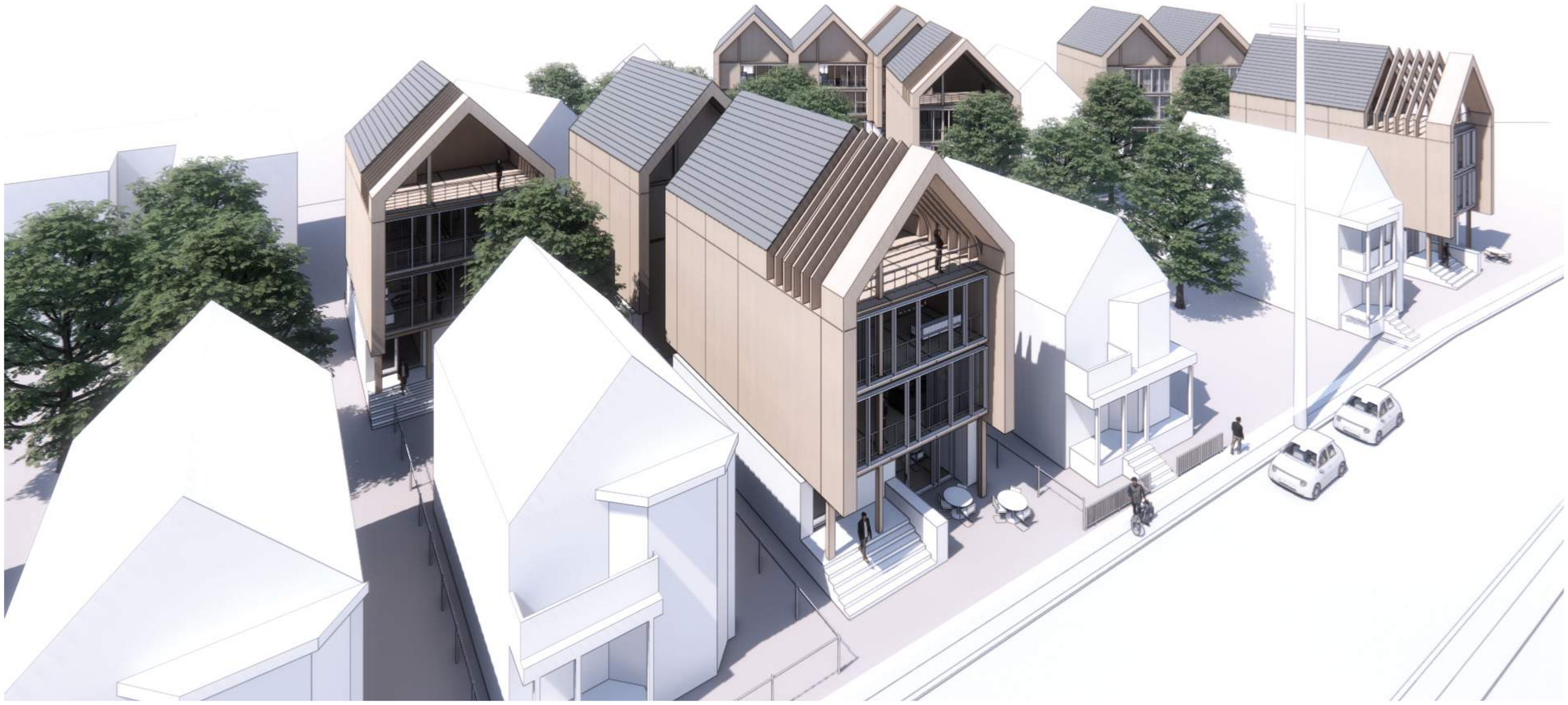


Community Engines

The Mayor’s Housing Innovation Lab and Boston Society for Architecture

Request for Ideas: Co-Creating Boston’s Future Decker

Perkins&Will

Flow Design Inc.

BARNAT DEVELOPMENT
Real Estate Development & Management

July 30, 2021

Community Engines

Starting at the end of the 19th century and lasting over forty years, the triple decker housing typology was the engine that drove residential development in Boston's neighborhoods. Now, a century later, we look to use the the core concepts from this exemplary model in innovative ways to promote a new era in housing growth that is affordable, equitable, and integrated into the fabric of our neighborhoods.

This new model needs to be socially, economically, and environmentally sustainable. These new multifamily houses need to be more than great places to live; they need to provide local jobs, grow and strengthen the communities where they are located, promote health and well being, and provide amenities that benefit local residents.

We are not just making houses, we are making Community Engines.

Contents

01. Our Team: Partnerships as Engine

Barnat Development

Sarah Barnat founded Barnat Development in October 2015 as a full service real estate development company. She concentrates her company's development efforts in urban, mixed-use and transit-oriented new residential construction. Ms. Barnat has fifteen years of real estate development experience in which she has successfully developed twelve high-profile, transformative projects totaling over 2,000 residential units, of which 1,787 units were permitted in the City of Boston. She has developed over $1 Billion of new construction residential projects as Vice President of Development for National Development (2011-2013) and Senior Project Manager for Trinity Financial, Inc. (2002-2011). Prior to founding Barnat Development, Ms. Barnat was Executive Director of the Urban Land Institute Boston/ New England District Council (2013-2015). Barnat Development is a Massachusetts certified Women-owned Business Enterprise (WBE) and Disadvantaged Business Enterprise (DBE). Ms. Barnat was named one of Boston Business Journal's Power 50 Game Changers in December 2016.

