



Pueblo architecture is one of many building traditions that continue today in Native America

In 2017, over 16% of households in Indian Country were overcrowded. This crowding often shelters houseless relatives and includes multiple generations.¹

Indian Country’s housing crisis is a public health crisis. Pandemic response and recovery must include a roadmap to resolve systemic issues.

Indian Country faces daunting challenges to the health and well-being of the people. COVID-19 is exacerbating long-term issues in housing, healthcare, and self-governance that tribal nations have been working to solve for decades. The shortage of healthy housing in Native communities is an especially visible challenge for families during the pandemic, when the primary recommendation for mutual safety--self-isolation at home--is unattainable for many. Equal attention must be paid to emergency response and long-term recovery; for each dollar spent on relief, another must be invested in building and preparing for the next major challenge. As we work together on facilities for front-line healthcare workers and housing for recovering COVID-19 patients, medium- and long-term solutions should be prioritized for healthy, locally-fabricated housing and infrastructure. This document presents a background on systemic challenges and community resilience in Indian Country’s COVID-19 response. It provides a look at short-term design strategies and long-range design planning that can aid tribal nations and tribal housing professionals in their vital work.

Early in the COVID-19 pandemic, concern for healthy spaces--in relation to at-risk populations and strained public resources--centered on urban and clinical settings. These guidelines are designed to remind tribal leaders, policymakers, housing authorities, designers, and the many others working on healthy housing that this concern must extend to tribal communities. Indian Country was already confronting a 200,000-unit housing shortage before the pandemic arrived, and families are struggling to configure their homes to perform as workspace, school, multigenerational residence, cultural center, and homestead all at once.²

Pandemic recovery includes an opportunity to reevaluate the fundamental values and standards that create exemplary housing in Indian Country for current and future generations. The suggestions herein indicate opportunities to help existing buildings better protect their residents during the COVID-19 pandemic and beyond. As new projects continue to move forward, designers and operators must consider these strategies fundamental to design. Previously, robust window systems, outdoor living space, generous entryways, and additional storage space were seen as luxury items. During a period of increased isolation at home, these elements are proving essential to maintaining residents’ physical, mental, and emotional health, and should be considered as such for future projects.

Our hope is that the design strategies presented here can be tested and implemented by housing authorities across the country and can also be used as a tool to advocate for quality housing for all. Everyone deserves to live in a healthy home. Everyone deserves good design.

¹“Native American Housing Needs Study,” HUD, 2017.

²“Housing on Native American Lands: Rural Research Report,” HAC, 2013.

Phases for Design	p. 3
Design Strategies	p. 4
Design Applications	p. 5



Healthy Housing requires understanding community needs and lived realities.

Good design within a community uplifts the community as a whole.

Native communities cultivate resilience through long traditions of care. Each tribal community is rooted in the wisdom and practice of its ancestors who survived and rebuilt from epidemics, genocide, and harmful policies. A community's future is based on this legacy of knowledge. We envision today's pandemic recovery as a phased design approach that addresses these critical, long-standing challenges with the skills inherited by tribal nations. This approach is organized into three major phases:

1. Responding to immediate needs by adapting existing infrastructure for housing and infection control, while vetting and deploying new cost-effective modular and prefabricated options;
2. Recovering through the development of new infrastructure to serve the most vulnerable while implementing local fabrication methods that maximize economic impact within the community;
3. Rebuilding with a long-term strategy that invests COVID-19-related and other funds into healthy housing and healthcare systems in order to increase resilience for elders and future generations.

To craft a comprehensive recovery, it is vital that housing professionals, policymakers, designers, and builders look to the community leadership and traditional resilience present in tribal communities. For instance, many Native households address homelessness and the chronic housing shortage within reservation communities by sheltering their relatives; sometimes, this leads to overcrowded homes. A future community-centered design approach will follow these families' lead in preventing homelessness while ensuring that all family members have enough healthy space for living.

