 2006; Prins et al. 2022). Play also helps develop our 'hidden' proprioceptive and vestibular senses (DAurizio and Hoffman 2024; Studio Ludo et al. 2023). Proprioceptive refers to the feeling of where our body is oriented in space (DAurizio and Hoffman 2024; Studio Ludo et al. 2023; Bailey et al. 2019). Vestibular is our spatial awareness of movement and balance (DAurizio and Hoffman 2024; Studio Ludo et al. 2023).

Cognitive Development

Play instills critical life skills in children, including intrinsic motivation and executive functioning (AAP 2024). At this stage, executive functioning is evident in memory, flexible thinking, and self-regulation (AAP 2024; Herrington and Lesmeister 2006). Children exercise these capabilities while playing to learn, problem-solve, and focus, which are fundamental skills for school preparedness and academic success (AAP 2024).

Social–Emotional Development

Play has proven to support the growth of social-emotional abilities (Prins et al. 2022). These skills include listening to directions, paying attention, resolving conflicts, negotiating relationships, strategy, cooperation, risk-taking, communication, and empathy (AAP 2024; DAurizio and Hoffman 2024). Play encourages creative growth in early childhood by developing problem-solving, abstract thinking, individual influence, environmental understanding, curiosity, and imagination (DAurizio and Hoffman 2024; Herrington and Lesmeister 2006). Further, play and stress have an interdependent relationship, where more play is associated with lower cortisol levels and lower anxiety (AAP 2024; DAurizio and Hoffman 2024). Preschool-age children develop higher emotional intelligence when given freedom in a stimulating play space (Cloward Drown and Christensen 2014).

Language & Literacy

Play reinforces the developmental signature of language in children aged three to five through the social interactions it initiates (Herrington and Lesmeister 2006; Prins et al. 2022). Children practice their language skills when playing with others and are exposed to new words, expanding their vocabulary (AAP 2024). Adult and peer interaction is crucial for language and literacy development, as it prompts children to articulate their speech sounds and diligently listen to others (AAP 2024).

Partaking in Play

Thus, how do we play? Partaking in play looks different to everyone and depends on the individual's interpretation of play and experiences. Interestingly, the culture in which a child grows up can influence the skills they develop while playing (AAP 2024). Certain types of play can support specific developmental benchmarks, and as children mature, their play becomes more complex (Maxwell et al. 2008).

Playing Pretend

Transcending into a fantasy world through dramatic play is vital in early childhood development (Cloward Drown and Christensen 2014). Dramatic play—also known as symbolic, pretend, fantasy, make-believe, or imaginative play—occurs when a child wields their imagination to imitate reality and turn objects, actions, and identity into someone or something else (IPEMA 2021; Cloward Drown and Christensen 2014; Maxwell et al. 2008). Sociodramatic play, or dramatic play involving multiple members, fosters social interaction among children (Prins et al. 2022; Robson and Rowe 2012). In preschool-age children, dramatic play is essential for social, emotional, and cognitive development because it urges them to think abstractly using symbols to represent something else (Maxwell et al. 2008). Dramatic play enhances children's understanding of the world and builds cognitive capacity serving as a communicative outlet to express themselves beyond the constraints of reality (IPEMA 2021; Cloward Drown and Christensen 2014; Castro 2016). In fact, dramatic play strengthens and creates new synaptic connections in children's brains by stimulating multiple domains (cognitive, motor, emotional, and linguistic) (Cloward Drown and Christensen 2014). As children evolve, so does their play, enabling more dramatic and sociodramatic play (Maxwell et al. 2008).

Pushing Boundaries

In addition, risky and curious play offers children valuable educational and developmental opportunities (Bailey et al. 2019; Gurholt and Sanderud 2016; DAurizio and Hoffman 2024). Risky play refers to the exhilarating prospects for physical activity that involve uncertainty and potential risk of injury (Bailey et al. 2019). Risky play is beneficial for childhood development because it prompts children to assess their surroundings and make conscious decisions about how they play based on personal abilities and comfort (Bailey et al. 2019). While children are encouraged to challenge their personal limits during risky play, it is essential to note that risk does not—and should not—equate to danger (DAurizio and Hoffman, 2024). Risk becomes dangerous when children can not perceive the potential outcomes of their actions and, thus, are not given the full context to determine their participation (DAurizio and Hoffman 2024).

Parallel to risky play, curious play argues that stimulus for risk-taking and thrill does not have to involve serious physical danger (Gurholt and Sanderud 2016). Curious play describes children's innate urge to explore and investigate their physical and social surroundings and existential desire to discover, understand, and grow (Gurholt and Sanderud 2016). This type of play suggests that children accept risk as part of their ongoing hunt for enlightening experiences about themselves and their world (Gurholt and Sanderud 2016).



fig. 2.5 A child exploring the wonders of the natural world (Fernanda 2023).

Nature Play

Nature-based play has become increasingly acknowledged in early childhood because of the social, physical, and cognitive benefits of interacting with nature at a young age (Fiala 2017; Prins et al. 2022; Dankiw et al. 2020). The term 'nature play' refers to the type of play in a natural environment that encourages individual play scripts and helps children understand their connection to the living system (Dankiw et al. 2020; Prins et al. 2022). There is no one-fits-all description of a nature play space; however, they typically include surfaces for living elements to grow and offer children opportunities to interact with non-man-made features, like plants and wildlife (Prins et al. 2022). Nature-based settings also contain natural non-living elements like water and rocks, weather factors, and seasonal changes (Prins et al. 2022). Nature play supports physical and cognitive play behaviors, well-being, child development, education, and can inspire environmental stewardship at a young age (Prins et al. 2022; Dankiw et al. 2020; Zamani 2016; Bailey et al. 2019). Nature playscapes offer distinct, unique play possibilities and enhance the quality of play compared to conventional playgrounds and interior spaces (Prins et al. 2022; Kiewra and Veselack 2016).

CREATIVITY:

/ˌkrēāˈtɪvədē/

“imaginative activity
fashioned so as to produce
outcomes that are both
original and of value”

(NACCCE 1999, 30).

cultivating creativity

Defining Creativity

Creativity is a broad concept, often associated with the gifted few and commonly expressed through art-based activities (Robson and Rowe 2012). However, everybody—not just the artistic—contains creative potential (Robson and Rowe 2012; Kiewra and Veselack 2016; Nicholson 1971). The National Advisory Committee on Creative and Cultural Education (NACCCE) defines creativity as the imaginative process resulting in original and valuable outcomes (NACCCE 1999).

Further, the NACCCE identifies creativity through four fundamental aspects of creative processes: imaginative thinking or approaches, goal-oriented behavior, which must result in an original idea or object, and create an outcome relevant to the objective (NACCCE 1999). Creativity in early childhood can be observed as a child's ability for both convergent (well-defined solutions) and divergent (multiple and varying solutions) thought processes (Kiewra and Veselack 2016).

Benefits of Creative Development

Creative development is necessary because it can maximize human potential and well-being as well as inspire positive societal change (Kiewra and Veselack 2016). Flexible thinking and creativity are crucial life skills that children can develop to become active members of society (Kiewra and Veselack 2016). Many argue that creativity is an innate trait but a skill that can be developed over time and should be prioritized in formal education beginning in preschool or before (Aljarrah 2017; NACCCE 1999; Kim 2011).

Expressing Creativity

Rather than being limited to the imaginative arts (painting, song, dance, etc.), creativity is evident in problem-solving skills and ingenuity, which can be demonstrated through actions like building and construction (Goodliff et al. 2018; Kiewra and Veselack 2016). Further, creativity does not mean producing a completely original idea; it is about discovering a new way of thinking for that individual and always requires critical thinking (Robson and Rowe 2012; NACCCE 1999).

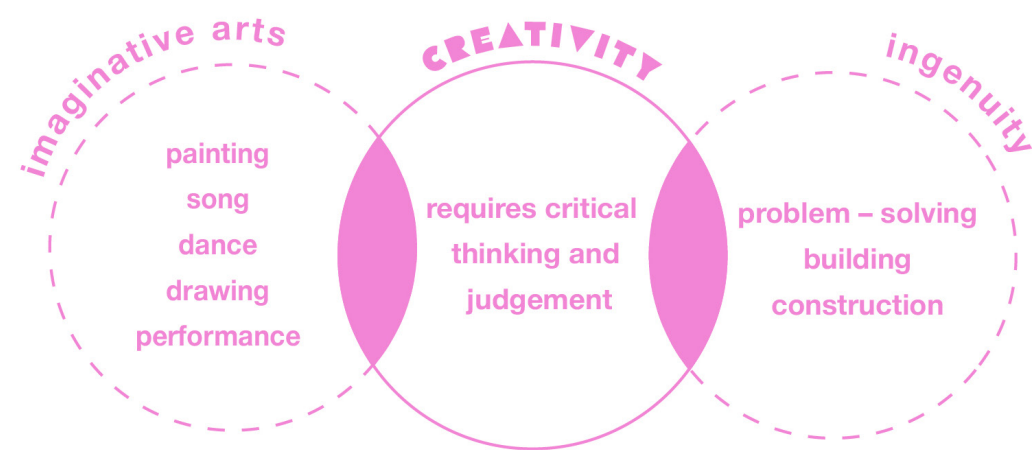


fig. 2.6 Creative expression in young children (Ramirez 2025).



fig. 2.7. Imaginative and exploratory play is the foundation for creativity in early childhood because it connects thought, emotion, and action in symbolic forms (Ramirez 2025).

Eliciting Creativity Through Play

Furthermore, in early childhood, children’s play and imagination can be considered a manifestation of their creativity because it is the primary way they interact with and investigate the world (Aljarrah 2017; Goodliff et al. 2018). In particular, play that involves imaginative and exploratory behaviors serves as a foundation for children’s creativity because it connects thought, emotion, and action in representative forms (Aljarrah 2017; Goodliff et al. 2018). What children produce and how they create it meaningfully requires them to judge the value of their creative thinking and expression (Goodliff et al. 2018). Additionally, playfulness is integral to the creative experience because it provokes unique interpretations, insights, and goals through the exploration of new viewpoints (Plambech and Konijnendijk van den Bosch 2015).

Dramatic & Sociodramatic Play

Playing pretend allows children to showcase and enhance their creative and flexible thinking abilities (Robson and Rowe 2012). In particular, sociodramatic play (dramatic play with multiple players) is most likely to stimulate profound creative thought because of the required social interactions, where children must negotiate and employ strategies to achieve the desired outcome (Robson and Rowe 2012; Goodliff et al. 2018). Children's personal experiences, interpretations, and how they choose to interact with each other influence how creative play advances and is maintained (Goodliff et al. 2018).

Child – Led Activity

Open-ended or unstructured play opportunities enable children to guide their own play experience, in which case learning is the natural outcome (Bailey et al. 2019; Kiewra and Veselack 2016). Child-initiated play embodies creative thinking processes because it involves experimentation and evaluation, empowering children to express themselves, problem-solve, communicate, and strengthen social relationships (Robson and Rowe 2012; Goodliff et al. 2018). Additionally, child-led activities spark fulfilling play episodes and sharp concentration as children are encouraged to formulate, process, evaluate, troubleshoot, construct, rethink, rework, and investigate (Kiewra and Veselack 2016). Persistence in early childhood is often observed in child-led activity as children acquire knowledge and understanding through trial and error encountered in play (Robson and Rowe 2012; Goodliff et al. 2018).

Role of Adults

While child-led activity is critical for creative expression in early childhood, adults' role in facilitating and uplifting exploration is equally important. Adults, especially educators, can promote creative thinking by offering support, new knowledge, and provoking deeper thinking (Robson and Rowe 2012; Kiewra and Veselack 2016; Prins et al. 2022; Goodliff et al. 2018). Educators are responsible for mediating between the child and the world, which is essential for uplifting children's creativity (Prins et al. 2022; Kiewra and Veselack 2016). Thus, different approaches to facilitating play result in varying outcomes. With a hands-off approach, children are more inclined to take risks, seek challenges, and engage in more sociodramatic play episodes (Prins et al. 2022).



fig. 2.8 Questions from the Possibility Thinking Card for early childhood educators to engage students in creative problem solving (Ramirez 2025).

However, adult presence during child-initiated activities can boost children's involvement, encouraging persistence and completion of tasks despite facing challenges (Robson and Rowe 2012). Empowering children to lead their investigation increases their likelihood of overcoming difficulties, making them more resourceful and creatively engaged in entertaining new ideas and pushing boundaries (Kiewra and Veselack 2016). Of all adults, educators are most successful in stimulating children's learning by eliciting deeper thinking and exploration (Robson and Rowe 2012; Goodliff et al. 2018). Children are more receptive to new ideas when posed by an adult and are likelier to participate in new activities with an adult's involvement (Robson and Rowe 2012). When adults engage in possibility thinking by asking 'what if?' questions, they provoke children's curiosity, encouraging imaginative play (Robson and Rowe 2012; Goodliff et al. 2018). Examples of possibility thinking questions are depicted in Figure 2.8. from The Possibility Thinking Card (Taddei and Budhai 2017, 27). The Possibility Thinking Card is a tool for educators to stimulate students' critical thinking and creativity by encouraging them to think beyond their initial ideas (Taddei and Budhai 2017).



THE CHILD

- ✦ Capable of guiding their own learning
- ✦ Are innately creative and express themselves through a variety of mediums



THE EDUCATOR

- ✦ Resource for children’s inquiry
- ✦ Maintain child-led and hands-on learning style
- ✦ Document learning process



THE ENVIRONMENT

- ✦ Has a significant influence on children’s learning and development
- ✦ Children feel valued and respected in thoughtfully designed spaces
- ✦ Uplift children’s “100 languages”

Reggio Emilia Approach

The Reggio Emilia Approach is an educational philosophy that emphasizes creativity, exploration, and child-led learning. It is rooted in the belief that children—and all human beings—are innately curious and possess not only the potential but the right to direct their own learning and growth. The Reggio approach contains three key pedagogical principles: (1) respect for the child, (2) the role of adults, and (3) the influence of the environment (Tijnagel-Schoenake 2018).

The first principle concentrates on the image of the child—or the notion that children are imaginative, intuitive, and capable of leading their learning. Loris Malaguzzi, the founder of the Reggio Emilia Approach, believed children expressed themselves through '100 languages,' or a myriad of creative and symbolic mediums, to communicate their ideas (Malaguzzi 1996). The Reggio Emilia Approach urges children to express themselves freely, believing that traditional schooling diminishes many of these 'languages' as children grow up (Tijnagel-Schoenake 2018; Malaguzzi 1996).

The second principle focuses on adult interaction with children, underscoring their vital role in exploratory learning. Reggio-inspired educators learn alongside children, continuously seeking to understand and uplift children's inquiries and '100 languages.' Teacher-researchers are a resource to children, but they respect the child-led process through active listening, observation, and documentation of children's ideas and questions (Tijnagel-Schoenake 2018).

The third principle, the environment as a third educator, asserts that the space in which children play and learn is fundamental to their development. The Reggio approach acknowledges that children feel valued, respected, and more motivated to learn in thoughtfully designed spaces that respond to and uplift their '100 languages.' Educators must create engaging environments brimming with provocations, inviting children to explore (Tijnagel-Schoenake 2018).

fig. 2.9 The three pedagogies of the Reggio Emilia Approach to early education (Ramirez 2025).

See pages vi-vii for *The 100 Languages* by Loris Malaguzzi.

Nature's Influence on Creativity

Outdoor play spaces have been shown to elicit more creative behavior in early childhood than indoors, regardless of individual or group play or adult presence (Robson and Rowe 2012). Research indicates nature-based environments are restorative, which is crucial for inspiring creativity (Prins et al. 2022; Williams et al. 2018; Plambech and Konijnendijk van den Bosch 2015). The Stress Recovery Theory (SRT) posits that humans are better adapted physiologically and psychologically to nature, and exposure to natural settings reduces stress (Prins et al. 2022). Additionally, the Attention Restoration Theory (ART) suggests that humans inherently observe and positively respond to natural elements because they enabled survival during evolution (Prins et al. 2022). Both theories are crucial for understanding why nature-based settings are more restorative—where SRT suggests that they alleviate stress, and ART indicates that they restore mental fatigue (Prins et al. 2022).

Further, cognitive development benefiting from play depends on how much a child plays and the degree to which they experience well-being (Prins et al. 2022). Nature's restorative effects improve children's moods, which is also vital for creative problem-solving, which is more likely to occur with positive attitudes (Prins et al. 2022; Bailey et al. 2019; Plambech and Konijnendijk van den Bosch 2015). Nature also refreshes our directed attention, which is needed for divergent thinking processes (Plambech and Konijnendijk van den Bosch 2015). Exposure to natural elements uplifts creativity through the reinforcing processes of attention restoration and mind-wandering (Williams et al. 2018). These functions enable controlled attention yet flexible thinking—mandatory for innovation (Williams et al. 2018). Nature's unpredictability evokes curiosity and creativity because the same outdoor environment is never actually the same (Plambech and Konijnendijk van den Bosch 2015).



STRESS RECOVERY THEORY

humans are more physiologically and psychologically adapted to natural environments, and exposure reduces stress (Prins et al. 2022).



ATTENTION RESTORATION THEORY

humans have an innate tendency to observe and positively respond to natural elements and places because they enabled survival during evolution (Prins et al. 2022).

fig. 2.10 The Stress Recovery Theory and the Attention Restoration Theory are vital for understanding why nature-based settings are restorative for humans (Ramirez 2025).

Mimicking nature's qualities in the built environment to improve human health and well-being is gaining prominence in the design community, primarily through biophilic practices. Biophilia refers to "humankind's innate biological connection with nature" and the intrinsic desire to reconnect with natural systems (Browning et al. 2014, 4). Biophilic design concepts fall into three themes: 'Nature in the Space,' 'Natural Analogues,' and the 'Nature of Space' (Browning et al. 2014). 'Nature in the Space' refers to the physical existence of natural elements in an environment, such as vegetation, water, wildlife, breezes, sounds, scents, etc. The 'Nature in the Space' concept is most meaningful when offering direct interaction with diverse features, providing movement and multi-sensory engagement (Browning et al. 2014). Next, the 'Natural Analogues' principle encompasses nature's evocations through materials, colors, shapes, patterns, etc., proving an indirect connection with nature. 'Natural Analogues' are most effective when the elements are presented in an organized and developing manner (Browning et al. 2014). 'Nature of a Space' describes spatial arrangements catering to humans' need to see past our immediate surroundings, fascination with the mysterious or unknown, moments of revealed views, and even the phobias induced by spaces with trusted safety features. Compelling 'Nature of the Space' experiences are executed through intentional spatial configurations that layer in ideas from Nature in the Space and Natural Analogues categories (Browning et al. 2014).

The affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill. The verb to afford is found in the dictionary, the noun affordance is not. I have made it up. I mean by it something that refers to both the environment and the animal in a way that no existing term does

— J.J. GIBSON (1986, 127)

the case for nature play

The Affordance Theory

Where children play impacts their learning and development, and nature-based environments provide unique, interactive experiences that are often unmatched inside (Prins et al. 2022; Maxwell et al. 2008; Kiewra and Veselack 2016). James J. Gibson's affordance theory is an influential framework for examining a physical environment's play value and opportunities. The affordance theory refers to what an environment can offer a user based on unique individual perceptions (Gibson 1986).

While Gibson describes the theory with animals, the affordance theory has been expanded to observe how designed spaces influence activity based on what opportunities or functional uses it can or can not support. Affordances are the perceived function and significance of an environmental feature for an individual; each function may have multiple affordances and hierarchical differences but relate to one's personal abilities (Fjørtoft 2001; Cloward Drown and Christensen 2014; Prins et al. 2022). Through this perspective, the affordance theory is referenced in much of the existing literature to interpret the play value of a designed environment based on the experiences a space can or can not offer.

Affordances in Nature-Based Environments

Outdoor playscapes can be just as supportive of developmental benchmarks in early childhood as indoor play, if not more so (Maxwell et al. 2008). Unsurprisingly, affordances in nature-based settings differ from those indoors; however, natural environments are believed actually to improve the quality of play (Prins et al. 2022; Kiewra and Veselack 2016). The reciprocity of nature, coupled with the abundance of open-ended materials, leads to a higher quality of play (Prins et al. 2022; Kiewra and Veselack 2016). Nature play affords distinct hands-on and open-ended learning opportunities through numerous textures, smells, visual cues, and sounds that connect children with nature to motivate creativity (Zamani 2016; Kiewra and Veselack 2016). Sensory-stimulating environments offer children significant learning and developmental opportunities (Kiewra and Veselack 2016). The outdoors offers more physical and visual room, allowing children to self-regulate emotional and social needs (Herrington and Lesmeister 2006).

Children's outdoor play is motivated by the natural cadence of their interests (Kiewra and Veselack 2016). Nature-based environments offer children greater play diversity (Prins et al. 2022; Fjørtoft 2001). Nature play's wide variety offers more physical education and developmental opportunities than conventional playgrounds, as evidenced by a study finding that children engaged in nature play performed higher in motor skill evaluations; this study also revealed that the play became more creative in natural settings (Fjørtoft 2001).

Even with the supply of stimulating objects, complex group social interaction occurs more frequently outdoors than indoors (Cloward Drown and Christensen 2014). Further, nature-based playscapes have been shown to afford more dramatic play than standard playgrounds (Cloward Drown and Christensen 2014). Nature's lack of predetermined themes inspires children with unique play motifs, valuable for uplifting dramatic and sociodramatic play (Cloward Drown and Christensen 2014; Herrington and Lesmeister 2006; Prins et al. 2022). Nature play's flexibility and ample resources, compounded by adult-child possibility thinking exchanges, shape environments that nurture childhood imagination and creativity (Goodliff et al. 2018).

Nature-based play also can instill environmental stewardship in early childhood (Bailey et al. 2019; Prins et al. 2022; Kiewra and Veselack 2016; Cloward Drown and Christensen 2014). Exposure to nature's living essence—its inhabitants and seasonal changes—nurtures children's empathy, curiosity, and concern, echoing biophilia notions, or humans' inherent affinity for the natural world (Prins et al. 2022; Herrington and Lesmeister 2006; Cloward Drown and Christensen 2014; Browning et al. 2014). Interaction with nature in early childhood is vital because the exchanges are reciprocal, strengthening children's awareness and appreciation for the environment while simultaneously enhancing play (Prins et al. 2022; Zamani 2016). Nature's interactive qualities stimulate a child's imagination and creativity while encouraging environmental education (Bailey et al. 2019; Zamani 2016). Thus, nature-based settings afford more meaningful play experiences than traditional playgrounds, which distance children from the natural world (Cloward Drown and Christensen 2014).



fig. 2.11 Key nature play design considerations (Ramirez 2025).

Nature Play Design Considerations

Finally, as planners and designers, we would do children a disservice by avoiding creating playspaces that afford the full spectrum of children's play (Castro 2016; Maxwell et al. 2008). Well-designed play spaces allow children to climb, balance, move in new ways, have space for games, show off, make friends, imagine, leave their mark, invent, and engineer (DAurizio and Hoffman 2024). The most significant design considerations to foster creativity through play are flexibility in the environment, loose parts, site layout, scale, topography and elevational changes, paths, enclosures, and planting.

Flexibility in the Built Environment

One of the most beneficial affordances of nature play compared to traditional playgrounds or indoor settings is the adaptability and variability in the environment. Children do not know where their play will take them or how it will end (Gurholt and Sanderud 2016). The compounding qualities of flexibility, curiosity, and wonder in nature create spontaneous scenarios where children must utilize problem-solving and flexible thinking skills to adapt (Gurholt and Sanderud 2016; Kiewra and Veselack 2016). The variability in natural environments prompts intuitive exploration, prompting children to create, manipulate, and leave their impression on the play space (Herrington and Lesmeister 2006). Moreover, young children are captivated by nature's dynamism, and they are beginning to understand the sequence of daily events (Herrington and Lesmeister 2006). Malleable materials such as sand, mud, gravel, and vegetation—fallen or picked—are commonly recommended in the literature regarding high-quality child care because of their adaptability (Herrington and Lesmeister 2006).

Loose Parts

Loose parts are essential for providing flexibility in play and represent some of the most meaningful affordances of nature play. The theory of loose parts suggests that the degree of innovation and creativity is inextricably tied to the amount and type of variables in the environment (Nicholson 1971). Mary Jo Sutton, a self-identified "loose parts wrangler" as an exterior exhibit planner at the Bay Area Discovery Museum in California, notes the following:

Loose parts can be any collection of fully movable elements that inspire a person to pick them up, to re-arrange or create new configurations, even realities, one piece or multiple pieces at a time. They can be small or large enough to require multiple hands or full bodies to move them. Loose parts require the hand and mind to work in concert; they are catalysts to inquiry. Loose parts are the flexible edge of an inviting open-ended interactive environment that allows participants to make an imprint of their intention. Experiences with loose parts provide a profound yet playful way for children to form associations between learning and pleasure.

— SUTTON (2011, 409).

Her definition of loose parts expands on Nicholson's 1971 theory by underscoring the collaborative opportunities afforded and emphasizing its full potential. Loose parts are invaluable in early childhood development and learning because they require creativity, experimentation, and confidence for construction and invention (Nicholson 1971; Maxwell et al. 2008). Loose parts invite children to toy with information (literally), and their availability increases constructive, dramatic, and game-oriented play and length (Kiewra and Veselack 2016; Zamani 2016). Children find loose parts irresistible, often seeking them out to enhance play even when they are not supplied (Sutton 2011).

While loose parts manifest as manufactured toys, they are also natural elements, such as sand, water, and stones, coming in endless forms, types, and sizes (Sutton 2011; Kiewra and Veselack 2016). Play with loose parts is beneficial indoors and outdoors; however, open-ended materials and natural inspiration provide special play affordances and a higher quality of play, uplifting children's creativity (Kiewra and Veselack 2016; Prins et al. 2022). The irregularity and sensory variation of natural loose parts suggest different ideas to children, provoking creativity and motivating innovative play narratives (Kiewra and Veselack 2016; Prins et al. 2022).

Furthermore, the ambiguity of natural loose parts supports creative development because they require imagination and problem-solving skills to engage with (Kiewra and Veselack 2016). The unstructuredness of natural loose parts invites children to pretend it is anything, laying the groundwork for innovation (Kiewra and Veselack 2016; Moore 1989).

Loose parts also spark ideas of how to be played and interacted with, influencing the direction of children's play (Kiewra and Veselack 2016; Maxwell et al. 2008). Open-ended objects encourage constructive and dramatic play for individual and group scenarios (Maxwell et al. 2008; Cloward Drown and Christensen 2014; Kiewra and Veselack 2016; Sutton 2011).

Site Layout

First and foremost, ample space for play promoting creativity is critical. The ratio of child to space density has proven to affect children's aggression, mood, and type of play outdoors (Herrington and Lesmeister 2006). To encourage creativity through constructive behaviors, the play areas must be large enough for children to build and ideate at a grand scale without conflict (Kiewra and Veselack 2016). However, when children assemble larger creations, group activity is often encouraged (Kiewra and Veselack 2016). Additionally, play spaces benefit from some predictability, enabling children to locate the needed materials for their creative works (Kiewra and Veselack 2016). Playground circulation and site layout must consider programmatic relationships to avoid discouraging children from participating in creative play behaviors (Bailey et al. 2019).

