United *in* Design

Design Matters

A Primer on Affordable Housing

UNION

Union Studio Architecture & Community Design
(401) 272.4724
unionstudioarch.com

Providence
160 Mathewson Street
Suite 201
Providence, RI 02903

Philadelphia
109 South 13th Street
Suite 3B
Philadelphia, PA 19107

@unionstudioarch

CONTRIBUTERS

Christian Miller
United in Design Scholar and Intern
2023

Jin Xu
United in Design Scholar and Intern
2024

Paul Attemann
Principal

Alanna Jaworski
Senior Associate

WITH SUPPORT FROM

Kevin Beaulieu
Associate Principal

Evelyn Ehgotz
Architect

Mikéla Sumner
Designer

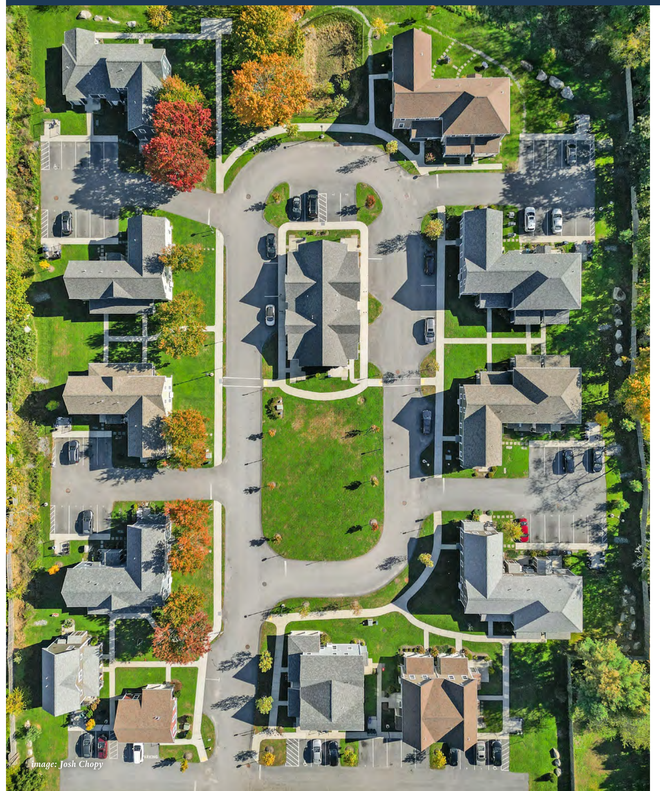

Image: Josh Chopy

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SECTION 1

Introduction

What is Affordable Housing, why does it matter, and how do we talk about it in our communities?

- Foreword
- Understanding Affordable Housing
- Community Processes

Capitol Square
Providence, RI

Image by Nat Rea

OUR APPROACH

At Union, we recognize the challenge of creating affordable housing in the world today. While there are many examples of affordable housing, unfortunately many of these solutions have not stood the test of time. They have left communities with derelict or unsustainable housing that must be demolished or replaced at great financial and cultural expense. We believe strongly that all types of housing should draw from the best examples of our collective past, improve on what has repeatedly stood the test of time, and use these lessons to respond to the challenges of contemporary society. Well-considered design is critical to any aspect of the built world, and affordable housing is no exception.

Through our work as community designers, planners, and architects, we have found that many of our most cherished places reflect pragmatic simplicity coupled with a pride in detail, craftsmanship and history.

We have found that this combination of efficiency and beauty is the hallmark of many enduring communities. The design matters, from the scale of the neighborhood to provide connectivity and belonging, to the scale of the buildings interior spaces.

Union's commitment to quality, craftsmanship, and design has enabled us to complete a wide range of projects, from historic rehabilitation and urban infill to master planning and the design of entirely new neighborhoods. Our primary goal in all of these contexts is to integrate beautiful and well-considered affordable housing seamlessly into the existing community.

Affordable housing serves everyone. It's importance cannot be understated, nor can the importance of design as a tool to create it. The design can make a project feasible, but more importantly, it can improve the lives of its residents and community.

Union Office, Providence, RI *Image by Union*

INTRODUCTION | PLANNING PRINCIPLES | DESIGN GUIDELINES | REFERENCES
FOREWORD | UNDERSTANDING AFFORDABLE HOUSING | COMMUNITY PROCESSES

Trinity Place, Providence, RI *Image by Nat Rea*

PURPOSE

Understanding Affordable Housing

WHAT IS AFFORDABLE HOUSING?

Federal guidelines set the standard for "affordability" at 30% of a household's gross annual income.[1] A household that spends more than 30% of their gross income for housing is considered to be "cost-burdened", meaning that the remaining funds may not be enough for necessities such as food, transportation, education, and healthcare.

Affordable housing falls within two categories: 'A'ffordable and 'a'ffordable. A'ffordable housing refers to federally funded housing, while 'a'ffordable refers to informally occurring affordability.
It is necessary to provide an ample cost-selection of affordable housing to effectively match varying annual incomes to homes within their range of affordability. At its base, affordable housing is housing that does not financially overburden the household. Household income ranges across many demographics in different regions of the nation. Therefore affordable housing is a term that can be applied to people in all income ranges, even though it is mostly associated with those in the lower- to moderate income levels.

THE 30% RULE FOR AFFORDABLE HOUSING

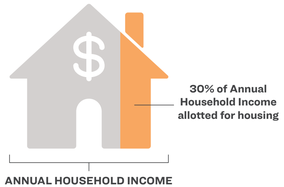

Illustration by HousingWorksRI (Modified by Union)

SEVERELY COST BURDENED RENTER HOUSEHOLDS BY INCOME GROUP

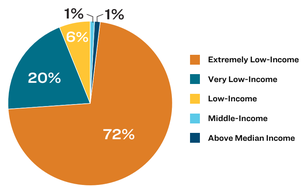

Illustration by National Low Income Housing Coalition

DEMOGRAPHICS OF EXTREMELY LOW-INCOME RENTER HOUSEHOLDS

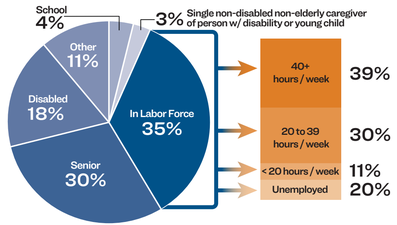

Illustration by National Low Income Housing Coalition

WHO DOES IT SERVE?

Affordable housing serves many people. High-income earners, hourly wage workers, and people experiencing homelessness all deserve an affordable roof over their head. The rent or home price that is deemed affordable varies between households depending on income.

Contrary to common misconceptions about affordable housing occupants, affordable housing often serves those who are essential to the functioning of every community. People who could benefit the most from affordable housing are moderate-income renters and homeowners. Many are healthcare professionals, teachers, firefighters, local artists, office workers, police officers, retail clerks, and other familiar faces that we interact with daily. These people constitute the backbone of our society and deserve safe, stable, and affordable housing.

Sweetbriar, Barrington, RI

Image by Rupert Whitely

COMMON DEFINITIONS

'A'ffordable

FEDERAL FUNDING

Capital 'A' affordable housing is housing that has been formally designated as affordable. This type of affordable housing relies on subsidies or other forms of government funding and will be 'A'ffordable for a predetermined amount of time. Public housing and privately-owned subsidized or tax credit developments fall into this category.

All 'A'ffordable housing programs have requirements for eligibility, and may include income restrictions calculated from the Area Median Income (AMI), age, familial status, or disability status. Additional stipulations, such as housing inspections and annual income verification, may be required. Some different types of federally-funded 'A'ffordable housing are outlined on [page 10].

HOUSING AUTHORITIES

PHAs are located nationwide and are often responsible for administering housing choice vouchers and maintaining public housing. Funding is limited, resulting in long wait times, but PHAs are able to provide rental assistance to those with little or no income.

PRIVATE DEVELOPERS

Private developers are mainly responsible for the development of LIHTC or subsidized housing projects. While subsidized units are often accessible to households with very little income, LIHTC projects are geared towards those with moderate incomes.

Adopted from Missing Model Report

'a'ffordable

> 30% OF INCOME SPENT ON HOUSING

Lowercase 'a' affordable housing more generally refers to housing that does not exceed over 30% of the renter's income. Although there may be federal subsidies or tax incentives available, this is not the major source of funding and the same rental limitations, such as income, age, or disability status, typically do not apply. 'a'ffordable units may be private employer programs, such as "workforce housing," an accessory dwelling unit, like an apartment over a garage, or a large single-family home that has been divided into small "micro-unit" rentals. These apartments are mostly market-rate rent, not subsidized, but the concept of what is 'a'ffordable is based off of the household's income and changes for each individual's financial situation.

WORKFORCE HOUSING

Workforce housing is provided by employers as a more affordable housing option (and a recruitment and retention strategy) for employees. However, the term has recently, and controversially, been used to define affordable housing for "working class" professions, like fire fighters and teachers.

PRIVATE LANDLORDS

"Private Landlord" is being used to define individuals who own small multi-family units or additional income apartments, such as a stacked-flat or an apartment over a garage. These rents are market rate but may also be available to households with Housing Choice Vouchers.

Source: usa.gov

AFFORDABLE RENTAL HOUSING COMPARISON

Affordable rental housing comes in a variety of types in order to be accessible to a diverse population with unique financial situations.

Source: usa.gov

HOUSING CHOICE VOUCHERS (FORMERLY SECTION 8)

A housing voucher is a portable subsidy attached to a household instead of a unit. Vouchers are government funded and distributed through PHAs. Funding for PHAs is limited and variable so there is typically a wait list. The voucher is applied to the market rate rent of a privately-owned unit and must be inspected for health and safety. The household is responsible for a set percentage of the rent, in some cases $0.

PUBLIC HOUSING

Public housing is subsidized housing that is typically administered through PHAs. The subsidy is attached to a unit. Most households in public housing are classified as "extremely low" income as their income is around 30% of the AMI. Nationwide, public housing is in need of approximately $45 billion in repairs as Congress has not approved new funding since the 1990s.[2]

PRIVATELY-OWNED: LOW INCOME HOUSING TAX CREDIT (LIHTC)

LIHTC housing has minimum and maximum income restrictions but can be combined with additional sources of funding to increase affordability.[3] For a project to qualify for tax credits a set percentage of the units must be designated as 'A'ffordable. The rent is attached to the unit and does not change with the household's income.[4] The LIHTC program is responsible for the majority of new affordable housing in the country.[5]

PRIVATELY-OWNED: SUBSIDIZED HOUSING

Subsidized housing has maximum income restrictions based on the Area Median Income (AMI). The rent is attached to a unit but changes in relation to the household's gross annual income. Subsidized housing is more suitable for households with very little, or no, income as they are only required to pay a percentage of their income as rent.[6] Funding for subsidized housing is often available through the government.

Adopted from Missing Model Report

Community Processes

PROJECT BEGINNINGS

Projects often come about when towns or municipalities have affordable housing committees, with active community members advocating for more housing. These committees have done the legwork to locate sites and do initial yield analysis on number of buildings, unit mix, and affordability ranges to advertise Requests for Proposals (RFP). That initial evaluation is an advantage to developers like local Community Development Corporations (CDCs) or other non-profit organizations because the desires of community members are reflected in the RFP.

For projects without an RFP, developers may propose using local statutes that enable local Zoning Boards of Appeals to approve affordable housing developments under flexible rules if a minimum percentage of the units have long-term affordability restrictions. The provisions often allow for a density bonus incentive.

Community processes are important for every project that integrates affordable housing. Aligning design and development goals with community interests is critical for long-term success.

THE CHARRETTE PROCESS

Inspired by early French architecture schools' intense design sessions, the charrette process is an intensive, multi-day process used to establish strong design foundations early on. The charrette process has great potential to build consensus and anticipate future difficulties by encouraging interdisciplinary project teams and interested parties to collaborate in short cycles of intensive review.

The charrette typically focuses on drafting concrete design solutions. Design professionals "talk with the pen," and use collaborative design sketches to create a shared vision. Public meetings are held throughout the process, helping to ensure that the designs proceed with the insight and full support of community representatives.

The charrette process transforms design into a collaborative public event that ends in a publicized presentation of a complete and workable proposal. Successful charrettes can quickly gain public support and propel the project through the development cycle.