Flow Design Inc

Flow is a culturally diverse architectural ecosystem where everyone has a voice and a shot at making a better world through the use of materials, form, and space. Our design philosophy is fueled by the strengths and skills each partner brings into the table to achieve a common purpose: great and impactful architecture for humanity. The process is essentially an organized oasis of resources working in harmony via thoughtful collaboration. Collaboration is so much more than just working together to execute a project. It is about an exchange of ideas that catalyze each other. It is about learning from and about each other. It is about using the power of design to elevate our communities and our purpose, and about the power of diversity to create a whole that is far more than the sum of its parts.

Perkins&Will

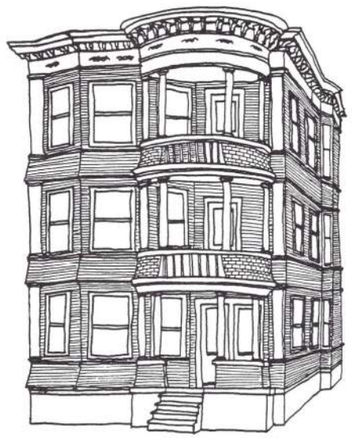
Perkins&Will is a global design firm with a local presence embedded in the city of Boston. As a local studio, we aspire to build and strengthen healthy, safe, beautiful, and affordable living for the community in which we live. We have partnered extensively with local agencies, municipalities, community leaders, and developers with whom we share our global thought leadership and experience designing for multifamily housing solutions in both public and private partnerships at every scale. At the heart of our work is a deep sense of purpose, making every project about its people and unique place. We draw on our research-based practice, leveraging cutting-edge knowledge and a culture of innovation to design ideas and methods for the future. We are passionate about housing--creating affordable homes that empower every neighborhood to succeed and grow on their own terms. Spanning all of these core values--purpose, research, affordable housing--is the lens through which we begin each project; it's called Living Design, and it means that our work must equally value well-being, sustainability, resilience, regeneration, and inclusion if we are to achieve our goal of making the world a better place through design.

02. Project Overview

Triple deckers have been a staple of Boston's housing stock for over a century and remain today as the most common typology in the city. Triple deckers were successful from their inception, and in many respects remain a model housing typology to this day. But times have changed, and the model must evolve to stay relevant. Our proposal seeks to retain the most critical concepts of historic triple deckers and use them as a starting point for a new housing model that addresses current needs, challenges, and opportunities of our Boston communities. This new model strives to address the goals set forth in the Request for Ideas:

1. Affordability through Innovation
2. Diversity of Housing
3. Community Cohesion
4. Partnerships

Developed in the late 19th century as housing for new waves of immigrants and a growing working class families, the triple decker model housed three families in a typically identical stacked floor plate that was easy to construct and efficient to build. Triple deckers were **successful as a financial model** as well, with each owner-occupied unit subsidized by the two apartment units. Over time, the model has proved remarkably resilient. Suited for residents of all types at varying stages of their lives, they have housed single professionals, long-time roommates, committed partners, married couples and growing families. It was common for triple deckers to eventually transform into multi-generational households, with relations occupying each floor.



Colonial Style Triple Decker

This proposal for affordable housing in Boston attempts build upon the **key values and concepts** that made triple deckers so successful while capitalizing on innovative approaches to create a new housing typology. Using modern materials and technologies, this framework for a new multifamily housing typology has the potential to quickly transform available parcels into vibrant, cost-effective properties and units, providing more housing in more neighborhoods.

For this idea to be successful at a meaningful scale, it needs to incentivize and proliferate construction of this typology **across all neighborhoods of Boston**. There are three fundamental elements that need to be embedded within this framework:

(1) **Beneficial.** It needs to provide benefit to the surrounding community beyond simply adding to the housing stock. To achieve this we propose that each project provide a unit that is not a residential unit but instead providing a valuable amenity to the neighborhood

(2) **Transferrable.** It needs to be transferrable across all neighborhoods in Boston. To that end, we picked 65 and 71 Ballou Avenue in Mattapan because they are both typical parcels. Our foundational thinking about these two sites can theoretically be applied everywhere in the city.

(3) **Flexible.** The framework cannot be static, it needs to work for a wide variety of people with diverse needs and it needs to be able to evolve over the life of the building.

Here is a simplified example step-by-step process to deliver the project, using our core concepts as drivers for each stage of the process:

1. **Location.** Choose parcel(s) for development that will offer benefit to the broader community in addition to providing much needed housing.
2. **Zoning.** Relax zoning restrictions for FAR, setbacks, and height to allow for increased density
3. **Construction.** Lease the land to a developer with restrictions and incentives to hire local labor and/ or fabricate pieces of the building locally.
4. **Community.** Collect neighborhood input on the best use of a single unit on the ground floor that will benefit residents.
5. **Sustainability.** Make a low carbon, super efficient building that addresses resiliency and strives to improve the health and well being of its inhabitants.
6. **Design.** Design aesthetically pleasing, thoughtfully proportioned buildings with access to daylight, green spaces, and all of the comforts of home.

