Climate Justice in Architecture

Design centering both the environmental and social aspects of climate change

Climate justice in architecture refers to engagement, advocacy, planning, and design that draw down emissions; build resilience and capacity; support human, cultural, and ecological health; and protect all communities in the context of climate change.

Committee on the Environment

AIA Knowledge Community

Stanley Center for Peace and Security: Front Entrance
Image Credit: Cameron Campbell, Integrated Studio

Stanley Center for Peace and Security

This case study shares an exemplary architecture project that centered both the environmental and social aspects of climate change in their design process, approach to community engagement, and final design. It touches on many aspects of the AIA Climate Justice in Architecture Taxonomy at the building, neighborhood, regional, and global scales.

Stanley Center for Peace and Security

Muscatine, IA

Stanley Center for Peace and Security Atrium
Image Credit: Cameron Campbell, Integrated Studio

Summary

The Stanley Center for Peace and Security is a private operating foundation in Muscatine, IA, with the mission "to catalyze and nurture just and sustainable solutions to critical global peace and security challenges." Their new headquarters, located in a locally designated historic district named after 19th century civil rights leader Alexander Clark, embodies the principles of empathy and social responsibility. The design weaves together exceptional environmental achievements with tangible efforts to promote social equity—within the workplace, in relation with neighboring institutions, and through their global initiatives.

Project overview

BUILDING PROGRAM TYPE(S):
Nonprofit (office)

PROJECT TYPE:
Existing building/renovation

CONDITIONED FLOOR AREA:
19,823 gsf.

SITE AREA:
17,097 gsf.

TOTAL USERS:
26 staff + public events

NUMBER OF FLOORS:
2

PROJECT CLIMATE ZONE:
ICC Climate Zone 5

PROJECT SITE:
Previously developed land

PROJECT SETTING:
Urban

YEAR OF SUBSTANTIAL COMPLETION:
2023

COST OF CONSTRUCTION (EXCLUDING FURNISHING):
$11,502,500

THIRD PARTY RATING SYSTEM:
Living Building Challenge

Project team:

OWNER:
Stanley Center for Peace and Security

ARCHITECT:
Neumann Monson Architects (Tim Schroeder–Principal in Charge, Khalid Khan–Design Principal, Sally Obernolte–Project Manager, Lyndley Kent–Project Architect)

MEP ENGINEERS:
MEPT Engineer

STRUCTURAL ENGINEERS:
Raker Rhodes

WATER SYSTEMS ENGINEER:
Biohabitats

CIVIL AND LANDSCAPE ENGINEER:
Environmental Consulting and Technology (ECT)

MATERIALS CONSULTANT:
Integrated Eco Strategies (IES)

WORKPLACE FURNISHINGS:
HNI Corporation

GENERAL CONTRACTOR:
Graham Construction

"I'm amazed at how this process put us through the paces and allowed us to express our values in ways that I never would have dreamed would have been part of a building project."
–Keith Porter, Stanley Center

Community Engagement Workshop
Image Credit: Neumann Monson Architects

Design Process

The Stanley Center approached the design of their new headquarters full of questions about what would need to change about standard design procedures, building technologies, and coordination with external stakeholders in order for the building sector to lead the way towards a more just, fossil fuel-free future. The resulting process influenced not just the final building design but also company policies internal to the Stanley Center, architecture firm Neumann Monson, and furniture consultant HNI.

Living building challenge

The project set the goal of achieving Living Building certification, in part, because it aligns with the Stanley Center's efforts to accelerate global climate action. As the integrated design process progressed, they discovered that conversations around connection to place and social equity dovetailed with their environmental goals to achieve net zero energy, net zero water, and low embodied carbon. The decision

to adapt the structure of a vacant 1970's era library building into their new headquarters is a visible demonstration of carbon sequestration, a memorial to the site's long history as a center for local education, and an example of the organization's commitment to benefit their neighbors in tangible ways.

