Addressing Trauma Through Architecture: Cultivating Well-being For Youth Who Have Experienced Trauma

Megan Itzkowitz

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ADDRESSING TRAUMA THROUGH ARCHITECTURE: CULTIVATING WELL-BEING FOR YOUTH WHO HAVE EXPERIENCED TRAUMA

A Thesis Presented

by

MEGAN ITZKOWITZ

Submitted to the Graduate School of the University of Massachusetts Amherst in fulfillment of the requirements for the degree of

MASTER OF ARCHITECTURE

May 2022

Department of Architecture
ACKNOWLEDGMENTS

Thank you to my family (specifically my dad, sisters, Tim, and Ru), friends, Finley, and cohort for supporting me along the way. Thank you to my thesis advisor Sandy Litchfield for guiding me through this experience and path of discovery.

This thesis is recognizing anyone who has ever had any negative associations with space from trauma- I hope you find a sense of safety and peace.
The aim of this thesis is to create an architectural design for youth that is informed by and in response to current trauma informed healthcare guidelines and research about wellness, with a focus on safety, trustworthiness, and empowerment.

70% of adults in the U.S. have experienced some type of traumatic event at least once in their lives, which stems into a larger risk factor public health group for substance abuse disorders and behavioral health issues (SAHMSA, 2014). “Individual trauma results from an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or life threatening and that has lasting adverse effects on the individual’s functioning and mental, physical, social, emotional, or spiritual well-being” (National Council for Behavioral Health, 2013).

Understanding how trauma can affect humans and applying this information from a human centered approach helps architectural designers create spaces that cultivate well-being. These spaces acknowledge the needs of the user by integrating the knowledge of trauma into its design phase, from beginning to end. As a result, re-traumatization is avoided, and a user-focused space can be created.
This paper will evaluate and combine research about how to care for traumatized patients in the healthcare setting with research about how spaces make us feel, to create a community center with a focus in mental health outreach in Easthampton, MA. This project addresses the idea that design and space do have an influence on healing in various settings.
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CHAPTER 1

INTRODUCTION

Architecture and design operate subtly and subconsciously; they are environmental backdrops acting in unseen, under-noticed, and unappreciated ways. Although often seen as one, good design is not a privilege. Our spaces deserve to be thoughtfully curated to human function since the way our built environment is designed impacts our feelings, moods, preferences, and general well-being. A space can cultivate well-being or push our users toward the opposite end of the spectrum, creating spaces that could lead towards potential feelings of discomfort. The concept of human centric design focuses on creating healthy and beneficial spaces with a specific user in mind.

Some of the most vulnerable and easily influenced people in our society, particularly children, are susceptible to this issue. The aim of this thesis is to create an architectural design for youth that is informed by current healthcare guidelines and research about wellness, with a focus on safety, trustworthiness, and empowerment.

From an economic perspective, wellbeing is particularly relevant because “happy” people are more successful (Petermans & Cain, 2021). Happiness is also reflected in more aspects than expected, like being more social, active, liking themselves more, liking others more, better conflict resolution, healthier bodies, healthier immune systems, higher capacity for constructive thinking, higher capacity for creative thinking, more energetic, more creative, more open-minded, more productive. This supports the idea that increasing societal well-being has public health benefits, beyond just personal and societal (Petermans & Cain, 2021). It also shows an increase in interest in designing for a specific user. Although there is research available on how to address trauma in a
healthcare setting, there is not research on how we can address trauma through design. With the high percentage of humans that have experienced trauma of some sort in their life, it is important to recognize this overlooked research. Furthermore, we must acknowledge communal trauma, and how spaces can influence healing and psychological safety in a way that is inclusive to all types of people and users.

Starting with well-being, I will begin to explain how well-being is currently evaluated. Then, I will move into the book Happy by Design by Ben Channon who breaks down the aspects that contribute to designing for well-being. Next, human centered design and place is talked about. These are two important attributes that address people’s connection to the space, or their potential connection. Moving forward, trauma is broken down and talked about how it is currently being addressed in healthcare settings, and what trauma informed care models are the most efficient. Next are precedent projects that have desirable traits and connections intended to be emulated through my final design. Placemaking is to promote connection and designing for a specific user. Form and site relate to creating a site with intention and through design opportunity, while form is maximizing the site to address the users needs. The adaptive reuse precedents are examples of how to take an old brick building into its current needed use, while still holding on to its intrinsic value. Translucent precedents offer suggestions about how to incorporate the polycarbonate and translucent facades successfully, while addressing the building context. Moving forward into all design decisions, site breaks down the chosen site as well as the general context of Easthampton. There is also a building analysis about the current building in this section. Next, program is explained.
and evaluated. Lastly is my design process, broken down into three separate iterations with their process work.
CHAPTER 2

WELL-BEING

Measurements

In 2011 the UN pushed for measuring non-economic sectors of societal happiness and well-being among countries (Petermans & Cain, 2021). This triggered other national organizations like the Organization for Economic Co-operation and Development (OECD) and the European Union to also start measuring objective and subjective well-being (Petermans & Cain, 2021). Scholars with a wide range of backgrounds and disciplines are developing guidelines that outline how design can contribute to well-being. Most researchers agree that happiness is determined by a combination of genetics and life circumstances (Petermans & Cain, 2021). Intentional activities can play a role in this too, which opens the door for design opportunities. Subjective wellbeing and happiness can be interchangeable in reference to self-reported evaluations on life satisfaction, emotional wellbeing, and psychological wellbeing. Psychological wellbeing refers to personal growth and purpose in life. (Petermans & Cain, 2021). Objective wellbeing refers to external constraints an individual must have to have a quality of life that is being met (Petermans & Cain, 2021). These are the historically measured data sets, including social, economic, cultural, and health measurements (Petermans & Cain, 2021). This set of data does not require having individuals answer specific questions.

Starting in 2012, well-being awareness in a variety of design disciplines started to emerge (Petermans & Cain, 2021). This shift went from designing for objective well-being, to subjective well-being, thinking about what ideas and concepts that already exist could promote this measure of well-being. This shift also focused on considering well-
being earlier in the design process, instead of solely in finishing’s or functioning moments at the end.

Well-being is often categorized as eudemonic and hedonic to refer to what may contribute to the increase of human well-being. The breakdowns of this belief can be seen in the chart below. (Petermans & Cain, CH.2, 2021)

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Authors</th>
<th>Year</th>
<th>Well-being</th>
<th>‘Well-being’ defined and description</th>
<th>‘Well-being’ outcomes</th>
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<tr>
<td>Psychology</td>
<td>Meade</td>
<td>1954</td>
<td>Self-actualization</td>
<td>Achieving one’s full potential, and experiencing purpose and meaning</td>
<td>Fully functioning persons Ought to experience, living in love and movement, knowing when good for them, experiential, free, creative etc.</td>
</tr>
<tr>
<td>Psychology</td>
<td>Rogers</td>
<td>1961</td>
<td>The good life</td>
<td></td>
<td>Retrospective judgement of life</td>
</tr>
<tr>
<td>Psychology</td>
<td>Bradburne</td>
<td>1969</td>
<td>Psychological wellbeing</td>
<td>Perseverance of positive affect over negative affect</td>
<td>Perception of wellbeing as standard of living, health, achieving in life, relationships, safety, community connectedness, future security</td>
</tr>
<tr>
<td>Psychology</td>
<td>Dunn</td>
<td>1984</td>
<td>Life satisfaction</td>
<td>The balance between positive and negative affect</td>
<td></td>
</tr>
<tr>
<td>Economy</td>
<td>Mens-Boer</td>
<td>1991</td>
<td>9 basic fundamental human needs: inclusion, protection, affection, understanding, participation, integration, identity, freedom</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychology</td>
<td>Cameroon</td>
<td>1996</td>
<td>Personal wellbeing</td>
<td>To overcome one’s life satisfactions standard of living, health, achieving in life, relationships, safety, community connectedness, future security</td>
<td></td>
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<tr>
<td>Psychology, Sociology, and psychology</td>
<td>Khanamn &amp; Keys</td>
<td>1999</td>
<td>Happiness</td>
<td>Diagnosis of flourishing, emotional, psychological and positive functioning</td>
<td>Be happy, healthy, capable &amp; engaged</td>
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<td>1999</td>
<td>Flow</td>
<td>Total engagement, being absorbed in something</td>
<td>Mastering</td>
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<td>Csikszentmihalyi</td>
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<td>Flow</td>
<td>10 human capabilities: life, healthy, healthy living, creativity, imagination, and thought, emotions, practical reason, joy, friendship, control over work environment</td>
<td>Mastering</td>
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<td>2002</td>
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*Figure 1: terminology of well-being (Petermans & Cain, CH.2, 2021)*