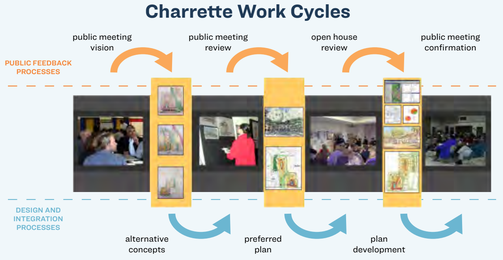

Image adapted from National Charrette Institute

The **New Urbanism: Comprehensive Report & Best Practices Guide** identifies nine practical principles for planning a successful charrette. The report delves into each principle in detail and provides useful tips for organizing a charrette.[7]

1. Work collaboratively
2. Design cross-functionally
3. Use design to achieve a shared vision and create holistic solutions
4. Work in detail
5. Compress work schedules
6. Communicate in short feedback loops
7. Work for at least 4-7 consecutive days
8. Work on site
9. Produce a buildable plan

DESIGNING IN COMMUNITY

It is important to recognize that the needs of underserved communities may not always be anticipated, despite best efforts. Affordable housing design should always include the community it is serving in the conversation. Community engagement is crucial to a successful, equitable, well-integrated project.

image: Union

"The public participation and approval process is the final determinant of affordable housing design excellence."

– *Good Neighbors: Affordable Family Housing*[8]

Engagement Format

Ideally, community engagement begins long before a project appears in an official public hearing format. Choosing the right format for preliminary community participation can be important to achieving engagement goals. Some formats include:

- Design charrettes
- Community workshops
- Community advisory groups
- Stakeholder meetings
- Local press briefings
- Pop-up booths near busy areas
- Post-it note comment boards
- Surveys
- Websites

Community Engagement Goals

Setting goals is useful in focusing engagement efforts. Goals can include:

- Understand the community's sense of self and identity
- Encourage the community to articulate the specific issues that are affecting it
- Create a design solution that satisfies the needs of future residents, concerns of current residents, and project feasibility.
- Build a constituency supportive of the development to ensure a smooth land-use and funding approvals process
- Learn lessons for improving future community based development efforts.

Key Participants

A community engagement session is only as good as the people present. The selection of attendees can inform the intentions and outcomes of the meeting. *Good Neighbors: Affordable Family Housing* identifies four key stakeholder groups for community engagement processes:[9]

CDC BOARD OF DIRECTORS

The Community Development Corporation (CDC) manages long-term ownership, tenant screening, and maintenance of affordable projects. Building mutual understanding and aligning design intentions is crucial.

PROPERTY MANAGERS

Property managers aid tenant screening and may have experience creating long-term stability for tenants. They may be sensitive to the needs of both tenants and neighbors.

NEIGHBORHOOD RESIDENTS

Not all residents share the same beliefs, but they can lend insight into local culture and attitudes. Residents may become strong allies once their concerns are addressed.

FUTURE RESIDENTS

Residents from existing affordable projects are a good reference point for understanding the needs, experiences, and design concerns of potential future residents.

DESIGNERS' ROLE

Designers are optimists who want to make a difference through creating better places. Their duty is to translate optimism into action and affect real change. Through their work, designers not only ensure that developments are feasible, but also that each community's knowledge, assets, values, history, culture, and best interests are reflected in the completed result.[10]

The role and responsibility of architects, designers, and community planners is not to be underestimated. The selection of qualified designers to steward the project's development as early as possible can have a real impact on the success of a project.

The designer's role is varied, and includes community engagement efforts, listening to neighborhood concerns, navigating the regulatory approval process and collaborating with the development team to create site and building designs.

"Architecture has the capacity to make housing more affordable through the adoption of smart and efficient planning—build better with less. Embracing new construction methods, technologies and pre-fabrication also can contribute to affordability."

- Paul Focic, COX Architecture

Union Office Pin-Up

Image by Susannah Bothe

Good Neighbors: Affordable Family Housing recommends four characteristics of well-qualified architects.[11]

WORKING WITH PEOPLE

Architects cross paths with local officials, funders, contractors, other project teams, and community members. Collaboration with people of different interests, backgrounds and expertise is crucial.

KNOWLEDGE OF THE PROBLEM

The architect's historical, technical, and intuitive understanding of affordable housing design contributes to their ability to design projects that are sensitive to the needs of future residents.

HISTORY OF SIMILAR PROJECTS

Referencing past projects and clients can help selection committees understand the architect's experience in designing quality housing with similar budgets and characteristics to the intended project.

TECHNICAL KNOWLEDGE

Careful attention to planning regulations, building codes, and construction techniques is among the most important duties of the architect. Changes are costly, and can be avoided by technically proficient architects.

COMMON CHALLENGES

The planning process of any development is a long and arduous process that can often take years to come to fruition. Along the way there are countless obstacles and requirements that the developer and their team need to overcome and comply with. Incorporating community engagement is imperative to consider and plan for. The process may add unexpected costs, additional time to the schedule and require concessions that were not previously contemplated. Described here are a few of the key challenges a development may face.

Illustrations by Vectorstall (top left), Vectors Market (top right), Aozora (bottom left), and Adrien Coquet (bottom right), The Noun Project

REGULATORY REQUIREMENTS

Addressing the affordable housing crisis requires challenging the standard of single-family zoning, which exists on more than 75% of land zoned residential today. Proposing neighborhoods with appropriately scaled buildings, but with increased density, helps change perceptions by redefining and illustrating to communities how they can accommodate dense, affordable housing.

BUDGET

Working with the whole project team from the beginning to understand budget, establish a hierarchy of project goals, maintain high levels of standards on materials and quality, and think creatively around how the team can meet budget requirements without sacrificing goals is an essential part of developing long-lasting housing. Often aspects of construction like sitework contribute heavily to budgetary constraints which can have a major impact on the architecture. It is important to prioritize quality so that residents feel they have a dignified place to live.

NIMBY-ISM

NIMBY-ism, or 'Not In My Backyard'-ism, is opposition to developments of something considered undesirable in one's local area or neighborhood. On the surface it stems from a concern that a project will lead to decreased property values. Designing projects which fit contextually to a place, and speak to the vernacular and scale of the local architecture, helps to address concerns of neighbors. New buildings which reflect the context of a place will enhance the neighborhood and desirability of a place.

GUIDELINES & STANDARDS

Depending on project funding sources, many state and federal guidelines and standards must be followed. Often those standards may apply broadly to larger single building type of multi-family development, and require creative solutions and suggestions to accommodate smaller or multiple building type sites (for example, unit square footage increase in a small multi-family). Understanding and implementing standards efficiently while addressing the specific needs of a site and community is a key component to efficient design.

SECTION 2

Planning Principles

Important considerations for designing in and for a community.

- A Sense of Belonging
- Proximity & Context
- Gentle Density

Cochecho Waterfront
Dover, NH

Illustration by Union

A Sense of Belonging

"'Housing First' policies acknowledge that the pursuit of a healthy, fulfilling life is possible only when we have a stable home. People across the world seek a sense of dignity and identity through their homes."

-Karen Kubey

A person's visceral experience and perception of their environment, identity, and connectivity to the community they live in is often understood and referred to 'a sense of place'. This is the understanding that, on the most basic level, every person wants to have a feeling of home and belonging. This can be achieved with careful and thoughtful consideration of context, place making, and architectural coherence to create quality homes where residents feel connected, safe, and comfortable. A feeling of belonging, pride, and integrity in one's home empowers residents to better maintain and safeguard the community they live in.

Much can be learned about a community by engaging with local community members to foster relationships and dialogue to better understand the history, the people, and the defining characteristics of the place in which they live. Listening to people's stories, experiences, and anecdotes will provide valuable insight into community-wide issues and constraints, as well as new opportunities and possibilities.

Sandywoods Farm, Tiverton, RI

Image by Rupert Whitely

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Illustrations by Guilherme Furtado (left) and Labonicon (right), The Noun Project

SOCIAL SUPPORT SYSTEM

A social support system refers to a group of people one can turn to for emotional and practical support.[12] Neighbors can be a valuable part of a person's support system.

Those who have a network of supportive relationships are healthier, live longer, and report a higher degree of emotional well-being. Having community behind your back helps an individual be more resilient to detrimental health effects resulting from isolation or loneliness. A social support system also yields many practical benefits, like the ability to find guidance and assistance during times of uncertainty.[13]

Well-designed housing can create opportunities to make and sustain strong community connections.

A HEALTHY ENVIRONMENT

Housing must provide a healthy environment for its residents. Our living environments often have profound physical and mental benefits that go unrecognized. Anyone can suffer from housing-related illnesses and injury; however certain population groups such as children, the elderly, low-income, or individuals with chronic illnesses are more at risk.[14]

PHYSICAL HEALTH

Both new and older homes can have health risks. Low drinking water quality, off gassing fumes from building materials, carbon monoxide, excessive moisture and molds, and asbestos containing materials are some examples. Durably-designed and well-constructed housing reduces health risks.[15]

PSYCHOLOGICAL HEALTH

Frequent relocation, overcrowding, foreclosures, evictions, and homelessness increase stress levels, depression, and feelings of hopelessness, which can take a heavy toll on low-income communities.[16] Safe, clean, reliable, and durable housing is critical to providing residents a stable environment for individuals and families.

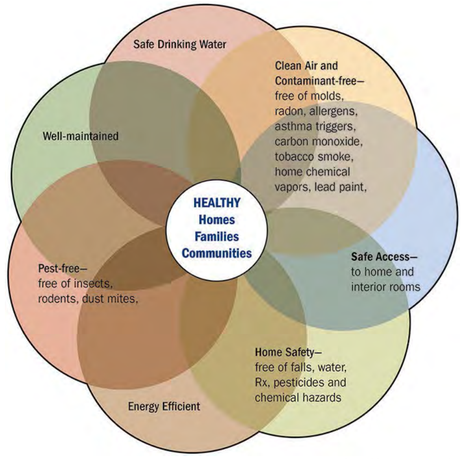


Image by Healthy Homes Partnership

Proximity and Context

"It's not a walkable neighborhood shortage, it's a housing shortage within walkable (or potentially walkable) neighborhoods."

-Kronberg Architects

LOCATION, LOCATION, LOCATION

When starting the process of creating affordable housing, consider siting neighborhoods in locations that have easy access to various modes of transportation and a wide range of essential amenities. Close proximity to essential daily needs, services, and employment opportunities saves residents valuable time and money.[18]

Car-based transportation is costly to buy and maintain, and can be a significant barrier for those with limited resources, so it is essential to choose locations with multimodal transportation options.[19]

MOVING IN CONTEXT

ACCESS

Locate housing so that residents can easily reach a variety of essential amenities like grocery stores, public transportation, post offices, pharmacies, open space, schools, and other services. It reduces or eliminates the need for residents to rely on personal vehicles and time lost to traveling long distances, providing a better quality of life for residents.

PUBLIC TRANSPORTATION

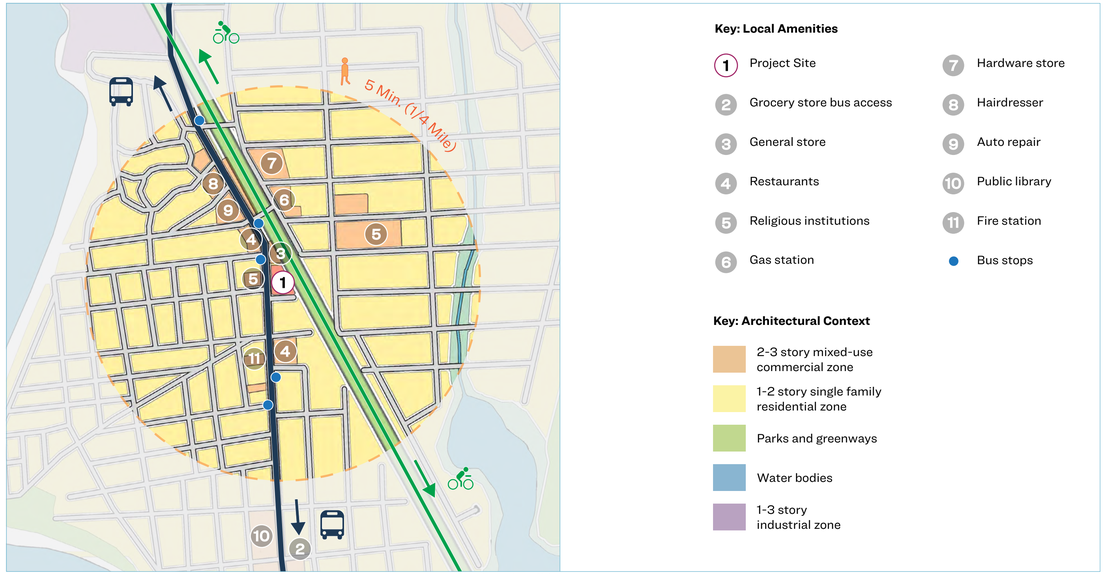
Consider site locations where residents have easy access to various modes of public transportation. Car-based transportation can be a significant financial burden, with research showing auto-dependent neighborhoods spend 25 percent of income on transportation, versus 9 percent in neighborhoods with easy access to transit.[17] Well-connected sites improve access to essential amenities, as well as promote connections with adjacent communities, fostering connectivity.

