2023

Adaptive Reuse of the Suburban Office Building

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ADAPTIVE REUSE
OF THE
SUBURBAN OFFICE BUILDING

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May 2023

Submitted in fulfilment of the requirements for the Master of Architecture degree

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ABSTRACT

My thesis addresses the current issues of office vacancy and the housing shortage. Living in the Portland, Maine area my entire life, I've noticed a lot of gentrification happening in the city downtown, including my dad's little neighborhood he grew up in. I want to create a space where people of all incomes levels have the opportunity to live in.

After a thorough GIS analysis, the ideal site was determined to be 300 Southborough Drive in South Portland. This is only 10-15 minutes from downtown Portland. When adapting a vacant, standalone suburban office building like this one, there are a series of decisions that need to be made to create a successful residential and mixed use environment. There needs to be connections to the existing context and amenities, equitable transportation options, and enough people living there to create vibrancy.

There are also challenges that are inherent in office to residential conversions that need to be remedied or accommodated, like atypical bay widths and long distances from the core to exterior. The when not addressed in the design can cause issues with unit sizes and shapes as well as inadequacies with natural light penetration.

Using the method of carving out an atrium, it allows for daylight to enter into to middle of the building. This language is continued throughout the new buildings to create a cohesive complex. The units are organized in in rows where the northernmost units are accessed through enclosed bridges over the atriums. The ground floor units are accessed through their own exterior front door, like townhouses.

Creating a place with a neighborhood feeling, ample amenities, and unique spaces to explore was the goal of my project.

1

PROBLEM STATEMENT

PROBLEMS ADDRESSED
Office Vacancy

The world has gone through tremendous transformation in the past 3 years in light of the COVID-19 pandemic. In the United States, many have experienced a shift in working environments to hybrid, or even fully work-from-home conditions. One of the main changes has been the increase in flexibility and autonomy for employees. With remote work, employees have more control over their schedules and can often work from anywhere, as long as they have a stable internet connection. This has allowed many people to better balance their work and personal lives, and has given them more freedom to work in ways that suit their individual needs and preferences.

At the same time, however, remote work can also be isolating and can make it difficult for employees to stay connected and engaged with their colleagues and the company as a whole. Without the face-to-face interactions and spontaneous conversations that often happen in an office setting, it can be harder for employees to build strong working relationships and to feel like they are part of a team. A sense of community, especially at a workplace setting is important to people and the success of a company.

Another significant change brought about by the pandemic is the need for companies to be more agile and adaptable. With the rapid spread of the virus and the constantly changing public health guidance, many companies have had to quickly pivot and change their operations in order to stay afloat. This has required them to be more flexible and open to new ideas, and has often involved implementing new technologies and processes in order to enable remote work and other forms of flexible working.

Overall, the COVID-19 pandemic has had a major impact on workplace culture, and has forced many companies and employees to rethink the way that they work. While there have been some challenges, it has also opened up new opportunities for flexibility and autonomy, and has highlighted the importance of being agile and adaptable in today's rapidly changing world. Many people argue that conditions will bounce back to what it was 5 years ago, but other suggest this is a permanent shift.

PROBLEMS ADDRESSED

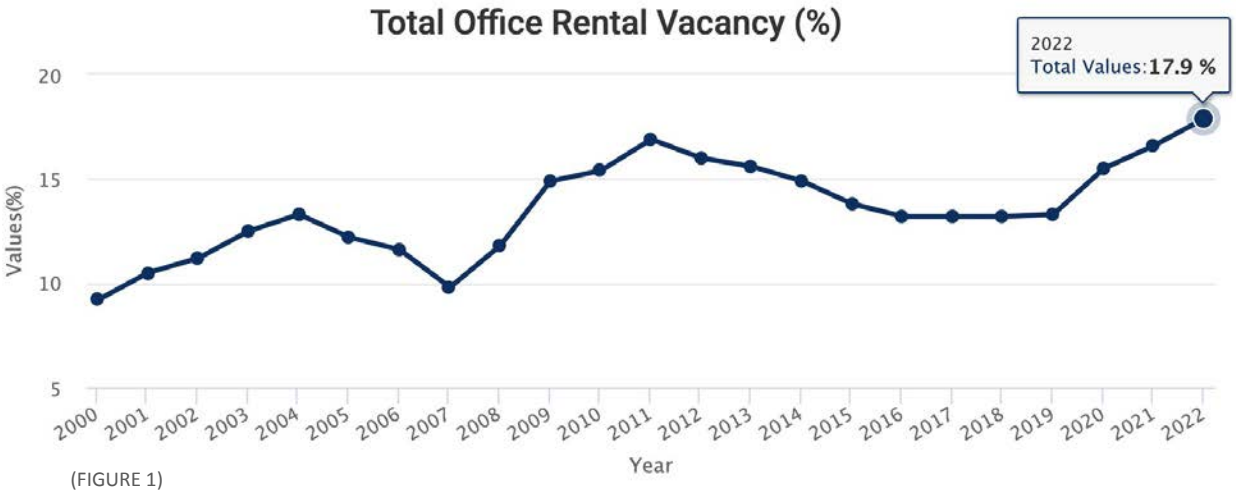
Office Vacancy

This has led to a rise in the number of empty offices, as companies downsize or sublet their excess space. In some cases, this trend has been exacerbated by the economic downturn caused by the pandemic, as companies have had to cut costs in order to stay afloat. As a result, many have decided to reduce their office footprint in order to save money on rent and other expenses. In addition, the rise of flexible working arrangements and the increasing popularity of remote work has made it easier for companies to operate with fewer employees in the office, further contributing to the increase in office vacancies.

The rise in office vacancies has had a number of consequences. For one, it has put downward pressure on commercial real estate prices, as landlords struggle to fill empty space. This can be challenging for property owners, who may have to offer reduced rents or other incentives in order to attract tenants. In addition, the increase in office vacancies can have a negative impact on local economies, as empty office buildings can lead to reduced foot traffic and fewer job opportunities in the surrounding area.

