Architecture of Healing

Trauma-Informed Design

HMC Architects DESIGN FOR GOOD

bassetti
A Design Studio of HMC Architects

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Nothing contained in this publication is intended to provide any type of medical advice or recommendation. The publication presents insights for the design of environments with the intent to create healing spaces.

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Architecture of Healing

Trauma-Informed Design

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Overview

As architects and designers, we understand how the built environment can have a profound effect on us — physically, emotionally, and spiritually. Well-designed spaces can help refocus our thoughts, change our mood, or reframe our place in the world. Whether we are designing for students, patients, or communities – Trauma-Informed Design unites our practices through a shared purpose: to create environments that foster dignity, healing, and hope.

Introduction

The spaces we inhabit profoundly affect our sense of safety, connection, and well-being. For those who have experienced trauma — whether from personal hardship, systemic challenges, or collective crises — the built environment can either be a source of support or a barrier to healing. *Architecture of Healing: Trauma-Informed Design* recognizes that thoughtful, intentional spaces can help people feel grounded, valued, and empowered.

This book explores strategies drawn from research, experience, and design practice to create environments that minimize re-traumatization and foster resilience. By integrating trauma focused design principles into the places where we live, work, learn, and heal, we can cultivate spaces that promote dignity, comfort, and engagement. Through meaningful dialogue and intentional design choices, we have the power to shape environments that mitigate trauma and actively support recovery and growth.

According to the Substance Abuse and Mental Health Services Administration (SAMHSA), an estimated 70 percent of people worldwide have experienced trauma; and 67 percent of American children are currently affected by it. Food insecurity, homelessness, drug addiction, alcoholism, gun violence, and bullying are just a few sources of trauma. The toll of trauma in our homes, schools, and workplaces is mounting, and we cannot ignore the divisive effect of trauma in our communities, on our social compact, and in our political discourse.

As design professionals, we strive to serve our clients and users by developing responsive designs. Given the ubiquitous nature of trauma, incorporating design ideas that minimize the effects of traumatic stress and support healing must become standard practice throughout the built environment.

We, the architects and designers at HMC / Bassetti Architects, began our exploration of Trauma-Informed Design (TID) through the lens of educational design. As the COVID-19 pandemic unfolded, we witnessed firsthand the devastating impacts of traumatic stress on our children as they struggled to learn. Gifted educators helped guide our journey by sharing critical practices focused on helping children with debilitating trauma.

As we dove deeper into trauma and its effects, we realized that TID was relevant beyond the school environment. Traumatized children grow up and carry their struggles with emotional regulation, attention, learning, and memory into their adult lives. People dealing with the impacts of trauma inhabit housing, work environments, commercial enterprises, recreational settings, and cultural venues. Sadly, as the list of places increased, we were hard-pressed to think of an environment where the impacts of trauma were not relevant.

67%

of American children have experienced trauma

“We don’t heal in isolation, but in community.”

–S.Kelley Harrell

What is Trauma?

We begin with a review of trauma, including a definition to ensure a mutual understanding; a look at Trauma-Informed Care as a focused approach to dealing with trauma; a brief review of how trauma impacts our brains and our senses; and a reflection on societal ramifications of trauma. The Substance Abuse and Mental Health Services Administration defines trauma as follows:

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.

Although stress resulting from trauma has been recognized throughout history, it was only in the past two decades that this toxic stress was defined and given psychiatric diagnostic criteria.

Traumatic stress disorders were placed in the Diagnostic and Statistical Manual V (DSM-V) under the new category of Trauma and Stressor-Related Disorders in 2013. This led to new research regarding trauma, its lasting effects, and more specifically, Trauma-Informed Care. Trauma in our society takes on many forms:

ACUTE
Resulting from a stressful or dangerous event such as witnessing a death, natural disaster, a pandemic, injury, or illness.

CHRONIC
Repeated and prolonged exposure to events such as child abuse, poverty, systemic racism, or discrimination.

COMPLEX
Exposure to multiple traumatic events early in life.

HISTORICAL
Collective and cumulative trauma such as genocide, slavery, colonization, structural racism, or homophobia.

“Traumatized people chronically feel unsafe inside their bodies: The past is alive in the form of gnawing interior discomfort. Their bodies are constantly bombarded by visceral warning signs, and, in an attempt to control these processes, they often become expert at ignoring their gut feelings and in numbing awareness of what is played out inside. They learn to hide from their selves.”

Dr. Bessel A. van der Kolk

Trauma’s Toll on the Brain

Sometimes, trauma is loud, abrasive, and visceral. Other times, trauma is quiet and woven into the fabric of everyday life as it compounds insidiously over time. Whether seen or unseen, trauma can profoundly impact the well-being of each person it touches. Trauma affects the neurobiological stress response in all three of the brain's primary layers.

Our **brain stem,** or reptilian brain, controls essential survival functions such as temperature, heart rate, breathing, and our fight or flight response to danger.

Our **limbic** or mammalian brain layer is the seat of our emotions. It regulates our coping skills, perception of danger, and sense of pleasure.

Our **neocortex**, the top layer of our brain, is where executive functions reside. This area enables language, planning, reflection, abstract thought, and critical thinking.

Trauma impacts executive functions by constantly pulling people back to emotional and survival areas of the brain as they struggle to deal with the traumatic event(s). Coping mechanisms overwhelm critical thinking, and the limbic system goes into overdrive. In severe situations, the body dysregulates, and the reptilian brain moves into survival mode.

Trauma outcomes include underdeveloped social skills, challenges regulating emotions, inattentiveness, interrupted learning, and memory loss. Many people who have experienced significant trauma act out in socially unacceptable ways or become isolated. Their ability to interact and collaborate with others can be critically impacted. Severe trauma can lead to primal survival modes of fight, flight, freeze, or fawn.

One insidious aspect of trauma occurs when a victim, even if not directly experiencing trauma, becomes hyper-aroused by fear of being triggered within their surroundings. Their brain's overriding search for safety pulls the victim away from being in the present moment.

Healthcare patients may enter spaces already feeling dysregulated from lived experiences of trauma in addition to acute trauma of their injury or illness. Additional stress on their brains from a loud, fast-moving environment can further disrupt their focus and impact critical thinking and emotional regulation. Higher Education students may face similar limbic overloads during stressful periods like exams or food and housing instability. People entering transitional housing bring with them trauma resulting from years of being unhoused. They may face trauma from addiction or abuse and a new environment may shift them into survival mode.

TIC Tenets

Recognize the signs and symptoms of trauma in patients, families, and staff.

Integrate knowledge about trauma into policies, procedures, and practices.

Actively avoid re-traumatization.

Healing Begins with Understanding: The Power of Trauma-Informed Care

Trauma-Informed Care (TIC) encompasses a program, organization, or system that recognizes the widespread impact of trauma and focuses on the management and regulation of stress caused by trauma. Stress and trauma are experienced through the sensory organs. Hence, managing sensory input types, quality, and quantity is a stress management tool that can be utilized in Trauma-Informed Care and Trauma-Informed Design. TIC seeks to create a change in basic assumptions.

Rather than asking, “What’s wrong with you?” TIC asks, “What’s happened to you?”

By changing the subject from the patient to the trauma, we can begin to understand the widespread impact of trauma and develop paths for recovery.

TIC is not a singular technique or checklist. It is an approach that is best implemented at an organizational level to effectively respond to trauma. Although the approach may be different between organizations, it embraces six primary Guiding Principles.

TIC GUIDING PRINCIPLES

/ Safety
/ Trustworthiness and Transparency
/ Peer Support
/ Collaboration and Mutuality
/ Empowerment, Voice, and Choice
/ Cultural, Historical, and Gender Context

The goals of TIC are to nurture a safe context that reduces toxic stress, trauma, and re-traumatization. Doing so can help people regain their power and agency, which supports whole brain health. Trauma-Informed Care can be brought into any service organization or institution to enable a better understanding of and response to the likelihood that many people carry trauma affecting their daily experience.

TIC TIERS OF SUPPORT

1. Counselors, supervisors, parents, teachers
2. Peers
3. The physical environment

Architects and designers shape the third tier. The environments we design can support our communities in their commitment to supporting a healthy and resilient citizenry.

Healthcare systems are adopting Trauma-Informed Care frameworks and architectural alignment with those frameworks strengthens delivery. College campuses increasingly embed similar models into wellness centers and residence life, as do eldercare facilities, especially those who cater to Alzheimer’s and dementia patients. Similar frameworks are being used in transitional housing.

“Trauma-informed care is a strengths-based framework that is grounded in an understanding of and responsiveness to the impact of trauma, that emphasizes physical, psychological, and emotional safety for both providers and survivors, and that creates opportunities for survivors to rebuild a sense of control and empowerment.”

Hopper, Bassuk, & Olivet

The Sensory Impact of Trauma

What the Body Remembers

Sense is how we perceive, understand, analyze, comprehend, and interact with the world. All organisms, including humans, have evolved to pay attention to their environment. The senses relay information to the brain about the surroundings, determining whether it is safe to occupy, move, breathe, eat, or rest. The brain responds with reactions and memories based on the information it receives. Subsequently, patterns of association are formed.

The five primary senses are touch, sight, hearing, taste, and smell. A sixth sense, proprioception, deals with the awareness of a body's position and movement in space. A few other subtle senses perceive balance, the oxygen level in the bloodstream, and muscle movements. However, in this overview, we will focus on the six senses most know well.

A person who feels safe and has a well-regulated nervous system can perceive the information their senses communicate to the brain and make objective decisions about interacting with their environment. Unfortunately, for people struggling with trauma, the typical response can become dysregulated, and their reactions may vary widely from non-responsiveness to acting out. Extreme responses for highly stressed trauma sufferers can involve fight, flight, freeze, or fawn.

The autonomic nervous system initiates these involuntary reactions in response to patterns imprinted on the brain by past trauma. In the grip of trauma, the brain believes that this reaction is what is needed to keep the person safe. These responses may seem out of proportion or even unnecessary to an observer. However, the trauma victim's responses are outside their control. Their brain is now captive to trigger patterns and responds as though they were re-experiencing the past trauma in the current moment. They may experience intense physical distress as real or symbolic reminders of their trauma. They may even experience physical sensations such as difficulty breathing, pain, nausea, sweating, or trembling that require medical attention.

The sight of a natural body of water may feel irresistible to a swimmer, and yet the same body of water may bring dread to a person whose brain equates water with drowning.

A Thousand Ways to Feel

Although most of the population functions with all their senses intact, some are born without all sensory organs working, and some lose sense organs to health conditions or accidents. People without all their senses intact are often considered lacking or disabled by the general population. The opposite appears to be the reality. The brain rewires neurons to gain hypersensitivity through the operative senses to compensate for lacking one or more sense organs. This enables perceiving the environment in unique and highly attuned ways. An example of this phenomenon is deaf gain — a term coined by deaf people (Aaron Williamson). Deaf gain reframes the perceived loss of hearing to highlight the uniqueness and benefits that deafness contributes to human society, highlighting the potential to contribute to the greater good of humanity. Deafness is not a disability but a form of sensory and cognitive diversity that creates its nuanced culture around a shared language, sign language.

Spoken, written, and signed language are three expressions of the same language.

Similarly, the concept of blind gain argues that blindness is a fruitful stance available to both blind and non-blind people. It invites us to dismantle the conventional hierarchy of the senses and explore sensory and audible descriptions to precede and enhance visual experiences for non-blind people.

Understanding the Mind-body Connection

As the senses are the method by which we perceive our environment, it can be argued that the brain perceives all experiences, whether safe or unsafe, via the senses. For those experiencing trauma, their intense effort to shut off stressful sensations deadens their capacity to feel fully alive. Sensory responses by hypervigilant brains range from eagerness to please to defensive and angry to blank and depersonalized.

A brief sampling of words and phrases used to describe people struggling with trauma reveals the breadth of impact: tense, frightened, not having words for feelings, shut down inner compass, robbed of imagination, unable to express happiness or fear.

These responses may be even further exaggerated in individuals with differing sense abilities. A blind person may be hyper-aware of an audible sensory input, while an amputee may be hyper-aware of a sloped floor or canted step. When in a hyper-alert state, the brain may fail to make a distinction between safe and unsafe and consider all unfamiliar perceptions, or those that fall into patterns experienced during a prior traumatic experience, as life-threatening.

> “Part of what makes a situation traumatic is *not* talking about it. Talking reduces trauma symptoms. When we don’t talk about trauma, we remain emotionally illiterate. Our most powerful feelings go unnamed and unspoken.”
>
> **Tian Dayton**

Physical responses to stress may also occur. Conversion disorder is when a person experiences temporary physical symptoms, such as blindness or paralysis, that may have a psychological cause, but do not have a physical cause. While the exact cause of conversion disorder is unknown, researchers believe it occurs in response to stressful situations or trauma.

A range of design considerations can address challenges for individuals dealing with sensory diversity as well as trauma. Provide information and signage in multiple formats (tactile, auditory, and visual) to ensure all have access. Is the sensory environment adjustable to accommodate differing needs – lighting, acoustics, furniture? Adaptable lighting (avoiding glare, flickering, buzzing) can ensure visibility for low-vision users as well as those who communicate through a non-verbal language.

Similarly, well designed sound attenuation can minimize echoes while providing clarity for a range of users with partial deafness. Consider visual alternatives for alerts (doorbells, fire alarms) and auditory communication systems. Consider people with high tactile sensitivities when selecting materials and textures. Last, be aware of olfactory sensitivities and minimize strong odors.

Societal Ripple Effects

Shelter, sustenance, and protection are basic human survival needs that too many go without. People struggling to survive are often dealing with significant traumatic stress in the process. The first step in addressing many of the broader impacts of trauma within our communities is to develop a more robust safety net that provides shelter, sustenance, and protection for all.

Survival basics are impacting our society across all ages and socio-economic ranges.

Children are often the most vulnerable. Many schools are confronting houselessness, food insecurity, and clothing inadequacy daily. Actions vary across districts, but typical responses include food programs (breakfast, lunch, and after school) and community spaces where food, clothing, laundry, showers, and access to public services are available.

The impact of trauma on adult communities is no less challenging. In the United States, the historical traumas of institutional racism, homophobia, and misogyny coupled with a perverse cultural acceptance of gun violence, mass incarceration, woeful maternal and infant mortality rates, and generational poverty serve up a wide array of toxic stressors with lasting impacts on our citizens. Recognizing the direct correlation between trauma and substance abuse presents yet another intractable challenge. Vast income discrepancies coupled with media-infused culture wars are bringing additional toxic stresses to every level of our society.

While many admirable public and private partnerships strive to mitigate the challenges, our social compact and societal safety nets are full of holes. When we consider the increasing impacts of climate change and its myriad outcomes (severe weather events, shrinking biodiversity, loss of arable land, mass migrations, war, economic instability, and political turmoil), uniting around common goals and mending the safety nets seems insurmountable.

We cannot solve these problems quickly. There is no easy fix. But in the wisdom of the ancient Taoist proverb, “A journey of a thousand miles begins with a single step.” Our initial step seeks to incorporate knowledge and actions into our design process to lessen the burden of trauma and move toward healing.

> “If you are not aware of what your body needs, you can’t take care of it. If you don’t feel hunger, you can’t nourish yourself. If you mistake anxiety for hunger, you may eat too much. And if you can’t feel when you’re satiated, you’ll keep eating. This is why cultivating sensory awareness is such a critical aspect of trauma recovery.”
>
> **Dr. Bessel A. van der Kolk**

Only the Beginning

It is important to reiterate that this book is a beginning. This is not a comprehensive list of ideas, principles, and design characteristics for dealing with trauma across all environments. Invariably different people, cultures, and places will have distinct challenges that require customized design outcomes. Ongoing research in environmental psychology, neuroscience, and physiology will continue to shape design responses. Our intent is to share the ideas we have found resonant through our work to date. Please share your ideas with us so we can expand the list. Give us your critiques to increase relevance and customize the TID Patterns around your project types. Our hope is to share knowledge, so all designs are more responsive to the needs of our users.

This book is intended as a charrette tool, used during each phase of design to assist the design team in attaining knowledge and developing actionable ideas. Strategies for dealing with trauma continue to be emergent and this book is a starting point for the design conversation. The open-source compilation of ideas, patterns, and provocations herein is meant to be shared, modified, and customized to enrich specific communities.

We hope this book will promote creative thinking and encourage dialogue so that embedding trauma-informed concepts in new and existing environments becomes the default. Now more than ever, TID is necessary to help heal and empower our communities.

Pattern Language of Design

The following Design Patterns support Trauma-Informed Design. This evolving list has been compiled from research, observations, and input from counselors, caregivers, and designers experienced in dealing with trauma. We have endeavored to support our ideas with references, however, the field of TID research is evolving, and new or updated studies are regularly available to provide further insights into design opportunities. The Design Patterns are organized into three broad categories. Just as the patterns interrelate with one another, there are invariably overlapping attributes and meanings within this framework. Our hope is that this conceptual taxonomy will help to make the patterns more accessible and applicable within a design.

Introduction

The Design Patterns identified and discussed here are intended for three primary uses: to summarize key issues impacting traumatic stress; to spur creative designs in developing healing strategies for people dealing with trauma; and to critique developing designs to inspire more transformative solutions. Some of the Design Patterns invariably overlap with one another. Design strategies encouraging the use of human scale, good daylighting, user choice, and biophilia, for example, support many patterns.

Architecture gives form to the patterns by which we live — in his seminal book, Pattern Language: Towns, Buildings, Construction, Christopher Alexander (1977) recognized that when we create spaces in which to live and work, we are solving human problems that occur in our environment. Trauma is one of those human problems, and the patterns illustrated in this book explore healing strategies for social and emotional well-being.

The initial step in addressing this challenge is awareness. Just as environmental awareness is critical for developing sustainable design, an understanding of mental health is essential for a thriving and engaged populace. We are not just designing any old project — an office building, apartment complex, or educational facility. We are planning for a beneficial and restorative future – socially, emotionally, and environmentally.

Alexander viewed his classic book as a starting point in developing pattern languages around various issues. The patterns herein are intended to raise awareness of the opportunities for designing transformative, healing environments in response to trauma. Use the relevant patterns as inspiration to customize an enriched environment and design language that fits the challenges within your community.

> “When you build a thing, you cannot merely build that thing in isolation; you must also repair the world around it and within it.”
>
> **Christopher Alexander**

Experiential

Self-Identity / Dignity

A sense of belonging and self-identity are essential for people who have experienced trauma. Connection to the community and the local environment is critical for healing. People need the opportunity to “see” themselves in a space and to feel they belong. Environments that are chaotic, messy, cacophonous, or overly sterile signal a lack of care for individuals engaging with the space. Work with users to determine their specific needs. Supportive housing may include small gardens or individual porches that create a sense of identity for inhabitants. Community centers may have graphics and murals that help develop a sense of belonging. Public murals and indigenous design elements can support cultural identity in civic centers and healing gardens.

Consider spaces that support gatherings: pet play areas, barbecues, picnic tables. Recognize that rituals (prayer, meditation, exercise, dining, etc.) can help build self-identity and connection within a community.

Having control and pride in shaping a part of the environment helps build a sense of identity and dignity.

Juhani Pallasmaa called the door handle the “handshake of the building.” Think about the touchpoints in spaces and how they can create a sense of being anchored to a place. Graphics can speak to the history of a place and help individuals who have retreated into themselves due to trauma begin to see themselves as part of a larger community. Use wayfinding, color, textures, and other sensory cues to help define spatial identity within the building’s larger context.

DESIGN ATTRIBUTES

Self-identity / Dignity

- Create spaces that allow users to “see” themselves in the space
- Develop a sense of identity for group or individual users through experiential graphics or the use of color or texture
- Support gatherings, celebrations, and rituals
- Think carefully about how the building is anchored to place

RESEARCH

In a statistical study on the impact of Trauma-Informed Design interventions in transitional housing, qualitative findings indicate participants felt design updates increased the experiences of dignity. Some indicated they had increased feelings of hope. (Ajeen, R., et al) One of the first statistical analyses of Trauma-Informed Design, it has far-reaching implications supporting the positive effects of TID on self-identity, self-efficacy, and healing.

> **“The essence of trauma, at its purest level, is disconnect from the self.”**

Dr Gabor Maté

DESIGN ATTRIBUTES

Agency / Empowerment

- Design flexible spaces that can be rearranged to support specific activities
- Encourage personal choice by developing adaptable lighting, acoustics, and furnishings
- Provide spaces that allow for varying degrees of social interaction

Agency / Empowerment

Agency and empowerment allow individuals to adjust environments to suit their needs in various settings including schools, libraries, workspaces, or elder care facilities. Being able to personalize the environment helps give users control, which can lead to confidence and self-regulation of emotions. In contrast, spaces that are too rigidly organized can engender a sense of confinement and loss of control. In design, consider the experience of utilizing a space and not simply the size needed for an activity.

What interventions can enrich an environment and provide spaces with diverse sensory, social, or cognitive experiences?

Create spaces or provide opportunities that encourage personal choice of where and how the work environment is configured. Provide layered spaces adjacent to the main area of activity to accommodate a variety of social interactions and spaces for those feeling dysregulated and uncomfortable in a large setting.

Agency is especially important in educational environments. Students dealing with traumatic stress may struggle to keep up with day-to-day classroom activities. They may withdraw or act out and fall into the methodical memorization of ‘facts and figures’ to be recalled on a test but that are quickly forgotten once the test is over.

Agency is not a stand-alone construct. To be effective, skills like self-efficacy (confidence), self-awareness (identification of one’s values), and self-regulation (directing one’s efforts toward goals) need to be honed. Thus, agency is often part of a pedagogical approach such as scaffolding, a teaching technique in which instructors deliver lessons in small segments, providing less and less support as students master new concepts or material. (Nance, n.d.)

RESEARCH

Habits of Mind

In his book *What's the Point of School,* Guy Claxton (2008), a professor of learning science, outlined "habits of mind" that need to be developed in children for success later in life: curiosity; resilience; balancing the logical mind with imagination; being able to ask for help and take criticism; being able to think things through – being reflective. For a person who has not experienced trauma, the brain understands these habits as a natural part of the learning/life process; however, for the person who has experienced trauma, the brain is in survival mode, and these habits, especially logic, memory, taking criticism, and being reflective, are displaced by doubt, anxiety, and hypervigilance. Research has demonstrated that students who have agency in their learning are more engaged, motivated, and excited to learn.

“Trauma never goes away completely, it changes.”

—Mark Epstein

DESIGN ATTRIBUTES

Areas of Refuge

- Provide spaces that support refuge — an area to retreat from the busy world and recharge
- Consider soft finishes, warm colors, and natural textures within refuge areas
- Create layers of space within larger areas and public settings to ensure everyone feels a sense of agency in the choice of space they inhabit
- Provide controllable light

Areas of Refuge

In public projects a great emphasis is placed on designing for collaboration and social interaction. We must remember, however, that humans also need refuge — spaces in which to recharge and experience solitude. This may be especially the case for those who have experienced traumatic stress or who are hypervigilant. Healing can take place in quiet and safe spaces. Areas of refuge offer inclusive calming spaces to neurotypical and neurodivergent learners and differently-abled individuals.

Refuge can provide relief through the senses of sight, touch, smell, hearing, and proprioception.