To achieve this vision will require thoughtful conversation, teamwork, and compromise, especially around difficult ideas such as relaxing zoning restrictions, but we recognize that we need to be innovative to make real change. Below is a list of the core concepts with some key considerations:

Location

1. Neighborhood - what are the needs?
2. Proximity - what is nearby?
3. Adjacency - to neighbors/ resources
4. Transportation - access to public transit

Zoning

1. Limitations - what are barriers for density?
2. Opportunities - where to propose changes?
3. Strategies - how to modify rules?
4. Challenges - where can this be difficult?

Construction

1. Affordability - where to save money
2. Simplicity - stack wet walls, shared amenities
3. Ease of construction - needs off site fabrication
4. Core/ Shell - remove aspects of interior fit out

Community

1. People - requires input and involvement
2. Neighborhood - assess needs and interests
3. Shared Spaces - build community within
4. Exterior - connection to street, neighbors

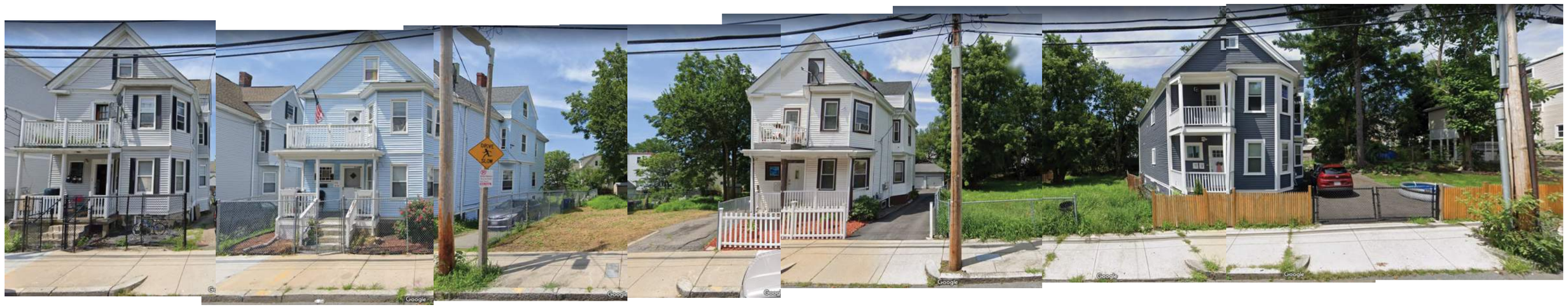
Sustainability

1. Carbon footprint - embodied and operational
2. Resilience - has to address climate change
3. Social - must provide benefit to neighborhood
4. Accessibility - needs to be affordable

Design

1. Scale - must fit in with neighborhood
2. Aesthetic - should feel residential
3. Daylight - must maximize access to nature
4. Comfort - within units and in shared spaces

03. Site Selection: Location as Engine



Ballou Avenue - Looking Toward 65 and 71 (Empty Lots)

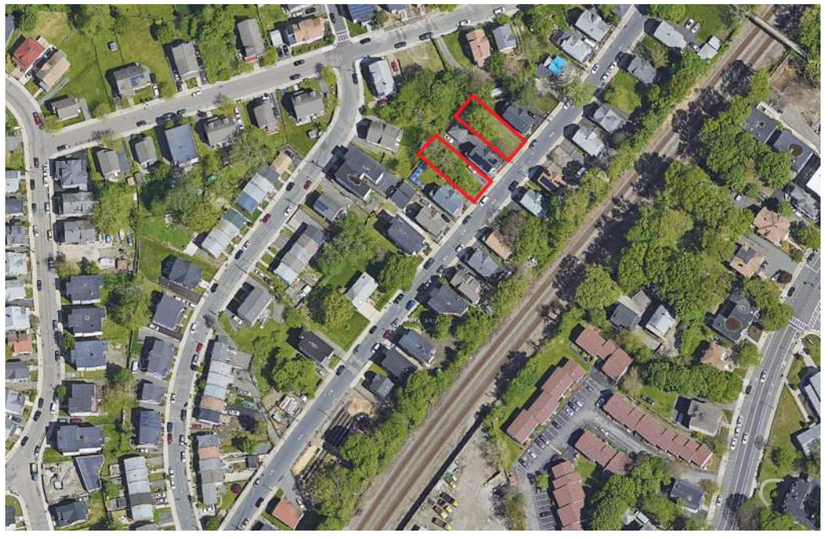
“The Ballou Avenue sites are quintessential Boston land parcels that represent the immense potential of our core concepts to be applied across all Boston neighborhoods.”

Why Here?

This location represents a typical condition that can be seen anywhere in Boston, thus serving as a test bed for the core concepts that could be picked up and applied in their own unique manner on other parcels in other neighborhoods. 65 and 71 Ballou Avenue in Mattapan are both empty lots, traditionally sized and rectilinear in shape, located adjacent to traditional neighborhood scaled houses including triple deckers. These are attributes that are extremely common in most of Boston’s neighborhoods. In addition, this location is highly residential and contains a reasonable mixture of street and off street parking.

