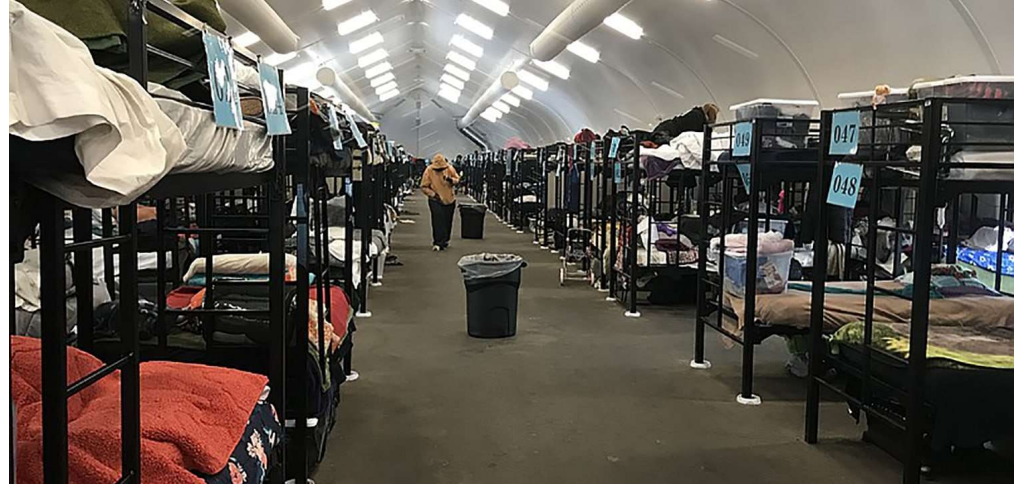




Utah Housing Conference  
**DIGNIFIED DESIGN**

Tom Otteson  
Rachelle Macur

**SWARC**







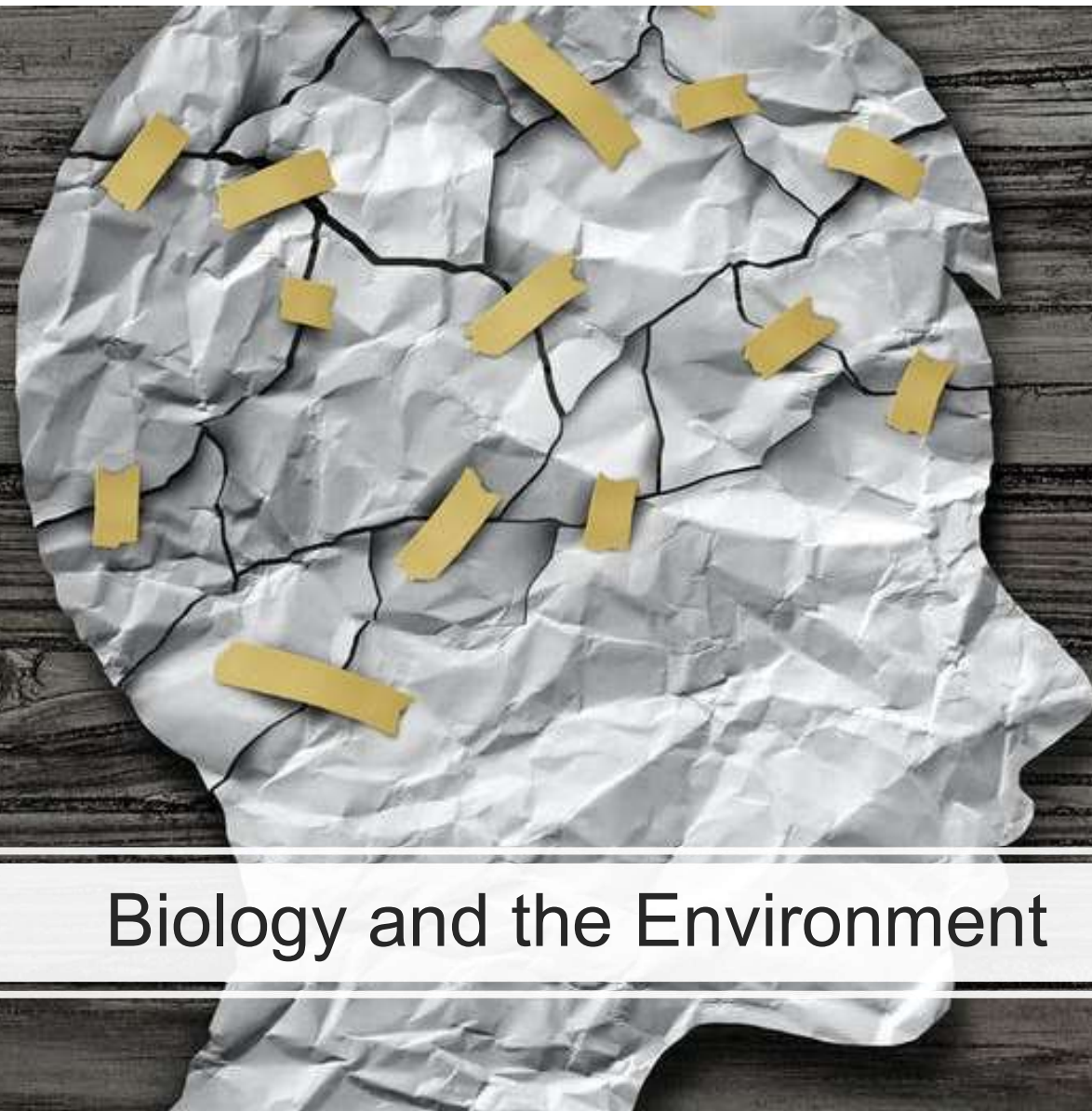
*Dignified Design recognizes that **how environments are designed impacts health.***