Paths & Circulation

Pathways play a vital role in fostering cognitive development on the playground because they orchestrate movement and offer visual cues to help children understand their surroundings (Herrington and Lesmeister, 2006). Additionally, hard-surfaced pathways have proven to encourage physically active behaviors, including biking, kicking balls, and running, among many others (Zamani 2016). Paths must have a hierarchy, with primary routes supporting various activities and secondary pathways deviating from them (Herrington and Lesmeister 2006). Pathway intersections are encouraged on the playground, confronting children with decisions and options (Herrington and Lesmeister 2006). Designers must arrange minor paths in overlapping circles for fluid movement, avoiding dead ends or the chance of collision (Herrington and Lesmeister 2006).

Scale

Since children navigate a world designed for adults, creating spaces tailored to their needs is crucial. The ground plane is a child's domain; therefore, it is indispensable to consider their proportions and point-of-view (DAurizio and Hoffman 2024). Environments can also motivate spontaneous exploration by carefully considering how children perceive and move through space (Herrington and Lesmeister 2006). Designers can stimulate child-led investigation by weaving in focal points and creating a sense of mystery with plant material, low walls, and terrain (Herrington and Lesmeister 2006).

Topography & Elevational Changes

Elevation changes of any kind add interest and complexity to any environment. However, height differences in areas that cater to young children enhance their early development by creating multifaceted play spaces (Fjørtoft 2001). Topography and diverse ground surfaces create stimulating conditions for children, fostering their proprioception development or how their bodies coordinate movement through space (DAurizio and Hoffman 2024; Studio Ludo et al. 2023; Bailey et al. 2019). Height variation on the playground offers experiential learning opportunities on physics-related topics, especially gravity (DAurizio and Hoffman 2024).



fig. 2.12 Children construct a nature play enclosure with large plant parts (Spiske 2017).

Enclosures & Spatial Definition

Young children often prefer enclosed spaces in an outdoor setting, which promotes cognitively and socially complex behaviors and encourages group interaction (Maxwell et al. 2008; Cloward Drown and Christensen 2014). Spots where children can hide, inspect, and observe their surroundings inspire risk-taking, games with rules, and pretend play (Zamani 2016). Further, enclosed or encapsulated areas on the playground offer vital affordances for dramatic play (Cloward Drown and Christensen 2014; DAurizio and Hoffman 2024; Maxwell et al. 2008). Spatial definition helps clarify distinct zones on a playground, implying a backdrop for pretend play, increasing the dramatic play in these areas (Cloward Drown and Christensen 2014; Maxwell et al. 2008). Enclosures must accommodate two to four children and include nodes, connector spaces, and multiple access points while maintaining clear visibility (Maxwell et al. 2008). Intentionally placing defined spaces is critical because the adjacencies significantly influence the amount of sociodramatic play in these locations (Cloward Drown and Christensen 2014).

Moreover, plant material can suggest or create enclosures in play areas that resemble dens, nests, forts, hideaways, and more (Moore 1989; Sutton 2011). Children can assemble larger plant parts to form enclosures, adapting the environment to support dramatic and sociodramatic play, as seen in Figure 2.12 (Moore 1989). Studies reveal that enclosures built with natural materials mimicking animal habitats (in this case, dens and nests) become vibrant role-playing venues for both adults and children (Sutton 2011; Goodliff et al. 2018). These enclosures evoke imaginative play scenarios and possibility thinking interactions with adults, uplifting children's creativity in a natural environment (Sutton 2011; Goodliff et al. 2018).

Vegetation

Plant material and its play affordances are among the most distinct and meaningful opportunities in nature play by enhancing play value, as shown in Figure 2.13. Vegetation offers seasonal interest, play diversity, spatial definition, loose parts, wildlife habitat, and experiential learning opportunities (Herrington and Lesmeister 2006; Fjørtoft 2001; DAurizio and Hoffman 2024; Moore 1989; Zamani 2016). Three to five-year-old children diligently observe their surroundings, and the seasonal changes and growth of natural features inspire environmental education, a sense of wonder, and curiosity (Herrington and Lesmeister 2006; Zamani 2016).

hands-on learning



critter habitat



shadows



shape space



fig. 2.13 Vegetation enhances play value by offering loose parts, educational opportunities, wildlife, dynamic shadows, and spatial definition (Ramirez 2025).

Integrating planting thoughtfully into a nature playscape follows the 'Nature in the Space' biophilic design principle, which enables direct interaction with nature. This exchange is vital for nature's advantageous effect on creativity, as vegetation introduces movement and sensory stimulation into the built environment (Browning et al. 2014). Foliage modifies climatic conditions and projects intricate shadows and dappled lighting (Herrington and Lesmeister 2006). Plant material equips spaces with inspiring open-ended loose parts vital for constructive and dramatic play affordances (Zamani 2016; Kiewra and Veselack 2016; Moore 1989; Herrington and Lesmeister 2006; DAurizio and Hoffman 2024).

Therefore, designers should integrate appropriate nontoxic plants into all children's spaces to stimulate imagination (Moore 1989). Planting should offer aesthetic value and rich sensory experiences (Bailey et al. 2019). Expert researcher of nature play affordances, Robin C. Moore, affirms that,

“[p]lant parts provide[d] irresistible sensory gems, pinpoints of color, smell, and geometric form that focus[ed] children's attention and set the wheels of their imaginations in motion (Moore 1989, 4).”

The most common loose parts utilized for constructive play outdoors are plants and plant parts, such as acorns, leaves, pinecones, branches, and stumps (Kiewra and Veselack 2016). These open-ended props provide robust play and learning potential in nature play spaces (Moore 1989; Herrington and Lesmeister 2006).

odds & ends



methods

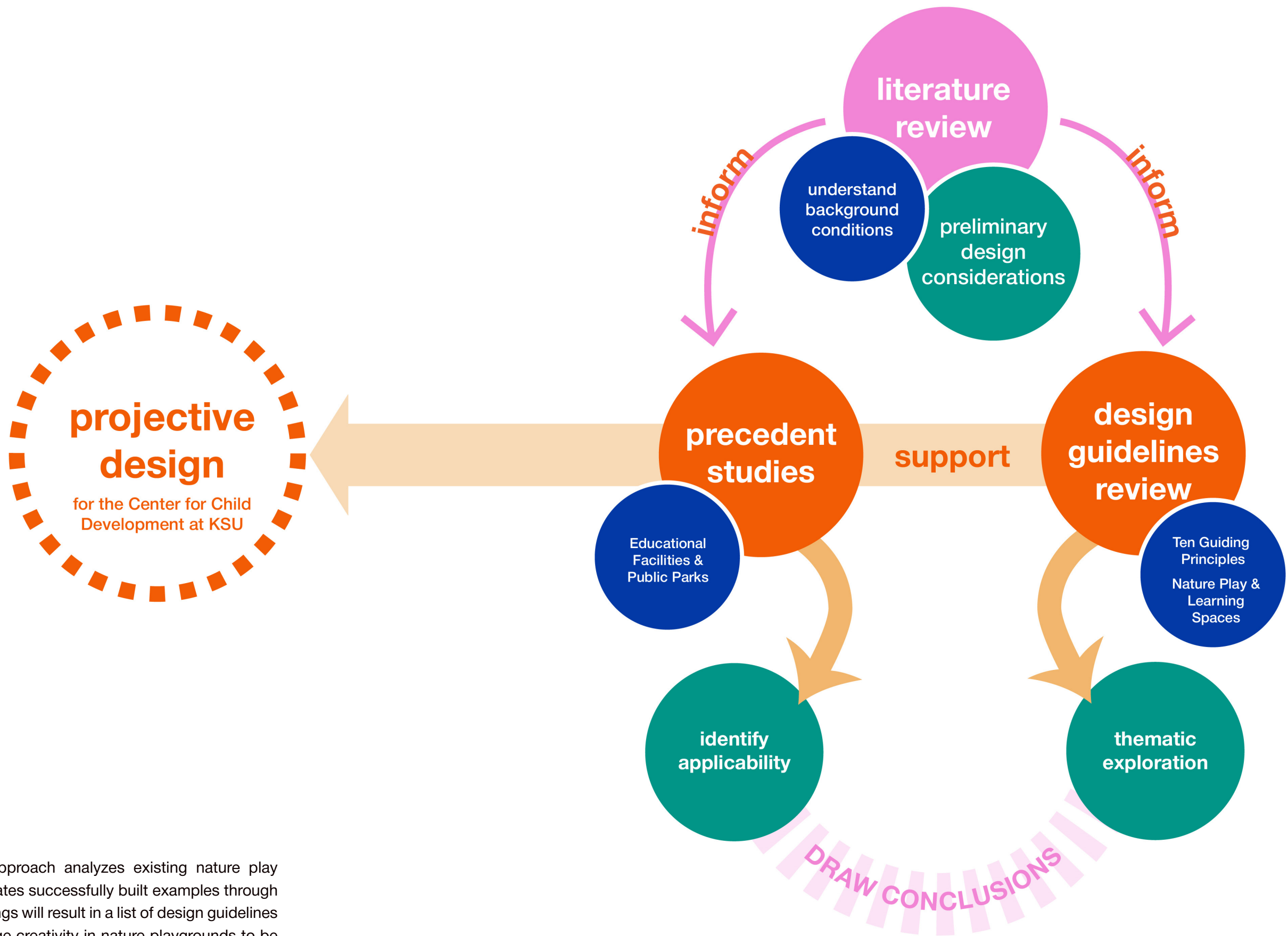
Research Design & Methodology

Existing Design Guidelines Analysis

- Purpose, Criteria, & Procedure Documents
 - Ten Guiding Principles
 - Nature Play & Learning Spaces

Precedent Studies

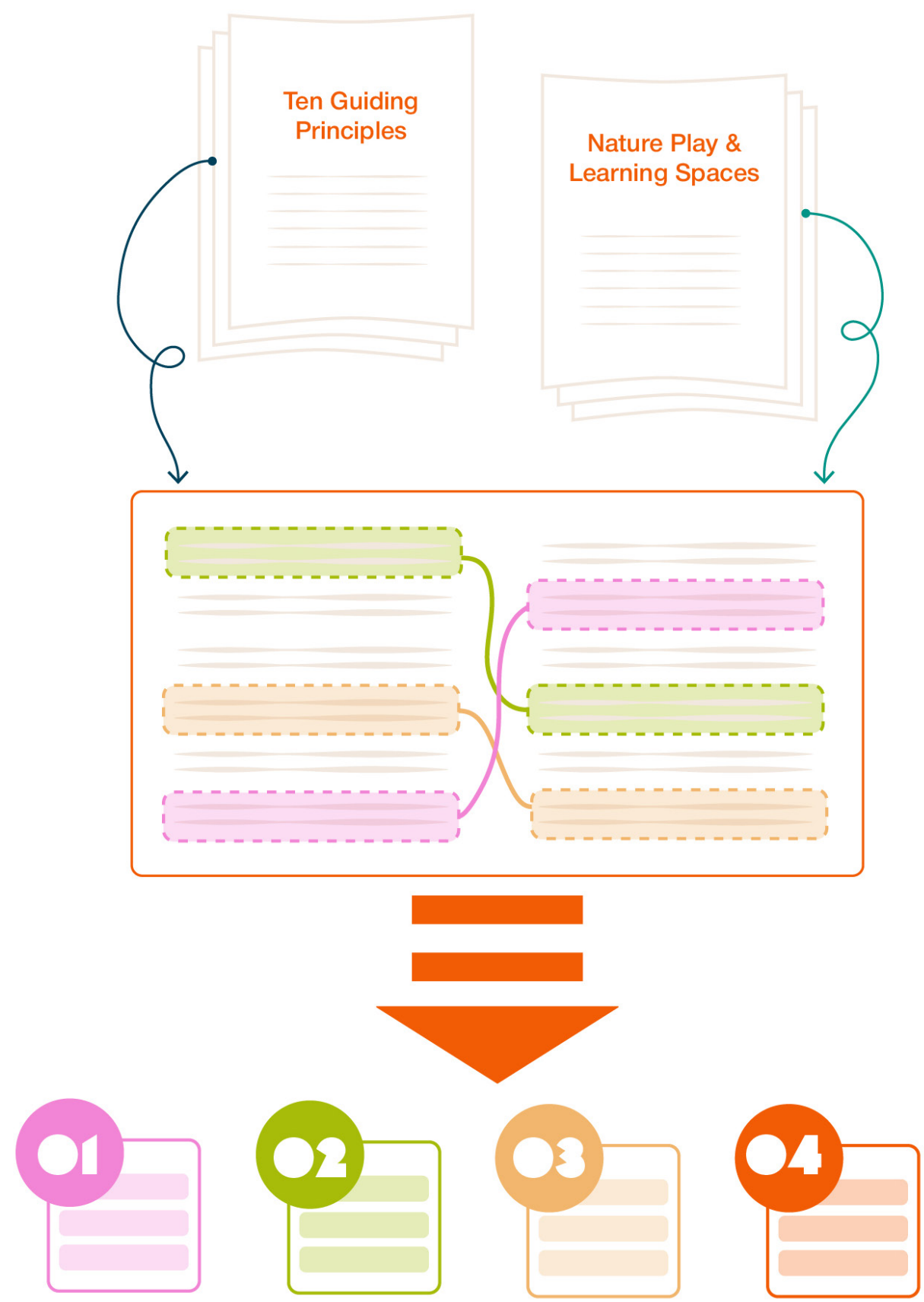
- Purpose, Criteria, & Procedure
- Project List



Research Outline

This qualitative methods approach analyzes existing nature play design guidelines and evaluates successfully built examples through precedent studies. The findings will result in a list of design guidelines and principles that encourage creativity in nature playgrounds to be applied to the projective design outcome.

fig. 3.1 Outline of the research design (Ramirez 2025).



review of existing design guidelines

Purpose

Currently, there are several documents providing guidance for nature-based play in early childhood spaces. This research method aims to understand the environmental design recommendations promoting creativity in natural settings to landscape architects and early childhood educators. Both sets of guidelines selected offer advice to both home-based and center-based child care facilities.

Selection Criteria

Two widely accepted design guidelines, both rooted in research, were chosen for review. One is public information and free (Nature Play & Learning Spaces by Robin C. Moore), while the other is private and costs money (Ten Guiding Principles by Nature Explore). Additionally, both documents refer to the design of nature-based environments for outdoor learning in children. The intended audience for both guidelines appeals to landscape architects and early child care providers but extends to all professionals responsible for outdoor spaces for families and children.

Documents

- ✦ Nature Explore: *Ten Guiding Principles*
- ✦ Robin C. Moore: *Nature Play & Learning Spaces*

Procedure

To analyze the design guidelines documents, a comprehensive list of all of the design principles identified in each document was compiled. These guidelines were then grouped based on common themes to synthesize the overarching concepts.

fig. 3.2 Process for the design guidelines review (Ramirez 2025).

Ten Guiding Principles

Nature Explore

Nature Explore’s *Ten Guiding Principles* were developed through a multidisciplinary collaborative effort between designers and education specialists to create sustainable and dynamic outdoor classrooms. These guidelines were shaped by extensive research and field testing and created to be flexible, allowing them to be adapted to each site’s individual needs and distinct opportunities. The *Ten Guiding Principles* are vital to the Nature Explore Certification, which is a nationwide initiative recognizing organizations leveraging nature’s educational and well-being benefits in their learning environments (Nature Explore Program 2025c; Dimensions Education Programs 2025). Additionally, the certification includes professional development for organizations to make the most of their outdoor classrooms and augment children’s outdoor learning experiences (Nature Explore Program 2025b).

Nature Play & Learning Spaces

Robin C. Moore

Nature Play & Learning Spaces is a tool authored by renowned landscape architect Robin C. Moore in partnership with the Natural Learning Initiative and the National Wildlife Federation. The guidebook was created for professionals who develop, manage, or advocate for the development of natural areas in the everyday environments of children, youth, and families. *Nature Play & Learning Spaces* strives to draw children and families outdoors and engage with the natural world. The document outlines the concept of nature play and its benefits, as well as provides design considerations, management strategies, insight into the implementation process, and case study examples (Moore 2014). This investigation will focus exclusively on Chapter 04, “Designing Nature Play and Learning Spaces.” Each guideline includes a general description, the affordances (or opportunities each feature presents), and design considerations. For this report, I will paraphrase each guideline’s main ideas.

Ten Guiding Principles

abbreviated

full guideline

01

spatial definition

Divide Space into clearly delineated areas for different kinds of activities.

02

play diversity

Include a complete mix of activity areas.
Recommended Areas
(Try to include all of these areas):

- An entry feature
- An open area for large-motor activities
- A climbing/crawling area
- A "messy materials" area
- A building area
- A nature art area
- A music and movement area
- A garden and/or a pathway through plantings
- A gathering area

(A separate area or one of the other larger areas could be used as a gathering area)

- A storage area

(This could be a separate area, or storage could be included within each area as needed).

Supplemental Areas
(Try to include at least one of these areas):

- A water area
- A dirt-digging area
- A sand area
- A wheeled toy area
- An area for swings or other dynamic equipment
- A greenhouse

03

named spaces

Give areas simple names.

04

visual cues & signage

Identify each area with a sign or other visual clues.

05

maintain visibility

Be sure every area is visible at all times.

06

variety of natural materials

Use a variety of natural materials, including trees and other live plants.

07

durable & low maintenance options

Choose elements for durability and low maintenance.

08

aesthetics & visual clarity

Maximize beauty and visual clarity in the overall design.

09

personalize design

Personalize the design with regional materials, and ideas from children and staff.

10

meets regulatory standards

Be sure the space meets all regulatory standards for your region.

Nature Play & Learning Spaces

abbreviated

paraphrased full guideline

01

entrances

Portals to nature play and learning

Affordances

- Celebrate arrival
- Express social & cultural meaning
- Sequential transition zone linking
- Gathering & socializing setting
- Point of information
- Accommodate varying abilities connecting to accessible route
- Help orient visitors

Considerations

- Space to accommodate larger groups (approx. 25 children)
- Shady seating
- Separate child-sized entry
- Durable materials

Adjacencies

- Intergenerational meeting point, includes seating
- Amenities (e.g. restrooms, diaper changing tables, nursing station)
- Storage

02

pathways

Arteries of space, require hierarchy, and edging to direct circulation

Primary Pathways

Affordances

- Direct, accessible path linking major locations
- Looping form with no dead-ends, curvy for a sense of exploration
- Wide enough for social interaction

Considerations

- 5 – 12' wide
- Accessible for wheeled mobility

02

pathways

- Added color
- For infant and toddler spaces consider thin coat of poured in safety surfacing
- Low single rail or rope-and-post edging, hoops, planted tires to protect vegetation

Adjacencies

- Connect entrances
- May serve as setting boundaries

Secondary Pathways

Affordances

- Less direct narrow routes
- Attractive to children – spark hiding and chasing games ("up, down, around routes")
- Connect to primary path for alternative exploration
- Take various forms – encourage investigation and individual discovery in secluded spaces

Considerations

- 3 – 4' wide
- Woodchips, shredded hardwood mulch, decking, or thick planks of rot-resistant timber

Adjacencies

- Primary pathways – use as an alternative way to move through the space

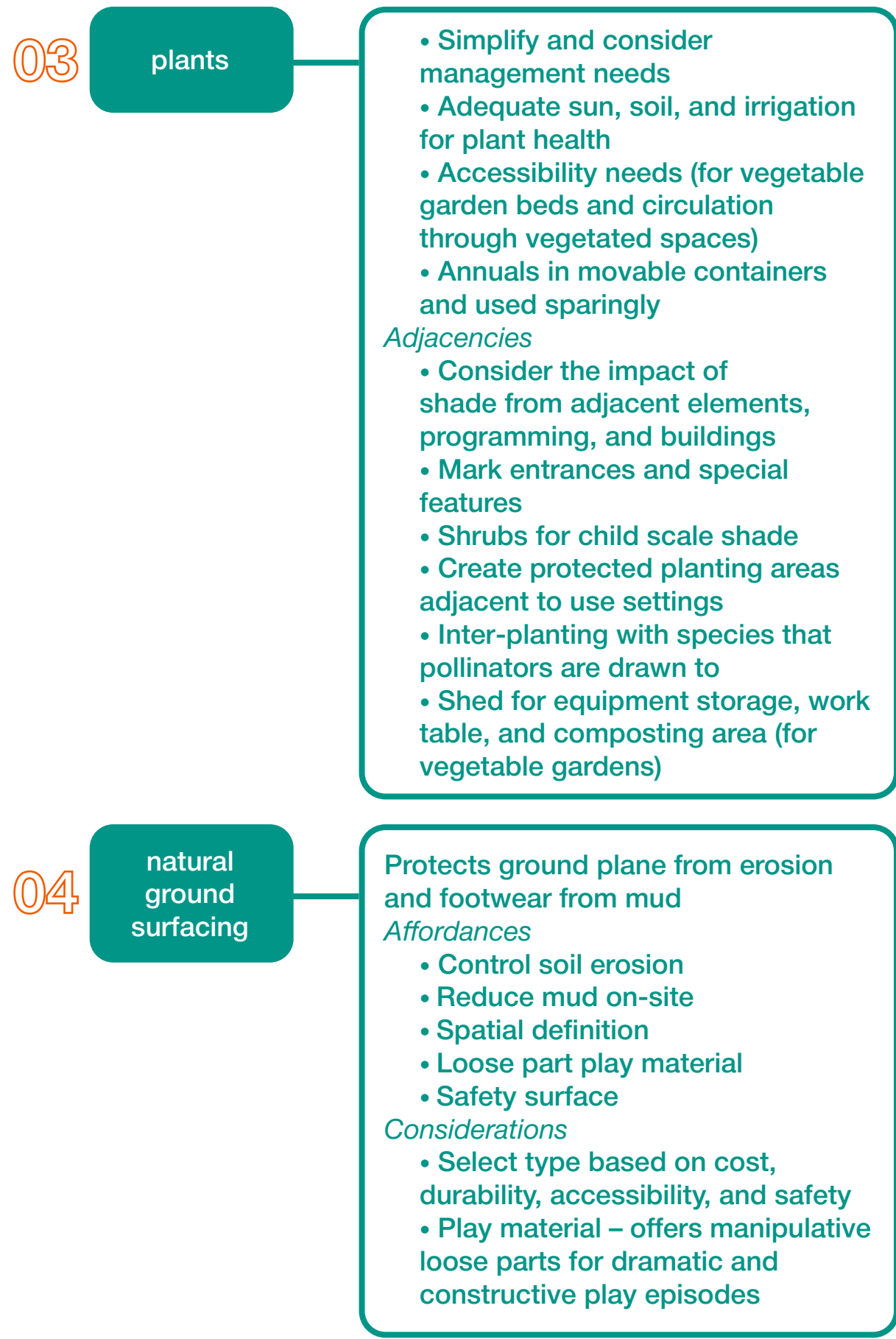
Tertiary Pathways

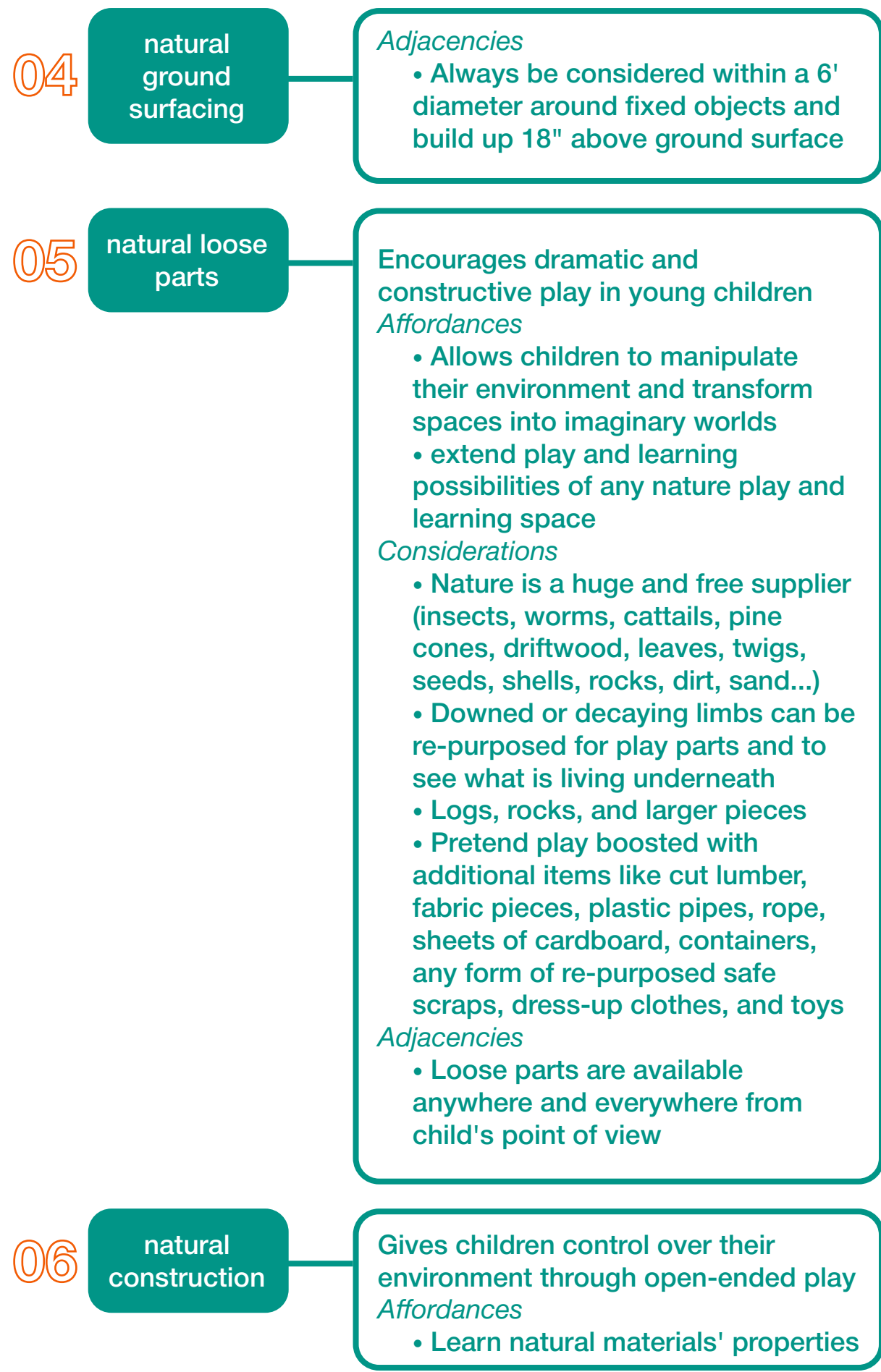
Affordances

- 2 – 3' wide
- Short, "secretive" loop off of main or secondary path, hidden connections

Considerations

- Stones or similar materials





08

multipurpose
lawns*Considerations*

- Decision of whether or not to include should be made early
- Curvy, informal shape
- Size vary depending on site
- Consider undulating surfaces and mounds for "roll-ability"

Adjacencies

- Location will depend on the topography but consider the center of the site
- Take care of the edge conditions to make sure there's not too much foot traffic

09

meadows &
prairies

Cleared woodlands managed as a "wild" ecosystem to attract wildlife

Affordances

- Easily "explorable" ecosystem
- Communicate seasonal cycles
- Helps users of all ages understand mowed and un-mown grass and ecosystem diversity based on management differences

Considerations

- Careful and knowledgeable management team
- Access through compacted granular fines or mowed paths

