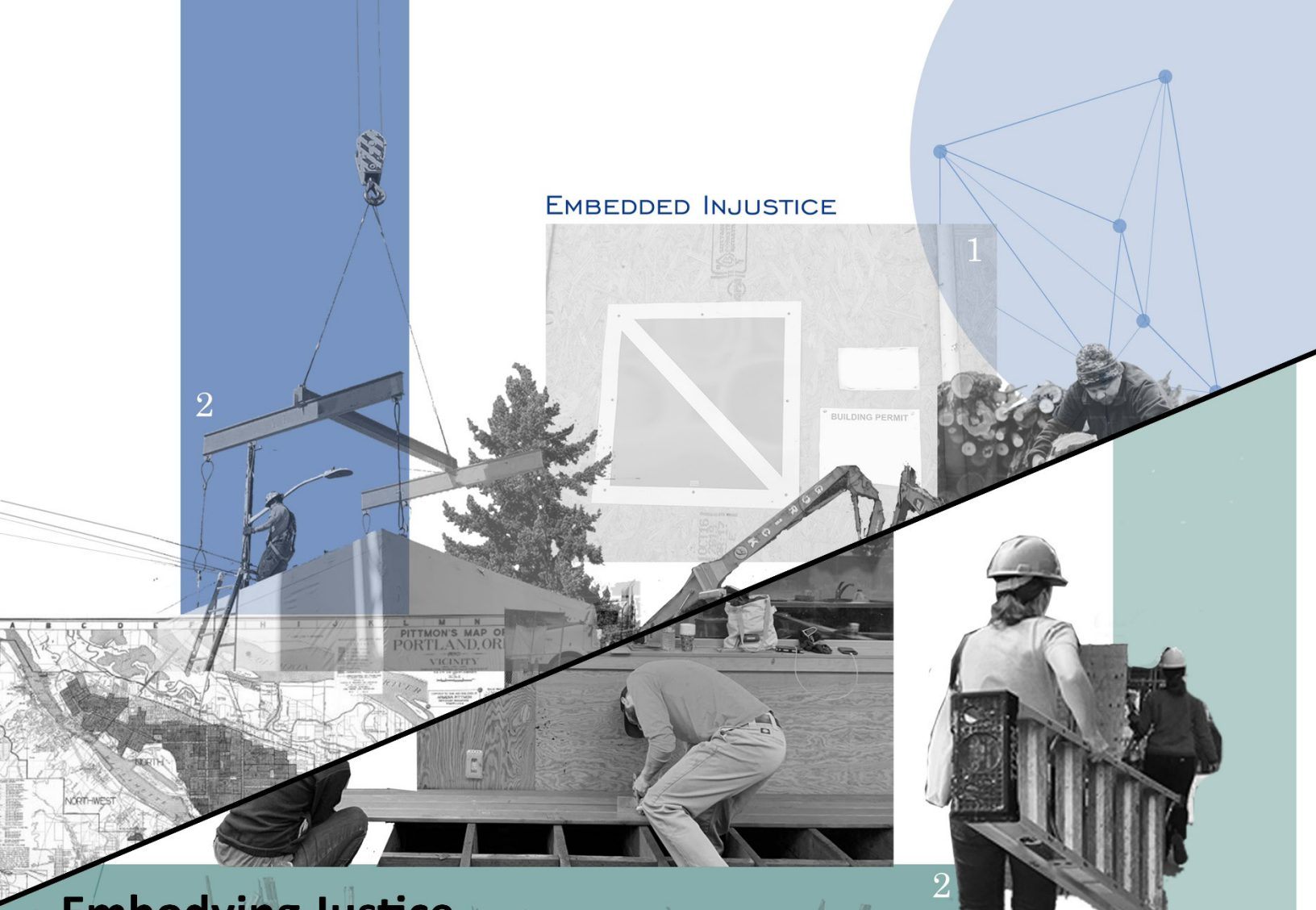

Embodying Justice in the Built Environment

Circularity in Practice

April 2024

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Authors: Jennifer Minner, Director of the Just Places Lab; Jocelyn Poe, Director of the Reparative Praxis Lab; Felix Heisel, Director of the Circular Construction Lab; Ash Kopetzky, Just Places Lab Researcher; Maya Porath, Just Places Lab Researcher; Gretchen Worth, Program Director of the Susan Christopherson Center for Community Planning.

Research Assistance and Graphics by: Wyeth Augustine-Marceil, Medha Kulkarni, Alexandra Ciobanu.

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Just Places Lab

REPARATIVE PRAXIS LAB

Circular Construction Lab

CHRISTOPHERSON CENTER

CR0WD

CNCA

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EXECUTIVE SUMMARY

Purpose

Embodying Justice in the Built Environment: Circularity in Practice is a guide and workbook for local governments and community organizations seeking to center justice and equity in their work toward building carbon neutral futures to address climate change. Unjust practices have shaped the built environment, from land dispossession to discriminatory planning, to harmful material extraction and toxic production processes, to wasteful construction and consumption practices. Current building processes have exacerbated injustices embedded in the built environment. This guide and workbook offers the *Embodying Justice* framework to support justice-oriented practices in the built environment and was developed with the belief that redressing injustices is integral to transitioning cities toward carbon neutrality.

What is *Embodying Justice?*

Embodying Justice is a continuous process that recognizes and remedies past and present harm within the built environment while working toward just futures. *Embodying Justice* requires cities to carefully and comprehensively examine regulations, programs, and practices that affect the built environment's design, construction, maintenance, repair, replacement, and end-of-life approaches and their impacts on justice. This concept is grounded in these guiding principles:

- **Justice is reparative.** It concerns itself with making right what has been wronged, reconnecting what has been broken, and balancing the imbalanced.
- **Justice is fair.** It equitably distributes social, cultural, political, economic, and environmental benefits and burdens.
- **Justice is community-driven.** It centers historically oppressed and marginalized communities in a collaborative and inclusive process to move toward just futures.
- **Justice is placed.** It is grounded in the specific community context in which it is invoked, rather than an abstract concept.
- **Justice is not a singular endpoint.** It is a continuing process of reflection, acknowledgment, and action.

The guide and workbook is designed to engage with five justice domains focused on three essential aspects of addressing Circularity and Waste: 1) Alternatives to Demolition 2) Resource Management and 3) New Construction.

How was the guide and workbook developed?

A team of researchers, with the support of community leaders, reviewed and analyzed the "Waste and Circularity" section of the *City Policy Framework for Dramatically Reducing Embodied Carbon*, which details 52 policies for achieving carbon neutrality goals. While considering the prevalence of injustice and inequity embedded in the built environment, the analysis was then developed into a conceptual framework that forefronts justice and equity principles.

HOW TO USE THIS GUIDE AND WORKBOOK

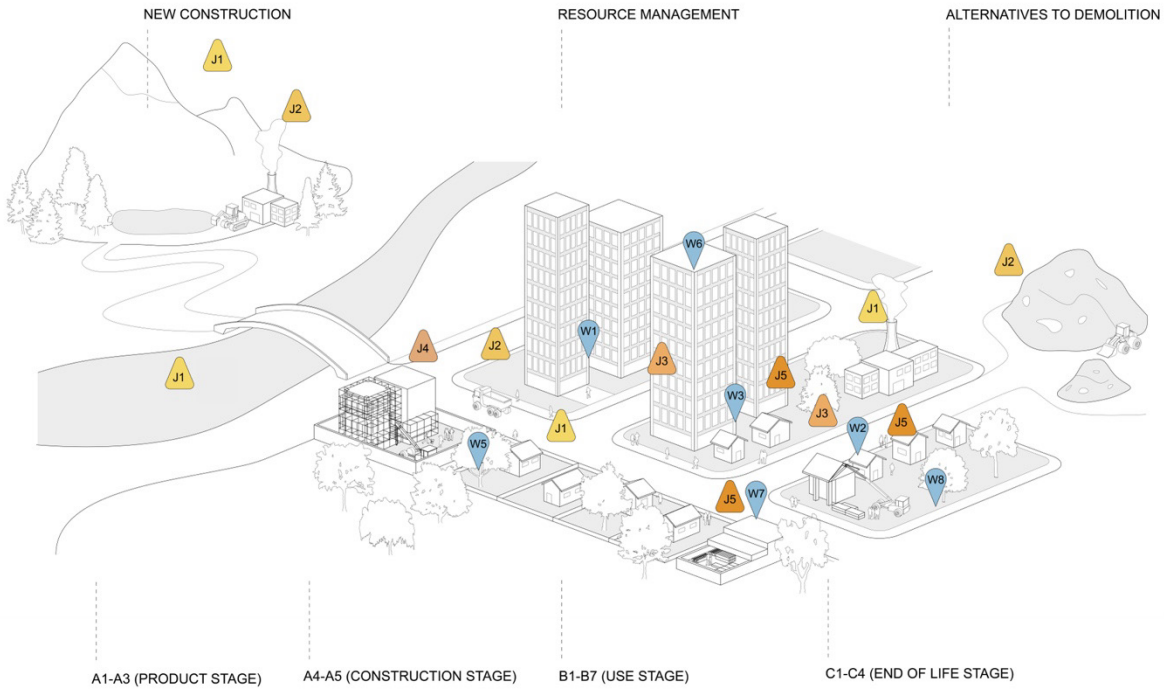


Figure 1. Circularity, Waste, and Justice in Building Lifecycles. The Js refer to justice principles referred to in section 1B. The Ws refer to the Waste and Circularity Policies in the City Policy Framework for Dramatically Reducing Embodied Carbon. (Credit: Circular Construction Lab)

The *Embodying Justice* guide and workbook is a tool for cities to examine their policies and programs and to prioritize incentives and regulations. It can serve as a reference for policymakers and practitioners in developing, implementing, and evaluating initiatives related to circularity, waste diversion and recycling, climate justice, and action, and in considering regulations and city permitting, long-range planning, economic development, and historic preservation programs. It can also be useful for government agencies at all levels when addressing the reuse and construction sector. The guide and workbook is also intended for community organizations to help identify opportunities for engagement and change in their cities, as transitions to more just, equitable, and circular cities will require action beyond what local governments can accomplish on their own.

This guide and workbook is designed to be used alongside the CNCA's *City Policy Framework for Dramatically Reducing Embodied Carbon* and to expand cities' tools to develop a more just built environment. The *Embodying Justice* guide and workbook also refers to additional frameworks, such as life cycle assessment (LCA), which is a method of understanding the environmental impacts of products and services from raw extraction to disposal. This workbook can also be used independently of other frameworks as cities develop their own approaches to address embodied carbon.

The *Embodying Justice* framework establishes justice principles as its foundation. The framework identifies five domains of justice, where city government and community organizations can focus their efforts as they develop policies, practices, and processes to address circularity and waste.

Justice principles (see section 1B, Defining Embodying Justice)

- Justice is reparative.
- Justice is fair.
- Justice is community driven.
- Justice is placed.
- Justice is not a singular endpoint.

Domains of justice (see section 1C, Embodying Justice Framework)

- J1 Community Impacts
- J2 Economic Impacts
- J3 Labor and Workforce
- J4 Historical Context
- J5 Community Engagement and Involvement

Strategies for addressing Justice in Circularity and Waste in the following areas:

A. Alternatives to Demolition (see section 2A)
B. Resource Management (see section 2B)
C. New Construction (see section 2C)

For each group of strategies, a series of questions is provided, with corresponding considerations when developing carbon neutrality policies. The questions are meant to raise awareness to justice issues and prompt users to pursue solutions appropriate for their communities. This is a workbook; make notes, draw lines, and connect ideas. Refer to the following Cross Reference Matrix to find specific strategies.

Embodying Justice Framework	CNCA Policy Framework	Life Cycle Assessment Framework
ALTERNATIVES TO DEMOLITION		
Building Maintenance, Preservation, and Refurbishment [MPR]	W5	B1-B7
Adaptive Reuse and other Extension of Building Life programs and practices [EXL]	W1, W5, W7	B1-B7 (if incorporates new construction then A1-A5)
Deconstruction and Salvage [DS]	W5, W8	C1-C4, D
RESOURCE MANAGEMENT		
Material Reuse and Distribution [MRD]	W3, W4, W7	All, concentrated on points of distribution after initial end of life
Recycling [R]	W5	C1-C4, D
Demolition and Waste [DW]	W2	C-1, D
NEW CONSTRUCTION		
Schematic Design [SD]	W2	A1-A3
Design Development [DD]	W1, W5, W6	A1-A5, B1-B7, C1, D
Construction Documentation and Permitting [CDP]	W4	A1-A5, B1-B7, C1, D
Bidding and Contract Negotiation [BCN]	W3, W6	A1-A5, B1-B7, C1-4, D
Construction Administration [CA]	W2, W4, W9	A3-A5, B1-B7, C1-C4

GLOSSARY

Adaptive Reuse
“Redesign and alteration of an existing building to support a new function it was not originally intended to serve.”[1]

Built Environment
”...the man-made or modified structures that provide people with living, working, and recreational spaces.”[2] This may include buildings, infrastructure (for services such as water, waste, electricity and communication systems), transportation roads and networks, landscapes, and parks.

Carbon Neutrality
”A state in which the GHG emissions released to the atmosphere by a stakeholder (individual, organization, company, country, etc.) have been reduced or avoided, and the remaining ones are compensated with carbon credits.”[3]

Circular Economy
“A systemic approach to economic development designed to benefit businesses, society, and the environment. In contrast to the 'take-make-waste' linear model, a circular economy is regenerative by design and aims to gradually decouple growth from the consumption of finite resources.”[4]

Deconstruction
The systematic dismantling of an entire building or structure, maximizing the recovery of valuable materials. It is an environmentally friendly alternative to demolition, which produces large amounts of pollution and waste that end up in landfills.[5]

Demolition
“The complete or partial removal of a structure from a site.”[6] Demolition is a process that often results in the wrecking and disposal of building materials in contrast to deconstruction and reuse.