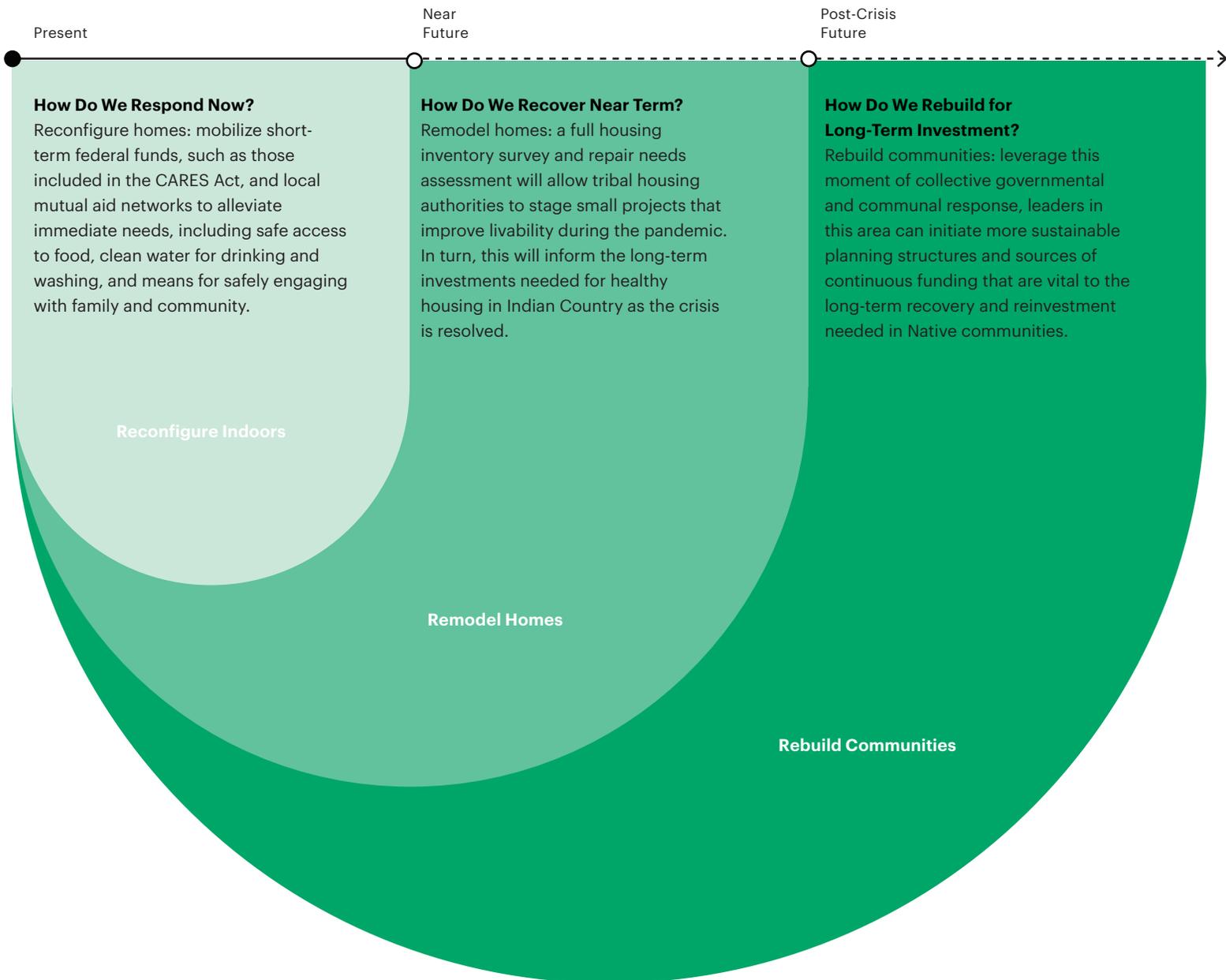
About this Document:

The following design strategies guide tribal housing leaders through spatial literacy and construction priorities as they adapt existing buildings for safer, healthier living and plan for future development.

