Traumas Effect On Children’s Development, Spatial design as intervention: The role of interior design in supporting children with trauma

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TRAUMAS EFFECT ON CHILDREN’S DEVELOPMENT

Spatial design as intervention: The role of interior design in supporting children with trauma
The common area space within The Dreamery center. This is the play space where children gather to socialize and interact together and is open to the outdoor play space and natural daylight.
After facing trauma, young children react emotionally, physically, and mentally in efforts to protect themselves from past or present trauma that they have faced. Young children may not always be able to recognize that the dangers they once went through are roots of trauma that have not been correctly addressed within their life. These roots may now be the result of uncontrollable behaviors, emotions, and reactions. After analyzing the lack of resources some families and children may have, a space that is uniquely catered to the children who are facing or have faced trauma that provides balanced schedules, particularly focused needs for a child’s well-being, one on one time with caregivers, and space for developmental milestone growth is necessary. This center will take into consideration abuse, poverty, and parents’ mental health roles on children’s trauma and the effects it has on their age developmental milestones and emotional health.

This research evaluates childhood developmental stages and the impacts trauma has on childhood. It has been identified that not all children are emotionally, mentally, and physically best supported in traditional daycare spaces. For children who have experienced or are experiencing trauma may not find enough support within these traditional spaces. While some caregivers may have a background in providing clinical support, the surrounding environments also need to support the increased needs of children who have experienced trauma.

Space Design as Intervention
To alleviate the long-term, profound impacts of childhood trauma later in life, addressing trauma during critical developmental stages is important to help relieve negative impacts later in life. The impact of environmental psychology and programming, thus, is also critical in supporting spaces where children who have experienced trauma or are experiencing trauma can learn, play, socialize, heal and grow as individuals. Space design greatly enhances the effects of counseling and therapy during important childhood milestone developmental stages.

OBJECTIVES

01. Provide a nurturing space that promotes effective developmental milestone growth.
02. Promote sense of safety and security for children within the space by understanding past physical and mental experiences.
03. Understanding how the built environment creates positive effects on children who have experienced/are experiencing trauma.
Trauma: An emotional and/or physical response to an intense singular or reoccurring event that has lasting effects on an individuals functioning mental, physical, and emotional health, overwhelms an individuals ability to cope, diminishes their sense of self, and the ability to feel a full range of emotions and experiences. 1, 2

**Trauma’s Intersectional Qualities**

Abuse (physically, emotionally, and sexually), poverty, and parent substance abuse/mental illness overlap in the ways that a young child may be affected or at risk of another form of trauma. While a child is facing emotional abuse, it may be a tripling effect from their caregiver going through a mental illness or from the stress that poverty presents someone. Trauma’s intersectional qualities and relationships contradict the contrasting ways a child may be affected. 3

- **POVERTY**
  - Children at all ages and developmental stages may be impacted by impoverished environments. 4

- **CAREGIVER SUBSTANCE ABUSE/MENTAL ILLNESS**
  - Kids growing up in a home with addicted parents are more likely to suffer. 5

- **ABUSE (PHYSICAL, EMOTIONAL, SEXUAL)**
  - Physical injuries
  - Neglect (unable to take care of child's needs)
  - Violence in the home
  - Exposure to toxic substances
  - Slow emotional development
  - Abuse (physically, emotionally, and sexually), poverty, and parent substance abuse/mental illness overlap in the ways that a young child may be affected or at risk of another form of trauma. While a child is facing emotional abuse, it may be a tripling effect from their caregiver going through a mental illness or from the stress that poverty presents someone. Trauma’s intersectional qualities and relationships contradict the contrasting ways a child may be affected. 6

- **POVERTY**
  - Housing instability - children not having basic living needs (beds, clothes, blankets, etc.)
  - Food insecurity due to loss of food options at home
  - Exposure to poor community/neighborhood environments

- **MENTAL ILLNESS**
  - Physical/Mental Illness
  - Slow emotional development

- **MENTAL HEALTH**
  - Development of toxic stress
  - Dissociation from interpersonal relationships
  - Low self-esteem
  - Fear of holding relationships
  - Feelings of guilt and shame for who they are

- **ADOLESCENT MENTAL HEALTH**
  - Violence
  - Self-harm

- **LACK OF FEELING OF SAFETY AND SECURITY**
  - Violence
  - Violence
  - Feelings of guilt and shame for who they are

**Figure 4.0: Trauma’s Intersectional Qualities**

Lila’s Story: Developmental Milestones Without Trauma

Lila is five years old and recently started preschool at Okemos public schools. While at home, she has a very supportive and loving family and has followed in line with the developmental milestones she should be reaching so far. One of the milestones she is currently working towards is knowing her home address so that if anything ever happens she may be able to verbally say it out loud to another adult.

1 Year Old
- Shy/Anxious with strangers
- Plays attention to speech
- Tries to imitate words
- Cries when parents leave
- Shows preferences in people
- May show fear
- Begins to say small words
- Picks things up

2 Year Old
- Begins to show behavior
- Follows simple instructions
- Notices when people are hurt/ill
- Seeks/attracts for reactions
- Repeats words
- Increase of separation anxiety

3 Year Old
- Calms down after parents leave
- Notices when kids play near them
- Has short attention span
- Can form full sentences
- May dress themselves

4 Year Old
- Comforts those who are sad/hurt
- Avoids danger
- Enjoys helping
- Finds solutions to problems
- Speaks clearly
- Cooperates with other kids
- Independent
- Views self as whole

5 Year Old
- Knows name and home address
- Wants to be like friends
- More likely to agree to rules
- Sometimes demanding
- Knows about items used at home
- Understands concept of time
- Dresses/undresses without assistance

Lila’s Story: Developmental Milestones With Trauma

Lila is five years old and recently graduated from Okemos Public Schools preschool academy. At home, she does not receive positive care from her caregivers and often times comes to school with bruises covering her body. With concern, her teacher has noticed that she is lacking milestones growth and seems to have irrational emotions come throughout her day.

1 Year Old
- Scared of noises, distress, or being out of routine
- Difficult to soothe
- Difficulty forming attachments to caregivers
- Loss of physical skills (sitting, crawling, walking)

2 Year Old
- Especially fussy
- High levels of distress when separated from caregiver
- Loss of playful and engaging behaviors
- Regression after reaching milestones

3 Year Old
- Shows aggressive behavior
- Avoids eye contact
- Loss of eating skills
- Difficulty forming relationships with peers

4 Year Old
- Difficulty with problem-solving
- Language delays
- Frequent nightmares
- Difficulty forming relationships with peers

5 Year Old
- Social withdrawal
- Trouble with concentrating
- Poor understanding of social interactions
- Re-enact traumatic events during play
Applies an evidence-based, hands-on approach in child development. Children learn through interacting with their surroundings and daily experiences while in safe, secure, warm and nurturing environments."

KEY TAKEAWAYS

- Designed to provide children with developmentally appropriate learning experiences.
- Designed classrooms to provide sensory stimulation vital to learning processes.
- Low teacher to child ratios to ensure that every child has attention needed to grow.
- Each classroom is equipped to foster the needs of each child’s age.
- All curriculum is written with principals of child developmental milestones at the forefront.


MILESTONES EARLY LEARNING | PORTAGE, MI

FIGURE 8.3 MILESTONES EXTERIOR

FIGURE 8.1 MILESTONES COURTYARD

FIGURE 8.0 MILESTONES EARLY LEARNING PLAN DIAGRAM

FIGURE 8.2 MILESTONES CLASSROOM

FIGURE 8.4 COMMON AREA PLAY ROOM

FIGURE 7.0 MILESTONES EARLY LEARNING KEY TAKEAWAYS DIAGRAM

FIGURE 7.1 MILESTONES EARLY LEARNING CIRCULATION DIAGRAM

PUBLIC

SEMI-PRIVATE

CIRCULATION

0-1 YEARS

1-2 YEARS

ENTRY

2-3 YEARS

3-4 YEARS

4-5 YEARS

EMPLOYEE ONLY

PLAY SPACE

EMPLOYEE ONLY

OUTDOOR PLAY AREA
LEARN N' GROW | OTSEGO, MI

“Our nature-based preschool will provide outdoor exploration experiences for three and four year olds. We will enhance students’ understanding and connection to the natural world while building skills and the needs of the whole child.”