Furniture can play a crucial role. A wrap-around chair or beanbag can provide refuge without calling attention to the need to retreat. Use ergonomic furniture to enhance comfort. Consider a rocking or swiveling chair that supports gentle movement. Ideally, refuge areas are removed from disruptive sounds, visual complexity, and overwhelming scents. But, if the space does not allow for separation, low partitions, bookcases, screens, or translucent materials that create a sense of privacy can evoke a sense of enclosure while still being open and bright.

In spatial design, consider prospect as well as refuge. Areas of refuge do not have to be enclosed. Provide quiet edges, nooks, balconies, or adjacent rooms for retreat or passive observation rather than direct engagement.

The idea of a “peace corner” comes from educational environments but easily translates to other settings. In a school, refuge areas should be passively or actively supervised spaces – a quiet corner of a breakout learning area, a space adjacent to a counseling room, or a calm bay window in a classroom.

Adult areas of refuge typically do not need supervision. A small conference room in a professional work setting, a perimeter bench in a busy lunchroom, or a quiet niche in a library can all provide space for centering and recharging. Healthcare settings (hospitals, clinics, waiting rooms, wellness centers) are prime locations for areas of refuge to give patients, visitors, and caregivers a place to gain composure and balance. Performance and gallery spaces can support refuge by considering a remote audio-visually linked space or balcony that gives participants a viewing option away from a large crowd. Calm, quiet spaces away from exhibits provide safe spaces to reflect, which is especially important if the art contains images or messages that may be triggering.

Provide outdoor spaces such as a calming garden, a peaceful grove, or a raised outlook tucked away from bustling activity zones that support refuge. Simply being in a natural setting can afford refuge for many.

“When all you know is fight or flight, red flags and butterflies all feel the same.”

Cindy Cherie

STORIES

Areas of Refuge

Areas of refuge can occur anywhere in a building. At Mountlake Terrace Elementary School in Mountlake Terrace, Washington, space was carved out beneath a staircase to provide a quiet nook for students needing to step away from the action and re-focus to become ready to learn.

Prospect and Refuge

Architecture can shape and modulate our emotions, moods, and various inner states of being. The design and structure of a space can evoke specific feelings, whether it is a sense of calm, inspiration, or unease. Jay Appleton (1975), a geographer known for his work in spatial experience, aesthetics, and environmental perception, outlined his theory of 'prospect and refuge' in landscape. He proposed that humans have evolved preferences for spaces that offer opportunities to see (prospect) without being seen (refuge). His theory has been further expanded to include interior spaces. Further research has shown our predilection for exterior and interior spaces that afford greater connection with external surroundings. (Vartanian et al., 2015)

Safe and Secure

Safety and security have both physical and psychological ramifications. Within the built realm, the most staggering impacts on security have been active shootings in our schools, workplaces, religous spaces, and recreational settings. While the horror of gun violence grabs headlines, more pernicious challenges impact our safety daily. Trauma-inducing events and circumstances are all around us — drug addiction, bullying, domestic abuse, alcoholism, gang violence, homelessness, racism — to name a few. A primary challenge in developing safe places for people impacted by trauma lies in designing for both physical and psychological safety in the areas we inhabit.

The fractured and oppositional political and cultural milieu of present-day America has brought concerns about safety into hyper-focus. Schools require layered entry spaces to ensure supervised access for all. Healthcare and collegiate institutions have adopted sophisticated access procedures and devices to control entry into buildings. Residential and retail developments are also adopting elaborate access technologies, guards, and cameras to ensure safety. Even cultural spaces — libraries, community centers, theaters, etc. — have supervised access. This climate of heightened security raises significant challenges for people already dealing with hyper-vigilance and trauma.

The design challenge is to provide both secure and welcoming environments that are open yet lockable, visible but not wholly transparent, secure while not prison-like!

Beyond secure entries, many additional strategies parallel ideas for helping people avoid re-traumatization. These include organizing spaces into human scaled clusters, good sightlines, avoiding dead-end corridors, and increasing overall building supervision by dispersing support and management personnel.

Physical safety is ingrained in the codes and standards of architectural design. Crime Prevention Through Environmental Design (CPTED) summarizes focused approaches to developing safe places. This multidisciplinary approach to crime prevention uses architectural and urban design to help deter crime, reduce victimization, build a sense of community, and positively influence behavior. CPTED is based on five principles: natural access control, natural surveillance, territoriality, activity support, and maintenance. It seeks to make spaces trustworthy and transparent.

For those who have experienced trauma, their “survival brain” is often anxious, fearful, and hypervigilant. Before work, play, learning, or healthy living can commence, people need to feel secure beyond physical safety. Various spatial experiences can encourage psychological safety. Calming spaces can break the cycle of hypervigilance and overstimulation while reinforcing a connection with oneself through reflection, meditation, or quiet play. Movement spaces can help reconnect with the body and process emotions through exercise, dance, yoga, and aerobics. Good visual sightlines are critical for psychological safety to see who is coming and going.

DESIGN ATTRIBUTES

Safe and Secure

- Incorporate CPTED design standards and reviews within the design process
- Encourage healing strategies through lighting, acoustics, materiality, and color
- Promote biophilic and outdoor connections
- Endeavor to provide a ‘home base’ for people regularly using a facility
- Encourage a sense of belonging by using curated patterns and graphics linked to community context and referencing history, culture, geology, or the environment
- Provide distributed support services to reinforce passive supervision and more “eyes on the street”

RESEARCH

Perceptions of Safety

Physical safety is not just crucial for our children. Loukaitou-Sideris (2011), addressing the need for a reduction in carbon emissions, writes extensively about a decline in walking, biking, and the use of public transport in favor of private vehicles due to comfort and perceived safety. She draws from empirical studies conducted primarily in Los Angeles, discussing how environmental factors, personal experiences, and socio-demographic characteristics contribute to this lack of perceived safety. She notes fear of crime, darkness, and lack of visibility as several factors that affected this decline — namely among children and women, the elderly, and lower-income groups. Her writing serves as a call to action for urban planners to prioritize safety in the built environment, particularly public transportation.

Yorio, Edwards, and Hoeneweld (2019) suggest that an individual's perception of safety is shaped not only by personal experience but also by national culture and institutionalized values. These factors contribute to a socially constructed framework that defines what is considered meaningful and rational within a given society.

Creating Community

Creating community is a foundational architectural concept in Trauma-Informed Design because it fosters a sense of belonging, safety, and connection, all of which are critical for individuals who have experienced trauma.

Trauma often leads to feelings of isolation and disconnection. Spaces that encourage community help mitigate these effects by promoting social interaction and emotional support.

Almost every project type can benefit from creating a sense of community — be it healthcare where a team of caregivers practices their healing skills, or a school where personalized connections between adults and students support critical aspects of social, emotional, and academic development. Residential complexes, eldercare facilities, office buildings, even retail environments excel when a vibrant spirit of community is manifest.

Designing shared spaces such as community rooms, open kitchens, or gardens allows people to strengthen social bonds through casual interactions and collaborative activities. These spaces are also designed to be inclusive by supporting diverse cultural, social, and physical needs. Accessibility and cultural relevance play key roles in ensuring everyone feels they belong.

The concept of community in Trauma-Informed Design also emphasizes psychological safety. Open, predictable layouts and visible spaces help people feel secure by reducing ambiguity and hidden areas. Visual connections, such as windows, relites, and transparent boundaries, foster trust and create an environment where individuals feel less vulnerable.

These designs also support autonomy by offering choices. People can engage with the community in shared spaces or retreat to private, quiet areas when they need solitude. Providing options respects personal boundaries and empowers individuals to manage their comfort. Involving community members in the design process further deepens their sense of ownership and connection.

Ultimately, fostering community through thoughtful design supports healing. Social connection is a powerful tool for recovery and trauma-informed spaces offer both formal and informal opportunities for people to build supportive networks and feel a part of something greater than themselves. By integrating the “creating community” principle, Trauma-Informed Design transcends functionality to nurture emotional well-being and resilience.

DESIGN ATTRIBUTES

Creating Community

- Look for opportunities to co-locate spatial functions to encourage meaningful interactions among users
- Design spaces that support inclusivity and equality

RESEARCH

Creating Community

Psychologists identify two types of social connections: strong ties and weak ties. Strong ties refer to close relationships, such as family members and close friends. Weak ties include acquaintances, like work colleagues or athletic teammates. Research. Research suggests that weak ties are just as vital as strong ones for overall life satisfaction. (Collins et al., 2021) To this end, an environment that supports social ties of all scales at school, work, the gym, or local community center is just as important as an environment that encourages professional collaboration and sharing of ideas among colleagues.

STORIES

Creating Community

Sitting on a prominent street corner, Liberty Community Plaza in Whitter, California, pays homage to the community's veterans with a memorial plaza. In a unifying gesture, the exterior pedestrian promenade bisects the building through the lobby and continues to a landscaped park, creating a gateway to the neighborhood. At night, the glass lobby illuminates the corner like a lantern. The site includes lush gardens, a walking track, a par course with exercise equipment, and a shaded seating area. The interior program includes a multi-purpose room with an adjacent outdoor amphitheater, game room, café, conference rooms, community rooms for seniors, and classrooms. There is also dedicated space for youth counseling, which offers an after-school tutoring and counseling program for youths and their families. The center evokes community spirit and active participation in civic affairs.

Personalized Scale

Personalized (human) scale ranges from the large-scale arrangement of a facility to the small-scale individualization of a workspace or learning setting.

Large groups and large-scale environments can be intimidating to people dealing with toxic stress.

Consider breaking down the scale of facilities into smaller units that support individuals being known well. Personalized clusters of space within a large office, school, or factory help individuals avoid anonymity and feel they belong within a group. In hospitals and student housing this is the “neighborhood model.” It subdivides large areas into smaller, more manageable areas which reduce feelings of anonymity and it scales down spaces that are often highly institutional.

In eldercare and housing facilities, look for opportunities to layer spaces for small group or individual use. Restaurants, which thrive as enriched environments and are sometimes overstimulating, can benefit from allowing some users semi-enclosed seating options (booths, nooks, corners) away from the action. Consider subdividing space using partitions or movable furnishings to create pockets supporting individuals or small groups.

Design that uses the human body for scale minimizes large, anonymous environments and creates space that feels familiar or comfortable. The activity within a space should also inform its scale. Small group activities suggest spaces of different sizes and shapes than large group gatherings. Users should be able to move comfortably through space without feeling crowded, confined, or unwanted touching in passing zones such as hallways. Look for opportunities to create adaptable spaces that accommodate a variety of scales, from small to large groups and from child to adult. In addition to furnishings scaled to the users, experiment with window and ceiling height, intimate niches or raised platforms, and tactile elements such as door handles and electrical switches.

DESIGN ATTRIBUTES

Personalized Scale

- Design human-scaled spaces that support a variety of activities
- Incorporate smaller, more intimate spaces to break down the scale of large spaces
- Eliminate the institutional feel with approachable experiential graphics
- Allow generous circulation space for users to pass without touching
- Encourage opportunities to personalize space with art or flexible furniture

RESEARCH

Human Scale

Until the advent of the codified measuring system, humans relied upon body-based measurements such as the width of the palm, length of the foot, or length of a single stride. And even after cubits, fathoms, and meters standardized measuring, body-based units of measurement often prevail. Using the body, we can tap into a deeply ingrained understanding of our body in space – such as ergonomics or motor efficiency. Evidence from studying 186 societies found that using body-based measurement is still globally prevalent and can be advantageous over standardized systems when looking at issues of human scale. (Kaaronen, et al, 2023) Spaces and furnishings are designed to codes and specifications that address “average” human measurements, such as the height of a table or the turning radius of a wheelchair, but these averages do not address everyone. For instance, our standard ceiling height is approximately eight feet. However, research shows that ten feet is the most often desired height as it reduces a boxed-in feeling. A person who is feeling traumatized, conversely, may wish to retreat to a smaller, lower space because the feeling of enclosure is comforting.

DeafSpace Design

DeafSpace Design Guidelines discuss proxemics relative to personal scale. Studying spatial distances between individuals is critical for signing within the deaf community. It is also important to develop strategies to mitigate triggering for those dealing with trauma. Many trauma victims are hypervigilant and avoid touching others. Having reasonable space around them and being able to keep an eye on who and what is in proximity is critical if trauma sufferers are to begin to let down their guard. In support of this proximal awareness, consider the shape of group gatherings. Triangular, square, circular, and oval-shaped gathering spaces and tables help people maintain eye contact. Long, rectangular-shaped spaces and furniture impact constant sightlines.

STORIES

Personalized Scale

Inspired by contemporary office design, the Innovation Hub at Leroy Greene Academy, Sacramento, California, features collaboration spaces of all sizes centered around a glass-enclosed “think tank.” Writable surfaces abound, from walls to glass, creating a dynamic and engaging entrepreneurial environment for students.

Play

Play is one of the earliest and most elemental of human activities. But there is considerably more happening with this seemingly simple activity. Scholars of play have identified over 300 forms of play. For this pattern, we will focus on two of them – original play and cultural play. Original play is best seen in young children who play for the sake of play - no rules, lots of physicality. Activities start, evolve, or dissolve as effortlessly as they began.

We often enter a state of grace when engrossed in original play – it's joyful, fun, and compelling – we're in the flow.

Cultural play involves rules, competition, and often titles. It is structured and achievement oriented. We play to win and bring the game to a conclusion. Both forms of play are critical for people struggling with trauma. Original play taps into a carefree self who can let go of worries and enjoy the moment. Cultural play is social, requiring we "play well with others" to engage. (Seigel, 2022)

Original play spaces that invoke wonder, curiosity, inspiration, and fun, and those designed for exploration, creativity, and discovery via hands-on activity provide a grounding and calming experience for those experiencing trauma symptoms. Original play can help focus the brain away from rigid hypervigilance and allow people to embrace curiosity and ambiguity. It engages all the senses and enables people of all abilities to participate. Unstructured play allows people to move at their own pace non-judgmentally, empowering them to choose how they use their strengths and skills. This is especially important for developing brains that have been exposed to trauma. Play helps develop the Whole Child.

Cultural play builds collaborative skills and confidence in people dealing with trauma. It focuses away from hypervigilance toward teamwork, excellence, strategic thinking, and self-awareness. Structured play can help with self-regulation and grounding.

Courts and fields supporting cultural play are ubiquitous in our educational and recreational settings. We also see an increased focus on play spaces within our workplaces and cultural venues. A ping pong table or dart board in the office and dance steps embedded in the floor of the theater invite us into play.

Original play is often serendipitous and can break out anywhere, but it is essential to consider intentional original play space as we navigate our functional world. Hospitals, supportive housing, and other facilities focused on users who have experienced trauma can utilize both original and cultural play spaces to boost self-efficacy and personal identity.

Gamification in learning environments — disguising learning as play — can benefit some people who have experienced trauma by creating a safe, engaging environment that reduces anxiety and builds confidence. Game elements like rewards, progress tracking, and choices promote a sense of control and achievement, which can counter feelings of helplessness. Structured, predictable game systems help establish trust and routine, while playful learning can shift focus from stress to enjoyment. This supportive, low-risk learning encourages participation, social interaction, and emotional healing. If using video games, it is important to note that they may be triggering for some and provide accommodations for other types of learning.

DESIGN ATTRIBUTES

Play

- Design informal seating and gathering areas to facilitate social interaction and initiate playfulness
- Provide intentional spaces that support active original play, such as ledges, curbs, ramps, slides, climbing structures, boulders, and swings
- Consider intimate spaces that support quiet, original play — sensory tables, building blocks, dolls, a house, make-believe, action figures, etc.
- Encourage cultural play at multiple scales – from fields and courts to pool tables and board games
- Develop culturally appropriate play opportunities – bocce ball, chess, mahjong, etc.

RESEARCH

Play

The study by Vigil-Dopico et al., *A Comprehensive Analysis of the Relationship between Play Performance and Psychosocial Problems in School-Aged Children* (2022), examines the relationship between different aspects of play and psychosocial challenges. The research was conducted with 142 typically developing Spanish children aged 5 to 9 and emphasizes the role of play in the children's emotional, cognitive, and social development. The researchers used the My Child's Play questionnaire to determine the play performance, while the Strengths and Difficulties Questionnaire was used to evaluate psychosocial issues. The study results show that play-related personal, environmental, and activity factors are significantly related to internalizing and externalizing problems. More interestingly, children's executive functioning while at play was seen to be a key contributor to their psychosocial difficulties, suggesting that there is a need for specific play interventions that can address play and mental health.

"The fact that playfulness – a kind of divine playfulness intended to lighten man's existential burden and promote what Joseph Campbell called 'the rapture of being alive' – lies near the core of Zen, Taoist, Sufi, and Tantric teachers, is lost on most Westerners: working stiffs and intellectuals alike."

Tom Robbins

Environmental

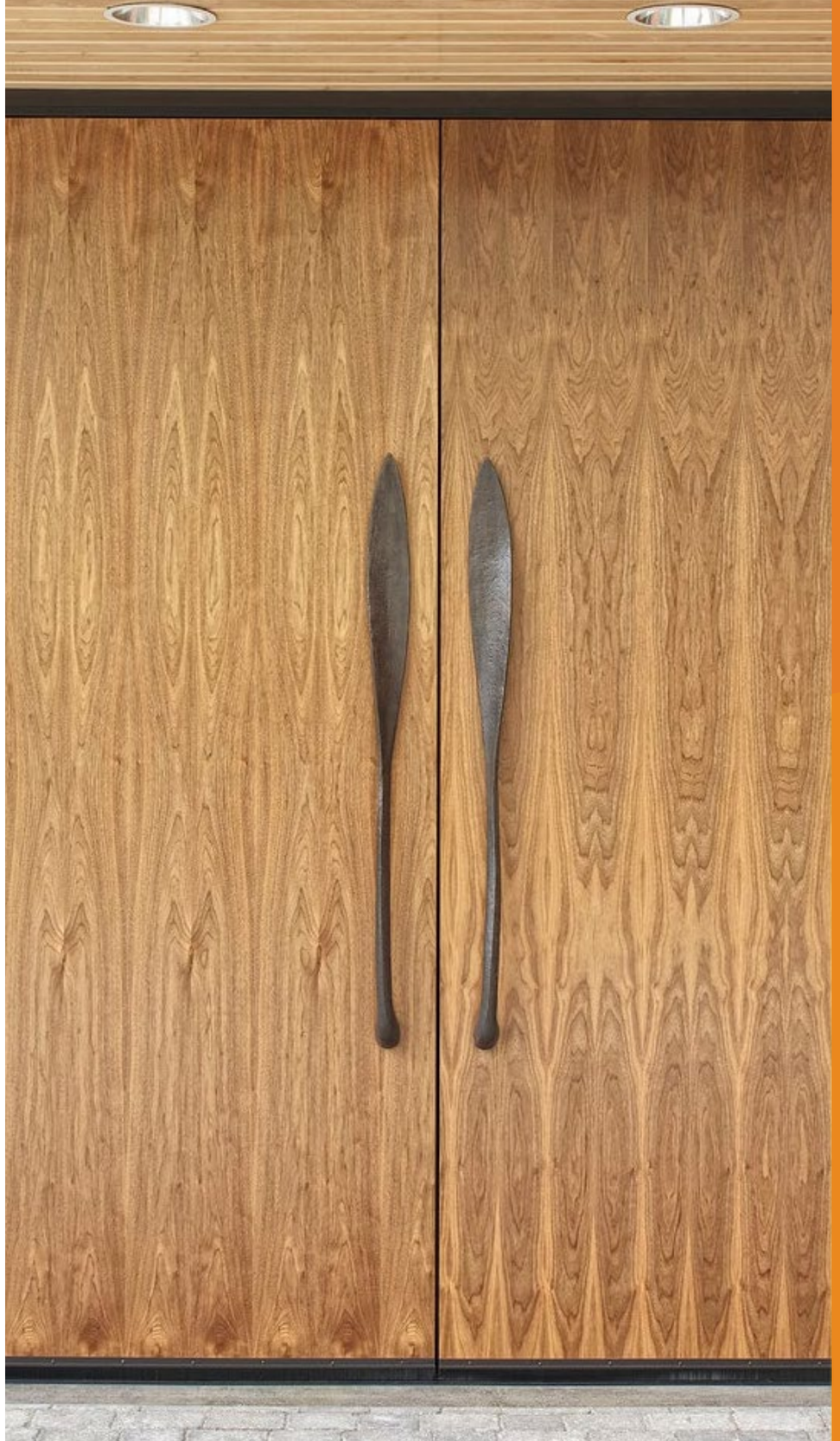
Enriched Environments

Enriched environments provide many opportunities to create spaces encompassing diverse motor, cognitive, sensory, and social elements. Various spaces, colors, textures, and lighting can help broaden the sensory experience and promote social interaction and creativity. Diversification encompasses “intensity and multiplicity of sensory experience.” (Owen et al., 2022)

However, we must be cognizant of designing environments that do not overstimulate traumatized brains, as too much stimulation can lead to retreating, shutting down, or acting out. Consider the sensory impact of design on all users. Intense contrast can be jarring, be it light, sound, color, or texture. Be thoughtful about the amplitude of variations within a space. Explore providing diverse opportunities within spaces for inhabitants to tailor the environment to their personal emotional needs.

Enriched environments can be broadened to include various experiences within spaces. Social enrichment through positive interactions is crucial in helping a traumatized brain engage. Spaces should encourage safe social connections, enable group activities and shared experiences, and offer spaces that invite a variety of levels of participation.

Cognitive enrichment is particularly vital for individuals who have experienced trauma. Providing access to learning opportunities, mental challenges, or activities that foster cognitive growth is essential. This might involve offering books, educational programs, or avenues for creative expression.