To fulfill psychological needs in architectural design, Design for Human Flourishing (DfHF) created an enriched program that explicates what the guiding principles of the design process should be, in addition to understanding the users’ psychological needs. (Petermans & Cain, 2021).
DfHF then created a workshop session with a toolkit to support co-designing through knowledgeable contributors, consisting of the following phases:

Phase 1. First insight – download, levels understanding of the key foundations of the DfH: ‘happiness’ and ‘sustainable society characteristics.

Phase 2. Preparation and incubation – let go, opens up participants’ senses and creativity to contemplate new ways of ‘doing things’, specifically, new holistic, sustainable thinking regarding the problem at hand during the session.

Phase 3. Incubation part 2 – presence, gives way to new ideas in the shape of draft design concepts that embed happiness and sustainable society characteristics in an innovative manner. The bespoke DfH tools ‘Recording templates’ and ‘Images cards sets’ support this phase.

Phase 4. Illumination and reflection – let come, focuses on generating design proposals out of the initial concepts in Phase 3. Design proposals evolve and develop into sustainable PSS characterized by their systemic nature; usually including a wide systemic perspective that includes the user’s behavior, user’s
use/experience with the product/service, and their associated contexts of use and routines (e.g., laundry, cooking). The design proposals at this level tend to be service-driven and result in participative experiences in communities that, by their design nature, would trigger happiness. The bespoke DfH ‘Recording templates’ support this phase.

Phase 5. Illumination and reflection part 2 – co-design and co-creation, brings the generation of design ideas to an end. Participants collate ‘incubating ideas’, developing them into one or two full concepts. The multidisciplinary aspect of the participating group continues to enrich and grounds them within viable contexts of everyday life. The bespoke DfH tools ‘Recording templates’ and ‘Idea catalyst web’ support this phase.

Phase 6. Evaluation, focuses on assessing the outcomes of the session after it has finished. Particular attention is given to the evaluation of the design proposal/s against the DfH triggers. This phase is led by the session facilitator. The bespoke DfH ‘Range-scale’ tool supports this phase (Petermans & Cain, CH. 9, 2021).
Figure 4: design for happiness framing, in depth (Petermans & Cain, CH.9, 2021)
Happy by Design

Happy by Design, written by Ben Channon lays out “a Guide to Architecture and Mental Wellbeing” in a digestible format that is easily absorbed by anyone, even those with non-architectural/designer backgrounds. It is broken down into main ideas that promote wellness in space: **light, comfort, control, nature, aesthetics, activity, and psychology**. The purpose and aim of this book are to bring back the idea that architecture and design can facilitate joy and could influence human behavior in positive ways. This also provides examples of nudging people to exercise or making it easier to be tidy by using design tools (Channon, 2018).

**Light**

Natural daylight is important to humans- this is common knowledge. However, the impact that natural light has on our wellbeing is significantly undervalued (Channon, 2018). “Staff in office with no natural daylight have been shown to sleep on average 46 minutes less than their light-receiving counterparts” (Channon, 2018, Ch.1). Daylight also affects our circadian rhythm, which is our internal clock that tells us when to be asleep and when to be awake, making it vital to our functioning.

- “To maximize solar gains, windows should be orientated within 15 degrees of true south

- Aim for an angle of greater than 25 degrees as a rule of thumb for good daylighting

- Vitruvius recommended that maximum room depth should be 4-5 times the height of windows, although modern rules of thumb generally suggest a factor between 2 and 2.5
• Spaces with no natural daylight provide us with no reference to the outside world and can be disorienting and even distressing” (Channon, 2018, Ch. 1).

When addressing artificial light, it is important to consider the variations in types and qualities, as well as the space and space use. For example, Paul Henningsen, a Danish lighting designer, designed glare free lighting with uniform illumination, reducing headaches and improving productivity (Channon, 2018). “Studies suggest that emotions are experienced more intensely under bright, harsh lighting, which can have a negative impact on our moods” (Channon, 2018). In addition, low color temperatures support melatonin being used and created in our bodies, promoting relaxation (Channon, 2018).

Artificial lighting comes in the following ranges:

- Soft Whites (2700-3000k)
- Bright/Cool Whites (3500-4100k)
- Daylight (5000-6500k)

(Channon, 2018)

**Comfort**

Comfort mediates the way our bodies interact with the physical world. It also helps us relax to promote the feelings of safety and calmness, which contribute to wellbeing (Channon, 2018). Touch is a sense that can help ground someone to the present moment, supporting mindfulness and wellbeing (Channon, 2018). Utilizing tactile materials like real wood also creates the same effect (Channon, 2018). Access to quality natural ventilation through different design methods, like stack or cross ventilation, makes a space feel more comfortable and more connected to nature (Channon, 2018). This also helps us consider the idea of noise in space. Soft finishes, heavy curtains, and
carpeting can support the reduction of unnecessary noise in a space (Channon, 2018). Considering the locations of windows and doors to the proximity of where potential external noise could be is crucial.

**Control**

Having a sense of control over one environment gives the user a feeling of autonomy, which can amplify their voice and make them feel like they have a right and purpose to exist in the space they are utilizing.

Psychological studies have shown that if we believe we have more control we feel more content, even if our actual levels of control are unchanged. For example, a recent investigation into stress and commuting discovered that having little control over how you get to work can create a sense of ‘impotence’, which dramatically increases heart rates and the release of cortisol (Channon, 2018, Ch. 3).

Often a desire to “regain control” can be linked to various long-term psychological problems (Channon, 2018). This leads to prioritizing simple to use elements that the user can adjust to suit their own needs, as Aldo Van Eyck and Herman Hertzberger exemplified (Channon, 2018). They designed a feature where stairs can also be seats, offering the user control to adjust their needs with the space allotted. Dimmer switches and operable windows are also good examples of how to implement user control into spaces. Providing a variety of environments for the user to choose from (public and more private environments) allows for users to be in environments that fit their needs. Lastly, allowing for personalization of spaces increases happiness- employees who are allowed to personalize their space are up to 32% more productive (Channon, 2018).

**Nature**

Connection to nature should be a driving factor in designing for well-being.
Spending time in nature has been shown unequivocally to improve our happiness and mental wellbeing, regardless of other factors. It has been proven to reduce stress, improve our memories, and make us kinder and more creative. It is almost impossible to overstate how good nature is for our minds. However, with more than 50% of the world's population now living in cities and this figure set to rise, many of us are losing this vital connection with the outside world. This places a responsibility on designers to incorporate natural elements into buildings and the wider urban environment. Biophilic design has been shown to reduce stress and increase the sense of being “home” (Channon, 2018, Ch. 4).