Embodied Carbon
”The sum of greenhouse gas emissions (specifically, carbon dioxide [C02]) released during amount the following life cycle phases: raw material extraction, transportation, manufacturing, construction, maintenance, renovation, and end-of-life for a product or system.”[7]

Embodying Justice
A continuous process that recognizes and remedies past and present harm within the built environment, working toward just futures (see Section 1B).

Equity
Equity often refers to fairness and justice in the distribution of resources. Equity is often contrasted with equality. For instance: “Equality requires that every-one receives the same resources and opportunities, regard-less of circumstances and despite any inherent advantages or disadvantages

that apply to certain groups. Equity, on the other hand, considers the specific needs or circumstances of a person or group and provides the types of resources needed to be successful."[8]

Greenhouse Gas Emissions (GHGs)

"Greenhouse gases trap heat in the atmosphere and make the planet warmer. Human activities are responsible for almost all of the increase in greenhouse gases in the atmosphere over the last 150 years. The largest source of greenhouse gas emissions from human activities in the United States is from burning fossil fuels for electricity, heat and transportation."[9]

Justice

A continuing process of reflection, acknowledgment, and action that makes right what has been wronged, reconnects what has been broken, and balances the imbalanced (see Section 1B).

Life Cycle Assessment

A method of understanding and generating documentation of environmental impacts through each stage of a product's life. When the product is a building, this includes production and construction, use, end of life, and recovery. There are many adaptations of this assessment model.[10]

Linear Economy

"An economy in which finite resources are extracted to make products that are used – generally not to their full potential – and then thrown away ('take-make-waste')."[11]

Material Flow

The flow of materials in an effective way to guide and inform resource, process and environmental management to better understand areas of needed improvement[12]

Operational Carbon

"The carbon used in operating and using a building. This includes things like: lighting, heating, ventilation, cooling or air conditioning, general power usage throughout the building."[13]

Priority Communities

Communities that have historically been excluded, marginalized and underrepresented and have suffered the burdens of discriminatory, unjust, and inequitable practices, policies, laws, and societal norms. These communities are often racialized or include a high proportion of racialized or minority populations, including -Indigenous, Black, people of color, immigrants, and other groups.

Recycle

"Using energy to transform a product into its basic materials to then repurpose and reuse again, or process into a new material."[14]

Reuse

The continued use of an entire building or its individual building components. Extending the life of a product or material previously installed for the same or similar function. Component examples include cabinets, doors, hardware, fixtures, flooring, siding, and framing lumber.[15]

Salvage

"A systematic and careful intervention to extract valuable building materials, components, and products before demolition. The salvaged materials usually retain their original form with light reprocessing before being reinstalled into a building."[16]

Net Zero

Reduction of carbon emissions to a degree in which the remaining emissions can be captured, stored and/or removed safely. [17]

Embedded Injustice

EMBODYING JUSTICE IN WASTE AND CIRCULARITY

The year 2023 was the hottest on record.[18] Faced with a climate crisis, scientists, researchers, and activists have been warning that countries must reduce carbon emissions to slow the risks and damages of weather-related impacts. The building sector, responsible for nearly 42% of the world's carbon emissions, offers significant opportunities for mitigating climate change.[19] Local governments, policymakers, and practitioners can support these efforts by working quickly to adopt new policies and lead coordinated action to reduce carbon emissions. To effectively achieve carbon neutrality, considerations of justice are essential.

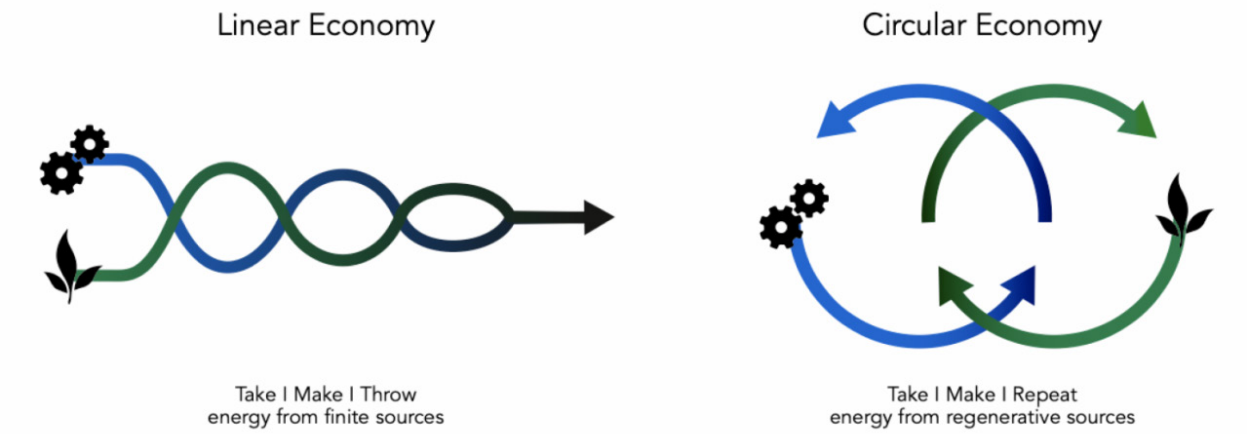


Figure 2. Linear economy and circular economy comparison demonstrating the differences in each. (Credit: Felix Heisel)

Many local governments are working to reduce operational carbon, which refers to "greenhouse gas emissions due to building energy consumption."[20] Fewer have begun to address the challenge of embodied carbon or the greenhouse gas emissions associated with life cycles in the built environment. This life cycle includes 1) the extraction, processing, manufacturing, and transportation of building materials; 2) the construction, maintenance, and adaptation of buildings over time; and 3) eventual removal, disposal, or disassembly at the end of use. An alternative to this linear pattern is achieving circularity. The Ellen MacArthur Foundation defines a circular economy as "a systemic approach to economic development designed to benefit businesses, society, and the environment. In contrast to the 'take-make-waste' linear model, a circular economy is regenerative by design and aims to gradually decouple growth from the consumption of finite resources."[21] In a circular system, embodied carbon is conserved, reducing, or eliminating the release of carbon into the atmosphere associated with the extraction of virgin materials and new construction. In a circular system, waste can be reduced and potentially eliminated.

This guide and workbook presents the *Embodying Justice* Framework and applies it to considerations for alternatives to demolition and waste, resource management, and new construction strategies. It is grounded in reflections on North American histories, theories of justice, and practice stories, and is the first in a series that addresses how cities can achieve a carbon neutral future grounded in justice.

To develop this guide and workbook, a team of researchers, with the assistance of community leaders, analyzed the "Waste and Circularity" section of the *City Policy Framework for Dramatically Reducing Embodied Carbon*, which details 52 carbon neutral policies.[22] While the report provides critical information for achieving carbon reduction, it does not explicitly address opportunities for developing justice and equity goals. Injustices and inequities pervade the built environment, including efforts to achieve carbon neutrality. This guide and workbook aims to disrupt this pattern by centering and operationalizing *Embodying Justice*.

The guide and workbook contributes to this important body of work by providing space for multiple actors to come together and answer questions that address the ways policies, practices, and processes must improve so that a carbon neutral future is also a more just future. A number of US-based projects are highlighted in the Practice Stories section; these are but a few examples. Readers interested in learning more about the thinkers and doers that influenced this book are invited to see the Additional Resources section and to follow the sources cited throughout this guide and workbook.

Section 1A

The Built Environment: An Overview of Injustices

In the built environment, historic and present injustices include dispossession, denial of land rights, discriminatory land use, zoning, and urban renewal policies, as well as harmful material extraction and toxic production processes, wasteful construction and consumption practices. Many of these wrongs were perpetrated against Indigenous, Black, Latina/o peoples, and other people of color harmed through genocide, trade routes, slavery, indentured servitude, and the taking, annexation, and cessation of land. Injustices continued through the treatment of oppressed laborers forced to create wealth used to establish national and local economies, the benefits of which they were denied.[23] These economies and capital were developed to support land growth, governments, and city development and resulted in unjust and unequal systems within the built environment.

Under capitalist economies and the pursuit of financial growth and profit, injustice has been perpetuated through private sector and government policies, which have had lasting spatial and social impacts. These injustices include denial of land claims and land rights, and restrictions— or outright denial—of government benefits according to race, ethnicity, and gender. Racial segregation and a racial wealth gap were facilitated through local, state, and federal-level government policies and practices within the finance, insurance, and real estate sectors that included redlining, blockbusting, contracts masked as mortgages, and other predatory lending and real estate practices that continue today.[24] Neighborhoods with high populations of Black residents and other minorities were routinely denied capital, while predominantly white neighborhoods had access to capital to build, purchase, and improve properties.

At the local government level, many cities adopted zoning and other land use restrictions that overtly or covertly segregated cities.[25] Often, the effect of zoning was to locate industrial uses, landfills, and other polluting uses in proximity to people of color and populations that were

economically disadvantaged. Some neighborhoods, particularly communities of color, have greater incidences of health problems due to pollutants caused by the distribution of industrial uses, heavy transportation infrastructure, landfills, and other noxious land uses.[26]

This history of spatial injustices has produced an uneven landscape within North American cities, where racial segregation and health, education, and economic inequalities are rampant.[27] The capital to construct and maintain the built environment has resulted in differences in benefits and risks associated with property ownership and the quality and condition of buildings over time. Throughout the 20th century, decisions about public initiatives related to renewal, infrastructure, and demolition have created deep and lasting injustices. For example, within the U.S., urban renewal and interstate and highway development have resulted in the premature removal of vast swathes of buildings.[28] These federally funded projects targeted Black communities and other neighborhoods with a high proportion of people of color. The result is the displacement of people, the loss of homes and businesses, division and destruction of neighborhoods, and exposure to environmental pollutants.

When considering the built environment—the construction of buildings, roads, parks, and more—additional layers of inequities are compounded. The life cycle stages of buildings and infrastructure reflect deep injustices that continue today. This includes unsafe and oppressive working conditions in the extraction of resources for building materials, such as mining and timber production, and in the manufacturing of building materials and components from bricks and glass to solar panels, which also include global child and forced labor.[29] Whole communities have been harmed in extraction and materials production, where externalities affect public health or irreparably diminish the environment.[30]

At various stages—from manufacturing to end of life—the extraction, production, and use of materials have continued to cause harm to entire communities. Some materials include spray and fiberglass insulation; polyvinyl chloride (PVC), commonly found in windows, plumbing, flooring, and roofing; liquid volatile organic compounds (VOCs) found in many on-site wood treatments; and mercury released from traditional gypsum wallboard.[31] Although not an exhaustive list, these materials and building components are just a few that are embedded within the material economy. Injustices take the form of exploitative labor practices, lack of local economic support, reduction in community hiring practices, loss of local material use, and lack of transparency in material development, transportation, and landfill management. Unjust displacement and disruption through manufacturing facilities, brownfield growth, and off-gassing of materials within the supply chain perpetuate injustices globally, as does material extraction, harvest, manufacturing, and assembly. Even building components deemed to promote sustainability, such as photovoltaic panels, often involve unjust practices.[32] These injustices are international and intergenerational, impacting communities for decades.[33] Though not all materials cause harm, many invisible and unseen injustices occur from failure to consider a material's entire life cycle; this is why advocacy to develop local material selection and reuse of existing building stock is essential when considering new methods for the industry.[34]

Injustices are not limited to the first stages in the building life cycle but affect how buildings are maintained and preserved over time. The racial wealth gap and lack of access to capital means that building maintenance, lead abatement, and access to weatherization and building energy retrofits are unequal, affecting the health of inhabitants and potentially the lifespan of buildings. Historic preservation programs and incentives may not reach neighborhoods whose histories have been denied the benefits of designation.[35] For instance, the requirements for listing on the National Register for Historic Places, necessary for certain kinds of tax incentives, are less likely to be met in certain areas. The National Register underrepresents historic resources associated with people of color, has typically privileged the listing of sites associated with architecture rather than social history, and requires a level of "historic integrity" that may not be possible in marginalized neighborhoods historically deprived of capital.[36] In other cases, historic designations may contribute to displacement when they attract new investment that does not serve the community and prices out residents.[37]

At the end of life, buildings are typically removed through demolition, which releases toxins into the surrounding neighborhoods.[38] Construction, renovation, and demolition debris represents the largest single component of US landfills, resulting in harm to surrounding soil, as well as surface water and groundwater.[39] Critics of federal and local demolition policies point to the role that they play in reinforcing patterns of racial segregation and accelerating cycles of disinvestment.[40]

As widely recognized in carbon neutrality efforts, all stages of building life cycles produce greenhouse gas emissions. These emissions are more likely to negatively affect frontline and vulnerable communities, who are also more likely to suffer from the negative externalities of life cycles, such as living or working near a site of extraction or a landfill.[41]

In addition to direct effects on communities, there is a long history of unequal access to opportunities to work in architecture, real estate development, engineering, construction, building trades (electricians, plumbers, ironworkers, etc.) and preservation professions. These career imbalances are reflected in the racial and gender composition of both the workforce and leadership within these sectors. The lack of diversity in leadership affects decisions about design, development, and construction practices and may perpetuate a lack of involvement and investment in communities of color.[42]

These injustices represent historical legacies and contemporary conditions embedded within the life cycles of the built environment. Many of these oppressive conditions continue to pervade global construction practices that are part of today's linear economy. It is not possible to list them all here, and local communities can examine their own histories to recognize and redress them. A circular construction economy,[43] which includes maintenance and repair, preservation and adaptive reuse of buildings, and deconstruction and reuse of building materials, offers opportunities to address, acknowledge, and repair these injustices that have deeply and negatively impacted so many.