DESIGN ATTRIBUTES

Enriched Environments

- Develop spaces that provide a variety of physical, sensory, social, and cognitive stimuli
- Provide spaces that support safe social interactions
- Support the need to choose levels of interaction

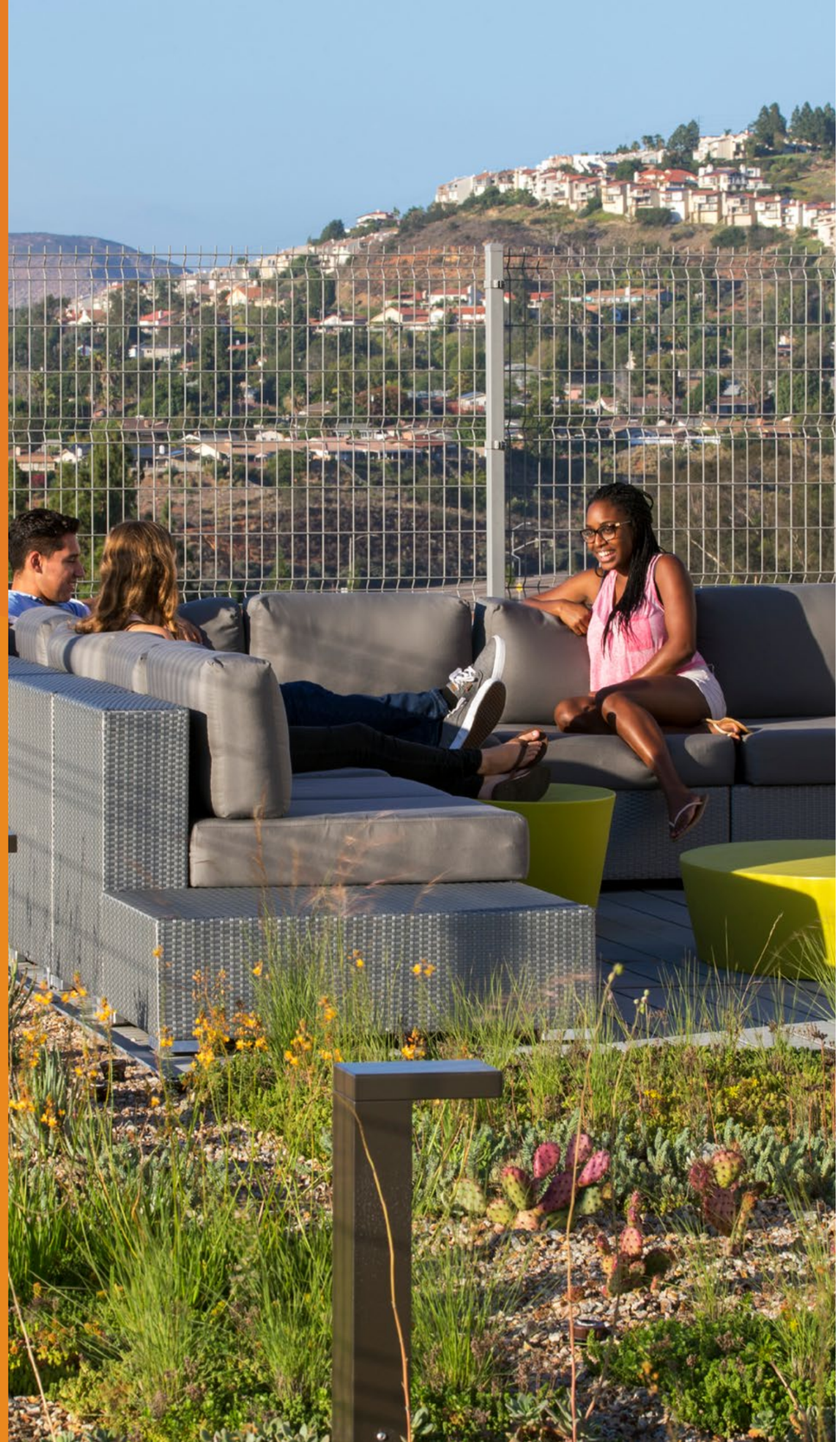
“The door handle is the handshake of the building.”

–Juhani Pallasmaa

DESIGN ATTRIBUTES

Grounded

- Explore creative ways of linking the building and the site to facilitate connections to nature
- Use local materials and forms to reflect vernacular aspects of the region



Grounded

Buildings that provide a sense of connection to place and the greater community can be supportive and healing. Connections to place can impact all the senses – from sight and sound to touch, smell, and taste. For people struggling with trauma, connections to nature are often critical. When designing spaces, consider the users and the various connections to the ground plane that can be developed. Take advantage of opportunities for spaces to extend the interior into the exterior. Terraces, patios, and gardens help bring the healing properties of the natural environment into the interior. Sunken or embedded ground planes offer a sense of enclosure and protection. Raised platforms or decks provide the opportunity for prospect and refuge. Raised balconies and roof decks can bring awareness of a vibrant forest canopy or the dynamic sky into focus.

Connection to place shapes how we heal, grow, and find purpose.

Use local materials that offer a variety of textures, colors, and temperatures to create rich environments that connect to the vernacular elements of the region. Consider architectural links that enhance community involvement and connection. Institutional, commercial, and residential facilities can all benefit from opening to a plaza, garden, or woodlot – be it public or private. Buildings that fail to connect to their site or establish a ‘sense of place’ too often leave users feeling anonymous, detached, and uncared for.

Grounded

Grounding a building is more than just building on top of flattened ground. Thiis-Evensen (1989), in *Archetypes of Architecture*, speaks of several variations on a building's relationship to the ground. It can be the extension of floor plates from interior to exterior, emphasizing horizontality, a sunken plane that feels enclosed or embedded, or a raised floor that hovers over the ground and disconnects the user from the earth. The latter is corroborated by Jorn Utzon, who finds that raised platforms appear detached from the earth and reaching toward the sky. Lived experiences dictate the space in which people are most comfortable.

“Get yourself grounded and you can navigate even the stormiest roads in peace.”

Steve Goodier

Biophilia

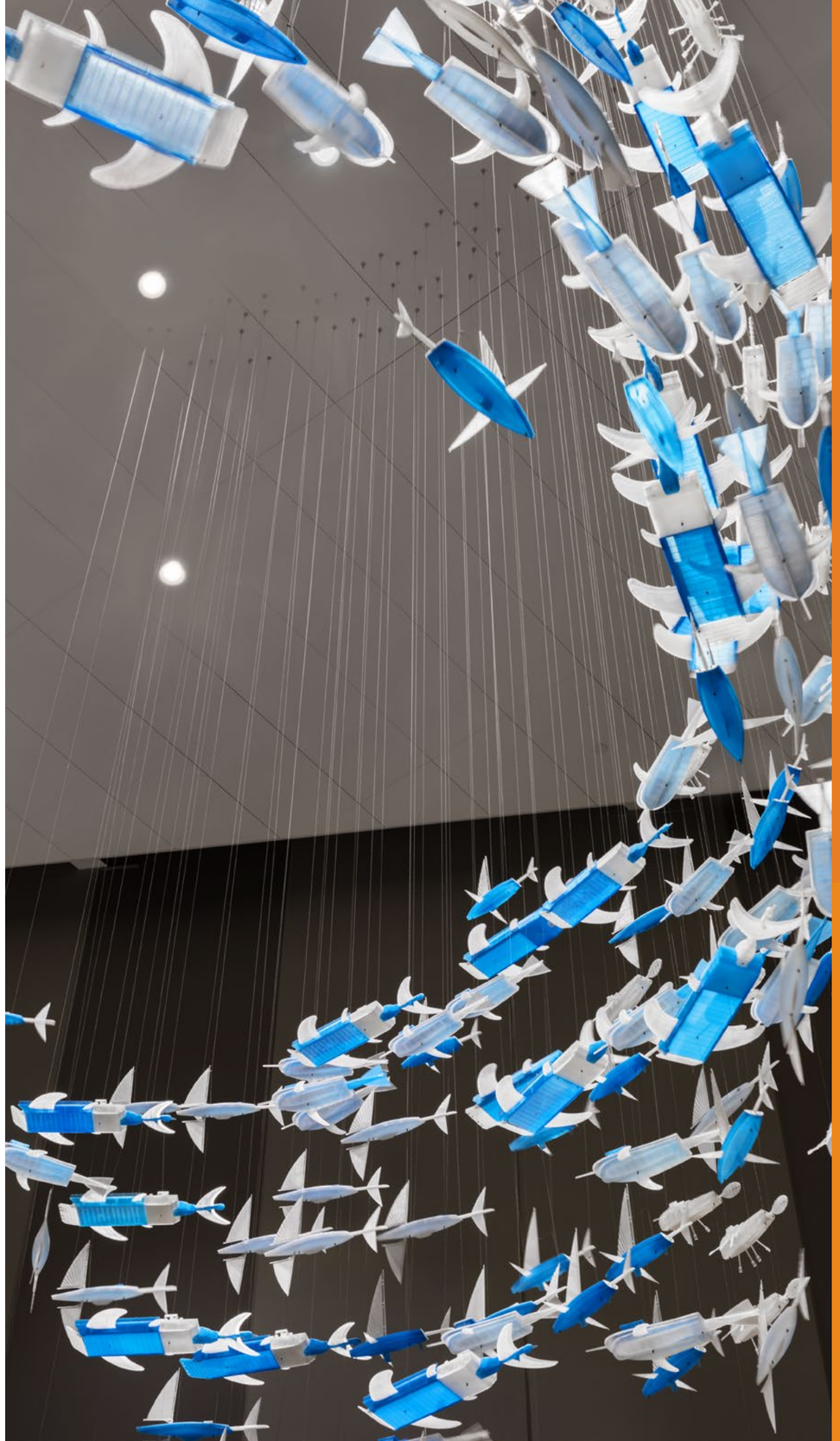
Biophilic design asks how we can achieve a sustained and reciprocal benefit between natural and built environments. Humans evolved by adaptively responding to natural conditions. We are biologically inclined to affiliate with natural systems and processes supporting our health and productivity. Connections to nature and natural elements help to calm and center individuals. Outdoor connections enhance problem-solving, critical thinking, constructive abilities, and emotional well-being. Biophilic elements can affect all our senses. By contrast, environments divorced from nature or natural elements are more likely to disrupt emotional well-being, slow healing, and trigger extreme responses to stress.

Biophilic design can occur on multiple scales, ranging from urban design to buildings and their site, to furnishings and graphics. Biophilic design is imbued with the basic intent of reconnecting humans with the life around us. In practice it encompasses using natural stimuli such as plants and wood, or using representations of nature in graphics or textures.

Numerous studies have documented how closer links to natural systems have reduced stress, hyperactivity, and attention deficit disorder while improving self-esteem, initiative, and self-direction. Hospitals, campuses, and civic buildings can employ nature to restore the emotional balance of users.

Trauma robs people of the sense that they have control over their lives. Critical steps in healing involve learning to become calm and focused and finding a way to be fully present in the moment.

Being in nature or experiencing natural systems helps stressed individuals focus and be engaged.



DESIGN ATTRIBUTES

Biophilia

- Draw design inspiration from the natural setting of the project
- Consider restorative environmental design to develop sustained connections between natural and human-made environments
- Utilize vernacular design approaches as appropriate
- Provide finishes, colors, and textures that draw inspiration from nature
- Create patterns that reference the local natural environment

Biophilia

Evidence for the emotional and health benefits of nature is myriad. Hall and Dickson's *The Emotional and Mental Health Benefit of Plants* (2019) shows benefits in the following categories: anxiety and stress reduction, attention deficit recovery, fractals and visual responses, decreased depression, enhanced memory retention, greater happiness and life satisfaction, mitigation of PTSD, increased creativity, enhanced productivity and attention, reduced effects of dementia, and improved self-esteem.

A systematic review of literature from 2010 to 2023 regarding biophilic design and the health and well-being of patients and providers in healthcare settings demonstrated that biophilic design leads to reduced hospitalization durations, lower mortality rates, decreased pain levels, and diminished stress among healthcare providers. Moreover, it fosters improved patient, family, and staff experiences, leading to faster recovery times and enhanced psychological and physiological responses.

The review integrates concepts from environmental psychology, emphasizing how the built environment influences individual behavior and emotions. In healthcare settings, the design can either contribute to or alleviate stress.

Facilities that prioritize biophilic design foster a more supportive atmosphere for patients and caregivers alike, aligning with principles of psychoneuroimmunology that highlight the connection between environment and health. (Al Khatib, I., et al 2024)

STORIES

Biophilia

Spruce Elementary School's design was inspired by the old growth trees on the site in Lynnwood, Washington. The intent to 'Connect to Nature' is highlighted in the biophilic-inspired learning community and the entryway graphics. The entryway graphic traces historic events through the growth rings of tree slabs re-purposed from the site.

“Study nature, love nature, stay close to nature. It will never fail you.”

–Frank Lloyd Wright

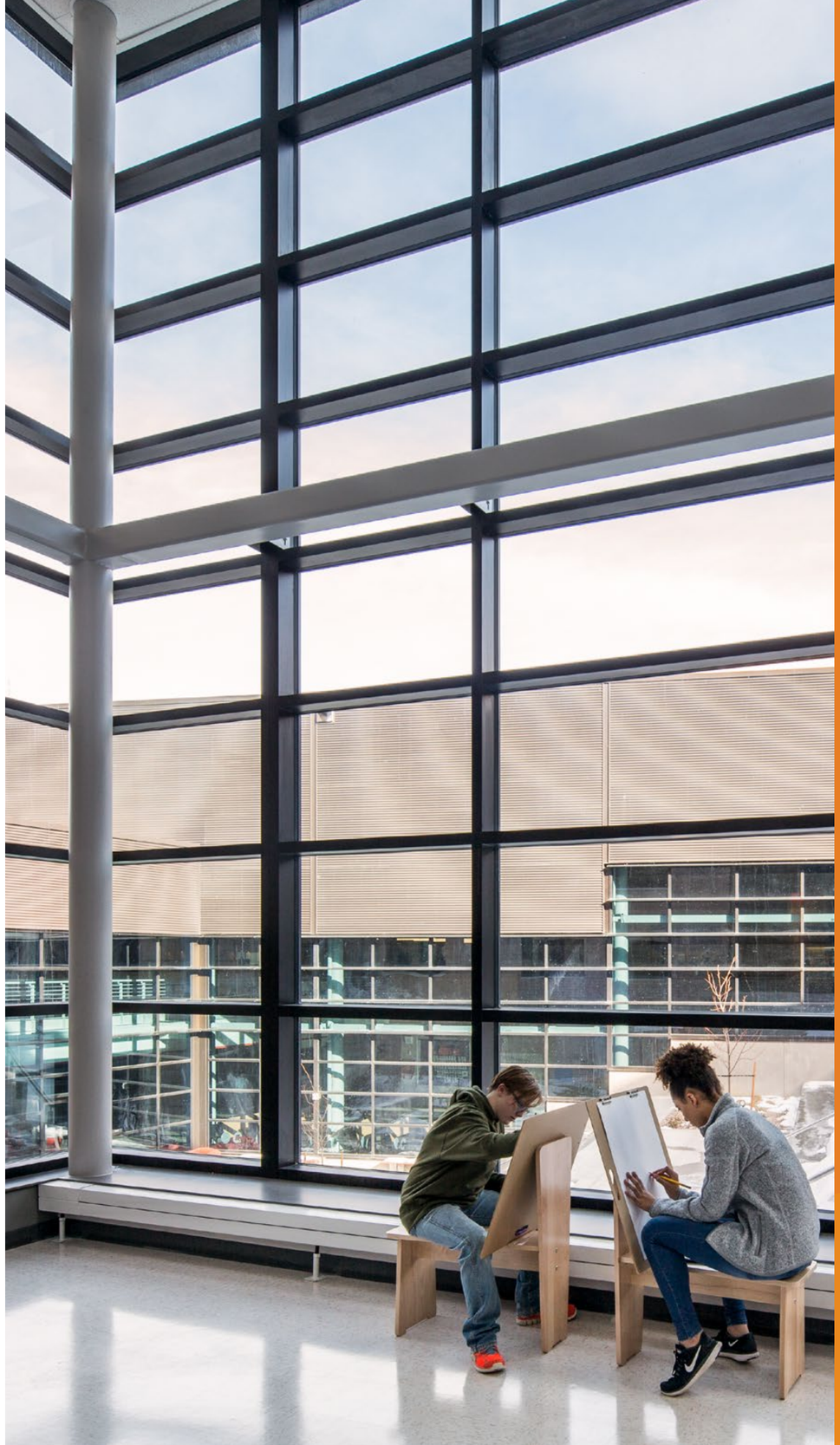
Optimal Light

Optimal light encompasses daylight; daylight variability over time and season; sunlight in occupied spaces; views of nature; and controllable artificial light. Lighting directly affects the senses of sight, and proprioception especially when navigating a space.

Numerous studies have shown that optimal light positively influences everything from productivity and learning to healing and product sales.

A brief survey of existing research tells us natural light positively impacts productivity, learning, and healing; nature views have a positive influence on healing, emotional health, and performance; variable daylight helps with our circadian rhythms, sleep cycles, diet, coordination, mood/depression, and immune systems; well-tuned artificial light influences our shopping habits. The general well-being that accompanies adequate lighting strongly suggests its importance in developing healing environments for people dealing with trauma.

While too much visual complexity, such as distracting patterns and shadows on floors and walls, may be triggering, controlled sunlight in spaces provides warmth and a connection to the outside world. Look for opportunities to use full-height windows and transparent or translucent interior partitions to bring daylight deep into a space. If direct daylight is not available, consider lightwells, skylights, and clerestories or incorporate controllable artificial lighting.



DESIGN ATTRIBUTES

Optimal Light

- Consider variable levels of daylighting to support differing needs
- Provide light controls (blinds, window coverings, etc.) to give occupants the ability to adjust light levels
- Augment natural light with artificial ambient light for wayfinding and mood-setting
- Augment ambient lighting with task lighting for specific work requirements
- Provide high quality, full spectrum lighting with warm values
- Consider adjustable light levels and task lighting to support agency by the users
- Avoid sensory triggers such as glare, harsh, flickering, or buzzing lights
- Limit the number of pendant fixtures to avoid too much visual distraction

RESEARCH

Optimal Light

Studies have shown natural light positively impacts learning, productivity, and healing (Beauchemin and Hays, 1996; Benedetti et al., 2001; Walch et al., 2005; Heschong Mahone Group, 2003). Access to views of nature is also significant in healing, performance, and emotional health (Ulrich, 1984; Mendall, 1991; Heschong Mahone Group, 2003; Kellert, 2005). Good daylighting - with controlled heat gain, glare, noise, and privacy - and darkness at night impact our circadian rhythms, sleep cycles, diet, coordination, mood/ depression, and disease susceptibility (Roberts, 2003).

Acoustics

Traumatic experiences often heighten sensitivity to certain stimuli, including noise. Loud, sudden, or unpredictable sounds can trigger anxiety, stress, or PTSD as they may remind the individual of past traumatic events. Conversely, a well-designed acoustic environment can be calming, helping reduce stress and anxiety levels.

Design spaces with acoustics in mind. Reduce echo and reverberation to help create environments that feel safe and comfortable. Soft materials such as carpets, curtains, and upholstered furniture can attenuate sound, reducing harshness and creating a more controlled auditory environment. Steady, droning noise can be as stressful as sudden, loud noise. Assistive devices that help amplify hearing, such as hearing aids or cochlear implants, often amplify reflected sound waves, which can be distracting or even triggering to someone who has experienced trauma.

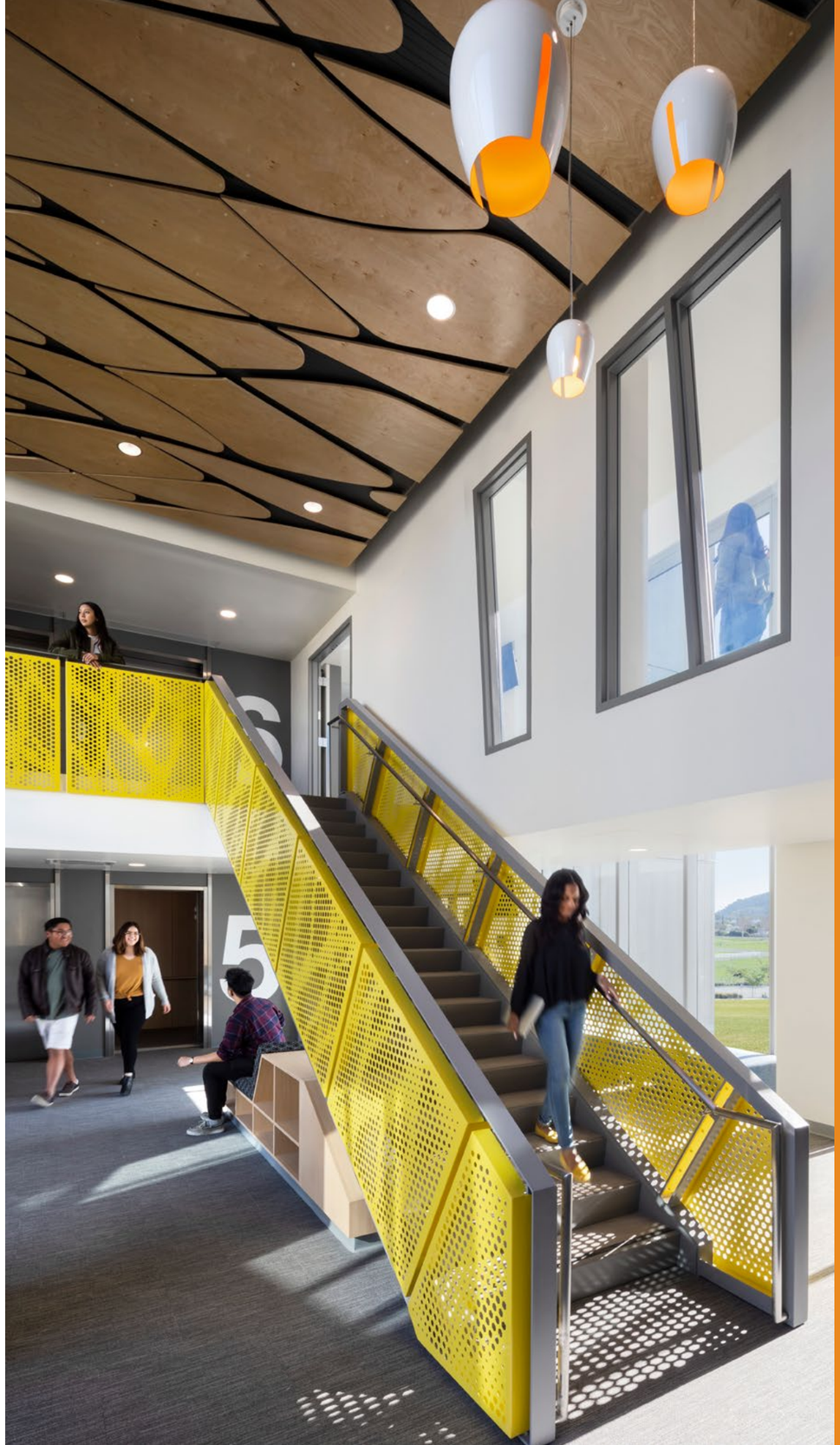
Consider sources of reverberation and background noise in developing acoustic strategies. Layer spaces so that the loudest, most active spaces are shielded from users who may be sensitive to sound. Explore design strategies that allow individuals to control their acoustic environment. Adjustable curtains and baffles, movable partitions, variable acoustic attenuation within different spaces, optional seating locations, or simply controlling the music volume can help people who may be triggered by unwanted sound.

Acoustics directly impacts the sense of hearing. It is often a misconception that deaf people are not affected by acoustics within a space – in fact, the opposite is true.

Deaf people have varying degrees of deafness, and even within their limited hearing ability, they have varying abilities to hear tone, volume, and pitch. Acoustics is, therefore, essential not only for non-deaf learners but also for deaf and partially deaf learners. For blind people, who depend primarily on their sense of hearing for understanding, communication and navigation, acoustics are especially important.

“Triggers are like little psychic explosions that crash through avoidance and bring the dissociated, avoided trauma suddenly, unexpectedly, back into consciousness.”

Carolyn Spring



DESIGN ATTRIBUTES

Acoustics

- Create balanced acoustics to minimize unnecessary and overwhelming ambient noise
- Consider white noise, music, or environmental sounds (birds, water, wind) to mask unwanted noise

DeafSpace Design

While DeafSpace Guidelines primarily focus on visual and spatial accessibility, acoustics still play a crucial role in design considerations, particularly for hard-of-hearing individuals and those who use hearing aids or cochlear implants. In spaces designed primarily for deaf individuals, acoustics matter because many hard-of-hearing people benefit from controlled sound environments, and hearing visitors or interpreters also need comfortable auditory conditions. A well-designed DeafSpace minimizes noise distractions while prioritizing visual and sensory communication. Key aspects of acoustics in DeafSpace include:

Reducing Unwanted Noise: Many hard-of-hearing individuals rely on residual hearing or assistive devices, which can amplify background noise. Soft materials (e.g., carpets, acoustic panels, curtains) help absorb sound and minimize distractions.

