



THE AMERICAN INSTITUTE  
OF ARCHITECTS

Committee on Architecture for Education

and

the AIA Early Childhood Learning  
Environments Subcommittee

invite you to

# Take a Walk on the Child Side

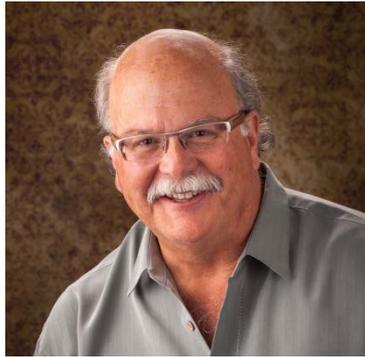
*understanding early childhood learning  
environments from the perspective of  
the child*



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24 October 2014

# Presenters



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*Early Childhood Learning Environments subcommittee*

*Principal*

*BRW Architects*

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# Take a Walk on the Child Side

# Take a Walk on the Child Side

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1.5 IDP Hours of Supplemental Experience.

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# Take a Walk on the Child Side

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## Course Description

Frequently when setting out on the design of a new learning environment for young children you might hear statements like these from owners, builders and sometimes even architects:

*“What’s the big deal, its only a daycare?”*

*“Daycare center? Its just a big house, right?”*

*“Why is it so expensive, its only a daycare center?”*

Come along with us as we walk on the child side and learn why it is so important, what are the pieces and parts, who needs to be at the design table and how the design grows into reality.



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## Learning objectives

Participants will be able to:

Understand the importance of early childhood facilities on the mental and physical health, school readiness and social development of young children.

Understand the design process as it relates to early childhood, and who the stakeholders are for responsible and sustainable solutions

Understand the elements of design and construction that support developmentally appropriate indoor and outdoor spaces for early care and education

Finally, understanding **why** a child's early learning center is ***the most important building environment of his or her lifetime.***



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# Take a Walk on the Child Side

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Schedule, all times Eastern Time

1:00 - 1:05 Opening Announcements and Introductions

1:05 - 1:20 Why this matters

1:20 - 1:45 A day in the life

1:45 - 2:00 Child sensitive design

2:00 - 2:10 Responsible Design Process

2:10 – 2:30 Q & A



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*“Young children are perpetual tourists without much life experience, truly strangers in a strange land. They are developing their minds and bodies at such a rate that they are literally new people with each sunrise. Their backlog of life experience is so slight that each day, each new place, each old place, brings surprises. Their courage rises and falls like the tides.”*

Jim Greenman

## TAKE A WALK: Part 1. *Why does this matter?*

### **the first six years of life**

- 4,000,000 births on the average each year in the U.S;
- Almost 15 million infants and pre-school age children in “out of home placement” on a daily basis.



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### **young children are characterized by rapid growth**

Children more than *double* their height and *triple* their weight before first grade



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### **characterized by rapid growth**

Children more than *double* their height and *triple* their weight before first grade

**fueled by consumption of massive quantities of air, food and water-per pound of body weight, more than:**



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Take a Walk on the Child Side

**immune systems in children are largely undeveloped, and with the massive consumption — their toxin intake could be two to seven times that of an adult, plus:**

Children put everything into to their mouths

They play, learn, sleep and eat on or within inches of the floor

**sources of Acute and Chronic exposures:                    mitigation/prevention**

cleansing agents	use only 'green guard certified' or equivalent
agents for pest control	
building materials	
tracked in soil	
mold and dust in hvac systems	
play yard accidents	
classroom accidents	
electrical shock	
scalding water	
pinched fingers	
physical abuse	



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regular maintenance, high filtration (MERV 13)



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regular maintenance, high filtration (MERV 13)  
proper surfacing and activity planning



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tempered water (105°-120°) at all child sinks



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finger safe hinges and hinge guards, totlocks



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finger safe hinges and hinge guards, totlocks  
fishbowl effect, every child is visible all the time

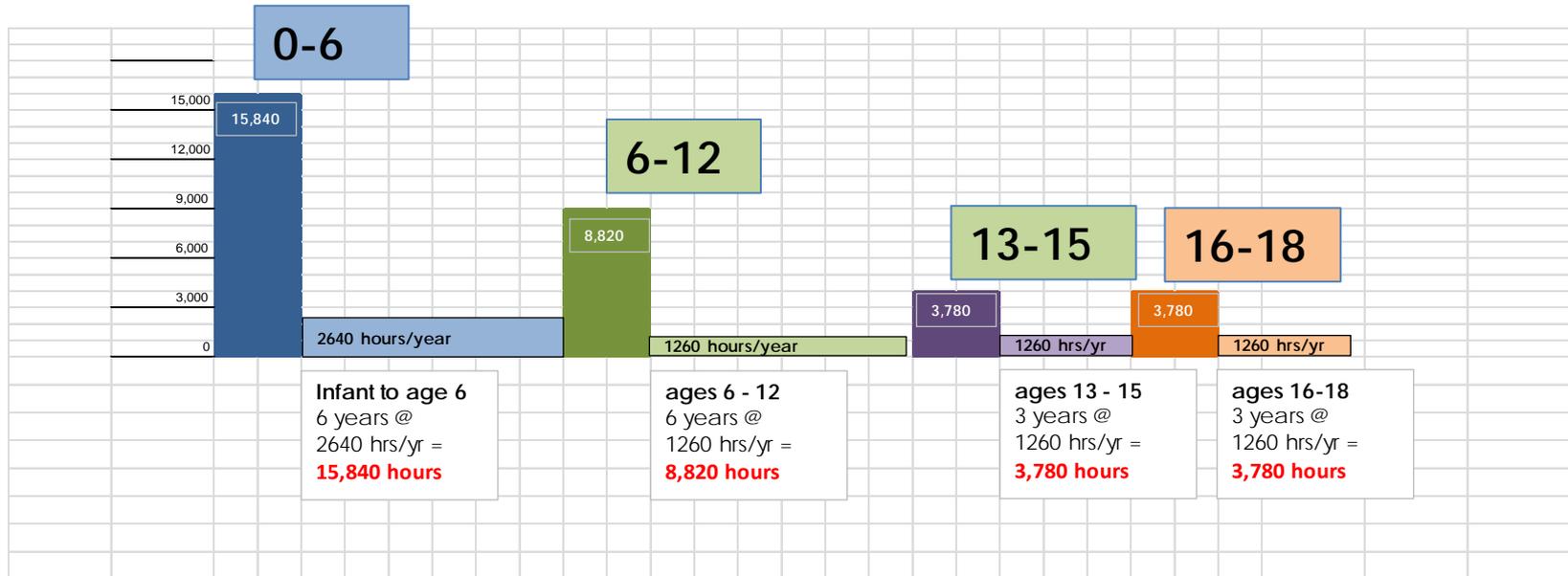


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## Cumulative Hours in Learning Environments



A child starting as an infant about the same amount of time in child care as they will spend in the rest of their education through high school graduation. In fact, he or she will spend time *inside a single preschool classroom*, than in all the years of middle school and high school put together.



