



Designing for Healing Dignity & Joy

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

Shopworks Architecture

Group 14 Engineering

University of Denver
Center for Housing and
Homelessness Research

Designing for Healing, Dignity, & Joy

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

Acknowledgments

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It's Time for a Trauma-Informed Approach to Design

When we started designing The Delores Project shelter and The Delores Apartments at Arroyo Village, we attended a training on the importance of trauma-informed care in engaging shelter guests. We learned that most adults have experienced childhood trauma, that many residents of the buildings we design have experienced substantial trauma throughout their lifetimes, and that trauma can have lifelong physical and mental health consequences and multi-generational effects—changing the brain and how we view and respond to the world around us.

We also learned that the negative effects of trauma can be mitigated. For us, this understanding sparked a revelation: ***We have a responsibility to not just design housing, but housing that promotes healing and well-being.***

As we've expanded our work building housing for vulnerable populations, we have sought to better understand how traumatic experiences shape residents' needs and to apply a trauma-informed lens to design from the get-go. Here we share some of what we've learned and propose a preliminary framework for trauma-informed design practice and process.

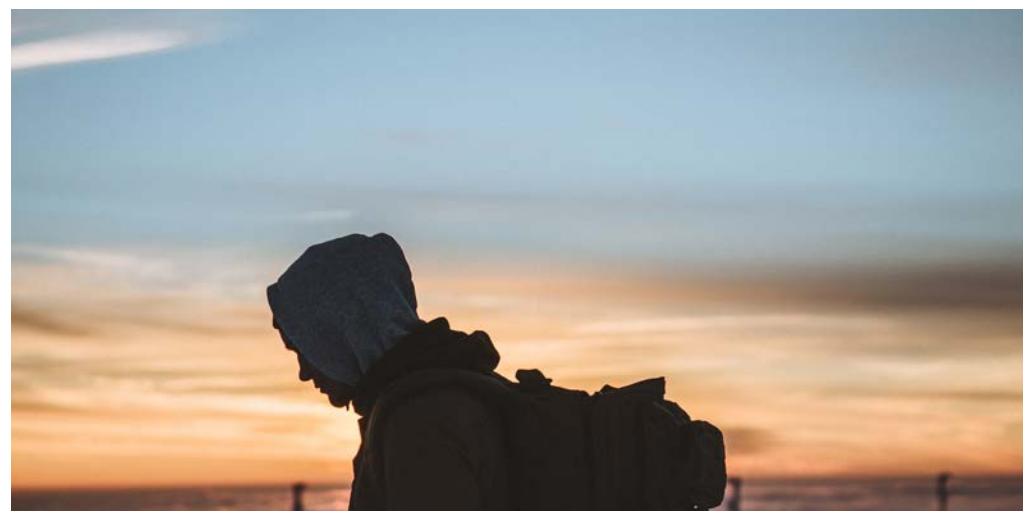
Our aim is to create greater awareness of and interest in the potential for our work—as architects, designers, engineers, developers, nonprofits, and others creating housing—to not just shelter people but to also promote healing, dignity, and joy through a built environment in which all people can thrive. ***We invite you to join us in this work.***

Trauma is a leading health concern in the U.S., where 61% of adults have had at least one adverse childhood experience (ACE)—a potentially traumatic event that occurs during childhood (Centers for Disease Control and Prevention [CDC], 2019). ACEs include abuse and neglect, growing up in a family with substance use or mental health problems, economic hardship, or parental divorce or separation, among others (Felitti et al., 1998), and the more ACEs one has, the greater the potential effect on health and well-being.

Although experiences with and responses to trauma are highly variable and aren't necessarily harmful (Center for Substance Abuse Treatment, 2014), **traumatic stress can be toxic, altering brain development and affecting a variety of physiological systems.**

For example, trauma can make the brain less responsive to rewards, which can, in turn, increase risk of addiction and obesity (Biological Psychiatry, 2015; USC Suzanne Dworak-Peck School of Social Work, 2017). Trauma can also trigger flight, fight, or freeze responses that can become a recurring pattern (Kozłowska et al., 2015) lasting years or even decades and affecting memory, concentration, and other physical, emotional, and cognitive processes (Mayo Clinic, n.d.). Thus, trauma is linked to a host of adverse outcomes, including chronic health problems such as asthma and diabetes in adulthood (CDC, 2019). Additionally, 5 of the top 10 leading causes of death in the U.S. are linked to childhood trauma (CDC, 2019).