MASS Design Group is a nonprofit design collective focused on creating social impact through the built environment. We have over 120 staff and \$200MM in work built or under construction in over 20 countries, which has collectively served over 500,000 people. MASS and the Sustainable Native Communities Collaborative (SNCC) launched the Sustainable Native Communities Design Lab (SNC Lab) based in Santa Fe, NM as a Native-led resource center for Indian Country to develop culturally responsive and resilient Native communities in what is currently the United States. This time of crisis is not unfamiliar to our organization: our practice has been defined through partnership with organizations at the front lines of the world's major health challenges, from the acute epidemics of Ebola and Cholera to the chronic injustices of structural health inequity. As your community responds to COVID-19, we want you to count on us as a partner.

Our COVID-Response is dedicating the full capacity of our organization toward pandemic response and recovery. We are raising and deploying philanthropic resources to advance two scopes of work from our core team: design guidelines for industries and sectors most impacted by the virus, and urgent partner support. To date, MASS has created and distributed several guides, including "Designing Spaces for Infection Control," "Spatial Strategies for Restaurants in Response to COVID-19," and "Designing Senior Housing for Safe Interaction," among others.

The built environment plays a key role in community health and pandemic recovery. The following pages offer recommendations to tribal housing professionals for phases of renewal in building, design, and planning, from this moment, extending into the future.

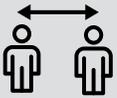


Creating safer spaces for interaction within and beyond the household is essential during the COVID-19 pandemic, when families must rely on their living space more than ever. These design principles are arranged to scale from adaptations that can be made in the near future to those that guide long-term planning, design, and development.



Make spaces breathe better

Good ventilation dilutes contaminated air to reduce airborne transmission of disease such as COVID-19, as well as irritation caused by allergens and particulate matter. Both passive and active systems play essential roles in directional airflow by creating negative air pressure in important spaces, such as bedrooms. HVAC professionals or housing staff should evaluate existing systems and consider upgrading or adding new systems and HEPA filters.



Reduce pressure on high-traffic places

In overcrowded homes, the common area may serve as living space, sleeping quarters, and storage. It is important to reduce activity and density in this area to prevent the spread of germs. Delineating private space (eg. sleeping area) from semi-private space (eg. cooking, eating, and living areas) can help to reduce common usage of high-touch surfaces.



Expand and define the entry threshold

Empower residents to manage their household safety by adding or expanding the home's entry space. If possible, a new threshold between outside and inside--such as a sunroom or covered porch--can function as a safer zone for hand-washing, removing outdoor clothing, and discarding personal protective equipment before entering the home.



Improve safety and access

Existing homes can be rehabilitated to improve safety and accessibility, in turn reducing stress and improving comfort for residents. These improvements may include ramps, consideration for hardware and surface installation heights, and marking high-touch surfaces to promote daily hygienic practices.



Move life outside

In exterior spaces, air moves more quickly and people are able to physically distance from one another, making this the ideal location for most at-home activities during warm weather months. Rethinking the design of outdoor spaces with porches, patios, sunrooms, or other semi-enclosed additions can increase the quality of outdoor life. These new or existing spaces can also extend the outdoor season, providing extra time and safety for families.