Focuses on providing children with exploration experiences (unique outdoor activities).

Each program is catered towards age and developmental milestones.

Key Takeaways

- Lunch meals provided at a very low fee making it affordable for children to get meals.
- Small class sizes making it low student to caretaker ratio - between ten and sixteen children.

Each program is catered towards age and developmental milestones.


Figure 10.0 LEARN N' GROW PLAN DIAGRAM

Figure 10.1 OUTDOOR PLAY AREA

Figure 10.2 GYM

Figure 10.3 CLASSROOM

Figure 10.4 CLASSROOM GROUP AREA

Figure 10.5 EXTERIOR

Figure 10.6 LUNCH SPACE

Figure 10.7 GYM ACTIVITY

Figure 10.8 MUSIC ACTIVITY

Figure 10.9 LEARN N' GROW CIRCULATION DIAGRAM

Figure 10.10 LEARN N' GROW KEY TAKEAWAYS DIAGRAM

Figure 10.11 LEARN N' GROW KEY TAKEAWAYS DIAGRAM

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YWCA: THE DREAMERY | KALAMAZOO, MI

“Focuses on improving the lives and well-being of children through providing innovative high-quality childcare and educational programs that support vulnerable children.”  

KEY TAKEAWAYS

- Programs available that encourage the health of children through professional development and mentoring.
- Assists parents with tuition so that all children have access to their education.
- Provides safety and security throughout their space — at times this may be the most trusted space in a child’s day.

YWCA: THE DREAMERY KEY TAKEAWAYS DIAGRAM

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“Exist to improve the lives of children and families, which in turn, will strengthen communities.”

Specializes in clinical services for children who struggle with behavioral, emotional, intellectual, and developmental challenges. Completely run by donations to make all services for children free. Work alongside caretakers to offer the best services for children.

Available to provide in home services for young child based on their clinical needs. Deep look into barriers children may face at home as well as their surrounding community.

KEY TAKEAWAYS

Available to provide in home services for young child based on their clinical needs. Deep look into barriers children may face at home as well as their surrounding community.


FIGURE 13.0 THE CHILDREN’S CENTER KEY TAKEAWAYS DIAGRAM

FIGURE 13.1 THE CHILDREN’S CENTER CIRCULATION DIAGRAM

FIGURE 14.0 THE CHILDREN’S CENTER PLAN DIAGRAM

FIGURE 14.1 CLASSROOMS

FIGURE 14.2 KIDS IN SPACE

FIGURE 14.3 GROUP SPACE

FIGURE 14.4 EXTERIOR

ENTRY

CLASSROOMS

COMMON AREA

CONSULTATION ROOMS

EMPLOYEE LOUNGE
While all users are within the space on a day to day basis, they will face different challenges and will experience the space based on their purposes and needs.

Children will arrive with their caretaker for the day - as the caretaker will only experience the front entrance and minimal parts of the space, the child will spend multiple hours navigating the walls of their classroom, the open play space, the outdoors and eating meals.

An employee will come in for what is their everyday job where they are hands on teaching and nurturing the children that come into their classrooms. From their perspective they will overlap interactions with other employees, caretakers and children.

Employees will have responsibilities to maintain the environment based on materials (cleaning up), acoustics (noise level containment) and containing multiple children.

**FIGURE 15.0 USER GROUPS DIAGRAM**

**FIGURE 16.0 DAY IN THE LIFE DIAGRAM**
TRAUMA-INFORMED DESIGN PRINCIPALS

**DEFINED AS** “Integrating principles of trauma-informed care into design with the goal of creating physical spaces that promote safety, well-being, and healing.”

- Physical environments affect identity, worth, and dignity, and how it promotes empowerment
- Intentionally designing and maintaining healing environments leads to empowerment and resists retraumatizing those who have already experienced trauma

**GENERAL GUIDELINES**
- Spatial layouts: clear sightlines and few barriers to create a sense of safety and calmness
- Visual interest with details
- Avoiding deeply hued colors - they may cause negative emotions
- Furniture should be durable and easy to clean, arrangements should enhance safety and promote positive relationships with employees and children

**GOALS OF TRAUMA-INFORMED DESIGN**
- Creating environments that promote the ability to feel calm, safe and empowered for all users
- The goal of creating a calming and nurturing space can come from adaptive spatial layouts, intentional furniture pieces and arrangements, light, color, and biophilic touches

**TRAUMA-INFORMED DESIGN PRINCIPALS DIAGRAM**

**PLAY THERAPY**

**DEFINED AS** Type of therapy where children use play, toys and games to help explore, express and safely experience the difficulties they are experiencing.

- “Children who have been abused or experienced traumatic events may benefit from play therapy to regain a sense of normalcy in their lives”

**GENERAL GUIDELINES**
- Building communicative and learning processes of children
- Helps aid children in expressing their emotions in a way that may not be verbally said
- Allows children to react, think about and resolve their challenges
- Develop respect and acceptance of others
- Educating more responsible behaviors and developing successful strategies

**GOALS OF PLAY THERAPY**
- Creates a space where a child feels comfortable being themselves
- It allows children to take charge and engage in activities that will activate developmental milestones and therapy processes
- Allows children to understand their emotions better
- Helps navigate communication and social skills among adults and other children

**BENEFITS OF PLAY THERAPY**
- Creates a space where a child feels comfortable being themselves
- It allows children to take charge and engage in activities that will activate developmental milestones and therapy processes
- Allows children to understand their emotions better
- Helps navigate communication and social skills among adults and other children

**DIRECTIVE PLAY THERAPY**
- Hands-on approach leading a child through guided play activities that help them express themselves.
- Typically, a child will receive instructions and will be supervised as they experience the activity.

**NON-DIRECTIVE PLAY THERAPY**
- Child is left alone to engage in whatever play activities they may enjoy within the space and can express with limited interferences from others.

**TECHNIQUES**
- Puppet play
- Sand play
- Building blocks
- Board games
- Lego play
- Strategy games

**DIRECTIVE PLAY THERAPY TECHNIQUES DIAGRAM**

**NON-DIRECTIVE PLAY THERAPY TECHNIQUES DIAGRAM**

**FIGURE 18.0 PLAY THERAPY TECHNIQUES DIAGRAM**


**COLOR PSYCHOLOGY**

- Colors can elicit positive or negative effects on children.
- Excessive stimuli can cause damages to breathing patterns, muscle tension, and blood pressure.

**GENERAL NOTES**
- Colors are most used by children to express their emotions and thoughts.
- Children need to be educated in spaces that increase creativity and imagination.

**ORANGE**
- Happiness
- Warmth
- Creativity
- Stimulates confidence

**BLUE**
- Calmness
- Serenity
- Helps to focus
- Decreases feelings of anxiety and aggression
- Reduces blood pressure and heart rate
- Helps children feel at ease
- Peaceful transition to sleep/quiet time

**PURPLE**
- Ambition
- Color of passion
- Creativity
- Wisdom
- Good for inspiring sensitivity and compassion within children

**YELLOW**
- Warmth
- Cheery
- Wisdom
- Kindness
- Enthusiasm
- Inspirational
- Refreshing effect on people

**BROWN**
- Encourages friendship
- Sense of security

**GREEN**
- Naturally cool
- Calming
- Signifies growth and positive health
- Reduces pressure
- Power of nature and life
- Considered relaxing

**IMPORTANT ASPECTS**

**LIGHTING**
- Incorporating the usage of natural lighting and brighter rooms in order to promote better mental health and behaviors.
- It is optimal to use bulbs with color temperatures ranging from 3000K to 5500K. 5500K can be benefited by increasing concentration while 3000K to calm children down.