Trauma is a nearly universal experience of people with mental health and substance use disorders, those who have experienced violence (SAMHSA, 2014), those living in poverty (Collins et al., 2010), and those who have experienced homelessness (Hopper et al., 2010)—the very people likely to be served by shelters, supportive housing, and affordable housing.



5 of the top 10 leading causes of death in the U.S. are linked to childhood trauma.

Maslow's Hierarchy of Needs



Because of its prevalence and the significance of related physical and mental health outcomes, trauma is a critical consideration for design of all housing types—and for shelters and supportive housing in particular. But addressing trauma isn't just the responsibility of individuals and the services that walk beside them. An effective response demands participation from the broader community and public (SAMHSA, 2014), including architects, designers, engineers, developers, and all others involved in building housing.

As damaging as trauma can be, healing and recovery are possible. But for healing to happen, the housing we build can't simply prioritize physiological or safety needs (Maslow, 1943). With a holistic, user-centered, trauma-informed approach to design—one that attends to higher-order needs such as love and belonging, esteem, and self-actualization (Maslow, 1943)—we can not only prevent and mitigate further harm but actually promote healing.

Learn More:
Watch pediatrician Nadine Burke Harris's TED Talk on
"How Childhood Trauma Affects Health Across a Lifetime"
Scan code or go to www.ted.com/speakers/nadine_burke_harris_1



Early Examples of Trauma-Informed Design

A small number of architects, designers, and trauma experts have already embarked on this work, and early examples are promising. In Colorado, for instance, the Mental Health Center of Denver's Sanderson Apartments (designed by Davis Partnership Architects) was among the nation's first trauma-informed supportive housing communities. Opened in 2017, Sanderson provides 60 apartments for individuals and couples who have experienced chronic homelessness. According to JoAnn Toney, the center's director of residential services, "We know in our residential programs that if we practice good trauma-informed care ... there is better engagement, people stay longer, and there are better outcomes" (Enos, 2017).

Sanderson has been followed by several similarly trauma-informed supportive housing developments in Colorado, including the Delores Apartments at Arroyo Village and St. Francis Apartments at Cathedral Square. Our own exploratory research (see pg. 14) on the experiences of residents at some of these developments has shown that trauma-informed design has supported residents' physical and mental health and well-being.

These outcomes matter. The U.S. currently spends more than \$4 billion on homelessness (Council of Economic Advisors, 2019) and more than \$100 billion on trauma-related health conditions each year (CDC, 2019). We believe that trauma-informed design of housing—from shelters to market-rate apartments—holds promise for reducing trauma-related costs and interrupting the intergenerational transmission of trauma and its adverse outcomes.

As an industry whose work directly or indirectly impacts virtually everyone in the U.S., we have an onus to act—to ensure that we're creating buildings and communities that contribute to prevention and healing and prioritize the physical and mental health and well-being of residents and the larger community.



Warm wood tones and joy-inspiring colors were used in the lobby and amenity areas at the Sanderson Apartments. (Photos courtesy of Davis Partnership Architects and Mental Health Center of Denver)



Establishing a Trauma-Informed Design Framework

Although there is no broad consensus on what trauma-informed design is and relatively little evidence to indicate how it should be implemented in process and practice, most conceptualizations are based on trauma-informed care guidelines developed by the Substance Abuse and Mental Health Services Administration (SAMHSA, 2014). Jill Pable, founder of Design Resources for Homelessness, has suggested a definition of trauma-informed design that adapts Hopper and colleagues' definition of trauma-informed care:

Trauma-informed design encompasses adaptations in the designed built environment that support "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 et al., 2010, p. 133; J. Pable, personal communication, October 7, 2019)

At the broadest level, trauma-informed design aims to promote healing and improved physical health, mental health, and overall well-being of individuals and their communities.

Learn More:
Design Resources for Homelessness provides a list of architectural ideas to support specific health, mental health, and well-being outcomes, as well as case studies from completed projects.
Scan code or go to www.designresourcesforhomelessness.org



Core Values

Informed by Pable’s “six human qualities that most people desire for physical and mental health in the places they inhabit” (Design Resources for Homelessness, n.d., p.1) as well as our work with residents and practitioners in affordable housing, we have arrived at a set of core values that must be prioritized during the design process by all members of the housing team.



Hope, Dignity, and Self-Esteem

We celebrate each individual’s inherent worth, communicating positivity, emphasizing strengths, and maximizing potential.



Connection and Community

We create spaces that encourage camaraderie and collaboration—among residents as well as between residents and staff—and offer the opportunity to belong, helping residents to rebuild relationships built on trust.