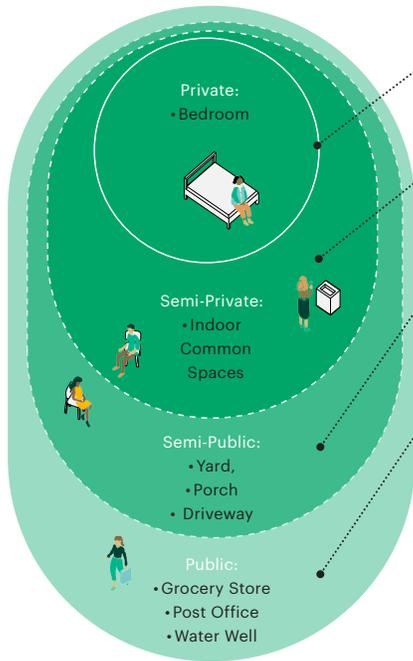
Engage the community

Communities rely on leaders for guidance on safer living during the pandemic and its recovery. Creating accessible guidelines delivered in Native languages can help families navigate public places, plan necessary travel, and engage in public life such as ceremony or voting without increasing the risk of illness. Investing in infrastructure and the planning, design, and construction of new housing types are vital parts of a comprehensive healing process within the built environment.

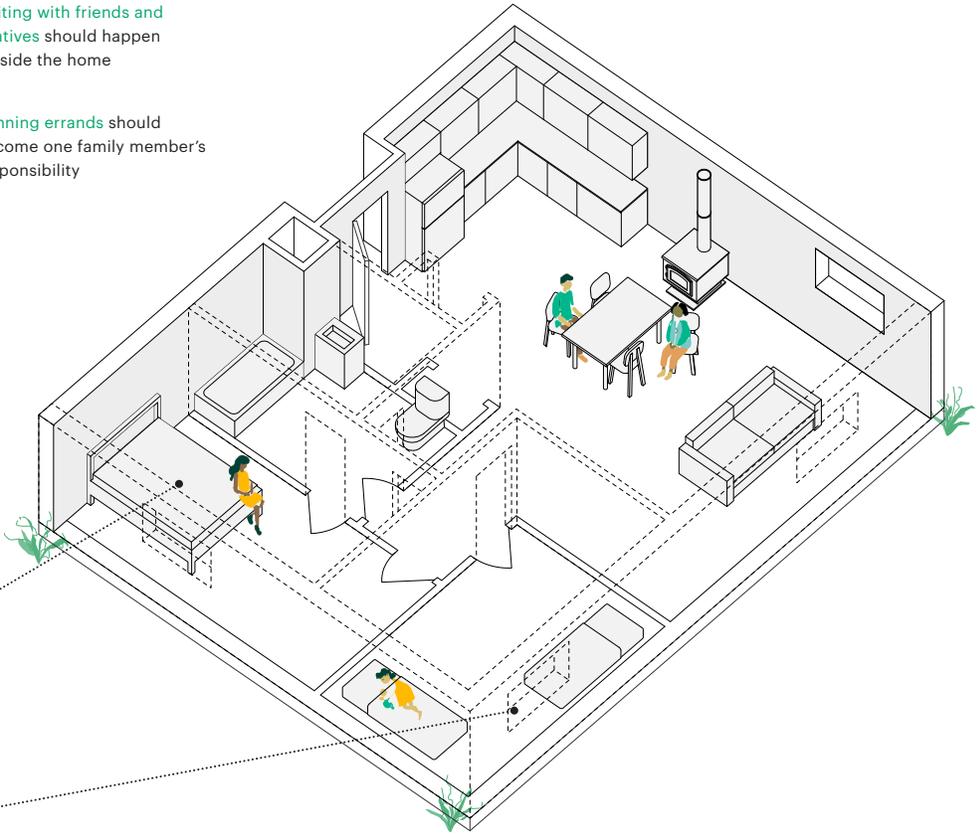
I. How Do We Respond Now?

Leaders in Indian Country are mobilizing short-term federal funds, local mutual aid networks, and other available sources of help for their nations. Families can also address immediate needs for daily life in the built environment both at home and beyond by reconfiguring their space and spatial behavior. These diagrams represent practical steps for interaction within and outside the home.