*It **prioritizes the human experience** and draws on evidence-based **multidisciplinary** research (including brain science, biology, social sciences, and design & architecture) to identify and minimize potential trauma triggers and design buildings (and spaces) that **promote dignity and healing.***

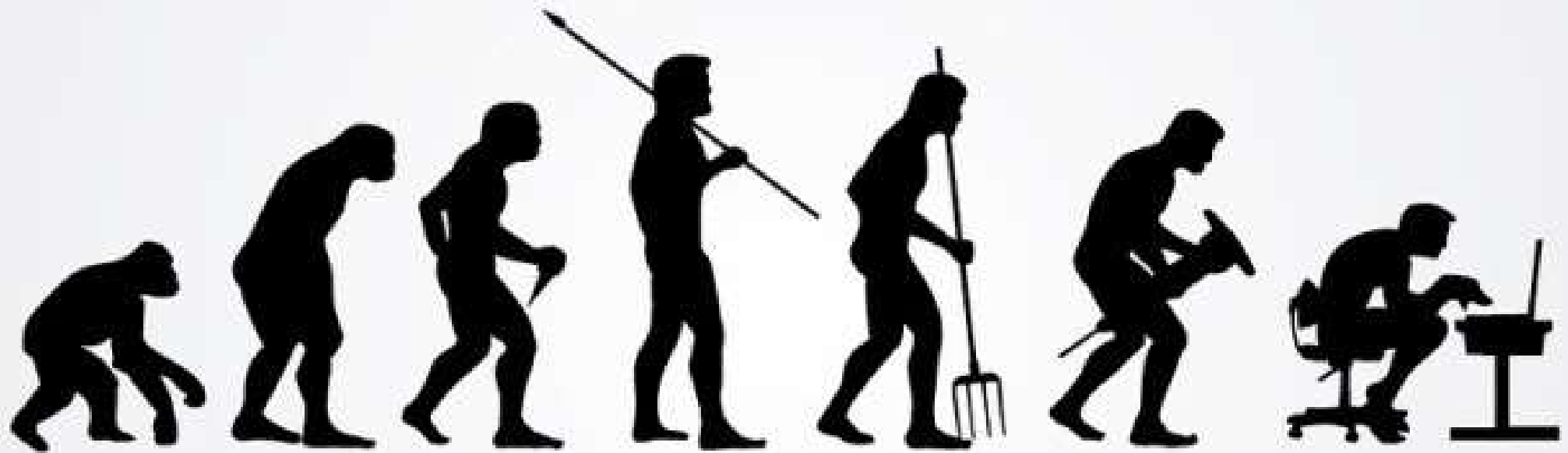
"There are two ways to think about architecture and design. One is to focus on 'aesthetics', the other, more ethical task, is to focus on the human organism whose life and happiness is interwoven with the environment in which one is raised"