Parallel organizational development

The Stanley Center selected regional architecture and construction firms that aligned with their valued were eager to learn how to design and construct a Living Building. This approach led to parallel continuous improvement efforts across the team, such as the Stanley Center and architecture firm Neumann Monson Architects seeking simultaneous Just certifications to enhance social equity within their organizations. Neumann Monson was also inspired to seek Living Building Core certification for their own office renovation, and they have integrated sustainability, biophilia, and cultural connection to place into their standard project delivery process.

> The Stanley Center decided to work with a local firm that aligned with their values, but had no prior Living Building Challenge experience, hoping to "take on the journey and the challenge together, so we could, in turn, continue to spread what we learned to more and more people. … [It reflects the Stanley Center's values of] advocacy, education, and learning together on the journey."
> –*Sally Obernolte, Neumann Monson Architects*

Community engagement

Muscatine residents expressed strong interest in using the new Stanley Center headquarters to expand local knowledge about the industrial history of the region, the region's role in the civil rights movement, and the history of the Indigenous peoples who lived in the Muscatine region before European settlement (Wolf 2024, p. 148). These topics are visually integrated into the design and have influenced the new center's outward facing programming.

The project is also next door to a community-based non-profit called the Muscatine Center for Social Action (MCSA), whose services include a food pantry, a shelter, and support services for Muscatine residents experiencing housing instability. The Stanley Center started conversations early on in the design process with MCSA to ensure the construction did not disrupt the center's daily operations.

The new building creates several tangible benefits for its neighbors—shading and beautifying an alleyway where people wait in line for the food pantry, upgrading the water fixtures and washing machines at MCSA, and donating most of their harvests from the urban agriculture in the central courtyard to the food pantry. Residents of the public housing development next door and MCSA patrons also enjoy the gardens along the periphery.

Project financing

The climate justice components of the design aligned closely with the Stanley Center's mission and key issue areas. As a result, they were not seen as adding cost to the project. Instead, stretch goals like the Living Building Challenge Materials Petal were seen as opportunities for the center's new headquarters to embody the organization's education efforts and goals for the future.

Essential climate justice design components include:

1. The owner, design team, and contractor should approach the project with aligned values.
2. The site analysis and the discovery process should include the property's social and environmental history, its future neighbors, and opportunities to leverage the project location and program to create a positive ripple effect on the surrounding neighborhood.
3. When landowners and building professionals establish long-term personal, trusting relationships with neighbors and local government, regulatory challenges can be resolved using a collaborative problem-solving process that does not slow down the project schedule.

Climate justice in architecture taxonomy

Climate change creates new, and amplifies existing, environmental, and social challenges across the following seven themes or categories: social determinants of health, cultural connection to place, economic development without displacement, environmental justice, ecosystem health, climate change health and resilience, and decarbonization. Climate Justice in Architecture, centering on both the environmental and social aspects of climate change, helps teams respond with an architectural design impacting the themes across three scales: building occupants, the surrounding neighborhood, and regionally and globally. The themes align and connect with the AIA Framework for Design Excellence, which represents the defining principles of design excellence in the 21st century. The Framework is comprised of 10 principles and informs progress toward four outcomes – a zero-carbon, healthy, resilient, and equitable built environment.

The Stanley Center for Peace and Security addresses all three scales in the taxonomy, with particular emphasis on the neighborhood and regional/global scales.

Climate Justice Taxonomy	Impact of Design Features by Spatial Scale			Alignment with Framework for Design Excellence			
	Building	Neighborhood	Regional/Global				
Social Determinants of Health	●	●	●	Integration / Water	Equitable Communities / Well-being	Ecosystems / Change	
Cultural Connection to Place		●	●	Integration / Economy	Equitable Communities / Well-being	Ecosystems / Resources	
Economic Development without Displacement		●	●	Economy	Resources	Well-being	
Environmental Justice		●	●	Well-being	Resources		
Ecosystem Health		●	●	Ecosystems	Water	Change	
Climate Change Health & Resilience	●	●		Equitable Communities / Energy	Ecosystems / Resources	Water / Change	
Decarbonization	●		●	Equitable Communities / Energy	Ecosystems / Resources	Water / Change	Economy / Economy

Overview of Climate Justice in Architecture themes and spatial scales: Stanley Center for Peace and Security. Source: Biositu, LLC

Social determinants of health

Enhancing equity in the workplace through design: As a living building, the Stanley Center was designed to create parity in access to positive environmental exposures that support mental and physical health among staff and visitors. All of the offices are the same size and have equivalent access to daylight and views of nature. Offices that do not look out on the agricultural courtyard or exterior are installed with edible wall plants.