Research suggests that there is a general decline in office parks in many different areas in the US. Real-estate experts state that between 600 million and 1 billion square feet of office space is unused and unnecessary. Many make the argument that Class A office space, which is often isolated due to its orientation around the car, is not ideal anymore. Today's workers want to be able to go to lunch or the gym without having to get into a car.

The question arises, what is to become of these suburban office buildings? There is evidence to suggest that a transformation from single-use to mixed-use can improve the success of the building, and make it more profitable and inviting.



(FIGURE 1)

PROBLEMS ADDRESSED
The Housing Shortage

We also are experiencing a serious housing shortage, and rental costs have gone up, driving low-income families out of their homes. There are a few factors that are slowing the housing production:

1) Since 2008, we haven't been building at the rate in keeping with the demand. Builders went out of business and never recovered.
2) Material and labor shortages induced by the pandemic has contributed to the lack of building in more recent years.
3) Restrictive zoning prevents certain types of housing from being built. On top of this, land restrictions prevent parcels from being divided up to build more affordable options.

Affordable housing production has taken a major hit over all other types. My goal is to design with that in mind.

So, in light of rapidly evolving working environments, creating a mixed use environment is key in assuring the success of these stand-alone suburban office buildings in the future. The question addressed is; can the problems of office vacancy and the housing shortage help solve one another?

(FIGURE 2) https://www.pewresearch.org/fact-tank/2022/03/23/key-facts-about-housing-affordability-in-the-u-s/

2

PROJECT STATEMENT

PROJECT STATEMENT

Objectives:

The main objective of my thesis is to create a adaptive reuse methodology that focuses on the assets that the typical suburban office building offers. I believe that there is value in these failing office buildings, and the solution I am proposing is to make the transition from single-use, to mixed-use. Flexibility and resiliency is inherit in mixed-use environments, and we are seeing a lack of both in Class A office buildings especially.

Factors:

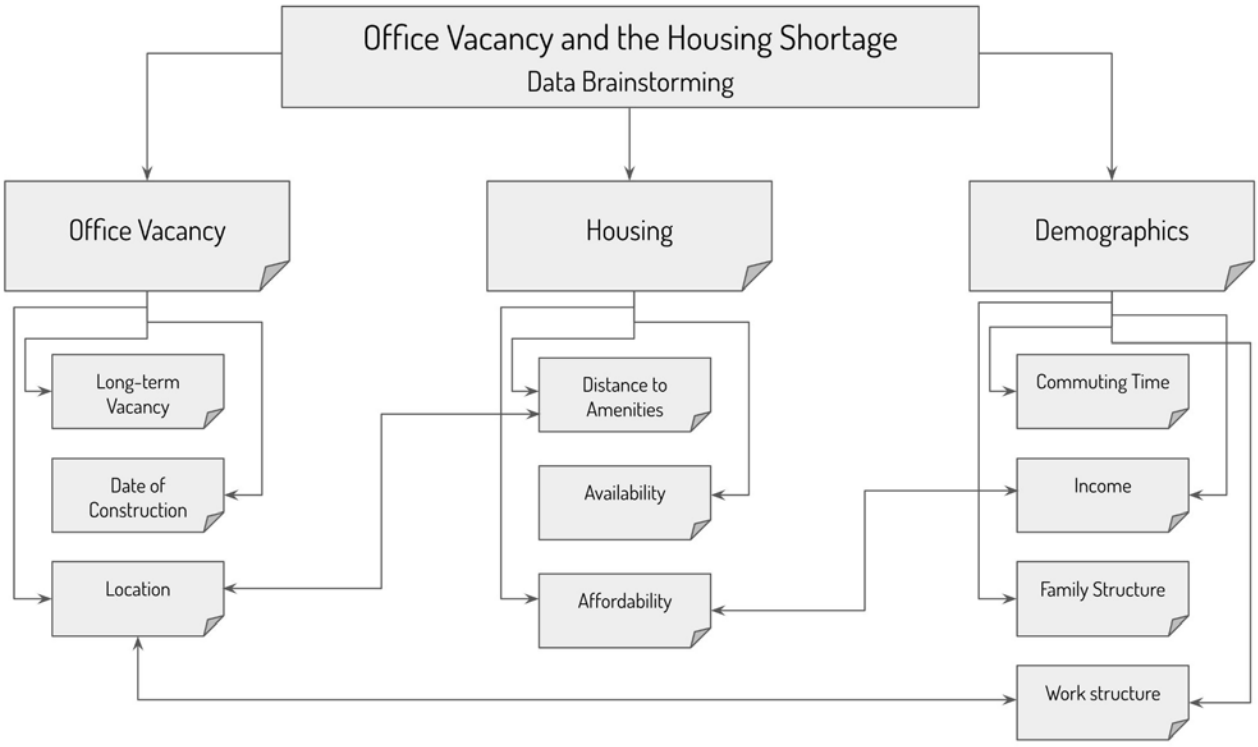
There are a few factors that are thought to be hindrances to adapting office buildings:

The first is the cost of rent. Office rent is higher than apartment rent, so when fully occupied, office spaces make more money than a residential building of similar size. This is why office spaces that are experiencing long-term and large-scale vacancies are better candidates. The second factor is the shape of the floor plates. The longer the distance from the core to exterior of the building, the more difficult it is to convert. The third is the zoning regulations on the site. Some towns are more strict than others in approving zoning variances, which may hinder the effort. The last factor is location. If it is inaccessible other than by personal vehicle, it could be a fruitless effort to try to create this environment in this location.