Movement within the community:



- Clear markings should separate private bedroom from shared living space
- Hands and supplies should be cleaned before entering the home or near the front door
- Visiting with friends and relatives should happen outside the home
- Running errands should become one family member's responsibility



Movement within the home:

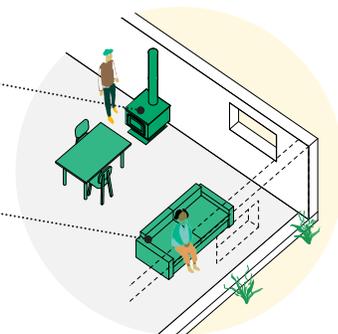
Reconfigure sleeping space so relatives who are isolating have a well-ventilated room closed to common areas

Generate cross-ventilation by increasing negative air pressure within isolation rooms. To ensure the directional flow of air, a fan can be placed in the window

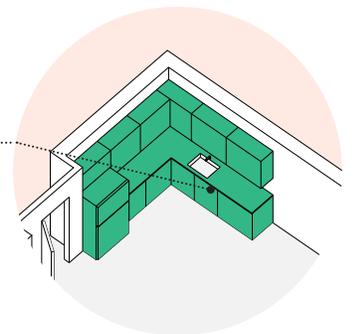
Clean wood or pellet stoves to improve indoor air quality

Position furniture near open windows and reduce potential clutter by adding on-site storage

Use tape or signs to mark high-touch surfaces within the home to reduce the spread of germs and distinguish private and semi-private space.



Indoor Air



High-Touch Surfaces

II. How Do We Recover Near Term?

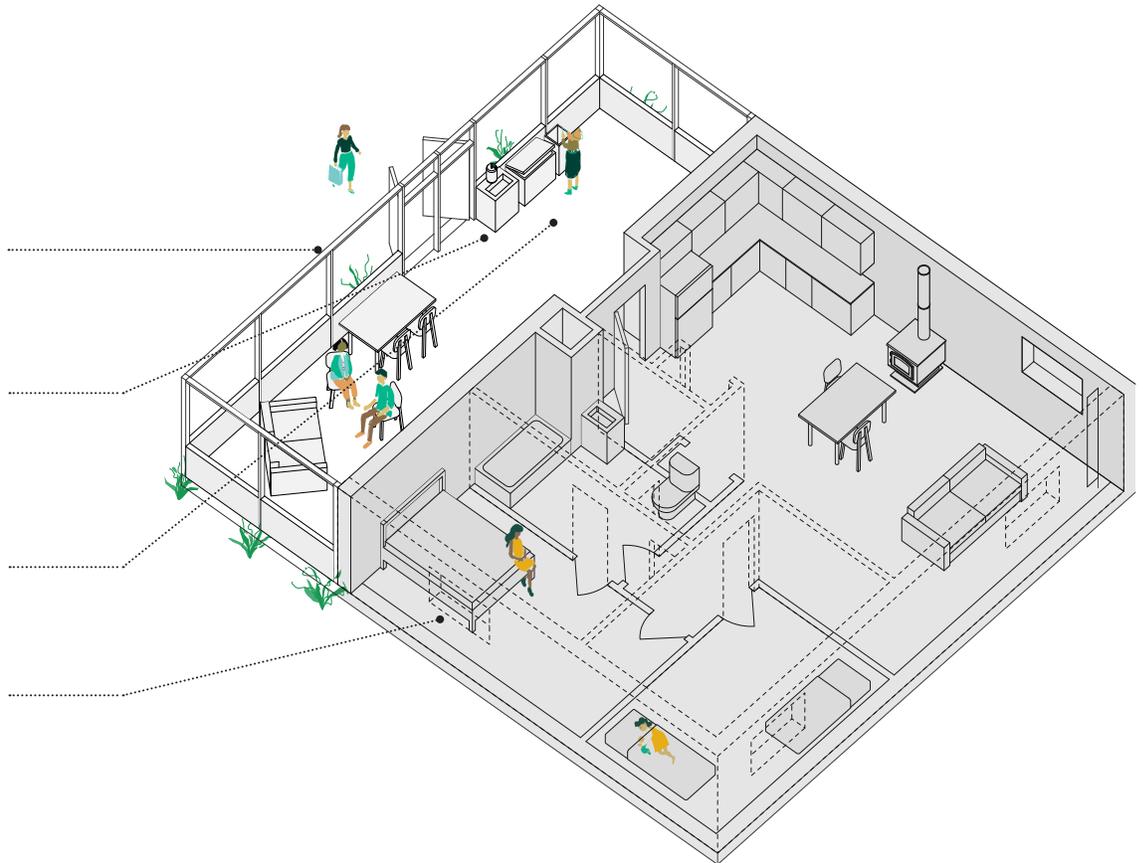
As the pandemic response adapts over coming months, short-term funds can be rolled into more robust planning efforts to unlock long-term investment in much-needed building for communities. The first steps toward this goal can be taken this year, with a full housing inventory survey and repair needs assessment to treat existing windows, accessibility, and indoor air concerns. These short-range projects will improve understanding of the existing built environment and its broader needs for the creation of healthy housing in Native communities.