With people now spending more than 80% of their time inside, it is desirable to bring nature into buildings whenever possible. When it is not possible, even looking at an image of nature, whether it is a photo, painting, etc. can offer similar benefits (Channon, 2018). This is also applicable to interactions with animals; pets have been shown to help those suffering with depression, all case in point referring to the importance of nature (Channon, 2018)

Green roofs are a good solution to offering green views in cities while simultaneously producing cleaner air and mitigating noise (Channon, 2018). Green roofs also offer a sense of grounding which aids in the feeling of safety and protection, making the user feel calmer (Channon, 2018). Roofscapes make up 15-35% of the total land area of most cities, so utilizing this space for green roofs can make a difference- green roofs also improve the insulation of a building, mitigating heat island effects, and increase higher diversity (Channon, 2018). It has been shown that people who live in cities have a more active amygdala, the part of the brain that assesses threat and generates fear. People who live near the ocean have better mental wellbeing than those who don’t. Overall, plant life and green space makes humans calmer, and increases the quality of our environments (Channon, 2018). If utilized correctly, nature can improve happiness, self-confidence,
coordination, and rehabilitation; while group gardening has been shown to combat depression, improve self-esteem, and increase energy (Channon, 2018).

**Aesthetics and Color**

Aesthetics are an important component in evaluating well-being in the built environment. Creating certain proportions with certain colors can be more pleasing than others, like making sure you use color wisely and sparingly to not overwhelm the user (Channon, 2018). Yellow has been shown to stimulate serotonin release in the brain in some studies, likely based off the associations color has in our society (Channon, 2018). Tokyo utilizes blue streetlights with the belief that they reduce crime and suicide by-train-rates (Channon, 2018). Changing the color of medicines has shown to affect their efficacy, concluding that red, orange, and yellow are best for stimulants, and green, blues, and whites are best for tranquilizers (Channon, 2018). Color can create a mood in a room to encourage or even discourage certain behaviors. Yellow is associated with happiness, green and blue are associated with calmness (better suited for spaces for relaxation), with an adequate and intentional usage of color (Channon, 2018). Finally, it is important to balance visual elements and complexity, for a lack of visual variety can lead to boredom and unhappiness, while a building that is too complex and confusing can be distressing for a user. Considering proportions and scale in space is important. Creating easily comprehensible proportions and shapes is more satisfying and feels safer to humans (Channon, 2018). This relates to considering scale of building components to make sense to the use of the space, design, and context.
Activity

Design can also help promote movement, for example, by designing a special staircase that would motivate people to choose the stairs instead. This creates endorphins, promoting wellbeing (Channon, 2018). Another method of promoting activity is designing wider streets to provide safer, vaster pedestrian use. Adding bike lanes would provide similar results, however, 41% of people interviewed said they feared being involved in a bicycle collision, which is one of the highest reasons why people do not take up cycling, even though it reduces the risk of cancer, heart disease, and risk of early death. When streets are well designed for pedestrians and bicyclists, people are encouraged to cycle to commute, increasing access to daily exercise and endorphins (Channon, 2018). People with active lifestyles score higher in wellbeing data than those who are not active (Channon, 2018). Regular cycling can promote relaxation and happiness levels, increase self-esteem, nurture a sense of independence, and reduce traffic and air pollution. It is important to consider connectivity to any type of athletic facility, including bike trail connectivity.

Psychology

It is important to provide order and means for organization for the user to potentially lower stress. Having adequate storage with high ceilings can offer a sense of psychological freedom and improve happiness. Drawers are much more useful than shelves for storage and avoiding clutter problems. Creating a celebratory entrance and creating an open plan encourages connectivity. In addition, creating an atmosphere is also valuable. Lacking a feeling of safety can trigger mental health issues (Channon, 2018).

Jay Appletons 1975 theory of ‘prospect and refuge’ argues that humans have evolved to feel innately safer in spaces that allow us to see without being seen.
This underlines again the importance of privacy in determining our happiness (Channon, 2018, Ch. 7).

This can be interpreted as choosing first floor bedrooms with lower living spaces.

The importance of perceived safety goes beyond getting a good night's rest, however. Maslow’s hierarchy of needs sets out safety as a basic requirement, surpassed only by physiological needs such as food, water and sleep. Without this feeling of safety, Maslow argued, people will feel anxious, tense and unhappy (Channon, 2018, Ch. 7).
CHAPTER 3

HUMAN CENTERED DESIGN AND PLACE

Human Centered Design

The idea and definition of human centered design varies amongst different users and implementers of the process. “Human-centered design is a practice where designers focus on system users’ human needs” (What is human-centered design? N.d.). In this case, human centered design is an iterative process that truly considers any users potential need in the design. It is not only considering it after the fact through finishing’s, which is part of designing for a specific user, but also considering what can be done with the space and how to set the space up for the proper finishing’s as well. This process typically connects the designer with the user at the earliest stage possible to come up with the most well adapted design. In a society where profit, timelines, and finances are all considered ahead of anything else, human centered design is needed to ground projects and designs to truly stick to their values and needs of the space, as well as the quality.

Place

“Sense of place is defined as the meanings of and the attachment to a place held by an individual or community” (Sense of place, 2021). Sense of place adds a personal connection to architecture. The idea of place produces special moments between the user and the space created by a designer. This is what drives a user to want to come back to a specific building, street, city, or moment- to experience the connection they once had with a space; to experience a memory, they created there; to emulate a sense of calm they once experienced and yearn for again. Having a sense of place can create a romanticized
moment, which makes us want to revisit again and again. This is the reason people will often travel to the same place once, twice, or even three times.

Designing architecture without considering these special moments where these connections can be formed is doing a great disservice to the user. This phenomenon is what makes space important and valuable to people. It also offers a sense of predictability, which promotes the user to feel safer in the space. They know they have a moment they can retreat to if they need to. Considering these types of moments when designing can help a place feel more intentional. Without the sense of place, people do not want to occupy or connect with the built environment, which is the opposite of what a designer wants when designing for a user specifically.
CHAPTER 4

TRAUMA

The topic of trauma has received a lot of discourse in fields outside on healthcare, including design. Trauma results from any type of exposure to an event or circumstance which causes a response that includes intense fear, horror, and helplessness (National Council for behavioral Health, 2013). Trauma can have a long-lasting effect on one's functioning and mental, physical, social, emotional, and spiritual well-being (SAMHSA, 2014). This can be directly correlated to a handful of health issues as well as increasing communal trauma. As mentioned in the beginning of this paper, the aim of this thesis is to create an architectural response utilizing the current healthcare informed guidelines and applying them to the use of space, resulting in a building cultivating wellness including safety, trustworthiness, and empowerment.

70% of adults in the US have experienced trauma at least once in their lives—that is 223.4 million people (National Council for behavioral Health, 2013). Trauma is not just found in behavioral health settings, but in a multitude of different sectors. Some examples include people in the juvenile criminal justice system, children and families in the welfare system, young people who bring their trauma into the school systems interfering with their academic success, and in regular primary healthcare people with a history of trauma see an affect in their personal health (SAMHSA, 2014). On top of that, each one of these systems or just public institutions can often be trauma-inducing on their own (SAMHSA, 2014). Trauma is often considered a risk factor in behavioral health and substance abuse disorders (National Council for behavioral Health, 2013). A self-reported history of childhood trauma among youth in secure settings has a rate of 26-92%
(Hogdon, et al., 2013). The variation relates to differing understandings and definitions of trauma.