**SECURITY**
- The sense of security throughout the space is important both physically and mentally.
- While the children occupying the space have effects of trauma, they may face attachment challenges and/or have trouble connecting with other students and employees. Being mentally safe, they will be more open to speaking, playing, and connecting. Physically, it is important to make sure that the children are in private spaces where the public cannot access in order to protect the kids from other caregivers and the community.

**BIOPHILIA**
- Beneficial for children to reduce stress level, inform connections to the outdoor environment, and increase healing.
- Biophilia may be used within this trauma center through live plants, interactive outdoor activities, and interior spaces being open to the outdoors.

**THERMAL COMFORT**
- Cold temperatures may decrease the negative effects a child may have while too warm of temperatures within a space will increase the effects.
- Maintaining an indoor temperature between 68 and 72 degrees (F) in order to keep both children and employees at a comfortable and safe temperature.
The business, Fido Motors was created by Jeb Gast. Gast was in search of an electric scooter that could be in competition with a gas scooter. While searching for an electric scooter that would have storage, be lightweight, and easy to charge, he could not find one. This is when Gast began to set out designing a scooter himself. After buying the building, he began to make it a personal workshop where these scooters would be built and sold.

Gast comes in contact with Kent Bakke who has worked in coffee retail for four decades who has a side hobby of fine motors, especially those that run on electricity rather than fossil fuels. Also meeting with Kalamazoo Native Mackenzie Chrisman, the three men collaborated together to form Fido Motors Cafe in a shared building with Fido Motors. This cafe is on the first floor, roughly 600 S.F. and took about six months of processing to design.

Today, The Dapper Hammer, a carpentry business, occupies the building.
The original building shell plans were retrieved from the Sanborn Fire Insurance maps located at Western Michigan University's library. The plan shown is from the date of 1932 and has since been updated per previous owners. There is no access to current construction drawings of the plan (per emails with current building owner).
<table>
<thead>
<tr>
<th>SPACE</th>
<th>SQUARE FOOTAGE</th>
<th>OCCUPANCY FUNCTION OF SPACE</th>
<th>OCCUPANT LOAD FACTOR</th>
<th>OCCUPANCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kitchen</td>
<td>100</td>
<td>Educational</td>
<td>20 net</td>
<td>5</td>
</tr>
<tr>
<td>Employee Lounge</td>
<td>200</td>
<td>Assembly without fixed seating - unconcentrated</td>
<td>15 gross</td>
<td>13</td>
</tr>
<tr>
<td>Employee RR</td>
<td>50</td>
<td>Assembly without fixed seating - unconcentrated</td>
<td>15 gross</td>
<td>1</td>
</tr>
<tr>
<td>Child Meeting Room</td>
<td>100</td>
<td>Assembly without fixed seating - unconcentrated</td>
<td>15 gross</td>
<td>5</td>
</tr>
<tr>
<td>Caregiver Meeting Room</td>
<td>100</td>
<td>Assembly without fixed seating - unconcentrated</td>
<td>15 gross</td>
<td>5</td>
</tr>
<tr>
<td>Classroom</td>
<td>500 per 1 (5 total)</td>
<td>Educational</td>
<td>20 net</td>
<td>30</td>
</tr>
<tr>
<td>Private Play Space</td>
<td>50</td>
<td>Educational</td>
<td>20 net</td>
<td>2</td>
</tr>
<tr>
<td>Community Play Space</td>
<td>500</td>
<td>Educational</td>
<td>20 net</td>
<td>25</td>
</tr>
<tr>
<td>Library</td>
<td>400</td>
<td>Stack Area</td>
<td>100 gross</td>
<td>4</td>
</tr>
<tr>
<td>Sleeping Room</td>
<td>550</td>
<td>Sleeping Area</td>
<td>120 gross</td>
<td>4</td>
</tr>
<tr>
<td>Lunch Room</td>
<td>400</td>
<td>Assembly without fixed seating - unconcentrated</td>
<td>15 gross</td>
<td>28</td>
</tr>
<tr>
<td>Child RR</td>
<td>240</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Public RR</td>
<td>50</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Entrance Lobby</td>
<td>400</td>
<td>Assembly without fixed seating - unconcentrated</td>
<td>15 gross</td>
<td>26</td>
</tr>
</tbody>
</table>

**FIRE RESISTANCE RATING**

- Primary structural frame: 1
- Bearing walls: 1
- Extensive exit stairways, ramps, and exit passageways: 2
- Interior: 1
- Nonsprinklered and partitions - Interior: 0
- Floor construction and associated secondary members: 1
- Roof construction and associated secondary members: 1

**OCCUPANCY TYPE**

- Group E - Education

**TYPE OF CONSTRUCTION**

- Sa

*Current building is non-sprinklered and will need to be reconstructed to be sprinklered.*
<table>
<thead>
<tr>
<th>SPATIAL PROGRAMMING NEEDS</th>
<th>CLASSROOMS (5)</th>
<th>PRIVATE SLEEPING ROOM (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENTRANCE</strong></td>
<td><strong>SQUARE FOOTAGE</strong></td>
<td><strong>SQUARE FOOTAGE</strong></td>
</tr>
<tr>
<td></td>
<td><strong>240 SQ. FT.</strong></td>
<td><strong>600 SQ. FT. each</strong></td>
</tr>
<tr>
<td><strong>USERS</strong></td>
<td><strong>Children</strong></td>
<td><strong>Employers and children</strong></td>
</tr>
<tr>
<td><strong>QUANTITY OF PEOPLE WITHIN THE SPACE</strong></td>
<td><strong>0 - 10</strong></td>
<td><strong>0 - 20</strong></td>
</tr>
<tr>
<td><strong>OCCUPANCY FUNCTION OF SPACE</strong></td>
<td><strong>N/A</strong></td>
<td><strong>Educational</strong></td>
</tr>
<tr>
<td><strong>OCCUPANCY</strong></td>
<td><strong>N/A</strong></td>
<td><strong>30 people</strong></td>
</tr>
<tr>
<td><strong>LIGHTING</strong></td>
<td><strong>LED can lights</strong></td>
<td><strong>High usage of natural sunlight when possible</strong></td>
</tr>
<tr>
<td><strong>THERMAL</strong></td>
<td><strong>Between 68 - 72 degrees (F)</strong></td>
<td><strong>Between 68 - 72 degrees (F)</strong></td>
</tr>
<tr>
<td><strong>MATERIAL CHARACTERISTICS</strong></td>
<td><strong>Highly cleanable and durable</strong></td>
<td><strong>TBD</strong></td>
</tr>
<tr>
<td><strong>FFE</strong></td>
<td>• Desks/tables for children</td>
<td>• Cribs, small beds</td>
</tr>
<tr>
<td></td>
<td>• Comfortable seating arrangements</td>
<td>• Changing area</td>
</tr>
<tr>
<td></td>
<td>• Lockers for children's personal items (backpacks, extra clothes)</td>
<td>•</td>
</tr>
</tbody>
</table>

| **ENTRANCE**              | **SQUARE FOOTAGE** | **SQUARE FOOTAGE** |
|                           | **240 SQ. FT.**  | **550 SQ. FT.** |
| **USERS**                 | **Children** | **Employers and children** |
| **QUANTITY OF PEOPLE WITHIN THE SPACE** | **0 - 10** | **0 - 10** |
| **OCCUPANCY FUNCTION OF SPACE** | **N/A** | **Sleeping area** |
| **OCCUPANCY**             | **N/A** | **4 people** |
| **LIGHTING**              | **LED can lights** | **High usage of natural sunlight when possible** |
| **THERMAL**               | **Between 68 - 72 degrees (F)** | **Between 68 - 72 degrees (F)** |
| **MATERIAL CHARACTERISTICS** | **Natural material products used within sleeping arrangements - limited need for cleanable surfaces as only beds will be used** | **TBD** |
| **FFE**                   | • Cribs, small beds | •  |
|                           | • Changing area | •  |
### SPATIAL PROGRAMMING NEEDS