~ Harry Mallgrave





# Biology and the Environment









**Prefrontal Cortex**



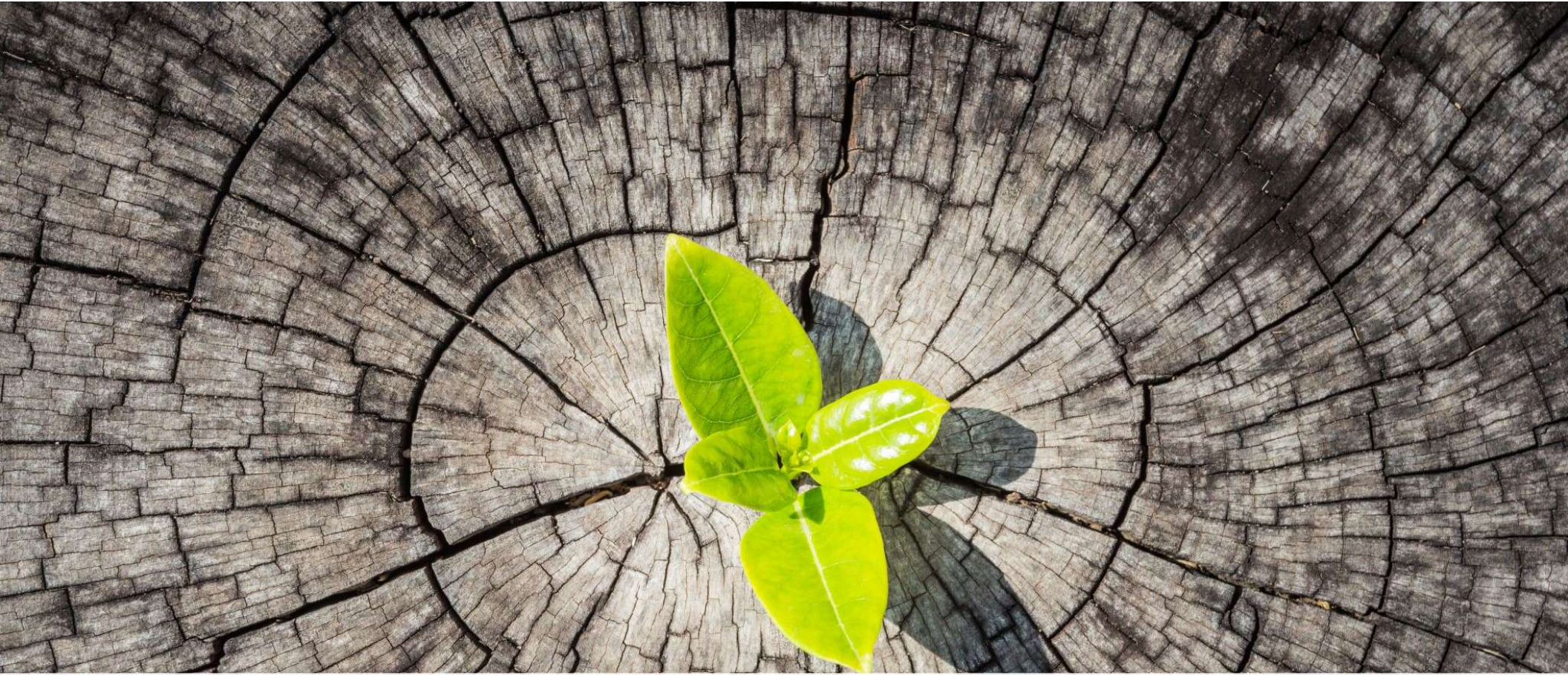
**Amygdala**











Relationship with Environment

# Impacts of Urban Settings

A blurred photograph of a crowded train platform. The image shows a dense crowd of people moving through the station, with train cars visible on either side. The motion blur conveys a sense of high activity and density. In the background, an "Exit" sign is visible above the crowd.

- pulse rates higher
- systolic blood pressure increased
- higher cortisol levels
- parasympathetic activity increased
- immune functioning is lower





## Threatening Elements

- Noisy
- Overstimulating
- Unpleasant Smells
- Crowded
- Unsafe
- Unwelcoming
- Unclear
- Inaccessible
- Institutional Materials



## Harmful housing leads to...

- Maladaptive behaviors
- Reduced quality of life
- Decreased social functioning
- Increase stress and depressive symptoms
- Difficulty connecting socially
- Feelings of insecurity/threat
- Negative self-identification

"{Environments are...} particularly relevant to PSH residents working to reconstruct their identities while simultaneously at higher risk of living in poor quality housing." - Rollings and Bolo

# Benefits of Nature

Reduced  
Stress

Better  
Sleep

Greater  
Happiness

Lower  
Blood  
Pressure

Better  
General  
Health


Improved  
Mental  
Health

Reduced  
Aggression

Improved  
Immune  
Function

More  
Social

Quicker  
Recovery  
Times



What happens when we pair healing spaces  
with trauma-informed care practices?

Can we improve health?

Can we create the conditions for healing?

Can we foster dignity and joy?

# Research Process

2500+ end users interviewed

75+ sites impacted

5000+ people trained



# Dignified Design Framework



# SAFETY

A photograph of a modern staircase with wooden railings and a green wall with multiple windows. The word 'SAFETY' is overlaid in a white box on the left side. The staircase is made of light-colored wood and has a dark metal handrail. The wall is painted a vibrant green and features several rectangular windows of different sizes. Sunlight streams in from the windows, creating bright spots and shadows on the wall and the stairs. The overall atmosphere is bright and airy.

# COMFORT



THE STELLA | Denver, CO



# CONNECTION



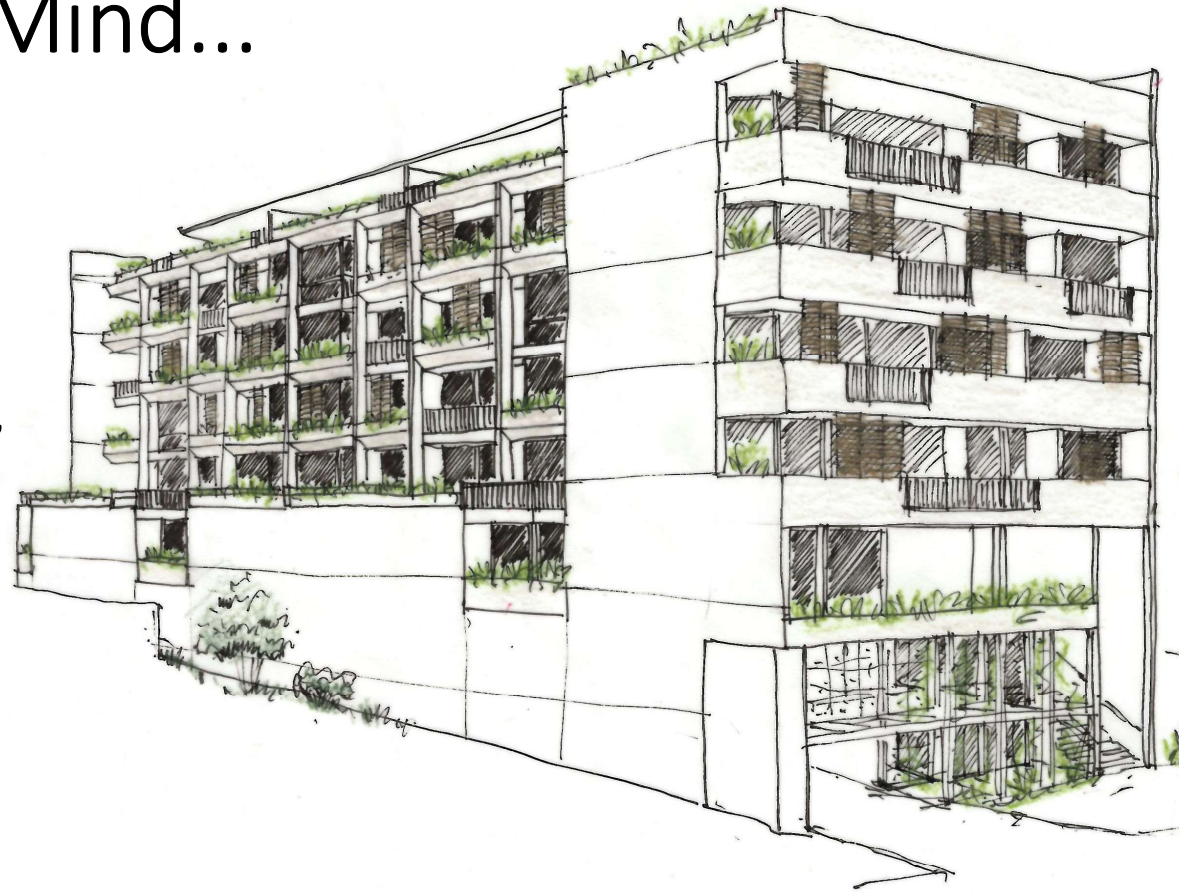
TERRAZA DEL SOL | Denver, CO

# CHOICE



# Key Things to Keep in Mind...

- **Principles are dynamic** and evolving.
- Less about removing the triggers, more about **creating safety cues** and "positive reward" opportunities.
- **Different spatial experiences** for different stress responses (fight / flight / freeze).