Trauma is centered around a world view telling them the world is dangerous and unpredictable (Hogdon, et al., 2013). Trauma often stems from sexual, physical, or emotional abuse, but there can also be community-based trauma like accidents, natural disasters, and war, abuse or neglect. Trauma can also result from witnessing any acts of violence, medical interventions, grief and loss, from past cultural events, and can even stem from intergenerational and historical trauma (National Council for behavioral Health, 2013). Physical symptoms, while recoverable, can manifest from trauma and present themselves as:

- general aches (headaches, backaches, stomachaches)
- sudden sweating
- heart palpitations
- change in sleep, appetite, bowel movements
- jumpy/easily startled
- weakened immune system
- low libido
- increased drug or alcohol use
- Overeating
- fear including depression and anxiety
- outbursts of anger/rage, emotional swings
- nightmares and flashbacks replaying the trauma
• isolation and detachment, inability to trust, feeling betrayed, self-blame, survivor guilt, shame, and losing interest in everyday activities (National Council for behavioral Health, 2013). Trauma has also been found to have a direct correlation to physical health conditions like COPD, heart disease, cancer, high blood pressure, and diabetes (National Council for behavioral Health, 2013). Some basic common coping strategies include:

• acknowledging you have been through a traumatic event
• connecting with others
• connecting with others who may have shared a similar or the same trauma
• exercise, relaxing, balanced diet, consistent sleep cycle
• starting new hobbies as a diversion
• avoiding overusing caffeine, sugar, or nicotine
• commit to something personally meaningful/important every day
• creating a routine
• journaling your experience for yourself/others
• formal medical intervention

(National Council for behavioral Health, 2013). Therapeutic interventions are most commonly CBT, EMDR, talk therapy, exposure therapy, and group therapy (National Council for behavioral Health, 2013). Interventions can sometimes even be pet therapy, support groups, and massage therapy (National Council for behavioral Health, 2013).

Post-Traumatic Stress Disorder (PTSD) is a common diagnosis in unison with trauma that is a mental health condition triggered by an event (National Council for
behavioral Health, 2013). Some symptoms of PTSD can be nightmares, severe anxiety, flashbacks, and uncontrollable/obsessive thoughts about the event (National Council for behavioral Health, 2013). 33% of youth that are exposed to community violence experience PTSD (National Council for behavioral Health, 2013). Data regarding PTSD in children revealed the following information: close to all children who witness a sexual assault or parental homicide develop PTSD, 90% of children who experience sexual abuse experience PTSD, 77% of children exposed to a school shooting experience PTSD, and 35% of urban youth exposed to community violence experience PTSD (National Council for behavioral Health, 2013)

![Figure 5: Principles to Trauma Informed Approach (SAMHSA, 2020)](image)

Referring to Figure 5, SAMHSA has produced 6 guiding principles to a trauma-informed approach that can be applied beyond healthcare. Safety, trustworthiness, and empowerment seem to embody all the traits that the 6 principals hold, so these are the 3
principals that will be the focus of this research. SAMHSA goes in depth about how they define these categories.

Safety: Throughout the organization, staff and the people they serve, whether children or adults, feel physically and psychologically safe; the physical setting is safe and interpersonal interactions promote a sense of safety. Understanding safety as defined by those served is a high priority.

Trustworthiness and Transparency: Organizational operations and decisions are conducted with transparency with the goal of building and maintaining trust with clients and family members, among staff, and others involved in the organization.

Empowerment, Voice and Choice: Throughout the organization and among the clients served, individuals’ strengths and experiences are recognized and built upon. The organization fosters a belief in the primacy of the people served, in resilience, and in the ability of individuals, organizations, and communities to heal and promote recovery from trauma. The organization understands that the experience of trauma may be a unifying aspect in the lives of those who run the organization, who provide the services, and/or who come to the organization for assistance and support. As such, operations, workforce development and services are organized to foster empowerment for staff and clients alike. Organizations understand the importance of power differentials and ways in which clients, historically, have been diminished in voice and choice and are often recipients of coercive treatment. Clients are supported in shared decision-making, choice, and goal setting to determine the plan of action they need to heal and move forward. They are supported in cultivating self-advocacy skills. Staff are facilitators of recovery rather than controllers of recovery. Staff are empowered to do their work as well as possible by adequate organizational support. This is a parallel process as staff need to feel safe, as much as people receiving services (SAMHSA, 2014).

In terms of context of this project, interpreting these principals to a sense of design is an important guiding factor of this project. Safety refers to feeling psychologically safe and comfortable in a space, giving the user a sense of purpose in a space can offer comfort in allowing that person to take up space. Safety considers all private and public spaces and understands users will have different preferences towards each, spreading access to these types of spaces consistently and evenly. Creating consistent, sensible floor and site plans gives the user a sense of understanding, making
them feel safe. Paying attention to what areas offer window views and what areas don’t is also important. Lastly, the smaller details like the length and width of hallways and orientation of furniture can affect the feeling of safety.

Creating trust is important for those who have experienced trauma. Safety and trust go hand in hand. Creating the feeling of safety promotes trust for the space as well as the organization. Organizational operations and decisions of the center should be conducted with transparency with the goal of building and maintaining trust with the users of the space and those involved in the organization, as well as community. This creates a more welcoming environment for people with trauma who may be having issues with such.

Empowerment gives those who experience trauma a sense of control back in their life, of having a voice again, as well as having choice. Trauma can be a unifying aspect for all users of this space, including those on the administrative side. Creating an environment that doesn’t offer hierarchy to the administration can make the users of the space feel more empowered and less diminished in voice and choice.
CHAPTER 5

PRECEDES

Placemaking

Cereso Femenil Library
Sourced from ArchDaily (2021), Cereso Femenil Library was designed by Proyecto Reacciona A.C in Escobedo, Mexico. It is 135 meters squared (1453 sf) and was renovated in 2021 as it is an adaptive reuse building. The objective of this space was to create a place for the development of positive activities, on a low budget, without compromising functionality (cite). Originally this structure was an old warehouse. The designers had to consider a way to have multiple activities coinciding in the space at once, which resulted in the different nooks and tables throughout.

This space plays with light, material, and color. The nooks cultivate a feeling of safety, but also choose- there is a multitude of ways to exist and utilize this space to make the user feel like they are supposed to be, and are allowed to be, taking up space here. A moment that someone can identify with is created; the user will remember this specific nook they enjoyed reading in and will come back to this place solely for the nook. The windows carry vast amounts of natural light in, with a white ceiling to make the space feel brighter and more open. Lastly, the yellow color choice should help the user feel safer, happier, and calmer in the space compared to other options that could have been chosen. Cereso Femenil Library inspired the use of color, nooks, and placemaking.
The Gary Comer Youth Center

Figure 8 Gary Comer Youth Center (ArchDaily, 2011)
Figure 9 Gary Comer Youth Center (ArchDaily, 2011)
Figure 10 Gary Comer Youth Center (ArchDaily, 2011)

Figure 11 Gary Comer Youth Center (ArchDaily, 2011)
Figure 12 Gary Comer Youth Center (ArchDaily, 2011)
From ArchDaily (2011), The Gary Comer Youth Center was designed by John Ronan Architects in 2006 as a youth community center for a Southside Chicago neighborhood. It is 75000 ft^2.