Joy, Beauty, and Meaning

We honor culture and identity while creating spaces that spark and nurture imagination, hope, and aspiration.



Peace of Mind

We cultivate a comfortable, calm ambiance that supports relaxation, self-soothing, stress management, and coping through design details such as lighting, sound mitigation, natural elements, and access to nature.



Empowerment and Personal Control

We encourage individual agency, welcome self-expression, and offer choices for residents.



Safety, Security, and Privacy

We understand that residents’ perceived safety is just as important as actual safety. We prioritize clear wayfinding, sight lines, and boundaries; minimize negative triggers; offer vantages of both prospect and refuge and paths of retreat; and recognize the role of program staff in creating a sense of safety and security.

The 3 C’s of Designing for Health and Healing

From the core values that guide our trauma-informed design approach, we’ve operationalized three key concepts of trauma-informed design—the “3 C’s”—to extend our work to the higher-level needs on Maslow’s hierarchy and shift from providing housing to promoting healing:

1

Choice

Emphasizes individual access, agency, and ownership; describes elements of personalization (e.g., color selection or furniture arrangement) and level of resident engagement with the space (e.g., choosing between relaxing in a community space or in one’s own apartment)

2

Community

Responds to the ways that residents may engage—with staff, other residents, and guests—through placement and design of programmatic spaces, office spaces, and public gathering spaces that facilitate relationship-building

3

Comfort

Includes aspects such as the quality and variety of materials; sensory experiences of light, sound, and smell; and elements such as nature and artwork that bring calm or spark joy

Together, these core values and key concepts frame the intent of the trauma-informed design process and influence design decision-making across all building systems and features—from natural elements and access to nature, to safety and security, to circulation and wayfinding, to light and color, to flexibility and scale.

Our Exploratory Study of Trauma-Informed Design

To better understand how residents experience buildings designed with a trauma-informed approach, in summer 2019, Shopworks Architecture, Group14 Engineering, and the University of Denver Center for Housing and Homelessness Research began gathering exploratory data from staff and residents of three recently completed affordable housing communities in Colorado: Housing Catalyst's Redtail Ponds (Fort Collins supportive housing designed by Studio Completiva), the St. Francis Center's St. Francis Apartments at Cathedral Square (Denver supportive housing designed by Humphries Poli Architects), and The Delores Project and Delores Apartments at Arroyo Village (Denver shelter and supportive housing designed by Shopworks Architecture).

We gathered data from observational tours, resident and staff focus groups, and resident surveys. Resident demographic characteristics varied, but most residents reported having experienced homelessness. A majority of residents said they preferred to relax and socialize in their own apartments and felt safest there. Noise was a common concern at two sites, and residents in all three buildings expressed a desire for more control over lighting—including natural and artificial light—in common areas and apartments.

Notably, we learned that residents preferred public spaces that were in proximity to staff and that amenity spaces without a staff presence were underused. Staff are critical to creating a sense of community—facilitating relationship- and trust-building among residents. This finding has important implications for both building and program design.