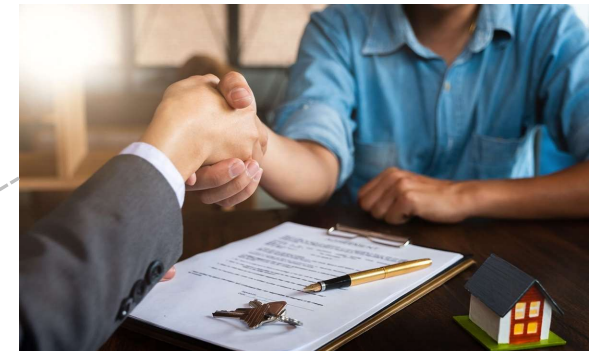
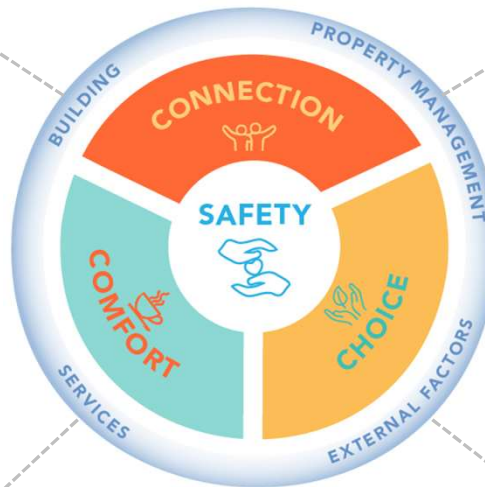