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## What else?

An infant will grow from no verbal vocabulary to almost 2000 words between age 2 and 5, and have near adult levels of comprehension by the end of the 6th year

From learning to crawl to fast track tricycle racing and understanding traffic signals

From crying and cooing to self-expression with color, movement, light and sound

Gaining functional control and mastery of their environment



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# Take a Walk on the Child Side



self-expression with color, movement, light and sound



gaining functional control and mastery of their environment



fast-track tricycle racing and understanding traffic signals



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Take a Walk on the Child Side

“What day is it?” asked Pooh.  
“It’s today,” squeaked Piglet.  
“My favorite day,” said Pooh.  
— [A.A. Milne](#)

## TAKE A WALK: Part 2. *A day in the life....*



### **skip by skip with a preschooler**

- arrival at the center
- secure entry
- first contact with staff
- check in
- proceed to the classroom
- chat with mom or dad
- load up my cubbie
- time for a change
- lets eat
- play time
- whew! I need some rest



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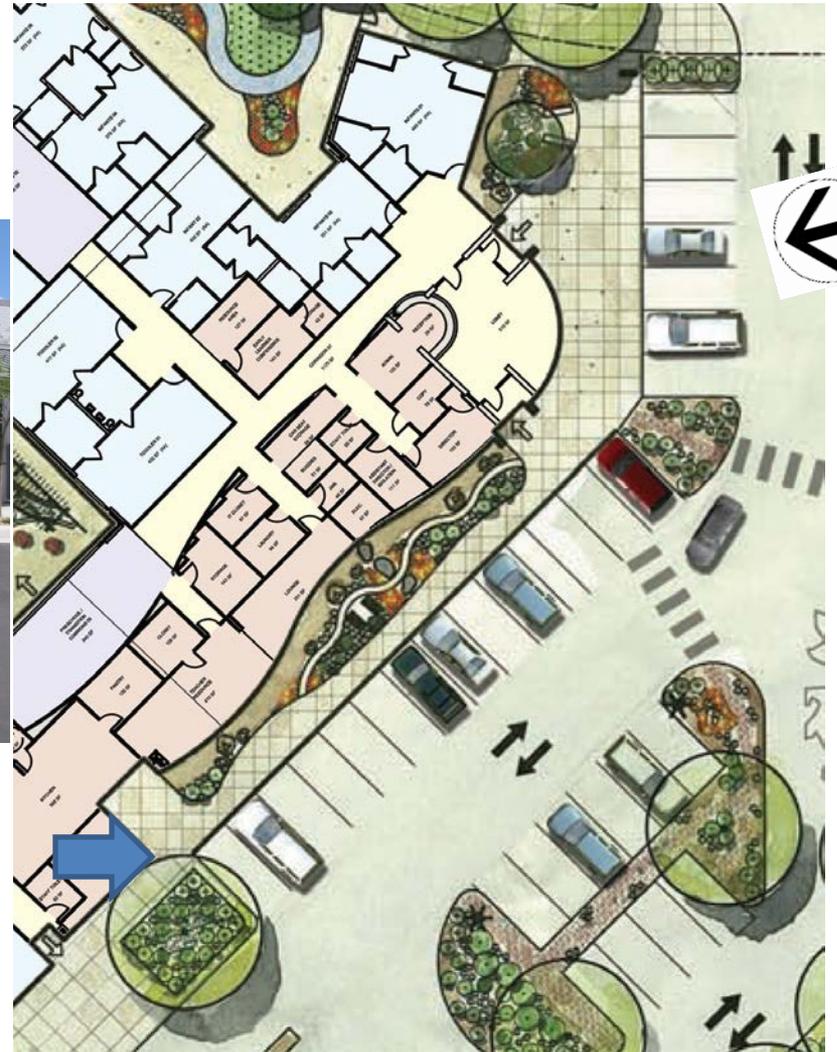
# Take a Walk on the Child Side

**safety**

arrive and park in reserved short term parking (15-20 minutes) spaces that lead directly to the entry without crossing any vehicular traffic



**We're here! Can't wait to find out what is happening today!**

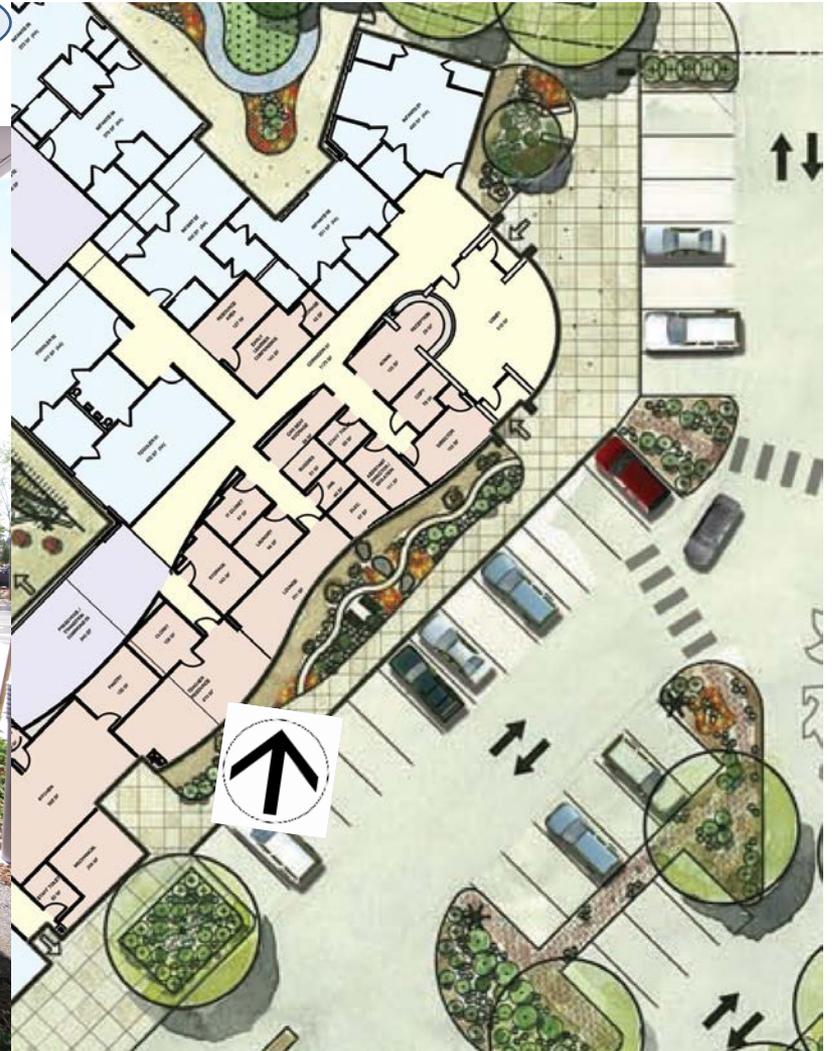


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**Take a Walk on the Child Side**