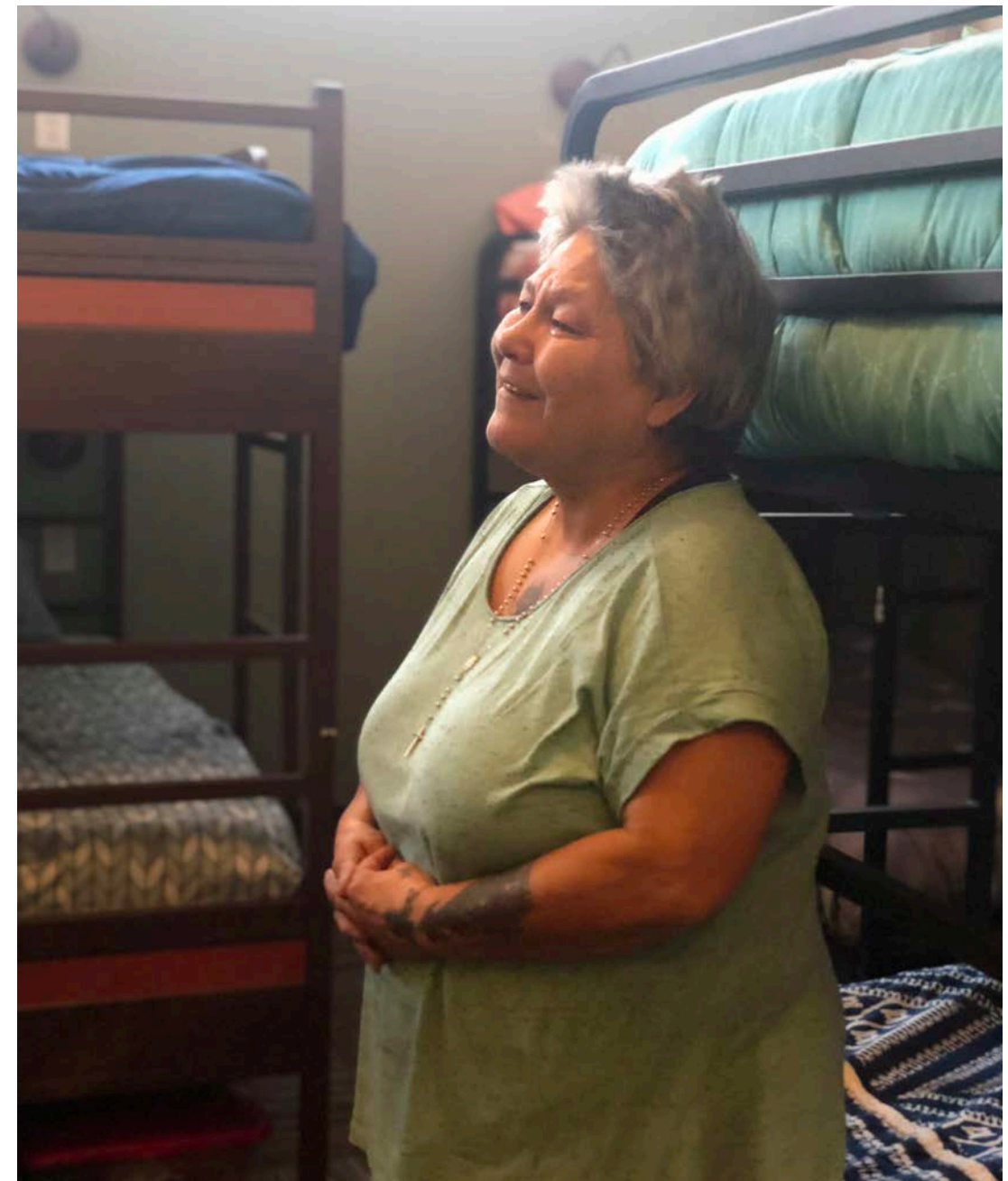
Across all three communities, most respondents said they felt safe, they had a personal connection to other residents, and that they felt healthier than before they moved in—primary aims of trauma-informed design.

Because the three buildings studied vary in design and programming features, much of the resident feedback was related to specific features. We're using study findings to inform our work on other housing developments and shape our feedback on national building standards.

Key Takeaway: Amenity areas for residents need to feel safe to residents. Locate amenity areas close to staff offices to help build connections among residents and between residents and staff.

"It's been six months, and I really have gotten used to my home. I'm able to relax here in a way I haven't relaxed in a while ... This is home. This is my home. I couldn't have gotten a better view; I couldn't have gotten a better apartment. It's my world."

Sandi Barros, Resident of the Delores Apartments at Arroyo Village





Biophilia describes the human need to interact with nature, and that interaction provides a range of physical and mental health benefits, including reduced stress, better sleep, lower blood pressure, and improved immune function. The central courtyard provides outdoor space for gathering and gardening at **Arroyo Village**, a homeless shelter, supportive housing, and affordable housing apartment building designed by Shopworks Architecture in Denver, Colorado.

Flexible, light-filled interior spaces surrounding the courtyard invite the outdoors in and offer residents both prospect and refuge. Color and artwork create a welcoming, joyful atmosphere infused with culture, meaning, and memory through incorporation of quilts (a Delores Project tradition) and quilt-inspired design elements.



Photos by Matthew Staver (top, bottom) and Ben Eyster (left, middle)



At the **Karis Apartments**—supportive housing for youth experiencing homelessness in Grand Junction, Colorado, designed by Shopworks Architecture—a soaring atrium reflects residents’ possibilities and potential, infusing the space with a sense of awe and aspiration. Wood and other natural elements ground and warm the space. Rather than reinforcing us-them power dynamics with a traditional reception desk, Karis features a café-style lobby where residents can interact casually and authentically with staff at the heart of the building or tuck into a cozy alcove. The main stairway opens into the lobby, corridors are short and wide with clear sight lines for resident safety, and each department has an easy connection with the central space so youth always feel close to people who care.