Section 1B

Defining Embodying Justice

Given the scale of embedded injustices in the built environment, carbon neutral investments or environmentally conscious legislation is insufficient without strategies that center justice in relationships among people, places, materials, and the environment. We contribute to ongoing work in Embodied Justice,[44] by offering *Embodying Justice* as a process or set of actions that addresses embodied carbon by working towards carbon neutrality in just and equitable ways. ***Embodying Justice*** **is a continuous process that recognizes and remedies past and present harm within the built environment while working toward just futures.**

Embodying Justice is grounded in these guiding principles:

- Justice is reparative. It concerns itself with making right what has been wronged, reconnecting what has been broken, and balancing the imbalanced. Justice acknowledges harm by situating systemic issues, actions, and circumstances in diverse histories. It uses this knowledge to remedy harm by developing and implementing reparative actions.[45]

- Justice is fair. It equitably distributes social, cultural, political, economic, and environmental benefits and burdens. Justice and equity work together to achieve fairness, as equity focuses on the distribution of resources in the present or future, while justice focuses on redressing past wrongs. As justice repairs, equity ensures that disadvantages associated with injustice are corrected by assessing needs and distributing accordingly.[46]

- Justice is community driven. It centers on those historically oppressed or made vulnerable by systemic injustices and facilitates collective and inclusive processes to move toward repair and fairness. Justice does not come from an aloof authority or lone judge. Instead, it emerges from a community's values, cultures, voices, and processes and thrives on community agency.[47]

- Justice is placed. Rather than an abstract concept, it is grounded in the specific community context in which it is invoked. It must be embedded in a place's social, spatial, ecological, and material conditions to be real.[48]

- Justice is not a singular endpoint. It is a continuing process of reflecting, acknowledging, and acting. It facilitates the ongoing planning for just conditions and requires investment and commitment to ensure longevity. It requires creative resistance and radical imagination.[49]

Section 1C

Embodying Justice Framework

The *Embodying Justice* framework supports justice considerations for strategies that aim to decrease carbon emissions. As the impacts of injustice in one area are felt in others, attempts to repair injustices will inevitably require more than one approach and more than one strategy. This framework acknowledges the pervasive nature of injustices and justices by encouraging practitioners and policymakers to consider five domains of Justice: Community Impacts, Economic Impacts, Labor and Workforce, Historical Context, and Community Engagement and Involvement.

These domains emerged from a methodical analysis in which the justice principles listed in Section 1B were applied to the waste and circularity section of the *City Policy Framework for Dramatically Reducing Embodied Carbon*. It is important to note that these domains are inherently interrelated, and their boundaries are not fixed. They serve as guidelines to organize discussions and actions around justice in ways that move from a singular focus to a systems-based approach. The *Embodying Justice* framework provides a means to evaluate strategies—that is, policies, processes, programs, and practices—based on the following considerations for each domain:

J1 Community Impacts

- Map a strategy's impact across communities (people, places, spaces, ecologies), ensuring equitable distribution of benefits for priority communities.
- Examine how a strategy's design and implementation reflect priority communities' values, needs, and cultures.
- Consider a strategy's potential to redress past and ongoing harm.

J2 Economic Impacts

- Map a strategy's impact on uneven development and local economies, ensuring equitable distribution of benefits for priority communities.
- Examine a strategy's relationship with commercialization, cost, and affordability across communities, identifying opportunities to balance local economies.
- Consider a strategy's potential to develop community-driven approaches for economic growth that aim to redress the impact of extractive development.

J3 Labor and Workforce

- Examine a strategy's impact on workers' health and well-being, ensuring equitable distribution of benefits for priority laborers.
- Identify how a strategy can support balancing opportunities and access to the workforce for priority communities that have been unjustly excluded.
- Consider a strategy's potential to invest in worker agency in ways that lead to a more just workplace and field.

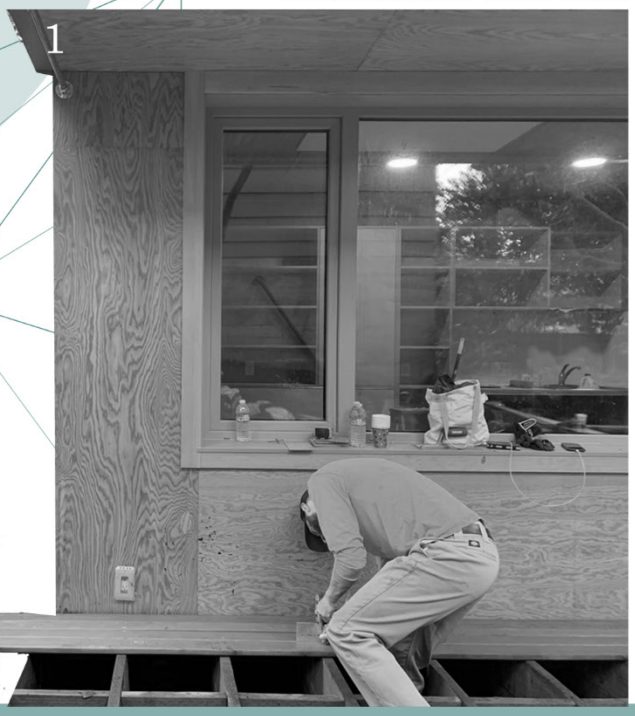
J4 Historical Context

- Examine how legacies of injustice and resistance can influence a strategy's design and implementation in ways that inform a more just approach in the present and future.
- Contextualize the strategy in local histories through an in-depth reflective process that centers priority communities to make right what has been wronged.
- Consider a strategy's potential to be situated in place by uplifting local stories of people, places, and sites historically abandoned or undervalued.

J5 Community Engagement and Involvement

- Examine a strategy's transparency and inclusiveness, ensuring priority communities have equitable access to knowledge, engagement, and opportunities.
- Promote processes that allow a strategy to be coproduced with priority communities through open dialogue.
- Consider a strategy's potential to invest in community-driven approaches that honor community knowledge and values and repair past and ongoing harms.

Integral to developing just practices is the identification of entities responsible for administering the policies, practices, and processes, laws, programs, and/or upholding societal norms that have resulted in injustice, intentionally or not. It is also imperative to acknowledge the entities who were on the receiving end of these wrongs and may have experienced harm. While their place, circumstances, and local histories vary, the *Embodying Justice Framework* acknowledges them as *priority communities.* Based on our North American overview of injustice in the built environment, we identify priority communities to be those who have suffered the burdens of discriminatory, unjust, and inequitable practices, policies, laws, and societal norms. These communities often consist of those who do not fit white, middle-class heteronormative standards, including Indigenous, Black, people of color, immigrants, and other identities that have been marginalized and underrepresented.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2

APPLYING THE EMBODYING JUSTICE FRAMEWORK TO WASTE AND CIRCULARITY


3

Cities must develop new ways of extending the life of building stock and building materials beyond their current "cradle-to-grave" trajectory.[50] Rethinking systems of waste and circularity allows for reflection on a city's social, cultural, and historic context, specifically in relation to questions of justice and equity. This guide and workbook applies the *Embodying Justice Framework* to three fundamental areas in the construction and renewal of the built environment:

(A) Alternatives to Demolition
(B) Resource Management
(C) New Construction

In these sections, strategies—including policies, practices, processes, programs—related to circularity and waste are considered with a series of questions to guide stakeholders towards *Embodying Justice*.

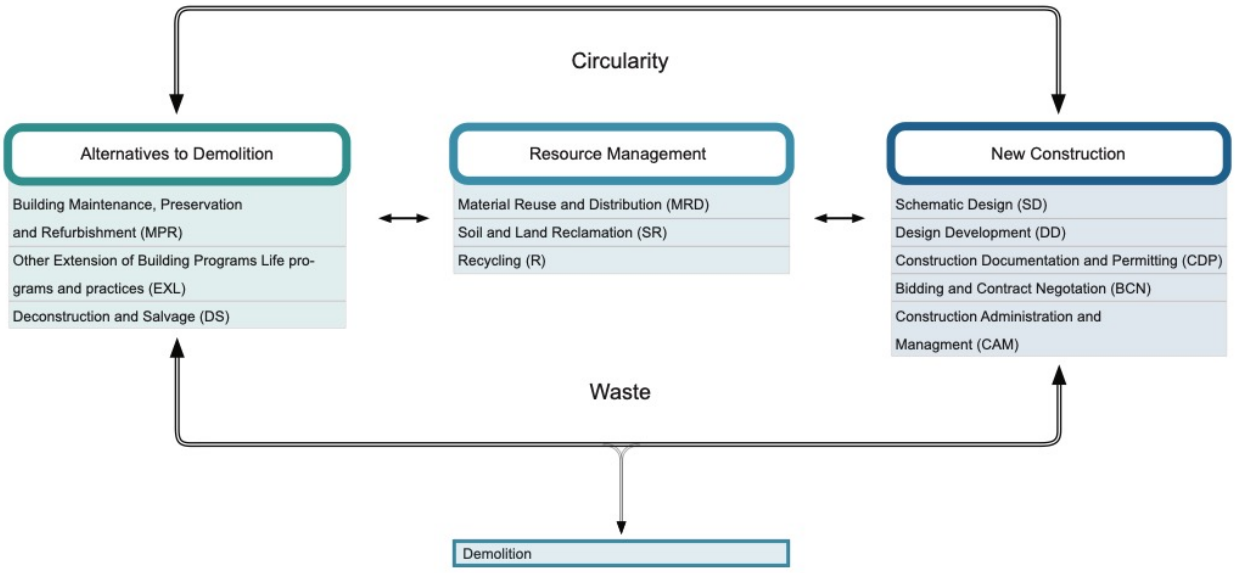


Figure 3. Three strategies addressing waste and circularity in the built environment. (Credit: Circular Construction Lab)

Section 2A

Alternatives to Demolition

Developing alternatives to demolition and waste requires attention to past injustices while incorporating just practices along a spectrum of building reuse. In this section are considerations for justice and equity in programs and policies that focus on extending the life of existing buildings as actions toward building carbon neutral cities. It also includes considerations for deconstruction and salvage of existing buildings if buildings must be removed.

Places where building demolition activities have been concentrated are often sites of injustice. Demolitions have resulted from past government policies that have contributed to racial segregation and the racial wealth gap,[51] for example, concentrations of demolitions related to urban renewal, "blight" removal initiatives, and large infrastructure projects. Concentrations of demolitions may also signal reinvestment in neighborhoods that result in the displacement of residents. Demolition activities also contribute to injustice and community harm through the resulting pollution and impacts of nearby landfills. Demolition and waste management workers are often exposed to hazardous materials (lead and asbestos) at demolition sites and landfill jobs.

While removal may be required when buildings have not received the level of care needed to ensure longevity, an examination of root causes can contribute to developing potential alternatives. A lack of building maintenance in neighborhoods may be traced to distant ownership of parcels by absentee property owners or real estate/financial institutions; lack of resources stemming from the legacies of racial segregation and the racial wealth gap; lack of access to capital due to predatory and discriminatory lending; and/or an emphasis in investment in cosmetic, rather than structural, investments in buildings; among other long-standing patterns of segregation and injustice.[52]

Given the many issues with demolition, local governments can instead consider policies that support a full spectrum of reuse, which can address injustices while conserving embodied carbon. The *Building Reuse to Waste Hierarchy* (Figure 4) is used in the following analysis, which includes the spectrum of reuse from extending the life of buildings through maintenance, preservation, and refurbishment; through adaptive reuse and building expansion; to options for end of life and reuse of components.[53] From the maintenance and preservation of building stock to the deconstruction and reuse of building materials, conserving embodied carbon should be fundamental to achieving carbon neutrality. Reuse also reduces demand for new materials, thus reducing the negative impacts of material extraction.

Adopting alternatives to demolition and waste creates new opportunities to consider justice and equity. Consider who these offices and programs are serving and what impacts they may have.
The following is a series of considerations for local governments and communities to consult as they focus on addressing past and ongoing harms. Organized according to the *Building Reuse to Waste Hierarchy* (Figure 4), it offers steps to consider programs and policies pertaining to the Extension of Life (the top portion of the inverted pyramid). Material Reuse and Distribution,

Recycling, and Demolition and Landfilling are considered in the next section of this guide and workbook, Resource Management.

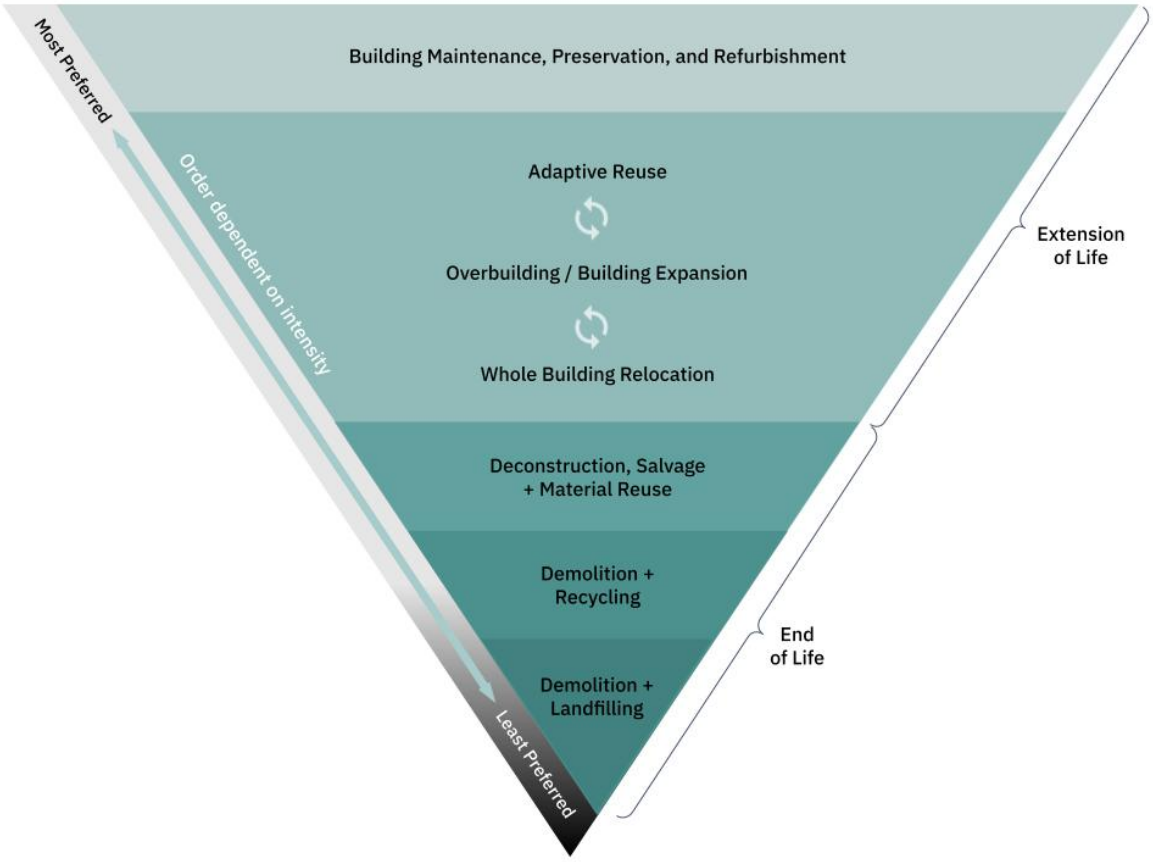


Figure 4. Building Reuse to Waste Hierarchy.
(Credit: Wyeth Augustine-Marceil and additional researchers in the Just Places Lab.)