I like the crunchy path. Mom likes to push the stroller on the sidewalk. We meet at the park bench

child friendly



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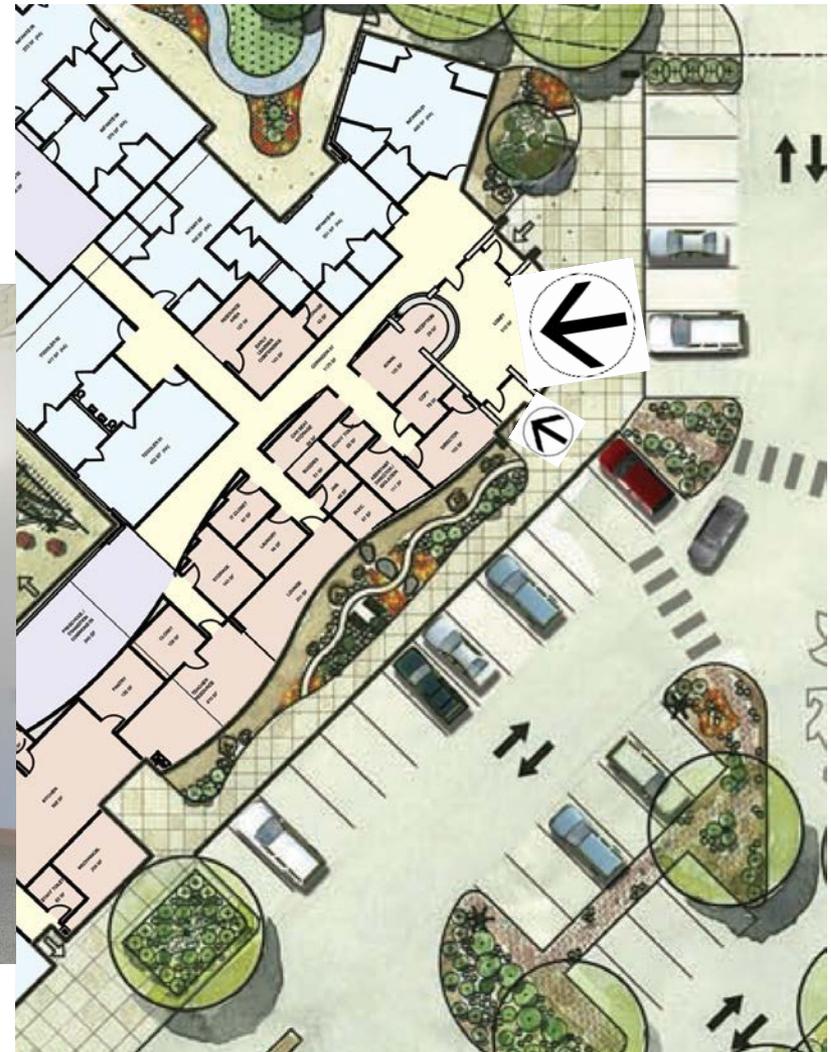
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**security**

arrive at the front door and enter (mom has a special key)

greet the receptionist, who will know your name (and I know hers too)



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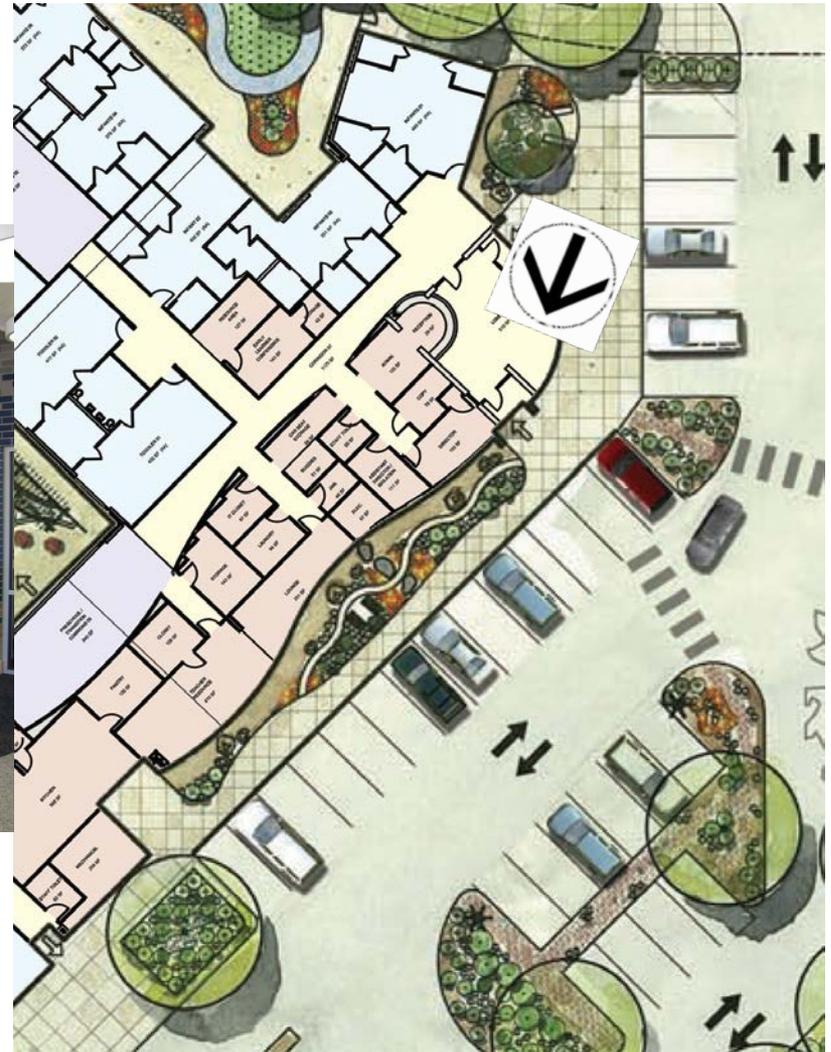
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32

too cool for school!  
do-it-myself (!) check in  
at the computer

child friendly



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Miss Friendly pushes the special button that unlocks the door



security

Miss Friendly pushes the special button that unlocks the door



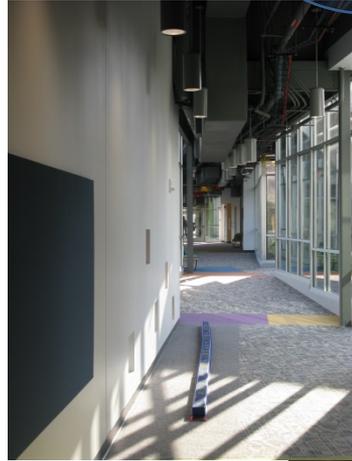
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“Its kind of a long walk because I’m just 38” tall and my legs haven’t grown up yet but there’s lots of stuff to see and do along the way, so I don’t mind”