Minimizing Echo and Reverberation: Large, open spaces can create excessive reverberation, making it difficult for those using assistive listening devices to differentiate sounds. Ceiling baffles, wall panels, and sound-dampening materials help control this.

Vibration Awareness: While reducing sound, DeafSpace encourages using materials that transmit vibrations for tactile awareness, such as wooden floors that allow people to feel footsteps approaching.

Visual over Auditory Cues: Instead of relying on auditory alerts (e.g., doorbells or alarms), DeafSpace recommends using visual signals (flashing lights, color-coded alerts) and tactile notifications (e.g., vibrating furniture or floor panels). (Bauman, 2010)

STORIES

Acoustics

The Fibonacci sequence — 0, 1, 1, 2, 3, 5, 8, 13, 21 — manifests in mathematics and biology, where each number is the sum of the two preceding ones, starting from 0 and 1. This sequence is beautifully exemplified in nature by the branching patterns of trees. We pay homage to this mathematical marvel with the acoustic treatment of Bakersfield College Science & Engineering Building's lobby, designed to resemble a decorative "tree." This unique feature celebrates the Fibonacci sequence and effectively manages noise levels, ensuring a comfortable acoustic environment.

DESIGN ATTRIBUTES

Materials and Finishes

- Incorporate natural materials native to the local environment whenever possible
- Specify finishes that are calming, biophilic, and do not contain harmful chemicals
- Consult the Living Building Challenge ‘Red List’ or the AIA Materials Challenge to avoid using materials that pose risks to human health and the environment
- Consider fragrance-free environments to prevent triggering stress through smell
- Create zones with color to develop order, structure, wayfinding and layering of space
- Use varied hues and tones of color to frame supportive spaces
- Avoid large fields of deeply saturated hues and neon intensities such as reds, yellows, and oranges that can be over-stimulating
- Avoid stark, slick, or institutional materials and finishes

Materials and Finishes

Materials and finishes provide opportunities to personalize the environment and create spaces that promote healing for users who have experienced trauma. While materials and finishes primarily involve touch (haptics) and sight, other senses, including smell, hearing, and proprioception, may also play important roles in shaping spaces that help people thrive.

Haptic experiences provide opportunities beyond traditional visual representation, and their power challenges visual dominance in architecture.

Materiality can help people struggling with trauma feel connected to place. Our sense of touch and proprioception (awareness of position and movement of the body) helps us feel at ease or agitated, depending on the experience. Natural materials reveal organic processes such as aging and weathering that connect us to nature. Soft, warm, durable, and easy-to-clean materials signal human touch, care, and resilience.

When considering materials and finishes, it is important to note that how we experience materials is not universal. Varying degrees of visual impairment- from color blindness to visual blindness - result in different experiences of space. Deaf people often have a heightened sense of touch and proprioception. Architecture also relies upon visual representation and downplays the other senses. Materials that elicit a haptic response can create a compelling sensory experience for all users. This can be accomplished with texture, density, or even temperature.

Historically, building materials were inherently elements of the natural world. Today, we experience both natural materials and manufactured products. Manufactured products may be completely new or natural materials with additives to increase an array of characteristics, including longevity, durability, color, penetration, or adherence.

Some of the new materials and additives can be toxic. Exposure to toxins has been shown to worsen many health problems in children and adults. We know from brain research that children who have experienced severe trauma may already suffer from stunted brain development. This can only be exacerbated by additional exposure to poisonous materials and finishes. In adults, Sick Building Syndrome (SBS) is a diagnosable sickness resulting from exposure to toxins in the built environment. No one struggling with trauma needs the additional weight of toxic materials and finishes added to the load they carry. As designers, we must strive to create healthy environments.

Color can help modulate the body’s response to traumatic stressors by creating a calming environment and reducing stimuli. Greens, blues, and purples often reduce anxiety, whereas warm colors like ochre, tangerine, or rust can promote feelings of warmth and security. Nature-inspired colors regularly help ground a person and connect them to the natural world.

Color often has specific cultural associations. When designing a trauma-informed environment, conduct user-focused research to gain insights into how stakeholders interpret color and how it affects emotional response. Use surveys or focus groups to help inform color choices that create a supportive, healing environment within diverse cultural communities.

Materials and Finishes

The theory of color and its effect on psychology began with Goethe's 1810 work, *The Theory of Colors.* In this, he linked colors to emotional responses — red-yellow was linked to "warmth" or "excitement," for example. This emotional response was expanded upon by Goldstein, who posited that these emotional responses lead to psychological reactions such as negative arousal, outward focus, or overt actions.

While substantiated research on the psychology of color is available, color theories are also rife with suspect claims. Studies, for instance, have shown red to have a heightened cortisol response in one study but lowered heart rate in another depending upon whether the color application was through light or paint. (Mikillides, 2012)

In another study, complicated and simple tasks were performed in blue and red rooms. Performance for complex tasks was higher in the blue room than for simple tasks in the red room. In the red room, performance on complex tasks decreased over time without an intervention (break or scenic picture). The thought is that blue is a less stimulating, more calming color, allowing users to focus more easily on tasks. (Stone, 2003) This last study has implications for TID as people who experienced trauma often have difficulty concentrating on tasks as they are in a continuous state of hypervigilance. Using softer hues and colors may help alleviate some of the anxiety that comes with hypervigilance.

Haptics

In *Architecture of the Seven Senses,* Juhani Pallasmaa (1994) posited that "skin reads the texture, weight, density and temperature of matter." Haptics, the sense of touch and motion relies on sensory receptors in the skin, muscles, tendons, joints, and internal organs such as the stomach. Receptors perceive vibration, pressure, pain, thermal change, and texture. They shape how we relate and interact with an object. Our individualized movement patterns lead to a multiplicity of haptic experiences.

Haptic experiences provide opportunities beyond traditional visual representation, and their power challenges visual dominance in architecture. The importance of the sense of touch supports the implementation of Universal Design, which uses architectural design parameters to integrate the haptic sense into the design. (Herssens, J., et al, (2009).

STORIES

Materials and Finishes

Water, earth, wind, and fire are natural elements commonly understood by students from diverse backgrounds, experiences, and perspectives at the Van Asselt School in Seattle, Washington. They are used as abstracted textures and patterns etched into panels to enliven the spaces: ripples represent water, cracked soil represents earth, fog wisps represent air, and sun rays represent fire.

Engagement

Flexibility

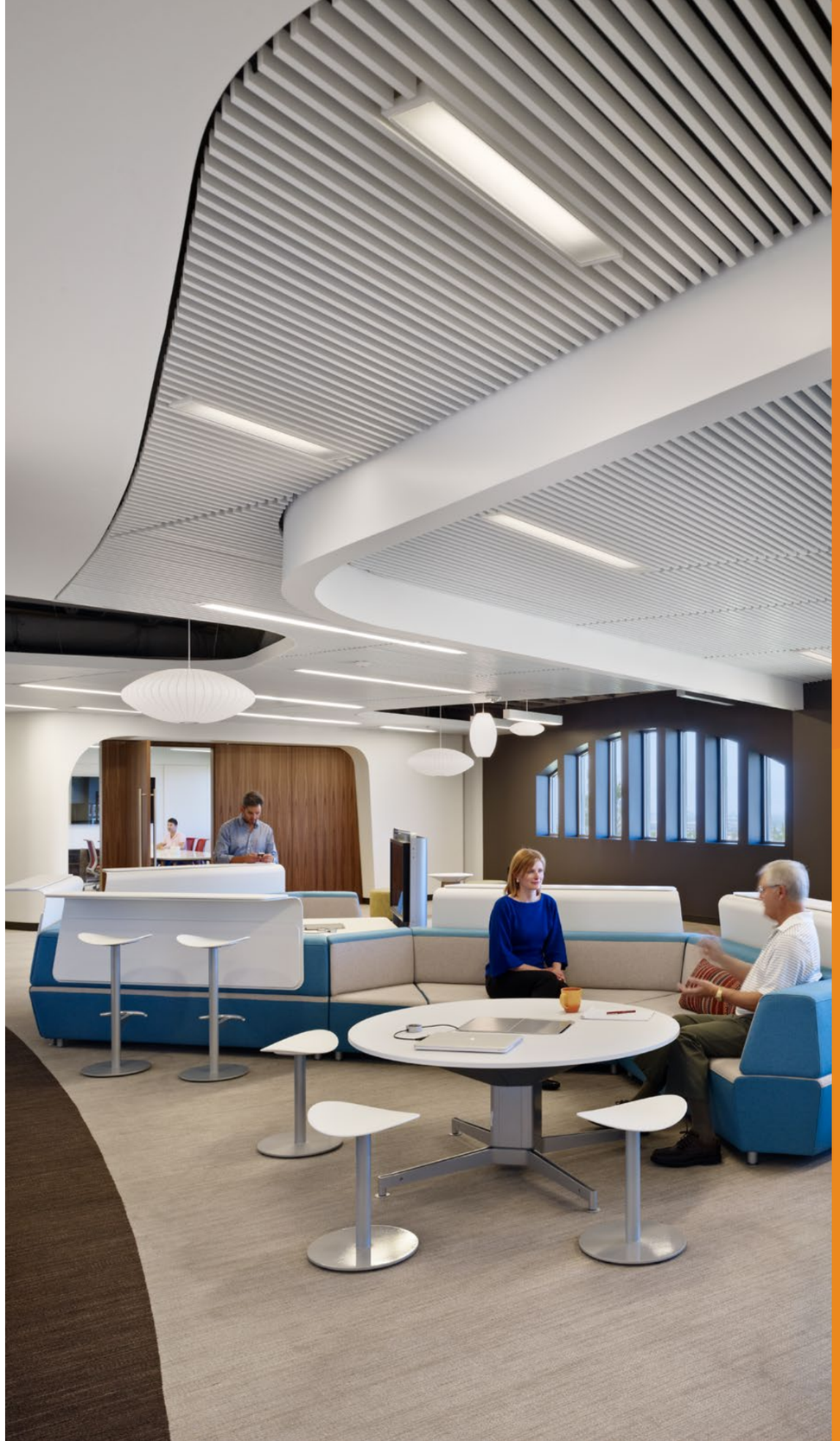
Open space offices, flexible learning environments, and remote workstations are all hallmarks of 21st-century design. From the open-plan homes of Le Corbusier to post-COVID workplace hoteling, where individuals no longer have assigned desks, the ability to be adaptable is becoming ingrained in our ethos. For a person who has experienced trauma, having flexibility in spaces allows for a range of work styles, engagement preferences, or learning preferences. Flexibility in choosing how to use a space or move between connected spaces can help traumatized individuals feel in control, empowered, and better able to self-regulate their emotions.

Flex space, at its most effective, is not an anonymous box that can be arranged in any way possible. Spaces should be intentionally designed for multiple uses.

Specific needs of the users vary widely — working autonomously, studying independently, conferencing, collaborating, making/tinkering, presenting, exercising, eating, drinking, or simply relaxing. Look for ways to define these needs through adjacencies, furnishings, or lighting.

Ensure that spaces are accessible for equitable use by all. Even within flexible spatial design, recognize the critical need for individuals to feel they belong and are valued. To help users feel empowered and in control, provide opportunities to choose from various spaces or subspaces ranging from quiet, customizable spaces to busy, active spaces.

Access to technology is often essential for individuals experiencing trauma as it allows a level of independence, focus, and autonomy. Consider how technology will evolve and require accessible reconfiguration.



DESIGN ATTRIBUTES

Flexibility

- Design for multiple ways of using space
- Provide a ‘choice’ of how spaces can be utilized – quiet, active, collaborative
- Encourage a sense of individual identity and belonging to avoid isolation
- Ensure technology is available in quiet, customizable work areas

“We shape our buildings; thereafter they shape us.”

—Winston Churchill

RESEARCH

Flexibility

Flexible learning spaces significantly benefit individuals with trauma by creating an environment that fosters safety, predictability, and emotional regulation. These spaces allow for the integration of trauma-informed practices that address the unique needs of trauma-affected students. (Brunzell, T., et al, 2016)

STORIES

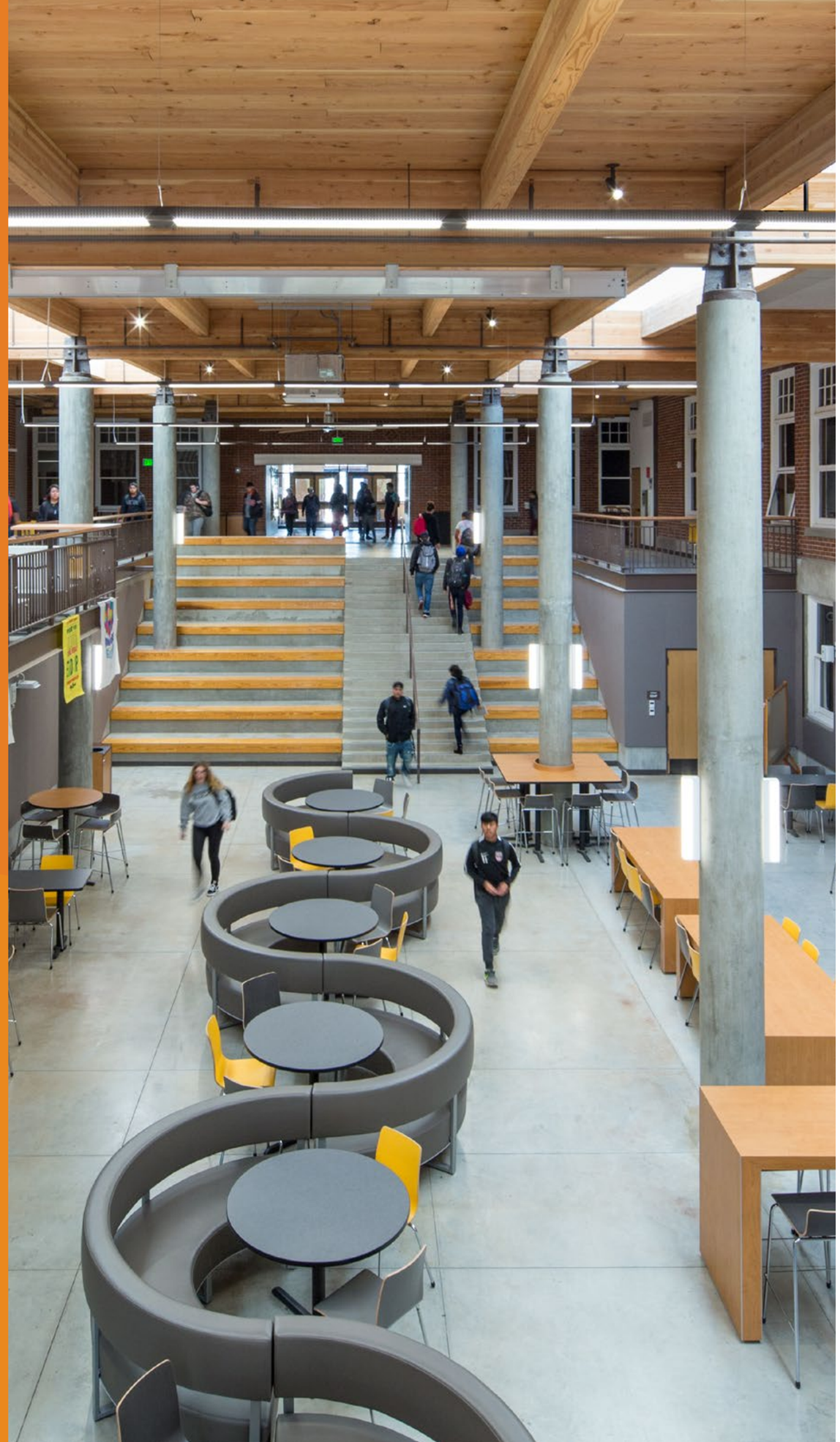
Flexibility

The Center for Leadership and Innovation at St. Thomas School in Medina, Washington, required flexibility to accommodate small and large group teaching, leadership activities, as well as a makerspace. The upper floor provides adaptable small group spaces a conference room, and counseling offices, including small areas of refuge for students. On the main floor a movable partition separates a larger group space from the makerspace area to enhance usability with the co-location of multiple activities.

DESIGN ATTRIBUTES

Furniture

- Provide a variety of furniture types and arrangement options
- Provide furnishings that are flexible and adaptable to the needs of different users
- Consider comfort, engagement, and interactivity when selecting furniture
- Keep spaces uncluttered and avoid overcrowding or excessive visual stimulation in the furniture layout
- Avoid furniture that is too heavy or scrapes loudly when moved



Furniture

Furniture design, selection, and curation are critical components in helping people experiencing trauma have agency within their environments. Furniture can be as much a focus of TID as the spaces themselves. Furniture selection directly affects the senses of touch, sight, sound, and proprioception.

Furniture needs vary by spatial use. In general, providing a variety of seating and work surface options coupled with generous room for navigation leads to users feeling like they have control over the space. Cluttered spaces can make people experiencing stress feel anxious or trapped.

Flexible furniture can provide options for moveability, height, and hardness to allow individuals to create work, learning, or recreational environments tailored to their needs.

Specifying a variety of furniture types allows for flexibility and choice. Use furniture to define differentiated settings within a space, such as quiet research or active collaboration with small or large groups. Explore opportunities to place furniture in unconventional locations, such as facing a garden, under a staircase, or even facing a wall — away from the madding crowd. Divide large workspaces into zones with a series of work pods. Provide numerous chair and table options including wheels on some to promote flexibility. Consider rocking or swiveling chairs for people who need to move to reduce stress. Look for soft finishes and natural materials, but ensure they are durable to reduce the risk of wear and tear. Minimize the institutional feel of metal desks and chairs. Make sure furniture movement doesn't result in loud, triggering noises.

Furniture

An Examination of Flexible Seating in the Higher Education Classroom from a Physical and Kinesthetic Perspective by Pennington et al. (2024) examines the concept of flexible furniture in learning environments. Through mixed methods data collection and analyses, four themes were examined: Movement Opportunity; Back Pain and Comfort; Anxiety and Restlessness; and Focus and Engagement. Nearly 80% indicated that flexible seating had a positive effect on their experience in a course related to the themes. This study has implications for spaces beyond the higher education learning environment. Offices, for example, require similar themes of focus, engagement, and comfort to promote positive work. This can extend into other spaces such as convention centers, libraries, or student housing, where individuals may benefit from movable seating.

STORIES

Flexible Furniture

At Spruce Elementary School in Lynnwood, Washington, the classroom wings are organized as internal “streets,” each housing learning communities. The design prioritizes choice by breaking down the scale of space and providing alternative learning environments. Each community showcases unique built-in casework in the flex spaces which is personalized to the scale of the students in the various grade levels. Soft seating, chairs on wheels, and genius bars are designed to enhance the learning environment.

Project-Based Activities

While project-based learning is rooted in education, the idea of active, project-centered exploration that provides an opportunity to develop solutions for specific problems is highly relevant to how we work, grow, and learn throughout our lives. People of all abilities benefit from engaging in project-based activities where all senses can be stimulated. We live in a rapidly changing world, and we need to be able to adapt and learn new skills.

Project-based activities provide people struggling with trauma with the opportunity to personalize the work or learning experience and/or to join a trusted group of peers.

The work engages the social brain by focusing attention on task-oriented skills, that often require collaboration with others.

Consider providing spaces that support project-based, hands-on activities such as makerspaces, shops, studios, or kitchens in community centers, schools, universities, offices, and residential spaces. Explore da Vinci studios, a type of learning space model that integrates art and music into project-oriented activities.

In eldercare facilities, project-based activities can help activate the social brain to help those traumatized by loneliness and social isolation. Consider greenhouses, gardens, and vegetable patches in public spaces to offer sensory grounding and connections to natural cycles. These may be used as a connection to community initiatives addressing food insecurity, as well.

DESIGN ATTRIBUTES

Project-Based Activities

- Provide a range of indoor spaces to support project-based activities such as art, craft, shop, dance, theater, music, flower arrangement, culinary arts, etc.
- Develop outdoor spaces that support hands-on activities – gardens, ponds, lawns
- Consider culturally appropriate activities

“Tell me and I forget. Teach me and I remember. Involve me and I learn.”

—Benjamin Franklin

RESEARCH

Project-Based Activities

Zhou (2023) explores how Project-Based Learning (PBL) compares to traditional teaching methods. Emphasizing the changing educational landscape shaped by technological advancements, the author presents PBL as a constructivist approach to learning. The research highlights that PBL enhances active engagement including creativity, critical thinking, collaboration, and teamwork — all skills crucial for academic and professional success. The paper advocates for adopting PBL as a more effective teaching method to better equip students for society's evolving demands.

Active learning is a skill that can benefit populations beyond students. Elderly people, especially those with dementia, benefit from active learning if given the opportunity. A study by Schmidt-Hertha et. al., (2019) serves as a call to action for researchers, educators, and policymakers to prioritize studying and implementing educational programs for older adults. It underscores the critical role of learning in fostering active aging, social inclusion, and well-being, suggesting that a deeper understanding of this relationship is essential for addressing the challenges an aging population faces.

STORIES

Project-Based Activities

Project-Based Learning can be the ideal education pathway for students who have experienced trauma. It is active, engaging, and enhances peer support and collaboration skills beneficial to socialization. Raisbeck Aviation High School, located adjacent to the Museum of Flight in Burien, Washington, features robotics classes that include designing, building, and competitions to enhance learning.

Display

Display consists of applying visual elements to an environment or space, often referred to as experiential or environmental graphics. These can include creative work, commissioned art, identity and branding elements, and wayfinding graphics. Display can directly impact our senses of sight, hearing, touch, and occasionally smell.

Adding a personalized touch to spaces helps create a sense of belonging and pride. Hand-made and biophilic elements in high traffic areas can help humanize the building and provide directional cues. Place-based graphics often help develop contextual links. Many patterns and processes can evoke a calming, natural sensibility, such as the patina of time, fractals, linked series, complimentary contrasts, sensory variability, dynamic balance, ratios, and scales. Artwork can speak to cultural and historical relevance along with the personalization of space.

Place positive messages in gathering, work, learning, recreational, and circulation areas. Avoid punitive-sounding messages. Ensure that art and graphics do not have a symbolic significance that can be interpreted negatively. Organize visual displays to reduce clutter and avoid too much visual stimulus. Minimize overhead, hanging, or dangling displays that can spark hypervigilance.

Some graphics encourage movement. They can help people come back from isolation or disassociation. Moving the body through a patterned sequence can increase mindfulness for people recovering from triggering events.

Wayfinding clarity is vital for people struggling with trauma. Intuitive, straightforward circulation helps anxious individuals navigate without undue stress. Displays and experiential graphics can help clarify circulation routes while promoting positive messaging. Consider sequential graphics or images with variations on a theme as a tool to increase clarity. For complex buildings, color-coded wayfinding graphics can clarify navigation and minimize confusion and stress.

Display

- Consider display that adds visual interest, biophilia, and warmth
- Provide “can do” as opposed to “can’t do” messaging
- Work with users to develop contextually appropriate displays
- Provide clear way-finding and messaging

RESEARCH

Display

A study compared two elementary schools: an experimental school that prominently featured permanent student artwork and a control school that displayed artwork temporarily. Findings indicated that students in the experimental school reported a significantly greater sense of ownership over their learning environments than those in the control school. The authors argue that permanently displaying artwork fosters a deeper connection of students to their educational experiences and enhances intrinsic motivation and engagement in the learning process. (Killeen, et al, 2003)

STORIES

Display

At Children's Hospital Los Angeles Neurology Institute, whimsical murals guide young patients through stories of bravery and adventure. The artwork encourages children to see themselves as the heroes of their own tales, with each patient room offering unique positive narrative outcomes. This ensures that every visit to the facility provides a fresh experience, filled with imagination and discovery.