BUILDING MAINTENANCE, PRESERVATION, AND REFURBISHMENT [MPR]

MPR strategies are often the most sustainable approaches toward managing building stock, materials, and working toward carbon neutrality.[54] Consistent upkeep and repair efforts can extend the life of buildings, thus reducing the necessity for demolition or extensive renovations. Prolonging the lifespan of a structure in its original location significantly reduces the demand for building materials for a new building. By retrofitting existing buildings, operational energy can be reduced while conserving the embodied carbon already present in the building stock. In developing programs and policies for the strategies listed below, work through the following questions to center justice and equity.

1. How are priority populations identified and their needs and values included in MPR strategies?
   - Consider community-led mapping of areas negatively impacted by concentrated demolition activity.
   - Conduct a neighborhood audit of building conditions, ownership patterns, and other indicators to understand potential root causes of injustices related to MPR needs in the built environment.

   Notes:

J1 J2 J3 J4 J5

2. How do public and private investments in MPR ensure that benefits and burdens are distributed equitably?
   - Consider incentives for businesses in priority communities, development of affordable housing in existing building stock, support for entrepreneurship, access and potential negative impact of energy retrofits and displacement effects.

   Notes:

J1 J2 J3 J4 J5

3. Are code enforcement efforts disproportionately affecting priority populations?
   - Is code enforcement resulting in demolitions that could be avoided by increasing a community's access to resources that support rehabilitation and refurbishment?
   - Is code enforcement of building violations enforced equitably and transparently?
   - Have steps been taken to address the root causes and needs of communities where code enforcement is concentrated?
   - How are landlords who do not maintain their properties held accountable, and how are their tenants supported?

   Notes:

J1 J2 J3 J4 J5

4. **How are hiring and training practices increasing opportunities for community-based MPR professionals, contractors, and laborers who are underrepresented in the workforce?**
   - Especially within the public and nonprofit sectors, consider strengthening equitable and transparent hiring processes and decision-making structures, increasing workforce training opportunities for local residents, and expanding the pool of applicants.
   - Support equitable hiring practices in private local design and construction industries.

   Notes:

J1 J2 **J3** J4 J5

5. **How are public sector hiring practices, including procurement and contract work, increasing accessibility to job opportunities so that the pool of applicants grows and diversifies?**
   - Consider where positions are posted, who has access to apply, and transparency in the application process.

   Notes:

J1 J2 **J3** J4 J5

6. **Do employers ensure the safety and wellbeing of laborers, pay a living wage (at minimum) and offer opportunities for promotion and advancement?**
   - Consider supporting unionizing efforts, partnering with community organizers, encouraging higher environmental standards at the local level.

   Notes:

J1 J2 **J3** J4 J5

7. **How are MPR projects contextualized in local histories and included in decision-making processes? How have past injustices associated with MPR been examined and discussed in public forums or platforms?**

J1 J2 J3 **J4** J5

- Consider how local policies and processes support buildings/places that are valued by communities but fall outside the scope of existing historic preservation programs.
- Consider developing interpretive methods and programs that celebrate diverse community histories and address past injustices associated with the site.

Notes:

8. **Are decision-making processes transparent, inclusive, and equitable, and do they consider the needs and concerns of priority communities?** J1 J2 J3 J4 J5
   - Consider engaging communities in joint fact-finding, implementation, and evaluation of policies and programs related to MPR.
   - Consider developing programs and tools to involve community members (e.g. residents, business owners, nonprofits) in MPR opportunities.
   - Identify barriers to engagement and consider compensation for community members who offer their input and expertise on committees and work groups.

   Notes:

9. **How can data on carbon impacts and reductions associated with MPR be measured and shared with the public to improve equity, transparency, and accountability?** J1 J2 J3 J4 J5
   - Consider how carbon impact data is used to support, rather than undermine, community input in decisions about MPR.

   Notes:

OTHER EXTENSION OF BUILDING LIFE PROGRAMS AND PRACTICES [EXL]

This part of the *Building Reuse to Waste Hierarchy* focuses on extending the lifespan of buildings through modifications beyond MPR to include adaptive reuse, overbuilding and building extension, and building relocation.

Adaptive reuse is the process of repurposing an existing building for a new use. This option offers significant environmental and cultural benefits by retaining carbon, reducing waste, and preserving a sense of place. Overbuilding and building extension can involve various steps to retain a large proportion of existing materials in place, even as the structure is expanded or the site around it is redeveloped. For example, overbuilding retains an existing building and additional construction occurs above (or around) the building. Another option includes the retention of large elements of a building, such as the foundation or structural components, even as a new building is constructed around those existing elements. In these cases, there is the opportunity to incorporate reclaimed materials into the new development.

Whole building relocation is moving an intact building from one site to another. This can be beneficial because it involves repurposing all or most of the original materials associated with the building. Moving the building shorter distances will reduce the energy costs associated with its transport. All these options extend building life, although the range of resources required and the amount of material reuse may vary substantially.

When centering justice and equity in Extension of Building Life, engage with the following questions:

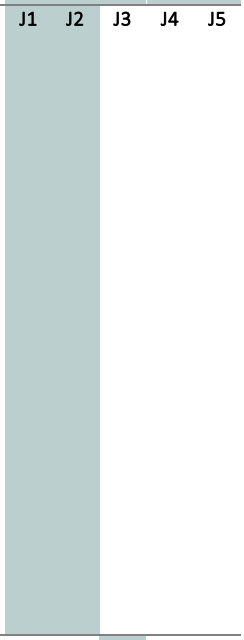
1. How are priority populations identified and their voices, needs, and values included in the creation and operation of EXL strategies? • Consider supporting community-based EXL processes that create opportunities for priority communities. • Consider performing an audit to understand the impacts on neighborhood residents of existing adaptive reuse and other strategies to retain buildings (such as moving them). Notes:	J1 J2 J3 J4 J5
2. How can platforms and tools be activated to inform, train, and educate community members about EXL histories, activities, opportunities, policies?	J1 J2 J3 J4 J5

- Consider diverse processes and platforms to gather and disseminate information to reach priority communities.
- Identify reasons for barriers to information and means to overcome those barriers.

Notes:

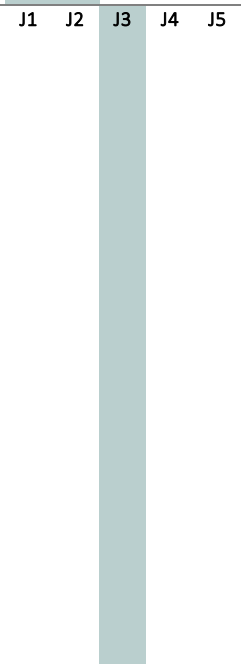
3. How do public and private investments in EXL ensure that benefits and burdens are distributed equitably within the local community rather than profiting external entities?
   - How can EXL strategies build the local community's economy and repair embedded injustices in the built environment/communities?
   - Consider incentives for businesses in priority communities.
   - Consider development of affordable spaces and support entrepreneurship within priority communities.
   - Consider use of EXL to benefit no- or low-income households.

   Notes:



4. How are hiring and training practices increasing opportunities for community- based EXL professionals, contractors, and laborers who are underrepresented in the workforce?
   - Especially within the public and nonprofit sectors, consider strengthening equitable and transparent hiring processes and decision-making structures, increasing workforce training opportunities for local residents.
   - Support equitable hiring and training practices in private local design and construction industry.

   Notes:



5. How are public sector hiring practices, including procurement and contract work, increasing accessibility to job opportunities so that the pool of applicants grows and diversifies?
   - Consider where positions are posted, who has access to apply, and transparency in the application process.

   Notes:

J1 J2 **J3** J4 J5

6. Do employers ensure the safety and wellbeing of laborers, pay a living wage (at minimum), and offer opportunities for promotion and advancement?
   - Consider supporting unionizing efforts, partnering with community organizers, encouraging higher environmental standards at the local level.

   Notes:

J1 J2 **J3** J4 J5

7. How are policies and procedures providing support for no-, low- and moderate-income property owners or prospective property owners who have been historically discriminated against in accessing design and building services?

   Notes:

J1 **J2** **J3** J4 J5

8. How are EXL projects contextualized in local histories and included in decision-making processes? What interpretive methods and programs can be developed or promoted to center priority communities in moving toward repair?
   - Consider programs that preserve and honor building and site histories associated with EXL and uplift stories of injustices to move toward repair.
   - Consider how local policies and processes can support buildings/places that are valued by communities.

J1 J2 J3 **J4** **J5**

- Consider developing interpretive methods and programs that celebrate diverse community histories and address past injustices associated with sites.

Notes:

9. **How can data on carbon impacts and reductions associated with EXL be measured and shared with the public to improve equity, transparency, and accountability?** ,
   - Consider how carbon impact data is used to support, rather than undermine, community input in decisions about EXL.

   Notes:

J1 J2 J3 J4 J5

10. **Are decision-making processes transparent, inclusive, and equitable and center the needs and concerns of priority communities?**
    - Consider engaging communities in joint fact-finding, implementation, and evaluation of policies and programs.
    - Consider developing programs and tools to involve community members in EXL opportunities.
    - Identify potential barriers to engagement and consider compensation for community members who offer their input and expertise on committees and work groups.

    Notes:

J2 J3 J4 J5

DECONSTRUCTION AND SALVAGE [DS]

Deconstruction and salvage is the next step in the hierarchy and involves the careful dismantling of a building to maximize the recovery of valuable materials for reuse, a higher and better use than recycling. Deconstruction is defined as the systematic dismantling of an entire building or structure. Deconstruction practices have the potential to increase safety by containing hazardous materials (lead, asbestos, etc) that may be disturbed by traditional demolition. Additionally, many older building materials (<1940) are of higher quality, such as strong old growth lumber and higher

craftsmanship found in casework. Salvage describes a more limited effort to recover building materials, components, and products from a building that will then be removed through demolition.

Identify policies and programs that support or require deconstruction and salvage. For instance, consider how historic preservation, housing authorities, planning and sustainability offices, and code enforcement programs are working together or against addressing justice in their work. Consider who these offices and programs are serving and what impacts they have.

When centering justice and equity in Deconstruction and Salvage, engage with the following questions:

1. How are priority populations identified and their voices, needs, and values included in the creation, operation, or support of DS strategies? • Consider communities that have been negatively impacted by concentrated demolition activity or threatened with demolition activity. • Support community-based DS processes that create opportunities for priority communities. Notes:	J1	J2	J3	J4	J5
2. How can platforms and tools be activated to inform, train, and educate community members about DS histories, activities, opportunities, policies, etc. and eliminate potential barriers to access information? • Consider diverse processes and platforms to gather and disseminate information to reach priority communities. • Identify reasons for barriers to information and means to overcome those barriers. Notes:	J1	J2	J3	J4	J5

3. How can DS policies support small-scale developers from priority communities to transition to deconstruction as an alternative to demolition, rather than privileging extractive development that increases imbalanced economies?

   Notes:

J1 J2 J3 J4 J5

4. How can priority neighborhoods be protected during DS processes at the site level, so they do not carry long-term burdens of DS?
   - Consider policies and practices that address remaining hazards.
   - Create community engagement processes that encourage reflection on deconstruction or demolition sites, in the case of salvage.

   Notes:

J1 J2 J3 J4 J5

5. How do public and private investments in DS ensure that benefits and burdens are distributed equitably?
   - Consider incentives for businesses in priority communities, development of affordable spaces so the transition to circularity doesn't result in displacement.
   - Support entrepreneurship within priority communities.
   - Support requirements that provide affordable building materials that benefit no- or low-income households.
   - Support informal sharing of building materials in ways that benefit people experiencing no- or low-income.

   Notes:

J1 J2 J3 J4 J5

J1 J2 J3 J4 J5

6. How are building material streams from deconstruction and salvage activities facilitated, regulated, and incentivized to promote equitable reimplementation strategies that benefit priority communities?
   - What strategies can provide priority communities access to affordable or free materials?
   - For example, consider opening deconstruction sites and materials to community-based reclamation.
   - Consider curbside building material events where collection priority is given to residents negatively impacted by demolition and dumping, prior to directing materials to a reuse center.
   - Consider how reuse of materials can remain in the community rather than move to other regions.

   Notes:

J1 J2 J3 J4 J5

7. To expand the positive economic impacts of deconstruction and salvage in the community, do they need to be commercialized? If so, how can the commercialization process redistribute burdens and benefits in existing uneven economies?

   Notes:

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8. How are hiring and training practices increasing opportunities for community-based DS professionals, contractors, and laborers who are underrepresented in the workforce?
   - Especially within the public and nonprofit sectors, consider strengthening equitable and transparent hiring processes and decision-making structures.
   - Consider increasing workforce training opportunities for local residents and expanding the pool of applicants.
   - Support equitable hiring practices in private sector local design and construction industries.