BIKEABILITY

Biking is a transportation option that can allow residents to get to work, school and other local amenities, in addition to being an enjoyable outside recreation option. Biking also serves those who may be too young to drive. Places with more connected bicycle network systems serve an important role in providing alternative transportation options than personal vehicles, which is especially critical in communities with less developed transit systems.

WALKABILITY

Walkable places benefit everyone in a community. They reduce transportation cost burden. Walking benefits our physical health and the environment by reducing or eliminating the dependency on automobiles. Places which consider walkability support elderly and disabled residents, who can be more active and have easier access to critical services. Increased pedestrian access supports growth of businesses and services in a concentrated area.



The Residences at Riverside Square, East Providence, RI

Illustration by Union

Gentle Density

"Peoples' attitudes, pro and con, reflect the quality of the housing around them, rather than the concept of density."

– *Visualizing Density*[22]

Illustration by Union

PERSPECTIVES

Density is needed to create pleasant places to live, work, and play. Building a degree of density is critical to the financing, design, and livability of affordable housing.

Homes that share land, walls, floors and ceilings are more efficient to build, creating cost savings and additional housing production. The value of utilities and public amenities also rely on density. For example, Public transportation is only worthwhile at densities of 7 or more homes per acre.[20]

The public understanding of dense housing, however, is often skewed by the worst collective examples of dense design. Many communities fear a vision of affordable housing that is aggressively dense, out of scale for their context, and incompatible with neighboring areas.
High density metrics can trigger fears of bad design. Density is typically described in terms of the number of residential units built per acre of land. This measurement is expressed in dwelling units per acre (DU/acre), ranging from low density (0~10 DU/acre), to moderate density (10~50 DU/acre), to high density (50~100+ DU/acre).

Describing density with only the DU/acre measurement is reductive, as design quality disproportionately impacts the success of dense housing. High DU/acre locales can be carefully designed to enhance comfort and privacy, while poorly planned places with a low DU/acre can still feel overcrowded.[21]

Good design is critical to creating higher density environments that feel spacious, private, restful and welcoming.

HIDDEN DENSITY

Contrary to expectations, multi-family housing has a history of integrating gentle density in diverse building types. Nimbler housing varieties were inserted seamlessly into neighborhoods before zoning and dimensional regulations restricted them.

The images to the right illustrate a variety of forms and densities that draw from local traditions. Although the top image appears to be a large, stately single-family house, it contains three homes, demonstrating how multi-family structures can be unnoticeable and accommodate local contexts. Well-designed multifamily homes can be unnoticeable and accommodate local contexts. The middle image of courtyard housing illustrates how multiple homes on a single lot are organized around shared outdoor areas, have common walls yet have individual entry doors. In the below image, a larger four-story apartment building in an urban setting does not overwhelm the street or surrounding neighborhood.

3 units on 0.29 acres = **10 DU/acre**

Manor House | Sandwich, MA *Image by Union*

5 units on 0.23 acres = **21 DU/acre**

Courtyard Housing | Santa Fe, NM *Image by Barker Realty, LLC*

32 units on 0.3 acres = **103 DU/acre**

Mid-Rise Apartments| Providence, RI *Image by Google Earth*

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DESIGNED DENSITY

High-quality affordable housing can be designed in a range of appropriate densities. Choosing a housing typology with a suitable degree of density can improve quality of life for residents, lower development costs, and reduce climate impact on the planet.

Visualizing Density, published by the Urban Land Institute, is a detailed resource for understanding the history of density, its built forms, and its visual characteristics.[23] Information and design guidelines from this resource are distilled here.

SUITABLE FOR DENSITY

- Developed areas with existing utility services and infrastructure which can support new growth.
- Underused urban sites with nearby jobs and commercial services
- Areas with multiple transportation options
- Areas with convenient local amenities

UNSUITABLE FOR DENSITY

- Natural resource land
- Areas that require investments in new roads, utility services and costly infrastructure.
- Areas with fragile soils incapable of supporting development

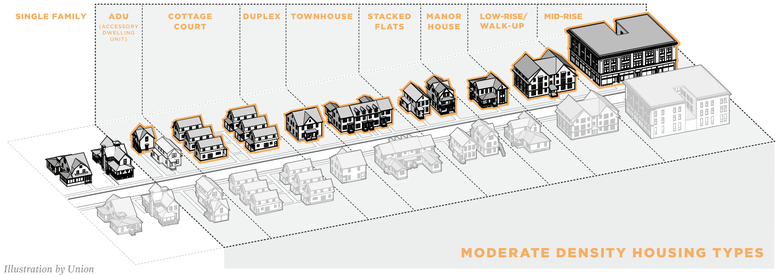

Illustration by Union

HOUSING TYPOLOGY COMPARISON

	SINGLE-FAMILY	GRANNY FLAT/ADU	COTTAGE COURT	DUPLEX	TOWN-HOUSE	STACKED FLATS	MANOR HOUSE	LOW-RISE/ WALK-UP	MID-RISE	HIGH-RISE
STORY HEIGHT	1-2 STORIES	1-2 STORIES	1-2 STORIES	1-2 STORIES	1-3 STORIES	3-4 STORIES	2-3 STORIES	2-3 STORIES	4-12 STORIES	> 10 STORIES
DWELLING UNIT (DU) PER ACRE	2-3 DU/ACRE	~8 DU/ACRE	4-7 DU/ACRE	6-12 DU/ACRE	12-24 DU/ACRE	20-45 DU/ACRE	12-24 DU/ACRE	20-90 DU/ACRE	50-100 DU/ACRE	60-100+ DU/ACRE

KEY DESIGN VALUES

SITE GUIDELINES

- Clear sightlines towards landmarks to aid wayfinding
- Green infrastructure (parks, greenways, and tree-canopied streets) to replace recreational yard space
- Well-proportioned public spaces that create "outdoor rooms"
- Street layout that interconnects with surrounding site
- Mix of uses, heights, housing types, and hours of activity

BUILDING GUIDELINES

- Select building typologies that complement site surroundings
- Distinctiveness and variety in architectural detailing (avoid repetition of a singular design)
- Autonomous resident control over entry, deck, and balcony spaces
- Locate parking areas out of view and reduce visual impact with landscaping and site features.
- Create clear distinctions of privacy and soundproofing.

APPROPRIATE SCALE

Appropriate scale and massing are the foundations of successful, dense housing.

The below example shows a mixed-income development in historic downtown of East Greenwich, RI. The current underlying zoning ordinance for this site prescribed a single multi-family building for fifteen proposed apartments. However, this single-building solution was out of character and scale with the surrounding neighborhood of single-, two- and three-family homes. A different approach envisioned a cluster of similar sized cottages, duplexes, and townhouses while yielding the same number of units, less impervious paving, and stronger support from neighbors.

This case study exemplifies that large-scale mid-rise apartment buildings are not appropriate in all contexts. A 10-story building would not be compatible within a community that has a history of building detached single-family homes.

The density of beloved historic neighborhoods is often much higher than many residents, officials and regulators realize. Although architectural styles may differ and represent a wide span of historical development, the massing and scale of buildings is what determines the final density of the site.

Image by Union

Cottages on Greene, East Greenwich, RI

This plan of the finalized site design shows the bounds of the site selected for the housing project.

This proposal, which was eventually approved for construction, is well-aligned with local scale and density.

Illustrations by Union

This rendering shows the scale and mass of a building designed to the original zoning regulations.

ARCHITECTURAL CHARACTER

An affordable housing development which understands and responds well to its context has a much better chance of avoiding community resistance and winning acceptance.[24] Analyzing and understanding the surrounding characteristics such as building typologies, building scales, façade materials, roof forms, parks, services, and commercial activity is essential to ensuring that well-designed, integrated housing will be appropriate to and enhance the community.

"With an inclusive approach to planning, and a design that fits the surroundings, the community ultimately embraces the new development and even considers it an asset."

– Affordable Housing: Designing an American Asset[25]

North Elmwood Revitalization, Providence, RI

Image by Union

NORTH ELMWOOD REVITALIZATION, PROVIDENCE, RI

One of the new buildings on Parkis Avenue (middle, blue) takes its architectural inspiration from its historic neighbor. Its proportions and architectural features echo those of surrounding homes. Over sixty beautiful, affordable homes were completed in this revitalization, including multiple rehabilitated historic homes and a nearly half-dozen newly constructed, stylistically consistent homes.

Capitol Square, Providence, RI

Image by Union

CAPITOL SQUARE PROVIDENCE, RI

A new mixed-use, thirteen apartment development hugs the street edge like most other buildings in the Smith Hill neighborhood. Comprised of two buildings to reduce the overall length of the mass, the three-story structures with steep pitched roofs, packed-out bay windows and architectural detailing blends seamlessly into the neighborhood.

SECTION 3

Design Guidelines

Building and site practices in the development of affordable housing.

- Project Considerations
- Site Design
- Building Design

North Cove Landing
North Kingstown, RI

Image by Nat Rea

Site Design

To the architect town planning specially appeals as an opportunity for finding a beautiful form of expression for the life of the community.

–Raymond Unwin, Town Planning in Practice

Careful site design involves many overlapping considerations that must all combine to form a coherent whole.

To help foster a sense of community amongst residents, the siting of shared site amenities and green spaces is one of the most critical considerations. Such spaces should be readily visible and accessible from common routes of circulation, and when possible, connect and celebrate existing natural features. Residential buildings should face onto these common areas to promote their use and encourage social interaction. Such an arrangement also serves to create a better sense of security and belonging, encouraging their use while also giving residents a sense of ownership and stewardship. Hopefully, it will then translate to their being kept up and cherished by the community as a whole.

Sweebriar, Barrington, RI

Image by Union

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North Cove Landing, Wickford, RI

Illustration & images by Union

SITE DESIGN COMPONENTS

A COMMON OPEN SPACE

The inclusion of shared, outdoor common spaces is essential to creating healthy, safe and pleasant places to live, work, and play. Buildings should shape these spaces, creating outdoor rooms that are comfortable to inhabit. Natural features can be preserved and incorporated while new plantings can help delineate public versus private areas while also helping soften and shade these spaces. In combination with more private spaces, the result can be a range of options allowing suitable spaces for group gatherings, individual contemplation, and anything in between.

B COMMON AMENITIES

Communal amenities that all residents have access to provide opportunities to socialize, connect, and take ownership of the community in which they live. Such amenities include spaces like mail rooms, laundry facilities, community rooms, playgrounds, and community gardens that are strategically located within the development to encourage interaction. Done well, these common amenities can enhance community character while also consolidating resources.

C CONNECTIVITY

Common pathways within a site should consider the various modes of circulation and services available to the residents and aim to offer the widest range of options possible. Finding a reasonable balance between the needs of pedestrian, bicycle and vehicle movements has a big impact on the quality of the built environment. Sidewalks should be accessible, integrated, and protected. Benches, crosswalks, and lighting can enhance the walking experience and make it more accessible to residents of all types.

D PARKING DISTRIBUTION

Large expanses of continuous parking can be detrimental to the visual character of a community. Care should be given instead to integrating parking into the site design, dispersing it evenly and conveniently throughout. Parallel spaces along the street can slow traffic and create separation between pedestrians and drivers while keeping the character of a residential street. Smaller lots can be located at the rear or side of buildings where they are partially shielded from public view. In addition, consider including impervious surfaces to reduce storm water impacts and planted islands to help reduce heat island effect.