Technology

In a world where digital information and Artificial Intelligence (AI) have rapidly come to dominate everyday life, it has become important to maintain the human attributes of self-reliance, adaptability and collaborative engagement. This can be challenging for people who have experienced trauma. Additionally, trauma impacts people's ability and willingness to acquire new information. When the social brain is not capable of superseding the traumatized brain, people often act out or retreat into themselves.

Technology can help traumatized people learn to navigate collaboration and interaction at levels with which they are comfortable. Interactive technology allows people to participate in more significant events while allowing them to be physically present in a smaller, more personalized space. It will enable them to work or learn where they feel safe and secure.

Recognize, however, that some people, particularly the elderly, may not be tech savvy and may find over-reliance on technology to be stressful and potentially triggering. Where possible, a warm smile and friendly greeting will always be the preferred welcome in a healing environment.

Technology can directly affect all senses. Moreover, technology can be harnessed to help those who are differently-abled or neurodivergent to gain access to a broad range of skills, knowledge, and experiences.

DESIGN ATTRIBUTES

Technology

- Consider integrating technology throughout work, learning, residential, cultural, and recreational projects to facilitate access for all people and give them agency with how, when, and where they wish to engage
- Explore integrating technology into various spaces to provide choices in how people engage
- Balance integrated technology with human touch

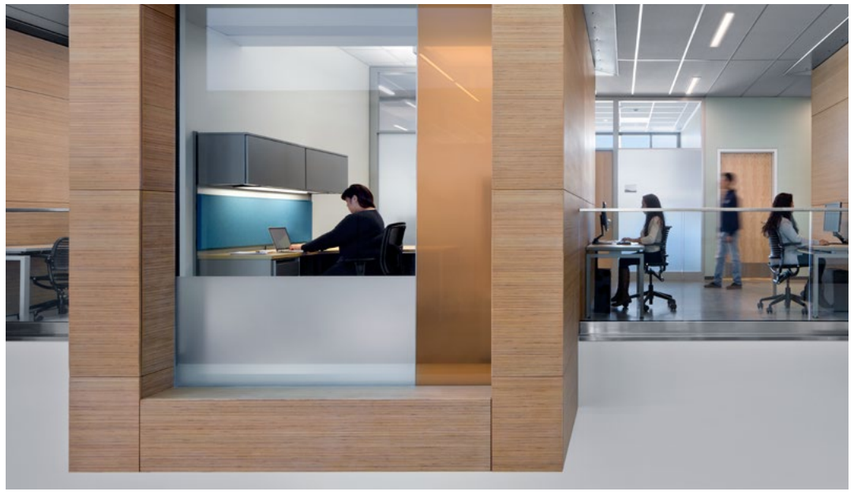
“The most important thing is to make the technology inclusive – make the world change.”

–Jack Ma

DESIGN ATTRIBUTES

Thoughtful Transparency

- Reinforce visual cues and legibility within buildings by providing relites between spaces and circulation routes
- Design primary circulation routes to be easily discernible
- Develop sequential patterns along corridors to make destinations visible
- Provide glass relites indoors along with sidelights to increase transparency
- Consider daylight at the end of corridors to aid in spatial awareness



Thoughtful Transparency

Thoughtful transparency embodies three key attributes: seeing one's place within the larger environment, having prospect over the surrounding area to see who is coming and going, and seeing where one is going when moving through space. Transparency helps develop a feeling of physical safety by minimizing dark dead ends while offering vantage, connection, and passive supervision. It can support emotional safety by ensuring that privacy is respected. It can open space and provide a message of 'welcome.' Conversely, a lack of transparency can lead to hypervigilance — what's around the corner, who's approaching, and how do I escape?

Thoughtful transparency can delineate spatial organization and hierarchies. It helps people feel connected and invites users into engagement.

For people struggling with hypervigilance, transparency is critical in helping them feel safe by being able to see what is happening around them.

In public spaces, layers of openness can provide visibility into and out of spaces to make users feel comfortable with their level of interaction. Differing levels of transparency frame or create a connection between the inside and outside. The organization of these levels of transparency is key to providing a feeling of enclosure and safety while also being able to see who is in proximity to their place. Their place could be a chair, in a classroom, a picnic blanket in a park, or the threshold of their home.

Balance transparency with areas of refuge. Individuals need to see their surroundings but also need to feel secure. Full glass enclosures can feel like fishbowls with too much visibility. Consider areas with varying degrees of light, shade, and enclosure to help delineate space and provide options to reinforce individual choice. In circulation areas, reduce single-line movement patterns and provide opportunities to "step off the path" while still seeing where it is going.

Thoughtful Transparency

Transparency in trauma-related design often references the Trauma-Informed Care principles of trust and transparency, which maintain openness to decisions and ensure that processes are visible, understandable, and trustworthy. (SAMHSA)

As a physical entity, transparency is a strategy that provides varying degrees of visual access within a space. Transparency is not just visual sightlines. It can be thought of through three lenses: literal, phenomenal, or experiential. Literal transparency allows visual interaction, enhancing feelings of openness and accessibility. Phenomenal transparency creates layered experiences that encourage users to engage with their surroundings and invoke curiosity. Experiential transparency emphasizes ease of access, promoting inclusivity and community interaction (Erkartal et al., 2019).

Spaces

In addition to patterns that address overarching design characteristics, specific spaces or groups of spaces can benefit from design focused on healing. Given the ubiquitous impact of trauma on children and adults, we cannot address every space occupied by people dealing with toxic stress. This section lists relevant spaces that can benefit from applying TID. Hopefully, this initial list will inspire an expansive application of TID Patterns to more spaces. We have grouped spaces into ten broad categories listed below.

Introduction

The preceding chapter, Pattern Language of Design, describes essential patterns and relevant attributes that can be applied throughout a project. In this chapter, those Design Patterns are translated into specific space types, with actionable recommendations on elements to consider including in your design. We explore how specific spaces can support those who have experienced trauma and outline attributes that may be applied to these spaces.

Although there is a wide and diverse range of particulars among the ten space types included here, the Guiding Principles of Trauma-Informed Care (TIC) apply to all of them — in that healing spaces, regardless of type, size, use or context all support the recognition of the signs and symptoms of trauma. All space types should integrate knowledge about trauma policies and practices, and actively work to avoid re-traumatization. Core design principles shaping these spaces include safety, trust/transparency, peer support/collaboration, empowerment/voice/choice, and awareness of cultural and historical related issues.

Scale matters. Considerations of scale are a critical thread that spans all of the following space types. Often, people dealing with trauma do not do well in large, undifferentiated spaces. Human scale, a sense of connection and belonging, and a home base where one is known well by caring colleagues or adults, are critical factors in developing trauma-informed designs. The DeafSpace Design Guidelines raise the idea of Sensory Reach – “the interrelated system of perception (hear, see, smell, feel, taste) used to understand and orient in space” - regarding personal scale.

In all space types it is important to thoughtfully consider an individual’s sensory reach in order to help them feel safe. Sensory and social cues coupled with spatial legibility support one’s orientation in space. Even considering the descriptors of a space can help frame the design intent. For example, ‘slick and corporate’ instead of ‘warm and welcoming’ speaks volumes to a person struggling to belong or navigate a space.

Large-scale projects need not abandon TID. A large school can break down learning spaces into right-sized clusters or learning communities. Corporate offices can be divided into meaningful departments or sub-groups. Even massive conference centers can be organized in an assemblage of spaces instead of one gigantic mind-numbing structure. These space planning strategies are, in fact, critical for the effective delivery of Trauma-Informed Design.

Examples

community centers, religious institutions, homeless shelters, family rooms in schools, communal areas in residential developments, elder care spaces, wellness centers,office breakrooms/commons, ‘third place’ gathering areas, taverns/pubs, restaurants

Community Spaces

Community spaces vary widely. They range from intentional gathering spaces in schools or eldercare facilities to more spontaneous community spaces in a local pub or bookstore. They may be publicly financed, like a homeless shelter, or privately operated, like a retirement community. Inclusive social spaces that engage families, friends, and colleagues can become safe havens for people dealing with trauma.

Design community spaces to be highly visible and welcoming, providing a haven and place of refuge for those in need. They often become a nexus for additional support, including health, counseling, and homeless services. Ensure caring adults are visible and available to listen and meet. Consider amenities like extended hours, technology access, language translation services, or skill and vocational training. In schools, PTA members, volunteers, and tutors are often available to help students and families seeking assistance.

DESIGN ATTRIBUTES

Community Spaces

- Encourage social interaction and emotional support to disrupt feelings of isolation and disconnection among people dealing with trauma
- Develop opportunities for formal and informal interaction
- Reinforce cultural relevance in shaping community space

STORIES

Community Spaces

The County of San Diego North Coastal Live Well Health Center promotes wellness, self-sufficiency, and a better quality of life to families. This building brings together aging and independence services, a military and veterans resource center, community health promotions, regional administration, public health services, and behavioral health services under one roof.

“There is more to life than increasing its speed.”

–Mahatma Ghandi

Group Spaces

Enhanced personalization is a critical aspect of developing group spaces that support healing. Consider developing a variety of spaces that support varying scales of use, from individual to large group. Balancing social spaces with private spaces allows individuals to be alone or join a larger activity. A semi-transparent conference room, pullout area, nook, or booth can provide space for individuals or small teams to work while keeping an eye on the larger activity.

Individuals dealing with trauma are sometimes challenged when participating in a large group rather than with trusted colleagues in more collaborative settings. Consider varying degrees of enclosure ranging from private spaces to alcoves or niches with views out to a larger space. Relites or screens between spaces can provide a sense of controlled connection and an awareness of who is coming and going.

Design areas of refuge at the perimeter of large spaces via benches, booths, screens, or counters. These activated edges provide seating options slightly separated from the large space and support an individual who may need to retreat if the activity in the large space is too cacophonous. Multiple seating options, workstation layouts, and movable furniture (high/low, round/square, rocking/stationary, counters/tables, benches/booths, etc.) allow users to determine how and where they wish to participate.

Thoughtful room arrangement and seating options can also benefit those struggling with stress. Sitting with views toward an open area allows users to survey their surroundings. Arrange formal gathering spaces and meeting rooms with U-shaped or oval tables to ensure everyone has views of one another.

Outdoor connections provide biophilic relief and security for people with hyper-vigilance. Consider porches, decks, patios, and trellises between inside and outside. These layered elements help develop an understanding of defensible space,

Consider providing multiple viewing options for large presentations, museums, or performance spaces. A balcony or raised area can separate from the primary space while maintaining a connection. Finding the appropriate balance between prospect and refuge can be key to allowing stressed individuals to engage within their comfort level. Some performance venues have even developed a separate space with audio/visual connections to aid audience members who are uncomfortable in the larger presentation space.

Examples

library, commons, cafeteria, theater, auditorium,restaurant, tavern/bar, waiting area, museum, gallery, store, conference center, senior housing communal areas, residential common areas

DESIGN ATTRIBUTES

Group Spaces

- Provide optional sitting or work areas adjacent to or at the perimeter of larger Group Spaces
- Develop defensible spaces within the Group Space to support differing needs and abilities to engage
- Consider optional viewing areas in presentation spaces to support people challenged with large gathering spaces


Local History

Examples

Routine use spaces: offices, professional workspaces, schools, healthcare facilities, community centers,elder care facilities

Physical activity spaces: gyms, health clubs, exercise spaces, dance studios,yoga halls, aquatic centers

Movement Spaces

Numerous paths to recovery from traumatic stress involve movement. Spaces that support physical activity can promote mindfulness, centering, and self-regulation. Yoga, meditation, tai chi, and similar disciplines have been helpful for individuals experiencing stress. Graphic movement courses placed on walls or floors can be used to focus body and mind, encouraging self-awareness and balance. Less rigorous activities such as fidgeting, tinkering, or rocking can also help burn off excess energy and stress. Consider providing spaces that accommodate various movement activities both indoors and out.

For active physical spaces such as a gym or exercise studio, explore providing widened perimeter areas with a bench, bleacher, or raised perch from which a stressed person can view the physical activity and assess whether they are ready to participate. Consider locating some equipment in a semi-private area for those triggered by too many people. Thoughtful placement of mirrors is another consideration. Not all participants want to be on display. Lastly, remember that relites help users see who is coming and going from an active space.

DESIGN ATTRIBUTES

Movement Spaces

- Provide optional sitting or work areas adjacent to or at the perimeter of larger group spaces
- Develop defensible spaces within the Group Space to support differing needs and abilities to engage
- Consider optional viewing areas in presentation spaces to support people challenged with large gathering spaces

Learning Spaces

Organize learning spaces to enhance personal connections and collaboration. Consider communities of approximately 150 learners as a maximum size to facilitate personalized learning where each user or student has agency in how they wish to engage. Seek to develop a sense of 'home base' so learners are known well and cared for. Provide access to multiple caring adults. Explore using human scale and biophilia to shape welcoming, differentiated spaces. Support indoor/outdoor connections.

Provide a variety of spaces that enhance safety and security. Balance social spaces with more individualized spaces. Layers of space can support engagement across many levels, from isolation to inclusion. Spatial variety might support individual work, quiet reflection, small to medium-sized groups, hands-on learning (studios, shops, and labs), and large group areas for presentation, debate, and team-building activities. In schools and higher education facilities, adaptable spaces support a variety of pedagogies and enhance student agency in determining preferred places to sit, access to exits, and sight lines. For hypervigilant participants, seeing the doors and windows and who is coming and going may be much more important than seeing the whiteboard or the instructor.

Learning spaces can also benefit from incorporating primal spatial characteristics that support prospect and refuge. Is there a sense of the 'cave' that provides enclosure, protection, and privacy? Perhaps there is a raised area that signifies a 'hill' to establish a defensible overview and survey for safe connections? Trusted colleagues might gather around the 'firepit' bathed in soft light and warmth, or an airy, daylit space might welcome large gatherings reminiscent of the 'watering hole.' These ideas hearken to core social patterns that have existed since the earliest understanding of human history.

Stressed individuals often do well in hands-on learning settings where activities allow a traumatized person to focus on the task at hand without much need for interaction with others. Art, craft, tinkering, inventing, and play activities can help with focus and healing. In schools, makers labs, Science, Technology, Engineering, Math (STEM) labs, da Vinci studios, and Career Technical Education (CTE) shops support a range of active learning modalities.

Examples

schools, colleges, universities,libraries, community centers,elder care facilities, career-technical education centers

DESIGN ATTRIBUTES

Learning Spaces

- Limit the size of learning communities to ensure opportunities for personalized learning are prioritized
- Develop a variety of learning spaces to maximize student choice in where and how to engage
- Consider hands-on learning settings to provide focused learning opportunities for traumatized individuals

STORIES

Learning Spaces

Learning spaces at Rose Hill Middle School in Redmond, Washington are organized into six semi-autonomous learning communities that form wings of the school with landscaped areas between them. Each community houses four classrooms, a lab, a conference room, and a planning area grouped around a shared area used for flexible learning and social gathering, that opens to an outdoor learning area. In addition to typical classroom use patterns, these variable types and scales of space support differentiated learning approaches ranging from individual study and small group collaboration to project-based activities and large group work.

Professional Workspaces

Professional workspaces come in various sizes and types, ranging from tiny private offices to open-plan cubicles stretching across entire floors. Humanize the workplace. Break down the scale of large office spaces into neighborhoods and smaller clusters to encourage more personalized connections among staff. Spatial identity and wayfinding clarity can be critical within large open offices where a stressed individual might feel overly exposed. Consider relites and corner windows in enclosed office domains to improve sightlines and safety. Provide views of natural light, biophilia, and the outdoors wherever possible. Provide refuge areas for stressed employees to escape the crowd and re-focus. Small conference rooms and gathering areas enhance trusted connections and collaboration between colleagues. Consider providing space for ongoing professional development and a place to relax and re-charge.

Many offices have begun incorporating recreation and play areas to encourage employees to unwind, get to know one another, and have fun. The employee lunchroom has transformed into a community kitchen/commons area where workers cook, eat, and celebrate together as they build trust and teamwork.

Professional workspaces within educational facilities, such as administration offices and counseling areas, must be carefully considered for students, clients, and their caregivers dealing with trauma. Consider dispersed administration and counseling services to support students closer to their home base. Offices and conference rooms dispersed throughout the learning communities give troubled students immediate access to caring adults. Rather than exacerbating the isolation of traumatized students by pulling them out of their communities for behavioral issues, consider reinforcing their sense of belonging by supporting their healing within their trusted group. Centralized records combined with a planning area can provide caregivers with space for collaboration and recharge.

Develop circulation paths to enhance student confidentiality. Avoid placing counseling services in a significant circulation area to circumvent the ‘walk of shame’ some students experience when seeking help. Create a welcoming waiting area for students, parents, and caregivers to build broad levels of support for students experiencing trauma. Positive graphic messaging can help develop a gracious welcome.

Design for both passive and active supervision strategies. Consider sightlines and related factors to support passive supervision.
Highly stressed students may need quiet places away from others to reduce hypervigilance and calm down.

Examples

offices, administration areas,counseling areas, customer service areas

DESIGN ATTRIBUTES

Professional Workspaces

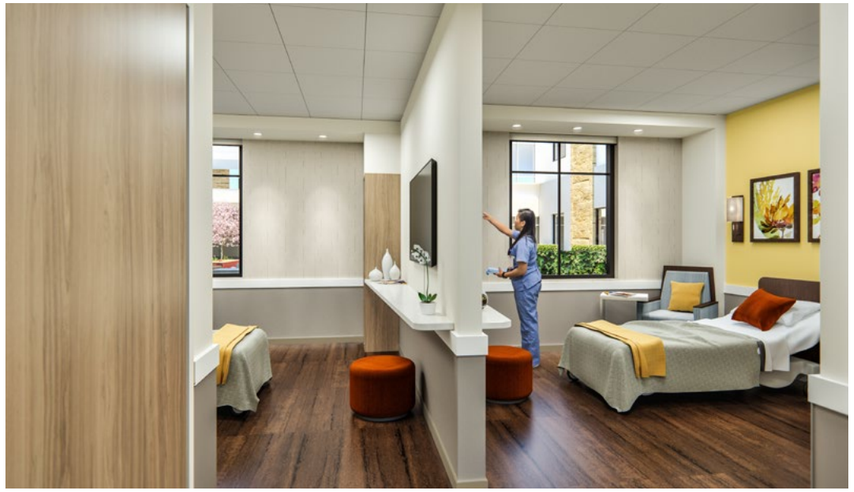
- Recognize the needs of the ‘whole person’ when designing workspaces – social, emotional, and physical
- Reduce the scale of large offices by developing smaller groupings that support a sense of belonging
- Ask, ‘What is best for students?’ when designing office space in educational settings

“The solution to alone-ness is not more solitude, but companionship and community.”

Robert Fulg

Examples

residential developments (apartments and condominiums), elder care facilities, group homes, transitional housing, student housing, long-term healthcare facilities



Living Spaces

Functional amenities in residential facilities vary tremendously. Remember that 67% of our children have experienced traumatic stress, and inevitably, a sizable percentage of adults have also dealt with trauma. Trauma doesn't merely disappear; we must design to support all ages. The need for healing strategies wherever people live is paramount. Consider an in-depth review of the Patterns and Spaces when shaping the shared areas in facilities supporting residential functions across all ages and embed TID concepts throughout the facility.

In general, seek to create a sense of identity for all users, limit the stimuli people are experiencing at any one time, and develop layers of space that allow individuals to choose how they wish to engage. For example, look for ways to accommodate areas of refuge within larger activity spaces in eldercare facilities instead of residents sitting in hallways.

Student housing projects benefit from developing identity-based wings or clusters coupled with flexible gathering spaces to give agency to all users. A variety of amenities can be provided, such as game rooms, firepits for gathering, and rooftop lounges. These provide students spaces to relax and unwind or find refuge when feeling overwhelmed. Safety, access to nature, warm materials, and optimal light begin the journey of avoiding triggers and recovering from past traumatic events. The goal is for all residents to thrive.

DESIGN ATTRIBUTES

Living Spaces

- Understand “who” the residents are and what are their needs?
- Create spaces that allow personalization and individual identity
- Create a sense of belonging in a greater community using graphics and display
- Look at the whole plan of a facility to ensure pathways feel safe

“Boundaries are, in simple terms, the recognition of personal space.”

—Asa Don Brown

Circulation Spaces

Circulation spaces are typically hallways, corridors, stairwells, and other connectors that unify a building or a campus. Although not primary programmed space, circulation spaces are equally as important. Provide clarity, visibility, and thoughtful transparency to support wayfinding and movement throughout a building and site.

Coherent wayfinding begins at the entry – be it to the site or to the building. Provide a well-defined entry sequence. Utilize landscape features to enhance the arrival process by balancing openness and refuge. Seek security without projecting control and fear. Good visibility and a covered entry can provide shelter without being oppressive. Layered spaces such as a porches and vestibules project a sense of welcome. Optimal lighting, acoustic attenuation, and inviting materiality signals welcome to a wide range of users. If heightened security is required, ensure visibility and clarity are given precedence over lock-down protocols. Easy to interpret wayfinding provides consistency, predictability, support, and information to users.

Create a sense of welcome with clear sightlines and generous circulation paths. Avoid surprises, sharp corners, and dead ends that might cause anxiety or trigger a feeling of being trapped.

Minimize tight spots in circulation spaces where personal space is compromised, and potential touching becomes a stressor. Develop nodes and eddies to encourage social interaction along circulation paths. Consider visual connections between floors to increase awareness of movement throughout space. Use cadence, rhythm, colors, textures, and smells in intuitive wayfinding. Explore uplifting messaging rather than punitive information - ‘can do’ as opposed to ‘can’t do’ - to avoid triggering stressed individuals. Use corridors as a canvas for experiential graphics that build identity and positive feelings among building users.

People experiencing trauma need circulation space to avoid triggering through touching or invasion of their personal space. Circulation spaces are the source of much anxiety and stress in learning environments, especially in schools designed with conventional layouts using hallways to connect rows of classrooms. These spaces need thoughtful design to avoid congestion and ensure stressed learners feel comfortable, safe, and connected.

Providing a feeling of safety in circulation areas becomes even more critical when designing for differently abled or neurodivergent people dealing with trauma. For blind people, it is critical that circulation spaces are acoustically absorbent, so the echoing sound of their canes does not create a distraction. Blind people’s perception of sound is often more developed than able-bodied people’s — their hearing is on high alert.

Circulation spaces for blind people can incorporate tactile and textural surfaces for wayfinding or utilize features such as water fountains as an auditory guide. Smell can be another wayfinding tool. Sequential gardens or planters with fragrant plants can provide excellent navigation clues. Navigation for deaf people requires good visibility in widened circulation spaces to facilitate conversations in sign language.

Expanded or relit corners help anticipate collisions. Gentle ramps are preferred over stairs to facilitate uninterrupted flow within sign language conversations.