   Notes:

	J1	J2	J3	J4	J5
9. How are public sector hiring practices, including procurement and contract work, increasing accessibility to job opportunities so that the pool of applicants grows and diversifies? • Consider where positions are posted, who has access to apply, transparency in the application process. • Consider how DS operator qualifications are accessible to priority communities. Notes:					
10. Do employers ensure the safety and wellbeing of laborers, pay a living wage (at minimum) and offer opportunities for promotion and advancement? • Consider supporting unionizing efforts, partnering with community organizers, and encouraging higher environmental standards at the local level. Notes:					
11. How are DS projects contextualized in local histories and included in decision-making processes? What interpretive methods and programs can be developed or promoted to center community histories that have been underrepresented or excluded from mainstream history? • Consider how local policies and processes support buildings/places that are valued by communities. • Consider developing interpretive methods and programs that celebrate diverse community histories, identifying where demolition vs deconstruction has taken place throughout the city. • How can salvaging opportunities serve communities faced with the loss of a valued building or site? Are there practices that can extend the life of materials and thereby extend their cultural presence?					

- Consider programs that preserve and honor building and site histories associated with DS to move toward repair.

Notes:

12. **How can data on carbon impacts and reductions associated with DS be measured and shared with the public to improve equity, transparency, and accountability?**
    - Consider how carbon impact data is used to support, rather than undermine, community input in decisions about DS.

    Notes:

J1 J2 J3 J4 J5

13. **Are decision-making processes transparent, inclusive, and equitable and center the needs and concerns of priority communities?**
    - Consider engaging communities in joint fact-finding, implementation, and evaluation of policies and programs.
    - Consider developing programs and tools to involve community members (e.g. local residents, business owners, nonprofits) in DS opportunities.
    - Identify potential barriers to engagement and consider providing compensation for community members who offer their input and expertise on committees and work groups.

    Notes:

J1 J2 J3 J4 J5

Section 2B

Resource Management

In the transition toward a circular economy, resource management—from the reuse of reclaimed materials to the way that waste is managed—must be radically transformed to center justice and equity. When developing resource management policies, local governments should consider how materials are reclaimed and collected from demolished or deconstructed buildings, and how they are distributed through community, city, or privately owned reused facilities. In addition, special consideration must be given to the impacts of material end-of-life facilities, such as landfills and incineration operations. This section focuses on the considerations of justice and equity as reusable materials are collected through deconstruction and salvage and distributed through reuse facilities and in land management and reclamation.

In a just and circular system, materials should be reused at their highest value or utility for as long as possible and redistributed in a way that repairs past harms and prevents new injustices in the process of reuse and reclamation.

Reusing building and landscape materials lessens the demand for new material extraction and production, thereby reducing potential abuses and exploitations linked to those industries. When developed locally, an economy of reused materials can also decrease carbon emissions involved in transporting materials to distant job sites. Reintroducing used materials into the economy contributes to redirecting material costs, increasing accessibility of materials across neighborhoods, decreasing additional embodied carbon within building stock, and diverting material from landfills.[55] Minimizing waste through building material diversion and reuse is critical for materials that otherwise would have been sent to landfills.[56] Building material reuse can also unite heritage and reuse efforts, encourage place-keeping in communities, honor community histories, engage in equitable distribution of burdens and benefits, and facilitate equitable and inclusive public decision-making processes.[57]

This section focuses on centering justice and equity in Material Reuse and Distribution, Recycling, and Demolition and Waste.

MATERIAL REUSE AND DISTRIBUTION [MRD]

Material reuse can come from salvaged, deconstructed, or disassembled buildings. The building materials are then reintroduced into the economy through reuse facilities and other programs. These questions pertain to the support of MRD policies, practices and processes associated with deconstruction and salvage of materials, including reuse centers for collection and redistribution of salvaged materials and/or soil.

Additionally, soil and landform are the very foundation upon which all built environments rest. Land is intertwined with all aspects of justice considerations and warrants careful attention in land management and environmental practices and programs. Changes in land and soil have historically

impacted communities and continue to do so, whether by excavation, mining, movement of soil types, ecological disruption, or contamination.

Identify policies and programs that support or require material reuse and distribution. For instance, consider how practices and processes associated with supporting local economic development, public works, historic preservation, transportation agencies, housing and school agencies, environmental agencies, and/or private sector design and construction industries are working together or against addressing justice in their work. Consider who these offices and programs serve and what impacts they may have.

When centering justice and equity in Material Reuse and Distribution, engage with the following questions:

1. How are the interests of local communities and priority populations identified and their needs and values addressed in MRD strategies? • Consider methods for equitable distribution of reuse materials to priority populations. • Prioritize stakeholders who are developing community-oriented or public projects (such as affordable housing, parks, and other public sites), in the use of salvaged materials. • Consider the right of first refusal of building materials sourced from community centers or important sites. For example: if a religious structure is deconstructed or demolished how can the materials be made available to those with historical ties to that building? • Consider environmental impacts of soil excavation, removal, transportation, backfilling, and reuse, including disruptions to local communities and their ecologies and animal and plant habitats. Notes:	J1 J2 J3 J4 J5
2. How do the sites for material storage, management, reuse, and sale impact priority communities? • Consider locating reuse and salvage facilities in easily accessible locations with adjacent public transportation options.	J1 J2 J3 J4 J5

- Ensure priority communities have opportunities to provide feedback regarding preferred sites.

Notes:

3. How are community and local advocacy organizations involved in material reuse programs?
   - Consider involving organizations in developing and operating programs to provide local jobs, training, and education resources.

   Notes:

J1 J2 J3 J4 J5

4. How are priority communities centered in developing equitable economies in relation to MRD programs and facilities?
   - Consider how reuse facilities can expand construction and building-related programs and services to their communities. For example: tool-lending libraries, educational support, open hours for working and repair, development of a resource center at little or no cost to the community.
   - Consider transparent funding streams for material reuse facilities.
   - Define affordability in the community.
   - Consider developing prioritization of reclaimed building materials and creating a stream for this over transporting new materials into communities.

   Notes:

J1 J2

5. **How do public and private investments in MRD ensure that benefits and burdens are distributed equitably?**
   - Consider incentives for businesses in priority communities, supporting entrepreneurship, developing workforce opportunities and training.
   - Support informal sharing of building materials in ways that benefit people who have no or low income.
   - Consider how MRD strategies can help to build the local community's economy and repair embedded injustices in the built environment.

   Notes:

J1 J2 J3 J4 J5

6. **How are material reuse and resale programs made accessible to priority communities and other community members? How will the material market ensure affordability and fair pricing?**
   - Consider providing public announcements for material availability in community centers, libraries, public spaces, and other accessible sites through job boards, flyers, community forums, etc.
   - Consider platforms for community discussions, meetings, and feedback.

   Notes:

J1 J2 J3 J4 J5

7. **How do reuse centers support the development of local businesses and entrepreneurship?**
   - Consider supporting small business development in material reuse and distribution.
   - Consider partnering with organizations that provide training and workforce development.

J1 J2 J3 J4 J5

- Provide and encourage employment opportunities to under-employed and hard-to-employ populations, including formerly incarcerated, veterans, and those in addiction recovery programs.

Notes:

8. How are material and product take-back programs impacting the community? What are the implications of the commercialization of material takeback?
   - Consider prioritizing resale of unused materials in local economies to limit high transportation costs and emissions of returned materials.

   Notes:

J1 J2 J3 J4 J5

9. How are hiring and training practices increasing opportunities for community-based MRD professionals, contractors, and laborers who are underrepresented in the workforce?
   - Especially within the public and nonprofit sectors, consider strengthening equitable and transparent hiring processes and decision-making structures, increasing workforce training opportunities for local residents, and expanding the pool of applicants.
   - Support equitable hiring practices in private sector local design and construction industries.

   Notes:

J1 J2 J3 J4 J5

10. **How are public sector hiring practices, including procurement and contract work, increasing accessibility to job opportunities so that the pool of applicants grows and diversifies?**
    - Consider where positions are posted, who has access to apply, transparency in the application process.

    Notes:

J1 J2 **J3** J4 J5

11. **Do employers ensure the safety and wellbeing of laborers, pay a living wage (at minimum) and offer opportunities for promotion and advancement?**
    - Consider supporting unionizing efforts, partnering with community organizers, encouraging higher environmental standards at local level.

    Notes:

J1 J2 **J3** J4 J5

12. **How are local histories contextualized and included in MRD decision-making processes?**
    - Consider how MRD can retain the histories of building materials and encourage the retelling of those stories at building material receiving sites.
    - Consider what policies and forums are in place to protect those who have been impacted historically and develop avenues and practices which honor significant community sites that have been excavated or disrupted.

    Notes:

J1 J2 J3 **J4** **J5**

13. **How can data on carbon impacts and reductions associated with MRD be measured and shared with the public to improve equity, transparency, and accountability?**

J1 J2 J3 J4 **J5**

- Consider how carbon impact data is used to support, rather than undermine, community input in decisions about MRD.

Notes:

14. Are decision-making processes related to MRD transparent, inclusive, and equitable, and center the needs and concerns of priority communities? J1 J2 J3 J4 J5
    - Consider engaging communities in joint fact-finding, implementation, and evaluation of policies and programs, developing programs and tools to involve community members (e.g. local residents, business owners, nonprofits) in MRD opportunities, identifying potential barriers to engagement, compensation for community members who offer their input and expertise on committees and work groups.

    Notes:

15. How have past injustices associated with MRD been examined and discussed in public forums? How are material histories considered in reuse programs? Are the histories of materials associated with contentious or politicized sites recognized? How can material reuse policies and practices contribute to community healing?
    - Consider the impacts of zoning on the distribution of industrial sites and environmental hazards, and the impacts of large sites of excavation or mining.
    - Consider how community members and organizations can engage with reclaimed materials from sites that have caused harm. For example, encourage local communities to provide input on the reuse of materials from prisons, memorial sites, etc.

    Notes:

RECYCLING [R]

Recycling involves the recovery of construction materials after demolition for reuse at a loss in utility and value. Materials such as concrete, brick, and metal can be recycled and used in new construction projects, reducing the demand for virgin materials, and reducing associated environmental impacts. In the US, demolition materials are typically mixed on site and require separation at a construction and demolition (C&D) recycling facility, which dramatically lowers recovery rates.[58]

Identify policies and programs that support or require recycling. For instance, consider how practices and processes associated with waste management, recycling facilities, local economic development, public works, environmental agencies, workforce, and labor, and/or private sector design and construction industries are working together or against addressing justice in their work. Consider who these offices and programs are serving and what impacts they have.

When centering justice and equity in Recycling, engage with the following questions:

1. **How are priority populations identified and their voices, needs and values included in the creation and operation of R programs?** • Consider communities that have been negatively impacted by concentrated demolition activity or threatened with demolition activity. • Support community-based R processes that create opportunities for priority communities. • Consider the impacts of new R facilities in priority communities. Notes:	J1 J2 J3 J4 J5
2. **How can platforms and tools be used to inform, train, and educate community members about R histories, activities, opportunities, policies, and eliminate potential barriers to access information?** • Consider diverse processes and platforms to gather and disseminate information to reach priority communities. • Identify existing barriers to information and means to overcome them. Notes:	J1 J2 J3 J4 J5

3. **How do public and private investments in R ensure that benefits and burdens are distributed equitably?**
   - Consider incentives for businesses in priority communities, develop incentives for participation in recycling programs, support entrepreneurship within priority communities.

   Notes:

J1 J2 J3 J4 J5

4. **To expand the economic impacts of R in the community, does it need to be commercialized? If so, how can the commercialization process redistribute burdens and benefits in existing uneven economies?**

   Notes:

J1 J2 J3 J4 J5

5. **How are hiring and training practices increasing opportunities for community-based R professionals, contractors, and laborers who are underrepresented in the workforce?**
   - Especially within the public and nonprofit sectors, consider strengthening equitable and transparent hiring processes and decision-making structures, increasing workforce training opportunities for local residents, and expanding the pool of applicants.
   - Support equitable hiring practices in private sector local design and construction industries.

   Notes:

J1 J2 J3 J4 J5

6. **How are public sector hiring practices increasing accessibility to job opportunities so that the pool of applicants grows and diversifies?**

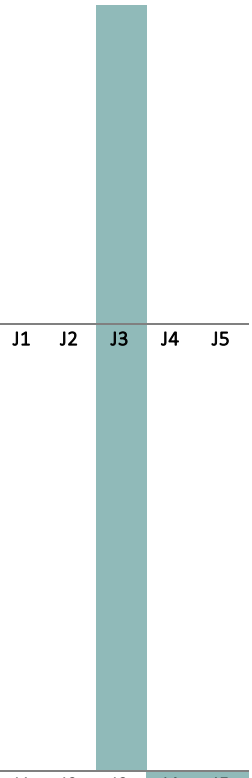
J1 J2 J3 J4 J5

- Consider where positions are posted, who has access to apply, and transparency in the application process.

Notes:

7. **Do employers ensure the safety and wellbeing of laborers, pay a living wage (at minimum) and offer opportunities for promotion and advancement?**
   - Consider supporting unionizing efforts, partnering with community organizers, and encouraging higher environmental standards at the local level.

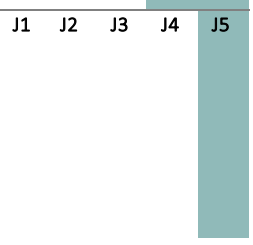
   Notes:



8. **What interpretive methods and programs can be developed or promoted to center community histories that have been underrepresented or excluded from mainstream history? How are projects contextualized in local histories and included in decision-making processes?**
   - Consider programs that preserve and honor building and site histories associated with R in order to move towards repair.
   - Consider how local policies and processes support buildings/places that are valued by community members. Develop interpretive methods and programs that celebrate diverse community histories, identifying where demolition vs deconstruction has taken place throughout the city.

   Notes:

9. **Are decision-making processes related to R transparent, inclusive and equitable, and center the needs and concerns of priority communities?**
   - Consider engaging communities in joint fact-finding, implementation, and evaluation of policies and programs.



- Consider developing programs and tools to involve community members (e.g. local residents, business owners, nonprofits) in R opportunities.
- Identify potential barriers to engagement and consider compensation for community members who offer their input and expertise on committees and work groups.

Notes:

10. **How can data on carbon impacts and reductions associated with R be measured and shared with the public to improve equity, transparency, and accountability?** J1 J2 J3 J4 J5
    - Consider how carbon impact data is used to support, rather than undermine, community input in decisions about R.