BUILDING SPATIAL RELATIONSHIPS

The proper placement of buildings relative to one another is critical to good site design. To create spaces that are comfortable, their design should intuitively suggest how public or private they are meant to be. Critical to this delineation is a clear understanding of what are meant to be fronts, backs, and sides of buildings, with attention given to the relationships between them.

FRONT TO FRONT

Typically, the fronts of buildings should face one another, across public spaces like streets and common greens. The inclusion of features like front porches and landscaping can help soften the transition from the public realm to the private residence within.

BACK TO BACK

Conversely, the backs of buildings are generally understood to be more private, and care should be given to minimize their exposure to public areas. Truly private back yards are a luxury not typically possible in denser configurations, but features like fences and/or landscaping can help create a sense of privacy and delineation.

SIDE TO SIDE/FRONT/BACK

The sides of buildings often are exposed to a range of conditions. When sides are exposed to public areas, care should be given to make sure they aren't exposing more private uses inside or that the facade isn't devoid of features or windows. There is much less pressure on unexposed sides.

Champagne Heights, South Kingstown, RI

Illustration by Union

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TECHNICAL CONSIDERATIONS

ON-SITE ENERGY PRODUCTION

Strategic building orientation and/or the installation of solar-integrated shade structures over parking spaces can reduce a site's overall energy impact and serve local utility needs.

EMERGENCY ACCESS

Emergency vehicle access requirements are an important consideration. Know the code, meet with the local fire marshal, and plan access needs in advance to ensure a smooth approvals process.

STORMWATER CONTROL/DETENTION

Low-Impact Development (LID) strategies are low cost, prevent flooding, and reduce stormwater runoff.[26] General techniques include reducing impervious surfaces and using bioswales and bioretention gardens.

SERVICE ELEMENTS

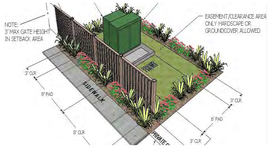
Care should be given to the location of service areas, like waste collection and loading areas, to find the balance between ease of access and their visual impact on the community.

LANDSCAPE DESIGN

Landscaping is important for the environment, people and property and its benefits are boundless. It provides noise reduction and natural cooling. It improves physical and mental health, encouraging recreation. Landscaping can be incorporated into the stormwater management plan.

LIGHTING

The appropriate placement and selection of outdoor lighting is critical to the safety, character, and sustainability of a community. Include Dark-Sky compliant fixtures that cast light only towards the ground where it's needed most, minimizing light pollution, and shield light from casting onto adjacent properties and buildings.



UTILITY AND MECHANICAL

Early coordination with utility companies is critical for integrating utilities into the site design. When feasible, place them away from common pathways, views, and sound-sensitive areas. Further mitigate their visual impact by screening them with fencing and/or plantings.

MAIL

Consolidating mailboxes and parcel storage into well-designed, central, prominent locations can turn a simple daily activity into an opportunity for social interaction between neighbors.

YOUR OWN FRONT DOOR

People naturally desire ownership, independence, and individuality. Recognizing and respecting each resident while fostering community informs the site and building design. The front door holds significance beyond its functional purpose; it should be celebrated as a means to foster a sense of ownership, demonstrate self-expression, and provide security.

The path each resident takes to their 'own front door' should be prioritized and considered carefully to enrich the overall building or neighborhood design. Providing special moments or experiences along the their path can be achieved with landscape and hardscape design, and placement of common amenities like mailboxes and laundry.

CASE STUDY #1: RURAL DEVELOPMENT

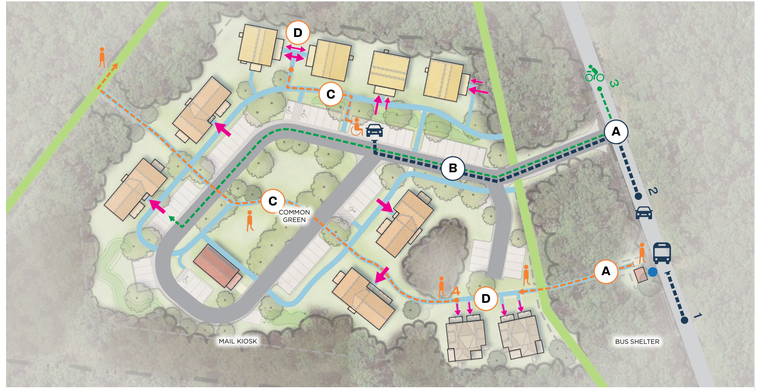
The site design of Meshacket Commons carefully protects natural habitats and open space while creating a pedestrian neighborhood. A large common green is a visual center of the neighborhood, equipped with a large communal building, mail kiosk, and porch for outdoor gathering. The building designs are inspired by the mass and scale of the vernacular architecture of Martha's Vineyard.

Try tracing the numbered paths to explore a different resident's perspective of the site:

1. A bus rider returning home
2. A handicapped driver visiting friends
3. A biker returning from a long ride
4. A senior resident walking their dog

Meshacket Commons, Edgartown MA

Illustrations by Union. Images by Graham Bezant (A), Nat Rea (B, C), and Union (D)



Rural site entry sequences usually begin with a driveway off of the main road or with a pedestrian trail.

The vehicular circulation loop can organize the site into common and private spaces. Roads can serve cars, bikes, and scooters.

Pedestrian paths are designed to accommodate accessibility needs and take advantage of the amenity spaces and any natural site features.

"Your Own Front Door" may be a private entry or a shared door. Some buildings may include multiple doors leading to different units.

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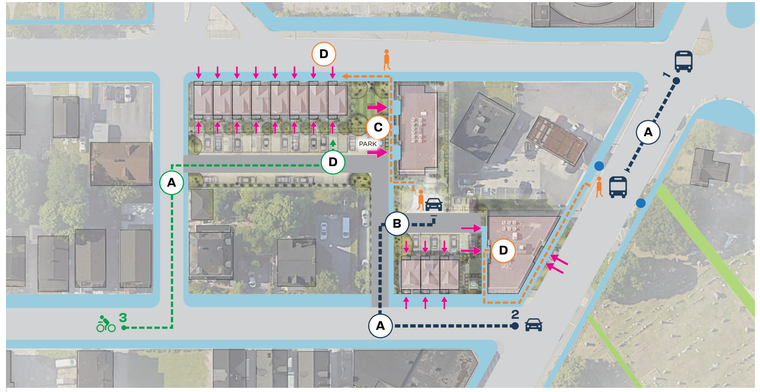
Trinity Place, Providence, RI

Illustrations and images by Union



Site access in urban contexts typically include multiple entry points (sidewalks, streets, driveways).

The vehicle access and off-street parking is often very limited for urban residents.

Pedestrian paths leading to the front door must be pleasant, safe and defined, connecting private amenity spaces within the site.

"Your Own Front Door" feels private. Townhouse units have front and back stoops, while most shared entries face a courtyard.

Everyone needs a place to call home. When night falls, every person confronts the basic need for a place that is safe, decent, and restful, a place to stow one's possessions, to clean up, to recharge for the challenges of the next day.

-Henry Cisneros, American CityVista

CASE STUDY #2: URBAN INFILL

The urban context of Trinity Place afforded opportunities to design around diverse paths and modes of transportation. A small park near the multifamily buildings creates opportunities for a sense of privacy, amenity, and belonging. The building designs create gentle density using townhouses.

Try tracing the numbered paths to explore a different resident's perspective of the site:

1. A bus rider coming home from work
2. A mother driving kids home from school, stopping by the local urban park on their way back
3. A biker returning with groceries

Building Design

DESIGNED TO THRIVE

The design of affordable housing is a large puzzle that must be viewed through different lenses to respond to a variety of factors. For the skilled designer, each decision is an opportunity to address multiple goals.

Design excellence and cost efficiency are not a zero-sum game, but instead a balance between aspirations and resources. **Housing that is not economically viable cannot be built, but housing that sacrifices design quality for cost will risk huge expense and public detriment, while failing to achieve the long-term goals of affordable housing.** Reducing upfront costs is important, but ensuring the resident's long term prosperity is what creates lasting success.

Thoughtful design, layout, and execution ensures that projects meet budget goals while also upholding the dignity and wellbeing of its future occupants.

The diagram on the following page illustrates a number of those considerations, from the intangible, experiential qualities to more physical, detailed technical specifications.

Sea Captain's Row, Hyannis, MA

Image by Nat Rea

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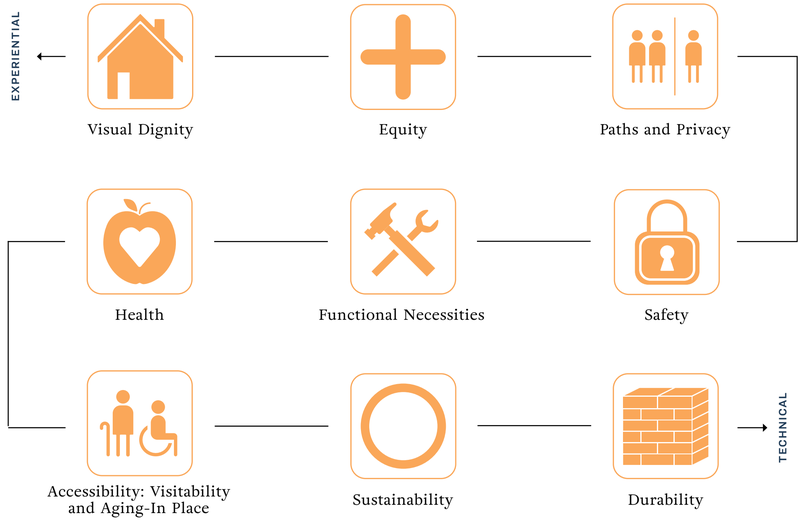
A ROAD MAP TO BUILDING AFFORDABLE HOUSING



VISUAL DIGNITY

At every scale, affordable housing must look good.

Regardless of architectural style, the visual appeal of a development is often a contentious discussion of the approval process. If not well considered, the built form will have lasting negative effects and impressions for the residents as well as the surrounding community. On the other hand, a well-considered design which respects the character of the neighborhood and draws from local context can promote a positive experience for residents and community members alike. Dignified and lovable buildings stand the test of time.

Visual dignity can be achieved more easily than one may think. Three layers of detail, illustrated on the right, come together to create a pleasing visual experience for residents and neighbors: appropriate massing, selective architectural details and thoughtful interior living spaces.

SCALES OF VISUAL DETAIL

MASSING

image: Union

EXTERIOR APPEARANCE

image: Union

INTERIOR EXPERIENCE

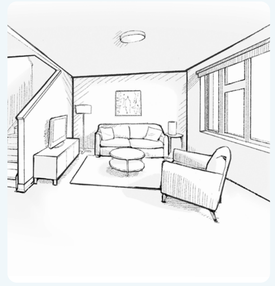


image: adapted from Vanni Archive

"The architecture, whether traditional or modern, should have an authentic feel. There are many ways to do this without spending a lot of money."

– Robert Steutefville & Philip Langdon[27]

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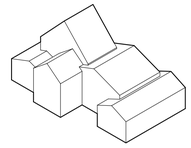
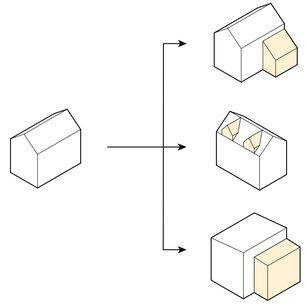
MASSING

'Massing' refers to the overall form of building volumes. Defined as "the location and size of the various built volumes and forms in an architectural composition,"[28] it considers the clarity and proportion of building volumes. Simplicity is key, as choices like complex roof and wall intersections and undulating building forms increase construction costs and are more difficult to build and weatherproof.[29] Solar orientation and the visual characteristics of the surrounding environment are also important to consider, as they significantly impact the interior visual experience.

If budget constraints tighten and further architectural details need to be reduced, a carefully considered overall form and composition will ensure that the building(s) can stand on their own.



Complex volumes are difficult to 'read' from the street and create visual confusion about how to interact with the building.



Simple volumes are easy to 'read' from the street. Any projections, like those highlighted, are well-proportioned and defer to the main volume. Good massing has a clear visual order of importance.

images: Union

Both examples above are of a similar scale and density. The right side has simple, attractive volumes that are easy to navigate, while the left side has too many intersections, resulting in a disjointed and confusing appearance that may draw stigma to its residents.

images: Union

Urban massing, on the left, tends towards more dense massing with large overall volumes that are broken up through visual detailing. Rural massing tends towards multiple volumes. Rural massing can still 'hide' a high density of units.