Adjacencies

- Usually requires full sunlight

10

woodland

Patches of existing woodlands with modest design and management interventions can create a complete and unique nature play space

Affordances

- Diverse ecosystem

10

woodland

- Offers adventure play, natural construction, ranging games
- Communicates seasonal cycles and the effect of sunlight on plants

Considerations

- Older children can ride bikes – very specific paths should be chosen with this in mind
- Careful design to reduce human impact on spaces

Adjacencies

- Flexible, usually depends on existing woodland areas on-site
- A very clear defined boundary

11

landform

A fundamental characteristic of the terrestrial environment

Affordances

- Learning about aspect, sunlight, drainage patterns, vegetation, erosion, and soil conservation
- Encourages fantasy play, orientation skills, hide-and-seek
- Add interest and complexity
- Allow rolling, crawling, sliding, balancing, and jumping (vestibular and kinesthetic senses)

Considerations

- Screen undesirable views
- Integrate with fixed elements to increase play value and combat erosion
- Accessibility to structures

Adjacencies

- Can separate opposite activities

12

animals

Provide sense of wonder for children

Affordances

- Interdisciplinary learning

12

animals

- Increase empathy and respect for other life forms
- Encourage social interaction

Considerations

- Non-harmful insects and insect like animals
 - Can select specific plant habitats for different life stages
- Birds
 - Space for nests, nesting materials, food producing plants
 - Nesting boxes, bird feeders, and small water sources will attract and bring closer
 - Add movement, color, sound
- Small mammals, amphibians, and reptiles
 - Could be encouraged or discouraged
 - May already exist on-site

Adjacencies

- Appears wherever vegetation is

14

sand, soil, & dirt

Malleable and soft material – can be dug, sifted, sculpted, and poured

Affordances

- Engage kids in creative, imaginary experience
- Explore sensory qualities
- Collaborative and social interaction opportunities

Considerations

- Small intimate spaces
- Access to water
- Can create vast imaginary landscapes using loose parts
- Enclose to keep contained
- 2' deep with good drainage
- If necessary/required a net can keep animals out – sand will become rancid if airtight
- Rain, air, and sun clean sand
- Spatially defined boundary – logs or rocks and a vegetated buffer

Adjacencies

- Accessibility – close to a primary pathway but not too close
- In small sites – avoid a central location
- Choose an enclosed space with one defined entrance

13

aquatics

Natural or man-made water features

Affordances

- Highly interactive (splashed, poured, dammed, float objects)
- Dramatic play
- Multi sensory experience
- Aquatic wildlife
- Social interaction
- Excites and relaxes children
- Cooling off

Considerations

- Local and state regulations
- Risk management
- Do not always have to be natural
- Consider winter conditions

Adjacencies

- Carefully consider location

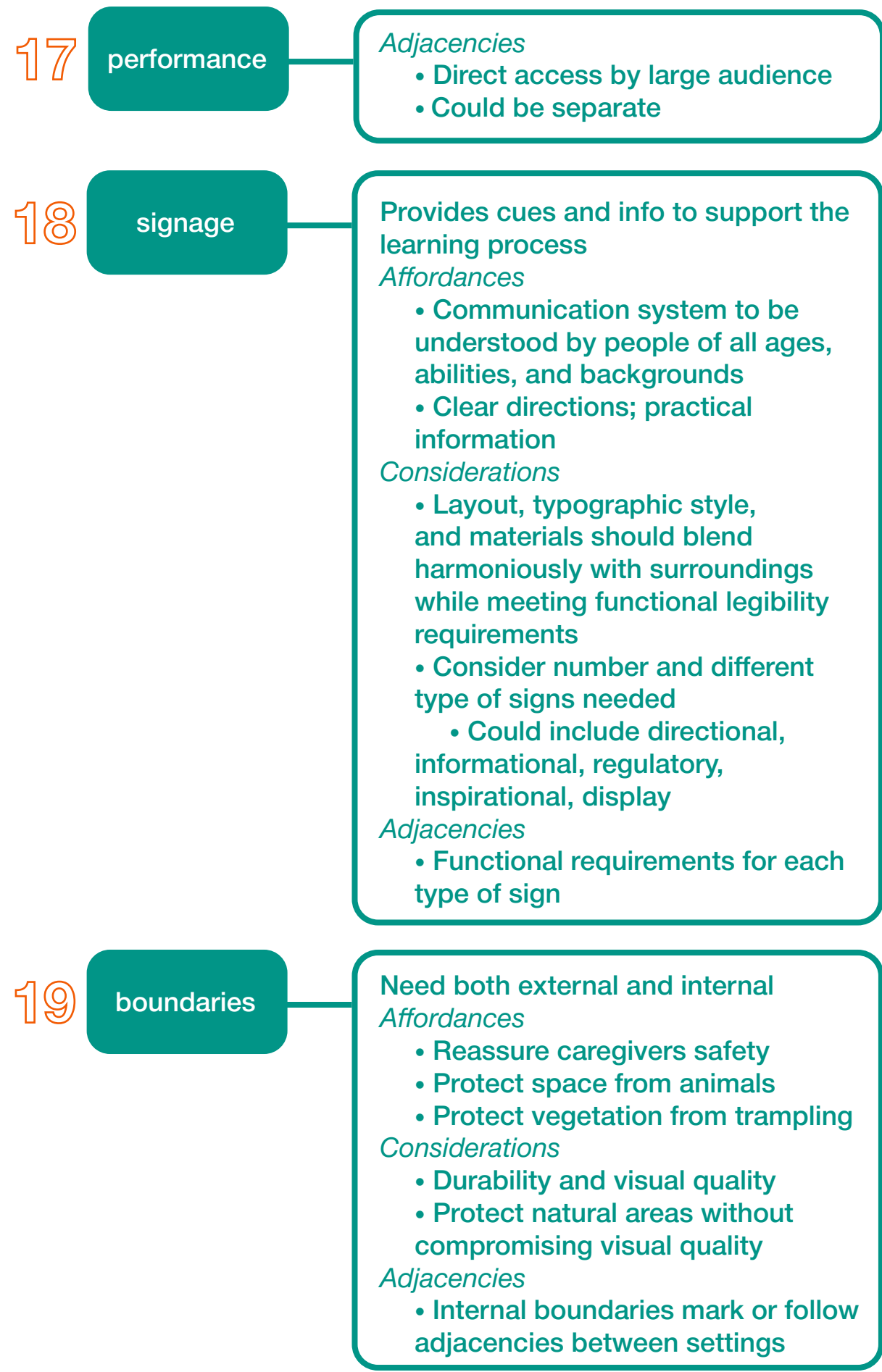
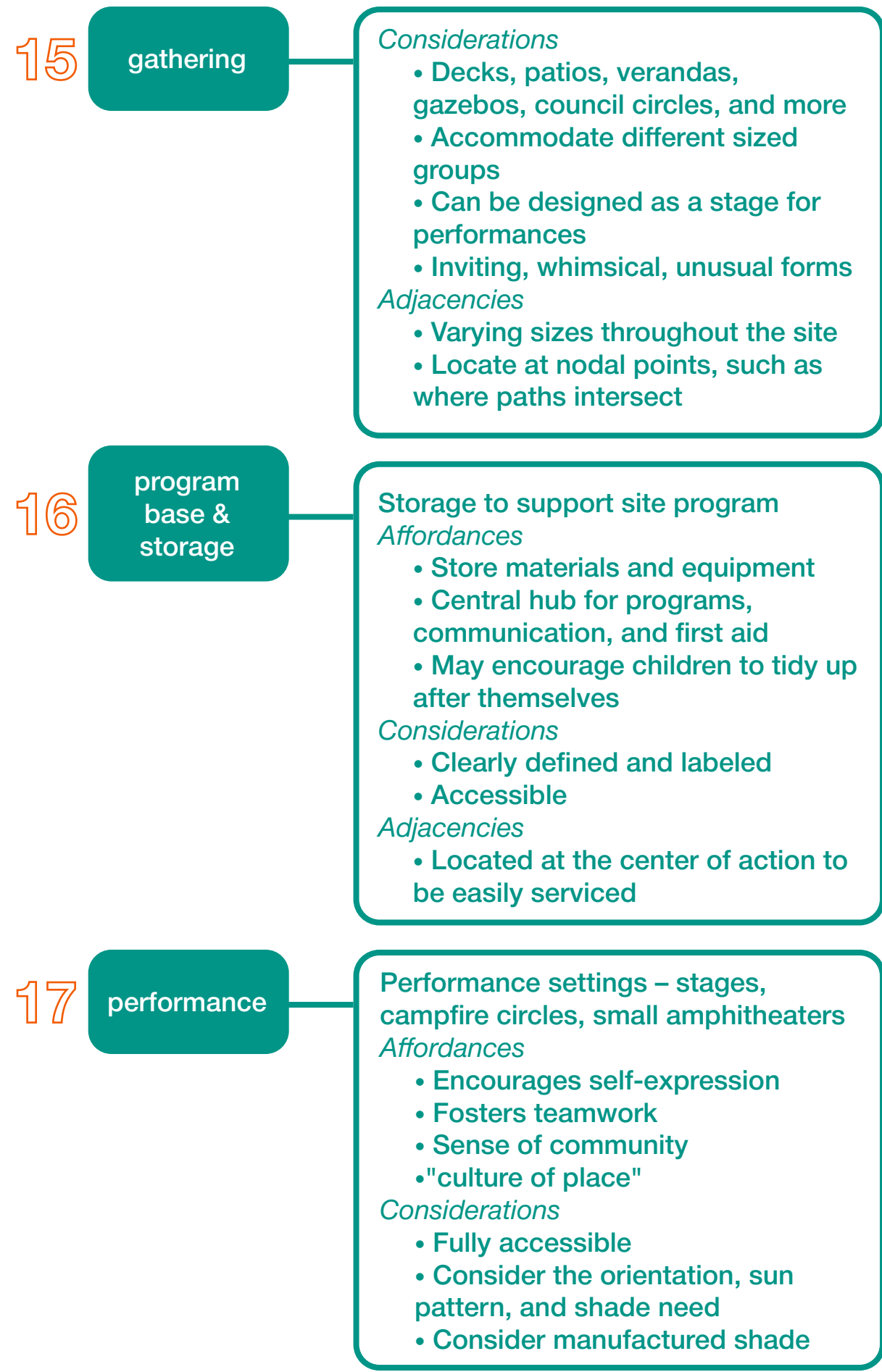
15

gathering

Space for individuals and groups to gather with seating

Affordances

- Opportunity to develop social relationships with peers and adults
- Support dramatic play
- Builds social capital
- Functional learning environment
- Programmatic infrastructure
- Hangout area for parents



precedent studies

Purpose

Precedent studies were completed to identify built works that exemplify and support the findings from the literature and design guidelines review. The four evaluated projects implement nature play design strategies aimed at inspiring creativity in early childhood spaces. The insights gained from the studies will inform design considerations and programming for the CCD projective design.

Selection Criteria

The projects included in the study are fully constructed and considered nature-based environments. The selected spaces also appeal to the early childhood age range, including public parks and renowned, certified outdoor classrooms at preschool centers.

Projects

- ★ Dimensions Infant & Toddler Center | Lincoln, NE
- ★ Ruth Staples Child Development Laboratory | Lincoln, NE
- ★ Jester Park | Granger, IA
- ★ Childhood's Gate Garden | State College, PA

Procedure

Each precedent study includes background information for each site, including their names, designers, sizes, locations, and climates. This is followed by a description of the design approach and key site design features that inspire creativity in early childhood. Reflections on what can be replicated or drawn from each precedent are then shared for the CCD playgrounds.



fig. 3.3 Locations of the built work evaluated in the precedent studies (Ramirez 2025).

findings

Existing Design Guidelines Analysis

Nature Explore
Nature Play & Learning Spaces
Design Guidelines Matrix

Precedent Studies

Dimensions Infant & Toddler Center
Ruth Staples Child Development Laboratory
Jester Park Natural Playscape
Childhood's Gate Garden

Takeaways

Applicability to the Projective Design

REVIEW OF EXISTING DESIGN GUIDELINES

The extracted nature play guidelines were organized into ten principles and further categorized into four overarching themes. Each theme has two to three principles articulating the most crucial design considerations for nature play that foster creativity in early childhood.

Key Themes Identified

- ✦ Site Layout & Planning
- ✦ Materials
- ✦ Program
- ✦ Safety & Accessibility

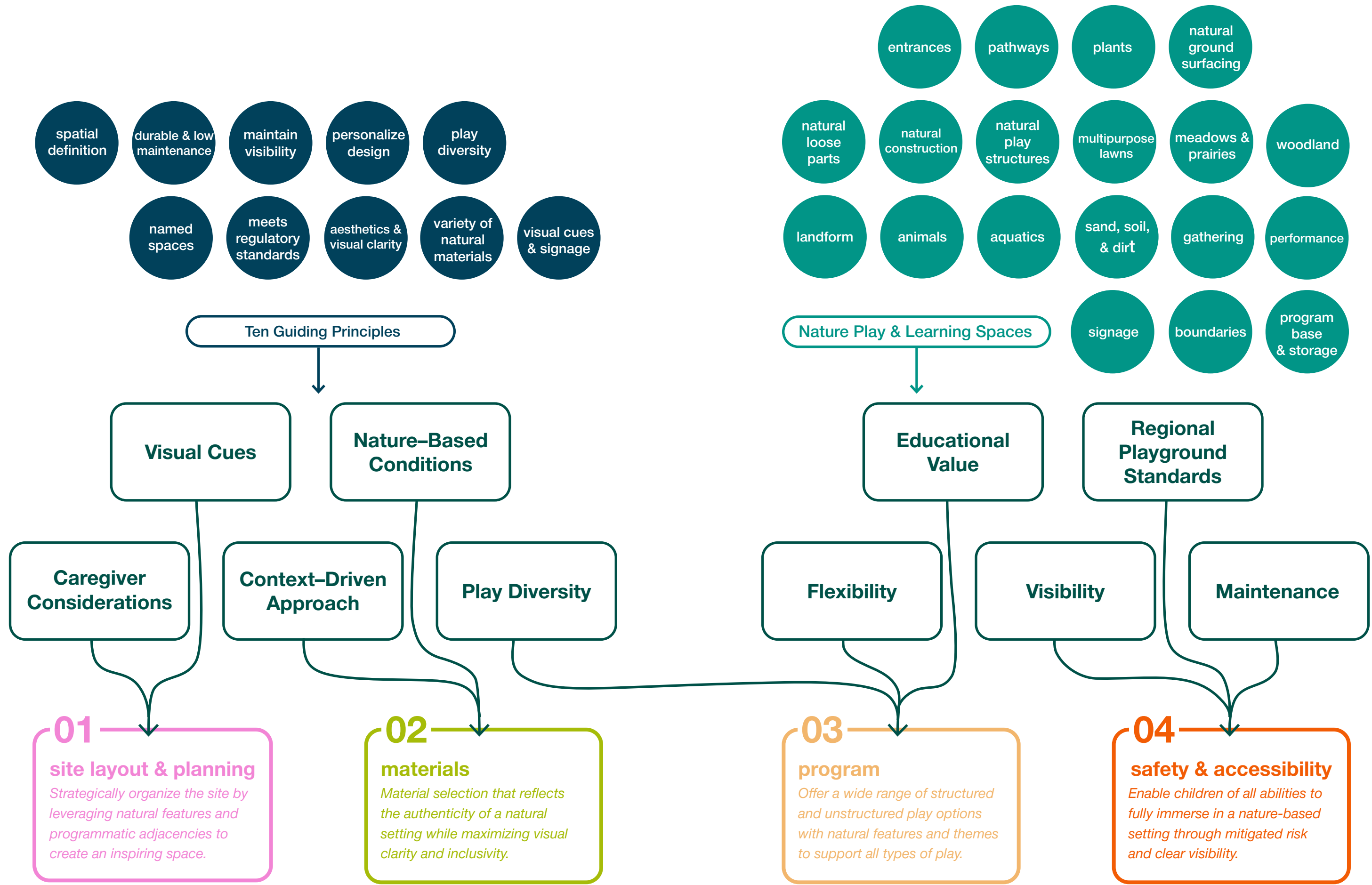


fig. 4.1 The extracted design guidelines and main themes flow chart (Ramirez 2025).

THE MATRIX:
Organizing Guidelines with Play Principles

Since many of the extracted nature play guidelines align with multiple principles, they are organized into a matrix grid format to see all of their affordances.

01
site layout & planning

02
materials

Ten Guiding Principles	Visual Cues	Adult Interaction	Context-Driven Approach	Nature-Based Conditions
spatial definition	✦			
play diversity		✦		✦
named spaces	✦			
visual cues & signage	✦			
maintain visibility				
variety of natural materials			✦	✦
durable & low maintenance				
aesthetics & visual clarity	✦			
personalize design			✦	
meets regulatory standards				

03
program

04
safety & accessibility

Play Diversity	Flexibility	Educational Value	Visibility	Regional Playground Standards	Maintenance
✦	✦	✦			
			✦		
✦	✦	✦			✦
					✦
				✦	

fig. 4.2 Matrix depicting the extracted Nature Explore: Ten Guiding Principles design guidelines and the identified nature play strategies (Ramirez 2025).

01
site layout & planning

02
materials

Nature Play & Learning Spaces	Visual Cues	Adult Interaction	Context-Driven Approach	Nature-Based Conditions
entrances	✦			
pathways	✦			
plants			✦	✦
natural ground surfacing				✦
natural loose parts				✦
natural construction		✦		✦
natural play structures				
multipurpose lawns				
meadows & prairies			✦	✦
woodland			✦	✦
landform				
animals				✦
aquatics				✦
sand, soil, & dirt				✦
gathering		✦		
program base & storage		✦		
performance				
signage	✦			
boundaries	✦	✦		

03
program

04
safety & accessibility

Play Diversity	Flexibility	Educational Value	Visibility	Playground Standards	Maintenance
				✦	✦
✦	✦	✦			
	✦		✦	✦	
✦	✦	✦			✦
✦	✦				
✦					
✦					
✦		✦			✦
		✦			✦
✦		✦	✦		
		✦		✦	
✦	✦				
✦	✦				
✦		✦			
		✦			✦
✦					
					✦
			✦	✦	

fig. 4.3 Matrix depicting the extracted Nature Play & Learning Spaces design guidelines and the identified nature play strategies (Ramirez 2025).

01 site layout & planning

to inspire creativity

Strategically organize the site by leveraging natural features and programmatic adjacencies to create an inspiring space.

Visual Cues

Include elements in the built environment that help children understand the space better.

Caregiver Considerations

Prioritize the caregiver’s comfort by incorporating amenities that enhance their experience and foster meaningful interactions.

The layout of a nature playscape significantly impacts both children and adult experiences. Defining spaces within the overall site is one of the most crucial recommendations from both documents because smaller zones provide structure and visual clarity for children. Spatial definition allows children to "read" the space more easily and offers them the organization and choice to explore their interests in distinct areas. Designers can articulate activity zones through features like thresholds, boundaries, names, and signage. Pathways are also vital for defining space and guiding the discovery process for young children in nature play. The hierarchy of pathways can determine the active or passive qualities of distinct zones, which in turn influence creative play behaviors.

Designers must carefully consider the adjacencies of spaces to encourage specific types of play and facilitate creative experiences. For example, dramatic and constructive play is likelier in quieter zones with less physical activity. Adult interaction can also uplift children's creativity and can be facilitated through strategic adjacencies with amenities that adults gravitate to. In addition, clearly defined boundaries also help caregivers feel secure enough to allow children to fully immerse in play, leading to more opportunities to various play outcomes.

Adjacencies Matter!

Activity zones and their arrangement can encourage or hinder specific creative play types and outcomes. The amount of space allocated for these activities could influence the degree to which they are passive or active.

- Passive activity examples: nature art, garden or a pathway through plants, building area, a greenhouse, enclosures, sand, dirt, and water areas.
- Active activity examples: an open area for large-motor activities, climbing/crawling, "Messy materials," music and movement, swings or other dynamic equipment, and wheeled toy spaces.

Engineering an Enchanting Expedition

Pathways, the channels guiding children’s quests, should be designed to encourage exploration and discovery.

- Curvy, organic forms provoking children’s curiosity.
- Create a hierarchy, offering a variety of unique ways for children to traverse through and engage with the site (not always the primary/most direct route).
 - Secondary path: offer hidden connections or attractive alternatives for travel “up, down, and around.”
 - Tertiary paths: short, discreet, “secretive” routes.

Promote Possibility Thinking

Intentionally locate specific amenities where adults can uplift children’s creative play through possibly thinking inquiries and thought-provoking guidance.

- Amenities: seating, shade, restrooms, and changing stations.
- Spaces with imaginative and constructive play affordances and where children may need motivation to overcome challenges would benefit most from adult interaction.

02 materials

to inspire creativity

Material selection that reflects the authenticity of a natural setting while maximizing visual clarity and inclusivity.

Context–Driven Approach

Features that reflect the site's ecological and cultural context.

Nature–Based Conditions

A dynamic array of seasonal living elements and natural themes, providing unique sensory experiences and exploration possibilities.

While nature play spaces are more deliberate than wild conditions, designers can still choose materials that reflect nature's spontaneous, authentic qualities. Designers can curate the site's hard and softscape materials for this effect through choices that echo the surrounding context. These contextually relevant materials can also help tell a unique site-specific story through the built environment to foster a deeper connection with children to the surrounding landscape.

Vegetation is one of the most crucial materials in any nature play space and should be intentionally selected. The seasonality of plants introduces an element of surprise and invites wildlife on-site, inspiring a sense of wonder in young children. Moreover, vegetation encourages constructive and imaginative play through abundant loose parts and sensory stimuli. To uplift creative play behaviors, plants producing natural loose parts (seed pods, flowers, twigs, etc.) and sensory experiences (fragrance, texture, showy foliage, edible fruit, etc.) should be prioritized.

The Sky is the Limit

Nature is undefined, inviting children to put their own spin on natural materials and objects to uplift personal play scripts through their unique interpretations.

- Fixed elements: enclosures, plant limbs, play equipment.
- Malleable materials: water, sand, dirt, plant play parts, natural ground surfacing (decomposed granite and wood chips), and loose parts of any kind.

Nature's Toybox: Full of Odds and Ends

As one of the most distinct traits of nature play, vegetation supports creativity through an endless supply of loose parts – vital to constructive and dramatic play affordances.

- Consider sensory qualities (smell, see, touch, sound, taste) and the variety of forms and sizes of plant parts.
- Plan for year-round production of objects for lasting interest and engagement.

Storytelling through Site Design

Use regional materials to craft a captivating narrative using natural themes and motifs that are still open-ended but inspire play scenarios.

- Themes can use regional materials to communicate and relate to the local context.
 - Allude to natural phenomena, attract local flora and fauna, and/or resemble other unique natural systems.
- Communicate narratives through the color and pattern of materials of play enclosures, pathways, other fixed elements, as well as through the plant palette.

03 program

Offer a wide range of structured and unstructured play possibilities with natural features and themes to support all types of play.

Flexibility

Provide open-ended opportunities for children to adapt their environment to enrich their play experiences.

Play Diversity

The extent of a child's choice for play opportunities, including chances for individual investigation or group collaboration.

Educational Value

Support traditional educational methods while also facilitating spontaneous, child-led discovery of natural systems through play.

It is paramount for designers to orchestrate chances for child-led investigation and support both active and passive types of play. Nature playscapes offer immense opportunities for interdisciplinary education, prompting spontaneous exploration in children. Designers must propose age-appropriate activities that provide unstructured play possibilities. Activities recommended for learning and play value include natural construction, water, dirt or sand digging, open space, gathering, and storage. Other activities to support engaging nature play are enclosures, performance areas, and a climbing or crawling space.

In addition, the nature play program and space should maintain flexibility, allowing children to tailor the environment to fit their play. Natural loose parts, a prime example of this phenomenon, promote creative play behaviors due to their uniqueness in sensory qualities and varied forms. Natural objects are incredibly versatile in play. Children often use these tools as props in a dramatic play script or as building material in a constructive play episode. The material's lack of predetermined themes enables children to transform natural objects into anything their imagination devises.

to inspire creativity

✦ Playful Possibilities

Unstructured play empowers children to lead their own investigation and foster creativity as they experiment and problem-solve while exploring interests without predetermined outcomes or expectations.

- Examples include: loose parts, sand, water, dirt-digging, etc.

✦ Thinking Outside the Box

Grant children opportunities for critical thinking to navigate obstacles in play, giving them the autonomy to evaluate their actions and adjust their approach to achieve their goals.

- Existing in both passive and active play types.
- Children overcome challenges in both individual efforts and group collaboration.
 - Individual play requires the child's concentration and constant iteration to reach the desired outcome.
 - Social interaction from group collaboration requires negotiating and strategy.

✦ Branching out: Facilitate Self-Expression

Provide opportunities for children to communicate their inner thoughts and emotions in representative and symbolic forms.

- Space for nature art, music, dance, performance, constructive play.
 - Natural loose parts and malleable materials children can adapt, elevation changes (stage), music equipment, open space for building.
- Features that facilitate dramatic and sociodramatic (pretend) play.
 - Natural loose parts and malleable materials children can adapt, play structures and enclosures, and spatial definition.

04 safety & accessibility

to inspire creativity

Enable children of all abilities to fully immerse in a nature-based setting through mitigated risk and clear visibility.

Visibility

All areas of the site must be visible to ensure the safety of children and allow for efficient adult supervision.

Maintenance

Consider the upkeep required and material durability to ensure safe play experiences and preserve the space's long-term vibrancy.

Regional Playground Standards

Comply with regulatory playground standards to ensure safety and equal opportunities for children of all abilities.

Children must be able to access and engage with the nature play space to immerse themselves in it fully. Designers can mitigate potential risks by complying with regional playground standards and ensuring the visibility of young children at all times. Especially crucial in early education settings, designers must reference regional playground standards for educator comfort, licensing requirements, and supervision of young children.

Additionally, designers must propose their ideas with maintenance capabilities in mind. Overgrown vegetation or short-lived ground surfacing can create safety hazards for children when not appropriately maintained. Therefore, the designers must take the maintenance of a design into account for sustainability and long-term risk. Without proper foresight during the design process, a natural play space could limit creative play behaviors if children cannot access and engage with the natural environment. Adequate maintenance of vegetation, especially natives, from trampling can reduce the amount of planting on-site and limit vegetative play affordances.

The Full Experience

Children must be able to fully access the natural playscape to immerse themselves in the space and participate in creative play and outcomes.

- Offer equal experiences and opportunities for users with varying abilities.
- Long-term maintenance capabilities should be considered to ensure sustainability.

Freedom to Roam Free

Ensuring safety on site comforts caregivers and enables children to engage in more uninterrupted, exploratory play affordances typical of creative play.

- Compliance with regional playground standards is vital for adult comfort, and supervision, and is especially critical for child care facilities and their licensing requirements.

When Risk Becomes Hazard

Poor site management can pose potential threats to children, and maintenance capacity should be considered during the design process.

- Designers can evaluate design interventions and the proposed elements for durability and upkeep requirements.
- Materials that should be evaluated for routine upkeep are hardscape, plant material, ground surfacing, and fixed elements.



relevance to the
ccd projective design

The design guidelines review underscored the best and most common practices in nature play design, reinforcing many of the site considerations identified in the literature. The matrix developed at this stage serves as a valuable tool to assess how key features of a nature playground align with the established guidelines to inspire creativity in early childhood and can be implemented in the precedent study and projective design sections.