BUILDING



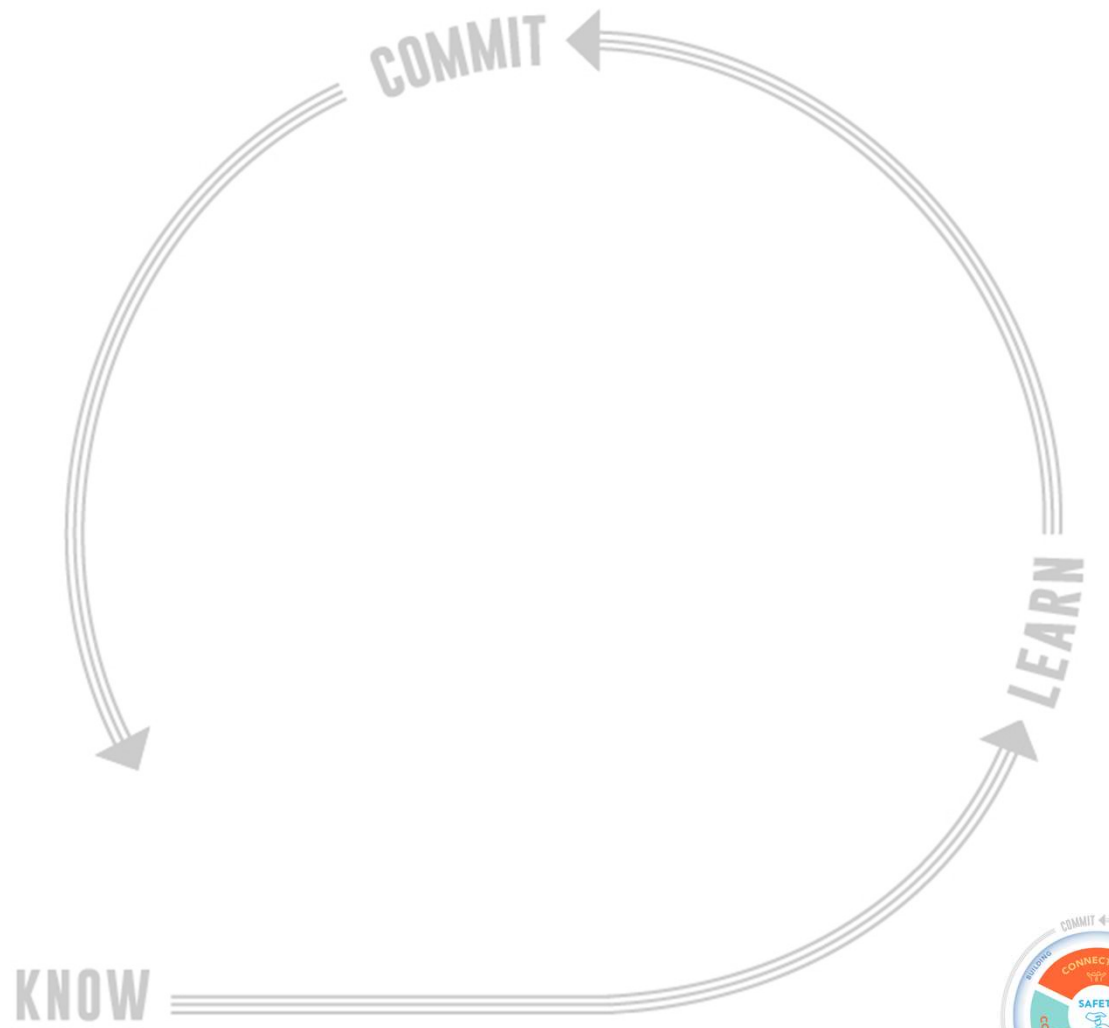
SERVICES

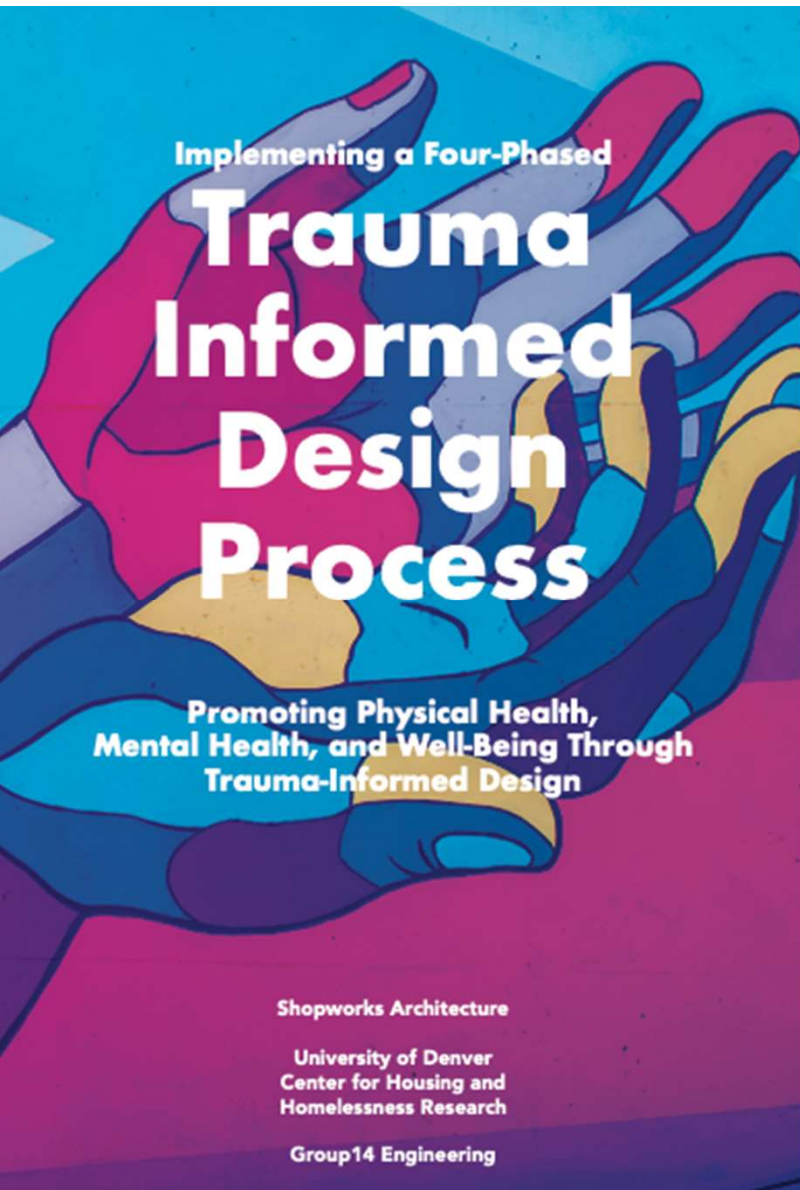


PROPERTY MANAGEMENT



EXTERNAL FACTORS





Implementing a Four-Phased

# Trauma Informed Design Process

Promoting Physical Health, Mental Health, and Well-Being Through Trauma-Informed Design

Shopworks Architecture

University of Denver  
Center for Housing and Homelessness Research

Group14 Engineering



PHASE ONE: Vision Setting



PHASE TWO: Pre-Occupancy Evaluation



PHASE THREE: Design/Collaborate/Refine



PHASE FOUR: Post-Occupancy Evaluation

# PHASE ONE: Vision Alignment

- In December of 2019 (conceptual phase)
- Gathered:
  - Developer
  - Boulder Shelter for the Homeless Staff
  - Longmont Housing Authority Staff
  - Representatives of the City of Boulder and City of Longmont
  - Design team (architect, landscape architect, civil engineer)
- Established vision for the project
- Trained team on trauma and trauma-informed design



# Phase Two: Pre-Occupancy Evaluation

- Interviewed:
  - Scattered site PSH residents
  - Residents at Lee Hill (first PSH in Boulder)
  - Guests at the Boulder Shelter for the Homeless
  - Staff at the shelter
  - Case management staff
  - Staff at Lee Hill
- Compiled report and presented to the Housing Development Team