EXTERIOR VISUAL DETAILING

People often equate architectural details with being ornate, costly, and unnecessary embellishments. In fact, there are simple techniques that provide visual interest for reasonable cost. The dignified character that such details lend a project are well worth their expense. A few brief examples include:

- Ensure the building face has **variety at a human scale**. Consider using different materials, projected volumes, or accent colors to break up long, featureless building faces.
- Inset or pack-out window and door areas to provide **depth and shadowing** to a building façade.
- Hiding or **harmoniously integrating mechanical elements** into the visual composition speaks to a concern for the resident who must see them daily.
- **Avoid visual 'cheat' details** like 'pork chopped' eaves, which imply poor craftsmanship. Equally simple and cost-effective alternatives can be designed.
- Prefabricated mill work and other **stock detailing components** can be a cost-effective way to provide an additional layer of detail and interest to selective areas of a building design.

image: George Gray

The window bays at Ivy Place pop out from the building facade and anchor a corner of the site that transitions from private spaces to live-work storefronts.

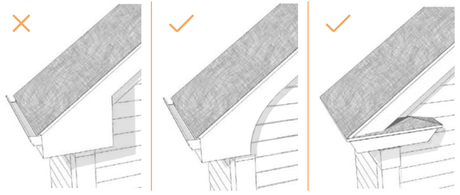


image: Union

Left: 'Pork chop' eave, a type of 'cheat' detail. These look bulky and cast unsightly shadows.
Middle: An alternative to the 'pork chop' that is inexpensive and elegant.
Right: An eave design with a 'return', which is the most classically desired eave. This eave return is simplified, and can still be achieved without large expense.

image: Make Architects

A larger building can be visually parted into multiple volumes of a human scale using volume, material and color differences.

image: Union

image: Utile

Mechanical systems like vents and downspouts can create a disorganized look to the facade. The building on the left has an air conditioning unit right next to the porch and main entry that can always be seen, while the right side has hidden its systems.

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INTERIOR EXPERIENCE

Interior spaces define a resident's experience of their home. A well-designed interior creates a pleasing environment to carry out daily tasks and receive guests. Some basic design considerations:

- Use **appropriate materials** for the space's designated use, especially in small units.
- Wherever possible, orient windows and balconies toward **pleasing exterior views.**
- Consider the **level of visual detail** in spaces. Color, texture, rhythm, and other design elements should be in harmony and hold up well, both far away and up close.
- Ensure **comfortable levels of natural and artificial light**. Natural light contributes to regulating circadian rhythms, making it very important for living spaces. Artificial lighting for private spaces, particularly bedrooms, should be of a warmer light spectrum to aid sleep.
- **Higher ceiling heights** create a sense of spaciousness. Adding an additional 2"-4" to a standard 8'-0" ceiling is a perceivable difference.

image: Union

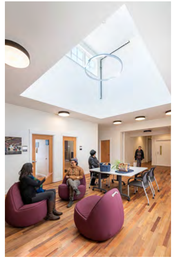
Different flooring materials may be used in kitchen and dining spaces to differentiate it from surrounding areas and ensure easy maintenance.

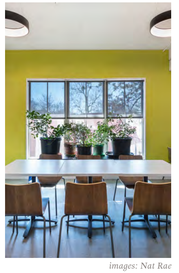
image: Union

Consider the potential of the surrounding site for orienting indoor spaces towards beautiful views.

image: Holst Architecture

Incorporating visual features like an accent wall or mural can increase the visual detail of interior spaces. Be careful that this approach is not overused, as it can become overbearing.





images: Nat Rae

Natural and artificial light contribute to the comfort of a space. Operable task lighting will allow inhabitants to adjust light levels to suit their occasion or activity.

EQUITY

Design decisions are an opportunity to contribute towards the cultural pride and dignity of residents.

Similar to other project types, good housing design responds to the needs of the community it serves. People who are seeking affordable housing are disproportionately people of color - whose communities have historically faced segregation and unjust treatment in government-sponsored housing programs.[30] Special care should be taken not to replicate unjust historical patterns, and to instead design new pathways for agency, autonomy, and community pride.

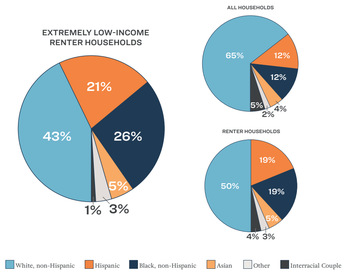


Image adapted from 2018 ACS PUMS

CULTURAL RECOGNITION

Culturally informed design may help future residents forge and keep strong community networks. An in-depth community engagement process can reveal opportunities to design for cultural engagement.

An example is a project where residents strongly identify with the existing porch culture in their community. In the new project, units can offer small outdoor patios with a new townhouse typology, as seen in Westside Evolves in Chattanooga.[31]

A project in Seattle, designed in partnership with Southeast Asian immigrants living in the area, incorporates courtyards for religious practices, drying food, and hanging laundry. Courtyards are not visible from neighboring subdivisions, providing privacy for these daily activities.[32]

Image by Westside Evolves

The design of Westside Evolves took into consideration the local places and typologies that are precious to existing residents. Porches were treasured as social and cultural spaces. After extensive outreach and community engagement, unit designs for the neighborhood provided residents similar outdoor spaces in a denser townhouse community.

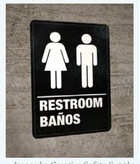


Image by Creative Safety Supply

Image by Jane Comben

Projects located near immigrant communities may include signage in different languages.

Image by Sundberg Kennedy Ly-Au Young Architects

U-Lex @ Othello Square is an affordable housing co-op located in a diverse neighborhood of Seattle. Garden plots in elevated double height courtyards support residents' cultural practices.

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Fieldstone Way, Wellesley, MA

Image by Union

EQUITABLE DISTRIBUTION: NEIGHBORHOOD CONTEXT

The above community was created with a mixture of affordable and market rate homes and gives all units access to site amenities within a five-minute walk. Thoughtful distribution on a neighborhood scale allows all residents access to green space, common outdoor patios, walking paths, play areas, and other amenities. These benefits can contribute to higher civic trust and engagement and promote good health.[33] Affordable and market rate units are visually indistinguishable, often share a party wall, and have porches in similar locations, creating a more diverse and sustainable neighborhood with residents of different socioeconomic backgrounds.

Aldersbridge at East Point, East Providence, RI

Image by Union

EQUITABLE DISTRIBUTION: MULTIFAMILY UNITS

A healthy mixture of affordable and market rate homes within buildings ensures that all community and amenity areas are afforded to all residents. Common areas which are open to all create an inclusive setting to hold events, meet neighbors, and build trust among community members. It is also important to give both unit types similar consideration for in-unit amenities, such as the Juliet balconies to enjoy ample light and air in the building plan shown above.

PATHS AND PRIVACY

Tight square footages make every inch count.

The cost of construction is always an important consideration of any building project. Cost is often driven by how much square footage is built. The more square footage is built, the more costly the housing.

Efficient hallways, corridors, and circulation paths within a building or home can greatly reduce unnecessary built square footage. Although designing for small spaces can be challenging, good design can incorporate circulation paths to create the necessary layers of privacy from one space to another, maximizing the potential use of every space.

Christopher Alexander's book, *A Pattern Language*, offers many insights for designing layouts that nurture privacy and comfortable circulation.[34] Alexander advocates for designing with generosity of movement and a sensitivity for gentle separation between a resident's public and private lives within their home.

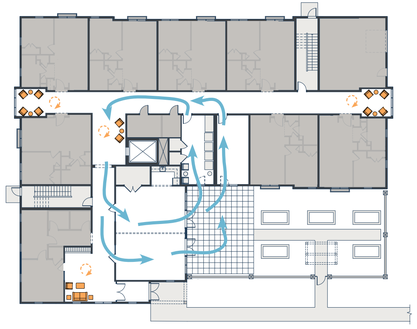

Image by Union

UTILIZE SPACE

Long corridors and hallways, though ubiquitous and simple to build, can create sterile, dark, and unsafe spaces. Alexander suggests the introduction of natural light, furnishings, and interior windows to make hallways places to live in and linger. In addition to benefiting socialization, hallways treated as rooms provide more visual interest to those circulating through.

CIRCULATION NETWORK

Connecting spaces through a thoughtful circulation network creates generous movement and spaciousness. Residents and visitors have greater choice of path when rooms contain multiple entry and exit points to other spaces. Circulation that offers options can tie together the activity in a building's common spaces.

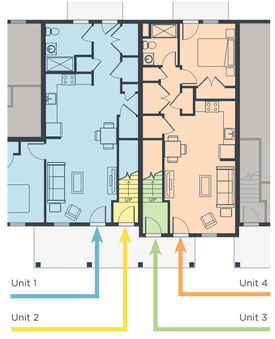

Image by Union

REDUCE HALLWAYS

One design alternative to a hallway-dependent building is to design multiple units with individual entry doors that cluster together and provide direct access to the outside. In the above diagram, four unit entries are clustered together and served by a shared exterior cover.

Image by Union

PASSAGES WITHIN THE HOME

Circulation through a series of rooms may be all that is needed for effective movement within a home. Reliance on hallways or corridors to move from one room to another can be inefficient and add unnecessary cost.

In the example shown above, a person can easily move between the bathroom, kitchen, living room, dining room, and bedroom. A small, one-bedroom abode like this is more efficient and pleasant to move through without a dedicated hallway. High-activity level rooms like dining and living rooms are most suited to function as the home's circulation core. Larger homes can also use this technique of creating room sequences as a conduit for movement.

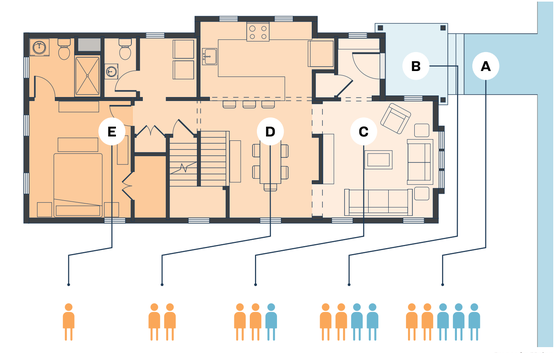

Image by Union

ZONES OF PRIVACY

According to Alexander, "Unless the spaces in a building are arranged in a sequence which responds to their degrees of privateness, the visits made by strangers, friends, guests, clients, family, will always be a little awkward."[35]

Ensuring a reasonable gradation of intimacy in the arrangement of a unit's layout can enhance residents' social experience and make them more comfortable welcoming visitors. A natural filtering mechanism is created when more public areas are placed towards the entry of the home, and private areas are sheltered towards the back. This sequencing of privacy also allows household members to each maintain their own spaces.

Well-designed intimacy gradients can support all kinds of social interactions.

THRESHOLDS: STRATEGIES OF PRIVACY

Spatial strategies for creating privacy are deeply embedded in our everyday experiences. We often do not realize when they are employed, but their difference is clearly felt.

Well-designed spaces often have a clear hierarchy of privacy. Architectural thresholds guide our movement and transitions from the public realm, to the semi-public, to the semi-private, to the private. Thresholds signify when one type of space, intended for a broader variety of occupants, changes to one intended for a more selective group.

These strategies often create visual, physical, or auditory boundaries between spaces. These physical distinctions create soft psychological barriers between spaces, and maintains a sense of individuality for the resident. Especially in the tight space demands of affordable housing, designing appropriate architectural boundaries for comfortable transition is important.

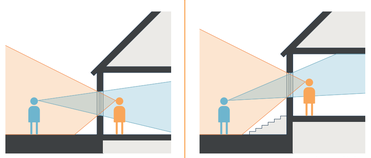

image: Union

ELEVATION

Slight elevation changes can control lines of sight between the interior and exterior. Those looking into elevated spaces from the sidewalk have a smaller cone of vision. More ceiling is visible than the contents of the room. Those within the elevated spaces have a broad view of the street, which provides a sense of safety and comfort. Interior blinds and curtains can be used to further control vision.