PRECEDENT STUDIES

The precedent studies examine both public parks and private education facilities at various scales, analyzing each site by identifying five key features that foster creativity in children, although many sites offer even more. These features are highlighted through annotated imagery and evaluated using the design guidelines matrix established in the previous method.

Projects

-  Dimensions Infant & Toddler Center | Lincoln, NE
-  Ruth Staples Child Development Laboratory | Lincoln, NE
-  Jester Park Natural Playscape | Granger, IA
-  Childhood's Gate Garden | State College, PA

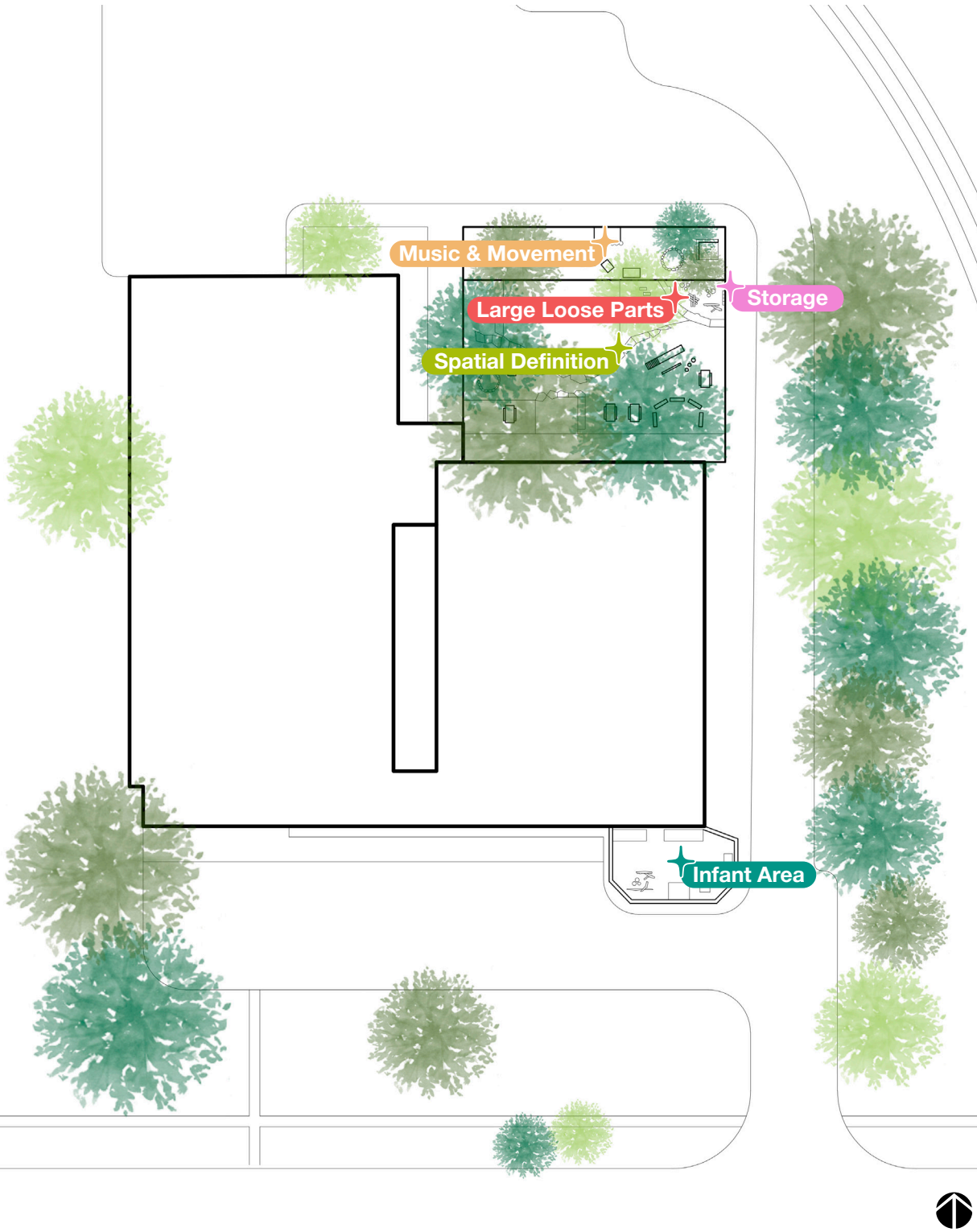


fig. 4.4 Site diagram locating key features inspiring creativity at Dimensions (Ramirez 2025).

Background

Designer: Nature Explore

Size: 1,930 Square Feet

Location: Lincoln, NE

Completion date: April 2005

Sector: Education

Climate: Humid Continental

dimensions early education infant & toddler center

Design Approach

Dimensions Early Education Infant & Toddler Center's outdoor classroom plays a vital role in reinforcing their research-based approach to early childhood education. Through the implementation of field-tested strategies, the space is designed to support children's social, emotional, physical, and intellectual development through daily, year-round use. Nature Explore emphasizes the significance of intentionally designed spaces to maximize children's learning (Nature Explore 2025a). Many of the actual design ideas were inspired by educator innovation during challenges in the construction phase. The initial design was accepted and began construction in 2001. However, shortly after the existing playground was removed, development stalled for 18 months due to unforeseen obstacles. During this time, educators piloted various play elements and activities, documenting what children liked and what they didn't. This insight ultimately shifted the trajectory of the project. Educators were surprised with what children gravitated towards and started to layer their feedback into the outcome. Stakeholder involvement grew, incorporating both educators and children, as well as the surrounding community, to create a more meaningful outcome. Today, the outdoor classroom features building, nature art, music, sand, dirt digging, gardening, climbing, crawling, and messy materials (Dimensions Education Programs 2025).

Key Features

- ✦ Spatial Definition
- ✦ Infant Area
- ✦ Music & Movement Zone
- ✦ Large Loose Parts
- ✦ Storage



fig. 4.5 View of the Dimensions outdoor classroom from the site's northeast corner (Coulter 2025).

01 Spatial Definition:

Incorporates multiple ground materials and is shaped through edging along activity zones to help children understand the space better. Spaces are further articulated through simple names on signage to promote literacy and assist educator communication.

✦ **How it Inspires Creativity:** Spatial definition offers children visual clarity, allowing them to fully immerse themselves in play. Delineating program zones can also motivate children to consider how moving from one space to another supports their play in new areas with different activities.



fig. 4.6 Play parts in the area (Coulter 2025).



fig. 4.7 The short grass mound (Coulter 2025).

02 Infant Area:

Is a designated outdoor space with specific age-appropriate features, including loose parts, a pull-up bar, a small mound, reflective surfaces, and adult amenities that allow children to spend extended time outside.

✦ **How it Inspires Creativity:** The open-ended play opportunities require children to use their ingenuity to interact with the materials, introducing problem-solving at a young age.



fig. 4.8 The space repurposes a table as a stage and uses the fence to hang props (Coulter 2025).

03 Music & Movement Zone:

Is an area furnished with a stage and various features children can maneuver to make noise.

✦ **How it Inspires Creativity:** The space encourages self-expression through performance (song, dance, acting) and stimulates dramatic and sociodramatic play.



fig. 4.9. The area is located in a corner and kept contained by logs (Coulter 2025).



fig. 4.10. Round boards in the large loose parts area (Coulter 2025).

04 Large Loose Parts:

Is an area supplied with tree limbs and larger natural parts for children to move, stimulating gross motor skill development.

- ✦ **How it Inspires Creativity:** The natural parts are open-ended and uplift constructive and imaginative play behaviors. The limbs are large enough for children to create enclosures, which educators mentioned that children have used to recreate their daily life occurrences during pretend play.



fig. 4.11 Red storage bins in the large loose parts area for easy access and organization (Coulter 2025).

05 Storage:

Is provided in areas where play props need to be contained and organized. Storage also reinforces classroom organization outdoors and reduces visual clutter.

- ✦ **How it Inspires Creativity:** Choosing items engages children in divergent thinking (the act of generating multiple solutions), prompting them to consider how each piece augments their play.

01
site layout & planning

02
materials

Key Features Inspiring Creativity	Visual Cues	Adult Interaction	Context-Driven Approach	Nature-Based Conditions
Spatial Definition	✦		✦	✦
Infant Area	✦	✦		✦
Music & Movement Zone		✦	✦	
Large Loose Parts	✦	✦	✦	✦
Signage	✦		✦	

fig. 4.12 Matrix depicting the key features for inspiring creativity at Dimensions (Ramirez 2025).

Dimensions Early Education Infant & Toddler Center

Inspiring Creativity

Overall, the Dimensions Early Education Infant & Toddler Center fosters creativity in early childhood by offering children visual clarity, age-appropriate open-ended play possibilities, and room for self-expression. Design strategies that enhance visual clarity include spatial definition and ample storage. The center promotes self-expression through interactive spaces such as the Music & Movement Zone and large loose parts in both the toddler and infant areas. These key features support creative development through play scenarios requiring children to problem-solve and use critical thinking skills.

03
program

04
safety & accessibility

Play Diversity	Flexibility	Educational Value	Visibility	Regional Playground Standards	Maintenance
			✦	✦	✦
✦	✦	✦	✦	✦	
✦	✦	✦			
✦	✦	✦			✦
		✦	✦		

Relevance to the CCD Projective Design

Design strategies for the projective design should prioritize visual clarity, open-ended play opportunities, and an enhanced infant area. The redesign can maximize visual clarity by incorporating ground material changes, edging, signage with area names, and adequate storage. The CCD's redesign can improve open-ended play possibilities to encourage children's self-expression through various play types. Design interventions must consider conditions that enable both individual and group activity. Finally, introducing problem-solving skills in the infant area is vital for creative development and can be promoted through open-ended opportunities.

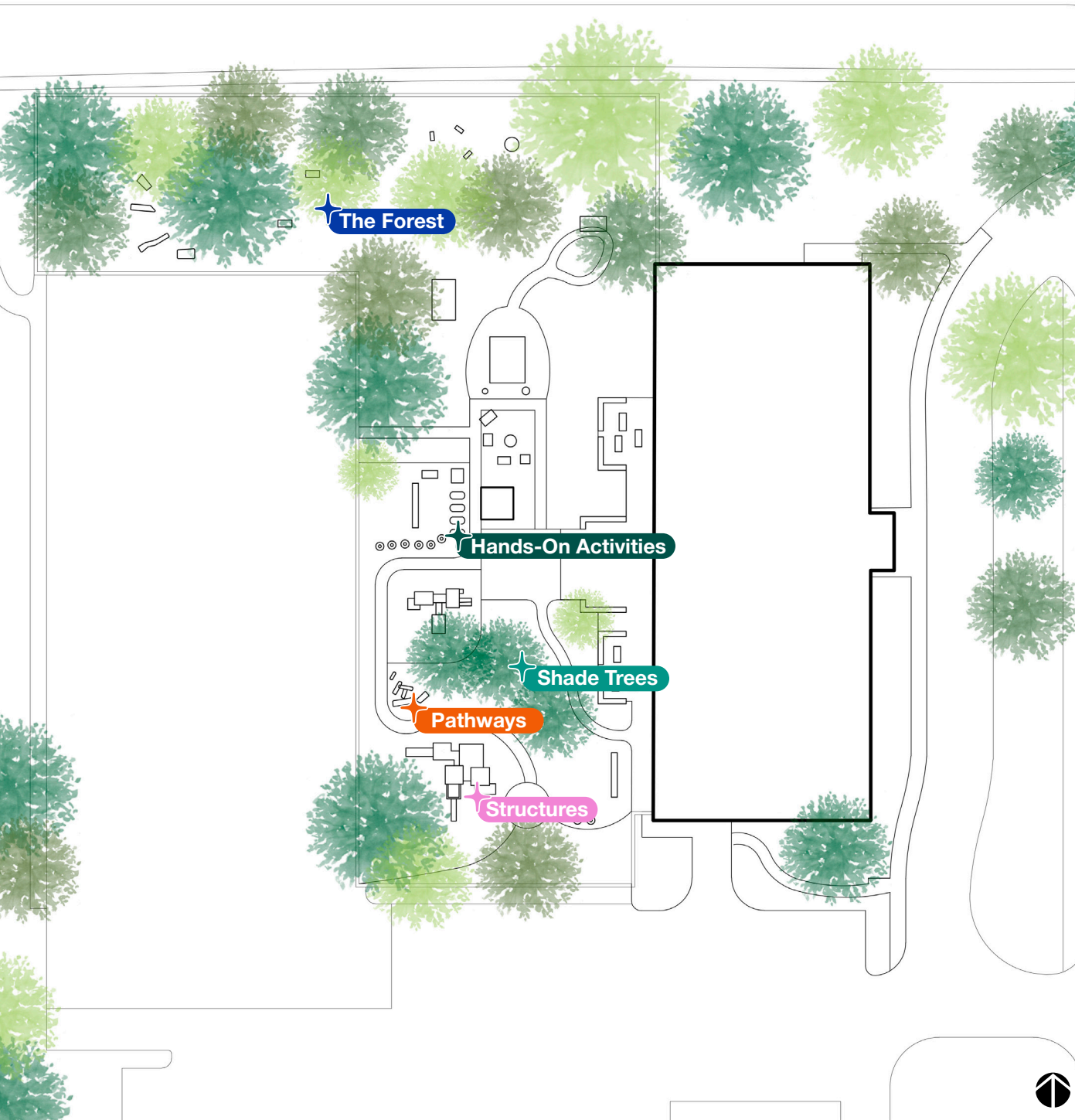


fig. 4.13 Site diagram locating key features inspiring creativity at Ruth Staples (Ramirez 2025).

Background

Designer: Nature Explore

Size: 17,300 Square Feet

Location: Lincoln, NE

Completion date: Updated in 2013

Sector: Education

Climate: Humid Continental

ruth staples child development laboratory

Design Approach

The Ruth Staples Child Development Laboratory (Ruth Staples CDL) at the University of Nebraska-Lincoln has been a pioneer in early childhood development since its establishment 100 years ago in 1925 (Ruth Staples CDL 2025a). Today, the child care facility serves children aged 18 weeks to five years old, using an interest-based learning approach, where the curriculum is developed around the child's inquiries (Nebraska Public Media 2019, 16:42). Further, one of the core pedagogies of Ruth Staples CDL is to foster a connection with the outdoors by inviting children to observe and engage with it daily (Ruth Staples CDL 2025b). Ruth Staples CDL uses the natural environment as a backdrop for learning, operating with the mindset that anything that can be done indoors can also be done outside (nap time article). With this philosophy, their outdoor classroom supports various activities, including outdoor dining, literacy experiences, and nap time (UNL 2013). The CDL has occupied its current facility since 1970; however, it updated the outdoor classroom in 2013 with Nature Explore. The space is designed to resemble the state of Nebraska, with the active play structures representing Omaha and Lincoln, transitioning to more rural areas with smaller play enclosures. Designers used native plants and materials to attract wildlife, and it is furnished with mature evergreen trees, adding shade and year-round interest. Play areas are cleverly named, and pathways are designed to follow children's curiosity (Nature Explore Program 2025d). To support the indoor curriculum, the playground offers a variety of hands-on learning opportunities. Most notably, the vegetable garden bridges interior and exterior learning by allowing children to see firsthand how food is grown while learning about nutrition indoors (Nature Explore Program 2025e).

Key Features

- ★ The Forest
- ★ Structures
- ★ Pathways
- ★ Trees
- ★ Hands-On Learning



fig. 4.14 The Forest is full of open-ended play opportunities in a woodland setting (Coulter 2025).

01 The Forest:

Is a separate outdoor space defined by large shade trees and is supplied with large loose parts and play equipment, including enclosures and fixed music features.

- ✦ **How it Inspires Creativity:** The large loose parts encourage constructive and risky active play, enabling children to create obstacle courses to climb on. Children use their critical thinking skills to push boundaries when assessing risk.



fig. 4.15 Larger play structure for the Goldenrod age range of 3 to 5 years-old (Coulter 2025).



fig. 4.16 Smaller play structure for the Bluestem age range of 18 weeks to 3 years-old (Coulter 2025).

02 Age-Appropriate Structures:

Offers active play possibilities and support gross and fine motor skill development.

- ✦ **How it Inspires Creativity:** The structures encourage children to challenge predetermined and less creative play possibilities. Children can explore alternate ways to interact with the structures. For example, when children crawl up the slide or jump from a platform instead of using the stairs.



fig. 4.17 Paths can be fixed, like the primary route defined by the brick pavers, or they can be adaptable, which is evident in the tertiary path constructed of large loose parts (Coulter 2025).

03 Pathways:

Are intentionally laid throughout the site to guide movement, motivate discovery, and go around major programmatic activity zones to avoid disrupting play. The hierarchy of paths is defined through materials and width.

- ✦ **How it Inspires Creativity:** The directed flow of foot and tricycle traffic ensures uninterrupted play, which is crucial for constructive play as children navigate challenges throughout. Additionally, tertiary paths motivate imaginative thinking to discover and create alternative routes to traverse the site.



fig. 4.18 Trees separate the structures, providing shade for educators monitoring (Coulter 2025).



fig. 4.19 Sculptures add movement and color to the large canopies (Coulter 2025).

04 Trees:

Provide dappled shade and natural loose parts, attract wildlife, and offer numerous active play opportunities.

- ✦ **How it Inspires Creativity:** The shade from the trees keeps children and staff temperate, allowing them to stay outside longer, which is essential for fostering creativity as children explore and overcome obstacles.



fig. 4.20 Raised garden beds provide interactive educational opportunities for students (Coulter 2025).

05 Hands-On Learning:

Pictured here are gardening beds intentionally located close to the entrance to be visible from the inside and relate to children’s education indoors.

- ✦ **How it Inspires Creativity:** Gardening offers a sensory-rich experience and requires children to use problem-solving skills. The activity can also spark dramatic play episodes where children role-play related scenarios.

01
site layout & planning

02
materials

Key Features Inspiring Creativity	Visual Cues	Adult Interaction	Context-Driven Approach	Nature-Based Conditions
The Forest		✦		✦
Structures		✦	✦	
Pathways	✦		✦	
Trees	✦	✦		✦
Hands – On Activities		✦	✦	

03
program

04
safety & accessibility

Play Diversity	Flexibility	Educational Value	Visibility	Regional Playground Standards	Maintenance
✦	✦				
✦		✦	✦	✦	✦
✦	✦				✦
✦			✦		✦
✦	✦	✦	✦	✦	✦

fig. 4.21 Matrix depicting the key features for inspiring creativity at Ruth Staples Child Development Laboratory (Ramirez 2025).

Ruth Staples Child Development Laboratory

Inspiring Creativity

Ruth Staples Child Development Laboratory promotes creativity in early childhood by facilitating longer, uninterrupted play episodes, opportunities for children to overcome challenges, and providing role-playing venues. Site design features that enable longer, uninterrupted play include the large shade trees, which keep the space comfortable, and the strategic placement of pathways in relationship to the program, not to discourage play that requires deep concentration. Spaces like The Forest and active play structures allow children to overcome physical obstacles and challenge expectations, assuming their own risk and engaging in possibility thinking ('what-if' scenarios). Finally, hands-on learning through gardening in the outdoor classroom offers children a sensory-stimulating experience and promotes creativity through pretend play by providing a role-playing venue. Together, these key features allow children to confront and tackle challenges and explore new avenues through play.

Relevance to the CCD Projective Design

The projective CCD design can implement these ideas with a similar approach. We can preserve the existing trees to ensure a large shade canopy. Similarly, paths can be hierarchically arranged to avoid programmed activities where children need sharp concentration to exercise their creative problem-solving skills. Active play and climbing opportunities can also be offered in a way that provides flexibility and safe exploration for children by supplying loose parts and ample fall zone space. Finally, the design can expand on the existing hands-on learning activities at the CCD to promote dramatic and socio-dramatic play by providing role-playing venues.

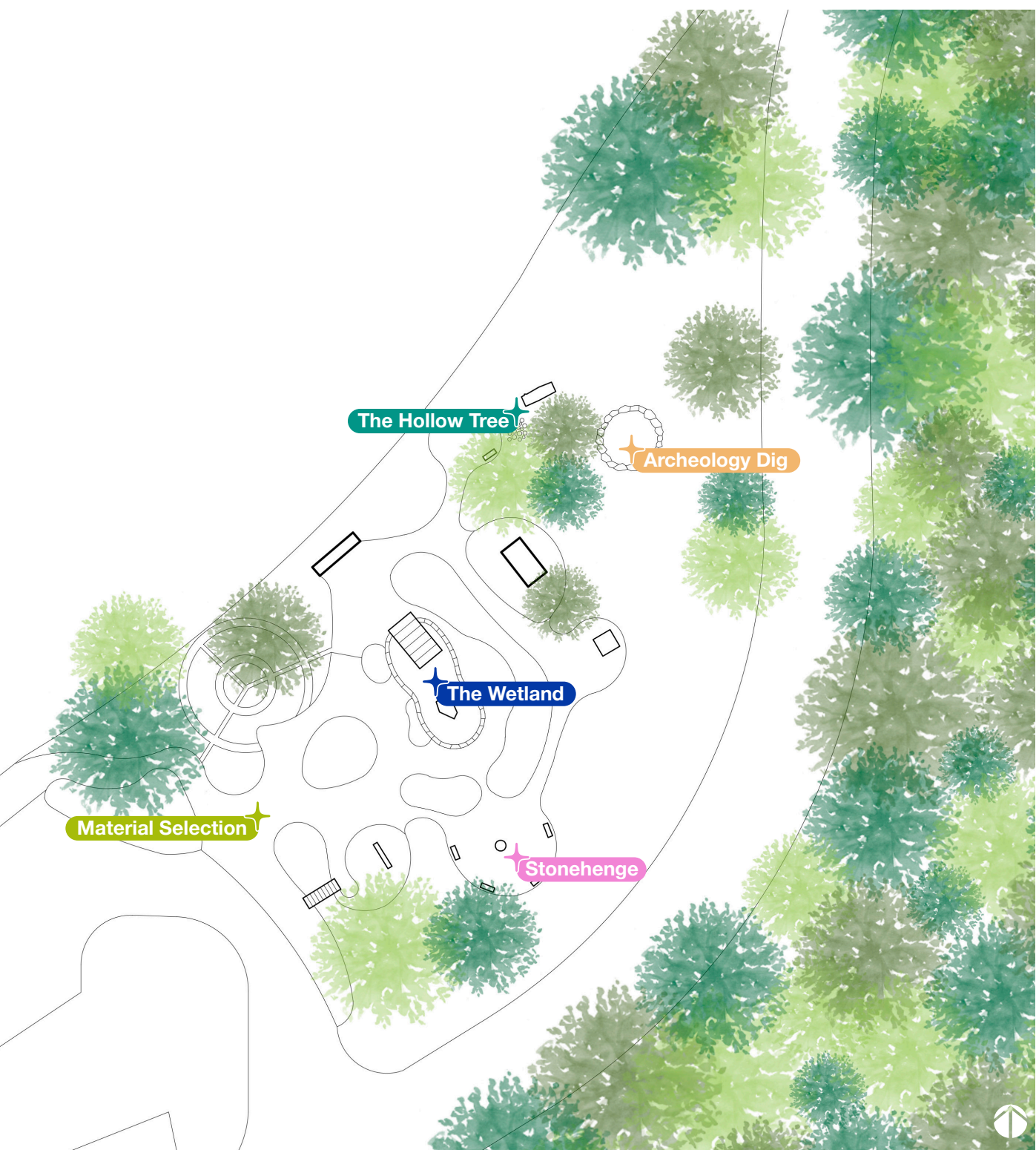


fig. 4.22 Site diagram locating key features inspiring creativity at Jester Park (Ramirez 2025).

Background

Designer: RDG Planning & Design

Size: 87,120 Square Feet

Location: Granger, IA

Completion date: March 2008

Sector: Parks & Public Space

Climate: Humid Continental

jester park natural playscape

Design Approach

Jester Park Natural Playscape had three primary goals guiding the design: (1) to offer an unstructured and creative environment evoked from nature’s stimuli, (2) to allow for physical exploration and accommodate varying abilities, and (3) to provide a safe setting that manages risks reasonably (Bell and Crawford 2021). Interestingly, the playscape does not include any prefabricated playground equipment and was built using naturally occurring, salvaged, recycled, or donated materials. Elements were chosen for their ability to allow children to “go over, under, around, and through them” (RDG Planning & Design 2025). Initially, designers experienced push-back when proposing a park with no swing set. However, they were able to secure public buy-in and excitement through an extensive public engagement process advocating for the value of unstructured play (Bell and Crawford 2021).

Key Features

- ✦ Material Selection
- ✦ The Hollow Tree
- ✦ The Wetland
- ✦ Archeology Dig
- ✦ Stonehenge

Photos courtesy of RDG Planning & Design, Kun Zhang | Dimension Images, All Rights Reserved.



fig. 4.23 Jester Park's entrance greets visitors with locally sourced natural materials, blending seamlessly with the surrounding landscape (Zhang n.d).

01 Material Selection:

Creates a contextually relevant nature-based setting using a collection of naturally occurring, salvaged, recycled, and donated materials.

- ✦ **How it Inspires Creativity:** Retrofitting play materials required designers to work closely with safety guidelines and county risk managers, ensuring each feature met safety standards while maintaining open-ended play possibilities.



fig. 4.24 The slabs are engraved with "petroglyphs" to spark inquiry (Zhang n.d).



fig. 4.25 The four "monoliths" frame views beyond the park from the child's perspective (Zhang n.d).

02 Stonehenge:

Resembling the ancient monoliths, the vertical rocks frame views of surrounding scenery and are engraved with native animals, star constellations, and globe imagery.

✦ **How it Inspires Creativity:** Piques children's curiosity, encourages child-led exploration and allows adults to participate in possibility thinking (what-if questions).



fig. 4.26 The Hollow Tree transforms recycled plant materials into engaging play equipment (Zhang n.d).

03 The Hollow Tree:

Repurposed salvaged timber logs from a nearby decaying floodplain forest invites players to climb over, under, around, and through them.

✦ **How it Inspires Creativity:** No manufactured play equipment encourages open-ended play, motivating children to wield their imagination to assign meaning and functions to objects for their personal play narratives.



fig. 4.27 The stepping stone paths encourage wading and exploration in the pool (Zhang n.d).

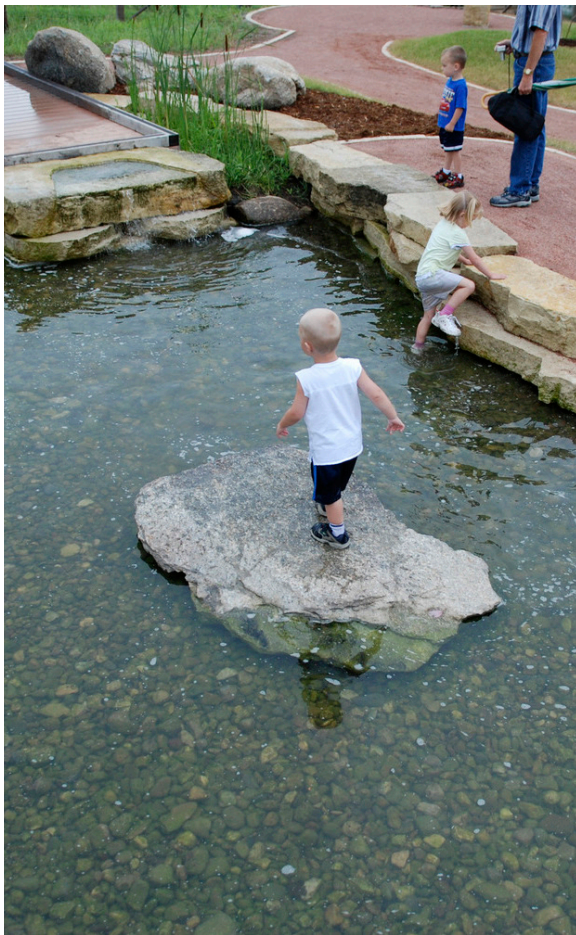


fig. 4.28 Movable river rocks line the pool's bottom, inviting children to explore (Zhang n.d).