Enhancing equity in the workplace through policy: The Stanley Center added a "living wage" human resources policy as part of their pursuit of a Just label under the Living Building Equity Petal.

*"This is more than the building influencing what we're doing; it's the building giving us those opportunities to walk the talk in so many different ways." (Wolf 2024, pp. 143-145)
–Jennifer Smyser, Stanley Center*

Using sustainability to support neighborhood action on water efficiency: Upgrading next-door neighbor MCSA's faucets, showerheads, and washing machines frees up their operational budget to better serve Muscatine residents experiencing housing and food insecurity.

Using sustainability to support neighborhood food security: MCSA distributes the fresh vegetables and herbs grown at the Stanley Center to clients at their food pantry.

Using sustainability to support neighborhood access to nature: The perimeter of the site is designed to welcome passersby to sit on the wall and enjoy the vegetation and wildlife on the property. While the Stanley Center property does not function as an active park, it brings a feeling of access to nature to an otherwise urban area that is separated by a freight railroad track from a nearby park along the Mississippi River.

Cultural connection to place

Reusing a building structure to create a connection to the history of the site: The Stanley Center chose to build their headquarters on the site of the historic Carnegie library to boost the local historic district that was harmed by the presence of an empty building at such a prominent corner. The original library built in 1902 was a town landmark and the location continues to hold cultural significance for many residents in Muscatine, even though the replacement library (built in the 1970s) was not universally loved. Reusing a portion of the 1970's library's structure in the Stanley Center headquarters acknowledges the role it played in the community before it was closed, avoids construction waste, and dramatically reduces the carbon footprint of the new building.

*"We are an organization with resources. So, it's very important for us not only to recognize our privilege, but also recognize how we're going to use that privilege in action. We chose this particular place as an example of using our privilege in a way that may not have been the easiest path for us but probably had the most positive impact on the community."
–Keith Porter, Stanley Center*

Integrating land acknowledgement into the construction process: Throughout the project, the Stanley Center and the design team used language to communicate the importance of linking the new building to the history of the place where it is located. For example, construction began with a "ground healing" ceremony rather than a "groundbreaking" that paid tribute to the history of the Meskwaki people who lived on the land prior to European settlement.

Using public art to bridge the gap between words and action on repairing historical harms: Community input into the project led the Stanley Center to commission a public sculpture called "Tree of Accountability," co-designed by two artists—Deana Dartt (PhD, Coastal Chumash, Mestiza, and descendant of Indigenous People of California) and Nancy Judd (descendant of European settlers). The sculpture was created using repurposed guardrails and decommissioned books. Each leaf shares an answer to a question that the Stanley Center asked of the Meskwaki Nation—who were displaced by European settlers in the early 19th century—"How can settlers be accountable to the people of the lands on which they live?" The answers raise awareness about history, culture, and environmental stewardship: "Care for the Earth like it's your body," "Respect our religion and culture," "Learn a true American history," and "Always think about how your decisions will affect generations to come." The Stanley Center used the sculpture dedication to launch a longer collaborative dialog with local Native stakeholders about what accountability and justice might look like in the Muscatine region. (Wolf 2024, pp. 150-151)

*"Healing cannot undo past harms, but I think our building can be part of the healing process and create a space in Muscatine that will be an example for people." (Wolf 2024, p. 52)
–Krista Regennitter, Stanley Center*

Economic development without causing displacement

Reusing the vacant library removed an impediment to economic development in the neighborhood economy: The new building replaces a drag on the neighborhood economy with a community resource that benefits existing residents and businesses.

Prioritizing construction that minimized disruption to neighboring properties: The Stanley Center project team coordinated construction hours and materials supply deliveries with MCSA to minimize disruption to clients seeking the food pantry.