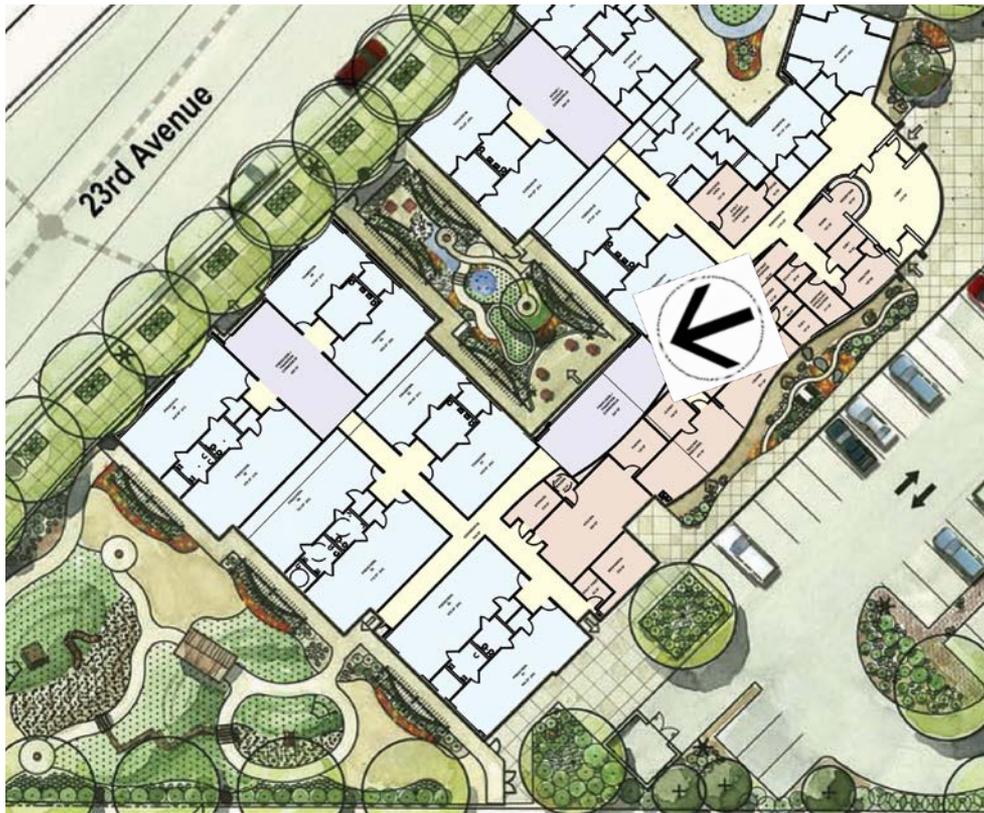
child friendly

- balance beams
- books to read
- textures to touch
- and birds that watch!



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“On nice days the glass walls are open to let the fresh air in”



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**Miss Chef likes to cook healthy treats like these zucchini muffins. This makes my center smell like home.**



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# Take a Walk on the Child Side



**“Mom comes early so I can play in the Common while she chats with my teacher and the other moms and dads.”**



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“This is MY door!! Grown-ups not allowed!”

child friendly



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“Mom and I load up my cubbie with all the stuff I will need today”



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“Might be time for a change.....”



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"I'm hungry-what's for lunch?"



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“Play time! I get to use my outside voice on the play yard”



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“Whew! I am whipped,  
my cot is ready and so  
am...zzzzzzz”



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*“Every child deserves a childhood, a time of magic and wonder, of safety and security in which to discover what life has to offer.”*

Jim Greenman

## TAKE A WALK: Part 3. *The concept of child-sensitive design*

### **design from the child’s point of view**

- **perspective and scale**
- **classroom environments**
- **outdoor environments**
- **some finer points**
  - **color and applied materials**
  - **tactile elements**
  - **accessibility**



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# Take a Walk on the Child Side

# Perspective and scale-*Reception*

Creates first center impression

safety

Serves as security checkpoint and controls access through additional door(s)

Provides space for business administration, visitor waiting, main switchboard system, computerized check-in system, and copy/file workroom

child friendly

Allows the child to see the person behind the desk and build relationships

Consider “child scale” and child elements such as an aquarium



note aquarium at child height

child friendly



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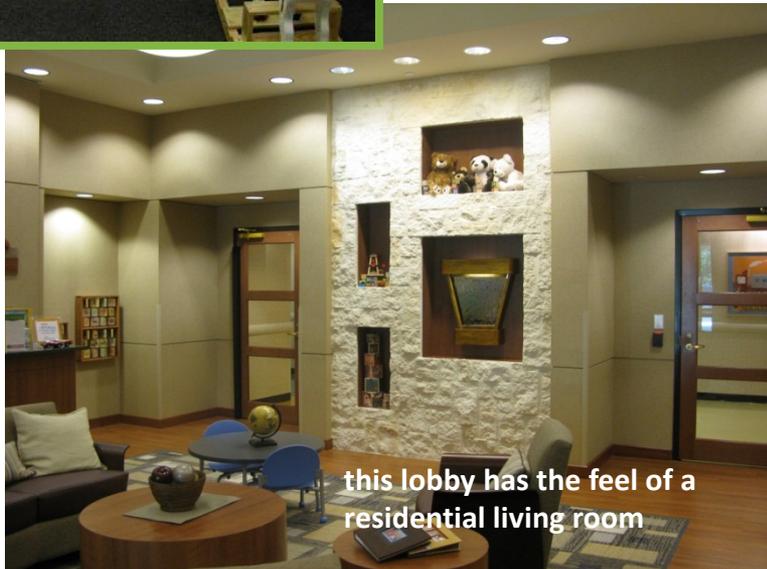


### **Welcome features help children transition:**

An aquarium or terrarium at reception

Interactive features (i.e., computer check-in station at child height )

An adjacent toilet room/diaper changing area for the inevitable



this lobby has the feel of a residential living room



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# Take a Walk on the Child Side