Add an enclosed porch for additional sleeping, visiting, and activity space. This area can also make room for additional storage

Place sanitation stations to make a new threshold between inside and outside where residents can clean their hands

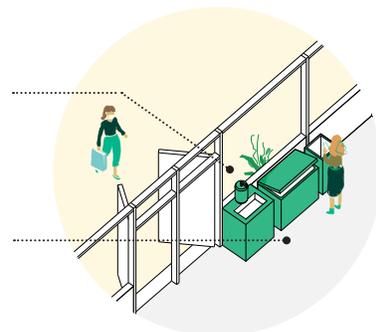
Create a don and doff zone for outdoor clothing and personal protective equipment, keeping these items outside until they can be cleaned

Add or repair operable windows with screens to improve passive ventilation



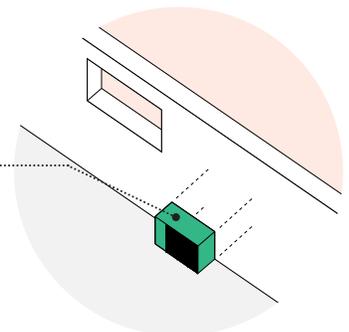
Hand-washing from an exterior spigot or water jug takes place before entering the house or when interacting with visitors outside

Enclosed outdoor storage keeps non-perishable items outside until they can be cleaned



Home Entry

HVAC professionals should evaluate existing systems and add HEPA filters or mini-HVAC units where possible



Mechanical Systems

III. How Do We Rebuild for Long-Term Investment?

These guidelines focus inward on the home rather than a wider rural or urban context. Although a strong relationship exists between the two, attaining healthy housing for Native communities represents a tangible goal toward sustainable Indigenous nationhood at larger scales. In this direction, the following recommendations center the planning and creation of new homes that reflect their community and environment.

Community Engagement:

In rebuilding from this crisis, tribal community leaders have a major resource in the elders, families, and youth who make up their nations. These members' expertise in living and working within Indian Country's existing infrastructure can provide essential lessons in its improvement. Engaging the community in design will significantly advance the next generation of homes, creating spaces that serve a community on their own lands, within their own traditions.



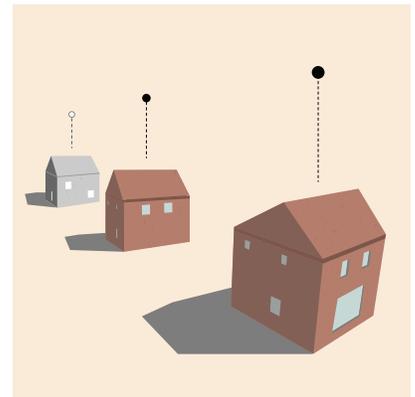
Healthy Design:

The long traditions of building that root Indigenous nations in their homelands remain essential to tribal sovereignty and wellbeing. Practicing these traditions of sustainable material design, thoughtful use of water and other resources, local labor, and intergenerational engagement in contemporary buildings characterize healthy design. Investing in the planning, design, and construction of housing with these goals in mind will foster healthy environments, economic development, and skills education in tandem.