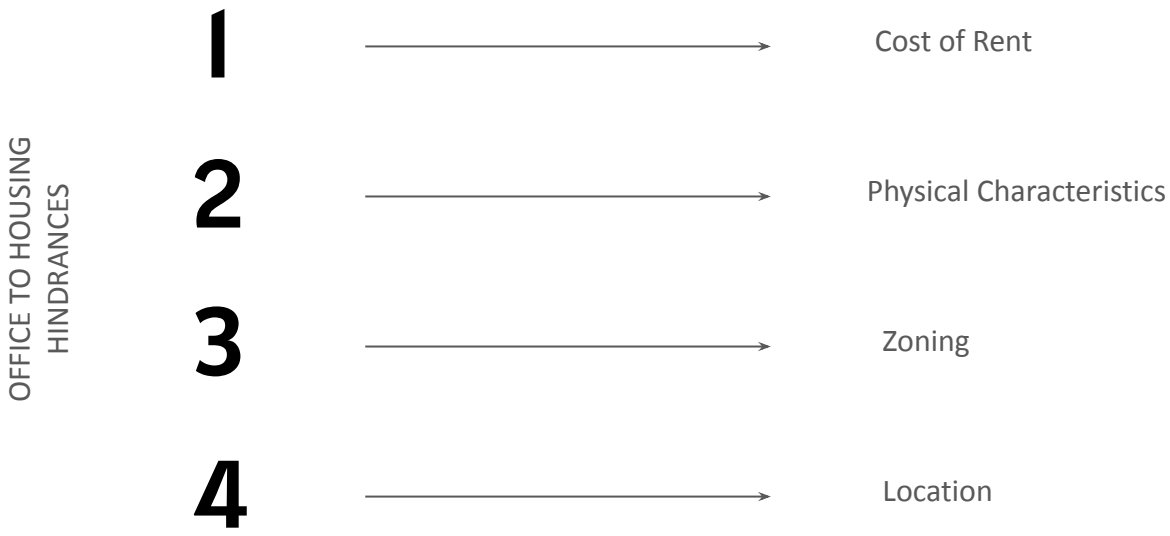
In light of the above, I will develop an approach to office-to-housing conversion on a building that has these hindrances. Through this, a feasibility study will be done to determine whether it is financially and physically realistic for this type of transformation to be applied to other sites.

Obligations:

I will also ensure that my ideas and implementations are in line with the goal and aspirations of the context and community. This will be done through analysis and thorough research of planning and related documents of the city where my site is. This will not only make my project more realistic to the community, but will also exemplify how goals can be translated to reality.



(Figure 3) DIAGRAM OF DATA



Whether office to housing conversion is worth it is a relevant debate, especially amidst all that we are facing here in the United States. The four hindrances, as stated in the previous section will be attacked head on, looking at one specific site as a case study.

3

ARCHITECTURAL INTENTIONS

PEOPLE
Affordability and Accessibility

The first intention of my thesis is to provide accessibility and affordability to my clients. This is extremely important to low income families, who often don't know how easy things can be with simple design considerations. People of this demographic often feel slighted by people in power and need help rebuilding that trust. Listening and understanding them is the firm step. There are a few considerations that are made when discussing developing affordable housing:

Affordable housing refers to housing that is priced at levels that are affordable to people with lower or moderate incomes. There are several factors to consider when designing affordable housing, including:

Unit size: Smaller units typically cost less to build and maintain, so designing smaller units can help keep the overall cost of the development down.

Building materials and construction techniques: Using lower-cost materials and construction techniques can help reduce the overall cost of the development.

Amenities: While amenities such as fitness centers and communal spaces can increase the appeal of a development, they can also increase the cost. It may be necessary to prioritize certain amenities in order to keep the overall cost down.

Financing: Affordable housing developments may rely on government subsidies or other forms of financing to help keep the overall cost down.

It is important to consider the needs and preferences of the intended residents when designing affordable housing. This can help ensure that the development is both functional and desirable for the people who will be living there.

PLACE
Vibrancy in the Mixed-Use Environment

The second intention of my thesis is to craft a mixed-use environment that maintains vibrancy though longer periods of the day, rather than just from 9-5. Mixed-use environments are designed to combine different types of land use, such as residential, commercial, and recreational, in one location. These types of environments can be successful for a number of reasons:

Mixed-use areas offer the convenience of having a variety of amenities and services within easy walking distance. This can be particularly appealing for people who do not own a car or who prefer to live in a more walkable, pedestrian-friendly environment. Mixed-use environments often have a higher density of development as well, which can help to create a sense of community and encourage social interaction.

By providing a variety of land uses within a single location, mixed-use environments can help to reduce the need for car travel and promote the use of alternative modes of transportation such as walking or biking. This can help to reduce traffic congestion and improve air quality. Mixed-use areas can also provide economic benefits by attracting a variety of businesses and generating tax revenue for the community.

Lastly, they can help to create a more vibrant and lively community by providing a variety of activities and amenities for residents and visitors to enjoy.

FORM
Clear Organization and Adjacencies

The third intention of my thesis is to form clear and visually interesting organization and adjacencies between program and elements. It is important to not only offer clarity to the space, but also make it inviting and unique in order to attract people.

My thesis will explore two routes of adaptive reuse on one site. This to offer phasing options to implement design changes from lower impact, to higher impact. The first route will mostly consist of the retrofitting of the existing structure. This is a lower-cost option for the owner. This option would limit the amount of units that can be added.

The second option would be adding three floors above, and building two more structures to introduce more units. This would allow for more market-rate housing to be located above. Although this is a more expensive option, it would increase revenue for the owner in the long run.

I will explore different types of organizations and adjacencies to tailor an environment that fosters collaboration, coexistence, and vibrancy.

SUSTAINABILITY
Keeping the Future at the Forefront

The fourth intention of my thesis is to incorporate sustainable strategies, both passively and actively. It is important to address the future in all construction, whether is new construction or renovations. Here are a few points of attack for implementation:

Energy efficiency: Many buildings in the Northeast are designed to be energy-efficient, using insulation, high-performance windows, and efficient heating and cooling systems to reduce energy consumption.