04 The Wetland:

Features a shallow pool equipped with a fountain, boardwalk, and stepping stone path surrounded by vegetation.

✦ **How it Inspires Creativity:** The water feature offers a diverse sensory experience, enhanced by vegetation attracting local fauna and equipped with river rocks that children can move, stack, and splash in constructive or dramatic play.



fig. 4.29 The Archaeology Dig engages children in a multi-sensory adventure and offers ample space for group interaction and discovery (Zhang n.d).

05 The Archeology Dig:

Is an interactive play activity where artist-created fossils are buried in the sand for kids to uncover by digging.

✦ **How it Inspires Creativity:** It provides a hands-on exploratory experience that elicits critical thinking as children navigate the challenge of discovering fossils. When found, the fossils can spark curiosity and imaginative storytelling of the past.

01
site layout & planning

02
materials

Key Features Inspiring Creativity	Visual Cues	Adult Interaction	Context-Driven Approach	Nature-Based Conditions
Material Selection	✦		✦	✦
Stonehenge	✦	✦		
The Wetland		✦	✦	✦
The Archaeology Dig	✦			
The Hollow Tree			✦	✦

03
program

04
safety & accessibility

Play Diversity	Flexibility	Educational Value	Visibility	Regional Playground Standards	Maintenance
✦	✦		✦	✦	✦
✦		✦	✦		
✦	✦	✦	✦	✦	
✦	✦	✦			
✦	✦			✦	

fig. 4.30 Matrix depicting the key features for inspiring creativity at Jester Park (Ramirez 2025).

Jester Park Natural Playscape

Inspiring Creativity

The most compelling design strategy for inspiring creativity was avoiding standard playground equipment. Jester Park epitomizes a dynamic, sensory-stimulating nature playscape brimming with open-ended play possibilities. A post-occupancy survey revealed that most visitors find the nature playscape a “better experience” than a traditional playground despite the lack of manufactured equipment (Bell and Crawford 2021). Further, the same survey found that 82 percent of visitors feel Jester Park “inspires children to play creatively, using their imagination,” compared to a traditional playground where only 42 percent of users felt that way (Bell and Crawford 2021). The park’s intentional yet subtle design balances spontaneity and programmed activity, suggesting specific types of play but remaining open-ended enough to pique children’s interest. The Hollow Tree is a perfect example, where the repurposed logs are large enough to physically interact with but ambiguous, encouraging children to assign meaning to stimulate imaginative and active play.

Relevance to the CCD Projective Design

Like Jester Park, the CCD redesign can stimulate multiple play types while supporting child-led inquiry and varied play outcomes. Strategies that designers can apply to the CCD to achieve this are incorporating naturally occurring materials, blending art throughout, and offering a rich multi-sensory adventure. Using local, natural materials supports an open-ended setting free from predetermined themes or structured play expectations. Similar to the Stonehenge and Archaeology Dig at Jester Park, the CCD redesign can also layer art and imagery into the playground to encourage imaginative play and invite adults to participate in possibility thinking with children. Finally, Jester Park’s year-round sensory stimuli through water features and vegetation is an example of how the CCD can provide diverse play experiences for long-term engagement.



fig. 4.31 Site diagram locating key features inspiring creativity at Childhood's Gate Garden (Ramirez 2025).

Background

Designer: Didier Design Studio
Size: 54,000 Square Feet
Location: State College, PA

Completion date: July 2014
Sector: Parks & Public Space
Climate: Humid Continental

childhood's gate garden at penn state

Design Approach

The Childhood's Gate Garden at Penn State re-imagines the concept of a playground and all it can offer. Rooted in the belief that nature and all its features are magical, the garden aims to inspire wonder and passion while fostering children's emotional connection to the natural world through opportunities for unscripted play and exploration (Didier Design Studio A n.d.). Celebrating regional identity, the design highlights Pennsylvania's unique geological history (Didier Design Studio n.d. B). It blends play, art, and science to narrate the geology story through the built environment. This evolution is further reinforced in the garden's site design, materials, vegetation, and public programming. The site is composed of a series of immersive garden "rooms." These dynamic spaces invite children to "learn through their bodies" by offering exploration, discovery, and stimulating sensory experiences, ultimately encouraging learning through play (Didier Design Studio n.d. A).

Key Features

- ◆ Storytelling in the Landscape
- ◆ Natural Loose Parts
- ◆ Chalkboard Art
- ◆ Enclosures
- ◆ Water

Photos courtesy of Didier Design Studio, All Rights Reserved.



fig. 4.32 Bird's eye view of Childhood's Gate Garden at Penn State (Didier Design Studio n.d.).

01 Storytelling in the Landscape:

Through materials and overall site design to develop a compelling narrative influenced by the surrounding landscape. The site design layers natural elements and regional history to create an immersive, educational, and inspiring experience for children.

✦ **How it Inspires Creativity:** The site's narrative, expressed through material selection, offers unique play opportunities inspired by the surrounding context. Imaginative themes drawn from local natural systems inspire dramatic play. Movable materials relevant to the site's story encourage constructive play.



fig. 4.33 Children engaging in constructive play with the river rocks (Didier Design Studio n.d.).



fig. 4.34 Seasonal plant parts supplied by the plant palette (Didier Design Studio n.d.).

02 Natural Loose Parts:

Are integrated throughout the site in many forms. Pictured here are the river rocks and seasonal plant parts made available from the plant palette.

- ✦ **How it Inspires Creativity:** Loose parts offer open-ended play opportunities without predetermined outcomes. They inspire children to use them for whatever their imagination conceives and are especially crucial for stimulating constructive and dramatic play behaviors.



fig. 4.35 Outdoor chalkboard inviting visitors to share their creativity and leave a lasting impression on the space (Didier Design Studio n.d.).

03 Chalkboard Art:

A large chalkboard is embedded into one of the stone walls, allowing children to leave their mark on the space for a sense of ownership.

- ✦ **How it Inspires Creativity:** The chalkboard provides children flexibility in their environment, offering an outlet for artistic expression and allowing them to adapt the space to fit their play.



fig. 4.36 Distinctive play enclosure inspired by the local geological history (Didier Design Studio n.d.).



fig. 4.37 The enclosure provides a sheltered space for outdoor sand play (Design Studio n.d.).

04 Enclosures:

Cave-like hideways further advance the site narrative, emulating natural formations while supporting sheltered play activities.

✦ **How it Inspires Creativity:** The natural aesthetic of the enclosure prompts unique pretend play themes. The enclosure also provides protective conditions for hands-on activities, like sand, and is large enough to support group activity.



fig. 4.38 The various water features encourage exploration through tertiary paths, fostering a sense of wonder with vegetation that attracts wildlife (Design Studio n.d.).

05 Water:

Contributes to the site narrative and design as an organizing feature while delivering a stimulating sensory experience that encourages exploration in children. .

✦ **How it Inspires Creativity:** Water captivates young children and is the ultimate open-ended play feature. Natural loose parts and vegetation accompany water elements on-site. The water features also vary in size, allowing for group and individual investigation.

01
site layout & planning

02
materials

Key Features Inspiring Creativity	Visual Cues	Adult Interaction	Context-Driven Approach	Nature-Based Conditions
Storytelling Materials	✦		✦	✦
Natural Loose Parts		✦	✦	✦
Chalkboard Art		✦	✦	
Enclosures	✦		✦	✦
Water	✦		✦	✦

03
program

04
safety & accessibility

Play Diversity	Flexibility	Educational Value	Visibility	Regional Playground Standards	Maintenance
✦	✦	✦	✦	✦	✦
✦	✦	✦			
✦	✦	✦	✦		✦
✦	✦				✦
✦	✦	✦	✦	✦	

fig. 4.39 Matrix depicting the key features for inspiring creativity at Childhood's Gate Garden (Ramirez 2025).

Childhood's Gate Garden at Penn State

Inspiring Creativity

Childhood's Gate Garden at Penn State encourages creativity by supporting unique play themes, flexibility, and multi-sensory engagement. The park celebrates the region's geological history through programming and materials to compose a unified and inspiring space for children. The narrative motivates unique play scenarios and informs specific natural loose parts to uplift creativity in children. For example, the cave-like hideaways offer a unique dramatic play backdrop while contributing to the narrative. The movable river rock also advances the site story, supporting constructive play where children can express their ingenuity. Further, loose plant parts and water elements create a dynamic sensory environment, encouraging experimentation and problem-solving thought processes. The outdoor chalkboard offers another flexible and interactive surface children can adapt to express their creativity through pretend play scenarios or visual art.

Relevance to the CCD Projective Design

The CCD projective design can employ similar strategies to inspire creative play outcomes through a clear site narrative, multi-sensory engagement, and flexibility. A meaningful narrative can guide the redesign by influencing material choices and programming. The narrative can encourage unconventional and imaginative play scripts through context-specific themes and features, like Childhood's Gate Garden. The CCD projective design should also consider the seasonality of sensory stimuli to keep children engaged year-round. Developing a planting palette that creates a continuous rotation of natural loose parts and providing malleable materials (water and sand) is crucial. Natural loose parts and malleable materials also maintain flexibility in the built environment and encourage children to engage in constructive and dramatic play when given ample space.

TAKEAWAYS

Design Guidelines Review

Overall, the design guidelines review highlighted standard practices in nature play design, reinforcing many of the site considerations identified in the literature. The review assessed existing nature play design guidelines by extracting the advice and categorizing them into four overarching themes: Site layout & Planning, Materials, Program, and Safety & Accessibility. The Site Layout & Planning guideline emphasizes the implementation of visual cues and caregiver considerations to support creativity through intentional adjacencies, curated exploration, and possibility thinking scenarios. The second guideline focuses on material selection to create a context-driven, nature-based approach for open-ended play opportunities, supply loose parts, and an inspiring site narrative. The programming principle concentrates on flexible, diverse, and educational play opportunities to boost creativity, unstructured exploration, challenge-based growth, and opportunities for self-expression. The last principle, Safety & Accessibility, underscores the importance of clear visibility, manageable maintenance, and abiding regional playground standards to uplift creativity through complete immersion in play, uninterrupted experiences, and risk mitigation through proper upkeep.

Precedent Studies

The precedent studies investigated how built work executed the design ideas recognized in the literature and design guidelines. Each study identified key features inspiring creativity and then evaluated their alignment with the guidelines established from the design guidelines review using the matrix. Many key features afforded constructive and dramatic (pretend) play behaviors. These play types are important because they are generally unstructured and require children to engage their critical thinking skills, overcome challenges, and allow for self-expression through representative forms, key indicators of creative thinking. Additionally, all projects utilize natural loose parts (rocks or plant parts) and/or malleable materials (sand, water, or mud). These programmatic features offer interactive, multi-sensory, and open-ended experiences, inviting children to adapt them to fit their individual play.

APPLICATION TO THE CCD

✦ The Matrix

- serves as a tool to assess how key features in the projective design align with the outlined principles and guidelines to inspire creativity through nature play.

✦ Dimensions Early Education Infant & Toddler Center

- Prioritize visual clarity, open-ended play opportunities, and an enhanced infant area.

✦ Ruth Staples Child Development Laboratory

- Environmental factors for uninterrupted play, opportunities for children to overcome challenges, and providing role-playing venues.

✦ Jester Park Natural Playscape

- Stimulate child-led inquiry, and various play types through naturally occurring materials, blending art throughout, and offering a rich multi-sensory adventure.

✦ Childhood’s Gate Garden at Penn State

- Encourage creative play outcomes through a clear site narrative, multi-sensory engagement, and flexibility.



**"To raise a nature-bonded
child is to raise**

**a rebel,
a dreamer,
an innovator**

...

**someone who will walk their
own verdant, winding path."**

— Nicolette Sowder
creator of Wilder Child & Wildschooling



projective design

The Design Process

- Site Analysis
- Concept Development
- Staff Engagement

Final Design & Marketing Materials

- Narrative Statement & Project Goals
- South Playground
- North Playground
- Supplemental Items

THE DESIGN PROCESS

The projective design was a collaborative effort with fellow landscape architecture student Michaela Coulter, who is researching nature play and its role in enhancing sensory development in early childhood. Our work is part of a larger initiative for the Center for Child Development at Kansas State University, which aims to renovate the existing nature playscape. The redesign addresses critical site concerns and incorporates our individual research findings while re-imagining how the space can reflect the facility's values and practices in an outdoor setting. This iterative process involved extensive research and active stakeholder involvement to ensure a well-informed and meaningful design proposal. Ultimately, we bring these ideas to life through visioning imagery and marketing materials to support fundraising.

- **site analysis**
Familiarize with the Center for Child Development (CCD) and assess existing site conditions, culminating in a SWOT analysis.
- **concept development**
Generate initial design ideas informed by site analysis and the design considerations discovered from the literature review.
- **reviews with professionals**
Gather insights from landscape architects and educators (many are parents of former CCD students) to refine design ideas.
- **design guidelines review & precedent studies**
Review of current design recommendations and evaluate successful projects to ensure best practices (sections 03 and 04).
- **stakeholder engagement**
Present a more refined concept to CCD educators to incorporate their feedback into the design.
- **design refinement**
Further develop the design concept by applying research findings and stakeholder input.
- **final package**
Produce renderings and visioning materials to support the Department of Applied Human Sciences' fundraising efforts.

The Center for Child Development (CCD)

Family Centered

The CCD’s program integrates the experiences and principles from all families and provides opportunities for the children to learn about their diverse world.

Exploration

The CCD teaches their students about different cultures and traditions that may differ or be similar to their own. Students who attend, come from all around the world, which provides opportunities to celebrate cultural uniqueness through art, music, and language. The CCD also encompasses their lesson plans with their outdoor play areas to teach their students about science, biodiversity, and have a well-rounded play experience with nature.

Evidence – Based Practices

The Department of Applied Human Sciences at Kansas State University administers the CCD. Using research-based approaches in early childhood development programs, the Center provides quality child care to students and faculty at K-State as well as the greater Manhattan, Kansas community. The CCD is one of 8% of child care centers accredited by the National Association for the Education of Young Children.

Students at the CCD

The CCD supports a large age development window, serving students as young as six weeks old to five years old. The student to staff ratio is dependent on the age range. The Center currently supports about 150 children but is licensed for up to 238.

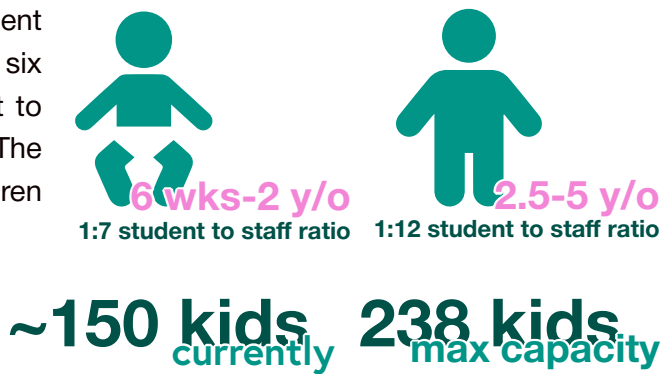


fig. 5.1 Students at the CCD (Ramirez 2024).

History of the CCD

- 1984**
The CCD was established in 1984 by K-State’s former President, Duane Acker to meet the community’s needs.
- 1985**
The CCD acquired nonprofit status and opened the K-State Child care Cooperative with three programs. These were a full-day toddler facility, a full-day preschool, and a flexible-time preschool unit.
- As the need for early childhood learning grew, the center expanded and added classrooms.
- 2006**
The K-State Center for Child Development became an official part of the university, which led to a new facility that increased child care capacity by 50%.
- 2010**
The current building and playground opened and today serves up to 246 children of the Manhattan and the greater K-State community.
- 2017**
The shade structure on the North playground was funded by the Social Services Advisory Board Utility Donation Fund.

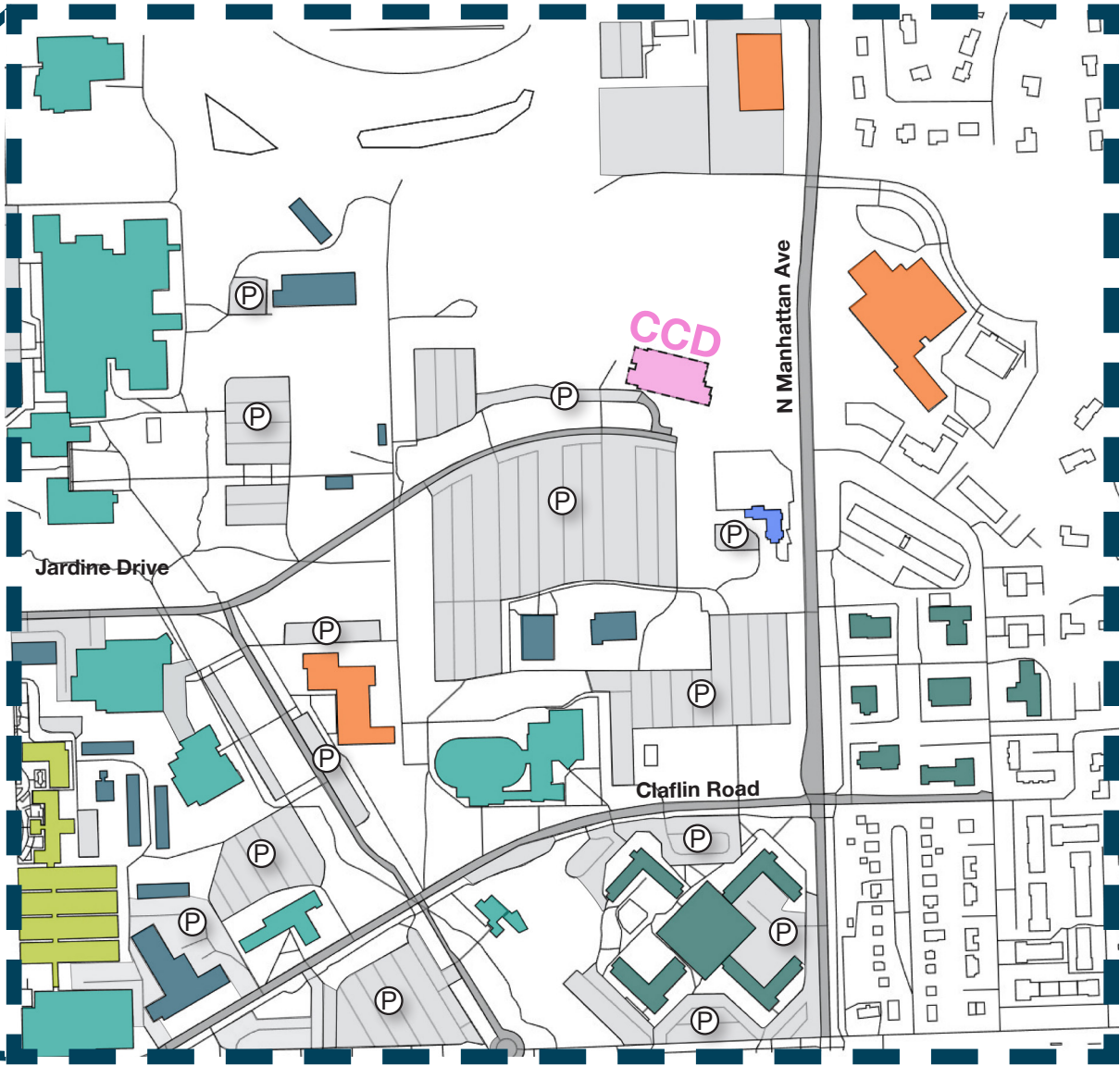
site analysis

Site Context

The CCD is located on the east side of campus and is largely surrounded by Kansas State University property.



fig. 5.2 Map of Kansas State University's Campus (Ramirez 2025).



- K-State Building
- K-State Office Building
- K-State Residential Building
- K-State Greenhouses
- Business Building
- Police Station
- Ⓟ Parking Lot

The CCD at Kansas State University

fig. 5.3 The Center for Child Development on campus (Swaney 2024).

Hydrology & Vegetation

The existing topography on site leaves the playgrounds relatively flat, with few water collection areas intentionally placed for certain play activities. Much of the grade change occurs outside the fence boundaries, where mowed grass swales are designed to move water away from the building and toward the street and parking lot.

- Mugo Pine
Pinus mugo
- Klein Forsythia
Forsythia viridissima 'Klein'
- Black Walnut
Juglans nigra
- Thornless Honey Locust
Gleditsia triacanthos var. inermis
- Common Peach Tree
Prunus persica
- Eastern Redbud
Cercis canadensis
- Ivory Silk Japanese Lilac
Syringa reticulata
- Weeping Mulberry Tree
Morus alba 'Chaparral'
- Cornelian – Cherry Dogwood
Cornus mas
- Siberian Elm
Ulmus pumila
- Lamb's Ear
Stachys byzantina
- Rose of Sharon
Hibiscus syriacus
- Gold Cluster Forsythia
Forsythia 'Courtaneur'

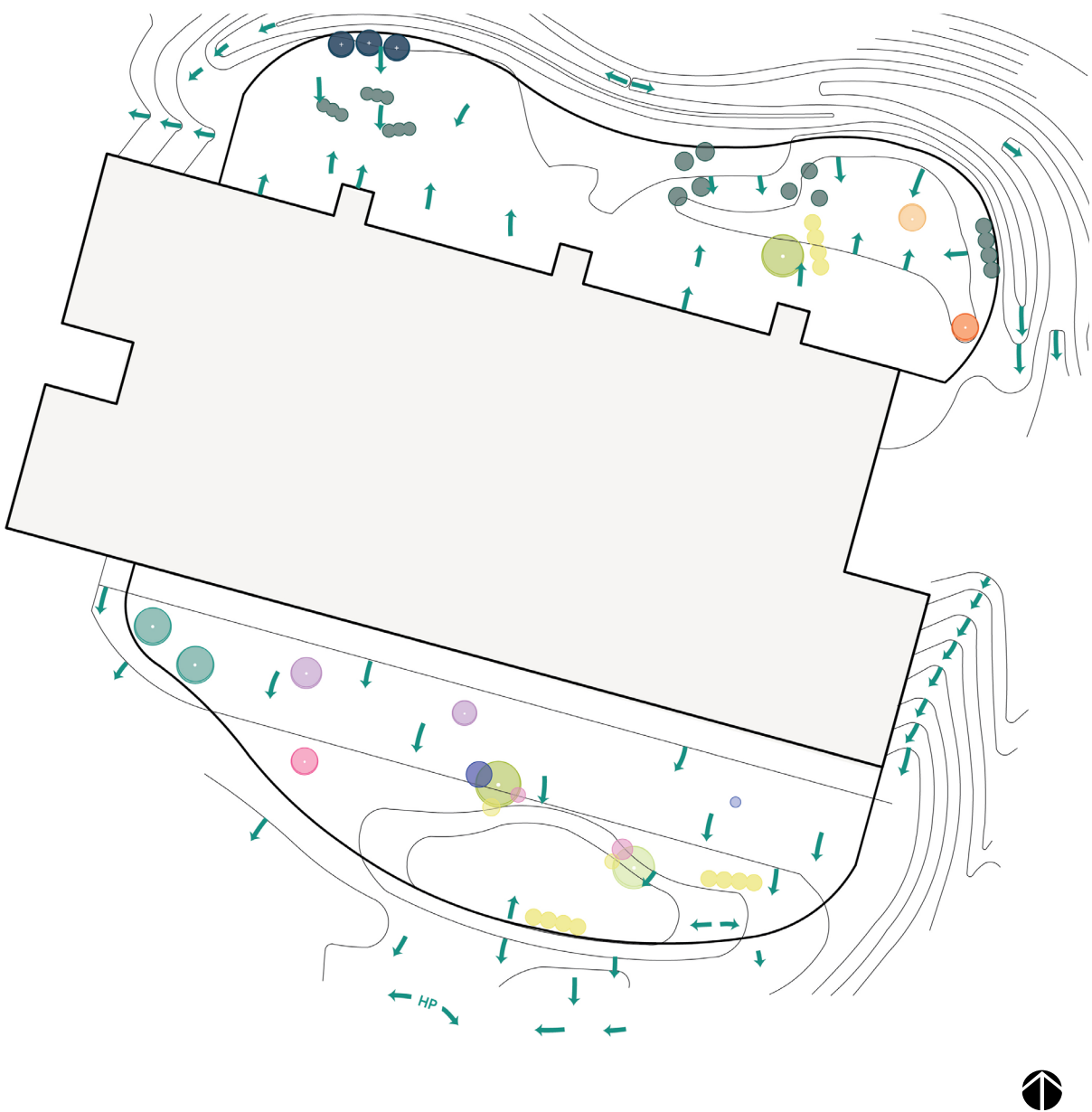


fig. 5.4 Existing vegetation and renovated swale topography at the CCD (Ramirez 2024).

Interior – Exterior Relationships

The building upgrade in 2010 intentionally created indoor-outdoor connections. Each classroom has direct physical access and fenestration framing the playground.



fig. 5.5 Diagram of interior and exterior connections (Ramirez 2024).

Circulation

The existing design encourages free movement and exploration with few defined paths. It prioritizes child-directed play and tactile learning, so the ground materials subtly transition as a wayfinding technique. Access points beyond the site require staff supervision and codes for child use.



fig. 5.6 Diagram of existing circulation on the playground (Ramirez 2024).

Existing Play Zones

The CCD’s evidence-based approach to early childhood extends to the existing playground. Key features in the current state are loose parts, natural elements, play structures, and age-appropriate design. Existing play zones include structures, nature-based settings, outdoor classrooms, edible landscapes, music, loose parts, a splash pad, and an infant lawn.



Loose Parts

stimulate imagination by allowing opportunities to explore, test, and adjust their environment.

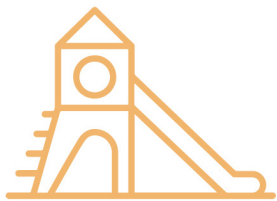
- river rocks
- recycled tree pieces
- toys (buckets/shovels/blocks/etc.)



Nature – Based Elements

help foster children's connection with the outdoors.

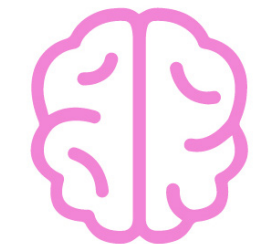
- the overall aesthetic is natural
- includes specific tactile activities:
 - dry river bed
 - mud pit



Structures

encourage safe risk in play.

- allowing children to climb, hide, jump
- fall zones



Age Appropriate Play

for different comprehension levels and stages of development.

- Infant lawn
- Separated play spaces with differing structure & elements



fig. 5.7 Diagram of play zones in the CCD's existing playground (Ramirez 2024).