The goal of this space is to provide a constructive environment for youth to spend their after-school time, providing support for various community programs. This includes the south shore drill team and performing arts ensemble which is a 300-member dance group for ages 8-18. A main feature of the building is a versatile, adaptable, gymnasium that is the daily practice space for the drill team. This also converts to a 600-seat performance venue through a collapsible seating system, automatic curtains, and stage doors. This is the center of the structure, and all programming feeds off the opening to the area.

The program includes arts and crafts rooms, computer labs, dance rooms, a recording studio, costume design shop, tutoring spaces, study spaces, classrooms, office, and exhibition space. There is also a roof garden which is also an outdoor classroom for the community and supports cooking classes within the building.

This community center was a useful precedent for programming ideas. You can see how the design is directly inspired and created for the specific community. The spaces are multipurpose, but also specific. Spaces like the roof garden offer moments for users to connect with the design in a way that they may be compelled to spend more time in this building solely for that space. This was an inspiration in programming, but also placemaking and human centered design. They analyzed what the community needed and tailored spaces to fulfill these needs. The design also has diverse spaces that all have multiuse and offers connection to nature.
Form + Site

Kindergarten Bambu

Figure 13 Kindergarten Bambu (ArchDaily, 2021)
Figure 16 Kindergarten Bambu (ArchDaily, 2021)

Figure 17 Kindergarten Bambu (ArchDaily, 2021)
From ArchDaily (2021), Kindergarten Bambu is a Kindergarten in Las Condes, Chile designed by architects Gonzalo Mardones Viviani. It is 455 m^2 (4897 ft. sq.). Some guiding design challenges/principals were creating a kindergarten that wouldn’t disturb the neighbors, and where the children wouldn’t get distracted by the surrounding buildings. To solve this, the lot was excavated to partially bury the area for privacy. This also supports making the building structured on the edges of the lot, to allow for more activity in the outdoor space. Laminated pine beams, columns, and walls of distinguished pine slabs make up some of the materials of the building. The geometrical shapes that were chosen were simple shapes that could be easily recognized by children.

Between the form of the structures, the use of light, site use, and materiality choice, Kindergarten Bambu is successfully designed. The way that the building segments are formed inform and create the site, from what was a simple square. The enclosed area creates a sense of safety, while the choice to split the building up into segments provides the user with options, if they want to be in the center of the site in the corridor, or if they want to be between the multiple structures to have some privacy and enjoy a smaller more enclosed building scale, while still being outside. The use of simple forms spread throughout can be calming and grounding for users and emphasizes the programming of the space–kindergartners. The wood on the exterior has low contrast with the ground and site walls, which could be calming with less of a drastic contrast, as well as the natural material (rewrite this this is bad). The interior follows with simple shapes and simplifies, natural wood material throughout. Design moments like the round staircase with a responding circular sky light offer the opportunity for the user to make a connection with the space and want to spend time with these curated architectural
features. Every aspect of this design feels meticulously thought out and intentional. This design was an inspiration to my material choice, prioritizing natural light, placemaking, and utilizing the unique site to its own design advantage.

Grossweikersdorf Community Center

Figure 20 Community Center (ArchDaily, 2021)
Figure 21 (Community Center (ArchDaily, 2021)
Sourced from ArchDaily (2021), a community center in Grossweikersdorf, Austria was created in 2020 by smartvoll architects, at 3701 m$^2$ (3982 ft.$^2$). This center was built with the “donut effect” in mind, which is the idea of drawing away a city center's traffic from having necessary stores on the edges of towns and cities. The building is divided into three sections. The first section is oriented to the main street downtown, near downhall. The second section is the clubhouse, which is intended to be a multi-use space for the community. The last section of the building is a medical center that can support 5 doctors.

The form alone reflects the different programs inside the building. It manages to make maximum use of an awkward, long site. Beyond that, appropriate scale is created using segments to avoid long, huge rooms that may make people compelled to not spend
time in the space. The form also offers an opportunity for great natural lighting in every space. The interior is made up of natural material (wood) and skylights, providing a calming feeling to the space. The natural materials from this precedent were carried through into my design, as well as the interesting interpretation and site solutions.

**Adaptive Re-use**

**The Green Building**

![Figure 23 The Green Building (ArchDaily, 2011)](image)
According to ArchDaily (2011), the green building was renovated in 2008 by (fer)studio architects. The building is in Louisville Kentucky, at 10175 ft^2. This project is a LEED platinum project, as well as an adaptive reuse building. A priority in this design was expressing the importance of sustainability throughout the project. This was amplified by the choice of building; a 115-year-old store. The new version of the building includes mixed commercial use, a galley, event space, offices, conference room, and restaurant space. Analyzing and deciding what parts of the building were its weakest and strongest created the newly developed aspects of the form. The building uses no city water, and only uses storm water cleaned onsite. With 81 solar panels, 1100-gallon ice...
storage system, and geothermal wells, the building saves 30,000 pounds of CO2 each month. This exceeds the current energy code in Kentucky by 65%. Much of the material that could be saved was reused throughout other aspects in the finishing of the building. 100% of the flooring, 70% of the windows, and 80% of the insulation are recycled materials.

The green building office building is a great example of how to integrate new technology and design in adaptive reuse brick buildings. Brick buildings can sometimes feel dark and heavy, but the choice to break up the center of this with a transparent addition off the top offers relief. The inside of the space feels surprisingly warm and calm with the addition of natural wood and exposed columns/beams throughout the interior. Exposed historical brick also adds to this. The quality of light was considered, with every space having sufficient amounts of natural daylight. Concepts inspired from this building included window interventions/extensions in an existing brick building and blending material choices to respond to the original building while keeping the space light and natural.
Hughes Warehouse

Figure 25 Hughes Warehouse (ArchDaily, 2014)

Figure 26 Hughes Warehouse (ArchDaily, 2014)
From ArchDaily (2014), Hughes Warehouse is an adaptive reuse project designed by overland partners in 2012 at 22,800 ft^2. Located in San Antonio, TX this building was formerly Hughes Plumbing Warehouse from 1918. This studio has now become an open and airy designed building being organized for multi-use studio and office space for the company.

Historic photos show what is now the interior courtyard had a dilapidated roof with holes which was used as a design opportunity instead of a problem, allowing for the courtyard to reside where it currently is. Keeping as much of the building as possible was important for this design, which worked out in the quality of the spaces’ favor. Remnants of the original building are shown throughout the building through exposed brick. What was once a huge mass of a building has been thoughtfully utilized, so that each space gets quality natural light. There are also solar shades on appropriate windows to consider the effects the light may have on the spaces. Hughes Warehouse helped inform me of how to make a problem (the dilapidated ceiling) into a solution (the courtyard). It also showed how to blend new and old together in a brick adaptive reuse building.
Translucent

Kit Energy Lab

*Figure 27 Kit Energy Lab (ArchDaily, 2020)*
According to ArchDaily (2020), KIT energy lab is an office building for a university designed by behnisch Architekten in Eggenstein-Leopoldshafen, Germany in 2019. The translucent envelope is made of polycarbonate to allow the view of the wooden construction frame. There are test areas and labs, meeting rooms, and auxiliary rooms. There are also offices and a small staff kitchen.

The enticing moments in this design were the spaces that had a controlled amount of light entering and exiting the façade. The contrast between those moments with the fully transparent standard windows creates an interesting dynamic between public and private, as well as what programming may be included in these separate spaces. Seeing the exposed beams through the façade adds a layer to the translucency, keeping the viewer engaged. The polycarbonate façade with intentionally layered material to control
translucency was carried into my final design. It also showed me that this material could work in a colder climate.