Creating a welcoming space and access to nature while retaining a separation between private and public spaces: The landscaping, low perimeter wall, and shaded alley between the Stanley Center and MCSA create welcoming, public spaces for community members, Clark House residents, MCSA clients, and the public to gather and build community.

Thinking of it from a library point of view, our role is to provide services for everybody in the community, regardless of their ability to pay, or any other barriers that they might experience. The Stanley Center purchasing the old library and turning it into this new structure that isn't open to the public in a way that the library was, but still provides a service to the community, speaks to that continuity of being a force for good here in Muscatine."
–*Robert A. Fiedler III, Musser Public Library & HNI Community Center*

Supporting local businesses: The project team prioritized selecting building materials from local producers to support the local economy (Wolf 2024, p. 133).

Environmental justice

Modeling investment in a just, circular economy: The Stanley Center used the headquarters project as an opportunity to educate community members in Muscatine about the environmental harm caused by the industries that historically fueled the city's economy, such as pearl button making and the lumber industry. The new building's materials demonstrate a new approach to the economy, which includes adapting existing buildings to new uses, sourcing products that grow local businesses, and prioritizing products with nontoxic components.

Adaptive Reuse of the Existing Structure on the Site
Image Credit: Neumann Monson Architects

"All the things that we don't know about what's in the built environment around us is extremely humbling, and a little scary. It has been really interesting to see how that plays out in a practical sense, with the types of decisions we have to make – that we get to make – about what we're putting into our building."
–*Catherine Elliott (Member of Stanley Center Governance Board) (Wolf 2024, p. 139)*

Protecting furniture manufacturing workers from exposure to toxic chemicals: Workplace furniture maker HNI, which was established by Stanley Center founder Max Stanley, reevaluated many components in its products after its experience supplying furniture for the foundation headquarters. The process of learning about the ILFI Red List inspired HNI to earn ILFI Declare Labels for two popular products (Wolf 2024, p. 132). Removing toxic chemicals from the furniture supply chain reduces exposure among manufacturing workers and building installers, in addition to safeguarding indoor air for building occupants.

Ecosystem health

Engaging non-traditional consultants to broaden design and community perspective: A biophilia place-making workshop educated the Stanley Center, designers, and community stakeholders about the human and ecological history of the site. Experts in geology, ecology, and cultural history looked in detail at the influence of Indigenous communities on the ecosystem and the influence of industry on the land after European settlement.

Using biophilia to improve environmental sustainability, social equity, and the historical connection to place: The biophilia workshop led to a more holistic approach to the design process and community building activities post-occupancy.

The biophilia place-making workshop "gives you a much more comprehensive idea of what you're trying to preserve or recreate. [After the workshop,] you know how you want to connect to nature, what is important for the whole group – not just the design team. It helps get the community members engaged. That is powerful."
–Khalid Khan, Neumann Monson Architects

Translating one pilot experience into standard practice: Neumann Monson has integrated their newfound expertise in biophilia and place-making into their standard project delivery process.

Climate change health & resilience

Preparing for increasing risk of drought and flooding: The indoor and outdoor water system was designed with the future climate in mind. Models indicate that the region may experience less rainfall overall in future decades but a greater frequency of heavy rain events and flooding.

Making the hidden water cycle visible: The building uses its unique position—straddling a buried creek—to educate occupants and visitors about the natural watershed crossing the site. The pavement at the entrance mimics the path of the original stream beneath occupants' feet. The building's water treatment and distribution system is also visible through a window in the main conference room.

Reducing neighborhood flood risk: The landscaping along the property boundary functions as a rain garden—reducing flood risk. Other areas of the site use pervious pavement to contribute to flood mitigation.

Reducing demand for the city water and wastewater infrastructure: Next to the entrance, two large water cisterns show passersby the quantity of water stored to supply all of the building's needs. The center also reduced its burden on local wastewater infrastructure by upgrading the efficiency of faucets, showerheads, and washing machines at MCSA, their next-door neighbors.

Providing short-term access to fresh food during disasters: Depending on the time of year, the on-site agriculture covering 5% of the site and lettuce walls on the interior could provide limited food supplies to people sheltering in place during an extreme weather event. The solar panels and battery storage also safeguard the contents of facility refrigerators.