65 and 71 Ballou Ave, Mattapan

Map View of Ballou Avenue



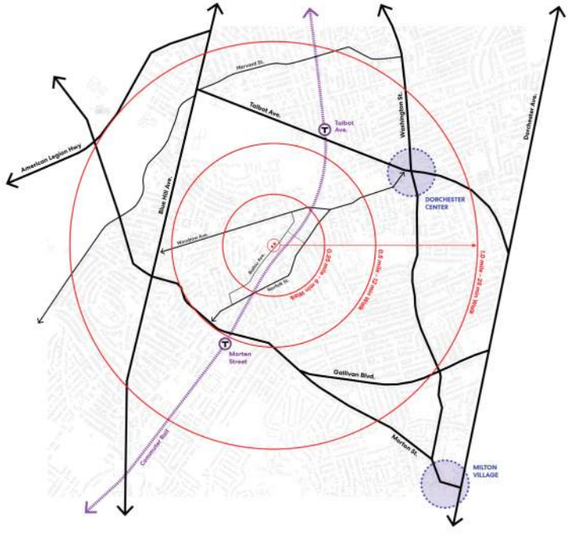
04. Site Analysis: Ballou Avenue, Mattapan

65 and 71 Ballou Avenue are located in the heart of Mattapan, almost equidistant between the two major Commuter Rail stops of Talbot Avenue and Morton Street, shown with T symbol below. These stops provide direct access to South Station in downtown Boston. The closest centers of commerce (purple) are 20+ minutes away walking. There are major thoroughfares (black) that are heavily trafficked by cars and buses. The neighborhood is richly populated with multifamily residential units of varying styles and typologies. There are empty parcels of land on many blocks, some of which have been turned into urban farming locations (green). Most grocery stores (yellow) are 10-20 minutes walking from the site, and are limited in selection and size. There are many child care facilities, but not proportionate to density of the neighborhood. Civic, public amenities, and green spaces are abundant, but there are few within a five minute walk.

This site analysis served the team as we considered how the street front unit on the ground floor could give back to the local community. Our mapping exercises led us to the initial idea that the community might be interested in an amenity such as child care, a co-working space, a grocery store selling or locally grown agriculture. These ideas are examples based on site analysis, but in the future project, the community would be directly involved in the process and their voices would shape the final outcome in a meaningful way.

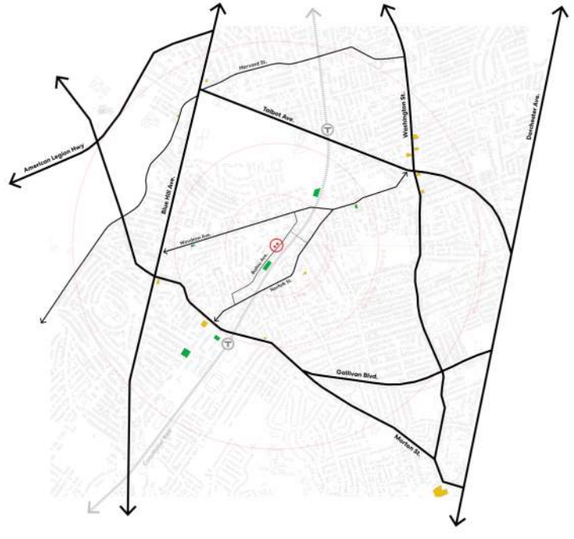
Oasis on Ballou - Urban Farm by Codman Square NDC

Fowler Clark Epstein Farm - Urban Farming Institute



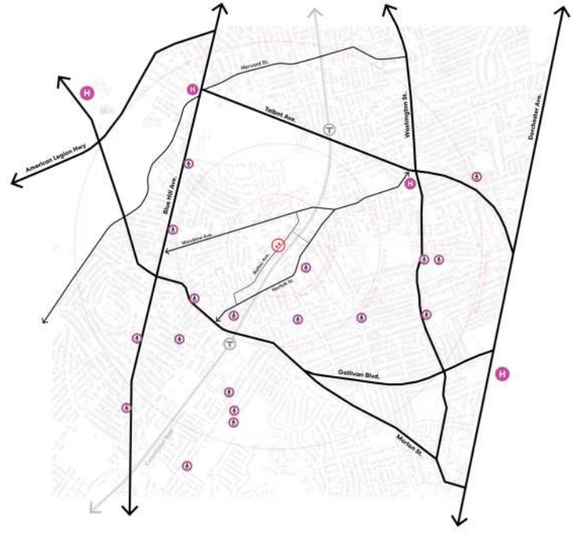
Connections and Walkability

These two parcels are a reasonable walk to public transit on the Commuter Rail and to a wide range of bus stops. This location is nearby two “centers of commerce”, but for many inhabitants, walking 25+ minutes to carry home groceries is too much of a challenge. This location has the possibility to become less dependent on cars as infrastructure and housing develop.