Examples

entry into a site, wayfinding to a building entrance, the entry sequence, horizontal and vertical movement throughout a building

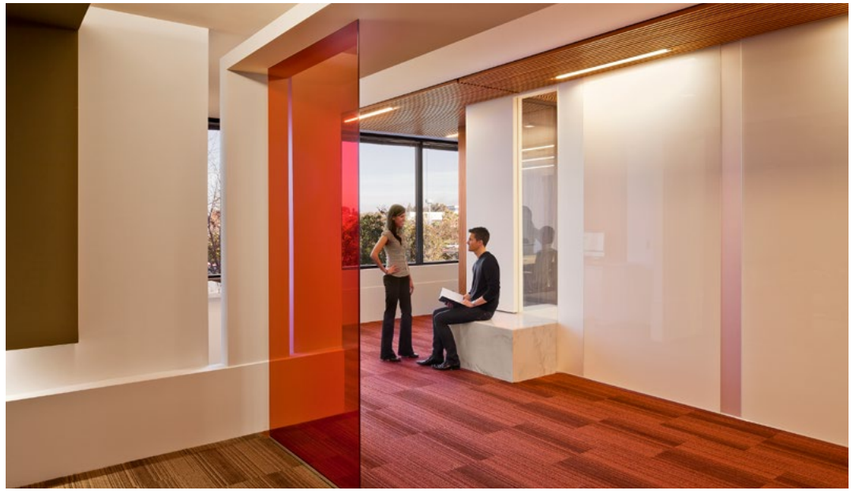
DESIGN ATTRIBUTES

Circulation Spaces

- Provide clear and welcoming circulation paths to avoid triggering people dealing with trauma
- Develop generous areas for circulation to avoid touching
- Consider tactile, visual, and olfactory experiences when designing circulation spaces

“Some people’s lives seem to flow in a narrative; mine had many stops and starts. That’s what trauma does. It interrupts the plot. You can’t process it because it doesn’t fit with what came before or what comes afterwards.”

Jessica Stern



Transitions and Thresholds

Transitions and thresholds can signify a shift from one state, space, or experience to another. They can be physical, emotional, or energetic. When designed thoughtfully, they provide structure, meaning, and an opportunity for recalibration. In the context of Trauma-Informed Design, these transitions and thresholds take on additional layers of importance. In spaces designed for humans — whether homes, offices, classrooms, or public spaces — transitions help regulate the sense of flow, energy, and experience.

Transitions between high-energy and low-energy environments allow individuals to align their internal states with their surroundings.

For instance, moving from a bustling hallway to a quiet nook offers a moment of decompression. Moments of pause between high and low energy spaces, when intentional, reduce cognitive and emotional overload while creating a sense of safety and predictability.

For individuals who have experienced trauma, abrupt or unstructured transitions can be overwhelming, potentially triggering feelings of anxiety or loss of control. Thoughtful thresholds — both literal and metaphorical — can act as buffers that help individuals prepare for and navigate changes in their environment or emotional state.

Transitions between high- and low-energy spaces allow for a balance supporting productivity and rest. High-energy spaces encourage collaboration, creativity, and social interaction, while low-energy spaces provide areas for quiet reflection, focus, or emotional recovery. Ensure that these transitions are gradual and accommodating, recognizing that individuals may need time and cues to adjust their energy levels and emotions. Design Patterns, including Thoughtful Transparency, Optimal Light, Acoustics, Display, and Materials and Finishes, can all play a significant role in developing friendly transitions to avoid triggering experiences.

DESIGN ATTRIBUTES

Thresholds and Transitions

- Incorporate sensory cues such as changes in lighting, color, or texture to signal a shift
- Create rituals when passing between spaces
- Use scale to guide users through thresholds

Toileting Spaces

From childhood to adulthood, restrooms have been the location of conflict for many. Bullying, fighting, drug use, homophobic taunting, sexual abuse, suicide – the list of traumatic activities in restrooms is fearsome. Restrooms have become a flashpoint in the 'culture war' for many. Diverse communities and cultures have firmly held opinions about restroom design. Gender-segregated toilet rooms create significant challenges for the transgender community because they fail to recognize the non-binary nature of gender. Meanwhile, some people with more traditional values object strenuously to ideas of gender-neutral toilet rooms.

Thoughtful communication and questions are a starting point for addressing all concerns. Decisions need to focus on reducing traumatic events impacting users and providing safe and supportive environments for everyone regardless of age, gender, race, religion, or disability.

Multiple-occupant gender-neutral restroom designs have been developed to provide individual privacy while improving safety, visibility, and openness. Options vary from individual lockable rooms with water closets and sinks to those with common sink areas. Issues of menstruation, illness, drug use, sex, sexual abuse, and suicide need careful consideration with lockable rooms. Cleanliness in restrooms without urinals is another challenge.

Is there a need for binary toileting, or can all-gender toilets meet the needs of all users equitably? Some religious and cultural groups have firmly held mores about separating the sexes. How does this reconcile with transgender people? A combination of male, female, and unisex toilet rooms offers a more traditional approach. However, this design approach runs the risk of spatially segregating non-binary people. If unisex or gender-neutral toilet rooms are as plentiful and available as traditional binary restrooms, can we reach a middle ground?

Visual and acoustic passive supervision are key elements in dealing with abusive behaviors that trigger traumatic responses. Open shared areas and cameras in shared areas are enhanced supervision options. Supervision requirements will vary with use patterns. Children's restrooms invariably have different supervision requirements than adult spaces. Public restrooms will vary from private toileting. Each design problem will require careful dialog.

In addition to numerous traumatic challenges, homeless and transient people struggle to find publicly available restrooms. Besides providing toilets and sinks, are there opportunities to design showering, storage lockers, and even laundry facilities within the programs of some institutions (schools, libraries, civic buildings, markets) or private projects?

DESIGN ATTRIBUTES

Toileting Spaces

- Focus discussions about toileting on safety, support, and reducing traumatic impacts for all
- Ensure passive and active supervision strategies are appropriate to use patterns
- Explore opportunities to support homeless and transient populations with showers, storage, and laundry facilities

STORIES

Toileting Spaces

At Spruce Elementary School in Lynnwood Washington, student safety and agency are supported through gender neutral toilets in the learning communities. Individual stalls feature full height doors to provide privacy and transom windows to let in light from the corridor.

Examples

parks, playgrounds, sports fields, green lawns, plazas, courtyards, patios, decks, porches, gardens, arboretums. woodlands, meadows, wetlands, streams, beaches, and deserts.

Outdoor Spaces

Connections to nature draw upon all our senses and offer numerous healthy, supportive experiences to those struggling with trauma. Natural settings help calm, center, and ground people – be it from trauma or other stresses. The simple act of breathing, oxygenating the brain, enhances learning and focus.

Numerous studies point to the restorative value of connecting with nature. Benefits range from enhanced emotional clarity, critical thinking, problem-solving skills, and constructive abilities to promoting recovery and healing.

Provide a variety of refuge spaces to help people deal with stress, such as a quiet shady grove, restful garden, or pond-side bench. Develop a series of outdoor rooms of diverse character and size to give people choices in where to engage. Consider edges, transitions, and slopes as places to observe without engaging. Develop variable-sized social spaces emphasizing small gathering spaces for trusted friends. Remember that the extent to which outdoor spaces may be used is dependent on geography and climate patterns.

Play is healing. Consider active, passive, organized, and spontaneous play in shaping spaces of various sizes. Simple exploratory experiences such as walking in the woods, climbing a hill, or skipping stones can relieve stress. Explore on-site opportunities for gardens, enhanced ecosystems, orchards, water systems, and the like to heal users and planet alike. Encourage access to off-site amenities that improve connections to the natural world.

Fitness activities can be hugely beneficial for people experiencing trauma. Support a range of fitness options from personal workouts to organized sports. Personal fitness options such as training circuits, climbing walls, and obstacles can double as both a workout and a centering or grounding activity. Tracks, athletic fields, and play courts enhance fitness for all.

DESIGN ATTRIBUTES

Outdoor Spaces

/ Enhance connections to nature in both formal and informal settings

/ Encourage a variety of fitness and play activities to support healing

Engagement Process

Engagement processes vary tremendously depending on project type, community, budget, schedule, owner, and design professionals. We recognize that community involvement and Trauma-Informed Design strategies may not be prioritized for some projects. However, given the broad and insidious impact of trauma, we urge project teams to consider how trauma may be affecting clients and/or users and integrate some of the TID design patterns that fit within the project's constraints.

Introduction

Trauma-Informed Design Engagement Framework

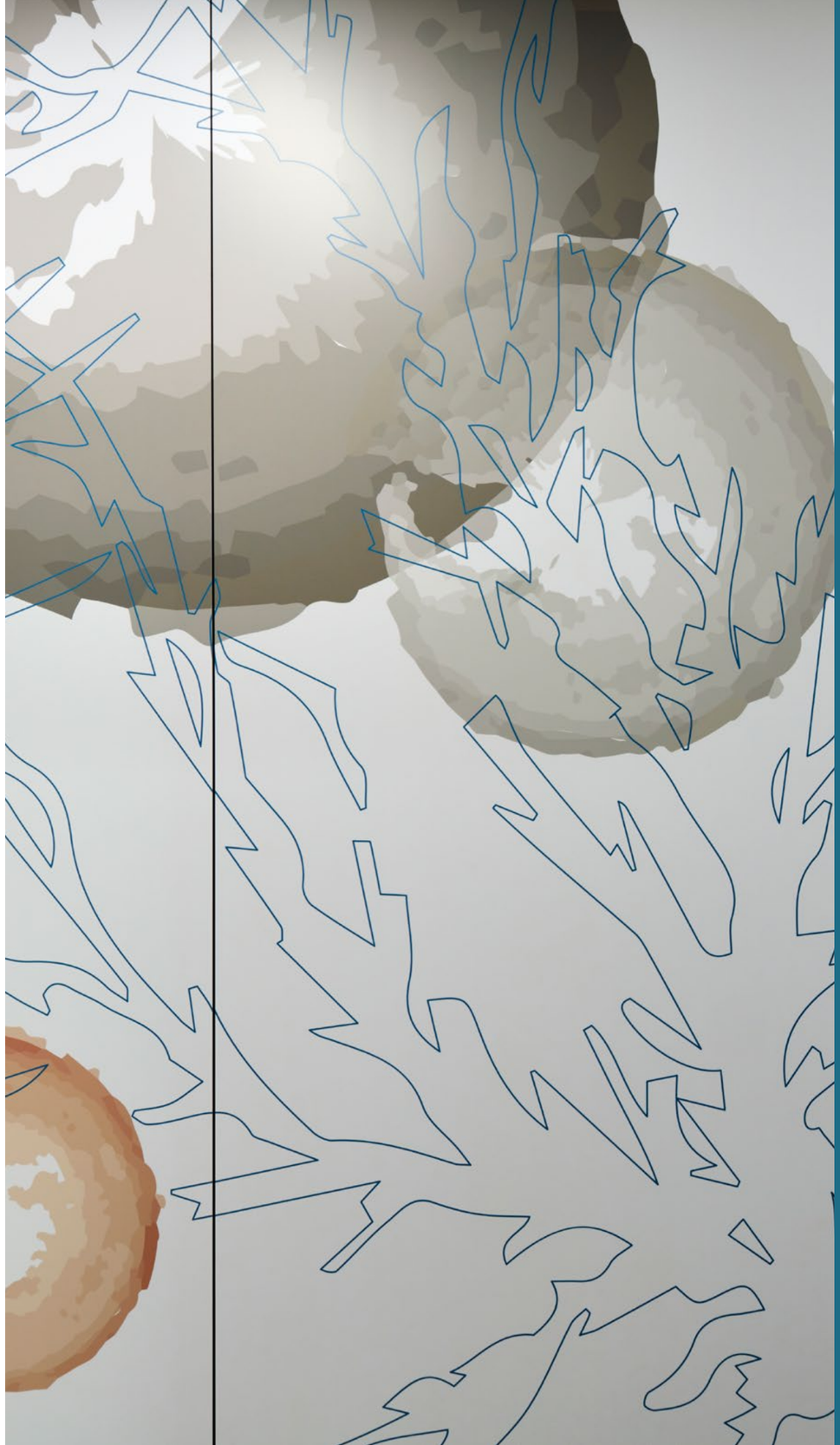
We have developed a Trauma-Informed Design Engagement framework to guide the planning and execution of a process that engages many voices in a collaborative effort to weave TID Patterns into projects and promote healing.

This chapter details the engagement framework, shown in the diagram at right.

Lead with Empathy: Engage, Listen, Transform

Empathy is a state of mind. It is the capability and the willingness to understand and even feel the emotional states of others. And while empathy is not inherently tied to the physical world, such as a built space, it can play a pivotal role in the creation of spaces that support healing for users. For a TID stakeholder engagement to truly benefit users, empathy is foundational.

Lead all stakeholder engagements with an open mind. Hear the voices in the room and try to understand their points of view. People with lived experiences of trauma can help designers and decision-makers understand challenges and sensitivities that should be addressed. Empathy fosters trust, encouraging open dialogue where all voices feel valued and heard.



Step 1: Define

The first step in the engagement process is to define what we are trying to accomplish. Project design approaches vary with every design team and owner, and developing project design goals can also take many forms. To effectively integrate TID into a project, we have developed a process for generating Guiding Principles to clarify this critical aspect of a project. The Guiding Principles are intended to augment the wide variety of approaches to design and goal setting utilized by other architects, designers, and owners, not displace them.

Guiding Principles are big ideas or goals that frame projects and help prioritize decision-making. We typically develop them with stakeholders at the beginning of the design process and regularly reference them as the design progresses to ensure we meet our objectives. These central concepts can be used to shape the entire project or, in this case, focus on integrating healing-focused concepts into a project. For TID-oriented projects, the Guiding Principles regularly focus on the social-emotional, psychological, and physical needs of those using them. These themes are often inspired by ideas of resilience, restoration, or a focus on calming hypervigilance while emphasizing the design of nurturing and responsive environments. The themes will inform choices related to spatial organization, materials, lighting, acoustics, and aesthetics, all working together to create safe, comforting, and healing spaces.

Some clients and projects have neither the time, budget, nor inclination to engage in a deep visioning process that breaks down the essence of the project into aspirational Guiding Principles focused on TID. Below, we have shared both a process and its outcomes. We hope you can use what works best for your project— a deep engagement dive or a quick overview to "integrate good ideas."

The starting point for our TID Guiding Principles is the Trauma-Informed Care (TIC) Guiding Principles developed by the Substance Abuse and Mental Health Services Administration (SAMHSA). The principles focus on operational goals for organizations dealing with people experiencing trauma. Adapting the ideas to architectural design requires developing specific outcomes focused on each project's program requirements. The following principles from Trauma-Informed Care have been edited and synthesized for clarity and relevance to Trauma-Informed Design. We have also expanded the list with two principles that focus on architectural outcomes not represented in the TIC principles – Sustainability and Beauty & Joy. We share these Guiding Principles as a starting point for discussion.

We recognize the unique nature of every project and hope these ideas inspire earnest exploration of what is right for your client, community, and program.

Safety

Trust + Transparency

Peer Support + Collaboration

Empowerment, Voice + Choice

Guiding Principles

SAFETY

A safe and secure environment includes both physical and social/emotional attributes. Physical safety encompasses a wide range of design characteristics that begin at the boundaries of a site and layer into the entry, circulation areas, and specific program areas of each project — be it a workplace, learning environment, residential, or recreational setting. Visibility, clarity of circulation, and lighting are physical attributes that help provide a secure environment. A sense of welcome, uplifting colors, and connections to nature are examples of social/emotional security that augments physical design attributes.

TRUST AND TRANSPARENCY

Building trust requires sustained, personalized relationships in which social, emotional, and physical well-being are supported. Engendering trust and transparency begins with human interactions regarding a project approach to organization, management, and communication. Design characteristics that support transparency include visual and acoustic connections throughout the facility, whether a glass relite between spaces for literal transparency or an open plan layout that unifies activities, For those experiencing significant stress, full transparency (the fishbowl effect) must be carefully balanced with the need for pockets of protected space. Enhanced visibility (who is coming and going), multiple pathways for movement, and access to trusted colleagues are critical. Trust begins at a smaller scale with spaces that support one-to-one or small-group connections.

PEER SUPPORT AND COLLABORATION

People suffering from trauma benefit from having a calm home base from which they can choose to take part in an activity or retreat. Layered spaces allow for a sense of prospect to see what is going on and make choices about readiness to engage. Small-scale spaces support trusted peer interactions. Self-help often requires agency within a space – the ability to close, open, or otherwise rearrange a space. Hands-on activities allow stressed users to engage with limited or no interaction with others. Collaboration results from a sense of trust, support, and empowerment. Skills required for collaboration include communication, emotional intelligence (understanding what others are going through), and respect for diverse viewpoints. Spaces that support collaboration are welcoming and encourage interaction and shared actions. Collaboration is often amplified through project-based activities. Spaces that support shared work or activities on a small scale are particularly helpful in bringing traumatized individuals out of a sense of hyper-vigilance.

EMPOWERMENT, VOICE, AND CHOICE

The agency to change one's surroundings is a critical component in aiding traumatized people to develop a sense of empowerment. Choice of seating, rearranging furnishings to create a greater sense of protection, adjusting light levels, or modifying acoustics are a few examples of how space can be changed to support struggling individuals. Spaces that accommodate movement can be particularly supportive for individuals as they search for mindfulness and centering. Varied, flexible spaces that are easily changed and not overly prescriptive support a wide range of voices.

CULTURAL AND HISTORICAL ISSUES

Just as each community is different, the impact of trauma varies from place to place. One community may be impacted by racism, another by poverty, and still another by identity-related issues. Mass tragedies and natural disasters will invariably impact communities in distinct ways. The design response to trauma must be tailored to meet each community's specific challenges. Reinforcing the contextual vitality of a community helps individuals dealing with trauma develop a sense of safety, mutuality, and empowerment. Celebrating cultural context around the arts, language, and cuisine builds a sense of belonging for all.

SUSTAINABILITY

Sustainable design supports healthy people and a healthy planet. Contact with nature enhances healing and recovery as our brains respond to natural patterns and cues. Connection with natural features and settings builds resilience — the capacity to withstand or recover quickly from difficulties. Sustainable, resilient design helps stressed people recover just as it helps stressed ecosystems recover from the fundamental challenges of climate change. Designs that engender a deep connection to place enhance emotional well-being, problem-solving, critical thinking, and constructive abilities.

BEAUTY AND JOY

Beauty offers comfort and peace, while joy brings awareness of happiness and hope. Together, these elements can transform spaces into sanctuaries that nurture the minds, bodies, and spirits of those who inhabit them. Beauty in architectural design is not merely about aesthetics but creating spaces that resonate with the human spirit. Beautiful environments can evoke tranquility and comfort, which are essential for recovering from trauma. Joyful environments can transform how individuals interact with one another. Joy in architecture can be seen in playful design elements, vibrant colors, and spaces that encourage social interaction and personal expression. These elements can support the healing process by providing respite and happiness.

Cultural + Historical

Sustainability

Beauty + Joy

Differing project types will invariably give greater emphasis to different Guiding Principles.

Healthcare, for example, may focus on **Peer Support** and **Collaboration** as a pathway to build an empathic healing environment. Healthcare design teams may also revise the ideas in this principle to more closely align with their project's mission.

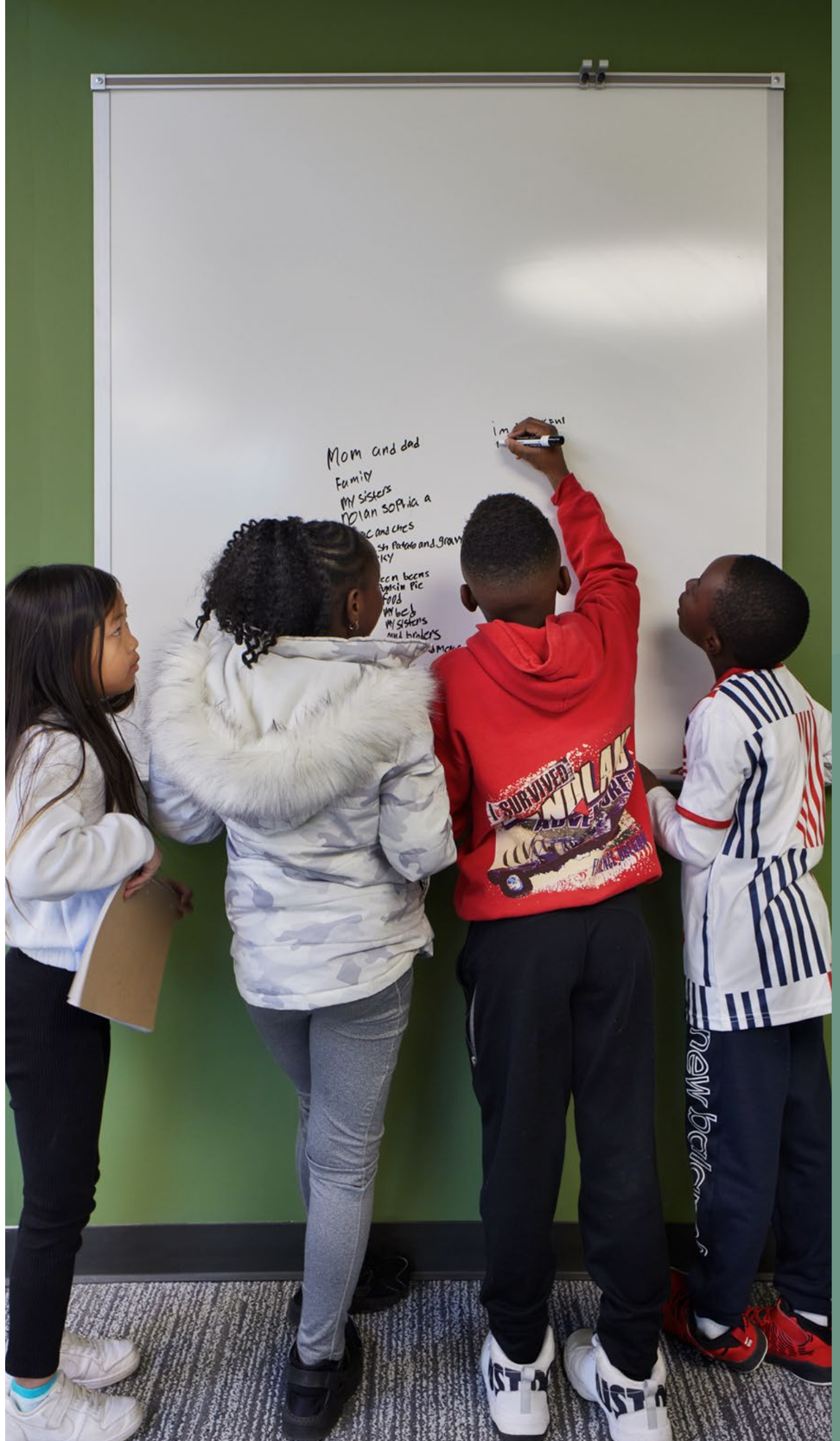
Higher education projects will likely expand on ideas outlined in **Empowerment, Voice, and Choice** as they explore the dynamic of young adults moving into their first live/work environments after graduating from high school and leaving home.

Community and Cultural projects may find ideas embedded in **Cultural and Historical Contexts** at the forefront of their design thinking as they explore ideas of representation and inclusion in museum exhibits, arts programs, or civic spaces.

A residential developer may choose to emphasize **Sustainability** or **Beauty and Joy** as prioritized Guiding Principles to model best practices in addressing climate change or simply to enhance sales.