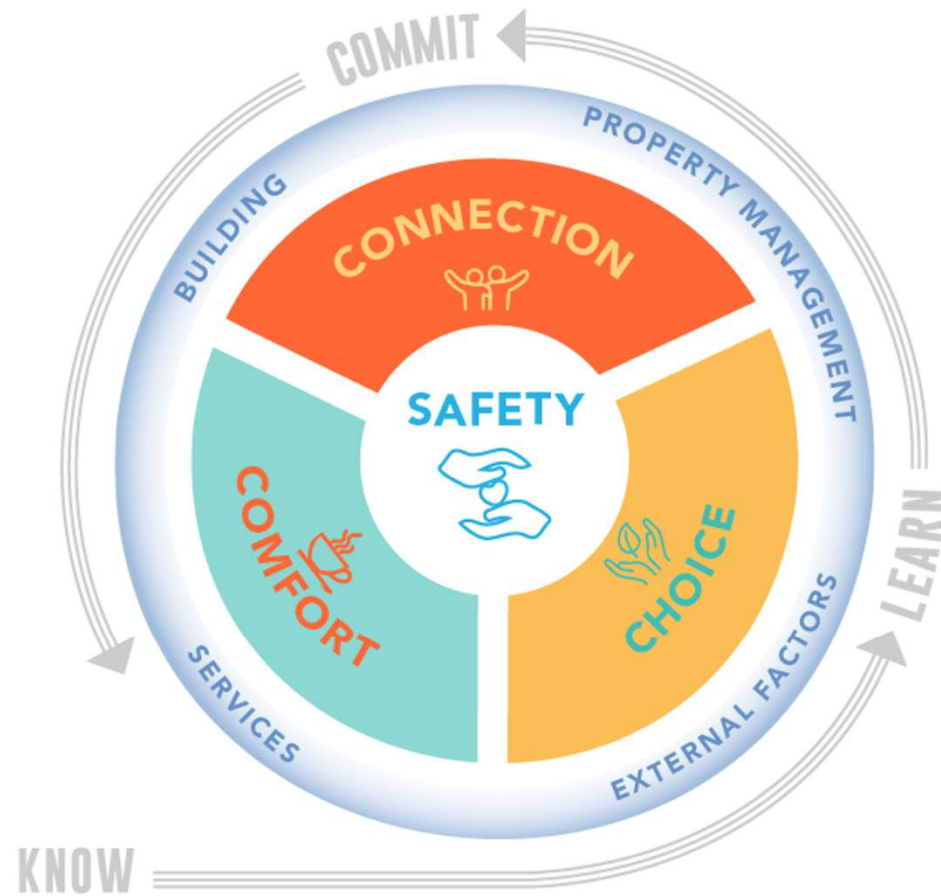
# Bluebird Boulder & Longmont Trauma-Informed Design Assessment

January 2022

## RESEARCH STUDY

In July 2020, to prepare for the development of two properties, Element Properties Bluebird – Longmont and Element Properties Bluebird – Boulder, Shopworks Architecture hosted focus groups with current and potential residents of PSH as well as staff. The objective of this research was to inform the design of the developments, ensuring that the voices of potential residents were at the design table and that foundational principles of trauma-informed design were integrated at the beginning of the process. Interviews were conducted with residents and staff at Lee Hill Housing, residents in scattered site PSH housing, guests and staff at the Boulder Shelter for the Homeless, and staff at The Suites PSH in Longmont. In total, 19 staff and 28 potential and current PSH residents were interviewed. The following report provides a summary of findings from these interviews as well as design considerations for the future developments.