Growing Green

Within a somewhat reasonable walk there are local stores that sell groceries or similar products, but these are mostly smaller corner stores or chain style pharmacies. There are several nearby locations that grow fresh local produce, including several Urban Farming Institute locations as well as “Oasis on Ballou” which is run by the Codman Square NDC.



Family Care

Another notable challenge that could be turned into an opportunity is the lack of child care compared to the quantity of residences in the area. Affordable housing is not truly affordable if the other costs of living such as child care, utilities, and public transportation are extremely high. This diagram shows care facilities from small family daycares to larger hospitals.

Civic + Green Space

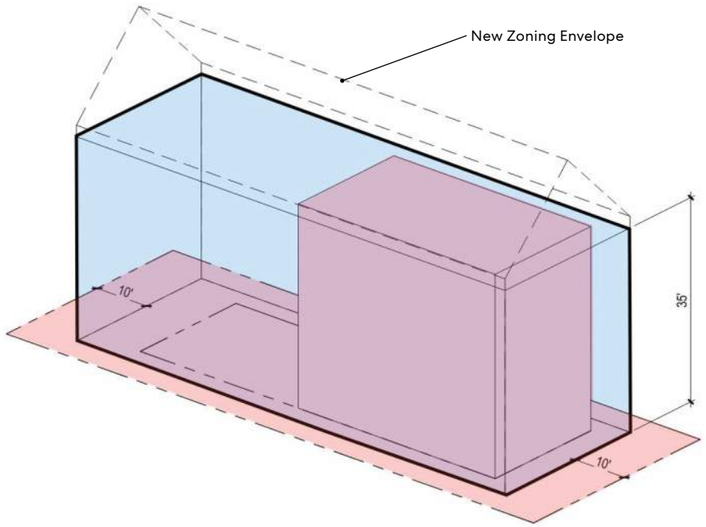
Access to fresh air, daylight, green space, and opportunities for exercise and human connection are central to the health and well being of inhabitants. This diagram illustrates community and civic locations including sports facilities, parks, playgrounds, and community centers. It is notable that 65 and 71 Ballou Avenue are more than a 10 minute walk from many of these amenities.

05. Core Concepts: Zoning as Engine

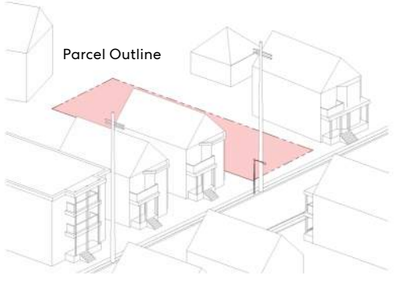
The core concepts we are proposing here could easily be transposed onto many other sites throughout Boston. The concepts balance the desire to fit within the context of the neighborhood while recognizing the need to modify the zoning regulations and challenge the status quo. These two specific sites in Mattapan are typical for Boston land parcels and therefore perfect to test the concepts. The zoning has a 35' foot max building height with a Floor Area Ratio (FAR) of .6, meaning that the built footprint, if a single story, can occupy 60% of the site. To increase density and provide more housing supply, we need to increase the allowable FAR and relax the overall height restriction.

One strategy to address the challenge of zoning is to implement a Ground-Lease on currently vacant property for the purpose of densifying developments. This has a multi-faceted benefit of removing land acquisition costs and allowing the city of Boston to retain control of the land and therefore be more suited to allow relaxed zoning. Likely opportunities for such loosened restrictions include increasing the FAR, removing minimum parking requirements, reducing setbacks, and removing height restrictions. In the following examples, these changes would allow a six unit building on a single typical parcel.

Another benefit of keeping ownership in the hands of the city would be a unique opportunity to open up ground floor street facing unit to be an amenity beneficial to the specific community. This use could be based on the needs or interests of people in the neighborhood and could be flexible enough to change over time. Based on our initial site analysis, examples of beneficial amenities in this neighborhood could be a day care center, a co-working space, or a grocery store selling locally produced agriculture.

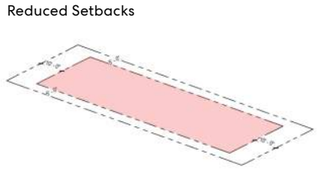


Overlay of increased FAR example (blue) on traditional triple decker volume (red)



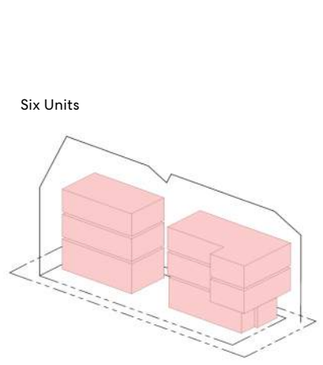
Typical Boston Parcel

71 Ballou Avenue (shown above) is a typical, mid-block site that could be found almost anywhere in Boston. Adjacent residential units are somewhat traditional although immediate neighbors are not "true" triple deckers. Site dimensions and proximity to both the street and the surrounding neighbors are typical. There are hundreds of empty parcels that look almost exactly like this one.