Renewable energy: Many buildings in the Northeast are beginning to use renewable energy sources such as solar panels or even geothermal systems to generate electricity or provide heating and cooling. Using VRF systems can also reduce heating and cooling costs.

Water conservation: They could also be designed to conserve water through the use of low-flow fixtures and rainwater harvesting systems.

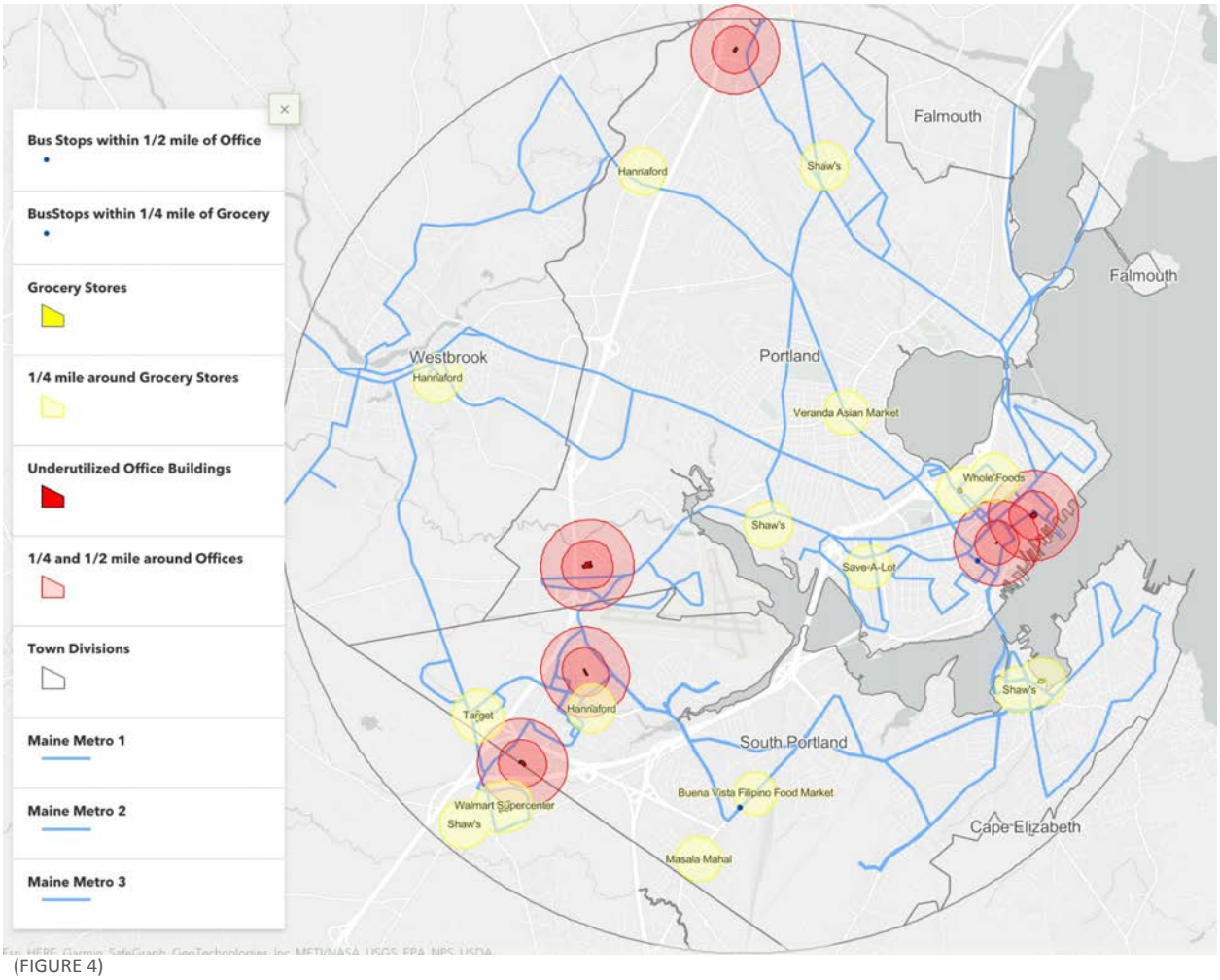
Materials and waste management: Sustainable building practices could also include the use of recycled and locally sourced materials, as well as the implementation of construction waste management plans to minimize the impact on the environment.

Landscaping: Practices such as the use of native plants and rain gardens, can help to reduce the need for irrigation and improve the overall sustainability of a building. There should also be respect the natural features existing on the site. Lastly, returning some elements back to their natural state may be necessary to reduce runoff issues that exist.

4

SITE IDENTIFICATION & RATIONALE

SITE IDENTIFICATION USING ARCGIS

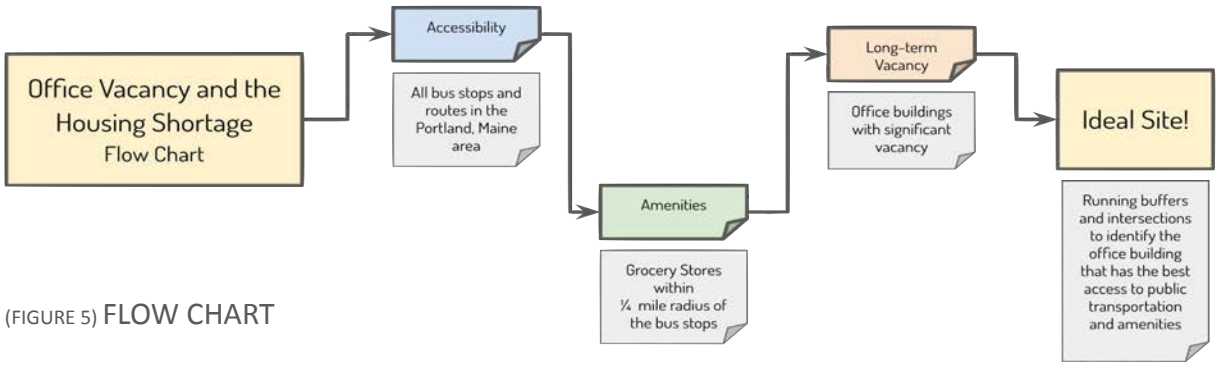


(FIGURE 4)