K-12 educational design teams often place emphasis on the Guiding Principle of **Trust and Transparency** as they strive to build personalized learning environments supporting the diverse needs of all students.

These examples of prioritizing and modifying the **Guiding Principles** represent the first steps in an engagement process focused on shaping a project to support healing and resilience.



PROMPT

Step 1: Define

- Determine which Guiding Principles are relevant to your project
- Discuss if any Guiding Principles critical to your project are missing
- Modify and customize the Guiding Principles to align with project goals and priorities

Step 2: Plan

Planning effective stakeholder engagement involves asking questions about the scope of the project, the schedule, and how much input is desired from stakeholders. Remember that this engagement is about defining the Trauma-Informed Design needs of the project and identifying TID Patterns that can help create healing environments.

Scope

Identify stakeholders who will be a part of the engagement process — such as clients, end-users, community representatives, family members, or regulatory authorities who may have valuable input to help align the project with TID goals.

Outline the type of engagement that is desired. This may include workshops, surveys, or meetings to gather input and maintain transparency.

Coordinate stakeholder input on meeting dates and times to encourage participation.

Determine if stakeholders will be a part of a formal Design Review Committee (DRC), or if input will be obtained in less formal sessions.

If a DRC is desired, size the group to ensure there are representatives from a variety of project interests so all voices can be heard regularly.

Adjust the plan based on community context and input.

While larger, multi-use projects may require more diverse input, and smaller projects might need fewer voices, this is not always the case. To develop a comprehensive approach to TID, look at projects from social/emotional, cultural, historical, and physical perspectives.

Determine how much input is desired from stakeholders and how much influence stakeholders may have as the design develops.

Align the engagement plan with the project schedule. Ensure that meetings occur throughout the schematic and design development phases.

Depending on desired input, schedule reviews in later construction document phases so stakeholders can see how their recommendations have influenced the project.

Trauma-Informed Engagement

Due to the nature of trauma, the engagement sessions may be triggering for some members. It is essential that these discussions support participants and do not have negative consequences on the individuals involved. Ensure that there is a shared definition of trauma, so that there is mutual understanding among a diverse group. As the plan develops, consider ways engagement sessions can help mitigate trauma. One framework to lean into is the Transforming Community Space Through Equitable Collaboration Toolkit developed by the Institute for Engagement & Negotiation (IEN), University of Virginia.

The Toolkit offers institutions and communities practical tools for addressing issues in ways that center formerly silent voices and stories, support community learning, provide for more complete and honest histories, recognize trauma and promote healing, and support justice and equity.

While the toolkit focuses on spaces identified with histories of harm or oversight, such as monuments, buildings, and public parks, it offers strategies and resources that can help bring people of diverse views together to determine how to create and transform all spaces into healing environments.

Whether the engagement plan is complex or straightforward, it can benefit from applying the basic tenets of these principles. A thoughtful approach to planning TID Engagement will foster collaboration, address potential conflicts early, and lead to a design that meets stakeholder needs.

PROMPT

Step 2: Plan

- Determine the specific outcomes that can be achieved through stakeholder engagement
- Identify the most affected or vulnerable groups in the community and determine how to prioritize their voices in the engagement process
- Explore how vulnerable populations can speak freely without fear of judgment or re-traumatization
- Develop strategies for how attention can be given to processing trauma that may occur as part of the process
- Review how participants can be treated with empathy

Tenets of Equitable Engagement

TRAUMA-INFORMED
Safeguard and put support systems in place to address emotional responses or discomfort during discussions.

INCLUSIVE
Seek out, welcome, and honor diverse voices during engagement sessions.

RESPONSIVE
Acknowledge and respond to questions, needs, concerns, and input.

TRUTH SEEKING
Invite stories and histories that may be painful to hear and seek to uncover false narratives that adversely affect members.

DELIBERATIVE
Foster understanding of stakeholder needs and encourage openness to learning about one another on individual terms.

ADAPTIVE
Allow engagement activities and processes to change appropriately to achieve desired goals.

Step 3: Outreach

Once the engagement plan is set, stakeholders need to be recruited. All too often, when selecting a Design Review Committee (DRC), the members are those who feel they can invest the most time into the process and those who feel most heard. For example, when we design schools, this often means that honors students are on the DRC rather than struggling students who may have valuable input as to how the school can support all students.

When implementing TID, it is imperative to recognize that often the voices we need to hear from the most are the ones that are hardest to connect with.

These may be historically marginalized people, those with differing physical, sensory, or cognitive needs, the elderly, non-native speakers, low-income people, or transient/ unhoused populations.

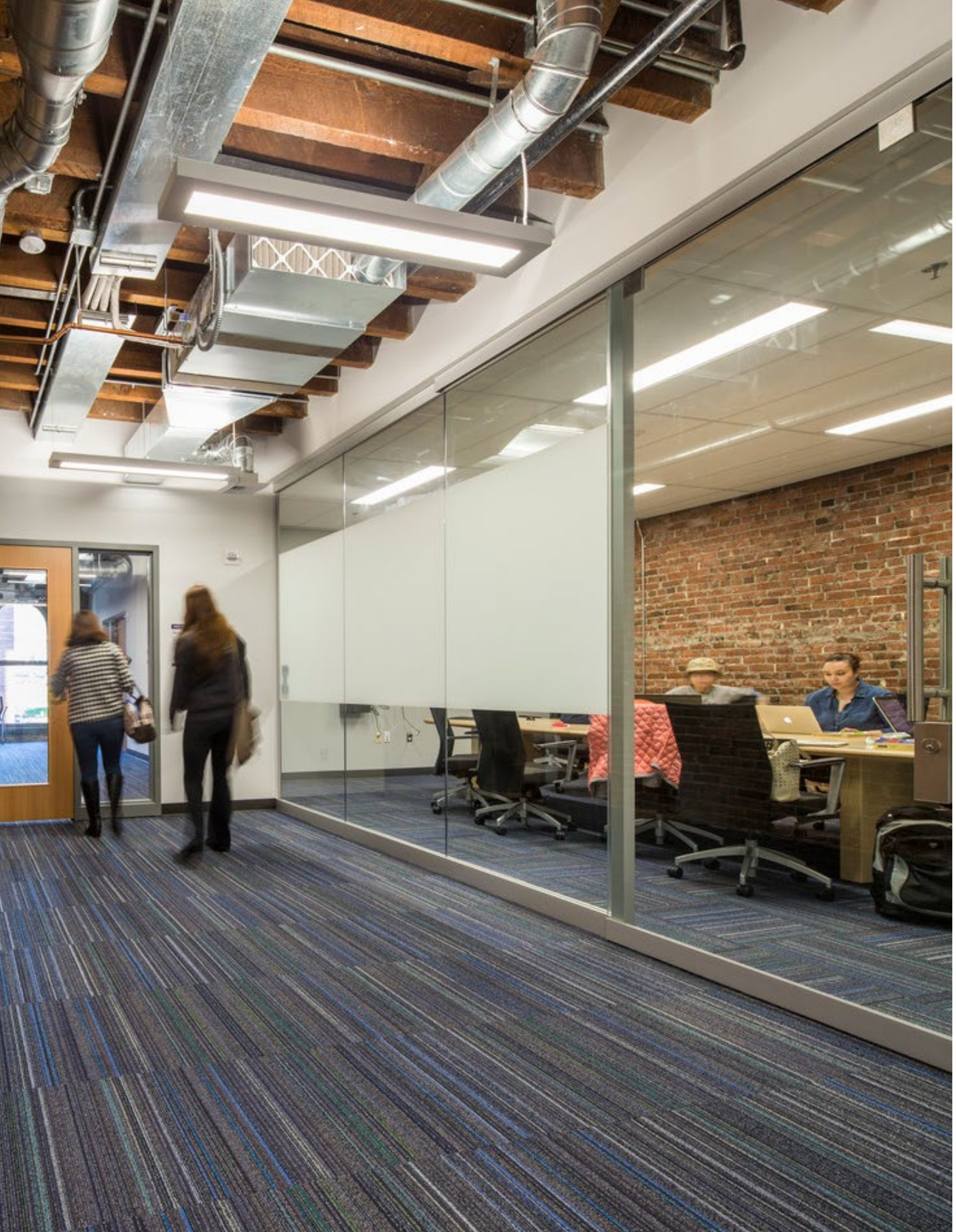
In healthcare, ensure nurses, social workers, and patient advocates are involved in the engagement process and feedback loops. For higher education, engage with first-generation students and students with disabilities — visible and invisible. Community and cultural projects benefit from partnering with local leaders to encourage widespread and diverse community input. Work with Black, Indigenous, and People of Color (BIPOC) artists to interpret lived experiences of stakeholders. Eldercare facilities benefit from listening to the needs of the residents. Reach out to caregivers and family members who may have insights into traumas and triggers that residents are unable or unwilling to voice.

Ensure that everyone feels welcome, and that outreach includes the individuals or groups who may benefit most from a healing-centered environment. Endeavor to reach those who are most vulnerable, to lift everyone. Seek people who are broad thinkers with diverse interests and backgrounds, representing a wide swath of the community.

PROMPT

Step 3: Outreach

- Determine the key participants and tools needed in the discussion
- Develop a list of incentives that can be provided to support participation in meetings - daycare, food, travel, etc.
- Explore flexible schedule and location opportunities to ensure participant involvement



Step 4: Engage

Once the stakeholder group has been formed, Trauma-Informed Design Engagement sessions begin. Transparent communication is a critical aspect of the engagement process. Establishing clear parameters and expectations from the beginning can help with more robust discussions and minimize tangential conversations that do not advance the project. Before stakeholder discussions occur ensure all parties understand how their ideas and recommendations may or may not influence the project.

During engagement sessions, participants discuss and expand on the project's Guiding Principles and dive into applying TID Patterns throughout the project.

The engagement sessions aim to develop project-specific attributes of each Guiding Principle that address needs and measurable outcomes.

Use the Design Patterns and Spatial Characteristics outlined in Chapters 3 and 4 as a starting point. Add more patterns expressing innovative ideas and observations gleaned from stakeholders. The intent is to develop an actionable design approach.

Engagement Example

A brief example of how **project-specific attributes** support actionable design ideas: While designing a professional office space for 50 people, stakeholders participating in the TID Engagement session generated ideas supporting the Guiding Principle of **Empowerment, Voice, and Choice.**

The following **attributes** are based on TID Patterns and Spaces and provide ideas to enhance the design.

PERSONALIZED SCALE

Break down the scale of the office space into teams of +/- 10 people to ensure everyone is known and feels empowered to speak up and participate in the work. No one should feel anonymous or forgotten in a larger group of 50 people.

SELF-IDENTITY / DIGNITY

Provide an individual workstation for each person so they have a comfortable, supportive space that serves as a home base.

FLEXIBILITY, FURNITURE

Provide movable and modular workstations and furniture to allow each person to rearrange their work environment to fit their needs.

AREA OF REFUGE, PROJECT-BASED ACTIVITIES, BIOPHILIA

Provide some shared workstations to support variable work modes that individual workstations might be unable to accommodate, including privacy, collaboration, project-based activities, or outdoor work in good weather.

PROFESSIONAL WORKSPACES

Provide adequate wayfinding through the office so people are not constantly interrupted by others walking by their workstation.

TID Champion

Like the early days of integrating sustainable design ideas into projects, incorporating Trauma-Informed Design concepts is new and different for many designers and clients. To ensure the TID Patterns are deeply considered, we often designate a champion within each team whose responsibility is to advocate for including trauma-related ideas and challenge design assumptions when TID Patterns may have been overlooked. Some patterns are easy to incorporate, while others require more comprehensive integration rethinking. Some patterns are low-cost or free; others come with a cost to the project. Owners and clients invariably have opinions and biases that must be considered. Like all design processes, careful consideration must be given to various choices affecting the project. The TID Champion's responsibility is to gently ensure that ideas focused on healing are not left on the cutting room floor.

Engagement Strategies

Be Prepared

/ Come with an agenda, name tags, presentation materials, activities, tools, and appropriate technology for every meeting.

/ Designate a notetaker/historian. If someone misses a meeting, they can consult with the historian before the next meeting rather than interrupt the follow-up meeting to revisit issues already covered.

Develop a Rules of Engagement List

/ Ensure respectful listening and communication throughout the meetings.

Make Introductions

/ Who are you? Why are you here? What is something special in your life?

/ Begin a process of building trust within the stakeholder group so new ideas can be developed and considered. Develop an understanding that meetings are "safe places" for brainstorming and ideation.

Vary the Activities

/ Large group discussion, small group activity, and one-on-one sharing.

/ Recognize that some people are intimidated by speaking to a large group but may excel in a small group setting. Try developing active, hands-on activities to engage nonverbal participants.

Discuss Homework

/ Innovative designs often require research and advocacy to comprehend key issues and ideas before being incorporated into a project.

/ If we are to incorporate ideas that help mitigate trauma effectively, we need to get more thoughtful about TID.

/ It's also essential that the Design Review Committee read this book.

PROMPT

Step 4: Engage

/ Understand your stakeholders – listen!

/ Choose activities that are best suited for the stakeholder group

/ Remember that some members may not understand “architectural” terms and need guidance

/ Provide “breathing space” during activities for participants to think about the broad ramifications of trauma and discuss how TID Patterns and Spaces can help create healing spaces

Engagement Activities

We have used several techniques, including brainstorming, role-playing, and design charrettes, to help expand TID engagement for projects. These techniques help engage a broader group of stakeholders, generate new concepts, and lead to actionable design ideas.

Brainstorming

/ The intent is to generate and document various ideas to spark creativity.

/ In a small group setting (4-6 people), allow individuals to explore novel solutions to the issue presented.

/ There are no bad ideas in a brainstorming session; all ideas are considered and written down.

/ Teams build on each other’s ideas by withholding judgment and scaffolding lateral thinking during shared ideation.

/ In addition to problem-solving, brainstorming fosters team building and collaboration skills.

/ After a list of ideas is quickly generated, each team reviews and refines them before presenting them to the entire DRC for consideration.

Role-playing

/ Organize into small teams (4-6 people max) around a table.

/ Hand out two types of cards to each person on the team. The first is an ‘Image Card’ that illustrates an AI-generated photo of a person. The second card, a ‘Trauma Card,’ spells out a type of trauma. We use diverse AI-generated images, so the cards have no connection to any living person.

/ After examining their cards, each team member makes up a story incorporating the information outlined on the cards. For example, if your ‘Image Card’ shows an elderly man and your ‘Trauma Card’ says, “psychological abuse,” you may invent a story outlining the man’s lifelong struggle with childhood abuse. What are the manifestations of his trauma, what has he done to mitigate the effects, what are the triggers that make him re-live his toxic experiences, and what would make him feel safer?

/ Note: If the exercise triggers some, you may choose to talk about the people separately from the traumas, trade cards, let people sit out the exercise, or excuse them. Remember, this is a safe place, and we are dealing with trauma!

/ After each person on the team has told a trauma-oriented story through role-playing, have the group list design attributes and spaces that would help mitigate the traumatic challenges.

/ Present the list of design ideas to the whole DRC for discussion. What ideas are resonant for this project? How can the ideas be shaped into actionable attributes within the Guiding Principle format? What ideas were not considered but are also crucial for inclusion?

Design Charrette

Another tool we have used to integrate TID Patterns into our work is a Design Charrette held early in the Schematic Design Phase. The charrette involves key members of the design team exploring a broad integration of TID Patterns into the emergent design while looking for synergistic ideas. Working individually or in pairs, design team members prioritize TID concepts in the conceptual design and then discuss ideas that may be relevant.

Step 5: Execute

Once stakeholders have identified the specific actionable characteristics of Trauma-Informed Design for the project, the next step is to implement the ideas. This responsibility lies with the entire design team, along with helpful advocacy by the TID Champion.

Incorporation of healing elements into Design Development and Contract Documents involves prioritizing ideas that promote safety, comfort, and inclusivity while minimizing triggering architectural elements that could cause distress.

For instance, incorporating natural light, sound-dampening materials, and clear wayfinding enhances physical and psychological safety. Flexible spaces that allow privacy and control over the environment cater to diverse needs and foster a sense of empowerment.

Many trauma-informed strategies align naturally with existing building codes and sustainability goals, and thoughtful early planning allows teams to make meaningful decisions within tight parameters. With a focus on intentionality rather than extravagance, Trauma-Informed Design becomes an accessible and impactful approach for any project.

Depending on the stakeholder engagement plan, feedback loops with the Design Review Committee may continue during these later phases. Engaged members of the Design Review Committee (DRC) can continue to advocate for the ideas generated and ensure that design solutions align with the intended users' lived experiences and needs.

PROMPT

Step 5: Execute

- Conduct regular reviews with the design team to ensure that TID Patterns are incorporated into the project
- Develop a project checklist for the TID Champion to use in challenging assumptions and advocating for greater TID inclusion

PROMPT

Step 6: Assess

- Use various methods to ensure the breadth and effects of TID are represented
- Share the information with Bassetti and HMC Architects so the next version of the TID information includes the new insights

Step 6: Assess

Assessing the efficacy of Trauma-Informed Design characteristics in projects involves collecting data through various post-occupancy evaluation (POE) methods to determine whether the spaces meet the intended goals of safety, comfort, and well-being. The following assessment approaches provide options for gathering data. Select the tool(s) that aligns with your project's needs.

SURVEYS AND QUESTIONNAIRES
Distribute surveys to occupants, asking about their experiences.

FOCUS GROUPS AND INTERVIEWS
Conduct structured or semi-structured interviews and focus groups with users to gain qualitative insights into how the design impacts their daily lives. Explore whether specific design elements are beneficial or need adjustment.

BEHAVIORAL OBSERVATION
Observe how occupants interact with the design over time. Note use patterns and areas of congregation or avoidance, and assess whether the design supports intended behaviors and mitigates stress-inducing scenarios.

ENVIRONMENTAL DATA MONITORING
Use sensors to gather objective data on environmental factors like lighting, acoustics, temperature, and air quality, ensuring these align with trauma-informed goals.

COMPARISON METRICS
Compare pre- and post-occupancy data, such as reports of stress levels, productivity, or health outcomes, to measure the design's impact.

FEEDBACK LOOPS
Create mechanisms for continuous feedback from occupants, allowing for iterative improvements and ensuring that the space evolves to meet users' needs. Use the feedback loop to inform future projects.

Regardless of the methodology chosen, focus on questions, use the Design Patterns, or data directly related to TID and its effects: perceived safety, comfort, and the usability of trauma-informed features (e.g., natural light, privacy options, acoustics). Gather data that determines if there are reductions in patient aggression, decreased staff burnout, improvements in student retention, increases in students seeking assistance for mental traumas, attendance at community events, or the increased use of formerly underutilized public spaces.

"In the end, what we want is to create citizens. The community is not only a protagonist because it engages volunteers, young misfits, or people with no opportunities in the construction, [but also, because] they become involved in the design and building development. They start to debate, to think, and to visualize these spaces, the scale, and the colors. This is the beginning of a fundamental process: understanding that they are responsible for changing their own reality."

José Naza Rodríguez

Case Studies

The following case study diagrams illustrate how various aspects of Trauma-Informed Design interrelate. The information shaping a project is rarely sequential or organized. Good ideas can flow from general to specific, or the reverse. Inspiration comes in many forms; as capable designers our task is to embrace the ambiguity and synthesize disparate ideas into a coherent outcome.

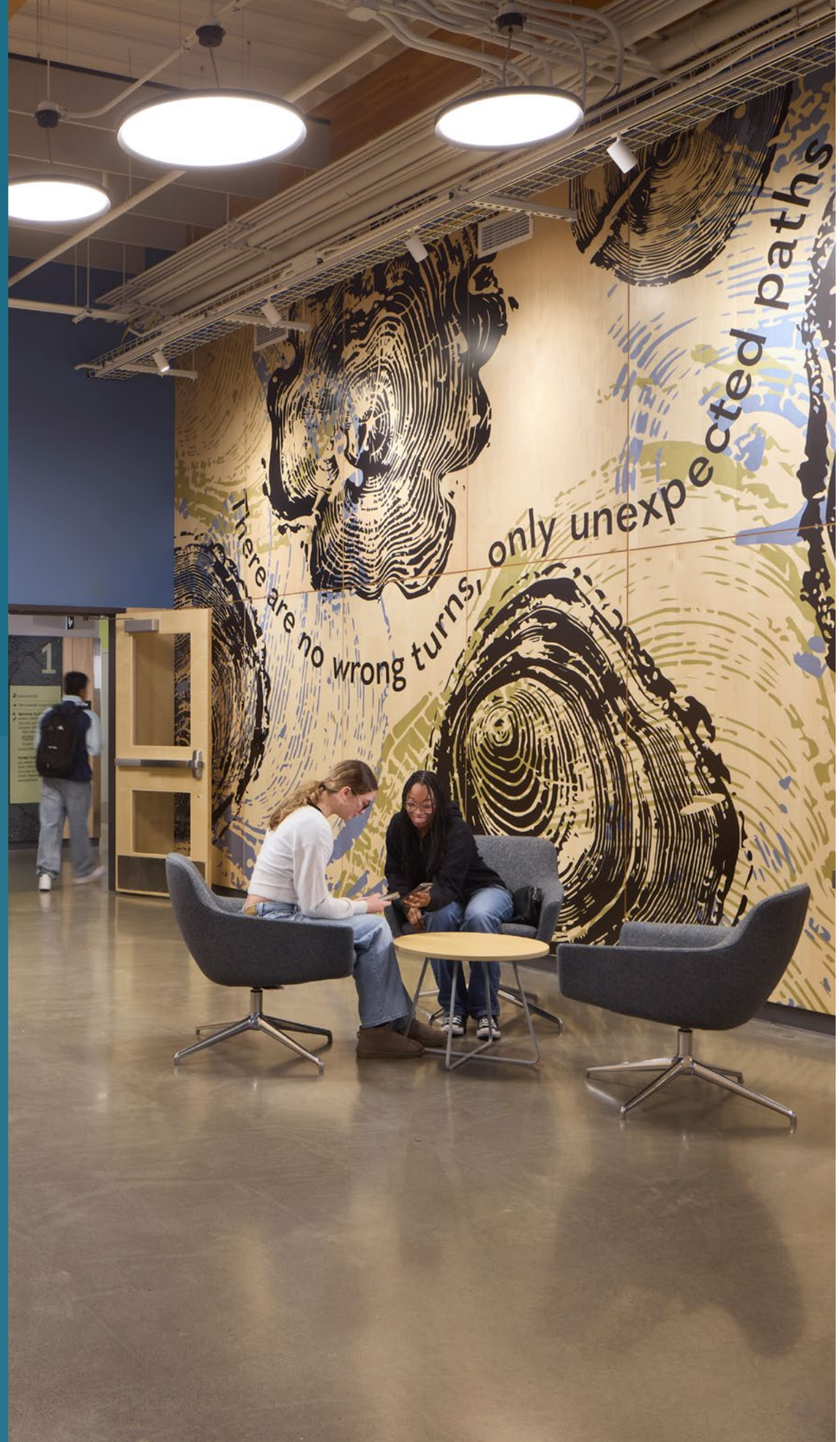
For example, at hayu alqi uyxat, in Portland, Oregon, an alternative high school, the engagement process included visioning and programming discussions. Stakeholders — district representatives, students, staff, and the greater school community — selected **Empowerment, Voice + Choice** as one of the project Guiding Principles during the visioning process.