South Playground

6 weeks – 2 years old

The south playground serves children from six-week-olds to two-and-a-half-year-olds. This approximately 8,000-square-foot area is equipped with various play structures in good condition, which the staff seeks to preserve in the redesign.

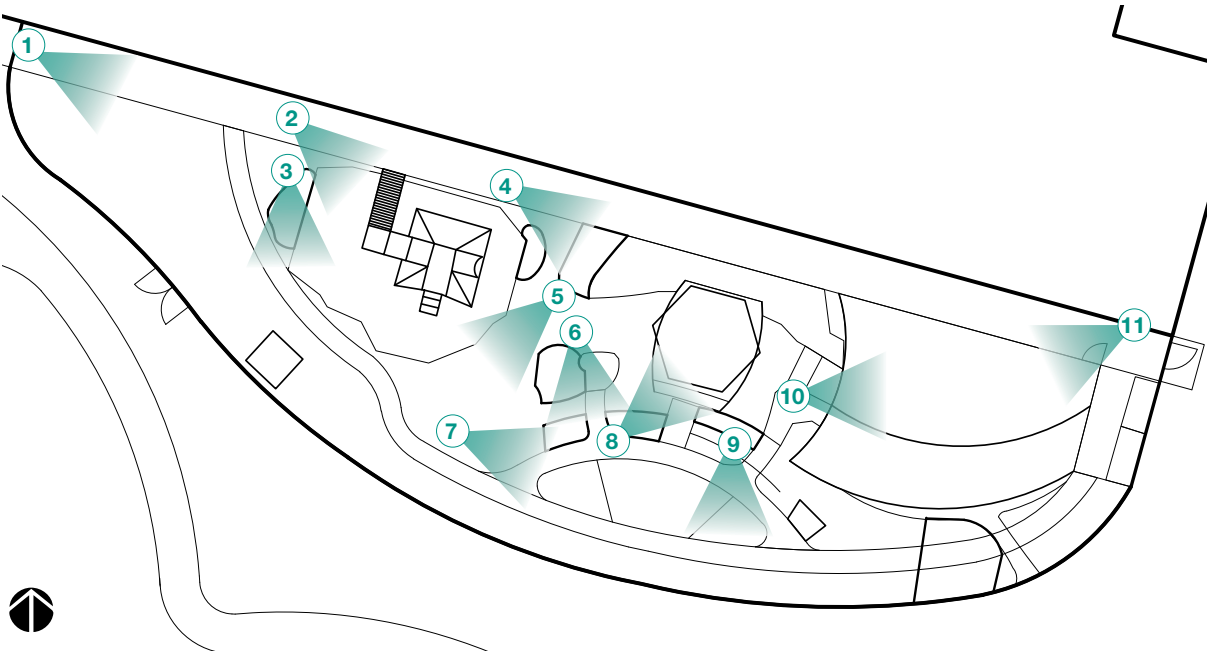


fig. 5.8 Existing south playground conditions (Coulter 2024).



North Playground

2.5 – 5 years old

Two-and-a-half-year-olds to five-year-olds occupy the north playground. Children have approximately 10,500 square feet to roam, including the outdoor classroom. However, the outdoor classroom requires educator access.

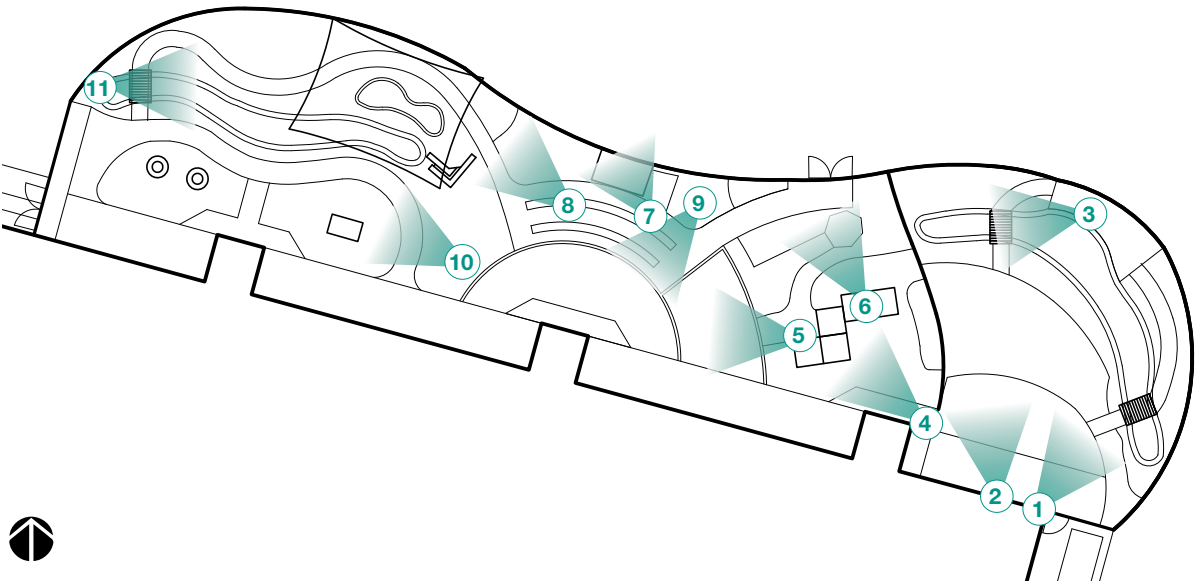


fig. 5.9 Existing north playground conditions (Coulter 2024).



fig. 5.10 The north playground after a blizzard (Skabelund 2025).

Play Knows No Off-Season...

The playgrounds are an integral part of the CCD, used daily throughout the year, no matter the (nonthreatening) weather.



fig. 5.11 The south playground structure after a blizzard (Skabelund 2025).



fig. 5.12 The south playground after a blizzard (Skabelund 2025).

CCD REQUESTS

The staff identified critical improvements to improve playground functionality and support child development.

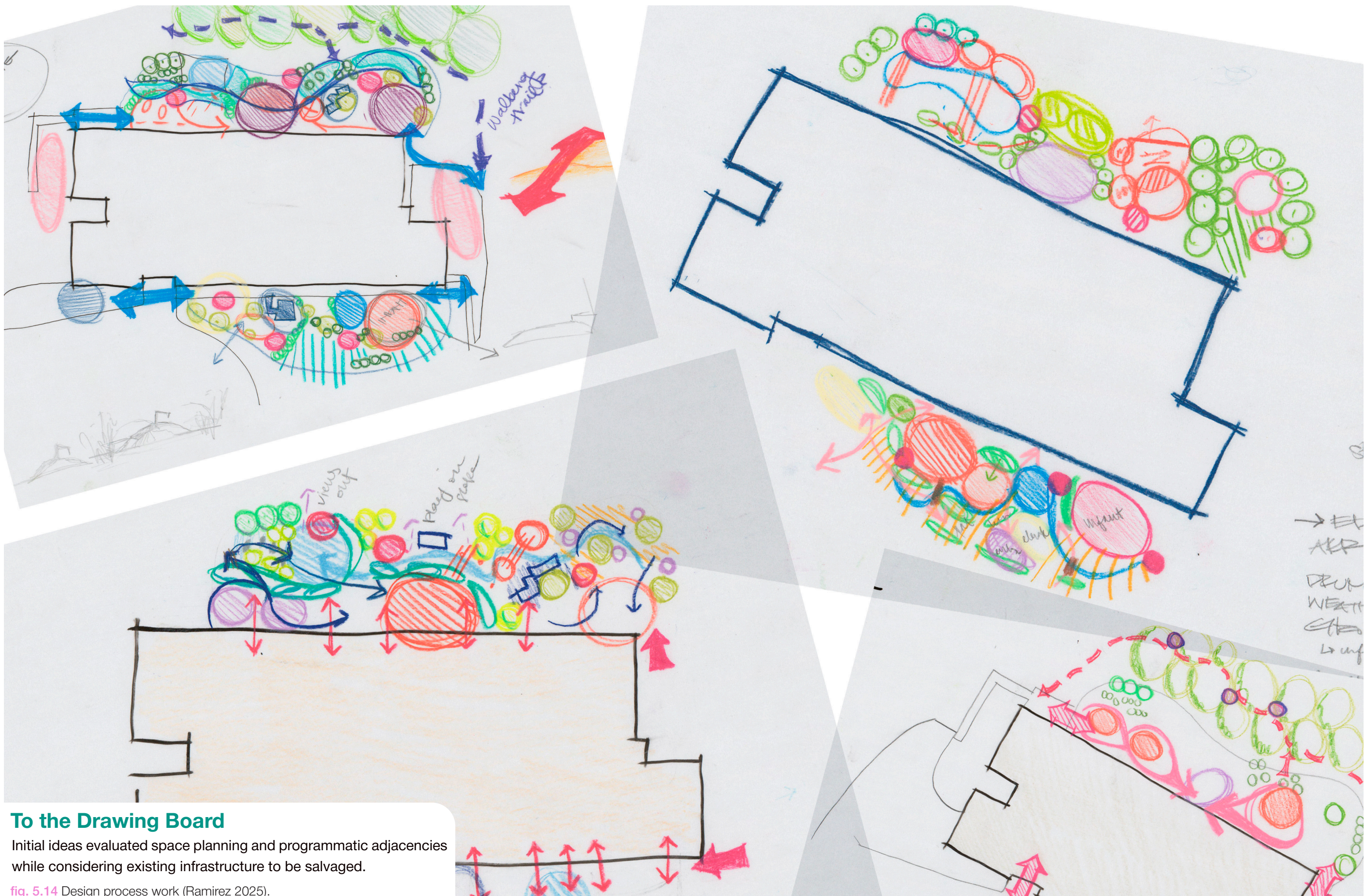
- ✦ Incorporate the **existing play structures** that are in good shape
- ✦ **Resurface** deteriorating ground materials
- ✦ **Maintain visibility** in the playgrounds
- ✦ **Connect educators and staff** with children in play
- ✦ **Provide hands – on learning opportunities**
- ✦ **Consider low-maintenance solutions**

Strengths, Weaknesses, Opportunities, & Threats

To synthesize findings from the site analysis phase, we developed a Strengths, Weaknesses, Opportunities, and Threats (SWOT) assessment to inform the design process.



fig. 5.13 SWOT analysis for the current CCD playground (Coulter and Ramirez 2025).

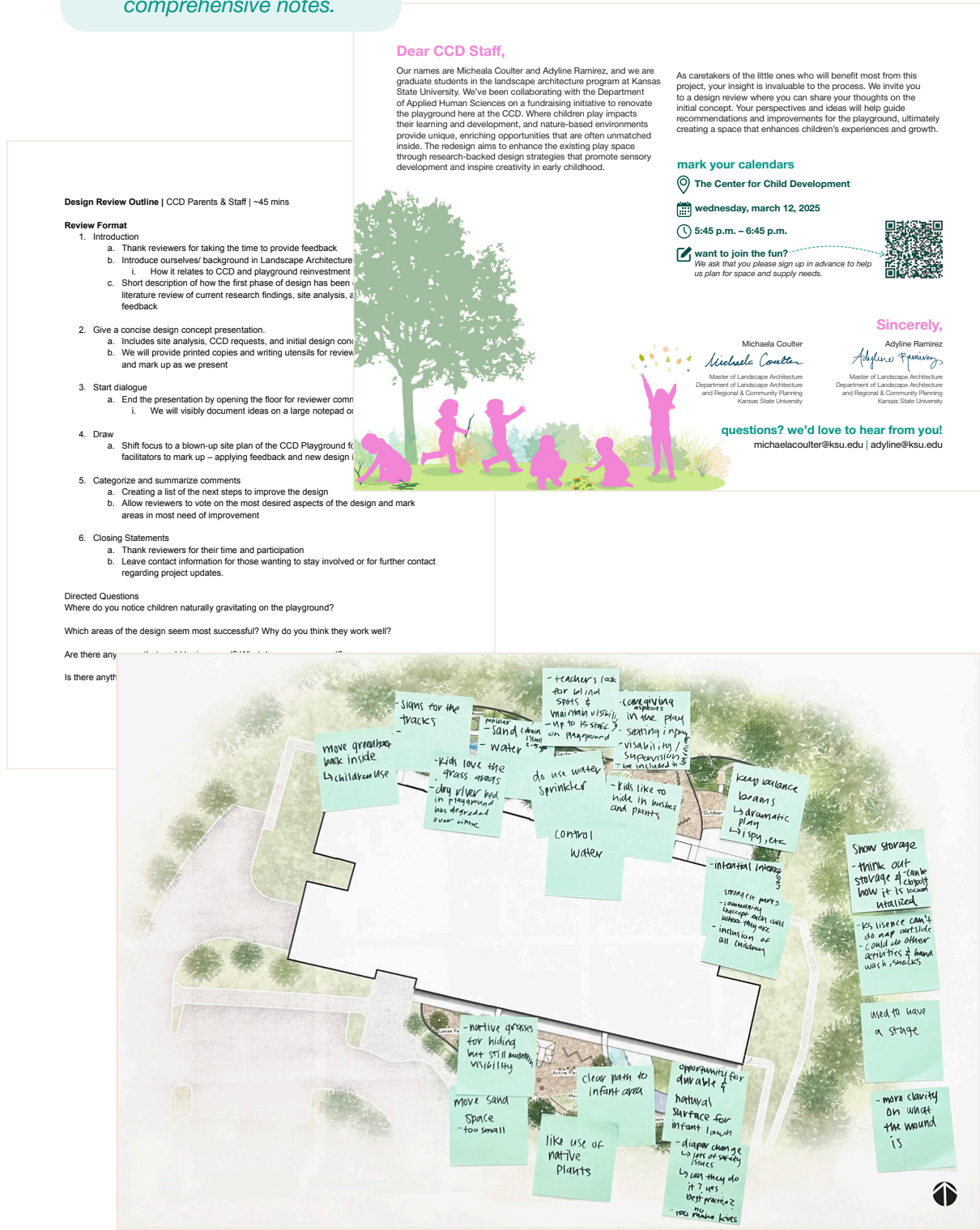


To the Drawing Board

Initial ideas evaluated space planning and programmatic adjacencies while considering existing infrastructure to be salvaged.

fig. 5.14 Design process work (Ramirez 2025).

See the appendix for the design team's planning materials and comprehensive notes.



staff engagement

While we worked closely with the Director of the Center for Child Development, it was also vital for us to speak to the educators and staff who experience and interact with the playground daily. With a more refined concept, Michaela and I orchestrated a brief presentation on March 12th, 2025, to collect the team's feedback. Their expertise and ideas provided invaluable insights and recommendations guiding the following steps before finalizing the design. The full list of notes the design team took can be found in the appendix.

Key Takeaways

- ✦ Maintain Interior–Exterior Connections
 - Educators agreed that the connection is vital to the CCD and was a core design strategy from the building's construction in 2010.
- ✦ Vegetation
 - Staff liked the use of native grasses because they are child-scale hiding places, but still keep visibility from the adult's point of view.
- ✦ Adult Amenities
 - Staff appreciated the attention to their needs for more seating and amenities within the playground redesign.
- ✦ Visibility
 - Mandatory for every child care center – educators informed us they tend to have their backs to the fence to supervise as much of the playground as possible.
- ✦ Storage
 - The ability to store and organize objects is essential to both playgrounds and needed to be depicted more clearly in the renderings.

fig. 5.15 Copies of the planning materials for the design review (Ramirez 2025).



fig. 5.16 Full group at the CCD design review presentation (Goold 2025).

Lessons Learned on the Playground

Michaela and I talked with six educators whose experience with the CCD ranged from 9 to 15 years. Many staff have been with the Center since the current building and playground were constructed in 2010.



fig. 5.17 Ady presenting at the CCD staff design review (Goold 2025).



fig. 5.18 Michaela documenting feedback on the site plan (Goold 2025).

FINAL DESIGN

Narrative Statement

The Flint Hills in Manhattan, Kansas, holds the largest expanse of tallgrass prairie left in the world. Home to over 500 species, the tallgrass prairie supports a diverse ecosystem, offering unique nature-based play and learning opportunities for students at the CCD. This design, maintaining the perspective that the environment serves as a third educator, introduces ecological concepts of the tallgrass prairie and its history through carefully crafted, age-appropriate, exploratory play possibilities while fostering a connection to the local identity.

Environment As A Third Educator

Refers to the third pedagogy in the Reggio Emilia approach to early childhood education, establishing that children feel valued, respected, and more motivated to learn in thoughtfully designed spaces.

Inspiring Creativity

The CCD projective design offers open-ended, constructive, and dramatic play opportunities within thoughtfully designed nature play spaces to uplift creativity in early childhood. These intentional environments, inspired by the third pedagogy of the Reggio Emilia approach, honor children's autonomy and curiosity while leveraging unique affordances of nature play.

trailblazing tots

Project Goals

Enhance sensory learning and creative development through age-appropriate and intentional playground equipment and open-ended play opportunities.

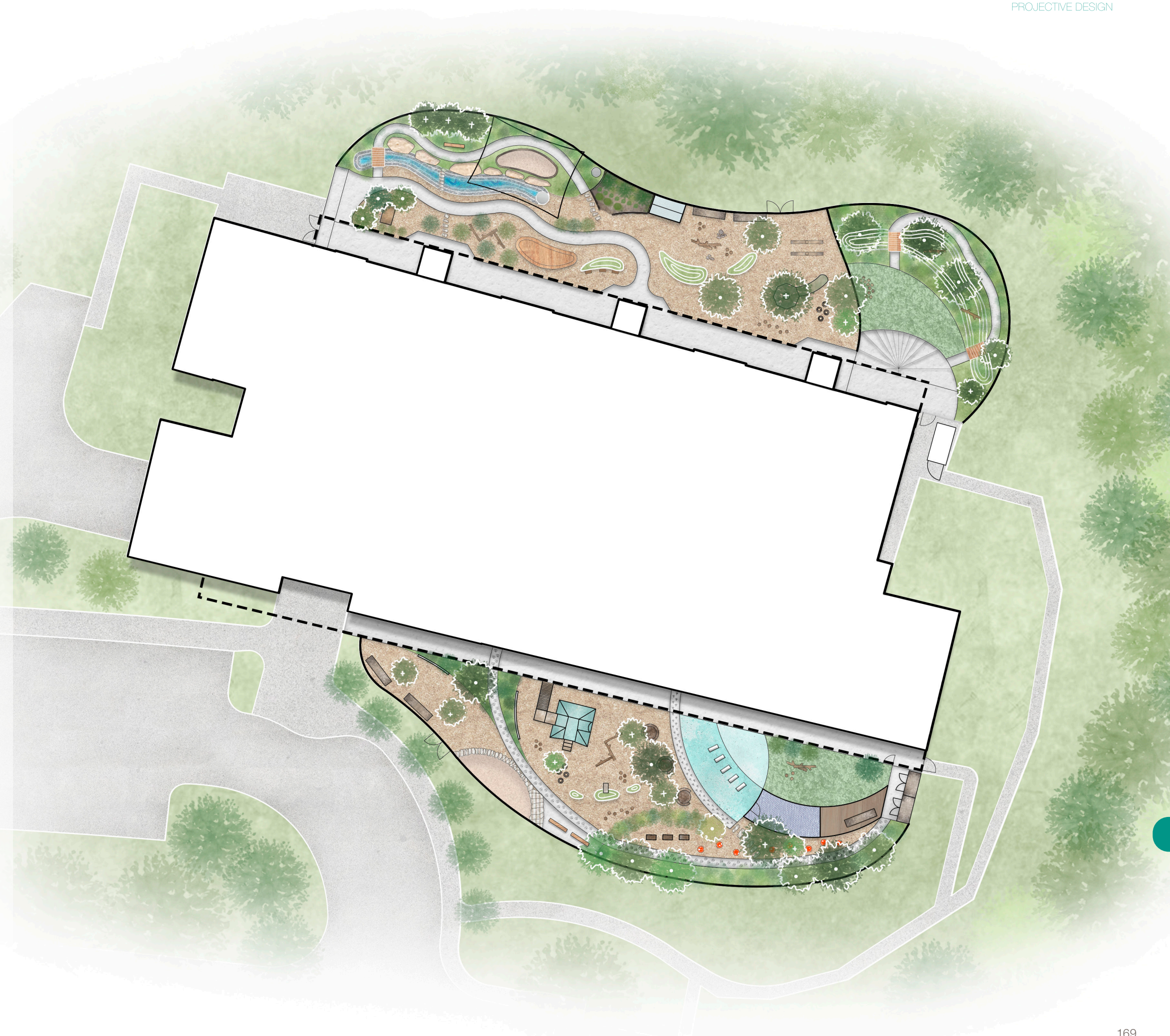
Encourage environmental stewardship through nature-based learning opportunities to promote exploration and interaction with natural features.

Inspire a sense of wonder in nature through a diverse planting strategy to provide a dynamic rotation of loose parts, seasonal interest, and sensory stimuli.

Utilize place-based design strategies to introduce children to the ecological significance of the Flint Hills and tallgrass prairie in Manhattan, Kansas.

 **scale 1"= 30'**

fig. 5.19 Overall site plan for the re-imagined nature Playgrounds at the CCD (Ramirez 2025).



proposed
play zones

to inspire
creativity



Loose Parts:

✦ Open-ended, flexible natural materials that children can use to support self-expression through pretend and constructive play opportunities.

Dramatic Play:

✦ Role-playing venues, performance spaces, and imagery inspired by the site narrative to motivate unique play scenarios.

Active Play:

✦ New equipment furthers the site narrative and encourages children to explore and push boundaries with their physical play.

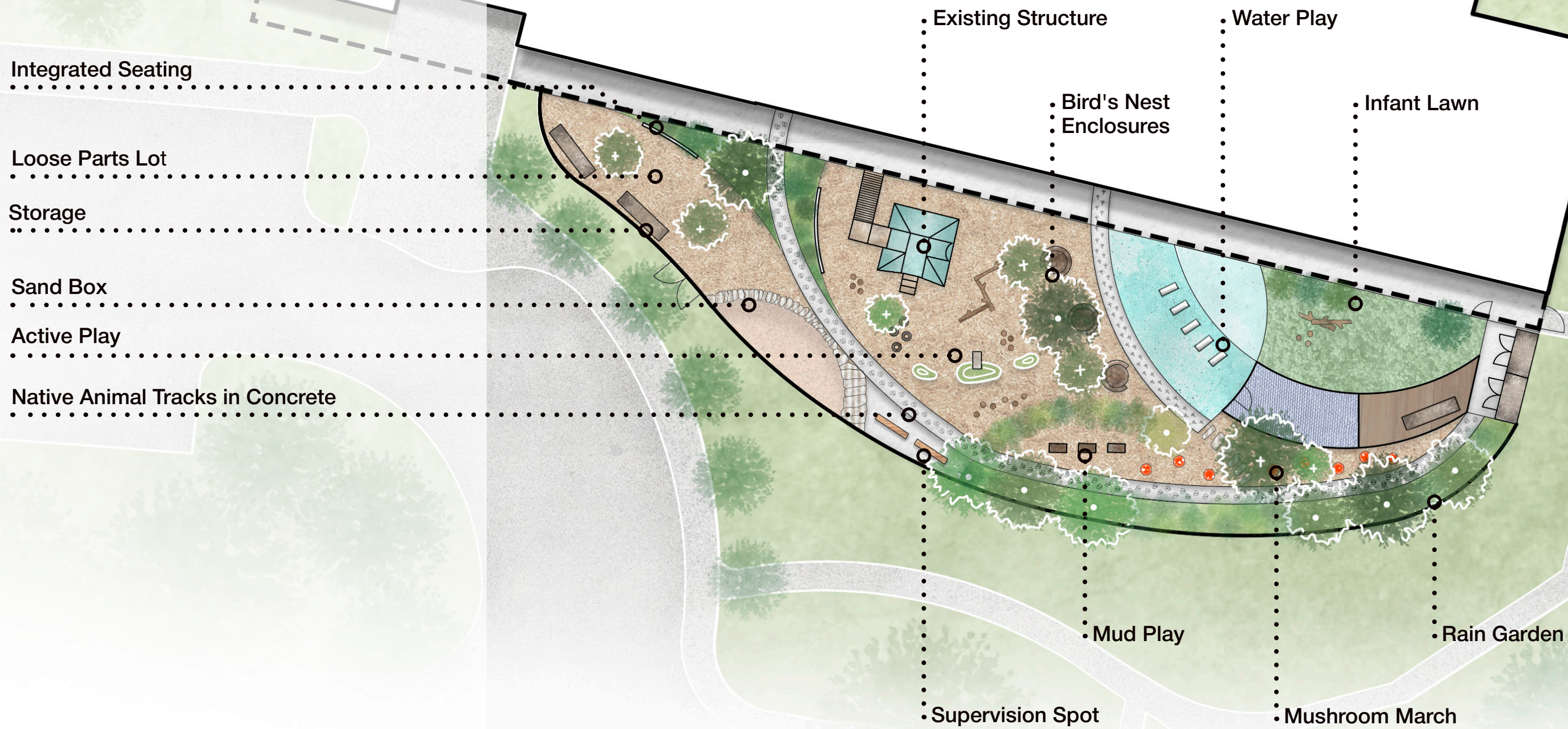
Malleable Materials:

✦ Includes sand, water, and mud play, granting children diverse sensory stimuli and unstructured play props.

Supervision Spots:

✦ Integrated into zones where children use strategies to confront obstacles in their play to facilitate possibility thinking interactions with educators.

fig. 5.20 Diagram of play zones in the proposed CCD playground (Ramirez 2025).



little bluestem landing

South Playground | 6 weeks – 2 years old

 **fig. 5.21** Zoomed in site plan of the redesigned 6-week to 2-year-old nature playground (Ramirez 2025).

Mushroom March

Trailing off the beaten path, this whimsical space invites a hay day of imagination and discovery. The Mushroom March features native bison track paving and child-scale mushroom sculptures to spark self-expression in children through rich pretend play scenarios. The dynamic rain garden filters views of the adjacent parking lot, providing children with an immersive, sensory-stimulating experience evolving throughout the seasons.

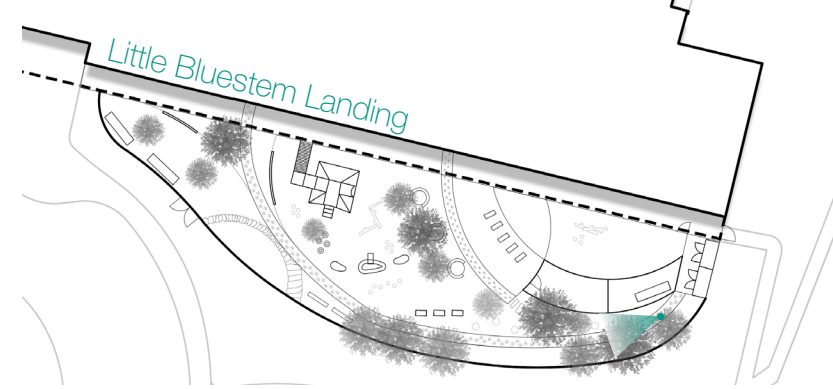


fig. 5.22 Immersive view into the Mushroom March on the South Playground (Coulter 2025).



fig. 5.23 Rendering depicting the refurbished Infant Lawn (Coulter 2025).

Infant Lawn

The redesign implements a new vegetative ground cover like Creeping Thyme for lower maintenance and seasonal interest. The Infant Lawn is further enhanced with seating and natural loose parts, offering infants options to perch and interact with their surroundings.