**Headquarter Lasvit**

*Figure 29* Headquarter Lasvit (ArchDaily, 2020)
Figure 30 Headquarter Lasvit (ArchDaily, 2020)
Based on information from ArchDaily (2020), OV-A Architects designed Headquarter Lasvit in NovyBor, Czech Republic in 2019. The façade glazing is by Tgk. The design intent was to marry two traditional early 1800’s buildings with a middle addition that is functional and harmonic. The addition serves as an office café with an archive of design samples on the second floor.

The second façade layer wrapping around the center building is a great example of how to combine modern architecture and technology with traditional, historical buildings as the site context. The center building plays off the form of the neighboring buildings to offer familiarity and consistency, while the change of the façade works as a transition from the dark wood building to the white building on the back side. The translucent façade connects with the original historic buildings in an appropriate form and scale, which was brought into my final design.
CHAPTER 7

SITE

Site Selection

Easthampton, MA is in Hampshire County, MA and connected to the five-college area. Northampton, Amherst, Holyoke, and Springfield are all near this location. It is surrounded by water including the Oxbow, mountains, and hiking trails. The population of the town has been mostly increasing for the past 20 years, showing potential growth and the need for future community spaces and services. When you are driving through Easthampton, you’ll see many old mills, some repurposed and some run down, as well as various bodies of water. Easthampton's public transportation mainly consists of the PVTA. There are two separate bus routes that connect the town to local areas, and there is a van service you can call if these don’t suit users’ needs. There is also the Manhan rail trail which is a walking/bike path, running 6 miles to connect to Southampton and Northampton. The intention is for this trail to eventually meet other trails from Northampton to as far as New Haven CT. The city has a rich industrial past, which you can see today through its adaptive reuse buildings. All these factors contributed toward my choice of Easthampton, MA, and an adaptive reuse project.

The site lies within the bounds of Easthampton, Massachusetts, a small city of about 13.6 square miles. To the north of Easthampton is Northampton, while the east is contained by Holyoke, and the west by Southampton. The south side is shared by Southampton and Holyoke, with Westhampton touching on the northwest corner of Easthampton (Easthampton Reconnaissance Report, 2009). Water contributes to the landscape of the city, with the Oxbow of the Connecticut River along its border, and the
Manhan River crossing through the town from West to East emptying in the Connecticut River (Easthampton Reconnaissance Report, 2009). Mount Tom sits on the eastern border of the city, with watersheds being dammed from entering the Rubber Thread Pond (including Williston Pond), Nashawannuck Pond, and Lower Mill Pond (Easthampton Reconnaissance Report, 2009).

Figure 32 Shows proximity to local towns and proximity to important commodities in Easthampton
Demographics

The city is currently home to 16,211 people as of April 1, 2020 (QuickFacts Easthampton Town City, Massachusetts, N.d.), which is an increase from the 2000 census population of 15,994, showing a trend of increasing population (QuickFacts Easthampton Town City, Massachusetts, N.d.). 15.2% of the 16,211 people are under 18, while 19.1% are over 65, and 51% are female (cite 2020 census). The populations race percentages are broken down as such: 92.3% white, 4.5% Hispanic, 3.5% two or more races, 1.5% Asian, and 1.9% Black (QuickFacts Easthampton Town City, Massachusetts, N.d.). 96.3% are a high school graduate or higher, and 39.1% have a bachelor's degree or higher (QuickFacts Easthampton Town City, Massachusetts, N.d.). The average commute to work is 23.2 minutes, with the median household income being $63,507 (QuickFacts Easthampton Town City, Massachusetts, N.d.). With that being said, 12% of children under 18 experience poverty in Easthampton (American Community Survey 5-year Estimates, 2020).

Geology

14,000 years ago, a continental glacier retreated, creating a notable geographic as well as geological feature called the Barnes Aquifer. The water is supported with sand and gravel deposits that were laid down 15,000 years ago (BAPAC, N.d.). The Barnes Aquifer now supplies water to multiple municipalities in Western Massachusetts, including Westfield, Holyoke, Easthampton, and Southampton.

Moving forward, it is said the first European to settle the lands of current Easthampton happened in 1665 (Easthampton’s Written History, N.d.). Originally, Easthampton was a part of Northampton’s grant, but for the first decade there was no use
for the land we now call Easthampton (Easthampton’s Written History, N.d.). This chunk of land was then given to a small band of Indigenous people to establish a palisaded village in current day Easthampton (Easthampton’s Written History, N.d.).
Figure 33 Aquifer Map (CAPAC, 2014)
History

Easthampton is classified as a heritage landscape. A heritage landscape is described as “a special place created by human interaction with the natural environment that helps define the character of a community and reflect its past. They are dynamic and evolving, reflect the history of a community and provide a sense of place. They show the natural ecology that influenced land use patterns and often have scenic qualities. This wealth of landscapes is central to each community’s character, yet heritage landscapes are vulnerable and ever changing. For this reason, it is important to take the first step toward their preservation by identifying those landscapes that are particularly valued by the community – a favorite local farm, a distinctive neighborhood or mill village, a unique natural feature, or an important river corridor” (Easthampton Reconnaissance Report, 2009).

Easthampton grew with a rich agricultural and manufacturing history, still present in the city to this day. Starting in 1714, homes began popping up in the city and finally in 1785 the first meeting house in Easthampton was constructed (Easthampton Reconnaissance Report, 2009). A large majority of these settlers were farmers in this relatively small town, consisting of about 457 people at this point (Easthampton Reconnaissance Report, 2009).

Samuel Williston quickly became an important part in the fabric of Easthampton. Samuel Williston was the son of the town's first minister, who then moved his button works to Easthampton, starting the beginning of the city's industrial history in 1832 (Easthampton Reconnaissance Report, 2009). At this point, he would hire women to make buttons in their homes (Easthampton Reconnaissance Report, 2009). The industrial
movement was enhanced when the Hampshire Hampden Canal was put through east Hampton in 1835 and enhanced even further when this was replaced by a railroad in 1856 (Easthampton Reconnaissance Report, 2009).

Williston put up his first elastic suspender mill in 1848 called the Nashawannuck Company, placed right next to his button factory (Easthampton Reconnaissance Report, 2009). He then added the Glendale Elastic Web mill and a cotton yarn mill (Easthampton Reconnaissance Report, 2009). The civil war then brought further business to these mills, driving the need for more laborers. The immigrants that came to Easthampton at the time came from Ireland and Germany, settling into workers housing on Pleasant St., Ferry St., and Lovefield St. (Easthampton Reconnaissance Report, 2009). Wealthier community members lived on Main Street and Park Street, with the middle class filling in the gaps (Easthampton Reconnaissance Report, 2009). The styles erected in Easthampton during this time were Italianate, Stick Style, French Second Empire Style, with the town hall built in 1869 being a High Victorian Gothic Building (Ruskinian Gothic) which was designed by Charles Parker (Easthampton Reconnaissance Report, 2009). Immigrants continued to arrive in Easthampton and between 1870 and 1915 French Canadians, Poles, Austrian and English people migrated for industrial work (Easthampton Reconnaissance Report, 2009). Farming was happening simultaneously along the Manhan meadows, as well as on East Street from the Oxbow toward the base of Mount Tom (Easthampton Reconnaissance Report, 2009).