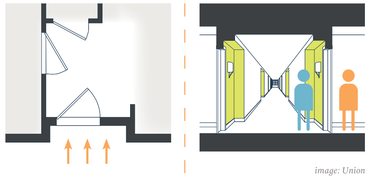

image: Union

ENTRY ALCOVES

Entries need to be treated thoughtfully. Inset unit entry niches can visually distinguish an individual unit entry from the common corridor. Color and wall treatments can further support these visual distinctions. Interior entry niches create a sense of ritual around entering and exiting the home, and holds items of transition, like shoes and umbrellas.

Image by Union

CEILING HEIGHT

The ceiling height of a room can greatly influence a person's experience of a space. Lower ceiling heights (8'-11') create cozy and intimate environments for private areas, like bedrooms and washrooms. Higher ceilings (10'-12') are more suitable for living rooms, dining rooms, shared building common rooms, and other public spaces.

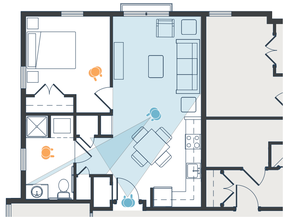

Image by Union

SIGHTLINES

Controlling sightlines within a unit is important for maintaining private boundaries. Spaces like the washroom and the bedroom are most comfortable when they are visually hidden from other more public spaces within the unit.

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DESIGNING "YOUR OWN FRONT DOOR"

As discussed previously in this report, having a clearly distinguished front door is important for residents to feel a sense of individuality, comfort, and home. In **A Pattern Language**,[36] Christopher Alexander identifies three keys to a well-designed front door that is clear and recognizable.

Image by The Architectural Team

POSITION

The depth of light and shade around the entrance can distinguish a building entry from its surroundings. The building entrance should be located in a spot that an approaching pedestrian can easily identify from the street. The path to the entrance should be no more than 50 feet along the building, as entry paths that are too long can be discouraging for visiting pedestrians.

Image by Union

FORM AND SHAPE

Highlight colors, architectural mouldings, and ornamentation can all serve to visually distinguish an entrance from the rest of the building or wall face. Front porches, entry porticoes, or canopies are effective ways to define building entrances from the street. The shape of the building face and roof line can guide the eye to make entry locations recognizable from afar.

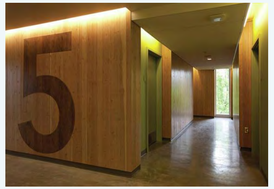

Image by Holst Architecture

VISUAL DIFFERENTIATION

In multi-family buildings, efficiency in double-loaded corridors can sometimes leave little room for social interaction among neighbors. However, a simple design gesture, such as recessed niches at entry doors, can create an intentional transition between the front door and semi-private circulation spaces. For interior unit entries, insets commonly serve this purpose.

FUNCTIONAL NECESSITIES

Good living standards are twice as important for affordable housing.

The home is one of the most important tools for those with limited resources. Some building elements are often seen as “extras” or “amenities,” but are in fact integral for household maintenance, care tasks, and general quality of life.

There are a variety of functional necessities that can be easily incorporated within the apartment, the building or the neighborhood design. Close proximity to these every day necessities saves residents time and resources by not having to travel elsewhere to meet their needs.

Providing functional necessities can significantly lighten the load on residents, provide more flexibility in their daily lives, and provide opportunities to focus their energy on other pursuits.

IN-UNIT ELEMENTS

Keeping laundry machines, some desk space, and storage spaces in-unit allow residents to multi-task in their home. Simple heating, ventilation, and lighting controls also allow residents to adjust their home environment for their needs while avoiding unintentionally high utility bills.[37] Residents can ideally work, cook, clean, and keep an eye on children all in the same spaces, eliminating the need, and associated costs, of leaving the house for daily necessities.

Image by rawpixel.com

In-unit washer/dryers save families the time, money, energy, gasoline, and possible childcare needed for external laundry facilities.

Image by Castorlystock

Dishwashers free time and energy to spend on other caregiving, income-generating, or personal wellness activities.

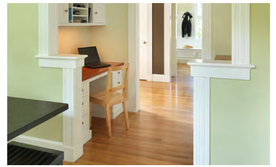

Image by Union

Flexible in-unit workspaces allow residents to work from home or pursue new avenues of income. Children can use them to do homework as well.

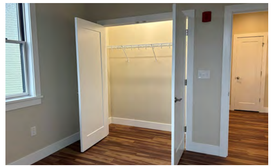

Image by Union

Coat, linen, pantry, and utility closets are essential to store household goods and offseason items. Adequate storage reduces the need to rent external storage space.

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COMMON SPACE ELEMENTS

Functional elements in the common spaces of multifamily buildings give residents ongoing support in their daily lives. Aside from the improvements they offer to a resident’s quality of life, they also give functionality to shared spaces and create social opportunities.

Image by Union

Internet access spaces in common areas provide residents with stable, reliable access to communication, information, resources, programs, and education.

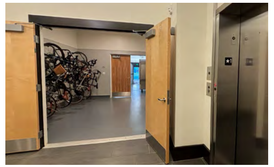

Image by Union

Bike storage supports residents’ mobility. Without a secure and dry place to store bicycles, residents may need to opt for more expensive or time-consuming modes of transport.

Image by Florence Corporation

Package rooms allow residents to delivered to a secure setting and allow for it to be safely collected.

Image by Holst Architecture

Multipurpose spaces give residents places to organize events, meet neighbors and facilitate community engagement, and receive guests outside of their own units.

SAFETY

The safety of "home" is what turns a house into a beloved sanctuary.

Affordable housing is often home to vulnerable populations, which makes it especially important to design naturally secure spaces. The goal is not to create gated communities, but to create a sense of comfort and safety.

The design of space and the physical realm can influence the psychology of its occupants. Subtle cues like the location of windows, shape of building volumes, distance from the street, and other architectural decisions change the way people experience the safety of built spaces.

The International Crime Prevention Through Environmental Design Association (CPTED) provides useful guidelines on designing spaces to both reduce crime and create a sense of safety.[38] Its key principles are discussed below.

NATURAL SURVEILLANCE

Placing "eyes on the street" through windows, balconies, porches, or busy common spaces increases perceived risk to offenders. Semi-public spaces that maximize the number of casual observers deter incidents and creates a greater feeling of security in the space.

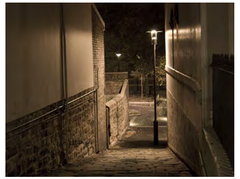

image: Cowboy Dave on Flickr

Alleyway with no windows or casual viewing areas. There are no potential observers on this street.

image: Bruce Damonte

Alleyway between homes with many stairs and balcony spaces that appear to be actively used by residents.

TERRITORIAL REINFORCEMENT

People have a natural sense of territoriality. They respect the territory of others and protect what they feel is their own. Architecturally define boundaries between public and private space to eliminate any uncertainty. Building massing, distance to entry, fences, landscaping, and elevation changes are some examples of reinforcement techniques.

image: Albert Bridge

These homes have no architectural or landscape distinction between personal space and the street.

image: George Gray

Homes with architectural demarcations between private and public space create a clear territoriality and sense of ownership.

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LIGHTING

Though not one of the main CPTED principles, lighting deserves a discussion. Adequate nighttime light levels raise visibility, supporting the observer effect. On the other hand, too much or the wrong type of light can produce other conditions, such as light pollution, glare, and deep shadows, making spaces harder to see and ultimately feel less safe.

Image by Louis Poulsen on Architonic

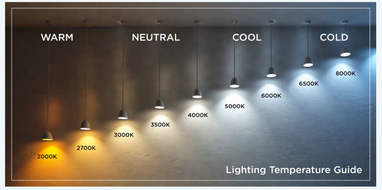

Image by Casa Di Luce

Left Image: Street lights should create an even, ambient light to promote visibility and protect vehicular and pedestrian safety.

Right Image: Color temperature describes the warmth of light, which is directly related to visual comfort, sleep health, and perception.

ACCESS CONTROL

Architectural strategies can limit access into properties. Landscaping, doors, locks, fences, building projections, and other physical elements create subtle layers of access control. Properly located entrances, exits, and building lighting direct circulation and decrease criminal opportunities.

image: Christie DeFoor

Home before renovations. The window is large and feels insecure, giving passerby visual access to the home interior.

image: Christie DeFoor

Home after renovations include porch guard rails that lend a sense of safety to the porch and controls view into the home.

MAINTENANCE AND MANAGEMENT

Visual indicators of maintenance or neglect will send subtle signals to the occupants of spaces. Dilapidated areas attract unwanted activities and dangerous individuals. Developing a clear local identity and well-maintained visual image will enforce social cohesion and create a sense of security.

image: Mario C. Russell on Flickr

Homes in dilapidated or abandoned areas are unsafe. These areas invite unwanted guests and illicit activities.

image: Make Architects

Homes that are well maintained and cared for create clean and safe environments for residents and the public to enjoy.

HEALTH

A healthy home gives residents the chance to thrive.

The World Health Organization (WHO) defines health as more than the absence of illness, but as "a state of complete physical, mental and social wellbeing."[39] Building design has the unique potential to influence each of these areas of health.

Affordable housing developers also have a unique responsibility. The demographics they cater to are more likely to suffer from chronic health conditions. For example, while an estimated 22 million Americans suffer from asthma, affordable housing seekers are disproportionately affected.[40]

Residents with chronic health conditions, or those who would be unable to afford a health emergency, rely on housing developments to be safe and healthy.

Design decisions like choosing hypoallergenic materials, and avoiding allergen-trapping carpet material, can support long term health and avoid perpetuating health inequities.

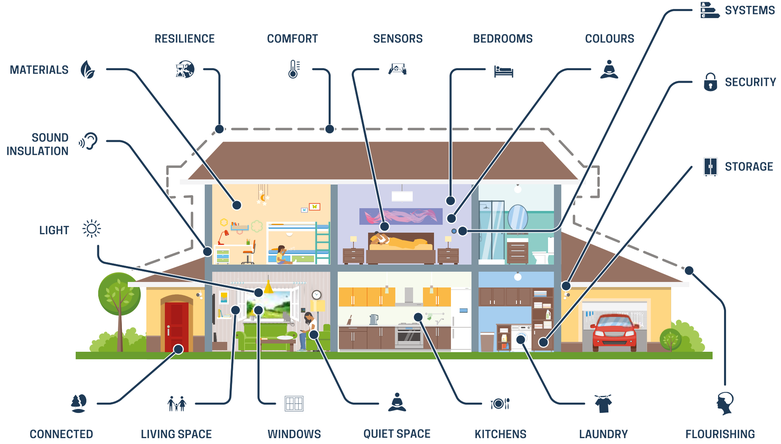

image: Adapted from the United Kingdom Green Building Council (UKGBC)

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BUILDING HEALTH

The United Kingdom Green Building Council (UKGBC) report, *Health and Wellbeing in Homes*, emphasizes the need for design to holistically consider the general wellness of occupants.[42]

The report identifies eight principles for healthy building design and offers design guidelines for each. These principles are: social interaction, light, internal air quality, thermal environment, moisture, noise, functional homes, and adaptable homes. Some of these principles have been covered in earlier sections. Six are summarized on the right.

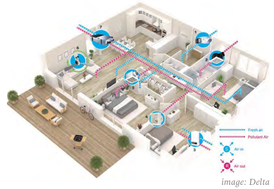


image: Delta

INTERNAL AIR QUALITY

Indoor build-up of carbon dioxide, Volatile Organic Compounds (VOCs) and other pollutants can lower cognitive functioning and threaten long-term health. Clean materials and good ventilation systems can reduce indoor air pollutants and allergens.

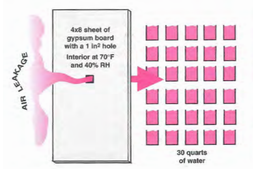


image: Joseph Lstiburek

MOISTURE

Moisture can lead to the growth of bacteria, dust mites, mold, and other allergens. Air leakage, thermal bridges, and human activities can all lead to moisture accumulation. Careful design and construction can reduce health hazards.

image: Rajesh Vora

SOCIAL INTERACTION

Studies show that wellbeing and physical health are correlated with the quantity and quality of social connections.[41] Design that offers residents comfortable spaces for socialization can promote sociability and build strong family and community ties.

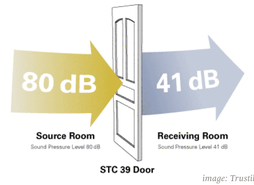


image: Trustile

NOISE

Unwanted noise can cause mental distress, affect sleep, reduce children's education outcomes, and cause longer term health issues. Sound can transfer between walls, floors, and ventilation systems. Acoustic design is essential to a healthy home.