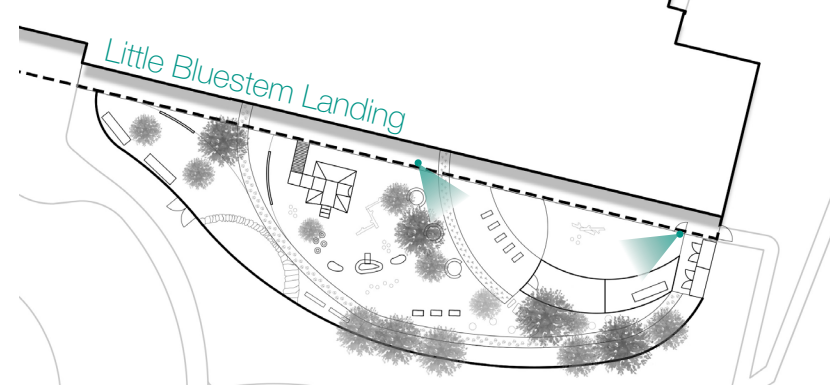


fig. 5.24 Little Bluestem Landing's dramatic and sensory play experiences (Coulter 2025).

In the Treetops

New additions to the South playground provide enhanced opportunities for play with malleable materials and immersive enclosures. Fully accessible water tables and a mud kitchen, located along an ADA-compliant path, allow children with mobility challenges to participate in sensory-rich, creative play. Nature-themed play enclosures inspire dramatic play but remain open-ended enough to encourage children to develop unique play scenarios.

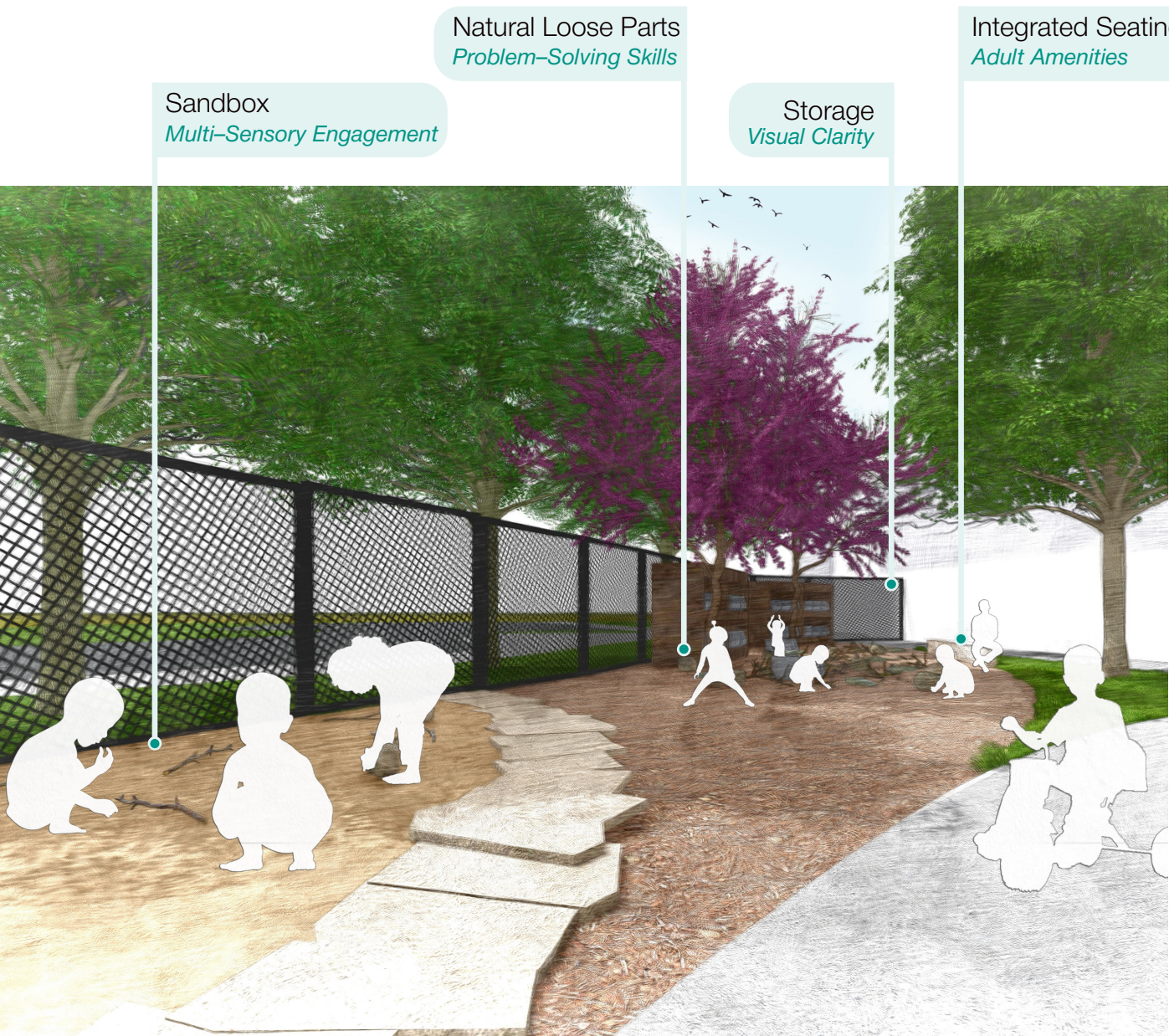


fig. 5.25 Children engaging in constructive play in the Loose Parts Lot (Coulter 2025).

Loose Parts Lot

The Loose Parts Lot supports open-ended play through natural loose parts, an enhanced sandbox, and storage space, all encircled by the primary tricycle path. Integrated seating throughout the space encourages meaningful interactions between children and caregivers.

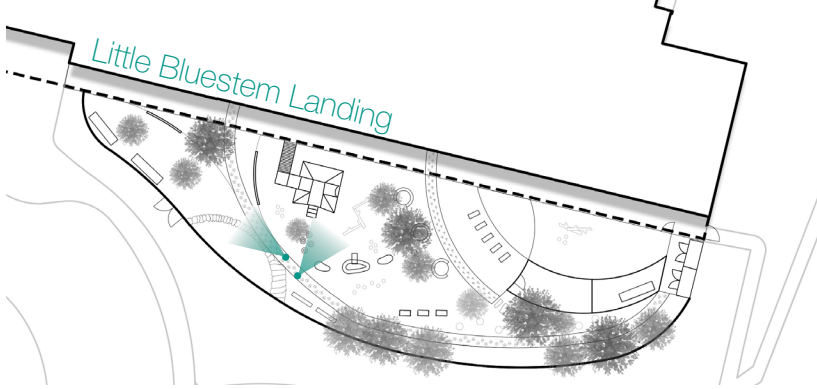


fig. 5.26 Rendering of the added mounds in the active play area on the South Playground (Coulter 2025).

Tallgrass Tumble

The redesign builds upon the existing Active Play area, adding low play mounds and natural play equipment. These features encourage divergent thinking, free from predetermined themes, as children decide how to interact with elements.

little bluestem landing

South Playground | 6 weeks – 2 years old

Design Guidelines Matrix

01
site layout & planning

02
materials

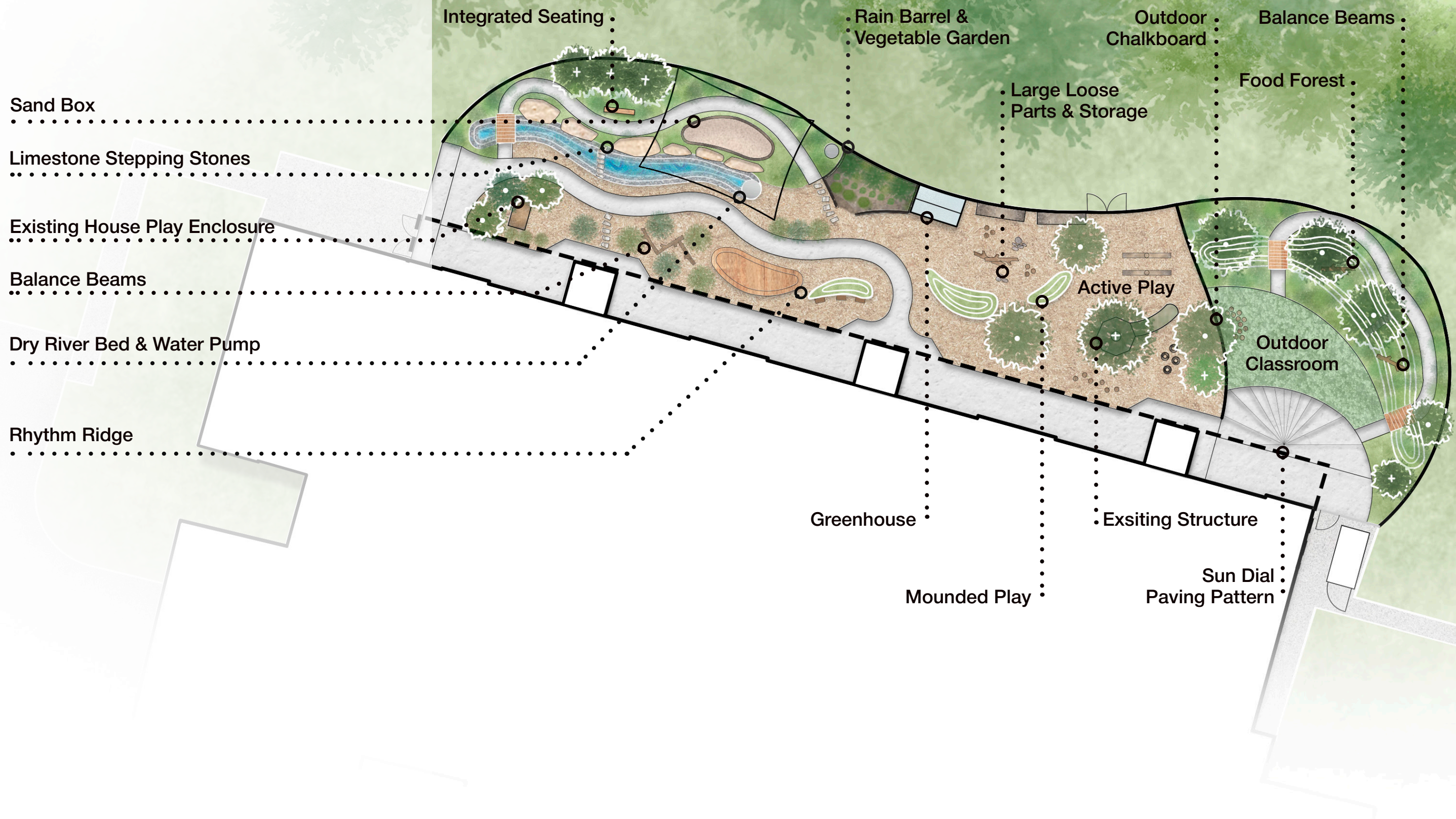
South Playground Features	Visual Cues	Adult Interaction	Context-Driven Approach	Nature-Based Conditions
Loose Parts Lot	✦			
Sand Box	✦			✦
Active Play	✦		✦	✦
Animal Track Paving	✦		✦	
Supervision Spot		✦		
Mud Play	✦			✦
Mushroom March				✦
Infant Lawn	✦	✦		✦
Rain Garden			✦	✦
Bird's Nest Enclosures			✦	✦
Storage	✦	✦		

fig. 5.27 Matrix evaluating how the proposed Little Bluestem Landing playground features align with the established nature play design guidelines (Ramirez 2025).

03
program

04
safety & accessibility

Play Diversity	Flexibility	Educational Value	Visibility	Regional Playground Standards	Maintenance
✦	✦	✦	✦		
✦	✦		✦		
✦	✦		✦	✦	
		✦		✦	✦
			✦		
✦	✦		✦		
✦			✦		
✦	✦			✦	✦
		✦			✦
✦		✦	✦		
	✦				



 **fig. 5.28** Zoomed in site plan of the redesigned 2.5-year-old to 5-year-old nature playground (Ramirez 2025).

big bluestem bend

North Playground | 2.5 – 5 years old

Ripple & Relic

Tucked along the fence, the Dry River Bed is a nature-based setting rich in open-ended and creative play opportunities. Reminiscent of the ancient inland sea that formed the Flint Hills, this space resembles a stream with a child-operated water pump and prehistoric imagery. The ground plane features mosaic-style tiling and fossil imagery blended into cemented limestone river rock. Movable river rocks embellished with fossil impressions are scattered throughout the space, inviting children to engage in constructive and pretend play adventures.

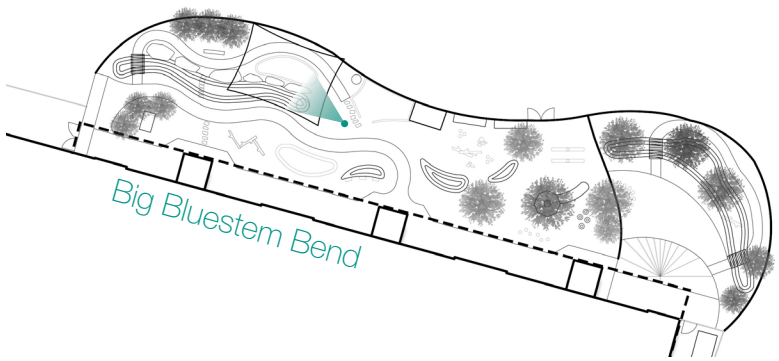


fig. 5.29 Immersive view into the transformed Dry River Bed on the North Playground (Coulter 2025).



fig. 5.30 Rendering illustrating how the redesign integrates existing play structures (Coulter 2025).

Little House on the Prairie

This space blends existing play infrastructure by preserving familiar features to further the redesign's narrative. The playhouse enclosure is enriched with planting and the Dry River Bed improvements, expanding opportunities for dramatic play and imaginative exploration.



fig. 5.31 Rhythm Ridge features a performance stage accompanied by music equipment (Coulter 2025).

Rythm Ridge

Adjacent to the playhouse, Rhythm Ridge offers children a sensory-stimulating platform for self-expression through music, movement, and performance.

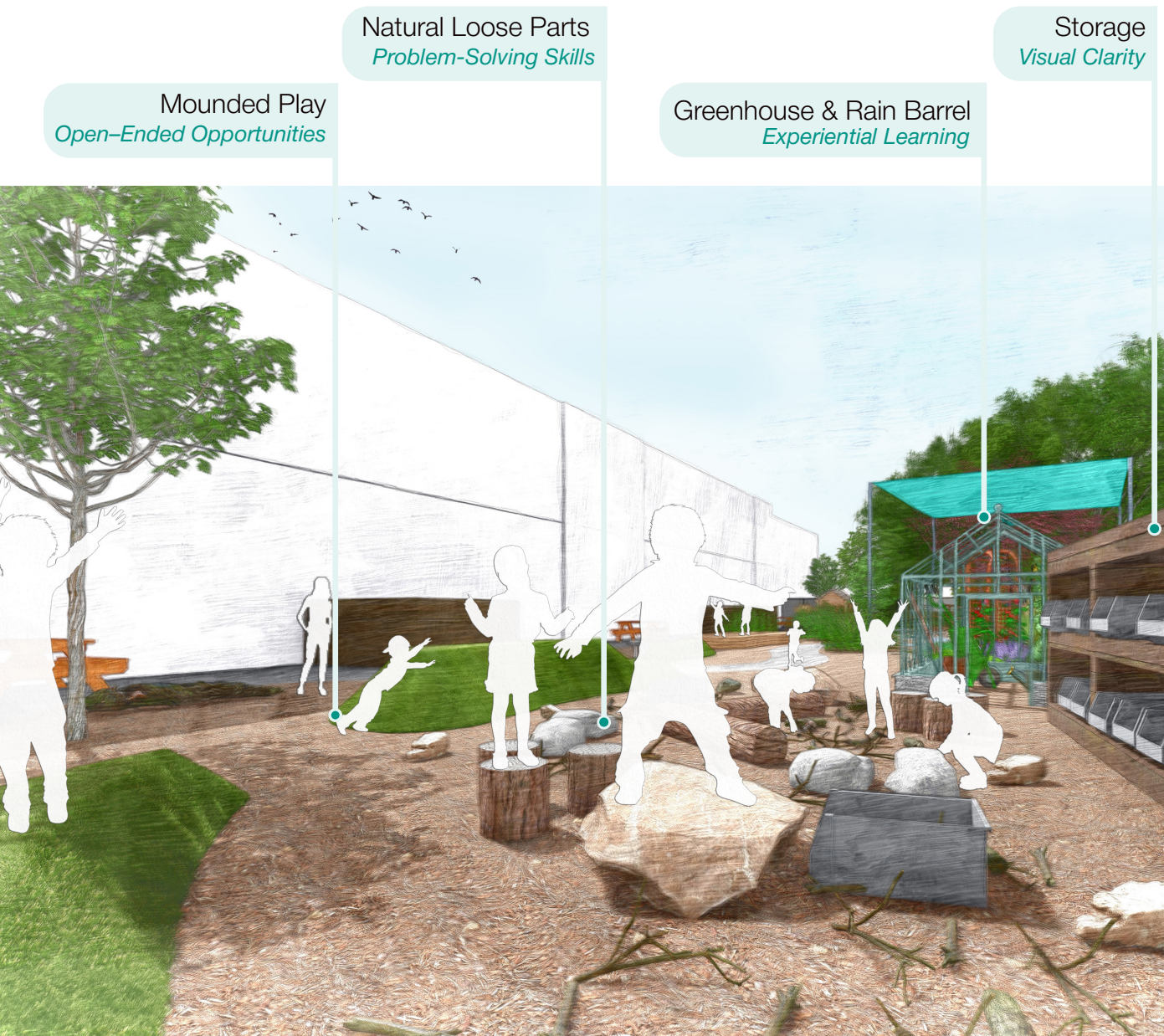


fig. 5.32 Area for exploration with natural loose parts to uplift constructive and dramatic play (Coulter 2025).

Burrow & Build

The Large Loose Parts Zone contains natural materials that invite children into open-ended, constructive, and dramatic play. Spatially defined by mounds, the area gains extra dimension through elevation changes that challenge children and enrich play experiences.

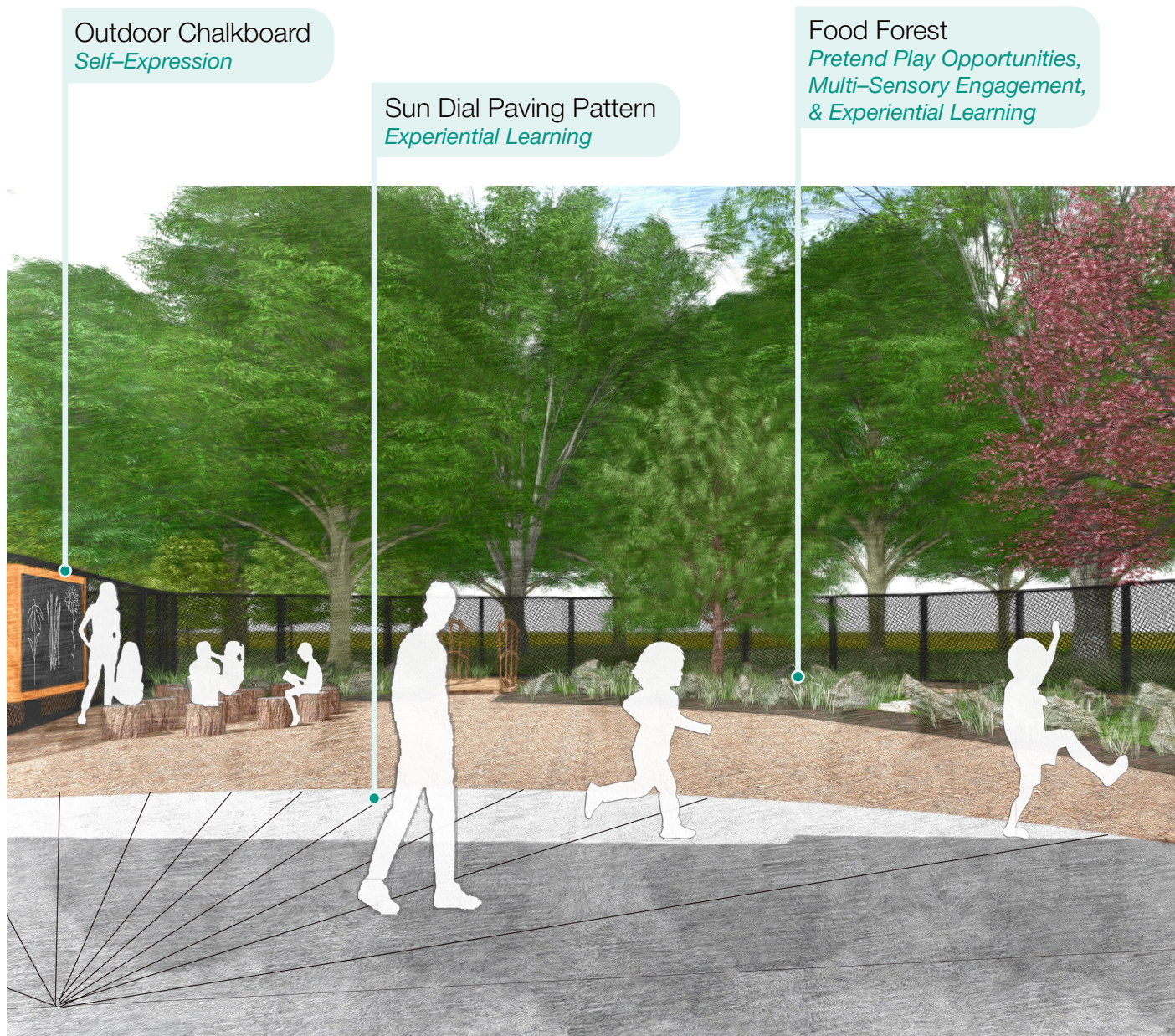
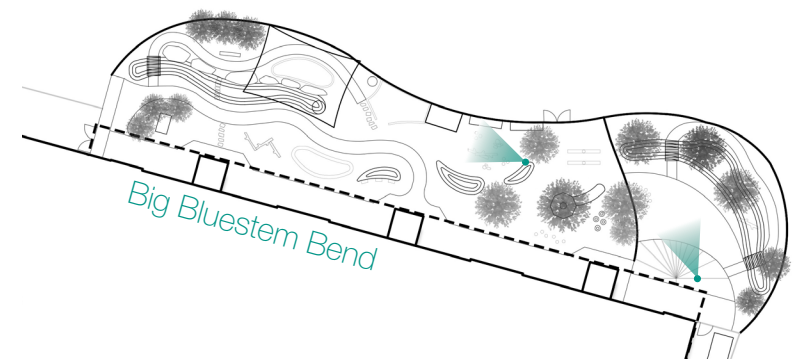


fig. 5.33 The re-imagined outdoor classroom, now transformed into an edible landscape (Coulter 2025).

Tallgrass Table

Inspired by the current peach tree in this secure area, the redesign transforms the outdoor classroom into a vibrant food forest with edible plants and hands-on foraging experiences. The outdoor classroom also features a chalkboard that can be used to support teaching practices or arts-based self-expression.

big bluestem bend

North Playground | 2.5 – 5 years old
Design Guidelines Matrix

01
site layout & planning

02
materials

North Playground Features	Visual Cues	Adult Interaction	Context-Driven Approach	Nature-Based Conditions
Sand Box	+			
Dry River Bed		+	+	+
Rhythm Ridge	+	+	+	
House on the Prairie			+	+
Large Loose Parts		+		+
Storage	+	+		
Mounded Play	+		+	
Active Play	+		+	+
Outdoor Chalkboard				
Outdoor Classroom	+	+		+
Edible Landscaping		+		+

03
program

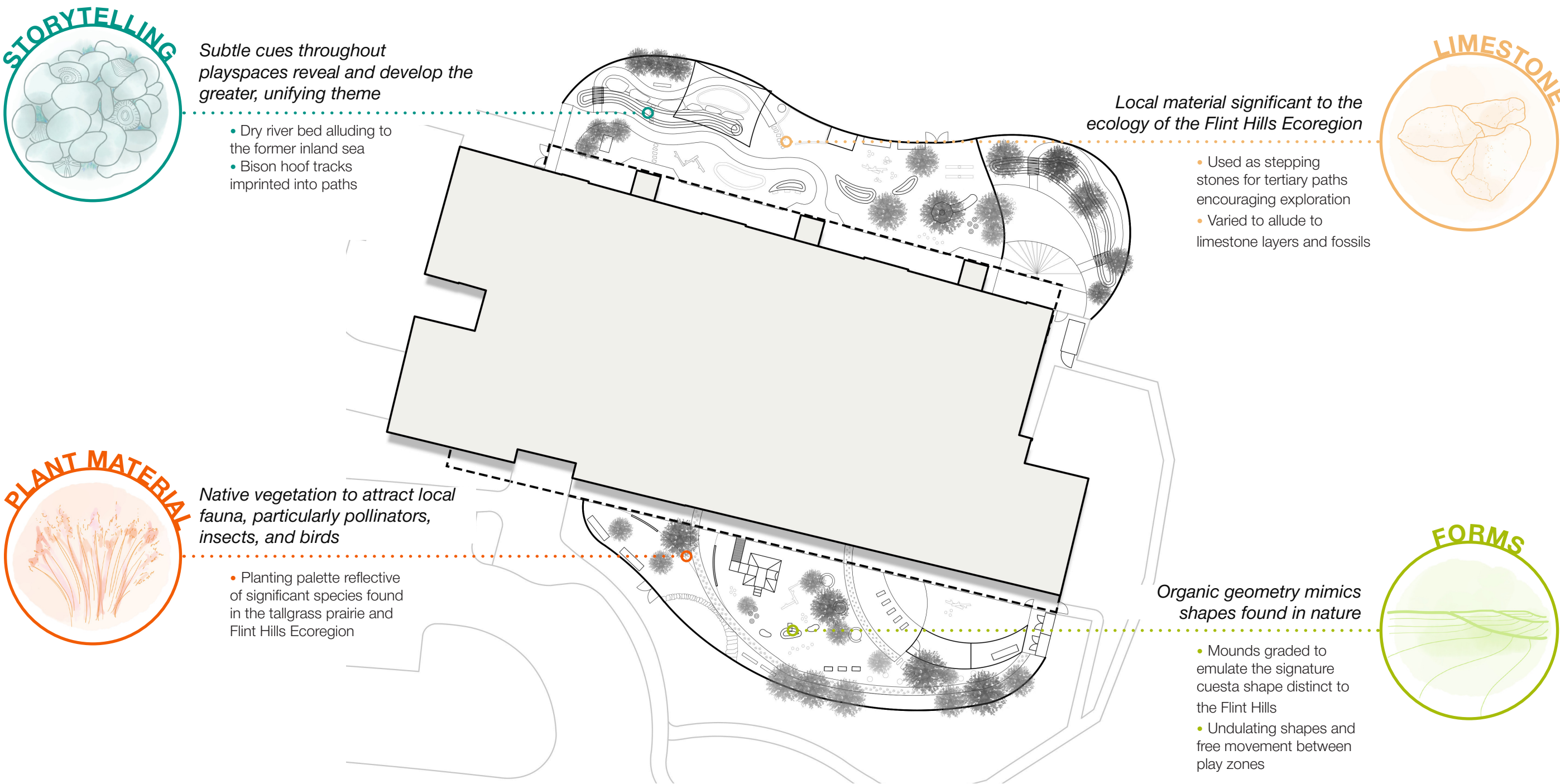
04
safety & accessibility

Play Diversity	Flexibility	Educational Value	Visibility	Regional Playground Standards	Maintenance
+	+		+		
+	+	+	+		+
+	+	+	+		+
+			+		
+	+	+	+		
	+				
+		+	+	+	+
+	+		+	+	
+	+	+			
		+	+		+
+		+			

fig. 5.34 Matrix evaluating how the proposed Big Bluestem Bend playground features align with the established nature play design guidelines (Ramirez 2025).

narrative-driven approach

Place-based design strategies to introduce children to the ecological significance of the Flint Hills and tallgrass prairie in Manhattan, Kansas.