Renderings by Shopworks Architecture (left, top) and Flow Design Collaborative (bottom)



Because our research has shown that laundry spaces and trash collection areas can be triggering for people who have experienced homelessness, and because residents fear that their clothes may be stolen if left unattended, **The Elisabetta** rethinks the typical “afterthought” laundry space. We prioritized laundry, creating a beautiful, spa-like space that fosters community as residents gather to talk, listen, and laugh—or just relax—as they do laundry. Operated by Laradon, this mixed-use project designed by Shopworks Architecture in Denver, Colorado, includes low-income housing, apartments for residents with disabilities, and a day program for people with intellectual and developmental disabilities. Larger family units face a central courtyard where kids can play safely, and each floor of the building offers a different experience: fitness, library, or lounge.



Photos by Matthew Staver



We Must Retool The Design Process

Practical considerations such as budgetary constraints, zoning requirements, and building best practices typically drive the housing design process.

Although these factors remain relevant, a trauma-informed approach to design elevates other contextual considerations—particularly the resident experience—to create a holistic framework for prioritizing design decisions, especially at the outset.

As we've observed, a trauma-informed approach to housing design can improve the design decision-making process—and ultimately resident outcomes—without increasing the cost or complexity of a building.

Understanding & Establishing Context

From day-one of the trauma-informed design process, we must consider the context of future residents (particularly their experiences with trauma), the programs and systems they interact with, the community in which they reside, and the environment in which they're located..

Cultural Context

Culture forces are complex, dynamic, provide identity and tie communities to their environment.

Environmental Context

Environmental forces not only include the climate and land on which the community resides, but also includes: historical contexts, economic contexts, and the systems / institutions they interact with.

Lived Experiences

A multi-layered, series of opportunities and obstacles that shape both individual and community perceptions of the world around them.

Tips for Success

- Gather feedback from stakeholders throughout the process.
- Seek the help of professional facilitators to navigate power dynamics and program evaluators to help organizations understand and anticipate needs.
- Enlist help from the research community to incorporate evaluation of short- and long-term indicators of individual and community physical and mental health and well-being.
- Seek to understand what worked and what didn't from a trauma-informed perspective; apply that knowledge to future work and share it within your field / industry.



The housing team must take into account the unique community a specific building is designed to support, and the neighborhood and culture it will be a part of. It is critical to listen to those with lived experience, potential residents, and community members to hear what will be healing for them. Follow their vision and hopes to ensure the built design truly helps individuals move toward health and resilience.

It is critical in trauma informed design that those with lived experience are interviewed and brought into the design conversation from day one. We have found it helpful to host a conversation at a local service provider and ask a variety of questions to ensure we are not making assumptions about individual's lived experience, what they connect to in their community, and what support has helped them heal to ensure those same supports are possible in the building you design.

Questions for the housing team to consider:

- What are the lived experiences of the population, both staff and residents, that the building will serve?
- How do we design for the real and perceived safety of all residents, considering their past experiences with trauma?
- What assumptions, stereotypes, and biases influence your understanding of the target population and the community (internal and external)?
- What are the identities, culture, traditions, and history of the target population, the community, and the land on which they reside?
- What systems and institutions intersect with and influence the housing development, either directly or indirectly? Are there amenities nearby?



Questions to ask potential residents:

- What makes this neighborhood/community unique?
- What do you love about this city/community/neighborhood?
- What has helped you heal?
- When you think about your first day in a new apartment, what does that look like?

Because there is no singular "trauma experience," we must revisit these questions and the building context for each and every housing development and do so in collaboration with the target population and larger community throughout a building's planning, design, and construction. Even among a specific population (e.g. veterans experiencing homelessness) the neighborhood and community they are a part of will impact how they experience certain spaces.

Trauma-Informed Design Framework



Core Values



Hope, Dignity, and Self-Esteem

We celebrate each individual's inherent worth, communicating positivity, emphasizing strengths, and maximizing potential.



Connection and Community

We create spaces that encourage camaraderie and collaboration—among residents as well as between residents and staff—and offer the opportunity to belong, helping residents to rebuild relationships built on trust.



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Empowerment and Personal Control

We encourage individual agency, welcome self-expression, and offer choices for residents.

3 C's / Key Concepts

With each design decision, the housing team should ask:

- Is this giving the residents and staff **choice**?
- Is this helping to create **community** among residents, and between residents and staff?
- Are we creating **comfort** for residents—does this bring calm or spark joy?