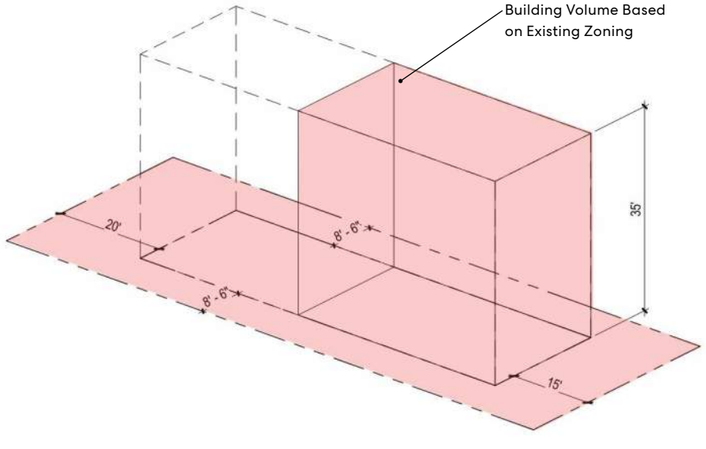
Reducing Setbacks

As the population continues to grow, maximizing the quantity of bedrooms and units on typical land parcels will become even more critical. There will be trade-offs between reducing setbacks and still providing green space, privacy, and comfort, but it can be accomplished with thoughtful design and careful consideration of the site conditions and adjacent buildings and parcels.



Diverse Unit Sizes

Triple deckers traditionally have identical stacked floor plates meaning that each layout was the same. Often times owners would "wall off" a dining room to make an extra bedroom to accommodate changes over time. Making small but efficient floor plates with multiple unit types and sizes gives an opportunity for different price points and entries into ownership. It also allows for more units per location, adding to the housing stock. In this example, the units range from 600 to 900 square feet.



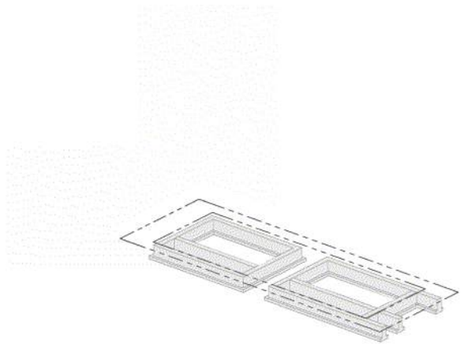
Typical zoning requirements

05. Core Concepts: Community as Engine

Small to mid sized multi-family construction is an opportunity for local builders, tradespeople, and teams. There are many barriers to entry into the market, especially when there is so much competition and a high cost of initial investment. Even though there are challenges, they could be turned into opportunities. The team sees the proliferation of these residential projects as a chance to bring people together, to recognize the value in providing more housing, in turning empty and abandoned lots into housing and amenities for the neighborhood, and for coming together as a community for self improvement.

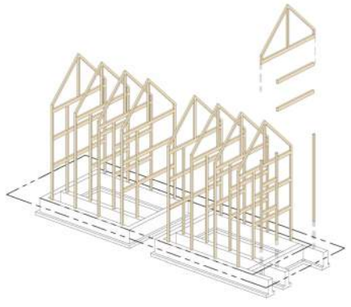
These projects could take on a more community and localized approach in construction and not just conception. To achieve this goal, the framework needs to be about how and when local community members can be involved and take ownership and pride in the process, even if they are not the end user resident. This could be done by having community build days - like Architecture for Humanity - but specifically targeting neighbors to the site. Much like a barn raising used to bring everyone together to help the neighbors and the community, these projects could be a way to meet the neighbors and beautify a site.

Another idea is to use these projects as a way to catalyze local industry. There are under utilized local warehouses that could be ideal locations for constructing pre fabricated elements such as the exterior panels. This would not bring local jobs for local projects and would additionally reduce the carbon footprint of the projects.



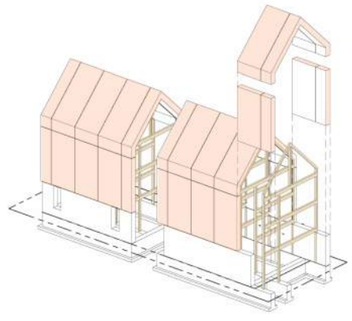
Foundations

There are many expensive and potentially challenging components in a newly constructed triple decker. Foundations are an example of an element that requires multiple trades, significant time, large potential weather impacts, and high overall costs. An alternative method for the foundation from a excavated basement would be grade beam style footings.