<table>
<thead>
<tr>
<th>COMMUNITY PLAY SPACE</th>
<th>LIBRARY</th>
<th>LUNCH ROOM</th>
<th>KITCHEN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SQUARE FOOTAGE</strong></td>
<td>500 SQ. FT.</td>
<td>400 SQ. FT.</td>
<td>100 SQ. FT.</td>
</tr>
<tr>
<td><strong>USERS</strong></td>
<td>Employees and children</td>
<td>Employees and children</td>
<td>Employees</td>
</tr>
<tr>
<td><strong>QUANTITY OF PEOPLE WITHIN THE SPACE</strong></td>
<td>0 - 40</td>
<td>0 - 15</td>
<td>0 - 5</td>
</tr>
<tr>
<td><strong>OCCUPANCY FUNCTION OF SPACE</strong></td>
<td>Educational</td>
<td>Educational</td>
<td>Educational</td>
</tr>
<tr>
<td><strong>OCCUPANCY</strong></td>
<td>25 people</td>
<td>4 people</td>
<td>5 people</td>
</tr>
<tr>
<td><strong>LIGHTING</strong></td>
<td>Large consideration of natural sunlight if possible (promotes health and well-being)</td>
<td>TBD</td>
<td>TBD</td>
</tr>
<tr>
<td><strong>THERMAL</strong></td>
<td>Between 68 - 72 degrees (F)</td>
<td>Between 68 - 72 degrees (F)</td>
<td>Between 68 - 72 degrees (F)</td>
</tr>
<tr>
<td><strong>MATERIAL CHARACTERISTICS</strong></td>
<td>Highly sanitizable materials for easy cleanability (ensures healthy child environment), comfortable and soft in order to prevent injuries at play</td>
<td>Highly cleanable and durable</td>
<td>Highly cleanable and durable</td>
</tr>
<tr>
<td><strong>FFE</strong></td>
<td>Interactive group play objects - soft climbing items</td>
<td>Lunch tables</td>
<td>Microwave</td>
</tr>
<tr>
<td></td>
<td>Tables/chairs</td>
<td>Space for food heat up, “hot lunch” opportunities via center</td>
<td>Large fridge</td>
</tr>
</tbody>
</table>

---

**Interactive group play objects - soft climbing items**

- Book shelves
- Tables/chairs
- Flexible arrangement of seating arrangements (space for children to gather as a class group)

**Lunch tables**

- Space for food heat up, “hot lunch” opportunities via center

**Microwave**

- Large fridge
- Countertop space
### SPATIAL PROGRAMMING NEEDS

#### PRIVATE RESTROOM

<table>
<thead>
<tr>
<th>Square Footage</th>
<th>50 SQ. FT.</th>
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<tbody>
<tr>
<td>Users</td>
<td>Employees</td>
</tr>
<tr>
<td>Quantity of People Within the Space</td>
<td>0 - 1</td>
</tr>
<tr>
<td>Occupancy Function of Space</td>
<td>Assembly without fixed seating - unconcentrated</td>
</tr>
<tr>
<td>Occupancy</td>
<td>3 people</td>
</tr>
<tr>
<td>Lighting</td>
<td>TBD</td>
</tr>
<tr>
<td>Thermal</td>
<td>Between 68 - 72 degrees (F)</td>
</tr>
<tr>
<td>Material Characteristics</td>
<td>Highly cleanable and durable</td>
</tr>
</tbody>
</table>
| FFE | • Stalls (per codes)  
  • Sinks  |

#### EMPLOYEE LOUNGE

<table>
<thead>
<tr>
<th>Square Footage</th>
<th>200 SQ. FT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Users</td>
<td>Employees</td>
</tr>
<tr>
<td>Quantity of People Within the Space</td>
<td>0 - 10</td>
</tr>
<tr>
<td>Occupancy Function of Space</td>
<td>Assembly without fixed seating - unconcentrated</td>
</tr>
<tr>
<td>Occupancy</td>
<td>13 people</td>
</tr>
<tr>
<td>Lighting</td>
<td>TBD</td>
</tr>
<tr>
<td>Thermal</td>
<td>Between 68 - 72 degrees (F)</td>
</tr>
<tr>
<td>Material Characteristics</td>
<td>Highly cleanable and durable</td>
</tr>
</tbody>
</table>
| FFE | • Tables  
  • Misc. seating options  
  • Lockers for personal items  |

#### CHILD MEETING ROOM

<table>
<thead>
<tr>
<th>Square Footage</th>
<th>100 SQ. FT.</th>
</tr>
</thead>
</table>
| Users          | Children and employee  
  • Children  
  • Employee  |
| Quantity of People Within the Space | 0 - 3 |
| Occupancy Function of Space | Assembly without fixed seating - unconcentrated |
| Occupancy | 5 people |
| Lighting | Soft |
| Thermal | Between 68 - 72 degrees (F) |
| Material Characteristics | Highly cleanable and durable |
| FFE | • Tables  
  • Chairs  
  • Whiteboard  |

#### PRIVATE PLAY SPACE (5, one per classroom)

<table>
<thead>
<tr>
<th>Square Footage</th>
<th>50 SQ. FT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Users</td>
<td>Children</td>
</tr>
<tr>
<td>Quantity of People Within the Space</td>
<td>0 - 2</td>
</tr>
<tr>
<td>Occupancy Function of Space</td>
<td>Educational</td>
</tr>
<tr>
<td>Occupancy</td>
<td>2 people</td>
</tr>
<tr>
<td>Lighting</td>
<td>TBD</td>
</tr>
<tr>
<td>Thermal</td>
<td>Between 68 - 72 degrees (F)</td>
</tr>
<tr>
<td>Material Characteristics</td>
<td>Highly cleanable and durable</td>
</tr>
</tbody>
</table>
| FFE | • Desk  
  • Soft toys, distractive devices  |
SPATIAL PROGRAMMING NEEDS

CAREGIVER MEETING ROOM

SQUARE FOOTAGE
100 SQ. FT.