Three Design Patterns that support the “big idea” (Guiding Principle) were selected and more granular design requirements (Design Attributes) were chosen to support the Patterns for both students and the greater community.

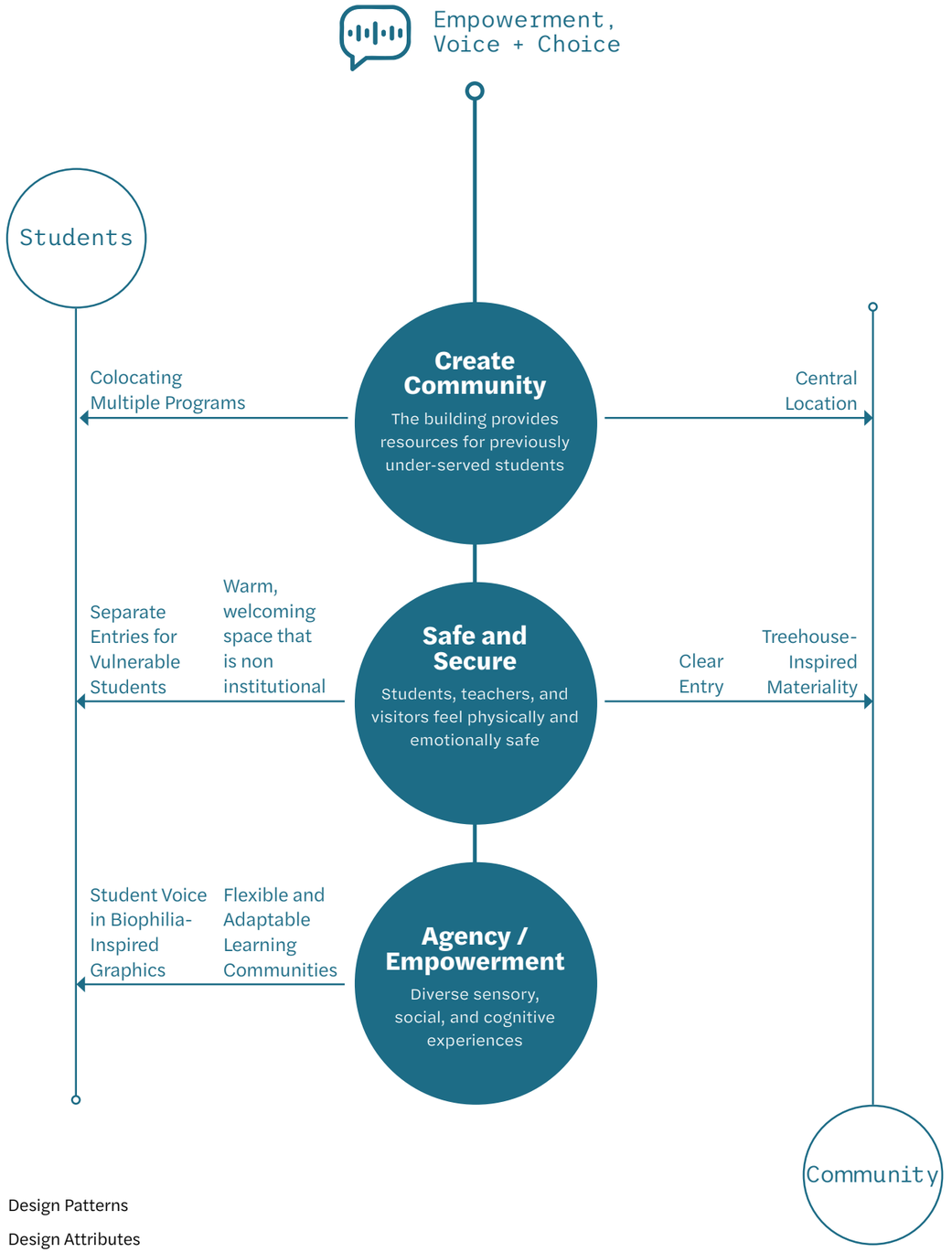
The lesson the case studies hope to convey is that powerful and successful projects synthesize a broad range of ideas and aspirations that encompass the core characteristics of healing environments.

HAYU ALQI UYXAT

Hayu alqi uyxat in Portland, Oregon, creates a space for high school students who've never truly had a school to call their own. It's a place that honors each child's unique learning journey, offering what traditional schools often overlook — an environment that recognizes them, supports their individual needs, and is committed to providing equitable opportunities for success.

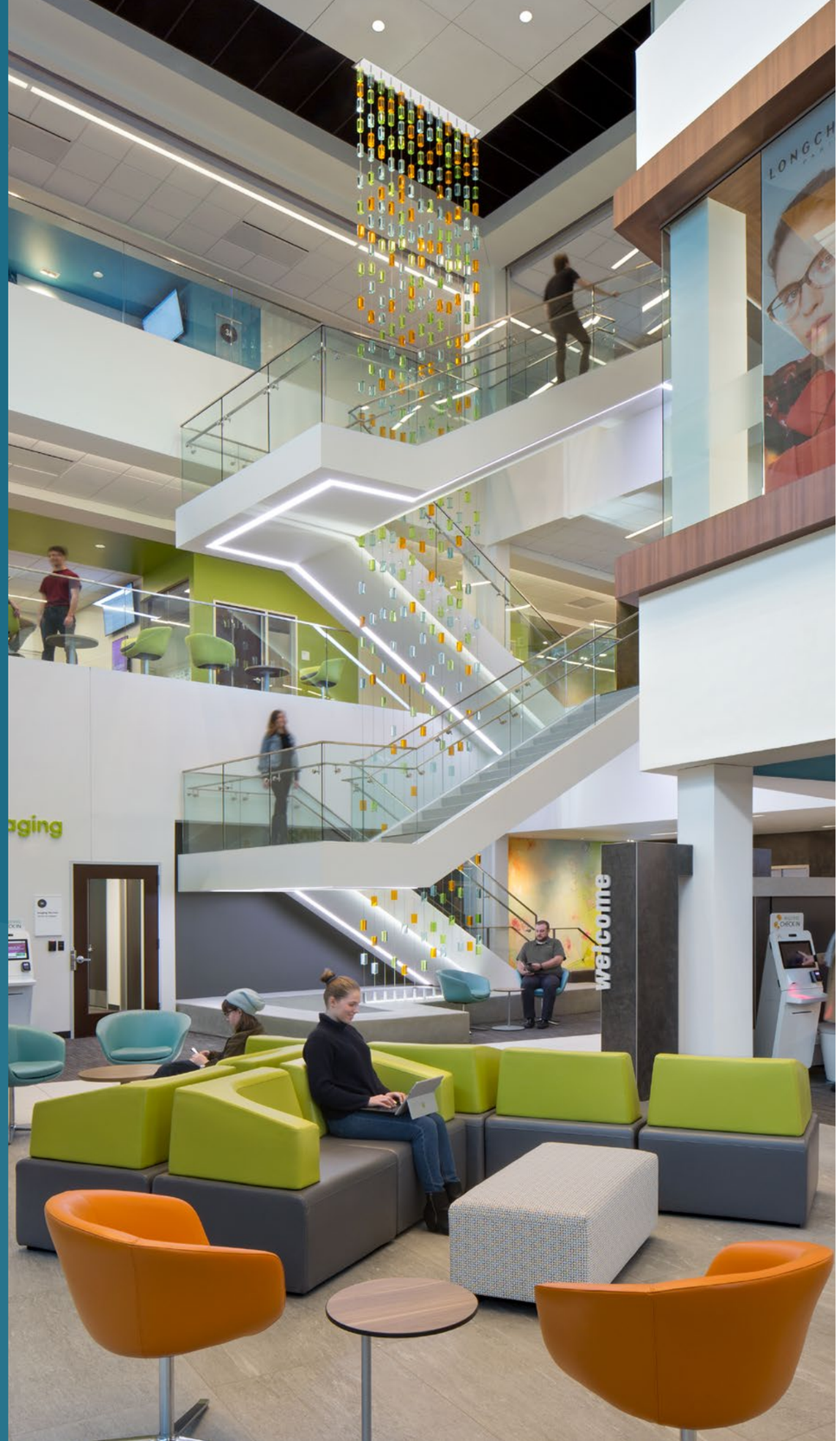


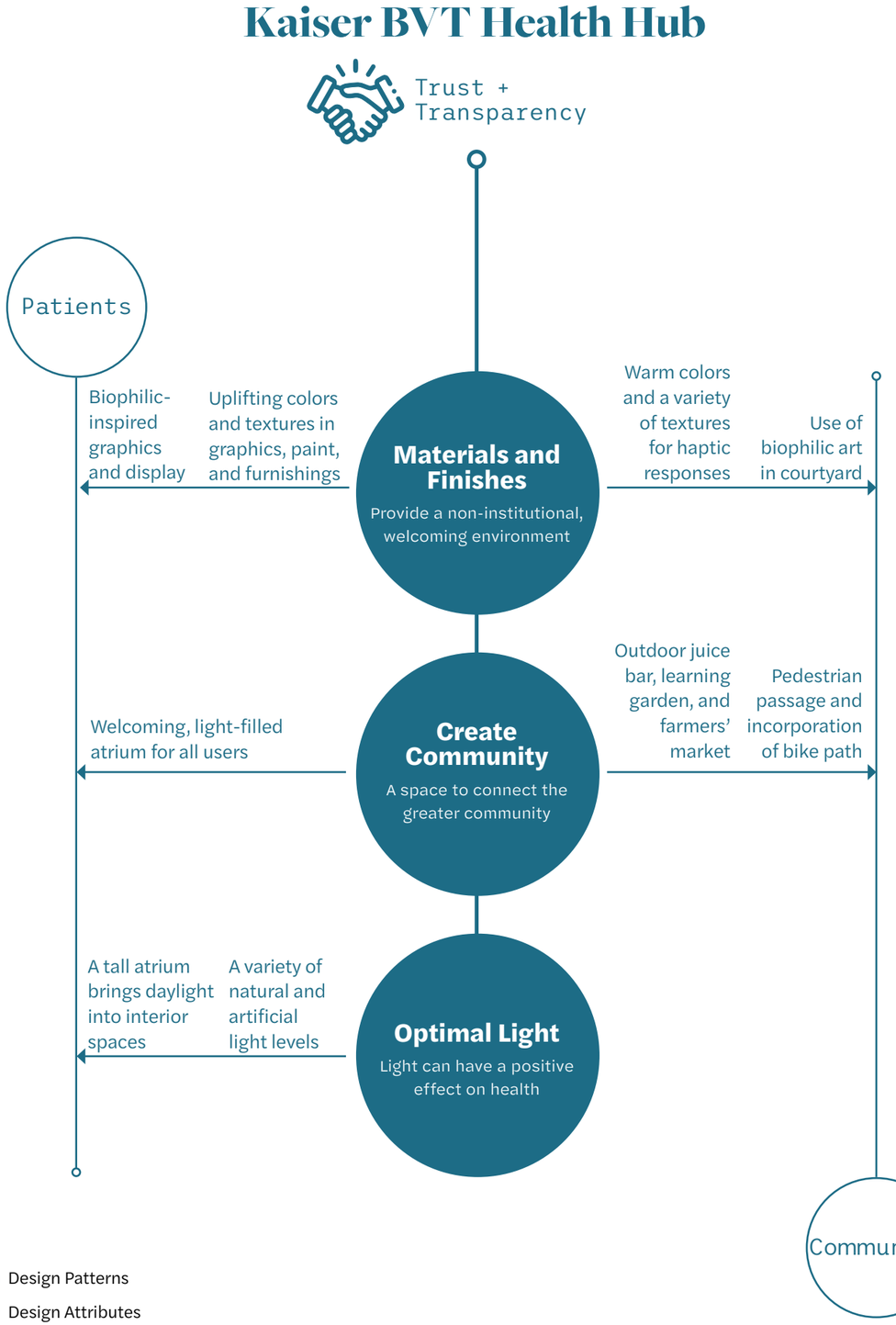
Hayu alqi uyxat



KAISER BVT HEALTH HUB

The original building in Beaverton, Oregon, lacked both connection to its surrounding environment and spaces for community engagement. The project engaged a nearby bike path that links multiple parks in the area. A new entry serves as a portal to create a welcoming pedestrain passage linking the building with an outdoor community spaces that hosts a juice bar, learning garden, and farmer's market. By intentionally connecting with community ammenities, people are welcome into the health hub's light-filled atrium, whether they are Kaiser paitents or not.

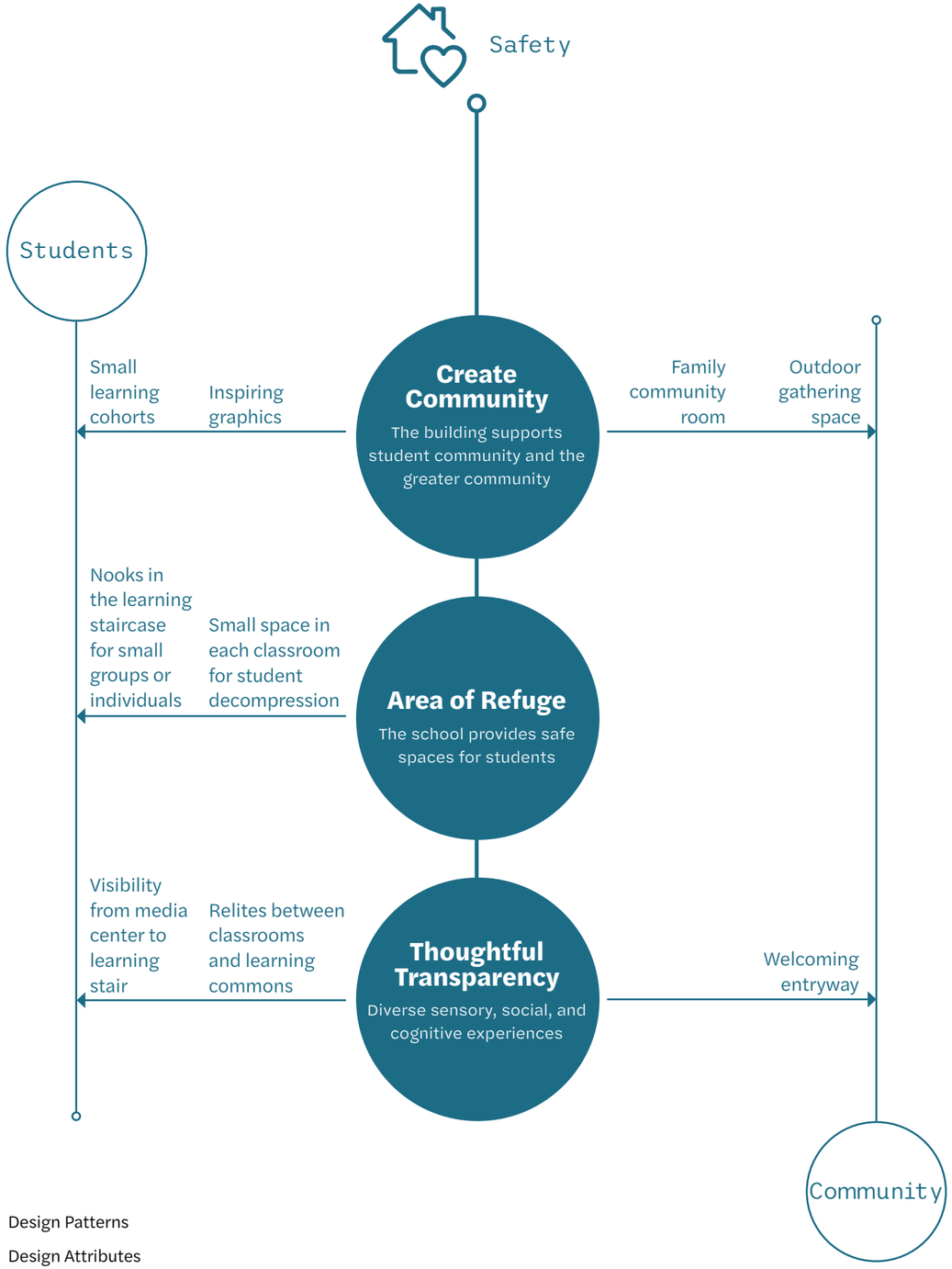




TRUMAN ELEMENTARY

At Truman Elementary School, in Vancouver, Washington, one of the key drivers was the need for a welcoming environment for both the students and the community. An integral part of the design was the Family-Community Resource Center. The Center is a flexible family-focused space that provides programs and services for the multi-cultural school community. Located adjacent to the main entry, it offers a full kitchen, laundry, technology access, crisis care services, and childcare.

Emotional safety was another critical issue at the school. The school is oragnized into small leaning communities to ensure a personalized journey for every student. Indoor pathways allow students to explore and meander while still under supervision of adults. Quiet areas and personalized niches provide dafe spaces for students to be calm and re-focus when they are feeling stressed.



THE SUITES

The Suites, a new housing project at California State Fullerton, leverages building mass and landscape to create a distinct residential identity. The expansion supported a variety of functions and fosters student life within the diverse campus. Student independence is promoted through a sense of ownership and belonging within the shared community.

The Suites

Peer Support + Collaboration

Students

Agency / Empowerment
Students have control over how they use spaces

Flexible and adaptable spaces

Privacy walls create personal space in living areas

Residences are a framework for exploring how student identity is shaped by living on campus

Personalized
Diverse sizes and scales of experiences

Large facility is divided into smaller, more familiar units.

Each suite features spaces for socializing, studying, or relaxing

Safe and Secure
Create a sense of community and pride for students

Lounge creates a bustling central hub for all residents

Art and graphics create a sense of shared community

Welcoming, home-like refuge for students

School Community

Design Patterns

Design Attributes

“A child who is not embraced by the village will burn it down to feel its warmth.”

—African Proverb

In Conclusion

Trauma has profound and lasting effects on individuals, communities, and society. Those who experience traumatic events often struggle with emotional regulation, attention, learning, and memory. Trauma reshapes brain function, impedes critical thinking and influences both psychological and physical well-being. On a broader scale, its effects manifest in our communities through challenges such as addiction, homelessness, racism, gun violence, and other systemic issues.

A growing body of research on Adverse Childhood Experiences (ACEs) has given educators deeper insight into the long-term impacts of family violence, abuse, poverty, bullying, and discrimination. While trauma-informed approaches have helped address these challenges in childhood, the reality is that trauma does not dissipate with age — it follows individuals into adulthood, shaping their experiences, relationships, and overall health.

The COVID-19 pandemic added yet another layer of toxic stress across society, exacerbating disparities for marginalized populations, including those living in poverty, refugees, BIPOC communities, and LGBTQ+ individuals. As we navigate these ongoing challenges, understanding trauma and designing environments that foster healing becomes more critical than ever.

Trauma-informed Design acknowledges trauma's profound and widespread impact, offering a framework for creating spaces that foster healing and resilience.

Every environment has the potential to benefit from TID principles and shape experiences that support well-being and restoration.

We hope this book serves as a resource to deepen understanding, spark dialogue, and inspire healing-centric design solutions. Use it as a foundation for design discussions, charrettes, and stakeholder engagement. Let it guide adaptive strategies that respond to the evolving needs of our communities. Add to it through your conversations, innovations, and designs as an advocate for meaningful, positive change.

Our goal is to help build more resilient communities by recognizing the signs of trauma, integrating trauma awareness into our design practices, and actively working to prevent re-traumatization. This book is intended for architects, designers, and all those shaping the built environment. It provides insight into the lasting effects of trauma and the critical role design plays in mitigating its impact.

Together, we can create spaces that not only shelter, but also heal.

Your insights and experiences matter; we welcome your feedback, ideas, and stories. Together, we can continue shaping environments that foster healing, dignity, and resilience. Contact us at architectureofhealing@hmcarchitects.com to share your thoughts or collaborate on future initiatives.

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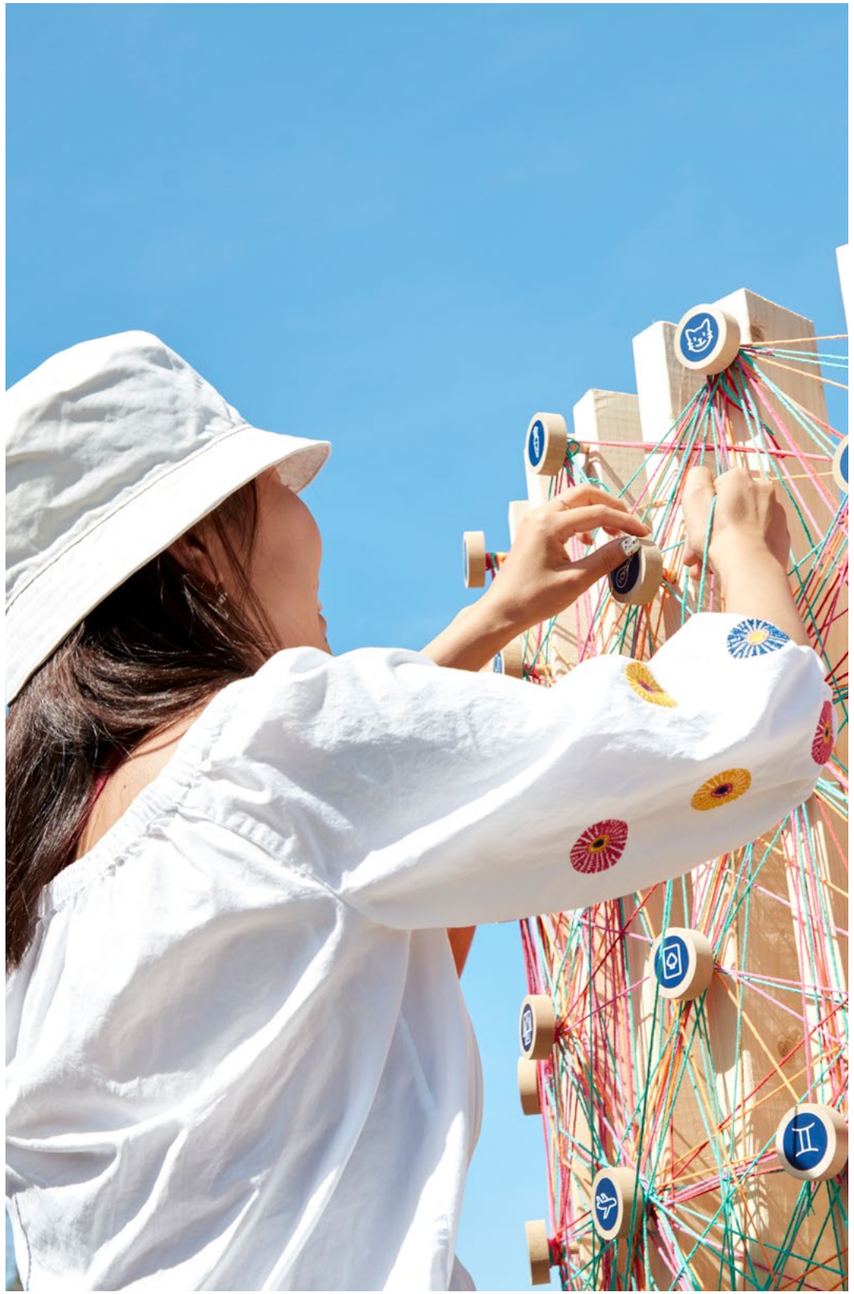

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