    Notes:

DEMOLITION AND WASTE [DW]

At the base of the *Building Reuse to Waste Hierarchy* is demolition, incineration, and landfilling. This involves demolishing a building and sending the waste to a landfill site, where it is buried and left to decompose over time, or to incineration where it is burned with or without heat to energy recovery. Incineration is used in both waste and recycling systems, either to reduce waste mass, energy production, or material processing.[59] This is the least preferred method of treating building materials because it does not promote the recovery of valuable resources or reduce the environmental impact of construction activities. However, some materials cannot be reused due to contamination, cost, difficulties in recovery, or required disposal process. Although demolition thwarts carbon neutrality efforts, cities can adopt policies and programs that respond to the injustices associated with demolition, incineration, and landfilling.

Identify policies and programs that result in demolition and waste. Consider who these offices and programs are serving and what impacts they have. Additionally, consider the environmental, social, and economic impacts of landfills and incineration facilities and their programs and policies.

When centering justice and equity in Demolition and Waste, engage with the following questions:

1. How are priority communities identified and their voices, needs, and values included in the creation and operation of waste facilities? • Consider communities that have been negatively impacted by the operation of waste facilities and concentrated demolition activity. Notes:	J1 J2 J3 J4 J5
2. How can platforms and tools be used to inform, train, and educate community members about DW facilities and their histories, operation, policies, closures, or transitions? • Consider diverse processes and platforms to gather and disseminate information to reach priority communities. • Identify reasons for barriers to information and means of overcoming those barriers. Notes:	J1 J2 J3 J4 J5
3. What processes support mapping and analysis of the spatial distribution and concentration of demolition activities and waste facilities? • Consider where landfills, waste transfer, and processing facilities are located and their impact on communities as well as how materials are transferred to landfill. • Consider identifying where demolition activities result in vacant lands that are difficult to maintain and redevelop. • Consider identifying where demolition may lead to displacement. Map purchasing patterns around demolition activity and examine how they may contribute to uneven development. • Identify the causes of demolition and their impacts on the site, neighborhood, community, city and region. • Identify ways to reduce the negative impact of demolition activity; create an accountability plan addressing the impacts of demolition. Notes:	J1 J2 J3 J4 J5

4. How can priority communities be protected during demolition activities and waste facilities operations, so they aren't carrying long-term burdens? How do methods and processes consider complexities of materials and waste diversion?
   - What steps are being taken to heal neighborhoods that have long histories of proximity to landfills and incineration sites?
   - Consider policies and practices that address hazards.
   - Create community engagement processes that encourage reflection around demolition sites and the pollution impacts from incineration and landfilling.
   - Consider transportation routes to and from demolition and landfill sites to decrease negative impacts on neighborhoods including air quality, walkability, and transit lines, road closures, and access to services.

   Notes:

J1 J2 J3 J4 J5

5. How do public and private investments in demolition and waste facilities ensure benefits and burdens are distributed equitably within the local community rather than profit external entities?

   Notes:

J1 J2 J3 J4 J5

6. How can financial institutions, insurance, and real estate sectors that contributed to and perpetuate discriminatory systems resulting in concentration of demolitions and landfilling in priority neighborhoods be held accountable, redress past injustices, and support efforts to increase community well-being?

   Notes:

J1 J2 J3 J4 J5

7. How do policies and practices provide access for priority communities to reclaim materials that would otherwise go to landfill?

J1 J2 J3 J4 J5

- Consider curbside building materials events where priority is given to residents of neighborhoods negatively impacted by demolition and dumping.

Notes:

8. How are hiring and training practices increasing opportunities for community-based DW professionals, contractors, and laborers who are underrepresented in the workforce?
   - Especially within the public and nonprofit sectors, consider strengthening equitable and transparent hiring processes and decision-making structures, increasing workforce training opportunities for local residents, and expanding the pool of applicants.
   - Support equitable hiring practices in private sector local design and construction industries.

   Notes:

9. Do DW contractors and/or landfill employers ensure the safety and well-being of laborers, pay a living wage (at minimum) and offer opportunities for promotion and advancement?
   - Consider supporting unionizing efforts, partnering with community organizers, and encouraging higher environmental standards at the local level.

   Notes:

10. Are decision-making processes relating to DW transparent, inclusive, and equitable, and center the needs and concerns of priority communities?
    - For example: town halls, community gatherings in public spaces, creative community programs.
    - Consider engaging communities in joint fact-finding, implementation, and evaluation of policies and programs.

- Consider developing programs and tools to involve community members (e.g. local residents, business owners, nonprofits) in DW opportunities.
- Identify potential barriers to engagement and consider compensation for community members who offer their input and expertise on committees and work groups.

Notes:

11. **How can data on carbon impacts and reductions associated with demolition and landfilling be measured and shared with the public to improve equity, transparency, and accountability?** J1 J2 J3 J4 J5
    - Consider how carbon impact data is used to support, rather than undermine, community input in decisions about DW.

    Notes:

12. **What interpretive methods and programs can be developed or promoted to center community histories that have been underrepresented or excluded from mainstream history? How are projects contextualized in local histories and included in decision-making processes?** J1 J2 J3 J4 J5
    - Consider programs that preserve, and honor building and site histories associated with DW in order to move towards repair.
    - Consider how local policies and processes support buildings/places that are valued by community members. Develop interpretive methods and programs that celebrate diverse community histories, identifying where demolition vs deconstruction has taken place throughout the city.

    Notes:

Section 2C

New Construction

As part of a circular economy, new construction standards–including design stages, material sourcing, construction process, labor and workforce hiring and training, and building disassembly–must be reimagined as an apparatus for centering justice and equity. This section addresses strategies for designing and building new structures relevant to a range of public and private stakeholders.

New Construction strategies become necessary to address local demand when options of preservation, building reuse, and adaptive reuse have been exhausted or are inadequate.[60] As described before (Section 1A), construction is the largest emitter of greenhouse gases, responsible for at least 42% of global emissions of which new construction contributes the majority. Most of the progress on limiting emissions in the sector has been made on reducing a building's operational carbon – emissions resulting from heating, cooling and lighting spaces. Solutions for reducing embodied carbon emissions from the design and construction of structures and the production of associated materials such as cement, steel, and aluminum are lagging. There is an urgent need to develop cooperative models for decarbonizing new construction and support stakeholders across all steps of the process, including avoiding extraction and production of new materials; shifting to regenerative, ethically sourced and low carbon material practices; and improving methods to radically decarbonize conventional materials when their application is absolutely necessary.[61] Considering the scale of the industry and its global reach, such methods and incentives for decarbonization need to empower decision-makers in both informal and formal building sectors, including producers and consumers across the global material supply chains and process stages.

Urban environments are continually changing and adapting to factors such as population growth, displacement, migration, and extreme weather events. Without centering justice, new construction contributes to these risks and harms. Investing in flexible programming, thoughtful operational infrastructure, labor and workforce development, and material circularity allows new construction to contribute to place-keeping and to sustaining local histories. By placing justice and equity at the forefront of decision-making, buildings can begin to perform in ways that honor their community and provide material longevity, which in turn positively impacts residents' quality of life and environment. Selecting materials that are free of toxic chemicals, ethically and locally procured, and retain their utility and value beyond a single use, allows them to play a role beyond a single structure or program. This creates a justice-centered symbiosis of materials with the community that engage in new changes, tell their histories, and adapt to local needs.

The following is a series of considerations for architects, planners, contractors, building owners, developers, local governments, and communities to consult as they focus on addressing new construction. Organized according to the five phases of a design project, per the American Institute of Architects (AIA), these considerations offer steps along the trajectory of Schematic Design,

Design Development, Construction Documentation and Permitting, Bidding and Contract Negotiation, and Construction Administration.

SCHEMATIC DESIGN [SD]

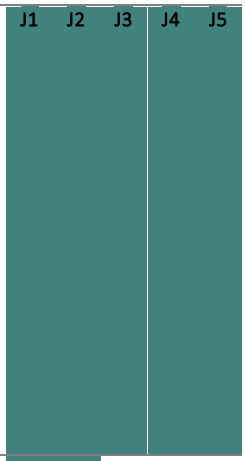
Schematic design is the first of the five increments of architectural services where project teams typically explore various concepts for addressing a project's brief, site, context, program, schedule, budget and determine viability of the project.[62] As such, it is a critical phase when considering sustainability and carbon reduction as well as justice and equity since these ideally drive alternative futures in a broad, yet holistic, conversation. In further advanced project development phases, design changes become costly as they might require redesign, change orders, or procurement changes.

In centering justice and equity in schematic design, stakeholders should consider physical, regulatory, and environmental, as well as historic, cultural, and communal aspects of the site and the building—beginning with existing structures and landscapes. Analyzing the material extraction and production processes with a justice lens allows for new practices and procedures that engage communities, support local economies and workforces, as well as new design methods for healthy materials. The integration of reused materials in designs for adaptability or disassembly embraces the multiple benefits of circularity and offers opportunities to engage with communities along the full supply chain, whether these are local or in distant places. (See also Resource Management.)

When centering justice and equity in Schematic Design, engage with the following questions:

1. How are priority communities identified and their voices, needs, and values included in the initiation and development of SD phases of new construction projects?
   - Consider communities that have been historically negatively impacted by concentrated industrialized sites, impacts of toxic materials, brownfields, or other environmental risks or material hazards.

   Notes:



2. How do public and private investments in SD-related aspects ensure that benefits and burdens are distributed equitably?
   - Consider incentives for underrepresented and excluded communities, material supply chains, development of affordable housing, support of entrepreneurship, and access and potential negative impact of energy retrofits and displacement effects.

   Notes:

3. Are local educational programs in design, construction, business, and other allied fields engaged in training the next generation of designers to facilitate just and equitable new construction? Are design teams representative of local community voices and stakeholders and/or allowing these voices to be heard and listened to?

   Notes:

J1 J2 J3 J4 J5

4. How are design teams assembled and relevant stakeholders identified for the project? Are diverse voices represented in the team, and as part of site selection and program development?

   Notes:

J1 J2 J3 J4 J5

5. How do hiring and training practices increase opportunities for community-based SD professionals, developers, and consultants who are underrepresented in the workforce?
   - Especially within the public and nonprofit sectors, consider strengthening equitable and transparent hiring processes and decision-making structures, increasing workforce training opportunities for local residents, and expanding the pool of applicants.
   - Support equitable hiring practices in private local design and construction industries.

   Notes:

J1 J2 J3 J4 J5

6. When selecting a site and defining the project program (the activities or services to be provided, for example, a new school), do stakeholders consider the historical context of injustice both locally and in the communities that are impacted by the new program and site?

   Notes:

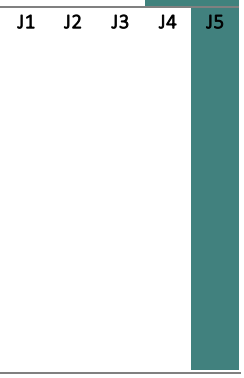
J1 J2 J3 J4 J5

7. **How are projects contextualized in local histories and how are those histories addressed in decision-making processes? Are past injustices examined, interpreted, and considered as valuable design parameters in new proposals?**
   - Consider how local policies and processes can support buildings/places that are valued by community members but fall outside of the scope of existing historic preservation programs. Develop interpretive methods and programs that celebrate diverse community histories.

   Notes:

8. **Are government agencies, architects, and contractors open and responsive to feedback from community organizations and community members about design decisions and/or parameters?**

   Notes:



DESIGN DEVELOPMENT [DD]

Design development is the extension of schematic design and aims to reach a level of completeness that demonstrates the project can be built. The schematic design is overlaid with additional details and information obtained from an array of consultants, stakeholders and project team members. Design development further documents the project scope, qualities, and costs by specifying details about materials, systems, compliance with life safety requirements and coordination with different trades. Meetings including all stakeholders during this phase are critical to understand which and how design decisions are made.[63] As local governments review proposals for new construction, elected officials, planning and historic preservation review bodies should ask questions about how the projects will embody justice.

During design development, critical decisions on materiality and systems are made. In centering justice and equity, teams should consider the lifespan and longevity of each specific material and its components. Considerations about material longevity and design for reuse in both the refurbishment of existing buildings and new construction is an opportunity for stakeholders to reimagine how materials impact environments, places, ecologies, communities and people, and identify changes that prioritize a healthier, holistic process.[64] Additionally, during the design

development stage, stakeholders should consider the impacts of material sourcing (extraction, labor conditions, slavery, toxicity, transportation) and prioritize local reuse and renewable or biogenic materials, such as timber, hemp, mycelium and living materials for their environmental, social and economic benefits. A holistic perspective on simultaneously reducing embodied and operational carbon emissions related to construction requires the implementation of energy efficiency strategies, electrification, new construction techniques, reduced or reused foundations, design for disassembly and reuse at the end of use. Lastly, design development must guarantee the accessibility and inclusivity of the design proposal, a lens that should be extended to the building's context and relationship with the neighboring community.

Identify policies and programs related to design development stages in new construction projects. Consider who these offices and programs serve and what impacts they have.

When centering justice and equity in Design Development, engage with the following questions:

1. How do material selection processes define and consider life cycle criteria during DD in ways that reflect just and equitable values?
   - Consider the historical impacts of material off-gassing, toxic manufacturing practices or harmful labor practices. Consider the longevity and potential for reuse for material with historic significance.

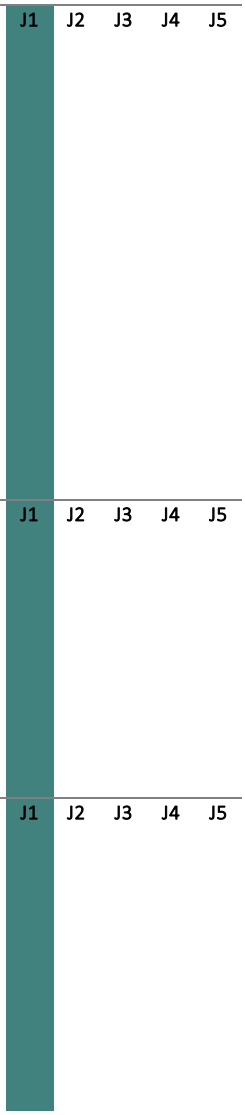
   Notes:

2. How are DD stages addressing material circularity by integrating strategies and opportunities to benefit priority communities?