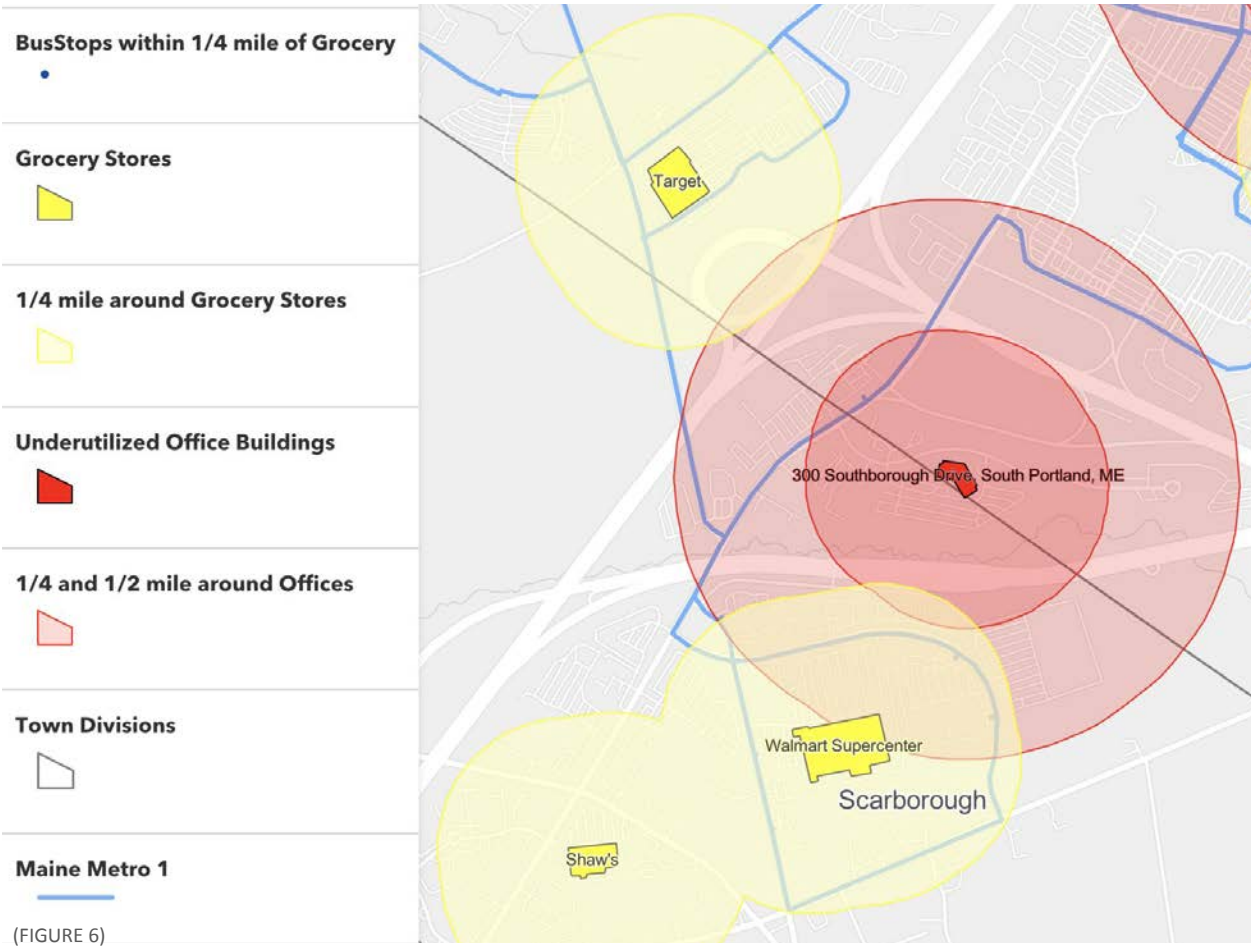
Portland, Maine is known as one of the best cities to live in the United States. We are seeing a lot of work being done to expand and revitalize surrounding communities to accommodate growth in the vicinity of the downtown. This site was one of a handful that I have been looking at as possibilities. This location, in South Portland, was ultimately chosen through a site suitability study done on ArcGIS.

Online resources, like Loopnet, was used in the search for office properties for sale or if most of the floors are empty. Using the Maine Metro bus routes and stops, grocery store proximity, demographic data, and median income data, six potential sites were run through a suitability study.

SITE IDENTIFICATION USING ARCGIS



(FIGURE 5) FLOW CHART



(FIGURE 6)

This site, 300 Southborough Dr. was ultimately determined to be the most ideal site for my adaptive reuse thesis project. There are a few factors that were at play in the decision, most of which were done through GIS analysis; 1. Number of Bus Stops within a 1/2 mile of the building, 2. Proximity to groceries and amenities, and 3. Size of building and design potential.