USERS
Caregivers and employees

QUANTITY OF PEOPLE WITHIN THE SPACE
0 - 4

OCCUPANCY FUNCTION OF SPACE
Assembly without fixed seating - unconcentrated

OCCUPANCY
5 people

LIGHTING
Natural lighting, acoustic pendant

THERMAL
Between 68 - 72 degrees (F)

MATERIALS CHARACTERISTICS
Highly cleanable and durable

FFE
• Table/desk
• Computer monitor with display screen
• Comfortable seating (4 chairs)
• Whiteboard

MEZZANINE LOOK-OUT

SQUARE FOOTAGE
1/3 portion of main floor level - to overlook the central common area

USERS
Employees and caregivers

QUANTITY OF PEOPLE WITHIN THE SPACE
0 - 10

OCCUPANCY FUNCTION OF SPACE
N/A

OCCUPANCY
N/A

LIGHTING
TBD

THERMAL
Between 68 - 72 degrees (F)

MATERIALS CHARACTERISTICS
Highly cleanable and durable, soft materials

FFE
• Lounge seating
• Limited toys/activities for children
• Informal lounge seating
• Drinking fountain

OUTDOOR PLAY

SQUARE FOOTAGE
TBD based upon site location

USERS
Children and employees

QUANTITY OF PEOPLE WITHIN THE SPACE
0 - 30

OCCUPANCY FUNCTION OF SPACE
N/A

OCCUPANCY
TBD

LIGHTING
Uncontrollable - may have use of covering to minimize sunlight exposure

THERMAL
Uncontrollable - thermal will depend per season/day

MATERIAL CHARACTERISTICS
Rubber tiles for cushioned play spaces, natural woods, cement

FFE
• Playground
• Walking track
• Picnic tables

FRONT CHILD DROP-OFF

SQUARE FOOTAGE
TBD based upon site location

USERS
All users - caregivers, employees and children

QUANTITY OF PEOPLE WITHIN THE SPACE
0 - 30

OCCUPANCY FUNCTION OF SPACE
N/A

OCCUPANCY
TBD

LIGHTING
Uncontrollable - may have use of covering to minimize sunlight exposure

THERMAL
Uncontrollable - thermal will depend per season/day

MATERIAL CHARACTERISTICS
Cement

FFE
• Benches
Children Employee Caretaker

PROGRAMMING KEY

FIGURE 25.0 ADJACENCY DIAGRAM

CLASSROOMS (5) 576 SQ. FT.
SLEEPING ROOM (1) 576 SQ. FT.
PRIVATE PLAY ROOMS (5) 50 SQ. FT.
MEETING ROOM (1) 144 SQ. FT.
LIBRARY 576 SQ. FT.
LUNCH ROOM 400 SQ. FT.
OUTDOOR PLAY 1,000 SQ. FT.

FIGURE 26.0 BUBBLE DIAGRAMS

CHILDREN EMPLOYEE CARETAKERS

CHILDREN

EMPLOYEE

CARETAKERS

FIGURE 26.0 BUBBLE DIAGRAMS
Within the children’s center there will be a majority of spaces that children, employees, and caretakers will occupy together. It has been taken into consideration that these are not spaces where caretakers will always consume, but are open in case of the need. An example of this could be a caretaker coming to pick their child up at the end of the day and then needing to be grabbed from the private sleeping room.

The only private spaces that will not be available to caretakers and children are the employee only spaces. As labeled, these spaces are the employee lounge, the restroom only provided for them, and the kitchen as it will hold valuables and hazardous items that are not for children’s reach.
**DESIGN DEVELOPMENT PROCESS**

**Design Methodology**

- Utilizing foam core plans for model
- Identifying processes of reviewing core models
- Developing preliminary common play space plans

**Design Response**

- Schedule meeting times with professionals for model iterations
- Meet with previous case study professionals

**Week 1**

- Design Methodology
- Build foam core model
- Create 2 preliminary floor plans for model
- Establish process of reviewing foam core model

**Week 2**

- Create preliminary common play space plan(s)
- Establish design visual style
- Decipher key views within project

**Weeks 3-4**

- Design Response
- Schedule meeting times with professionals for model iterations
- Meet with previous case study professionals

**Week 5**

- Preliminary floor plan based off of model iterations
- Common play space final plan

**Weeks 6-7**

- Preliminary Finish Plan & Finish Materials
- Preliminary Furniture Plan & Furniture Selection
- Preliminary Reflected Ceiling Plan

**Week 8**

- Rendered Floor Plan
- Interior Elevations/Sections/Perspectives taken

**Week 9**

- Presentation Graphics
- Order Finish Materials for final boards
- Create final poster layouts
- Print out posters and gather any other materials necessary

**Week 10**

- Final Presentation
- Final booklet and boards

**Week 11**

- Gantt Chart Schedule

**Utilizing a scheduled gantt chart helps provide clear guidance on the remaining design development processes and requirements needed at each stage. By defining the need and developmental needs per the remainder of time, it helps navigate when certain items are needed in order to move forward without getting off track or behind. An example of this need can be seen by self-set requirement of having a finalized floor plan by February 26, but in order to achieve that goal, boundaries had to be recognized for when it is necessary to reach out to the professionals reviewing the foam core model to set a meeting time and to physically meet in person to make these plan iterations together. Developing the development process to achieve a present methodology is necessary to achieve a well thought out design response.**

**FIGURE 28.0 GANTT CHART**

**INTERNAL DIALOGUE**

1. Provide a nurturing space that promotes effective developmental milestone growth and wellbeing.
2. Integrating effects of lighting on children - natural sunlight where it is necessary and most efficient.
3. Sense of security mentally and physically - allowing children to feel secure by creating a plan that promotes this.
4. Integrating project outcomes and key design features: (01) Provide a nurturing space that promotes effective developmental milestone growth and wellbeing. (02) Integrating effects of lighting on children - natural sunlight where it is necessary and most efficient.

**PUBLIC FEEDBACK**

- Feedback meetings with professionals gathered from past precedent studies will be coordinated in order to develop a floor plan best supporting children experiencing/have experienced trauma.

- Finalized floor plan to be created based off of iterations and conversations held with professionals keeping in mind key research insights. By receiving floor plan perspectives and developing different iterations, it creates a developed plan that will be most successful in supporting the needs of children, enhances the users experience and encourages positive developmental milestone growth and wellbeing.

This evaluation process is an important aspect of the design development process in order to identify key spaces and to prioritize children experiencing/have experienced trauma needs when occupying a space. Incorporating users well-being and their day-in-the-life diagrams, given a thought out and well researched plan will help children succeed and heal in within this space.

The help and insight of professionals are those who are experienced with this form of children will greater my knowledge and understanding of how they circulate through space and what their differing needs are. From past research, I have created a base of how children experiencing trauma may differ in milestones and what mental and physical needs should be met on a per age, but that does not identify the differences in each or in the level of trauma they have experienced and how it effects their built environment. From the physical model and meetings, a successful and encouraging finalized plan will be developed.

**MEETING(S) SCHEDULED**

**WHO**

- Teresa Payne

**WHEN**

- March 29th @ 11:30am

**WHERE**

- Milestones Early Learning Center
The white foam core model represents the pre-existing exterior walls of the building that this space will be occupying. Each coordinated cube below represents different spaces and their square footages found within research and the color coordination coordinates with what users will occupy each space. This model will allow professionals to pick up each cube space and move them around until a finalized floor plan is confirmed.
PRELIMINARY FLOOR PLAN - OPTION A

This preliminary floor plan will be brought to the scheduled meetings with professionals as a base starting point for conversations and movement of the spaces.

PROGRAMMING KEY

- Children
- Employee
- Caretaker

FIGURE 31.0 PRELIMINARY FLOOR PLAN A BUBBLE DIAGRAM

FIGURE 32.0 PRELIMINARY FLOOR PLAN A BLOCKING DIAGRAM
This preliminary floor plan will be brought to the scheduled meetings with professionals as a base starting point for conversations and movement of the spaces.

FIGURE 33.0 PRELIMINARY FLOOR PLAN B BUBBLE DIAGRAM

FIGURE 34.0 PRELIMINARY FLOOR PLAN C BUBBLE DIAGRAM
MEETING NOTES

SPACE ARRANGEMENTS CHANGES

• Take away sleeping area
  - Children will have separate sleeping arrangements (cots) available in each classroom
  - If you have one sleeping area, the licensure provision requirements (ratio of children allowed in square footage and employee to child ratio change)

• Take away lunch room
  - Each classroom will have a designated grouping of tables for children to eat at throughout the day
  - Unless creating a lunch room large enough and not minding the ratio change of employees to children because of all age groups combining together at once, it also has to be considered that if on separate schedules children all take separate times to eat (one year old - 2 year old - 45 minutes, 3 - 5 year old - 30 minutes). The lunch room would have to be "open" for about three hours when separating eating times per age group.