   Notes:

3. How can DD practices ensure priority communities are protected from the negative impacts of manufacturing and transportation of materials along the supply chain?
   - Consider using reclaimed materials that have been locally extracted and re-manufactured.

   Notes:



4. **What considerations have been given to banning or reducing reliance on toxic materials or those that negatively impact the surrounding community?**
   - Consider the full product stage and the management of waste in extraction, manufacture, and transport.

   Notes:

5. **How are DD stages addressing protecting priority communities from the impacts of demolition? How are priority communities protected from pollution and construction waste through buildings that can be easily and safely disassembled?**

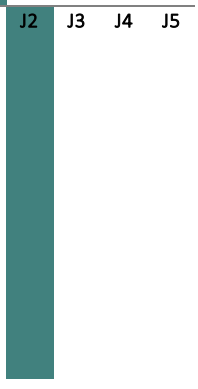
   Notes:

6. **How are methods for material salvaging, reuse, collection, and distribution to local communities integrated into DD?** (See Section 2A: Alternatives to Demolition: Deconstruction and Salvage.)
   - Consider material pricing and ways to alleviate costs for community members, allowing the materials to continue within the material flow.
   - Consider materials that lead to a reuse life, supporting circularity of material within a community, thus providing longevity and economic accessibility.

   Notes:

7. **Are priority communities receiving the economic benefits of manufacturing and transporting materials for new construction? How does local sourcing in the production benefit locally owned businesses?**

   Notes:



8. Do employers involved in material production ensure the safety and well-being of laborers, pay a living wage (at minimum) and offer opportunities for promotion and advancement?

   Notes:

9. Are there educational and training opportunities for new sustainable and just methods in the construction stage coming from, taking place in, and reaching priority communities?

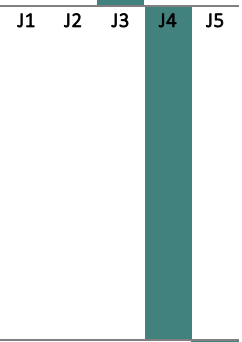
   Notes:

10. How are hiring and training practices increasing opportunities for community-based DD professionals, contractors, and laborers who are underrepresented in the workforce?
    - Consider hiring processes and decision-making structures, increasing workforce training opportunities for local residents, expanding the pool of applicants.

    Notes:

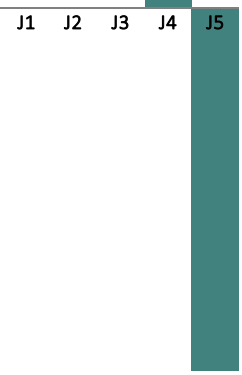
11. Are government agencies and other site owners, architects, and contractors considering the historical context of injustice both locally and along the global supply chain in material and product requirements and selections?

    Notes:



12. Are government agencies, architects, and contractors open and responsive to feedback from community organizations and community members about selection of products, suppliers, transportation?

    Notes:



13. How is information about DD being made available to community members in transparent, inclusive, and equitable ways? Is it available in multiple languages when relevant, easy to understand and not unnecessarily technical?

    Notes:

J1 J2 J3 J4 J5

14. How can data on carbon impacts and reductions be addressed during DD stages? How are reductions for new construction measured and shared with the public to improve equity, transparency, and accountability?
    - Consider how carbon impact data is used to support, rather than undermine, community input in decisions about DD.

    Notes:

J1 J2 J3 J4 J5

CONSTRUCTION DOCUMENTATION AND PERMITTING [CDP]

Construction documents are instruments of communication that set the parameters for the building process. Comprising legal, procedural, and construction information, these documents outline the key relationships, rights, responsibilities, and dynamics of the various parties involved in the construction. They also describe (in writing and drawing) the components of a project that need to be fabricated, assembled and installed, carefully coordinating the contributions of a multitude of stakeholders into a coherent whole.[65]

In considering justice and equity in construction documentation and permitting, stakeholders should consider the health, safety, and welfare of the public with respect to project-specific details and the construction process. Construction practices can harm communities through pollution and construction waste, and priority communities may be more likely to be located near major transportation/trucking routes that may inflict harm.

When centering justice and equity in Construction Documentation and Permitting processes, engage with the following questions:

1. **How are priority communities identified and their needs and values included in CDP processes and practices?**
   - Consider labor and workforce stipulations in permitting requirements, environmental regulations, procurement requirements, material standards.

   Notes:

2. **How do CDP practices address protections from construction impacts along the supply chain?**

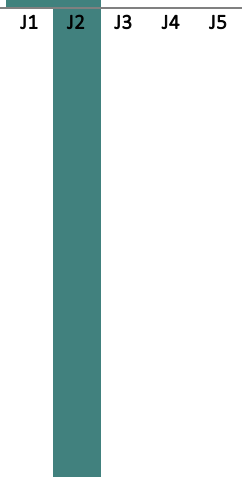
   Notes:

3. **How are CDP practices addressing the economic and environmental impacts of transportation and construction activities on communities?**
   - Consider transportation of goods going through communities whose businesses are being impacted and how these routes can be redirected to reduce disruption.

   Notes:

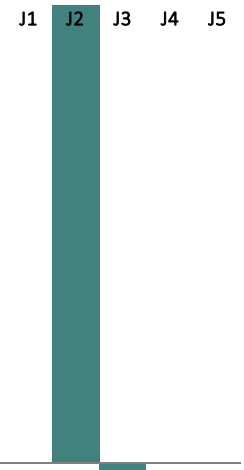
4. **How do CDP processes require economic benefits and burdens of new construction to be distributed equitably? How do priority communities benefit?**
   - Consider material and product sourcing requirements that ensure locally owned businesses may benefit.

   Notes:



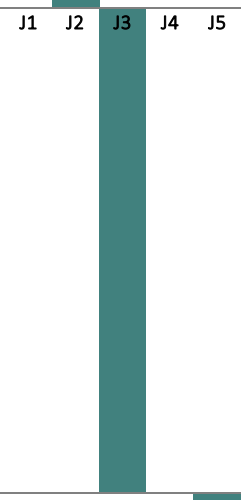
5. **How can CDP address hiring practices, including procurement and contract work, increasing accessibility to job opportunities so that the pool of applicants grows and diversifies?**
   - Consider where positions are posted, who has access to apply, transparency in the application process.

   Notes:



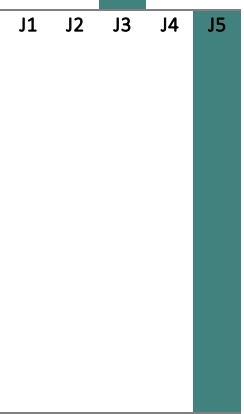
6. **How are community-based CDP hiring and training practices increasing opportunities for professionals, contractors, and laborers who are underrepresented in the workforce?**
   - Consider hiring processes and decision-making structures, increasing workforce training opportunities for local residents, expanding the pool of applicants.

   Notes:



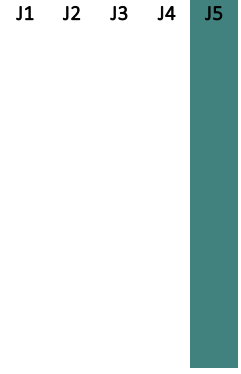
7. **How is information about CDP made available to community members and extended team members? Is it available in multiple languages when relevant? Easy to understand and not unnecessarily technical?**

   Notes:



8. **Are government agencies, architects, and contractors open and responsive to feedback from community organizations and community members about CDP?**

   Notes:



10. **Are processes related to permitting transparent, inclusive, and equitable, and do they consider the needs and concerns of priority communities?**
    - Consider engaging communities in joint fact-finding, implementation, and evaluation of policies and programs related to permitting or code oversight / enforcement.

    Notes:

J1 J2 J3 J4 **J5**

BIDDING AND CONTRACT NEGOTIATION [BCN]

Bidding and contract negotiation are two distinct steps in traditional contractor selection. Contractor selection is pivotal in terms of establishing sound working relationships, assigning liability to stakeholders, and treating participants fairly. Regardless of the project delivery approach, contractor selection criteria and procedures should be clear, sound, and strictly adhered to. Traditionally, contractor selection follows a design-bid-build structure, which dictates that design and construction stages of a project are conducted by separate entities (firms).

With respect to circularity, justice and equity in bidding and contractor negotiations, alternative approaches to project delivery (e.g., design-negotiation-build, design-build, or construction management) might be worth considering, in light of additional economic, social, ecological, and schedule implications; technical complexity; and project coordination aspects. However, such project delivery methods may have different implications for project coordination and liability across stakeholders.[66] As an example, in 2023 the EPA (Environmental Protection Agency) challenged the reuse community with a call to develop methodologies and strategies for the development of Environmental Product Declarations (EPDs) for secondary material resources (i.e., reused or salvaged materials) to harmonize procurement rules and liability concerns for this category of low-carbon resources. Architects and construction contractors are often the ones who specify which products are used in new construction; however, government agencies, community organizations, and community members must be engaged in thinking through what products are suitable for use in their community.

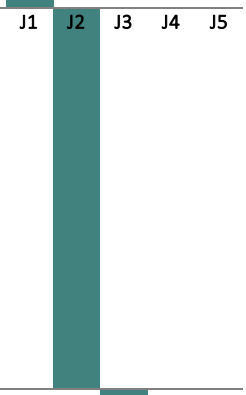
When centering justice and equity in Bidding and Contract Negotiation, engage with the following questions:

1. How can BCN practices ensure priority communities are protected from the negative impacts of manufacturing and transportation of materials along the supply chain?

   Notes:

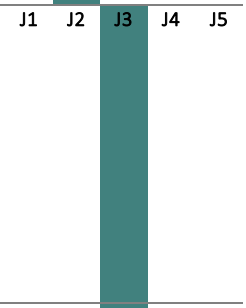
2. How can BCN processes require economic benefits and burdens of new construction to be distributed equitably? How do priority populations benefit?
   - Consider material and product sourcing requirements that ensure locally owned businesses may benefit.

   Notes:



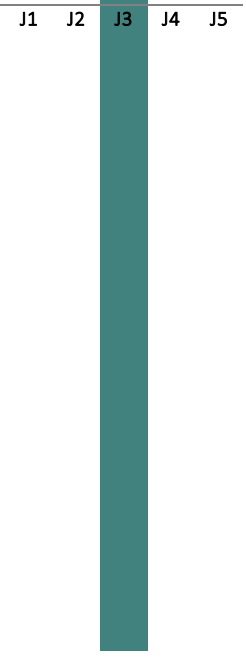
3. Do employers considered in the BCN process ensure the safety and well-being of laborers, pay a living wage (at minimum), and offer opportunities for promotion and advancement?

   Notes:



4. How can BCN processes ensuring hiring and training practices increase opportunities for community-based professionals, contractors, and laborers who are underrepresented in the workforce?
   - Especially within the public and nonprofit sectors, consider strengthening equitable and transparent hiring processes and decision-making structures, increasing workforce training opportunities for local residents, and expanding the pool of applicants.
   - Support equitable hiring practices in private sector local design and construction industries.

   Notes:



5. Are government agencies and other site owners, architects, and contractors considering the historical context of injustices?

   Notes:

J1 J2 J3 **J4** J5

6. How is information about BCN made available to community members? Is it available in multiple languages when relevant, easy to understand and not unnecessarily technical?

   Notes:

J1 J2 J3 J4 **J5**

7. Are government agencies, architects, and contractors open and responsive to feedback from community organizations and community members about BCN?

   Notes:

J1 J2 J3 J4 **J5**

8. How are public sector hiring practices, including procurement and contract work, increasing accessibility to job opportunities so that the pool of applicants grows and diversifies?
   - Consider where positions are posted, who has access to apply, transparency in the application process.

   Notes:

J1 J2 J3 J4 **J5**

9. Are decision-making processes related to BCN transparent, inclusive, and equitable, and center the needs and concerns of priority communities?

J1 J2 J3 J4 **J5**

- Consider engaging communities in joint fact-finding, implementation, and evaluation of policies and programs, developing programs and tools to involve community members (e.g. local residents, business owners, nonprofits) in BCN opportunities, identifying potential barriers to engagement, compensation for community members who offer their input and expertise on committees and work groups.

Notes:

CONSTRUCTION ADMINISTRATION [CA]

Construction administration services are time-sensitive and intensive and carry increased legal ramifications. Efficient organization, timely execution, and thorough documentation are paramount. Stakeholders direct the exchange of project information and communications during construction, coordinate the work to be carried out, ensure that it conforms to the project design, and review submissions, acting on them within a reasonable time to avoid causing project delays.[67]

In considering justice and equity in construction administration and management, stakeholders should ensure safe and equitable working conditions on construction sites and related sites down and up-stream of the building's lifecycle. On the construction site, strategies should be employed to reduce construction waste dramatically by considering aspects such as packaging waste, by-products, over and erroneous procurement.

When centering justice and equity in Construction Administration, engage with the following questions:

1. **How are priority communities protected from the impacts of transportation of materials to the construction site, their installation, and from pollution and construction waste?**
   - How are priority communities identified and their voices, needs, and values included in the initiation and development of CA phases of new construction projects?
   - Consider communities that have been historically negatively impacted by concentrated industrialized sites, impacts of toxic materials, brownfields, or other environmental risks or material hazards.

   Notes:

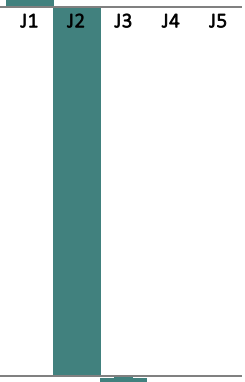
J1 J2 J3 J4 J5

2. What has been done to eliminate negative impacts to priority communities? Has the community considered banning or reforming local transportation routes that inflict harm on priority communities?