Context

Throughout the design process, the housing team should seek to understand the **cultural and environmental context** through direct conversations with those with **lived experiences** of homelessness and trauma.

Trauma-Informed Design Process

The traditional design methodology is a natural fit for a trauma-informed process that purposefully and thoughtfully engages the target population, community, and intersecting systems and organizations early.



- Goal-Setting & Agreement**
A trauma-informed design process must be trauma-informed at the outset: Physical and mental health and well-being outcomes must be a shared priority. Agreeing on goals and developing a project mission statement can be a great place to start (Enterprise Community, n.d.).
- Research & Discovery**
A trauma-informed process seeks to understand and anticipate program needs as well as the lived experience, identities, culture, traditions, and history of the target population and community. Get feedback from future residents, and identify and interrogate the assumptions, stereotypes, and biases of stakeholders.
- Collaboration**
Invite the target population and the broader community into the project, creating and facilitating meaningful opportunities for collaboration and engagement that can help you deliver on your mission and goals. Think about how you might weigh competing priorities or needs, such as those suggested by staff and those suggested by residents: Are marginalized voices truly being heard in the process?
- Evaluation**
Weigh features and costs against trauma-informed decision-making criteria and desired outcomes. Competing priorities can be expected, but evaluate all decisions through a trauma-informed lens: For instance, how do materials, the placement of windows and doors, the type and location of amenities, and the scale of rooms and buildings impact experiences of light, sound, smell, and human interaction inside and outside the space?



Shifting the Focus From Housing to Healing

By prioritizing the physical and mental health and well-being of residents and the larger community, our work has the potential to interrupt cycles of poverty and trauma, ultimately improving the lives of individuals, strengthening communities, and reducing costs. But how do we get there from here?

We've proposed a starting place, but more work is needed to develop an effective, evidence-based, trauma-informed approach to design practice and process. To move ahead, we need:

- **Ongoing empirical research** into the short- and long-term outcomes of trauma-informed design across a range of domains (e.g., physical health, mental health, socioeconomic status)
- **Further exploration, testing, and refinement** of the preliminary trauma-informed design framework and development of trauma-informed design process and practice guidelines
- **Deeper insights into funding and policy implications** and development of incentives and funding mechanisms for housing that implements trauma-informed design

These answers won't come quickly, but our work building housing can't wait. Given the individual and collective toll of trauma, the public resources already allocated to housing, and the even greater unmet need, we feel an urgency to act, evolving and refining the trauma-informed design approach as we go along.

Most immediately, our industry must begin developing a formal set of best-practice guidelines in trauma-informed design. We need to introduce education about trauma into college and university curricula and develop continuing-education opportunities in trauma-informed design. And we must broadly share what we know—including developing case studies of what has worked, what hasn't, and why.

A larger challenge is prioritizing the trauma-informed approach and ensuring that as we strive to meet the vast need for housing, we don't miss the opportunity to do more than simply provide square footage.

We must be particularly thoughtful about space, creating wider hallways but smaller apartments, for example, or offering more flexible shared spaces instead of apartment balconies. Ultimately, we believe prioritizing trauma-informed design decisions will result in better resident outcomes and lower associated costs in areas such as health care utilization or criminal justice involvement.

Shifting our focus from housing people to healing people—and ultimately to promoting dignity and joy through a built environment in which all people can thrive—will be required at all levels, from service providers to policymakers.

As designers of the built environment and stewards of the precious public resources allocated to do so, we must elevate our thinking and center human experience in our own work.



“Man, I have gone from bed bugs to honey bees!”

Patrick, Resident Sage of Providence at the Heights



Keep the Conversation Going

Addressing trauma is not just the responsibility of individuals and the services that walk beside them. An effective response to trauma demands participation from the broader community and public, including all those involved in building housing. Learn more about trauma-informed design and share this paper with your colleagues, clients, and professional organizations.

www.shopworksarc.com/tid



Additional Resources

The Enterprise 2020 Green Communities Criteria for integrative and healing-centered design provide excellent guidance for implementing for a trauma-informed design process. www.greencommunitiesonline.org



The WELL Building Standard (v2) provides detailed guidance on both process and features that support health, mental health, and well-being outcomes. v2.wellcertified.com



Design Resources for Homelessness provides a list of architectural ideas to support specific health, mental health, and well-being outcomes, as well as case studies from completed projects. designresourcesforhomelessness.org





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We invite you to join us in this work.

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