# Dignified Design Framework



PHASE THREE:  
Design/Collaborate/Refine



Bluebird  
Boulder, Colorado

SHOPWORKS  
architecture



First Floor Plan

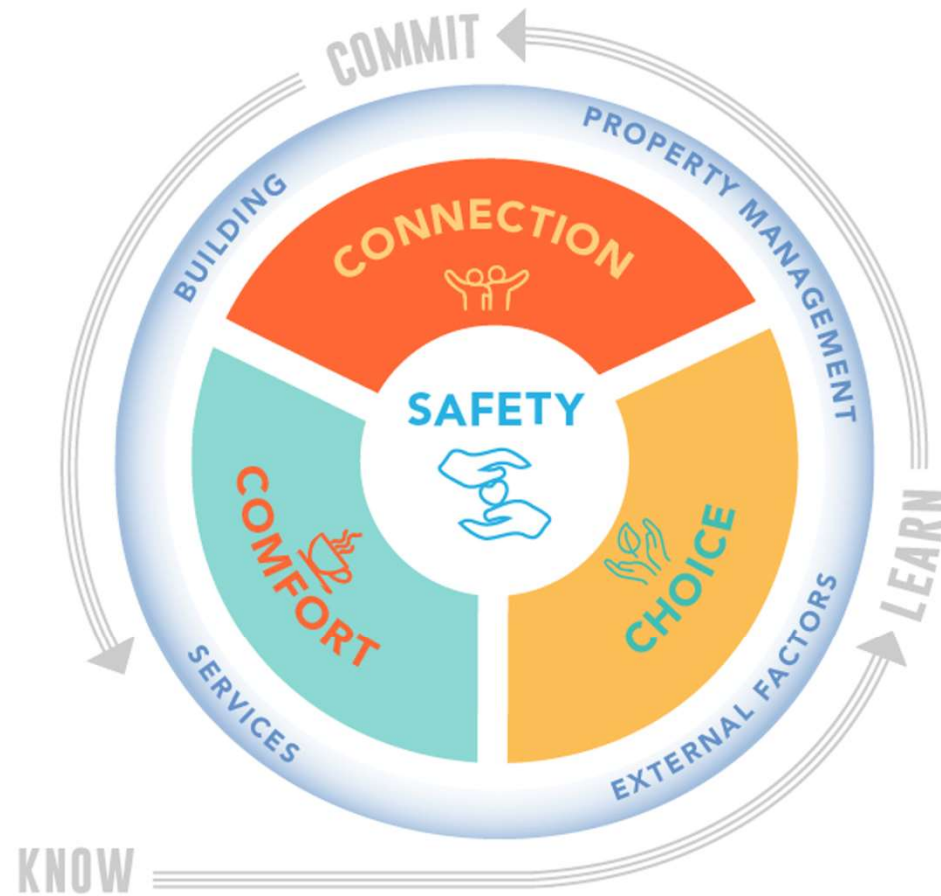
Bluebird  
Boulder, Colorado

SHOPWORKS  
architecture



Second and Third Floor Plan

# Dignified Design Framework



# Front Desk





# Open Sight Lines



# Open Sight Lines



# Approachable Entry



# Clear Wayfinding



# Natural Materials



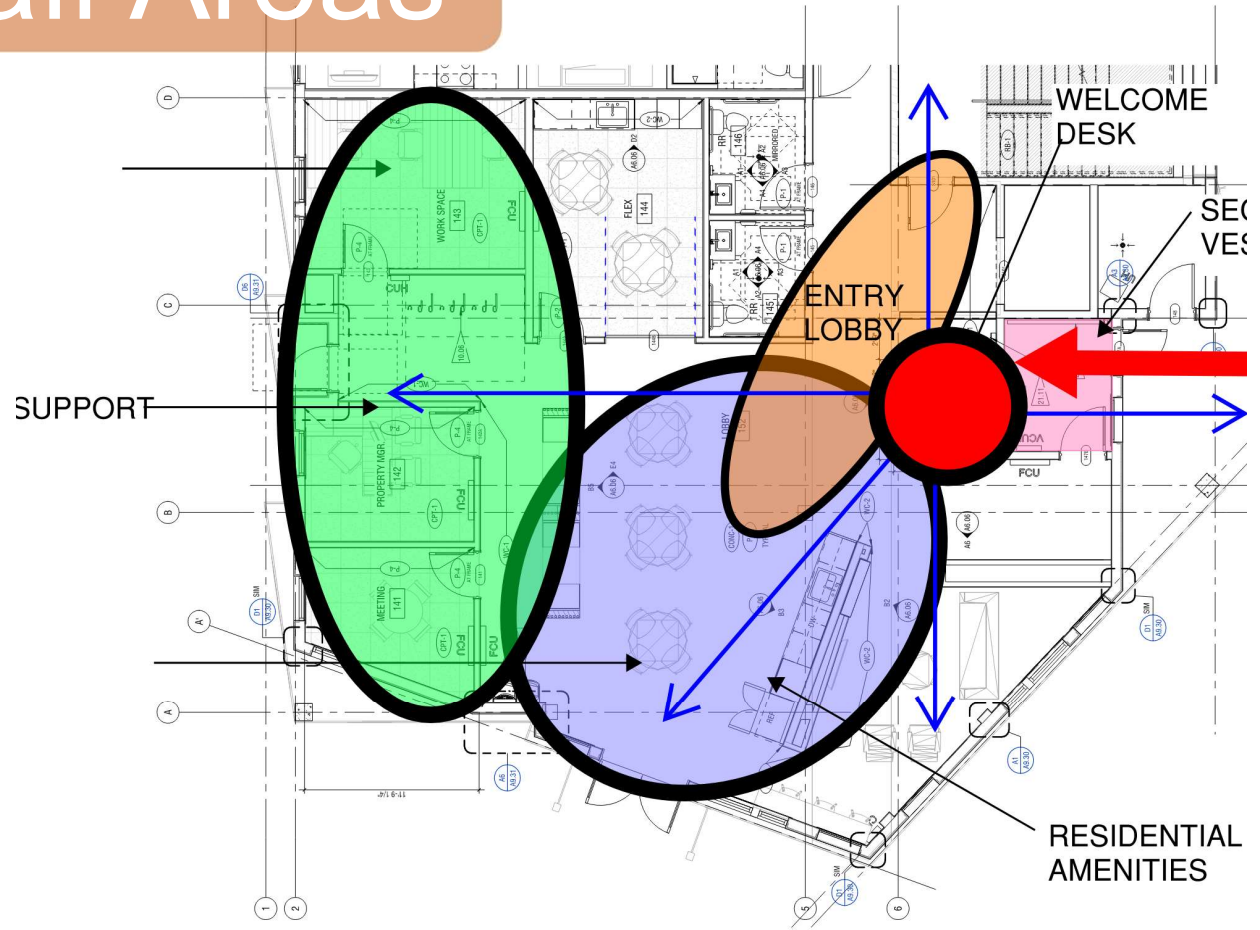
# Varied Outdoor Environments



# Varied Outdoor Environments



# Dedicated Staff Areas





# Diverse Common Areas



# Diverse Common Areas



# Diverse Common Areas



# Furnished Apartments



# PHASE FOUR: Post-Occupancy Evaluation

- Building received funding in Fall 2022
- Construction began Winter 2022
- Residents moved in January 2024
- Post Occupancy Research will be done 12-18 months after move-in (winter / spring 2025)











**22**

	elements	safety	comfort	connection	choice
sensory engagement	1. clear sightlines	•	•	•	
	2. enriched lighting	•	•		
	3. intentional color		•		•
	4. living systems		•	•	
	5. natural materials		•	•	
	6. natural ventilation		•		•
	7. noise modulation	•	•	•	
nested layers	8. accessible front desk	•	•	•	
	9. active security measures	•		•	
	10. approachable entryway	•	•	•	•
	11. attention to neglected places	•	•	•	•
	12. dedicated staff places	•	•	•	•
	13. diverse common areas	•	•	•	•
	14. hearth-like places		•	•	
	15. multiple pathways	•			•
	16. thoughtful proportions	•	•		
	17. varied outdoor environments	•	•	•	•
identity anchors	18. charismatic places		•	•	•
	19. clear wayfinding	•	•		•
	20. furnished apartments		•		•
	21. personalized entrances		•	•	•
	22. resonant art		•	•	

# sensory engagement

## elements include

1. clear **sightlines**
2. enriching **lighting**
3. intentional **colors**
4. living **systems**
5. natural **materials**
6. natural **ventilation**
7. noise **modulation**

The experience of trauma is often accompanied by sensory sensitivity and feelings of overstimulation. For some, intense sensory inputs can feel like a threat to their safety or an assault on their peace of mind. When this happens, people can more easily enter a fight, flight, or freeze stress response. Their nervous system may become hypersensitive, responding with contracted muscles; shallow, rapid breathing; dissociation from the environment, and shutting down.

In these cases, our aim is to positively engage the senses—sight, sound, smell, taste, touch, and movement—through gentle stimulation while avoiding overstimulation. Research shows that enriched, sensory engaging environments increase neural connections, enhance neural plasticity, stimulate the production of "happy" brain chemicals, improve learning and cognitive functioning, and improve regulation of our stress responses.