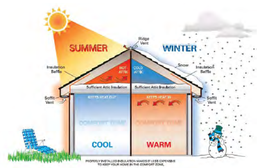


image: Energy Star

THERMAL ENVIRONMENT

Well-insulated homes can avoid the health risks and mortality associated with extreme summer heatwaves and winter temperatures. As climate change intensifies, stable internal temperatures become critical.

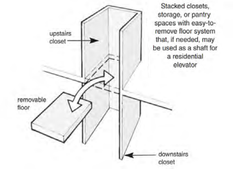


image: Universal Design Handbook, 2nd Edition

ADAPTABLE HOMES

Good design should consider the future. Aging, life changes, climate change, and other long-term factors all affect the health of residents, so having foresight is critical.

ACCESSIBILITY: VISITABILITY AND AGING-IN-PLACE

Accessibility is most efficient and cost effective when it is considered from the beginning.

Accessible design helps those with disabilities navigate spaces regardless of age, gender or other factors. It includes space planning and dimensional considerations so that residents of all needs can navigate spaces safely and easily.

The Americans with Disabilities Act (ADA) defines accessible design as "a process that ensures people with disabilities have equal access to programs, services, and areas as people without disabilities."

Accessibility can be considered in a few different ways beyond what the code requires. While new buildings must address the code requirements for accessible routes and spaces, consideration for adaptability to respond to future needs of residents can support a more diverse population, including aging seniors, injured persons, and couples with children, all of whom can appreciate the convenience of basic accessibility or adaptability standards. Incorporating visitable design elements allows those with mobility limitations the opportunity to visit family and friends. When considered from the beginning of a project, consideration and planning for various levels of need can lower the cost of later modifications without increasing up-front project costs.

It is an unfortunate fact that many of those with disabilities cannot find an affordable home that meets their needs. Too many households with disabilities live in homes that cannot accommodate them. Simple design solutions exist that cost little to nothing to implement, if only we advocate for them.

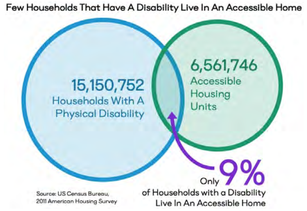


image: Apartment List

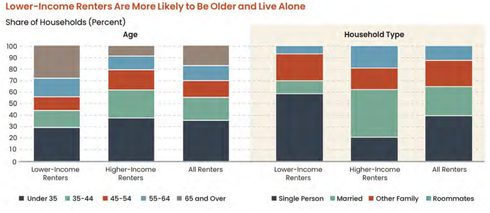
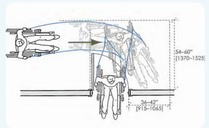


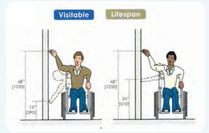
image: America's Rental Housing 2024

MOVING THROUGH THE WORLD

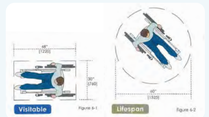
images: Inclusive Housing: A Pattern Book



This is the most complicated out of six possible wheeled approaches to a door. Extra space is needed to both sides of the door to maneuver.



Reach on a wheelchair is important to consider when placing switches, power outlets, and determining the height of countertops.



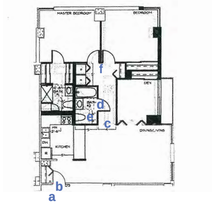
A clear floor area of 30" x 48" will accommodate most wheelchairs with average-sized occupants. A more generous radius of 60" will allow chair users to turn around. Other mobility aids, like scooters, may need more room.

VISITABILITY

Visitability: A measure of ease of access for people with disabilities so that all people, regardless of age or disability, are able to comfortably visit your home and maneuver independently while there.

images: Inclusive Housing: A Pattern Book

Plan before visitability redesign



Plan after visitability redesign

VISITABILITY DESIGN CONSIDERATIONS

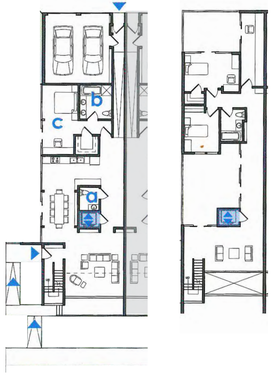
A visitable design can be achieved with simple space configuration considerations. The plan samples to the left illustrate a plan before, and after slight changes which affect and greatly expand the unit's visitability. These include:

- (a) No-step entrance.
- (b) 36 inch wide front entry door.
- 32 inch clear interior passage doors.
- (c) Wider hallways and inclusion of a turning radius for wheelchair navigation.
- (d) Out-swing bathroom door.
- (e) Toilet location at bathroom corner, which could also include grab bars.
- (f) Both bedroom doors, one which may be used for a visitor, are reconfigured for simpler wheelchair entry.

ADAPTABILITY

Adaptability: The ability of certain building spaces and elements, such as kitchen counters, sinks, and grab bars, to be added or altered so as to accommodate the needs of persons with or without disabilities or with different types or degrees of disability (definition by the Massachusetts Architectural Access Board).

image: Inclusive Housing: A Pattern Book



Adaptable home Ground floor

Adaptable home Second floor

ADAPTABILITY DESIGN CONSIDERATIONS

Adaptable elements can be made accessible to and safe for persons with disabilities without structural change. Levels of accessibility do not have to compromise aesthetics of size. The design sample to the left illustrates an adaptable apartment. Adaptable design features include:

- (a) Ground floor half bathroom can be used by visitors.
- (b) Ground floor full bathroom (for ground floor bedroom).
- (c) Ground floor bedroom.
- Entries to home include ramp access.
- Blocking in walls for future grab bars in showers and by toilets.
- Stacked closets located in same location on first floor and second floor allows for future installation of a residential lift.

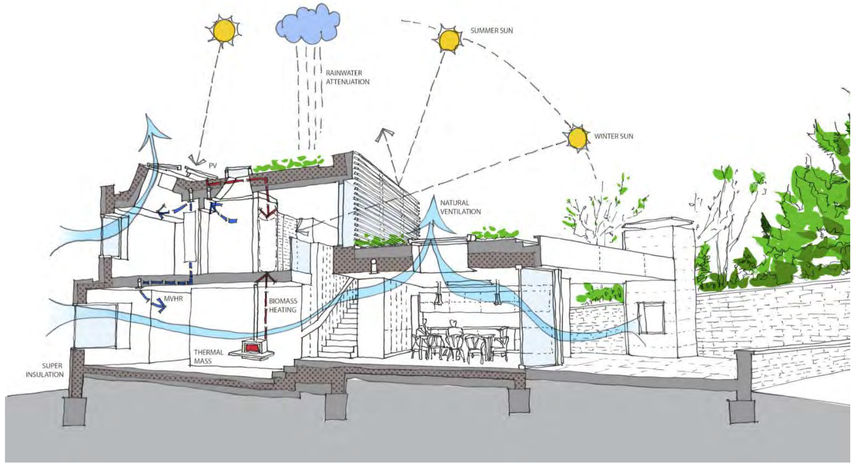
SUSTAINABILITY

Building is a process of negotiating with our future.

Sustainable construction is needed now more than ever - affordable housing is no exception. Each design decision is part of a complicated mix of environmental, financial, and organizational processes.

Truly sustainable design envisions a future where all can live well. To this end, designers must balance health, first-cost financial concerns, ecosystem impacts, and long term durability.

Decisions made during the design process can have long term impact on the residents' quality of life and the project's overall sustainability. Each decision must be made carefully, with full understanding of their implications for the future.



Sustainable design strategies are guided by the building's climate zone and location. Designs can be influenced by solar angle, natural ventilation, rainfall, and heating and cooling needs.

image: CaSa Architects

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UTILITY BURDEN: ENERGY AND WATER

Ensuring that residents have an affordable home means more than maintaining rent cost affordability.

The 70% of income retained after paying housing costs is often still tightly constrained. If utility bills become sufficiently high, residents may face the difficult choice between paying for energy and water bills, or paying for other important life expenses.

Efficient design supports long term sustainability, both in affordability and environmental impact.

"Housing conditions and energy consumption place an additional financial burden on families with low incomes, who often face the trade-off between energy costs and other essential expenditures."

- Urban Institute Report, Why Housing Matters for Upward Mobility

ENERGY BURDEN

According to the US Department of Energy, low-income households sustain up to three times the energy burden of other households.[44] The physical infrastructure and design of the home can contribute greatly to lowering energy burdens.

A large portion of electricity in residential buildings is used for heating, ventilation, and air conditioning (HVAC) and large appliances. Energy efficient design and specifications can greatly reduce energy cost.

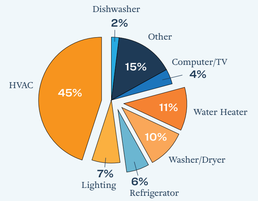

image: Adapted from Global Green USA

This graph shows electricity use in buildings. HVAC and large appliances use a significant portion of energy in homes. Good design and specifications have the potential to reduce these and generate energy savings.

WATER BURDEN

Water efficiency can also reduce residents' cost burden. According to the Low Income Household Water Assistance Program, households at 75% of the federal poverty level pay 40% of their monthly income on water and sewer utilities.[43]

Design strategies like specifying low-flow fixtures or using reclaimed water can lower water use. Reducing water use, in addition to its own cost benefits, can also reduce the use of energy for heating domestic water.

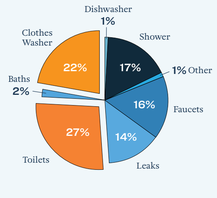

image: Adapted from Global Green USA

This graph shows water use in buildings. Toilet flushing and clothes washing alone comprise nearly 50% of household water use. Efficient appliance and fixture specifications can greatly reduce water load.

DESIGNING FOR ENERGY EFFICIENCY

The highest-performing buildings are consciously designed for efficiency from the beginning. From deciding building massing to selecting fixtures, every design element counts.

The book, *Greening Affordable Housing*,[45] contains an in-depth exploration of topics related to sustainable design. Some design recommendations are described to the right.

SOLAR ORIENTATION

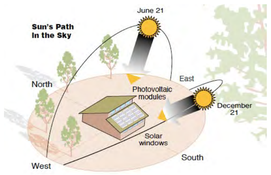

image: Nimish Biloria

Solar orientation determines the most efficient building massing. In cold climates in particular, longer building faces that are oriented towards the south can better harness heat and light from the sun. Proper orientation can reduce the energy needed for lighting and HVAC and optimize solar panel performance.

SHADING STRATEGIES

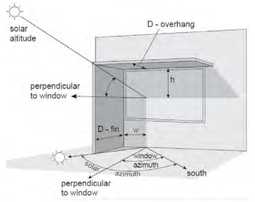

image: Lawrence Berkeley National Laboratory

Overhangs and shading strategies on southern building faces take advantage of the difference in sun angle between summer and winter. Shading over windows prevents summer sunlight from overheating the space, while allowing it in during wintertime. These strategies can significantly reduce heating and cooling load.

NATURAL VENTILATION

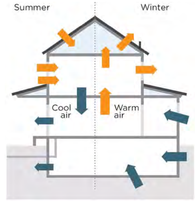

image: Elevate

Natural ventilation strategies use window and air corridor placements to create intentional airflow. Wind directions and the natural upward movement of hot air guide these design strategies. Natural ventilation reduces the energy needed for heating, cooling, and ventilation.

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AIR BARRIER

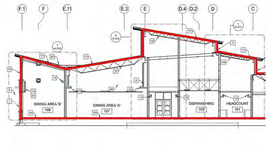


image: Nexus

Air barriers are a membrane that prevent heat loss and moisture accumulation. They prevent unintentional movement of air through cracks and gaps in the building assembly. The air barrier should be continuous and unbroken throughout the facade of the building. Ideally, it can be drawn with an unbroken line, as shown above.

INSULATION

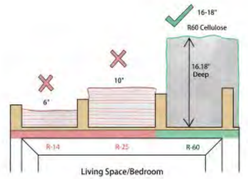


image: Greenattic

High R-value insulation protects buildings from the temperature swings of the exterior environment. Energy loss from maintaining interior temperatures can be reduced.