Education landed in the scope of Williston's mind, and he wanted to provide educational opportunities to the working class. Williston School was then created in 1841 (Easthampton’s Written History, N.d.). At this point in time, it was called the Williston
Seminary for boys (Easthampton Reconnaissance Report, 2009). Buildings in Greek and Gothic Revival were constructed to create this campus (Easthampton Reconnaissance Report, 2009). The town continued to move forward in population, education, and industry leading to the building of the Easthampton Library in 1881, designed by Peabody and Stearns in an early Tudor Revival style (Easthampton Reconnaissance Report, 2009). Shortly after this, the first trolley was built in Easthampton in 1895 (cite green). This provided fast, convenient service to Northampton and Holyoke, costing only 5 cents while running every 20 minutes. “It is said that: “Many a pleasant Sunday afternoon was spent riding a packed open trolley car from one end to the other” (Easthampton’s Written History, N.d.).

Industrialization and manufacturing started to decline in America and more specifically Easthampton by the late 19th and early 20th centuries (Easthampton’s Written History, N.d.). Williston lost a grip on his companies, which included the decline of the Williston School. Finally in the 1950’s, Williston's homestead was donated by the family to the school, under the direction of Phillip Stevens (Easthampton’s Written History, N.d.). Stevens relocated the school from the center of town to the Williston family property, using all available endowments, causing the school to struggle through the 50’s and 60’s like the local Northampton School for Girls did as well (Easthampton’s Written History, N.d.). In 1971 Williston, as well as Northampton) followed a boarding school trend, merging to be a co-educational institution on the Williston grounds (Easthampton’s Written History, N.d.). The Williston School then developed into the notable educational institution it is today.
Williston’s Hampton Company finally ended in 1962, United Elastic in 1977, and the Stanley Company in 1995 (Easthampton Reconnaissance Report, 2009). The farming attribute of Easthampton’s identity remained; however, the city has moved forward to become a commuter city, with 75% working elsewhere, and only 25% working in the city (Easthampton Reconnaissance Report, 2009). The main industries are currently the service industry, which employs over half of Easthampton’s residents, and manufacturing with over 30% of residents working in this field at the 34 manufacturing firms in the city (Easthampton Reconnaissance Report, 2009). Easthampton has slowly adopted art as an important component of its economy, which is clearly expressed in the downtown area full of art exhibits and shops. The city has attracted young families who work in the valley due to its schools, housing, new artistic component, and the locality to Northampton and Holyoke.
Figure 34: Collage exploring the history + future of Easthampton, by author
Building and Site Analysis

The site, Center elementary school, is located at 9 School Street. It is currently an active elementary school in a traditional 1903 schoolhouse building. The town of Easthampton is actively in the process of creating a new school to house the multiple dated elementary schools throughout the city, leaving this building to serve a new purpose. Adapting an old building to a new use pays homage to the history of the city while also pulling it forward into time, addressing the change in culture.

This site is located within, and connected to, the downtown district in Easthampton. This includes connectivity to the bike trail, as well as access to bus stops, which is information I found from figure 35 below.
Figure 35 Easthampton PVTA bus route and stops (PVTA, 2021)
The site is currently not being optimized for its use and needs of the space. There is too much parking and pavement with a good amount of dead space distributed throughout the North, East, and South side that isn’t being utilized properly. In addition, the surrounding lots have a large amount of parking that could contribute to any unmet parking needs. The vehicular entrance is fairly narrow due to the existing staircase from the back entrance. There are only two main entrances, and both require stairs. There is one metal emergency staircase on the exterior of the East side from the second to ground floor. The building is currently not accessible.

Issues with the interior of the building can be seen in the floor plan in figure 44. First, the circulation is poor. Stairwells are currently being used as classrooms and offices
due to lack of efficient space. The center corridor is essentially made to be a useless space, it is too wide and houses two required staircases with no source of light besides the doors. There is no variation in spatial quality or scale. The space is clearly not being defined for the current use- or any variations of use- efficiently.
Figure 41 West View

Figure 42 South view
Figure 43 View from Center School showing proximity to the Pepin School
Figure 44 Representation of assumed current floor plan
CHAPTER 8

PROGRAM

When approaching how to think about what type of program a trauma informed architectural approach would contain, I started thinking about the idea of a community center. I wanted this space to be a community asset that people could occupy as they pleased, but that also housed various community programs that support local youth and was a safe space for types of mental health outreach.

To get more insight on what this might look like, I reached out to Big Brother Big Sisters and had an informal interview with someone who supports running the program on a larger scale. After breaking down this conversation, although there aren’t many big brother big sister “buildings”, it was clear there was a need for spaces of gathering of different scales to house this nomadic type of programs that usually operate in parks, malls, etc. This drove my program to consist of, and prioritize, two different types of meeting spaces; one indoor and one outdoor, which can converge into each other when the large sliding doors open up, creating an indoor/outdoor community space when the weather allows.

In addition, the program includes classrooms for any type of learning or community programs that require that necessary setting. This could be something like trauma informed classes for public officials, parents, or anyone interested. There is also a kitchen to serve as a community asset for after-school cooking programs, or any other services needed. There will be group and private meeting spaces for group or private therapy. An arts and craft studio were added to invoke a community program through the arts and connect with the current trajectory of Easthampton. Creating a library allows the
space to be utilized after-school for kids if they need a quiet space to come and do their schoolwork, or somewhere someone can come to find a small escape if needed.

Figure 45 Programming scale smallest to biggest, and current SF
CHAPTER 9

DESIGN PROCESS

Tying the design back into my research, I had a handful of principles I followed. My three guiding principles for this design were safety, trustworthiness, and empowerment. Every design decision was made with these in mind, asking “does this add to the feeling of safety, trust, and empowerment for the user?” I also considered how to design for well-being from my research. I made sure my design considered these values as well: light, comfort, control, nature, aesthetics, activity, psychology, human centered design, and place.

Iteration One

Starting out, a challenge for me was the lack of accessibility the current two staircases in the building provided, along with the half height first floor, calling for a 66’ long ADA ramp. My first iteration of how the site would work didn’t change much and didn’t offer a different experience. I was struggling to connect the addition appropriately with the existing structure, without removing the history of the existing building. The addition was connected to the existing building with a glass wall corridor, and the addition was intended to be a translucent material, inspired by the precedents and the nature of the space, as well as the history of Easthampton. This was not fully fleshed out yet, but the intention was still there.
Figure 46 Iteration one site massing and concept massing
**Iteration Two**

Next, I removed the corridor and tried to blend the addition into the existing building more and created a rear accessible vestibule as the main entrance. This did not address the issue with the front entrance, which should have been the main entrance. This iteration I was able to consider and define interior portions of the building. I started considering the idea of openness and sight lines through the circulation areas of the building. I also introduced an atrium to solve the lack of light in the center of the space, to feel connected and open when you’re on the first or second floor. In this iteration I was still struggling with the point where the addition meets the building.
Figure 48 Iteration 2 floor plans
Final Iteration

My final iteration addressed all the previous site and building issues I had with design, as well as the original issues of the existing building. First, I removed the rear staircase, as I did before, but resolved the issue at a higher level. Removing the staircase provided the opportunity to create and utilize a ramp for the south entrance to become a divider to the site, which allows a separation of events to happen at once without flooding into each other. This also created a small bench by the outdoor event space. The ramp called for raising the left side of the site to have a small slope and differential moment. I chose to hold on to the current uses of the space by still containing a playground and small court, as well as a community garden which I expanded. I redesigned the parking and vehicular flow, considering the proximity of the parking in the surrounding lots, greatly reducing necessary parking on site.