• Consider mechanical rooms (kilostones has two throughout their building) as well as storage in each classroom, extra room and in employee only spaces
  - Take away library
    - Reading area/books will be within each room that kids can take advantage of
    - Consider creating this space to be an additional gymnasium for kids
    - In this space it allows for another classroom to get out of their "normal" class as a break if the community play space is already overpowered with other classes and also serves as an alternative space during recess outdoor time during bad weather. In this time throughout the day, children would use the gym as their recess space.
    - In the gym at Milestone, they had closets holding hula hoops, jump ropes, etc. but had toys out in the space full-time.

• Take away one of the meeting rooms
  - Typically throughout the day there won’t be so many meetings that schedules overlap that would result in needing multiple meeting spaces.
For my meeting on Friday March 24, at 11:30am, I visited my case study location Milestone’s Early Learning Center and met with assistant program director, Teresa. During this meeting I brought my 3D model, a printed updated packet to start the conversation by looking at my preliminary plans and prototypes. I explained my process and spaces, and explained that my end goal was to create a finalized floor plan by collaborating in a conversation about each space. Seen in the last page are notes indicating what spaces she told me that were not necessary and she also introduced me to the Michigan licensing book that has rules for many considerations I was seeking answers for. During my time in her office, we began with identifying top spaces (we began with the employee lounge) and moving forward from there with each space.

At the end of the meeting after we moved around the spaces for an hour, we landed on the finalized floor plan shown on the right. Some of the previous spaces have been crossed out and labeled as the new space.
CHILD CARE LICENSING BUREAU FOR MICHIGAN REGULATIONS

The following requirements come from the Department of Licensing and Regulatory Affairs Child Care Licensing Bureau for Michigan. In my meeting I received the printed packet where Teresa educated me on changes in square footages for spaces and requirements for ratios as well as provided activities per each space.

PLAY EQUIPMENT AND MATERIALS

If 4-5 H 5-6 labour space; play equipment and materials.

RATIO AND CLASS SIZE REQUIREMENTS

<table>
<thead>
<tr>
<th>RATIO</th>
<th>CHILD-CARE STAFF Number to ChildRation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 4</td>
<td>8-10 years old, birth and up: 15</td>
</tr>
<tr>
<td>1 to 6</td>
<td>9-11 years old, birth and up: 15</td>
</tr>
<tr>
<td>1 to 8</td>
<td>12-14 years old, birth and up: 15</td>
</tr>
<tr>
<td>1 to 10</td>
<td>15-20 years old, birth and up: 15</td>
</tr>
<tr>
<td>1 to 12</td>
<td>21-24 years old, birth and up: 15</td>
</tr>
</tbody>
</table>

ACTIVITIES REQUIRED IN SPACES

<table>
<thead>
<tr>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music and movement</td>
</tr>
<tr>
<td>Sensory exploration</td>
</tr>
<tr>
<td>Social interaction and dramatic play</td>
</tr>
<tr>
<td>Discovery and investigation</td>
</tr>
<tr>
<td>Early math and science experiences</td>
</tr>
<tr>
<td>Creative expression through art, music, and literature</td>
</tr>
</tbody>
</table>

ACTIVITIES AND PLAY EQUIPMENT EXAMPLES

- Music and movement - section with music items
- Sensory tables - incorporate discovery, exploration, math and science
- Sensory stimulation - mirrors, small objects/puzzles
- Receptive and afford space
- Kitchen
- Storage area and chairs
- Dramatic play - dolls, dress up, play kitchen
DESIGN PROTOTYPING

The common area play space, adjacent to classrooms, the children’s restroom and available from the library, is an important overarching space where all users will interact, socialize and play together. The common play space will support activities that stimulate the developmental milestones, social interactions between children and have space for physical activities. The two iterations represent developmental opportunities within the space. Iteration one allows children to have outdoor exploration experiences directly with doors to the exterior, quiet time at the reading benches or doing art at the bins. Iteration two promotes children gathering available toys to execute their own experiences throughout the space at floor areas, in small nooks, or at tables. Both spaces encourage children to interact together in play and conversations.

ITERATION SPACE KEY
1. Baby play pen
2. Table play surface
3. Reading nooks
4. Employee storage with sink
5. Art tiles
6. Exterior door
7. Whiteboard art space
8. Toys/activities
9. Employee/caregiver seating space while child plays

ITERATION 1

ITERATION 2

FIGURE 38.0 COMMON AREA PLAY SPACE PLAN ITERATIONS

Wireframe representation using as a style in the sketchup model demonstrates what the room looks like in a black and white perspective. In this style, it is hard to tell hard from soft materials from one another. Without switching to a different style or realistically representing the perspective, from a distance this sketchup model shows solid colors and distinct materials on the surrounding surfaces. Although it makes the perspective more realistic, it does not distribute a fully immersive visual experience of the space to represent space objectives.

The design representation process began by taking two floor plan iterations seen on page 58 and one perspective from each. The perspective from each iteration was put into three different visual explorations to depict the differences in views between the different stylization options.

ITERATION 1

ITERATION 2

FIGURE 39.0 DESIGN REPRESENTATION ITERATIONS

The enscape perspective represents the added in materials and objects within the space. Also within this rendering natural daylight is carried throughout, making it easier to recognize what different times of day may be like for users. Additional people added allow for visual reference of circulation within the space.

Wireframe representation using as a style in the sketchup model demonstration what the room looks like in a black and white perspective. In this style, it is hard to tell hard from soft materials from one another.
DESIGN REPRESENTATION FUNCTIONS

Using two different design representations for the same space allows for two functions to be focused on at an identical time. By highlighting prior usage of research in design and providing greater explanation for the solutions represented in plan and perspective view, it acknowledges cognitive and visual understanding for viewers. Both design representations give a greater perception of what the end goal of each perspective is communicating.

Furniture arrangements that encourage children to socialize together.

Activities that support children to explore and imagine on their own.

Way-finding to provide users with easy navigation to the outdoor play area.

Toys that promote developmental milestone growth.

Personal arrangements for children to engage in quiet time as needed.

Implementation of durable and sanitizable materials for proper and easy care.

Incorporation of natural daylight to enhance healing and foster positive behaviors.

Soft materials to contribute a safe environment for children to play and socialize in.

Neutral colors used within space to avoid over-stimulation in children.

FIGURE 40.0 WIREFRAME REPRESENTATION DETAILS

FIGURE 41.0 ENSCAPE REPRESENTATION DETAILS

The wireframe representation allows viewers to interpret design considerations and solutions as a whole, disregarding the design characteristics perceived through the enscape rendering.

The enscape rendering provides emotional quality in how the space will be perceived from different users' points of view, greater enhancement of materials used on hard surfaces as well as the types of lighting.
Classrooms designed for children between the ages of three to five years old

Individual tables allow scheduled group teaching times as well as spaces for individual child play. Open spaces enhance children’s ability to explore classroom toys and activities on their own or within a group. Iterating and thinking of different ideas about whether a teacher’s desk should be within the space or if additional storage can recover the space that a teachers desk would use.

Classrooms designed for children between the ages of one to two years old

These spaces should encourage children to lean on the developmental milestones and relies on open space for children who begin walking or crawling, have activities that enhance their ability to explore on their own as a learning curve, and have necessities such as minimal cribs and soothing rockers where employees can help a child one on one comfortably. Also included in these iterations is a child table that acts as high chairs to support each child - at this space employees can lead children in group activities that support them.
ENTRANCE DESIGN PROTOTYPES

FIGURE 44 ENTRANCE DESIGN PROTOTYPES

EMPLOYEE LOUNGE DESIGN PROTOTYPES

FIGURE 45 EMPLOYEE LOUNGE DESIGN PROTOTYPES
During my meeting time with professional Teresa Payne creating a finalized floor plan, I also gained insight and asked questions regarding different floor plan iterations and necessities for different age groups per space. I also was able to walk through different age group classrooms to visually see the differences in classroom styles and types depending on the age. In the red ink are notes taken during this meeting that better challenge me to create a successful floor plan for the space as a whole and separately by space.
Children centers in Michigan are required per the licensing rules of the bureau of community and health centers to maintain access to equipment and materials in specific outlined areas below.