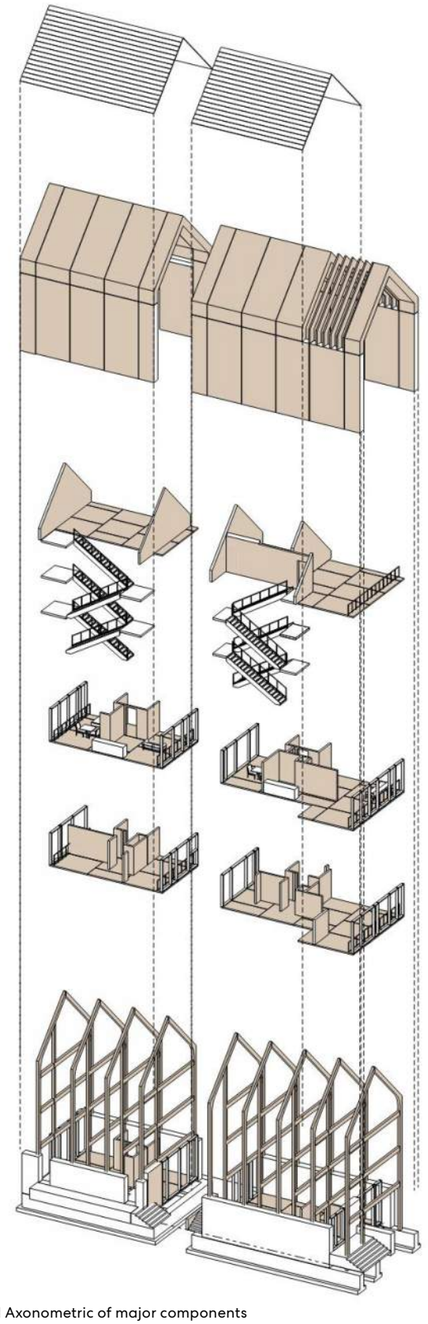
Mass Timber

Mass Timber is quickly becoming both more common and more practical. FSC certified glulaminated frames can be fabricated off site and bolted in place on site, significantly reducing on site construction time and potential weather challenges. These frames have a very low carbon footprint and are extremely strong and versatile, essentially creating an exoskeleton for the entire building.



Insulated Panels

Insulated panels such as SIPS are common building elements for small and medium multifamily dwellings. These can be easily and efficiently fabricated and are highly insulative. One notable economic strategy would be to find a way to have these panels fabricated in and around Boston. Raw materials would arrive to a local warehouse that would be set up specifically for this fabrication thus creating local jobs and reducing the carbon footprint of the facade significantly.

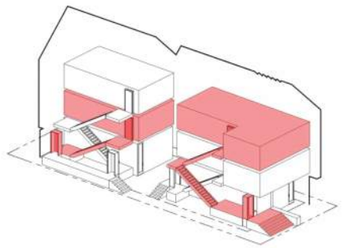


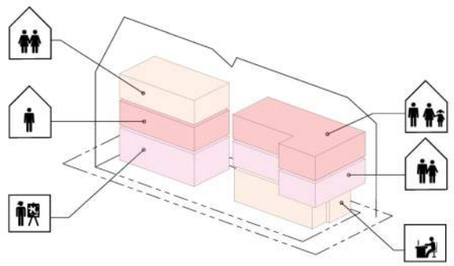
Exploded Axonometric of major components

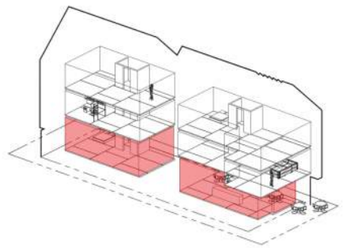
05. Core Concepts: Community as Engine

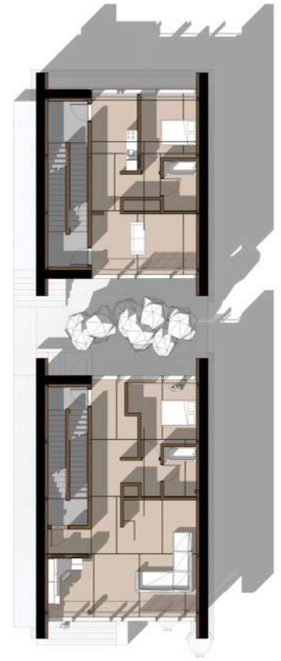
Triple deckers were originally designed around the economy of scale and repetition with identical cookie-cutter units on each floor to reduce. They were mostly similar buildings with a solely residential purpose. The new model that increases density must also recognize the importance of adding value to the neighborhood. Residents often push back at developers and developments that appear to be planned for self interest or that are just adding more housing into the neighborhood. These projects could do more and actually be address specific needs or fill voids where they exist.

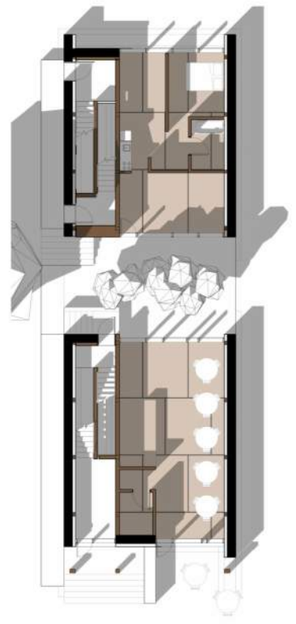
The ground floor street facing unit can be planned for a wide variety of uses based on criteria developed for the specific site. For example, at 65 and 71 Ballou Avenue in Mattapan, the neighborhood is highly residential, but lacks child care, co-working spaces, and stores that sell fresh local produce. This 600 square foot space could be set up as "retail" for day care or a daily farmer's market that sells produce grown by UFI or other organizations. If the neighborhood comes together and determines higher and better uses such as a Community Center or Test Kitchen for local start up home businesses, then they can work with the city on leasing terms and build outs to suit their needs. This can be an incubator and a driver of people and for the local economy. Another option for the ground floor unit(s) is to use them as ADA accessible or in-law units for the older generations of families or folks who have trouble with stairs.