Existing Housing Stock Survey:

Coordinating efforts in planning and funding for long-term investment in Indian Country's built environment begins with a thorough assessment of existing housing stock. Tribal housing professionals can contribute significant expertise by collecting data on the existing conditions and outstanding needs in their communities. By surveying, housing leaders can account for systemic issues--from water systems to pervasive indoor air quality challenges to overcrowding--and prioritize improvements to existing housing. This knowledge will then inform new design that is of good quality, maintainable, and better crafted for Native families.



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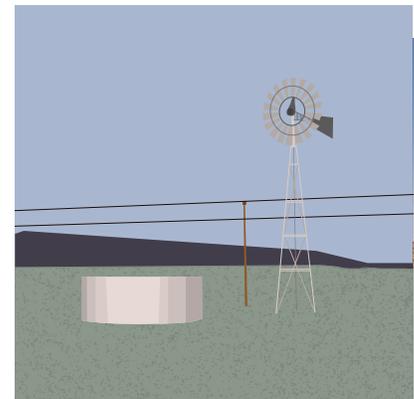
Intentional Construction:

In Indian Country, funding for new or remodeled housing is often erratic. This leaves tribal leaders with difficult decisions between maintaining existing structures, providing fewer new homes than are needed, or offering temporary solutions that become permanent fixtures in the landscape. In the rebuilding phase that follows this moment of crisis, we hope that coordinated investment design will help tribal communities escape this pattern.



Infrastructure Networks:

Underlying many of the challenges to healthy housing that pervade Indian Country are the systems that support homes: water, sanitation, roads, electricity, internet and phone service. These systems support families and are necessary parts of immediate and long-term crisis response efforts. Prioritizing these fundamental systems for modern living within the development process can alleviate many of the structural inequities that currently threaten the health, education, and community involvement of many tribal families. Infrastructure is foundational to tribal nations' future success.



More Home Types:

To address the many issues that exist under the umbrella of housing insecurity in Indian Country, it will be necessary to reimagine the different kinds of housing that our tribal nations require for their health, security, and sustenance. While conventional housing in the reservation era has often relied on one or two building types to shelter every member of a nation, we recognize that these types are typically not rooted in the values of extended family care, responsibility to the land, and other core beliefs that underpin Indigenous nationhood. Tribal housing experts can lead the way in reimagining homes that support elders, youth, individuals in transition, and strong families in their own communities.



A Living Document

This document draws upon MASS's design experience with epidemic outbreaks and the Sustainable Native Communities Design Lab's extensive work within Native housing. We are grateful to Lynda Lantz of FirstPic, Inc. who generously contributed time and insights to the creation of this document. As more research emerges regarding the virus, federal and state guidelines are updated and released, and additional case studies are completed, this document will be updated.

We are grateful to the designers and thinkers who have provided their expertise to this ongoing project, notably founding members of the Indigenous Design Collective, Elsa Hoover and Zoë Toledo. The work does not represent the opinions or full understanding of any one person. Please reach out to covidresponse@massdesigngroup.org if you have any questions, are seeking support, or would like to be included as a case study in this evolving body of work. For more information, check out the following publications:

- "Native American Housing Needs Study, US Department of Housing and Urban Development, 2017
- "Housing on Native American Lands: Rural Research Report," Housing Assistance Council, 2013
- Green Communities: The Standard for Sustainable Futures, Enterprise Community Partners

Contact Us

Joseph Kunkel, Design Director
jkunkel@mass-group.org

Sustainable Native Communities Design Lab
MASS Design Group
1807 Second Street #32, Santa Fe, NM 87505