HIGH-PERFORMING WINDOWS

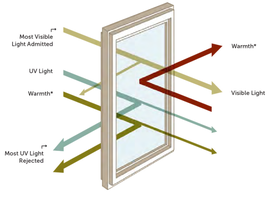


image: Lux Windows and Doors

High-performance windows maintain the thermal comfort of interior spaces while letting in adequate daylight. Glass with special coatings can prevent infrared and ultraviolet radiation from passing through and affecting internal thermal comfort. Double- or triple-glazed windows also maintain thermal barriers.

FIXTURE EFFICIENCY

image: The Kim Six Fix

Energy and water efficient fixtures reduce the energy and water use for daily resident activities. Utility companies may also offer rebates for the installation of low-flow fixtures.

BUILDING LIFE CYCLE

One way of tracking a building's environmental impact is through measuring its carbon footprint.

LIFE-CYCLE ASSESSMENT (LCA)

is the systematic analysis of environmental impacts of a building or material throughout its life cycle.

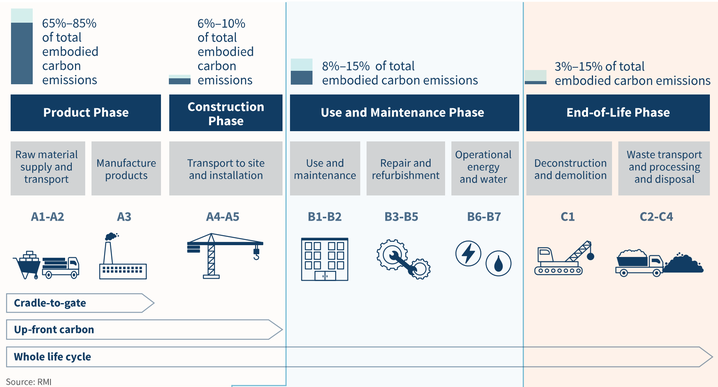
EMBODIED CARBON

is the amount of carbon emissions produced over a building material's lifetime, including manufacture, transportation, maintenance, and degradation.

DURABILITY

Frequent need for replacement or repair can increase carbon footprint and generate unnecessary waste. Hard-wearing and easily maintainable materials can reduce the carbon impact of maintenance.

Life-Cycle Assessment Phases



Source: RMI

UP-FRONT CARBON

Embodied carbon begins in the materials production process.

Upfront carbon is defined as the "carbon emissions released before the built asset is used."[46] Procurement, manufacture, and transportation distance to the site all impact the upfront carbon footprint.

OPERATIONAL CARBON

Resource use determines building efficiency and carbon footprint.

Operational carbon is defined as "The emissions associated with energy used to operate the building or in the operation of infrastructure."[47] Some buildings that generate their own energy can have negative operational carbon impacts.

END-OF-LIFE CARBON

Carbon impacts continue past the building's active life.

End-of-life carbon is defined as, "the carbon emissions associated with deconstruction/ demolition, transport from site, waste processing and disposal phases of a building or infrastructure's life cycle which occur after its use."[48]

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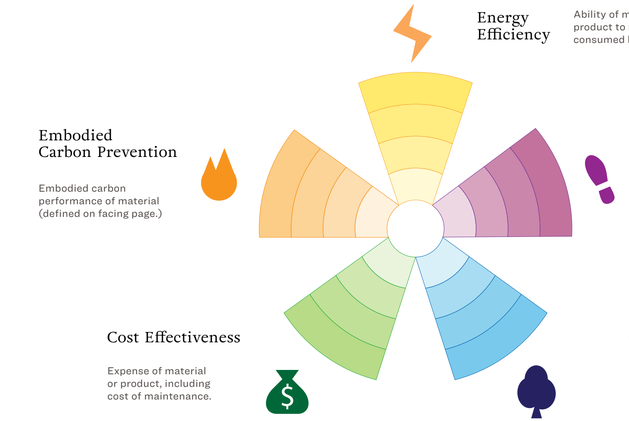
MATERIAL AND PRODUCT SELECTION

Choosing sustainable materials for a project can be a very complicated process. It is important to consider material choice from many different perspectives. Each material has upsides and downsides, which must be compared against project goals. No one material is sustainable in every situation.

The balance of considerations when choosing a material can be represented by the diagram to the right. Each material negotiates trade-offs between embodied carbon, energy efficiency, durability, cost effectiveness, and environmental compatibility.



DURABILITY

'Home' should be a place that lasts.

Materials used in affordable construction, just as in any other type of construction, need to be sturdy and stand the test of time. Proper material choice, design solutions, and construction techniques are important for minimizing construction and maintenance costs. Whether homeownership or rental units, building with long-lasting, decay-resistant, and durable materials can help to reduce the cost and inconvenience of demolition and premature repair or rehabilitation.

Careful, thoughtful design can ensure a lasting community, loved by its residents and neighbors.

image: WSOC-TV

image: Security Luebke Roofing

MATERIAL FAILURE

Choosing materials that age well will contribute to the long-term livability of any community. Long material warranties are critical to prevent material failures before rehabilitation funding is available.

image: C. Ransbury

REGIONAL CLIMATE

Rainfall, temperatures, and snow affect durability. Features like roof overhangs in New England or courtyards in the American Southwest can combat accelerated deterioration from the regional climate.

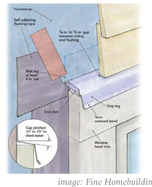


image: Fine Homebuilding

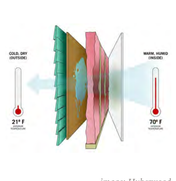


image: Huberwood

MOISTURE MITIGATION

In addition to being detrimental to resident health, moisture is the most common factor in the deterioration of buildings. Properly designed and constructed details at critical areas, such as wall-to-roof intersections and window and door openings, are critical to preventing bulk water and vapor build-up that result in long-term damage to the building.

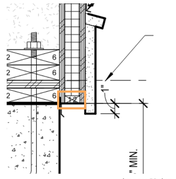


image: Union

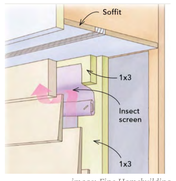


image: Fine Homebuilding

PEST PREVENTION

Pest infestations can be extremely expensive and time consuming to manage. Termites, carpenter ants, and powder-post beetles are particularly damaging to buildings. Simple construction techniques and components can ensure long-term prevention of pest infestations.

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We believe strongly that for neighborhoods of any type to endure, they must be places that are loved by their residents. In no place is this more important than in the creation of durable, v affordable housing.

– *Donald Powers, Union Studio*

AN ENDURING LEGACY

In addition to material durability, building a lovable environment can create a long-lasting, durable community. Each of the previous Building Design sections expand on an aspect of projects that allow them to endure and be loved by their communities.

Beyond any individual detail, resident communities will note and appreciate projects that are carefully designed. To ensure the success of any affordable housing project, it is critical for every design decision to be made with the end user in mind. Specifications, spreadsheets, detail drawings, and every meeting with stakeholders serve their part in the greater goal of creating good places to live.

Creating a community with an enduring legacy is a monumental task. A high standard of design can ensure it lasts.

Testimonials

A SUCCESSFUL COLLABORATION

There are many stakeholders and participants in the affordable housing development process, who all invest huge amounts of effort and resources to create much need housing communities throughout the United States. Balancing differing perspectives and needs effectively requires patience and empathy, as well as the skills and fortitude to navigate a complex process. The results of a successful, collective effort is rewarding and impactful, making the journey worthwhile.

CLICK VIDEO OR SCAN QR CODE TO MEET RESIDENTS AND STAKEHOLDERS OF THE SWEETBRIAR NEIGHBORHOOD

"Affordable Housing is not defined by the cost of construction. What makes Affordable Housing affordable is whether it's affordable each month for those living in it. Poorly designed and cheaply constructed housing means more upkeep and utilities costs every month of every year. This realization needs to be the core value for all that we do."

- DERRILL BAZZY, *Island Housing Trust*

SECTION 5

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Works cited in this document and additional resources for further reading.

- Bibliography
- Endnotes
- Additional Resources

Image by Union

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Additional Resources

AFFORDABLE HOUSING TERMS & STRATEGIES

North Carolina State University, College of Design

https://outreach.design.ncsu.edu/ah+sc/resources/white-papers/affordable-housing-terms-strategies/

HOUSING WORKS RI

Roger Williams University

HousingWorks RI at Roger Williams University is a clearinghouse of information about housing in Rhode Island. We conduct research and analyze data to inform public policy. RI Housing helps develop communications strategies and promote dialogue about the relationship between housing and the state's economic future and our residents' well-being.
https://www.housingworksri.org/

JOINT CENTER FOR HOUSING STUDIES

Harvard University

The Joint Center for Housing Studies is connected to national and international networks as to investigate and illuminate housing's critical role in the economy and in communities. They continue to foster strong academic ties with schools, faculty, and students from across the university community, and to engage with new initiatives on global urbanism, sustainability, and other critical topics for the 21st century. Most importantly, their work continues to serve as a resource for scholars, public and private sector leaders, housing practitioners, and policymakers. A large and growing share of US households cannot find housing they can afford. A major focus of their research is to document the housing cost burdens that both renters and homeowners face, and to analyze the complex interrelationships among household incomes, housing prices, and the market dynamics driving affordability trends. We incorporate our findings into our signature reports and make our national, state, and metro-level cost burden data available through a variety of interactive tools.
https://www.jchs.harvard.edu/

LOCAL HOUSING SOLUTIONS

ABT Associates and NYU Furman Center

Local Housing Solutions is a one-stop housing policy platform with actionable tools and step-by-step guidance to help cities develop, implement, and monitor local housing strategies. Developed for policymakers and practitioners from cities of different sizes and different levels of resources and technical capacity, LHS presents a rich and evolving set of resources to support comprehensive, balanced, and equitable housing strategies that enhance affordability, protect low-income residents from displacement and unsafe conditions, and foster inclusive neighborhoods. LHS also provides information to help cities pursue housing policies that reduce disparities, advance opportunity, and promote racial equity.
https://localhousingsolutions.org/

NATIONAL LOW INCOME HOUSING COALITION

NLIHC's goals are to preserve existing federally assisted homes and housing resources, expand the supply of low income housing, and establish housing stability as the primary purpose of federal low income housing policy. NLIHC's staff teams work together to achieve our advocacy goals. Our Research Team studies trends and analyzes data to create a picture of the need for low income housing across the country. Our Policy Team educates lawmakers about housing need and analyzes and shapes public policy. Our Field Team mobilizes members and supporters across the country to advocate for good housing policy. Our Communications Team shapes public opinion of low income housing issues. And our Administration Team works to ensure NLIHC remains a sustainable, high-capacity organization.
https://nlihc.org/

LOCAL INITIATIVES SUPPORT CORPORATION (LISC)

A safe, affordable home is one of the basic requisites of life—a key to individual health and well-being, and the foundation for sustainable, economically vibrant and diverse neighborhoods. Housing is where LISC started. And it's still the cornerstone of our mission, even as our vision has expanded to include catalyzing opportunity for people and places in many ways: through education, good jobs, health, safety and economic development. LISC continues to make quality, affordable housing available to low-income and vulnerable residents—from seniors to veterans to the formerly homeless—in undeserved communities.
https://www.lisc.org/our-initiatives/affordable-housing/

LINCOLN INSTITUTE

The Lincoln Institute of Land Policy seeks to improve quality of life through the effective use, taxation, and stewardship of land.
A nonprofit private operating foundation whose origins date to 1946, the Lincoln Institute researches and recommends creative approaches to land as a solution to economic, social, and environmental challenges. Through education, training, publications, and events, we integrate theory and practice to inform public policy decisions worldwide.
Work is organized around six goals: low-carbon, climate-resilient communities and regions; efficient and equitable tax systems; reduced poverty and spatial inequality; fiscally healthy communities and regions; sustainably managed land and water resources; and functional land markets and reduced informality. It also provides lots of great research on how these goals are relative to housing.
https://www.lincolninst.edu/about-lincoln-institute

CENTER FOR INCLUSIVE DESIGN AND ENVIRONMENTAL ACCESS

School of Architecture and Planning, University of Buffalo

The IDEA Center is not your ordinary design firm, university research center, or R&D company. It is a globally recognized center of excellence committed to creating and implementing inclusive design policies, practices, environments, and products. They are a dynamic group of researchers united by shared values. They are committed to creating a more inclusive world – for their clients, their team, and their community.
https://idea.ap.buffalo.edu/resources/