Internally, I created two sight lines down the center of the plan to create an open feeling and allow the user to feel that they can trust the space as they navigate through it. I then broke up the brick faces with two bay window “nook” moments on the south and east sides, to offer spaces of relief from any feelings the occupant may be having. This provides the user with choice and support empowering them to take up as much or as little space as they want. Removing the north staircase provided an opportunity to create a large window and another nook moment that could serve as a small meeting area as well. The space under the new staircase was also claimed as a nook. Next, I considered the low quality of the space that was originally in the center of the building and created an atrium that allows light from the center of the second floor to the center of the first floor, which was not happening previously. I expressed this in previous iterations, but it
came together fully in this last one. The rear entrance has connection to an elevator that runs from the ground to the first and second floor for accessibility, which also houses the second staircase in this area. On the second floor, part of the addition consists of a roof garden to break up how little green was within view before.

The elevations show the proportion and scale of this addition, with its simplistic form playing off the original building. In these views, we have a better sense of the window nooks as well. These sections were done with a perspectival view to offer an additional insight to how these spaces connect as well as their scale. The culmination of this whole project is wrapped up throughout my interior and exterior renderings, through the use of natural light, proportions, variety and choice of space, natural materials, soft textiles, nooks, simple form, and access to green views that the space provides.
Figure 49 Site plan with solar path
Diagrammatic Plans

Diagrams for quickly understanding the connections in the spaces
Figure 51 First floor plan
Figure 52 Second floor plan
Figure 53 East elevation

Figure 54 South elevation
Figure 55 North elevation

Figure 56 West elevation
Figure 57 North to South perspectival section cut
Figure 58 East to West perspectival section cut
Figure 59 View upon arrival to second story
Figure 60 View of atrium and library from second story
Figure 61 View from the first story of the library
Figure 62 View from the second story of the library
Figure 63 View from the inside of the indoor event space, showing the staircase that can act like seating or a stage
Figure 64 Interior rendering expressing finishing’s and what the main lobby looks like
Figure 65 South rendering of exterior, noting doors and the connect-ability of them
Figure 66 South exterior view showing window punch out interventions
Figure 67 North exterior rendering noting translucency and exterior window intervention
CHAPTER 10
CONCLUSION

Overall, the project was successful in its scope and goal. The scope of the research and project does not allow for this, but the project could have been richer with collaborating research with someone within mental health research. The main goals for this design were to create a space that followed the concepts of creating a safe, trustworthy, empowering space, and it did do just that through utilizing light, comfort, control, nature, aesthetics, activity, psychology, human centered design, and place.

Overall, I hope for this project to further the conversation of creating spaces with humans and wellness in mind. The goal would be for this project to contribute to a larger conversation about the way we have come to design and why we have come to design that way, then how we can shift the built environment back to a human scale again. It would also be important for the role of design and architecture to be considered at a higher level of importance in designing for healthcare facilities as the standard, and not just as an exception. The more we talk about and implement these types of projects the more it normalizes the idea that good design isn’t a privilege, it should be a right.

From this project, I learned the importance of implementing seemingly simple design concepts that connect back to the roots of good design, and how impactful they can be in a space when meticulously thought out. Having the design principles guide the entire design was extremely helpful in cultivating a successful building, inside and out. Moving forward, I will consider every detail on a higher level to how it will make the user feel and consider what type of person each design choice may cater toward. Through each iteration and step, my mind opened up to different ways of problem solving through
architecture, from the site interventions to the roof atrium intervention. I was able to bring light into the space in a way that wasn’t possible before, while adding new materials and purpose to the building while still paying homage to its past use and past appearance. I was also able to play around with how the addition responded to the three trauma principals guiding my design (safety, trust, empowerment) and emulated these through the transparent, polycarbonate material. I hope to contribute to the larger conversation about quality of space, and emphasize the importance of design accessibility.
APPENDIX A

ORAL THESIS DEFENSE PRESENTATION

Addressing Trauma Through Architecture:
Cultivating Well-being for Youth Who Have Experienced Trauma

RESEARCH, EXISTING BUILDING + SITE

DESIGNING FOR WELLNESS

NATURE

FOCUS ON THE QUALITY OF LIGHT AS A VITAL DIMENSION. MAXIMIZE NATURAL LIGHT IN ALL SPACES TO OPTIMIZE VISUAL EFFECTS, PROVIDE CIRCULATORY PATHWAYS FOR LIGHT, AND INCREASE VISIBILITY FOR SAFETY. INCREASE THE AESTHETIC VALUE OF INTERIORS TO ENHANCE WELL-BEING.

CONTROL

ACCESS TO NATURE REDUCES STRESS, OFFERS A RESpite FROM THE STRESS OF DAILY LIFE, PROVIDES A SENSE OF NEWS, AND REDUCES TENSION. TOGETHER, THESE ELEMENTS HELP TO REDUCE THE IMPACT OF TRAUMA.

COLOR

TOO MUCH COLOR CAN BE OVERWHELMING. CONSIDER THE EFFECT OF COLOR ON MOOD AND BEHAVIOR. THE USE OF NEUTRAL COLORS CAN HELP TO CREATE A SENSE OF CALM AND RELAXATION. IN SPACES WHERE COLOR IS USED, ENSURE THAT THE USE OF COLOR IS CONSISTENT AND BALANCED.

COMFORT

MOVEMENT

DESIGN FOR ADAPTABILITY. PROVIDE SPACE FOR YOUTH TO MOVE AND EXPLORE. CREATE OPPORTUNITIES FOR PHYSICAL ACTIVITY AND SOCIAL INTERACTION. PROVIDE SPACES FOR RELAXATION AND RECOVERY.

SENSITIVITY

PLACE MAKING

CREATE SENSES OF PLACE IN YOUTH-CENTERED ENVIRONMENTS. USE TO BE AUTHENTIC AND INTEGRAL. THE SPACE SHOULD BE INTUITIVE AND RELATING TO THE ENVIRONMENT.

HUMAN-CENTERED DESIGN

THINK AHEAD AS THE CENTER OF THE DESIGN. CONSIDER THE RELATIONSHIP BETWEEN PEOPLE AND BUILDINGS. THE ENVIRONMENTAL DESIGN WITH EMPATHY AND INTEGRATION.

REasuRA

MEETING ACCOUNTS FOR HEALTH, WELL-BEING, AND EMPOWERMENT. EMPOWER YOUTH THROUGH HUMAN-CENTERED DESIGN.

SAMAHA

6 PRINCIPLES TO A TRAUMA-INFUSED APPROACH

SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES ADMINISTRATION. 2019. DEPARTMENT OF HEALTH AND HUMAN SERVICES. PATHWAYS TO ADVANCEMENT, HEALTHY COMMUNITIES, AND THE HUMAN DEVELOPMENT MODEL

SAFETY

TRUST

EMPOWERMENT

EXISTING BUILDING

ADDRESSING TRAUMA THROUGH ARCHITECTURE: CULTIVATING WELL-BEING FOR YOUTH WHO HAVE EXPERIENCED TRAUMA

SOIL, ENVIRONMENT, AND HEALTH SERVICES ADMINISTRATION. 2019. DEPARTMENT OF HEALTH AND HUMAN SERVICES. PATHWAYS TO ADVANCEMENT, HEALTHY COMMUNITIES, AND THE HUMAN DEVELOPMENT MODEL

CURRENT SITE

PARKING

EXISTING BUILDING

96
Addressing Trauma Through Architecture: An Environment for Hope and Empowerment

Second Floor

Sunlight, Proportion Variety, Choice, Clear Sight Lines, Natural Materials, Simple Form, Nooks, Color, Mixed in Soft Textiles

First Floor

Sunlight, Proportion Variety, Choice, Sight Lines, Natural Materials, Simple Form, Nooks, Color, Mixed in Soft Textiles

First Floor: Library

Second Floor: Library

First Floor Event Space

Sunlight, Sight Lines, Natural Materials, Simple Form, Color

South

North

99
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