**Reading Space**
Creative exploration experiences through literature.

**Manipulative Toys**
Discovery, exploration, early math, science experiences.

**Dramatic Play**
Incorporation of experiential activities that encourage children to take on roles and explore their surroundings.

**Art Exploration**
Assists developmental milestone supporting motor skills, language skills and multi-sensory skills.

**Music and Movement**
Enabling children to learn new words and concepts through activities such as singing songs and creating sounds.

**Sensory Exploration**
Implemented tables to provide opportunities for children to explore senses and develop sensory pathways.

**Final Floor Plan**

**Final Blocking Plan**

**Key**
- Child
- Employee
- Caregiver

**Figure 48.0** Final Blocking Plan with Users

**Figure 49.0** Final Floor Plan

**Figure 49.1** Children Experiences in Plan
INTEGRATED TRAUMA-INFORMED DESIGN PRINCIPALS

FIGURE 50.0 1 YEAR ROOM RENDERING

Implementation of dramatic play experiences

Soft materials to contribute a safe environment for children to play and socialize

FIGURE 51.0 1 YEAR ROOM WIREFRAME

Manipulative toys throughout that positively encourages developmental milestones through discovery and exploration

Opportunities for children to feel safe, trusted and like they have a voice

Interactive seating to encourage positive relationships among children and employees

Implementation of durable and sanitizable materials

Soft materials to contribute a safe environment for children to play and socialize

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INTEGRATED TRAUMA-INFORMED DESIGN PRINCIPALS

- Incorporation of dramatic play to assist children in collaborative play and experiences
- Adaptive furniture layouts to ensure clear sight line and foster nurturing relationships
- Implementing creative experiences to encourage kids to explore and discover on their own
- Sensory tables to promote sensory stimulation and developmental milestones

Implementation of durable and sanitizable materials
Soft materials to contribute a safe environment for children to play and socialize

FIGURE 52.0 5 YEAR ROOM RENDERING
FIGURE 53.0 5 YEAR ROOM WIREFRAME
INTEGRATED TRAUMA-INFORMED DESIGN PRINCIPALS

Common Play Space

- Lightly hued colors to avoid over-stimulation
- Incorporation of natural daylight to enhance healing and foster positive behavior
- Creative experiences that support children to explore and imagine
- Acoustical support to avoid loud noises and over-stimulation
- Furniture arrangements that promote positive relationships between children and employees
- Clear sightlines and minimal room barriers
- Implemented social interaction and dramatic play
- Incorporation of natural daylight to enhance healing and foster positive behavior
The one year room will be occupied by the caretaker users and children one years old, before turning two. The maximum amount of children within this space is set at twelve per the square footage with one caretaker per four children (three total at a time in the room).

Integrated within this space is a reading space with a rocking chair that can be used by the caretakers to either soothe a child or read to multiple children. A portion of my visit and meeting with the professional was reviewing floor plan iterations. From this I gathered more knowledge on base needs for each child’s age specifically the need for a changing station for one year olds, storage where extra clothing and diapers can remain and adding in a sink per child height so that children have access without putting the daily strain on the caretakers to lift the children.

The five year room will be occupied by the caretaker users and children five years old, before being eligible for kindergarten. The maximum amount of children within this space is set at twenty-two per the square footage with one caretaker per 12 children (two total at a time in the room).

Integrated within this space is a personal art area where children can paint or use markers to explore their imagination, sensory tables, manipulative play, art corner and dramatic play (kitchen, building table, baby dolls). A key part of my research through an interview with a precedent study was the “private play space” located in the southwest corner of the classroom. This space is for children to go to when they are having a challenging day mentally or just need alone time. Provided within this space is soft seating, small toys and squish animals.
The employee lounge has personal storage where employees will be able to place bags, coats, shoes, etc. as well as a kitchenette (large commercial fridge near the front entrance in the kitchen used for children’s personal meals), small seating area, coffee bar and a printer for classroom needs. This private space for employees only is located in the back of the building, creating privacy from the public and the children. The space contains a large table that provides all employees the opportunity to gather together for meetings as a group and to have a quiet space for personal time necessary throughout the day.

The corridor is one of the essential spaces that all user groups will access daily. It is where users enter from and access all classrooms, the restroom and center play area. Within this space there are lockers outside of each classroom for children’s personal belongings; the intention of creating a half wall between the corridor was to have the separation between the classrooms while maintaining a clear sight line for users and open the space for natural lighting.

Previously reviewed in the trauma-informed design principals, the common play space area is open in the corridor between classrooms as well as to the outdoor play space. The inspiration and guidance for this space came from wanting to provide children additional spaces, other than their classrooms, where they could explore and strengthen their developmental milestones. At different times of day, children of all age groups will fill this space together. Experiences and education provided in this space are within the wall-mounted coloring, dramatic play, manipulative toys, and seating spaces. Additionally, having most of the space lit from natural lighting and acoustic panels for sound control within the corridor was an important part of my research integrated.

The main entrance greets users and visitors as they walk in and implement the usage of natural and lightly hued materials. At the front desk, an employee will maintain upkeep of who is coming into the building (extra security for the children and who can access them) as well as help with general information. Within this space there is seating for roughly six people, as most of the time people will be sitting and waiting because they will be dropping/picking up children or coming in for a meeting. Provided adjacent to the seating are children toys to occupy any user group who is within the space. Along with seating, there is caretaker access down the corridor to a public restroom and the meeting room.

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In order to alleviate the profound impacts and promote developmental milestones within children experiencing/have experienced trauma, critical development of programming and space design supports children’s mental and physical growth as they heal. Based on research, trauma-informed design integrates principles that promote how the built environment enhances the ways in which children experiencing trauma can heal outside of therapy and counseling. Providing children experiencing/have experienced trauma throughout their critical developmental stages a nurturing space assists in relieving the long-term impacts of trauma later in life. Implementing not only trauma-informed design principals but also licensing rules per state requirements, security for children occupying the space, lighting, thermals and materials create an important role in space design that supports children experiencing trauma. All crucial design considerations may be integrated in different ways depending on a child’s age, form(s) of trauma and the child’s needs.
CHILD CARE LICENSING BUREAU FOR MICHIGAN REGULATIONS CONTINUED

RATIO AND CLASS SIZE REQUIREMENTS

R 400.0057 Ratio and class size requirements.
Rule 41. (1) All licensed child care centers shall be present at all times unless a ratio of three children between the ages of birth and 1 year of age are present. A parent or adult who is not a teacher or who is temporarily substitute for a teacher shall not be excluded from the ratio by his or her presence.
(2) All licensed child care centers shall be present at all times unless a ratio of three children between the ages of birth and 1 year of age are present. A parent or adult who is not a teacher or who is temporarily substitute for a teacher shall not be excluded from the ratio by his or her presence.
(3) All licensed child care centers shall be present at all times unless a ratio of three children between the ages of birth and 1 year of age are present. A parent or adult who is not a teacher or who is temporarily substitute for a teacher shall not be excluded from the ratio by his or her presence.
(4) All licensed child care centers shall be present at all times unless a ratio of three children between the ages of birth and 1 year of age are present. A parent or adult who is not a teacher or who is temporarily substitute for a teacher shall not be excluded from the ratio by his or her presence.
(5) All licensed child care centers shall be present at all times unless a ratio of three children between the ages of birth and 1 year of age are present. A parent or adult who is not a teacher or who is temporarily substitute for a teacher shall not be excluded from the ratio by his or her presence.
(6) All licensed child care centers shall be present at all times unless a ratio of three children between the ages of birth and 1 year of age are present. A parent or adult who is not a teacher or who is temporarily substitute for a teacher shall not be excluded from the ratio by his or her presence.