As Grabowska et al. (2021) notes, "While the first instinct may be to work through subtraction and addition of sensory information, we recommend a practice of modulation and filtration. Instead of blocking sound, think of how to change the quality of it. Instead of sterilizing scent, imagine materials that enhance some smells and resist others."

The goal is not to remove all stimuli and create unnatural, inhospitable, institutional environments. We also want to avoid overstimulation of certain sensory inputs and under stimulation of other inputs. Often, people are overstimulated visually and auditorily, while the rest of their senses are under engaged, causing disorientation and mental fatigue.

Ideally, design elements can be used to offer people a subtle yet engaging sensory journey through a space.

# nested layers

## elements include

8. accessible **front desk**
9. active **security measures**
10. approachable **entryway**
11. attention to **neglected spaces**
12. dedicated **staff places**
13. diverse **common areas**
14. hearth-like **places**
15. multiple **pathways**
16. thoughtful **proportions**
17. varied **outdoor environments**

Nested layers offer variety and scale, so people can access the level of engagement within the space that feels most safe and comfortable. It's important to note that different stress and trauma responses warrant different design elements. For example, when someone is in a fight response, they may need opportunities for the safe release of energy – places where they can scream, pound, sweat. A flight response may require a soothing, relaxing space to decompress with dimmable lights, gentle sounds, and the ability to rock back and forth. Someone in a freeze response may need gentle stimulation to help ground themselves in the present and return from a dissociative state back into their body.

Stress responses may change from person to person and moment to moment. What an individual needs from their environment upon move-in may look different from what they need a month, a year, or 10 years later. This is certainly evident when we consider the evolving developmental needs of children from infancy to the teen years. With nested layers, we acknowledge this diversity of need by offering things like niches, nooks, smaller spaces within larger spaces, and variety to support individual need and choice. The intent is also to creatively and thoughtfully play with volume and proportion through seating arrangements, dropped ceilings, clusters of lights, and other design elements. These layers allow people to seek comfort in the way that best serves them and to connect with others, themselves, and the environment at various levels of scale and intensity.

# identity anchors

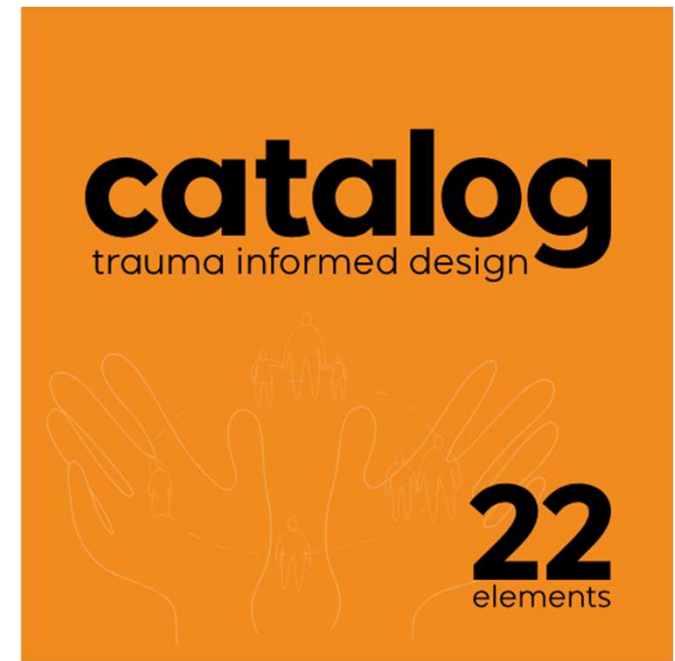
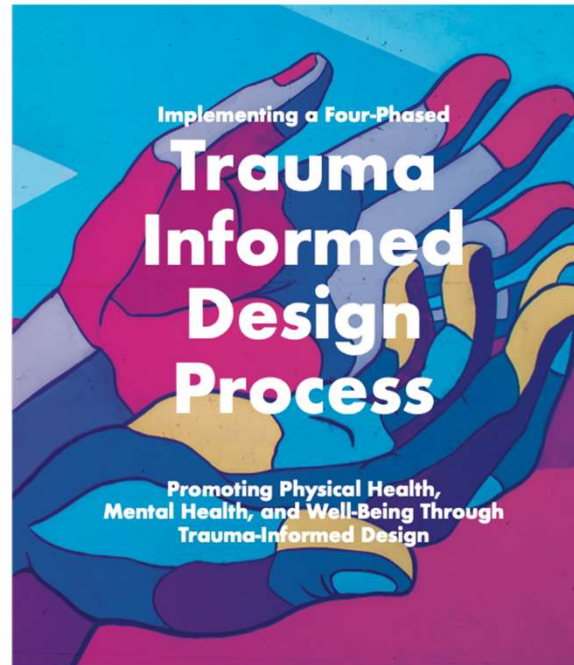
## elements include

18. charismatic **places**
19. clear **wayfinding**
20. furnished **apartments**
21. personalized **entrances**
22. resonant **art**

Identity anchors are elements that invite residents, staff, visitors, and the surrounding neighborhood to see themselves in the design. They foster a sense of belonging, cultivate an attachment to place, and combat isolation – all essential elements to healing.

A key aspect of the identity anchor concept is to challenge the design of impersonal, neutral, and generic elements in favor of features that intentionally seek to personalize, reflect, and represent some meaningful aspect of the local context (that is, the people, cultures, and traditions that were and are). The idea is not to reduce identity to a single catch-all feature but to create a constellation of touchpoints where people can see themselves represented throughout the environment.

We must also think about spaces for ritual, reverence, and routine that (re)connect people to themselves and others. This is essential as individuals are moving into a new place and potentially reconstructing their lives, as is so often the case in supportive housing. During these transitions, the relationships that people forge with their homes can be central to their sense of identity, self-worth, and dignity.



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