Creating a micro-emergency shelter/resilience hub to increase resilience to power outages: A small, designated shelter space—including bathrooms, shower facilities, and dedicated battery storage—is located in a staff-only section of the building. In the event the full building is called upon to operate during a power outage, its photovoltaic arrays and battery storage will allow it to function at 75% capacity.

Increasing redundancy in the local water supply: The cistern storage and on-site purification system are designed to generate potable water regardless of city utility disruptions (Wolf 2024, 107).

Stanley Center for Peace and Security: Interior Plantings and Green Wall
Image Credit: Cameron Campbell, Integrated Studio

Building Scale   Neighborhood Scale   Global Scale
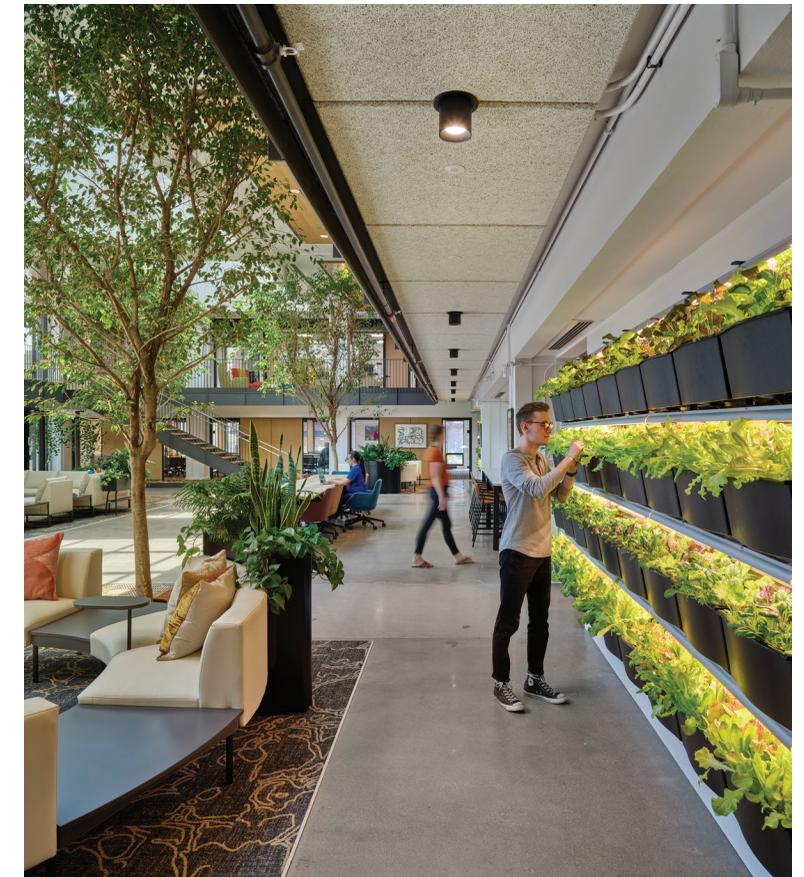
Decarbonization

Reducing embodied carbon and preserving local history through adaptive reuse: 94% of a 1970's era library structure was reused in the new Stanley Center—resulting in 193,545 Kg/CO2 embodied carbon compared with 854,037 Kg/CO2 for a new building the same size (Wolf 2024, p. 105).

It seems natural to say ... renovating a building that already exists is the most sustainable thing to do. Yet how naturally so many of us unfortunately slip to, 'Oh, it's so much easier to build new.' It's less hassle, and maybe even less effort. Having a client remind us of that, and purposely choose the 'harder' path, opened our eyes and reignited our awareness. In our office, we've talked about it over and over again. How can we help communities take a better look at the existing building stock within their communities and understand the potential?."
–*Sally Obernolte, Neumann Monson Architects*

Addressing the root cause of climate change: As a living building, the Stanley Center produces enough energy and water to cover its operational needs.

"Tree of Accountability" Sculpture, co-designed by two artists Deana Dartt and Nancy Judd
Image Credit: Cameron Campbell, Integrated Studio

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Additional information;

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Healing Ground, Living Values

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