## Perspective and scale-Hallways

child friendly

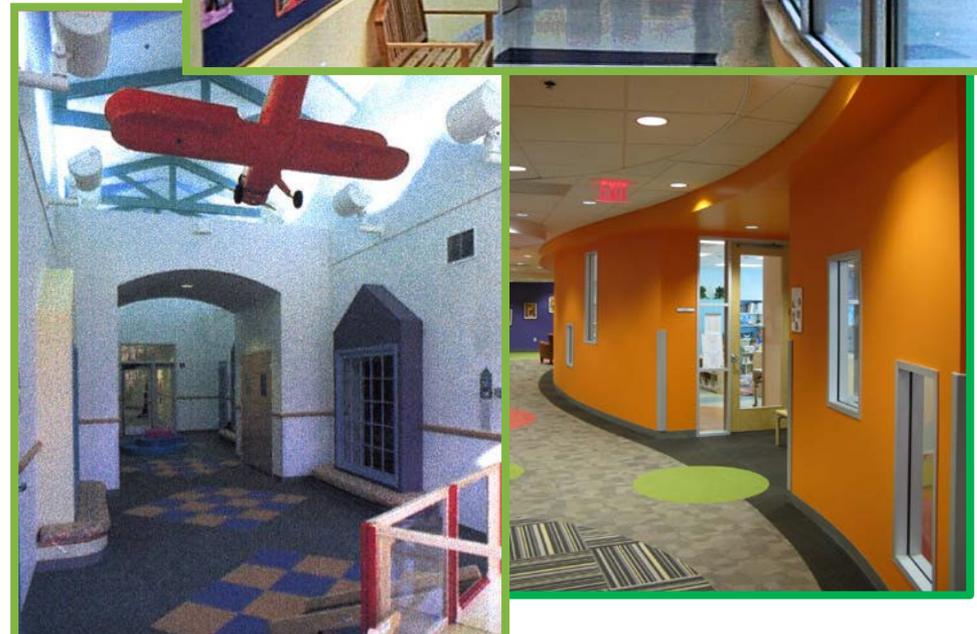
Architecture can be used to break up long hallways (which can be intimidating for children) and entice children to explore

child friendly

Walls can be used to display children's art work

Bulletin boards, documentation panels can inform parents of current activities

Corner/bumper guards protect walls from carts and strollers



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# Take a Walk on the Child Side

## Perspective and scale-Hallways



*which one feels like a great place to be a kid?*



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## Perspective and scale-*Hallway activity areas*



Incorporate “common” activity areas into corridors for efficient use of space and interesting environments

Creates a ‘change of venue’ for classroom activities and alternative play area for inclement weather

Creates a more interesting, and challenging, path of travel

child friendly



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# Learning environments-*Rooms for Infants and Toddlers*

Utilize “suite” concept throughout all age groups

~efficient use of utilities and infrastructure

~shared use of toilets, diaper change and food prep areas

~low walls in core areas enhance supervision and cooperation between classroom groups



~infant rooms should be a shoeless environment-infants put everything in their mouth and they ‘live’ on the floor much of the time

healthy practice



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## Take a Walk on the Child Side

# Learning environments-*Rooms for Infants and Toddlers*

## The “suite” concept

~efficient use of utilities and infrastructure

~shared use of toilets, diaper change and food prep areas

**safety** ~low walls in core areas enhance supervision and cooperation between classroom groups



## Crib areas for infants

Separates the ‘activity’ area from the sleeping area

Clear panels allow visibility to every crib, even from a sitting position on the floor

**child friendly** Use wall sconces to avoid bright light sources directly over the cribs



## Diaper changing area

**safety** Visibility out to the classroom while standing at the change pad

**safety** Hand wash sink within reach range of change pad

Diaper drop with continuous exhaust

**healthy practice** Touchless faucet at hand wash



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# Learning Environments-Rooms for Twos and Preschool (3, 4 & 5)

As children age up:  
~their group size, and therefore their classroom gets larger  
~their food and toileting requirements, and infrastructure, change  
~as they begin to master their interests, the manipulatives that fuel their curiosity should be readily accessible to them through out the room



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## Take a Walk on the Child Side

# Learning environments-*Rooms for Twos and Preschool (3, 4 & 5)*

## The “suite” concept

~efficient use of utilities and infrastructure

child friendly

## Activity sinks

water play sink – counter height and reach range are important considerations

healthy practice

drinking water separated from activity sink

undermount sinks and solid surface tops reduce delamination and water damage

## Diaper and toilet areas

At the 2 year old level, diapering area includes 2 toilets and hand wash sinks. Think low.

Preschool rooms eliminate the diapering area

Jurisdictions usually require accessibility at this age group

safety

All hot water is tempered down to 105° to 120°.

~low walls in core areas enhance supervision and cooperation between classroom groups

safety



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# Take a Walk on the Child Side

# Learning Environments-Rooms for Twos and Preschool (3, 4 & 5)



child friendly

note child sized entry door



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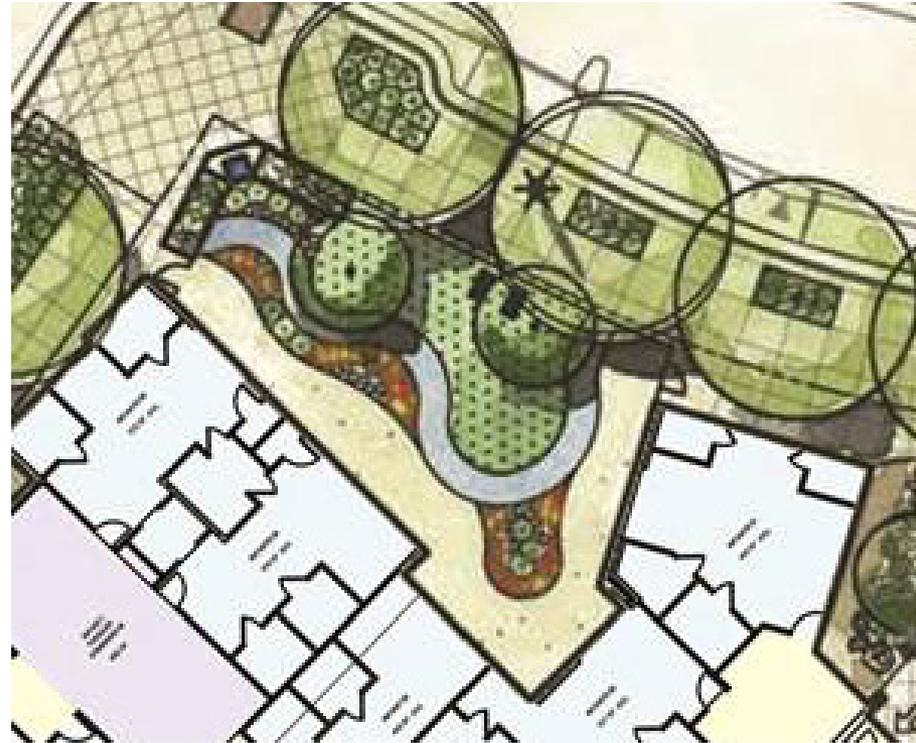
## Outdoor Learning Environments *for Infants*

Babies need fresh air too.