 **fig. 5.35** Diagram of the context-inspired design strategies in the CCD projective design (Ramirez 2025).

planting for play value

Vegetation and its dynamic play affordances are among the most distinct and vital components of nature play, offering rich learning and play opportunities. Therefore, curating a plant palette through the lens of inspiring creativity is vital to the CCD projective design. The planting strategies implemented to inspire creativity are providing seasonal interest, loose parts, wildlife habitat, learning opportunities, and low-maintenance options.

Planting Strategies

01 Seasonal Interest:

Compose a plant palette that offers year-round sensory engagement (through color, fragrance, texture, seed pods, fruit, etc.) to create a dynamic and inspiring playscape.

✦ **Inspiring Creativity:** As the landscape evolves with the seasons, planting should create fresh play possibilities for prolonged engagement.

02 Loose Parts:

Select vegetation that consistently supplies natural materials, such as seed pods, fallen foliage, twigs, bark, acorns, and fruit, for open-ended play opportunities.

✦ **Inspiring Creativity:** Children can transform natural objects into props for constructive and dramatic play scenarios, fostering self-expression and ingenuity.

03 Wildlife:

Consider planting that invites local pollinators, birds, and other wildlife to weave in added movement, color, and learning possibilities into the playground.

✦ **Inspiring Creativity:** The natural visitors enrich the outdoor experience, motivating dramatic play scenarios and prompting possibility thinking scenarios with educators.

04 Engineer Exploration:

Filter views and shape spaces with vegetation to encourage exploration in children while preserving adult visibility.

✦ **Inspiring Creativity:** Strategically arranged grasses to prompt dramatic play scenarios through an immersive environment designed specifically for the child scale.

05 Low Maintenance:

Prioritize native and resilient plants to reduce management needs for long-term play opportunities.

✦ **Inspiring Creativity:** Resilient planting design to ensure sustained creative play affordances that vegetation provides.

Plant Palette

Trees

- Bladdernut Tree
Staphylea trifolia
- Caddo Sugar Maple
Acer Saccharum 'Caddo'
- Eastern Red Cedar
Juniperus virginiana
- Persimmon Tree
Diospyros virginiana
- Paw Paw Tree
Asimina triloba

Groundcover, Shrubs, & Perennials

- Big Bluestem
Andropogon gerardii
- Butterfly Bush
Buddleja davidii
- Creeping Thyme
Thymus serpyllum
- Cup Plant
Silphium perfoliatum
- Fragrant Sumac
Rhus aromatica
- Joe Pye Weed
Eutrochium purpureum
- Little Bluestem
Schizachyrium scoparium
- Northern Sea Oats
Chasmanthium latifolium
- Prairie Dropseed
Sporocolus heterolepis
- Purple Coneflower
Echinacea purpurea
- Red-Osier Dogwood
Cornus sericea L. ssp. Sericea
- Wild Bergamot
Monarda fistulosa
- Wild Sienna
Senna hebecarpa
- Wild Strawberry
Fragaria Virginiana

spring | summer

Caddo Sugar Maple



fig. 5.36 (K-State 2003)

Paw Paw Tree



fig. 5.38 (Plant 2017)

Big Bluestem



fig. 5.40 (Voekler 2012)

Creeping Thyme



fig. 5.42 (Hollinger 2009)

Purple Coneflower



fig. 5.44 (USFWS 2018)

Wild Strawberry



fig. 5.46 (John 2008)

fall | winter



fig. 5.37 (Mullen 2009)

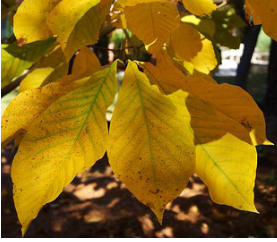


fig. 5.39 (Winder 2016)



fig. 5.41 (Lavin 2009)



fig. 5.43 (Stang 2006)



fig. 5.45 (Cephas 2022)



fig. 5.47 (Stang 2006)

Seasonal Interest		Jan.	Feb.	Mar.	Apr.
Trees	Bladdernut Tree				
	Caddo Sugar Maple				
	Eastern Red Cedar				
	Persimmon Tree				
	Paw Paw Tree				
Groundcover, Shrubs, & Perennials	Big Bluestem				
	Butterfly Bush				
	Creeping Thyme				
	Cup Plant				
	Fragrant Sumac				
	Joe Pye Weed				
	Little Bluestem				
	Northern Sea Oats				
	Prairie Dropseed				
	Purple Coneflower				
	Red-Osier Dogwood				
	Wild Bergamot				
	Wild Sienna				
	Wild Strawberry				

May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.

fig. 5.48 Vegetation provides year-round interest through multi-sensory experiences (Ramirez 2025).

conclusion

Summary

Overview
Key Takeaways

Limitations

Implications

Future Research
Next Steps

KEY TAKEAWAYS

Creativity does not just take one form; it is expressed through critical thinking processes and strategies. In early childhood, children develop their creative thinking skills through the challenges they overcome in play. For landscape architects, the key takeaway from this project is the delicate balance between structured play and open-ended exploration offered in the built environment. The nature playground must be designed and intentional enough to be engaging and inviting. However, site design must be open-ended and flexible enough to support wherever a child's imagination takes them. Incorporating natural loose parts, malleable materials, and objects without predefined themes achieves this balance, facilitating creative freedom through nature play.

conclusion

Overview

This study explored how landscape architects can implement nature play design strategies to inspire creativity in six-week to five-year-old children, and apply that understanding to a projective design for the Center for Child Development (CCD) at Kansas State University. As a program through the Department of Applied Human Sciences, the CCD prioritizes nurturing environments, exploration, and evidence-based practices in early childhood development education. Students at the CCD range from 6 weeks to 5 years old and are encouraged to participate in nature-based play daily. The current playground at the CCD was designed to prompt investigation and foster a connection with the outdoors. However, the existing playground needs repairs and is undergoing a fundraising and redesign initiative, which are the primary reasons for this project. The projective design addresses the critical site updates through the lens of boosting creativity through nature play landscape strategies. The research explores how environmental factors enhance creativity in early childhood settings by leveraging the unique affordances of nature play.

Qualitative methods were used to inform the projective design, including a design guidelines review and precedent study. The design guidelines review outlined standard nature play design practices and reinforced many of the strategies identified from the literature. Guidelines from Nature Explore's *Ten Guiding Principles* and Robin Moore's *Nature Play & Learning Spaces* were extracted, then categorized into four overarching principles articulated by 2-3 guidelines, and further expanded for their role in inspiring creativity. The synthesized design guidelines influenced a matrix to evaluate key site design features for their ability to elicit creativity in early childhood. Next, the precedent studies investigated how built work executed the design concepts discussed in the literature and design guidelines review. Each precedent study recognized key features for inspiring creativity and evaluated their alignment with the established guidelines through the matrix. Findings from both methods guided an iterative design process for the CCD and influenced many of the proposed design interventions. The CCD projective design offers open-ended, constructive, and dramatic play opportunities within thoughtfully designed nature play spaces to uplift creativity in early childhood. These intentional environments, inspired by the third pedagogy of the Reggio Emilia approach, honor children's autonomy and curiosity while leveraging the unique affordances of nature play.



fig. 6.1 The Center for Childhood Development at Kansas State University's outdoor classroom (Ramirez 2025).

Limitations

The primary limitation of this study was the inability to conduct more stakeholder engagement meetings. While the CCD staff contributed invaluable and unbiased feedback, perhaps the most important perspective, the children's, was not reached throughout this process. Gaining insights from current parents would have also helped offer a deeper understanding of their priorities when selecting a child care facility and the amenities they value, like the playground.

Further, conversations with the K-State Campus Grounds maintenance team could have validated the proposed low-maintenance design strategies. With more time, collaborating with Campus Grounds to develop a landscape management plan would have guaranteed a sustainable design that children and staff can enjoy for years to come.

Future Research Opportunities

The projective design is intended to devise a scheme that could one day be built at the Center for Child Development (CCD) at Kansas State University. With that in mind, future research could evaluate the design recommendations and whether they boost creativity in early childhood at the CCD. It could be a longitudinal study where researchers compare creative play behaviors before and after implementation. Potential methods could be observation or behavioral mapping.

Natural loose parts were a fundamental element of the projective design. With the CCD's priority for year-round outdoor engagement, future endeavors could investigate the seasonality of creative play with the proposed natural loose parts. Additionally, there is potential to collaborate with the K-State landscape maintenance team to supply natural loose parts collected during their routine rounds. Inspired by Jester Park's approach of recycling plant materials as play props, this initiative could repurpose some plant material typically disposed of (branches, logs, etc), as natural loose parts to support creative play behaviors at the CCD.

Lastly, to reinforce and strengthen the CCD's valued indoor-outdoor connection, future efforts could develop lesson plans that align key features to inspire creativity outdoors. These plans could facilitate meaningful child and adult interactions as well as maximize educational opportunities and creative exploration indoors and outdoors.

Next Steps

The projective design outcome of this report serves as a starting point for the CCD's nature playground redesign. Given the emphasis on nature-based play for inspiring creativity, maintaining similar approaches would align with the requirements for the Nature Explore certification. However, securing funding for implementation is the next major step to bring this vision to life. The CCD should allocate funds raised not only for construction but also for licensed professionals to produce more detailed drawings. The hired professionals can further develop the proposed design with expertise and budget requirements.

end matter

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Appendix

Notes from Lincoln, Nebraska Precedent Study Visits
Staff Engagement Planning Materials & Notes

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appendix

a.i Notes from Lincoln, Nebraska Precedent Study Visits

Dimensions Early Education Infant & Toddler Center

7700 A St, Lincoln, NE 68510 | 01.17.2025

Who:

- Christine Kiewra
- Jill Primak
- La Rinda Hall

General Notes

- The square footage of the outdoor classroom matters
 - Ex. 500 sq ft use will vary drastically vs. a 10,000 sq ft outdoor classroom.
 - Many licensing requirements have a minimum of ~75 sq ft/ child — we should check ours
- Spatial delineation – plant material and ground plane material changes — can work together to further accentuate zones
- Signage – will help children understand spaces + shape how they think about them
 - Encourages literacy in children
 - Use simple names for areas
 - Practicality benefits (ex., documentation of children from educators and researchers)
- Safety – visibility
 - Infants can enter toddler spaces here (because it has to do with the teacher ratio to children that is fulfilled here).
 - Subtle things in the built environment for safety measures — ex. The bridge over the tree root
 - Natural materials have more irregular forms, encouraging children to think deeply about how they interact with them (walk, touch, etc.)
- Maintenance – Can fold into the curriculum
 - Ex. Family volunteer days (also promotes parent involvement)
 - Pros and cons to artificial turf and mowed grass – think about their pros and cons — use as a way to value engineer
 - Natural edge
 - Consider the client's capacity for plant material and maintenance
- Design with intention – what are the design features saying?
 - Ex. making edges big enough to need to step over clearly
 - can encourage safe interaction

- What are the things that draw people inside — how can they be brought outside?
- Children's interests develop over time – need diverse play opportunities
- Storage is a must on the playground!!
- Messy/large loose parts area – helped children understand their reality
- Informal climbing – children began making their own obstacle courses
- Gather limbs from local arborists/construction sites/ etc
- Reflective surfaces – mirror or window
 - Consider the direction of the sun and make it moveable/adaptable
 - One ex. Is curved mirrors like parking garages
 - Can help with visibility
- Infant zone: includes a Sandbox, small Mound, Large loose parts area, changing table, and rocking chair

Nature Explore Certification

- Includes professional development courses
- Requires Adult interaction
 - One way to get parents involved is to allow them to play in space without kids
- Emphasizes a Child-led Curriculum
- Welcomes nature in spaces to inspire learning
- Can help set apart childcare facilities – diversify from places in the area
- Degrees of accessibility in outdoor classrooms – material choice is important
 - Think ground plane and table heights + space to move around fixed elements
 - Stabilized decomposed granite is ADA-approved

Ruth Staples Child Development Laboratory

1855 N 35th St, Lincoln, NE 68503 | 01.17.2025

Who:

- Christine Kiewra
- Jennifer Leeper Miller

General Notes

- 18 mo - 5 yo occupy the space
- Employ a “Beyond the classroom” philosophy – make connections that extend outside the classroom.
- Project-based approach
- Open concept/open play – allow children to explore their limits and abilities – ex. “Do you feel safe?”
- A philosophy that everything inside can be done outside: eat, nap, etc
- Outside all year round (as long as it is above 0 degrees)
 - The play looks different in different weather (ex., Shovels, sled for snow)
 - Believes that exposure to winter cold builds tolerance — in educators, too
- Pathways are very important in the design
 - Allow for uninterrupted play – pathways go around spaces
- Sand and water are important: they can trench, move, watch etc.
 - A combination of objects is good (toy and sand, stick and dirt, etc.)

- Up top: organic materials and tools — equipment “tells” kids how to play, clear use
 - Includes a Small ornamental tree — climbing opportunity / encourages children to master a skill
- The forest: open-ended play opportunities
 - Builds confidence
 - Obstacle course/large loose parts – plant material enclosure
 - Focus on movement
 - Mud kitchen
 - Seasonality
- Diversify play — children will gravitate toward certain elements (caretaking, building, movement, etc)
- Gardening — helps children connect where their food comes from
- Interior/ exterior relationships are important — they help children organize their thoughts
- Large stage/platform — dramatic play opportunities and performances / encourages building through ramps and other ways to get up
- Areas for contemplation
- Maintenance plan – family cleanup sign-up over the weekend (beyond grounds partnership)
 - Encourages family engagement
 - Quality varies based on time spent, but anything helps
 - Clean-up is a part of the play here — mixed-age classrooms also encourage older children to show younger ones how to help

a.ii Staff Engagement | Design Review Outline

Review Format

Introduction

- Thank reviewers for taking the time to provide feedback
- Introduce ourselves/ background in Landscape Architecture
 - How it relates to CCD and playground reinvestment
- Short description of how the first phase of design has been developed through a literature review of current research findings, site analysis, and educator feedback

Give a concise design concept presentation

- Includes site analysis, CCD requests, and initial design concept
- We will provide printed copies and writing utensils for reviewers to take notes on and mark up as we present

Start dialogue

- End the presentation by opening the floor for reviewer comments and feedback.
 - We will visibly document ideas on a large notepad or whiteboard.

Draw

- Shift focus to a blown-up site plan of the CCD Playground for reviewers and facilitators to mark up – applying feedback and new design ideas.

Categorize and summarize comments

- Creating a list of the next steps to improve the design
- Allow reviewers to vote on the most desired aspects of the design and mark areas in most need of improvement

Closing Statements

- Includes site analysis, CCD requests, and initial design concept
- Leave contact information for those wanting to stay involved or for further contact regarding project updates.

Directed Questions

- Where do you notice children naturally gravitating on the playground?
- Which areas of the design seem most successful? Why do you think they work well?
- Are there any areas that could be improved? What do you recommend?
- Is there anything else we should consider moving forward?

a.iii Staff Engagement | Advertising Flyer

Dear CCD Staff,

Our names are Micheala Coulter and Adylene Ramirez, and we are graduate students in the landscape architecture program at Kansas State University. We've been collaborating with the Department of Applied Human Sciences on a fundraising initiative to renovate the playground here at the CCD. Where children play impacts their learning and development, and nature-based environments provide unique, enriching opportunities that are often unmatched inside. The redesign aims to enhance the existing play space through research-backed design strategies that promote sensory development and inspire creativity in early childhood.

As caretakers of the little ones who will benefit most from this project, your insight is invaluable to the process. We invite you to a design review where you can share your thoughts on the initial concept. Your perspectives and ideas will help guide recommendations and improvements for the playground, ultimately creating a space that enhances children's experiences and growth.

mark your calendars

The Center for Child Development

wednesday, march 12, 2025

5:45 p.m. – 6:45 p.m.

want to join the fun?
We ask that you please sign up in advance to help us plan for space and supply needs.

Sincerely,

Michaela Coulter
Michaela Coulter
Master of Landscape Architecture
Department of Landscape Architecture
and Regional & Community Planning
Kansas State University

Adylene Ramirez
Adylene Ramirez
Master of Landscape Architecture
Department of Landscape Architecture
and Regional & Community Planning
Kansas State University

questions? we'd love to hear from you!
michaelacoulter@ksu.edu | adylene@ksu.edu

a.iv Staff Engagement | Printed Packet

**KSU CENTER FOR CHILD DEVELOPMENT
PLAYGROUNDS CONCEPT REVIEW**

Michaela Coulter | michaelacoulter@ksu.edu
Adylene Ramirez | adylene@ksu.edu

**EXISTING 0-2 y/o
PLAYGROUND**

SOUTH PLAYGROUND: 6 weeks – 2 years old
Enhance sensory learning and creative development through age-appropriate and intentional playground equipment and open-ended play opportunities.

Stepping stones
Mushroom sculptures
Native Planting

Mushroom Rain Garden

SOUTH PLAYGROUND: 6 weeks – 2 years old
Enhance sensory learning and creative development through age-appropriate and intentional playground equipment and open-ended play opportunities.

Water play tables
Logs
Mounded Play
Stumps
Play Structure

Plants
Grass
Shade structure

Active Play
Infant Lawn

NORTH PLAYGROUND: 2.5 – 5 years old
Enhance sensory learning and creative development through age-appropriate and intentional playground equipment and open-ended play opportunities.

Chalkboard
Stumps
Bridge to Nature Trail
Stepping Stones
The Hook
Stringy Stick
Sand Pit
Water Pump

Outdoor Classroom & Food Forest
Fossil Water Pump

Master Studio | LAR 705 | Concept Design

TRAILBLAZING TOTS
Enhance sensory learning and creative development through age-appropriate and intentional playground equipment and open-ended play opportunities.

Encourage environmental stewardship through nature-based learning opportunities to promote exploration and interaction with natural features.

Inspire a sense of wonder in nature through a diverse planting strategy to provide a dynamic rotation of loose parts, seasonal interest, and sensory stimuli.

Utilize place-based design strategies to introduce children to the ecological significance of the Flint Hills and tallgrass prairie in Manhattan, KS.

**EXISTING 2-5 y/o
PLAYGROUND**

**SOUTH PLAYGROUND
6 weeks – 2 years old**

Integrated Seating
Outdoor Gallery
Loose Parts Lot
Music Box
Active Play

Water Play
Infant Lawn
Mound Play
Rain Garden
Mushroom Walk

Little Bluestem Landing

Master Studio | LAR 705 | Concept Design

**NORTH PLAYGROUND
2.5 – 5 years old**

Dry River Bed
Reclined Greenhouse
Play Enclosures

The Hook
Sand Pit
Music House
Garden Beds
Seaweed
Chalkboard
Food Forest

Big Bluestem Bend

Master Studio | LAR 705 | Concept Design

NORTH PLAYGROUND: 2.5 – 5 years old
Enhance sensory learning and creative development through age-appropriate and intentional playground equipment and open-ended play opportunities.

Play Tower
Mounded Play
Edible Garden
Instruments
Music Stage

Music Mounds

Master Studio | LAR 705 | Concept Design

TRAILBLAZING TOTS: CONCEPT REVIEW

This page has space to take notes and document your feedback. Feel free to write as much or as little as you would like.

Where do you notice children naturally gravitating on the playground?

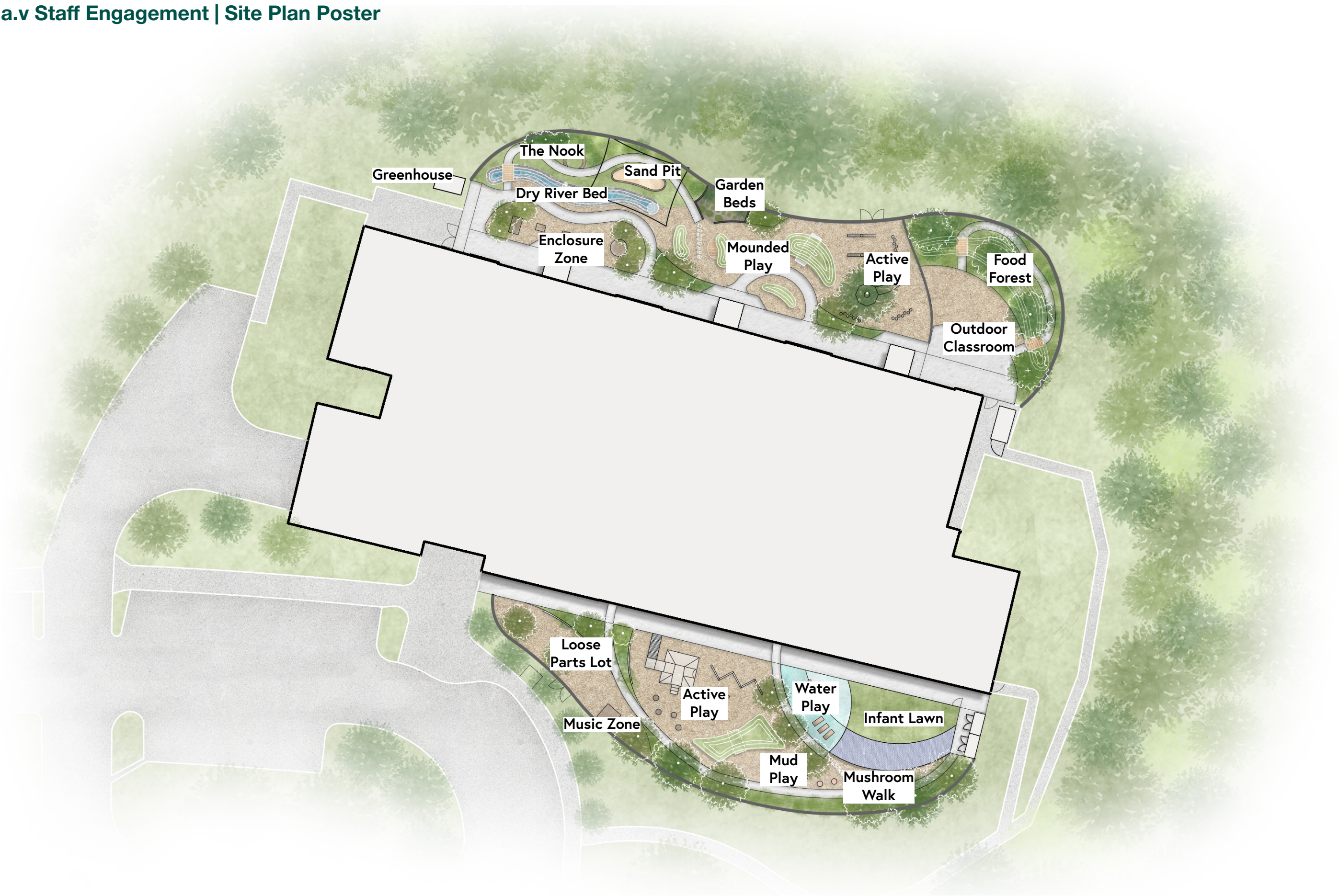
Are there any areas that could be improved? What do you recommend?

Which areas of the design seem most successful? Why do they work?

Is there anything else we should consider moving forward?

This page has space to take notes and document your feedback. Feel free to write as much or as little as you would like.

a.v Staff Engagement | Site Plan Poster





a.vi Staff Engagement | Notes taken by the Design Team

General Information

Wednesday, March 12, 5:45-6:45 pm

Who:

- 6 employees
- From both preschool and toddler & infant sides
- Experience at the CCD ranges between 9 to 15 years

What keeps you passionate and wanting to stay at the CCD?

- The kids and families
- Seeing kids grow and learn

Strongest part of CCD?

- Community - acceptance of each child, how they are and where they are at, every age and ability, both inside and outside
- Family
- Open hallway (to the upstairs and downstairs) to allow people to greet and see each other

Concept Design Comments

- Previously, there used to be stepping stones, balance beams, and logs, but they naturally deteriorated over time. Find a way to keep and preserve those things.
- There also used to be a stage/platform that kids used a lot in different ways.
- Where do the children gravitate towards?
 - Sand & Water

Adult and Child Interactions'

- Adults are usually positioned by doors for caregiving supplies (sanitizer, wipes, tissues, etc.)
 - Opportunity to incorporate caregiving supplies more into the play area
- More seating throughout the play area for adults
- Position themselves to supervise and help
- Adults should be more included in play and engage in learning
 - Ask questions to children
- Lots of blind spots
 - Stand with your backs to the fence and walls
 - Teamwork to cover all the spots
 - Up to 10-12 staff on playground (15 with aids)
- Important to maintain visibility

Greenhouse

- Keep the greenhouse inside the play space because the teachers and children use it.
- Children start their seedlings there, so concerned with moving it outside of the fence

Native Plants

- Love the idea of native plants
- They are not concerned with bees and pollinators because there's not much they can do to control them. Kids get stung all the time.
- Tall grasses instead of bushes = have more visibility
 - Kids like to hide in bushes

Riverbed

- When it rains, kids like the river bed, play in it, use pots and pans, etc.
- Like the idea of the pump so that kids can control the flow of water (gross motor skills)
- They turn on the water when it is nice out
- One in the playground has degraded over time due to flooding, sand, and wear and tear from kids. (needs durability)
- Balance beams in the food forest area have survived and are well-used by kids
 - Dramatic play, trips, iSpy, etc.

Infant Area

- Try a lower-maintenance ground cover like thyme or clover instead of grass.
- Durability
- Clear path to the area (use wagons to transport)

Sandbox

- South playground sand could be bigger.
- More space for all children
- A well-liked space by all the children

Bike / Path

- Like concrete and paver ideas
- Signs for stamped concrete so children can learn and discover
- The preschool playground has some stamps by the bridge

Storage

- Put it in the plan
- Think about how it is utilized
- The current sheds/shelves aren't great
- Open shelving or easy-to-open doors
- No storage in the infant playground

Indoor / Outdoor

- Changing table
- It would be difficult logistically and with licensing
- Hard to do outside with sanitation
- Probably couldn't do it
- Would need running water, trash, and kids accessing it

Naps

- Couldn't do outside with Kansas licensing

Snack time

- Need running water and a sink for hand washing
- Do have snack time outside on nice days
- Open to doing more things outside that are normally inside



May we raise children
who love the unloved
things – the dandelion, worms
& spiderlings.

Children who sense
the rose needs the thorn

run into rainswept days
the same way they
turn towards the sun.

And when they're grown & someone
has to speak for those who
have no voice
may they draw upon that
wilder bond, those days of
tending tender things

and be the ones.

wilder bond poem

by Nicolette Sowder
creator of Wilder Child & Wildschooling