   Notes:

3. Are priority communities receiving long-term economic benefits from construction activity? Are businesses and entrepreneurial activities from local and priority communities stimulated in the construction stage?

   Notes:



4. Do employers involved in the construction stage ensure the safety and well-being of laborers, pay a living wage (at minimum), and offer opportunities for promotion and advancement?
   - Consider supporting unionizing efforts, partnering with community organizers, encouraging higher environmental standards at local level.

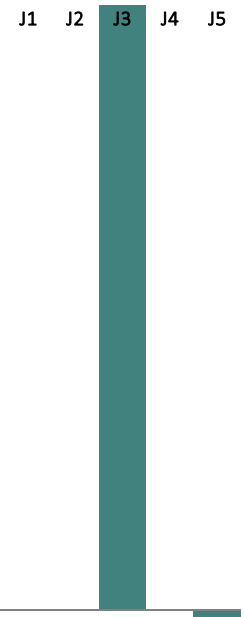
   Notes:

5. How are hiring practices increasing accessibility to job opportunities so that the pool of applicants grows and diversifies?
   - Consider where positions are posted, who has access to apply, transparency in the application process.

   Notes:

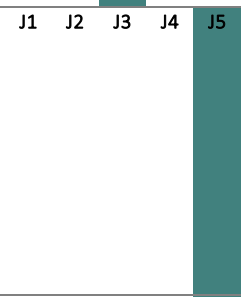
6. How is the workforce being onboarded, compensated, and protected to support a new vision of construction and circular economy?
   - Consider hiring community members and those in “hard to hire” categories.
   - Provide education to expand opportunities for material circularity, deconstruction, and reuse.
   - Consider using multiple platforms for job education and venues accessible to those seeking work, community determination and knowledge.

   Notes:



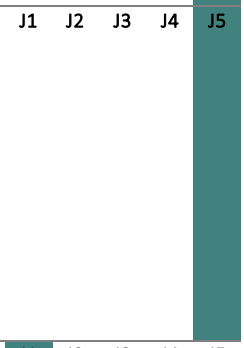
7. Has the community been engaged in questions of construction practices?

   Notes:



8. Are government agencies, architects, and contractors open and responsive to feedback from community organizations and community members about CA and transportation practices?

   Notes:



9. How can transportation and location of materials be examined to consider economic and environmental impacts of priority communities?
   - Consider transportation of goods going through communities whose businesses are being impacted and how these materials can be redirected to reduce disruption.
   - Consider how redirection can provide equitable access to participate in uninterrupted daily life such as commuting to and from employment, school and community activities.

   Notes:

PATHWAYS TO EMBODYING JUSTICE

Section 3A

Practice Stories

This section outlines examples of practice stories, where local governments and nonprofit organizations have adopted strategies and programs that address justice and equity within the built environment.

REHABARAMA

City of San Antonio Office of Historic Preservation
Power of Preservation
San Antonio, Texas

Image 1. Twice a year in San Antonio, the Rehabarama program brings together neighborhood residents, volunteers and local contractors to repair aging homes. Launched by the city's Office of Historic Preservation, it allows people to remain in their homes longer while creating generational wealth. Frederick Gonzales, courtesy of City of San Antonio.

About 25% of San Antonio's housing stock was built before 1960, largely representing affordable housing that is unsubsidized and at risk of demolition. In 2017, the Office of Historic Preservation launched Rehabarama, a home repair program aimed at keeping people in their houses longer and creating generational wealth. Twice a year, contractors, neighborhood residents, and volunteers come together for a day to restore windows, stabilize porches, repair gutters, and address other issues in these aging homes. Priority is given to residents in neighborhoods with lower AMIs (Area Median Income) and older housing stock. There is no cost to the homeowner if they or their heirs continue to occupy the property. Necessary building materials are supplied at no cost from the Material Innovation Center, which recaptures quality materials from deconstructed properties for use in affordable housing projects.

ESPERANZA PEACE AND JUSTICE CENTER

Joint Research into Code Enforcement and Demolition
San Antonio, Texas

Image 2. Community leaders from the Esperanza Peace and Justice Center, and researchers from the University of Texas at San Antonio. Jenni Minner.

The Esperanza Peace and Justice Center is a community-based arts and cultural organization serving San Antonio's near Westside by promoting a vision of social justice and cross-cultural understanding. The organization is led by Graciela and Leticia Sanchez, along with dozens of community leaders from several member associations who have worked tirelessly for preservation, justice, and community in San Antonio's Historic Westside neighborhood. These community leaders have successfully organized to save Alazán-Apache Courts, a historic public housing development that was threatened with demolition. They have created a community land trust used to house people with incomes below 30 percent of the AMI. The Esperanza Center purchased a former Rueben's Icehouse, which will become a new museum, Museo del Westside. The Casa de Cuentos (House of Stories) was saved from demolition and is used as the headquarters for the organization. With an over 30-year history and serving more than "70,000 people each year through direct participation in arts and cultural events, including exhibitions, workshops, concerts, theater performances, film screenings, and more," [68] the Esperanza and member organizations have countless stories of advocacy and activism that have contributed to preserving San Antonio's Historic Westside and beyond.

Dr. Esteban López Ochoa, an Assistant Professor at the University of Texas at San Antonio, and his faculty colleagues are working with the Esperanza Center to understand the relationship between code enforcement in San Antonio and demolition activity. They have been applying machine learning algorithms to process Street View images and developed an application to conduct visual surveys to understand the likelihood that demolitions will happen in the neighborhood. The project involves looking for patterns of bias in code enforcement. This research can help the Westside community to organize for justice and equity in code enforcement and rehabilitation services in the Westside.

RE:PURPOSE NEIGHBORHOOD

Re:Purpose Savannah
Savannah, Georgia

Re:Purpose Savannah's motto is: "Reclaiming history, one board at a time." The women+-led 501(c)3 organization promotes alternatives to demolition through deconstruction and material salvage and reuse – and labels every piece of building material the team salvages so that future users know its origins. The Re:Purpose team also works to research and document the site, compiling the information into a comprehensive report for the site owner. This rich trove of history also forms the basis of the organization's Re:Purpose Neighborhoods project, an online site that captures the diverse histories of the Georgia buildings the team has deconstructed.

Image 3. At Re:Purpose Savannah, the team labels every piece of material from every deconstruction site as part of Re:Purpose Neighborhoods, a larger story-telling project that collects and shares the histories of the people and these places. Gretchen Worth

This work includes projects such as Mercer Cottage, which likely influenced Johnny Mercer's "Moon River," and the Coffee Bluff home of Elizabeth Johnson, a descendant of freed enslaved people who settled the historic neighborhood south of Savannah. The report and the online site include photos and maps, current and historic; ownership and occupancy information; timelines and historic context; oral histories from past residents; and photos and videos documenting the deconstruction process itself. Members of the public with additional knowledge about the site are encouraged to share their information and memories online.

EMPOWERED NEIGHBORHOODS PROGRAM

Bureau of Development Services
Portland, Oregon

The City of Portland's Empowered Neighborhoods Program assists BIPOC community members and persons with disabilities who have been notified by the City of code violations on their residential or commercial properties. Residents submit a simple online form and receive a response within two days. The municipal staff person works with them directly and provides a network of community organizations able to offer support by, for example, providing architectural drawings and construction services as well as supplying free or low-cost reclaimed building materials to make the necessary repairs. Assistance is available in multiple languages.

Image 4. BIPOC community members and those with disabilities receiving code violations in Portland, OR, can seek free assistance from the City. Pictured here is a before-and-after photo of a property. City of Portland

BLACK WOMEN BUILD-BALTIMORE

Baltimore, Maryland

Since 2019, Black Women Build-Baltimore (BWBB) has provided generational wealth creation through home ownership, working with Black women in Baltimore to rehabilitate 13 vacant and deteriorating houses in the historically disenfranchised West Baltimore neighborhood. Prospective first-time home buyers who want to learn the building trades apply for BWB's programs: (1) on-the-job training at the sites (four days a week for about four months) with a stipend, or (2) learning community-building skills through BWBB's partners.

The program is open to first-time homebuyers with a two-year employment history and savings of $2,500. Houses range from $105,000 to $250,000 and require a minimum down payment of $2,500. A buyer must stay in the house for five years before selling.

Image 5. Working in the West Baltimore neighborhood, Black Women Build offers a path to first-time home ownership for Black women through a construction and maintenance training program. Black Women Build

To ensure affordability, BWBB works with the City of Baltimore's Commission for Historical and Architectural Preservation (CHAP) to receive a 10-year tax credit on the property value increase that results from the rehabilitation work on the property. The rehabbed houses incorporate low energy and net zero methods to reduce homeowner utility costs.

BETTER FUTURES MINNESOTA

Minneapolis, Minnesota

Through on-the-job training in deconstruction, reuse warehouse safety and operation, appliance recycling and other programs, Better Futures provides holistic support to high-risk adults, primarily formerly incarcerated men, to help them reintegrate into society. The materials it salvages through its deconstruction efforts – more than 2,000 tons annually – are diverted from landfills and sold through its Reuse Warehouse Store in South Minneapolis, with the resulting revenue helping to support the ongoing program. Better Futures' trauma-informed integrative care model provides employment, mental and physical health care, workforce development and life coaching.
Partnering with local and county governments in the Greater Minneapolis area, Better Futures operates additional Reuse Retail stores near Becker County's transfer station, capturing materials that would normally go to the landfill. In the city of Bloomington, it offers collection of bulky items from residents. Both these materials streams provide additional goods-for-sale to support Better Futures operations.

Image 6. Better Futures hires and trains high-risk individuals, primarily formerly incarcerated men, in deconstruction and warehouse operations, providing integrative care for them while diverting thousands of tons of reusable materials from landfills. Better Futures Minnesota

GREENSTEP TRIBAL NATION PROGRAM

Green Step Cities Program
Minnesota

Led by the Minnesota Pollution Control Agency, GreenStep Cities is a state-wide public-private partnership that supports cities to achieve sustainability and quality of life goals as laid out in five areas (Buildings and Lighting, Land Use, Transportation, Environmental Management and Resilient Economic and Community Development). Although the best practice actions and recommendations are designed for municipalities, since 2014 four Tribal Nations have joined the program, gaining full access to Greenstep's tools and resources. The GreenStep steering committee, with input from Tribal Nations, has developed an evolving set of guidelines and encouraged adaptation and interpretation by tribal representatives to accommodate their specific context.

Adoption of an ordinance to require building materials to be reused and recycled is among the 29 specific actions, as is the recommendation for inclusive and coordinated decision-making. The program is voluntary, free, and encourages civic participation. Participants can access resources including web-based benchmarking and reporting tools, along with program guidance from GreenStep program personnel.

THE BLOCK PROJECT

Facing Homelessness
Seattle, Washington

The BLOCK Project, a program of Facing Homelessness, works to develop homes as Detached Accessory Dwelling Units (ADUs), which are permitted and sited in homeowners' backyards. The fully equipped homes follow standards of the Living Building Challenge and incorporate water reuse and energy reduction.[69] The BLOCK Project's fabrication methods produce less construction waste, resulting in less carbon emissions than typical construction.

A reiterative design process includes input from current ADU residents and follows design for disassembly principles. The main materials of the homes are Red List free (building materials that cause health risks to humans and the ecosystem), and minimize injustice impacts caused within manufacturing, utilities, ecology, and occupancy.

The collaborative support network includes case workers, social service agencies, council members, city planners, homeowners, advocates and members of the architecture, engineering and construction community providing pro-bono labor. Sixteen BLOCK homes have been completed, with the seventeenth underway, and two have been sold to the NDN Collective, an Indigenous-led organization in the Black Hills on Oceti Sakowin Territory (South Dakota) which centers around change, liberation, and justice through Indigenous power; these homes will be built as a collaboration.

Facing Homelessness and The BLOCK Project plan to create a workforce development program to support local labor and education within the affordable housing sector, as well as develop processes to support other cities that desire BLOCK Homes and alternative construction methods.

Image 7. With an aim to end homelessness, the Block Project builds Accessory Dwelling Units (ADUs) using a construction process that minimizes waste while incorporating an iterative design process that engages ADU dwellers. The BLOCK Project.

EQUITY-BASED PRESERVATION PLAN

Historic Preservation Office
Austin, Texas

Nearly 150 community members from across Austin applied to become part of the Preservation Plan Working Group, with a goal to develop an equity-based preservation plan. The new plan will replace the city's 1981 preservation plan, and better recognize the city's rich, complex heritage. Thirty-two people were selected, a racially and ethnically diverse group from 19 different zip codes in Austin; those who wished were compensated for their time and expertise. Throughout the development of the new plan, the group engaged with community focus groups, technical advisers, and municipal staff. More than 300 people contributed their ideas to the plan.

In early 2024, the draft plan became available for public review. A series of informational events – lightning talks, open houses, block parties, night markets – were held, and accessible feedback

forms were widely available (at events, on various online platforms). Efforts were often led by "Community Ambassadors," who represented the city's historically marginalized communities; five local organizations received mini-grants to engage communities of color, LGBTQ+ communities, people with disabilities, low-income families and renters. The communication and the draft plan itself are available in English- and Spanish-language. The plan is expected to be presented to City Council in Fall 2024.

Image 8. In developing Austin's Equity-based Preservation Plan (now in draft form), the Working Group employed extensive community engagement efforts – which continue today as it gathers input on the current draft. This includes everything from multiple bilingual outreach events around the city to publishing all materials in both English and Spanish for increased accessibility. City of Austin Equity-Based Preservation Plan

Section 3B

Additional Resources

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[69] Copyright, International Future Living Institute. For more information please visit, living-future.org/lbc

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4. Redlining Map of Portland. Source: Mapping Inequality: Redlining in America https://dsl.richmond.edu/panorama/redlining/
5. Demolition of Chacona Block in Ithaca, NY. Credit: Jennifer Minner.
6. White Center, WA. Credit: Ash Kopetzky

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Just Places Lab

REPARATIVE PRAXIS LAB

Circular Construction Lab

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