~play area directly adjacent to the appropriate classroom

~a variety of surfaces builds experience and motor skills (concrete, path with epdm surface coat, natural or synthetic turf, sensory gardens with herbs are shown here)

~plenty of shade-provide awnings while trees are maturing



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# Take a Walk on the Child Side

# Outdoor Learning Environments *for Infants*



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# Take a Walk on the Child Side

24 October 2014

# Outdoor Learning Environments *for Toddlers*



Toddlers are everywhere at the same time.

~semi enclosed patio for each group with shade provides place for quiet play or small group activities

~introduce gentle topography to this group with synthetic turf

~many pathways with various surfaces and log tunnels, bridges, willow teepees

~toddlers love sand and water play



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# Outdoor Learning Environments *for Toddlers*



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# Outdoor Learning Environments *for Twos*

The twos have graduated to the big yard

~more patios and adjacency

~trike tracks (and trike storage)

~social play means clubhouses and talking tubes

~sand, water and berm slides are big with this group

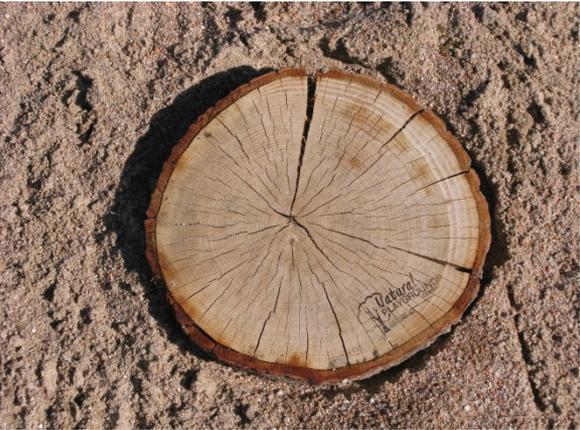
~tree cookies and talking circles are great places for story telling



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## Take a Walk on the Child Side

# Outdoor Learning Environments *for Twos*



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# Outdoor Learning Environments *for Preschool*



Long legs mean wide open spaces, provide some.

~the patios separate the big play from the quiet play-both are needed

~faster trikes need wider paths, roundabouts and an occasional stop sign

~social play means clubhouses and talking tubes

~this will be their backyard every day for three years-give it some challenges and variety



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# Outdoor Learning Environments *for Preschool*

child's eye view from the top



**safety**

Note the chamfered edge of the sidewalk leading into the engineered wood mulch play area



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*“It is a strange time. We live in an age when our children may know far more about bizarre people we care nothing about or a cartoon world than the workings of their own back yard — that marvelous ecosystem teeming with life. They may know more about, or rather have more information on, exotic zoo animals and farm animals than the snails, squirrels, birds, worms, and bugs that live outside their windows.”*

Jim Greenman

## TAKE A WALK: Part 4. *Responsible design process*

### **A child-centered design approach**

- Consisting of a design team including Owner, Architect and others, working together through a pre-defined series of workshops designed to inform the development of the project on a timely basis



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- 1. Entity with financial responsibility, both for capital expense and ongoing financial viability**



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The following is a case study illustrating a pre-defined workshop agenda, content and resultant early learning center, The Children’s Discovery Center at **San Juan Regional Medical Center**, Farmington, New Mexico



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Take a Walk on the Child Side

1.

# DEVELOPMENTALLY APPROPRIATE DESIGN CHARRETTES



1.

## 1. Conceptual

- Establish the vision
- Understand the site
- **Establish the number of children in care, their ages, group sizes and teacher:child ratios**
- Set budgets and schedules
- Establish the sustainability agenda focusing on healthy indoor environments.

## Design and Construction Timeline

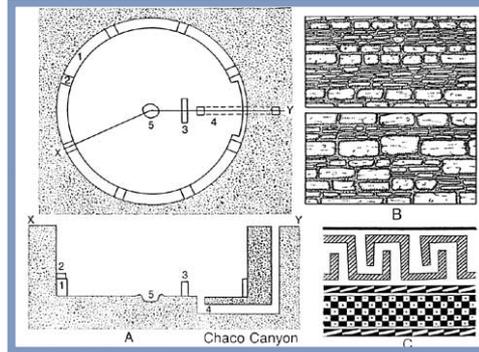
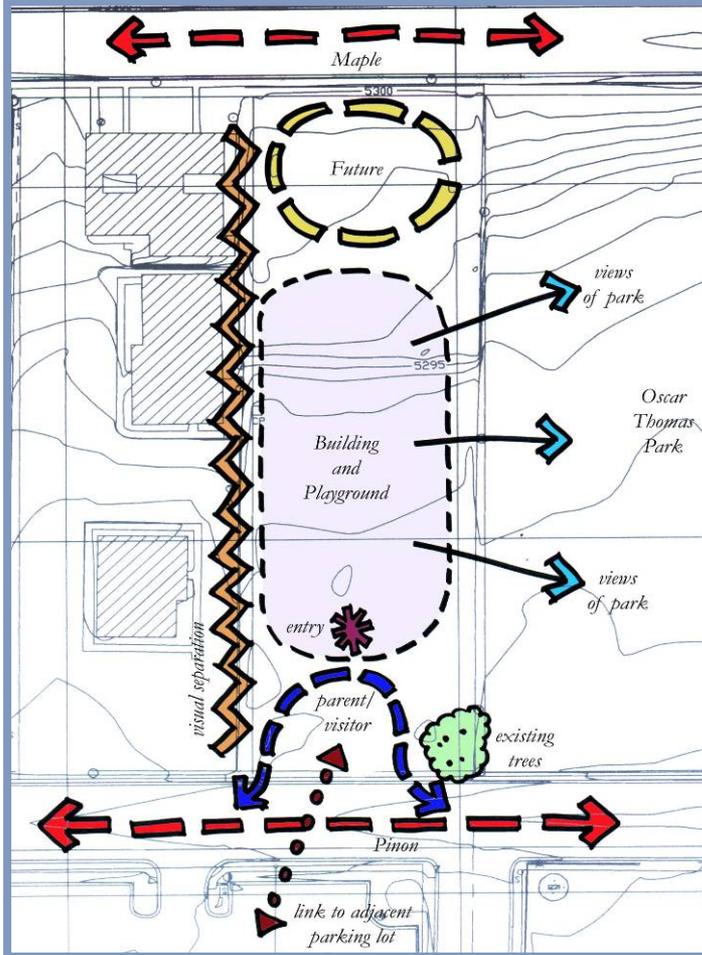


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# Take a Walk on the Child Side

1.