R 400.00571 Indoor space.
Rule 42. (1) The required square footage of indoor space per child must be at least the following:
   (a) 150 square feet for infants and toddlers.
   (b) 120 square feet for preschool aged children.
   (c) The following indoor space is included in the required square footage:
      (i) Bathrooms.
      (ii) Restrooms and office areas.
      (iii) Storage areas and closets.

R 400.00571 Indoor space.
Rule 43. (1) The required square footage of indoor space per child must be at least the following:
   (a) 150 square feet for infants and toddlers.
   (b) 120 square feet for preschool aged children.
   (c) The following indoor space is included in the required square footage:
      (i) Bathrooms.
      (ii) Restrooms and office areas.
      (iii) Storage areas and closets.

R 400.151 Indoor space.
Rule 44. (1) The required square footage of indoor space per child must be at least the following:
   (a) 150 square feet for infants and toddlers.
   (b) 120 square feet for preschool aged children.
   (c) The following indoor space is included in the required square footage:
      (i) Bathrooms.
      (ii) Restrooms and office areas.
      (iii) Storage areas and closets.

R 400.151 Indoor space.
Rule 45. (1) The required square footage of indoor space per child must be at least the following:
   (a) 150 square feet for infants and toddlers.
   (b) 120 square feet for preschool aged children.
   (c) The following indoor space is included in the required square footage:
      (i) Bathrooms.
      (ii) Restrooms and office areas.
      (iii) Storage areas and closets.

R 400.151 Indoor space.
Rule 46. (1) The required square footage of indoor space per child must be at least the following:
   (a) 150 square feet for infants and toddlers.
   (b) 120 square feet for preschool aged children.
   (c) The following indoor space is included in the required square footage:
      (i) Bathrooms.
      (ii) Restrooms and office areas.
      (iii) Storage areas and closets.

R 400.151 Indoor space.
Rule 47. (1) The required square footage of indoor space per child must be at least the following:
   (a) 150 square feet for infants and toddlers.
   (b) 120 square feet for preschool aged children.
   (c) The following indoor space is included in the required square footage:
      (i) Bathrooms.
      (ii) Restrooms and office areas.
      (iii) Storage areas and closets.

R 400.151 Indoor space.
Rule 48. (1) The required square footage of indoor space per child must be at least the following:
   (a) 150 square feet for infants and toddlers.
   (b) 120 square feet for preschool aged children.
   (c) The following indoor space is included in the required square footage:
      (i) Bathrooms.
      (ii) Restrooms and office areas.
      (iii) Storage areas and closets.

R 400.151 Indoor space.
Rule 49. (1) The required square footage of indoor space per child must be at least the following:
   (a) 150 square feet for infants and toddlers.
   (b) 120 square feet for preschool aged children.
   (c) The following indoor space is included in the required square footage:
      (i) Bathrooms.
      (ii) Restrooms and office areas.
      (iii) Storage areas and closets.

R 400.151 Indoor space.
Rule 50. (1) The required square footage of indoor space per child must be at least the following:
   (a) 150 square feet for infants and toddlers.
   (b) 120 square feet for preschool aged children.
   (c) The following indoor space is included in the required square footage:
      (i) Bathrooms.
      (ii) Restrooms and office areas.
      (iii) Storage areas and closets.

R 400.151 Indoor space.
Rule 51. (1) The required square footage of indoor space per child must be at least the following:
   (a) 150 square feet for infants and toddlers.
   (b) 120 square feet for preschool aged children.
   (c) The following indoor space is included in the required square footage:
      (i) Bathrooms.
      (ii) Restrooms and office areas.
      (iii) Storage areas and closets.

R 400.151 Indoor space.
Rule 52. (1) The required square footage of indoor space per child must be at least the following:
   (a) 150 square feet for infants and toddlers.
   (b) 120 square feet for preschool aged children.
   (c) The following indoor space is included in the required square footage:
      (i) Bathrooms.
      (ii) Restrooms and office areas.
      (iii) Storage areas and closets.
Adjacencies and circulation of different users within the space.
**PROJECT INTRODUCTION - SUMMER CONSIDERATIONS**

**TOPIC**
Children’s trauma and development milestones.

**SUBJECT**
How physical environments can best support child developmental milestones and maintain well-being while facing trauma.

**RESEARCH QUESTIONS**
- What tools best support a child facing trauma?
- How can an interior environment promote positive behavior and better mental health within children?
- How does trauma effect a child’s developmental milestones?
- What is missing within traditional children centers that would help trauma effected children?

**PROJECT INTRODUCTION - SUMMER CONSIDERATIONS**

**Initial idea:**
A space for children ages 2-4 years old that promotes self-growth and socialization. Ideal for children:
- Lacking attention
- Facing trauma
- Physical/Mental health
- Low-income families

**Challenges**
- Narrowing in the impacts trauma has on developmental milestones and the rehab needed post trauma.

**Updated:**
Focusing on traditional daycare centers available to children/families now and what they provide to children who have PTSD from the past/present
- Narrowing the impacts trauma has on developmental milestones and the rehab needed post trauma.

**What are my objectives of this space?**
- Analyze what I wanted this space to be for young children and the meaning behind why.

**What kind of children would this space impact the most?**
- Minimized down list of negative factors that will play impact in a child's life & developmental milestones.

**INTERVIEW FINDINGS**

**QUESTIONS ASKED THROUGH INTERVIEW**

1. In every classroom, there is a designated “safe place.” This area provides children space from others if needed or wanted while sorting through their feelings. Materials such as pillows, squish toys, family pictures, etc are placed in the area. If we know of a trauma before enrollment, we set up meetings with parents to navigate together what will be the best way to support the child.

2. Play therapy is a powerful tool that we recommend to a lot of families. If trauma caused any learning disabilities, we may recommend reaching out to their health care provider to obtain an AAP.

3. We work with Great Start to Quality and KRESA to ensure we are constantly updated our individualized plans with the children.

4. Some children would profit from lower ratios or one-on-one care. Milestones does not provide either as an enrollment option.

5. We provide the parents with daily communication whether it be in-person, email or an app. We hold parent teacher conferences twice annually. We also host many events such as trunk-or-treat, graduation, holiday programs, and other celebrations which include the parents.

**Interview with Teresa Payne - Assistant Director**
RELATED QUESTIONS

Questions that have come up:

• How will children get to this center everyday? Picked up?
• Are parents willing to take their children here knowing it costs money? Will it be free? Will there be bussing systems? How would that be decided on?
• Deciding factor on what kind of kids will be invited to use this space
• How kids interact with each other - would the kids growing up in a responsible home be friendly with the challenged kids/vice-versa
• What kids with different disabilities need in a space? Such as separate rooms
• Survey for families that can answer about if they would want their children in this space/take advantage of these benefits
• What being inclusive to everyone would look like?

Survey Idea:

For parents to provide input on their children

• Going through what would be offered in the space, the motive behind it (why is this space special?), why parents should take advantage of the space

Questions that could be asked in the survey:

• Potential virtual reality 3D space that surveyors could “walk-through” to show them what the space may be like (could even be two separate spaces - one being similar to other early education spaces or daycares now compared to what the ideal space would be
• Could receive feedback on things they like
• Things adults would add/want to see their children use
• How could they see their child moving through space?
• How would feedback come from this? Could I make a virtual reality but have it run similar to a survey where questions can be asked by me to the users and vice versa or would it only be 3D spaces with small amounts of feedback?