Example Plan Layouts

Identity

There is potential for these projects to provide a sense of identity on the exterior and interior of the building. In this example, the units each have their own entry which provides privacy, identity, individuality. On the interior, no two units will be the same because the model of a "core and shell" allows the unit owner to determine layouts. This personalizing of the place and spaces is unique.

Flexibility/ Adaptability

Families change and grow over time. Different people have different needs. Children grow up and leave home and might even return at some point in their lives. As folks get older or have life events they may have different requirements for access or challenges with stairs. These projects must address the need for customization and find ways to use it as a benefit and not a hindrance. We are proposing a core and shell style construction, systems in predefined wet walls and in the ceilings, and a completely open flexible floor plan.

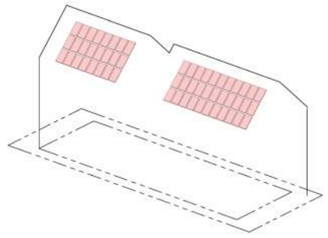
Community

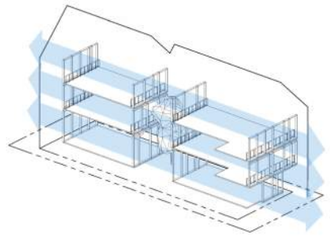
Buildings can connect to the neighborhood in meaningful ways and offer amenities that benefit the community. These projects have the potential to bring program and uses that are additive such as a day care, community center, test kitchen, or co-working space. Each new project is an opportunity to provide a shell space that is extremely flexible, can evolve over time, and suit the needs of many types of business and foster entrepreneurship, strengthening both the community and the economy.

05. Core Concepts: Sustainability as Engine

Any housing solution that addresses affordability must also face the reality of its carbon footprint, the rising cost of energy, and the importance of the well being of its inhabitants. The building itself must provide a respite from the outside world and an enclosure that feels comfortable, safe, and secure, but it must do much more than that. It needs to be extremely efficient and provide energy. It must have a strong connection with the surrounding environment including access to daylight and fresh air. It needs to isolate sounds and visual connections from the immediately adjacent neighbors while still proving access through windows.

One important feature of traditional triple deckers that should be incorporated is outdoor access while still in the building footprint. This can be accomplished by providing a “stoop” as was common in many triple deckers and by providing balconies, decks, and other raised spaces. These outdoor spaces can be both public (shared by residents such as shown in the rendering below) or private like the individual entry discussed previously. Triple deckers often offered exterior spaces in the form of decks and porches as well as public outdoor spaces outside of the building footprint.





Example Building Section

Energy and Efficiency

In addition to providing an extremely efficient shell and reducing energy demands, the major building systems need to be robust and ideally electrically dependent. The building can reduce its own energy consumption by tethering those systems to rooftop photovoltaics. The PV array can be subsidized, owned by the city of Boston or the developer, or sold to the future home owners offering different financial models to suit the needs of the potential stakeholders..

Daylight and Views

It has been proven anecdotally and with science that access to daylight and fresh air improves health incomes for all people. Triple deckers historically provided windows where they made sense for that building, which in many instances means people are looking directly into their neighbors windows. We propose that the windows face the street and the rear yard, offering more expansive views. Smaller punched openings could be provided in a more controlled manner for deeper daylight into interior spaces.

Community Well Being

The value of communal spaces in multifamily residential is as true for a triple decker as it would be for six units, but with the increased density it is even more critical that the communal areas be spacious and feel inviting. This scale is very important in a highly residential neighborhood such as Mattapan. In the rendered example above there is a lofted space at the upper level that could be shared by all of the units with direct visual access to the street below.

05. Core Concepts: Design as Engine

Using our core ideas as a framework, the multifamily building can have different architectural expressions to best fit the neighborhood aesthetic and needs as well as any other potential unique conditions. These rendered examples show different design ideas that strive to address the six core elements within the framework.

In addition to adhering to the framework, these examples address critical elements of design including comfort, privacy, and circulation. The concepts address other important aspects of residential design such as layouts of units, egress, common spaces, unit types and unit mixes. For the purposes of this RFI the focus of the imagery is on the concepts.

The concepts can be adapted in many ways. In the rendered image on the upper left, the building sits back off the street, offering an area in front that could be parking for a business in the first floor unit, creating a retail like connection to the street. Or the area in front of the building adjacent to the street could be used as an outdoor play area for a first floor daycare center.

The concepts could also be applied to an empty lot, a non standard shaped lot, or even a half lot. The rendered view on the bottom left shows what the neighborhood might look like in twenty or fifty years as these projects populate the area. In the foreground is a typical scenario rectilinear parcel with a six unit building. To its left is a single “half size” unit built in the rear yard of an adjacent parcel. In the background is a “duplex” version showing side by side units for a square shaped lot.

Bird’s Eye View of Example Design

Street View of Example Design

Bird’s Eye View of Example Design

Street View of Example Design