# DEVELOPMENTALLY APPROPRIATE DESIGN CHARRETTES



Summary of Interior Classroom Space Requirements

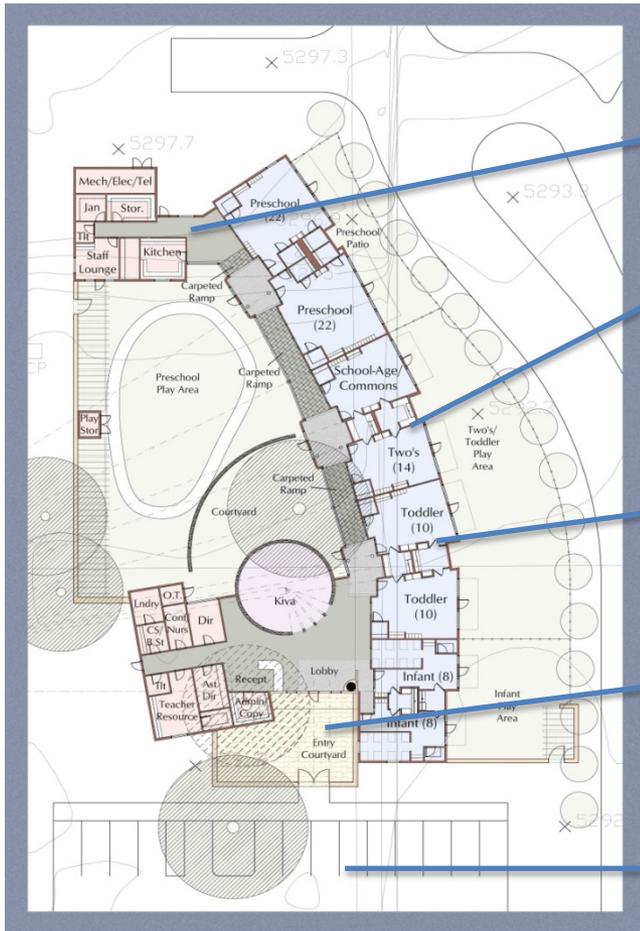
Core Space	Activity	Crib / Nap	Cubbies	**Diaper	**Toilet	Activity Counter	**Food Prep	**Storage	Teacher Workst	Total SF
8	Infant	360	160	10	50	0	45	20	15	635
8	Infant	360	160	10	50	0	45	20	15	635
8	Infant	360	160	10	50	0	45	20	15	635
<b>24</b>	<b>Totals</b>	<b>1080</b>	<b>480</b>	<b>30</b>	<b>150</b>	<b>0</b>	<b>135</b>	<b>60</b>	<b>45</b>	<b>1905</b>
10	Toddler	420		10	50	20	10	20	35	545
10	Toddler	420		10	50	20	10	20	35	545



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## 2. Schematic Planning

### *separate service access*

- *for deliveries and waste removal*
- *service for mechanical-electrical equipment*

### *every classroom has direct access to*

- *the age appropriate outdoor play space*
- *exterior windows and daylight*
- *individual support spaces for toileting, food prep and diaper changing*
- *interior visual supervision*

### *the classrooms are organized*

- *by age group, sharing core support for diapering, toileting and storage*
- *the shortest legs are closest to the front door*

### *secure entry*

- *controlled by access card*
- *monitored by staffed reception*
- *all access through front entry, except for scheduled food deliveries*

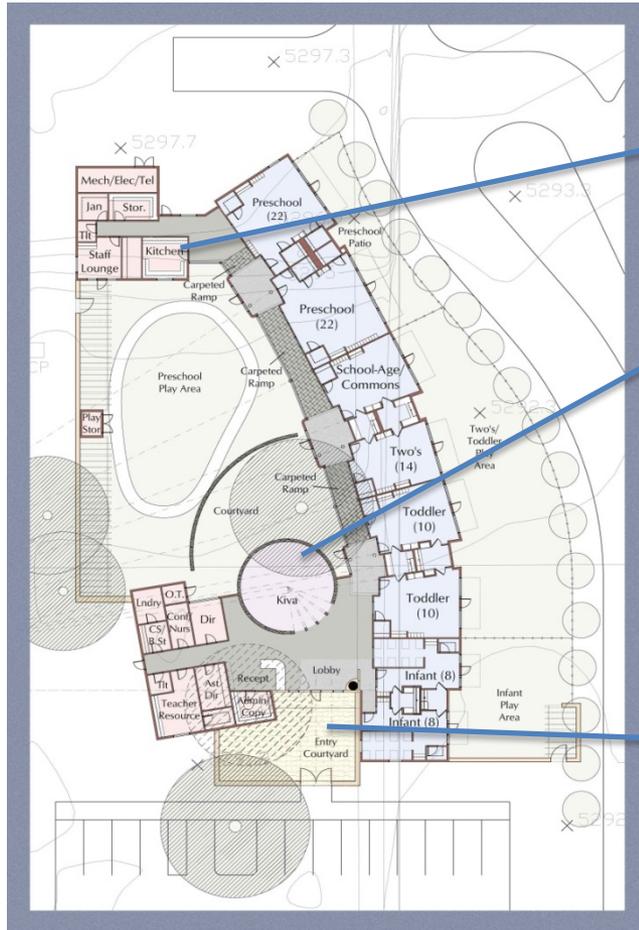
### *short-term parent parking*

- *15-20% of enrollment capacity*
- *direct access to entry (no cross traffic)*



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## 2. Other features

### *food service*

- *supports activities in the outdoor courtyard*

### *the kiva*

- *the community room supports children with indoor play in inclement weather*
- *supports parents with Center events*
- *supports teachers for training and coordination activity*
- *supports learning with the equinox skylight*
- *key element reflecting the Hospital's intent to reflect the culture of the region*

### *entry courtyard*

- *creates a controlled zone for arriving and departing children and a place for the child transition from parent care to caregiver*



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3.

# DEVELOPMENTALLY APPROPRIATE DESIGN CHARRETTES

3:00-5:00	<i>Detailed Plan Review</i>	
		<i>Classrooms</i>
		<i>Play area conceptual layout</i>
		<i>Administrative and support areas</i>
<b>THURSDAY JUNE 18, 2009</b>		
8:00-noon	<i>Engineering</i>	
	8:00	<i>Sustainability agenda</i>
	8:30	<i>HVAC &amp; Plbg</i>
	10:00	<i>Electrical, lighting</i>
	11:00	<i>I/T</i>
	11:30	<i>Security</i>
		<i>Fencing</i>
		<i>Access control</i>
		<i>Monitoring and cctv</i>
noon-1:00	<i>Lunch Break</i>	
1:00-2:00	<i>Support Services</i>	
	1:00	<i>Food Service</i>

3.

## 3. Systems

Review detailed, room x room requirements for **every** system

Structure

HVAC and controls

Plumbing

Power and lighting

**ADA Accessibility**

**Food service**

Fire protection

Security and fencing

Civil grading and drainage

Maintenance

Signage

Sustainable agenda

**Child Safety**

← Design and Construction Timeline →



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## 3. Systems

Review detailed, room x room requirements for **every** system

visibility into the classroom  
from the corridors

child windows for  
children only!

seamless flooring for  
ease of maintenance  
and cleanliness

rounded  
corners on  
woodwork

visibility panels in low walls and doors for  
supervision of babies in the crib even  
while seated on the floor

wall sconces in crib areas  
so children in cribs aren't  
looking into bright ceiling  
fixtures

rounded corners on  
millwork



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3.

## DEVELOPMENTALLY APPROPRIATE DESIGN CHARRETTES

play yard first aid kit  
and emergency call  
station



continuous piano hinge  
with retracting finger  
guard



magnetic  
cabinet latch



artificial turf with  
safety pad  
underlayment

poured in place  
EPDM surfacing

chamfered sidewalk  
with engineered  
mulch

### 3. Building Systems

Review detailed, room x room  
requirements for **every** system  
including child safety

door and cabinet hardware

finger guards  
cabinet safety latches

power outlets

hospital grade tamper  
resistant outlets

water tempering

varies by state from 100  
to 120 degrees

play yard safety surfacing, equipment  
selections and layout

glass & glazing

tempered per federal regs  
laminated safety glass for  
impact resistance

landscape materials (toxicity)

building materials (toxicity)

detailing soft/rounded/chamfered  
edges



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4.

## DEVELOPMENTALLY APPROPRIATE DESIGN CHARRETTES



4.

### 4. Design

- Coordinate the materials and finishes for a **child sensitive and aesthetically pleasing palette that is durable and easy to maintain.**
- **Incorporate special details into the interior and exterior activity areas for the discovery and delight of children**

← Design and Construction →

Programming &  
Conceptual Design

1.

Schematic Design

2.

Design Development

3.

Construction  
Documents

4.

Construction Administration

Commissioning &  
Move In

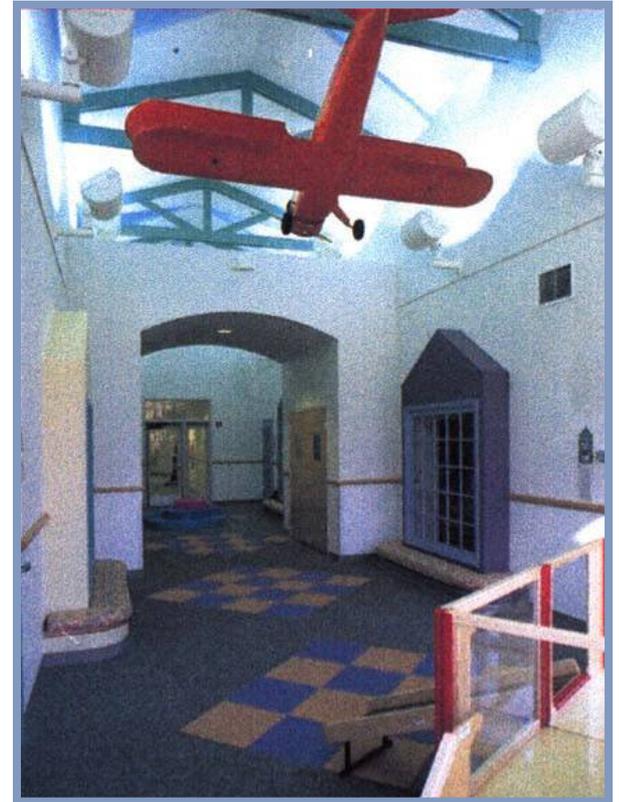
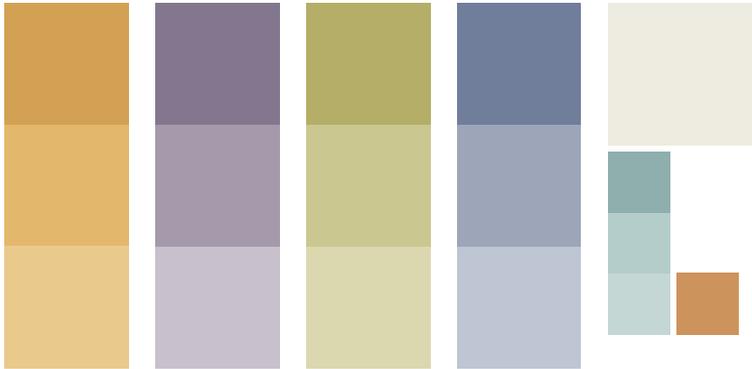


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# DEVELOPMENTALLY APPROPRIATE DESIGN CHARRETTES



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# CHILDREN'S DISCOVERY CENTER

## Children's Discovery Place San Juan Regional Medical Center Farmington, New Mexico

The Children's Discovery Place is located in the historic Four Corners region of Northern New Mexico. Designed to accommodate the children of San Juan Regional Medical Center staff, the administration directed the architects to develop a facility that reflected the architectural and cultural legacy of the region, including the prehistoric settlements of Chaco Canyon and the Aztecs, as well as the Spanish influence dating from the 1500's. The resulting structure incorporates a central community room, or Kiva, finished with Anasazi-inspired stonework, as well as traditional adobe forms rendered in conventional stucco. The building is oriented around an interior courtyard, and features exposed wood ceilings, cool white walls, and painted fenestration and trim work designed in a playful manner to enhance the life experiences of young children.

**Size:** 11,900 s.f.  
**Capacity:** 94 children, infant - preschool  
12 school-age (after-school)  
**Architect:** Rike Ogden Figueroa Dickson Wells



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## TAKE A WALK: Part 5. Q & A

*The thesis of organic architecture is simple: the basic idea that a building is designed appropriately for the people who will live and work in it, for its site, for its purpose, for the geographic, climatic and economic conditions for which it is to exist.... It will be well coordinated in all its aspects, taking shape from its inner reality, an entity.*

Frank Lloyd Wright, 1966



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## TAKE A WALK: Part 6. *For more information*

- *Introductory reading:*

- *Child Care Design Guide* *Olds*
- *Natural Learning* *R. C. Moore and H. H. Wong*
- *Caring Spaces, Learning Places:  
Children's Environments That Work* *Greenman*
- *Places for Childhoods: Making  
Quality Happen in the Real World* *Greenman*
- *Go Green Rating Scale for  
Early Childhood Settings* *Boise*
- *Inspiring Spaces for Young Children* *Deviney, Duncan, Harris, Rody, Rosenberry*
- *The Scientist in the Crib: Minds, Brains  
and How Children Learn* *Gopnick, Melzoff & Kohl, 1999*



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