CONTEXT AND AMENITIES

Homewood Suites
(FIGURE 7)

Sebago Brewing
(FIGURE 8)

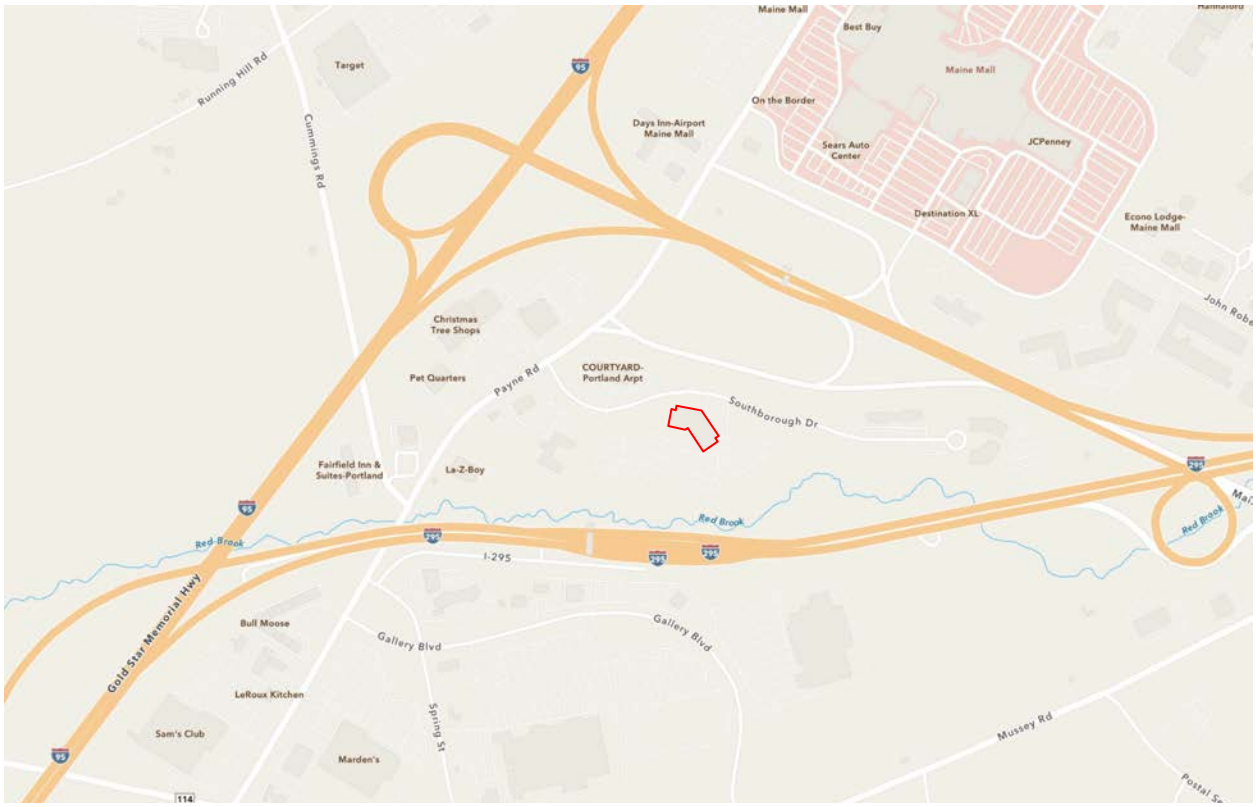
The Maine Turnpike system started to be built in the early 1950s. By 1956, the roads surrounding the site were constructed and running. The land remained unbuilt until the opening of the Maine Mall in 1971, less than a mile from the site. The land became more desirable as the Mall sparked a chain reaction of retail and restaurants in the immediate vicinity. Two hotels, two restaurants, a small furniture store, and 4 commercial office buildings popped up on the site.

The styles seen on the site consist of the both hotels' cookie-cutter designs, and the common 1970s to 1980s brick New England suburban office building. There isn't much architectural context that is powerful enough to respond to. The approach would be to create something new that draws people to the site.

Courtyard Marriott
(FIGURE 9)

500 Southborough Drive
(FIGURE 10)

AERIAL IMAGERY OF SITE AND CONTEXT
(FIGURE 11)



AMENITIES MAP
(FIGURE 12)

SOUTHBOROUGH DRIVE ENTRANCE SIGNAGE (FIGURE 13)

SOUTHBOROUGH DRIVE (FIGURE 14)

MAIN ENTRANCE TO 300 SOUTHBOROUGH PROPERTY (FIGURE 15)

NORTHWEST CORNER SHOWING STREAM AROUND PROPERTY (FIGURE 16)

NORTHEAST ELEVATION SHOWING RETROFITTED EMERGENCY STAIR (FIGURE 17)

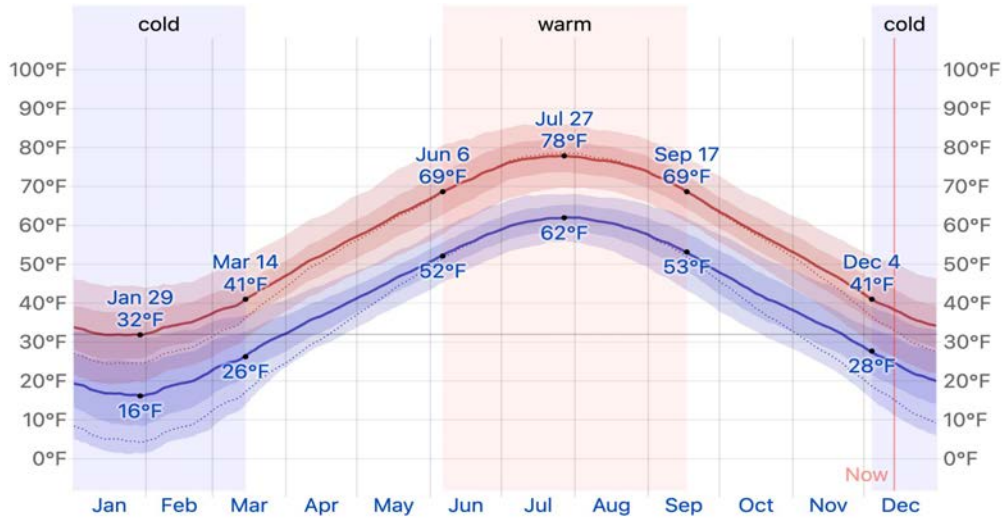
CLIMATE CONSIDERATIONS

Some general takeaways for climate are discussed below:

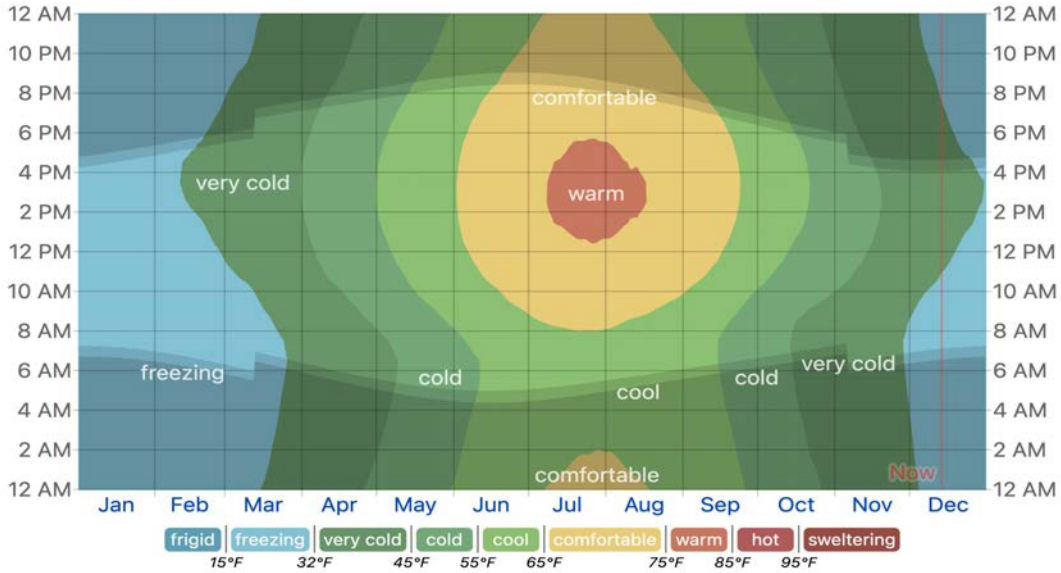
In the summer, temperatures average in the mid 70s to low 80s Fahrenheit and there is usually high humidity. The region can also experience heat waves during this time of year. Autumn is generally mild, with temperatures ranging from the mid 50s to mid 60s Fahrenheit. The fall season is known for its colorful foliage as the leaves on the trees change color. Winter in South Portland can be cold, with temperatures averaging in the low 20s to low 30s Fahrenheit. Snowfall is common in the region during the winter months. Spring is typically cool and wet, with temperatures ranging from the low 40s to mid 50s Fahrenheit. The region can experience heavy rainfall during this time of year. South Portland has a fairly moderate climate, but it can experience extreme weather conditions at times. It is important to be prepared for a range of weather conditions when designing. This will affect the heating and cooling system as well as orientation of buildings and site elements.

The wind direction experienced on the site is from the South and West predominantly. How wind is handled on the site will be an important factor in design.

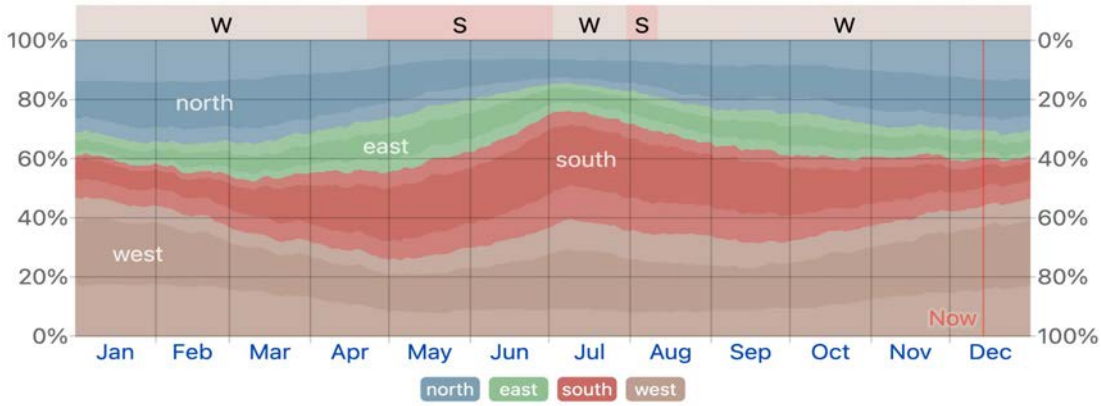
Lastly, the site has a ground snow load of 50 lb per square foot. It is important to design structure and enclosures based on this.



AVERAGE HIGH / LOW TEMPERATURE IN SOUTH PORTLAND (FIGURE 18)



AVERAGE HOURLY TEMPERATURE IN SOUTH PORTLAND (FIGURE 19)



WIND DIRECTION IN SOUTH PORTLAND (FIGURE 20)

SOUTH PORTLAND COMPREHENSIVE PLAN

In order to support my case for the adaptive reuse of this site, I analyzed the City of South Portland's Comprehensive Plan to assure that my endeavors are in line with the objectives to grow and improve the city. There were several themes that repeatedly came about in my research that my proposal addresses:

1. Lack of Affordable Housing production
2. Diversification of uses in Maine Mall area
3. Land use transformation

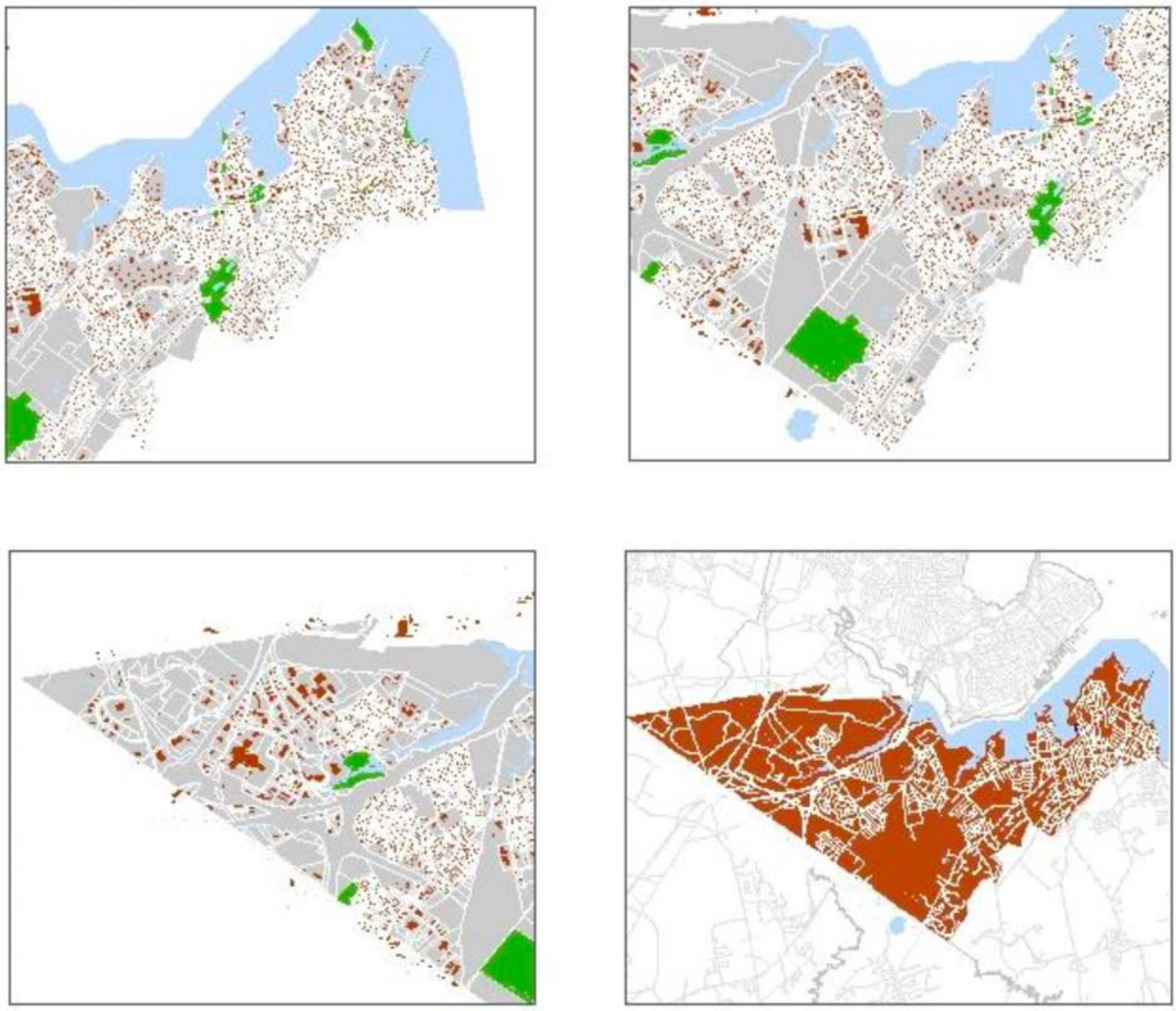


FIGURE GROUND MAPS OF SOUTH PORTLAND FROM COMPREHENSIVE PLAN (FIGURE 21)

SOUTH PORTLAND COMPREHENSIVE PLAN

Lack of Affordable Housing Production:

The State of Maine requires a minimum of 10% of new housing stock to meet the definition of affordable housing. South Portland has failed to meet this between 2005 and 2009. Current efforts with elderly housing have gotten them closer to that 10% minimum, but there needs to be an average of 8 more units created per year to meet and slightly exceed the number. There is an overall lack of affordable housing stock for people ages 25-44 with families.

Diversification of Uses in Maine Mall Area:

The Maine Mall is a major source of property taxes for the City of South Portland. Enhancing its attractiveness will help maintain its economic vitality. The plan specifically states that the "City should encourage additional office, service, high-tech, and even residential development and further expand the tax base."

Land Use Transformation:

I will address this specifically in chapter 7 of this booklet, but the city of South Portland is drastically changing their existing zoning to a new overlay that is divided based on Growth or Limited Growth areas with subcategories outlining whether it is mixed use or non-residential. As my project promotes growth in the area, it fits with the goals of the new land use overlay.

MAINE STATE HOUSING AUTHORITY

Low Income Housing Tax Credit

About the Program:

This credit, enacted in 2019, provides $80,000,000 towards affordable housing. This is broken into $10,000,000 a year for over 8 years. In 2021, the first of the funds were allocated to several projects across Maine. This is intended to be paired with the 4% federal low income credit for the development of this type of housing. Together, the credits pay for almost 60% of the total construction costs.

Eligibility and Priorities to Receive the Credit:

- Housing options for larger families with low monthly housing costs
    - Rent-restricted to lowest income
- Rehabilitation of existing housing stock
    - Rent-restricted to lowest income
- Projects where tax credit is needed for feasibility
- Projects that meet needs of distinct communities
    - The homeless population
- Housing for very low income
- Projects located in more rural areas of they state

MAINE STATE HOUSING AUTHORITY
Low Income Housing Tax Credit

Development & Location	Developer	Units & Type	Federal Tax Credits Awarded	Maine Tax Credits Awarded	Est. Total Tax Credit Equity
Oak Grove Estates, Bath	Realty Resources	34 affordable units for families	$415,958	N/A	$3,493,698
Martel School Apts., Lewiston	Lewiston Housing / Avesta	44 affordable units for older adults	$880,000	N/A	$7,655,234
Front Street Re-Development II, Portland	Portland Housing Authority	45 affordable units for families	$900,000	N/A	$7,649,235
The Uptown, Bath	The Szanton Company	42 affordable units for older adults. Mixed income, mixed use; historic	$840,000	N/A	$7,223,278
Senior Living at the Marketplace, Augusta	Tim Gooch	42 affordable units for older adults	$840,000	N/A	$7,055,294
Middle Street Apts., Portland	CHOM	50 affordable units for older adults	$481,493	$4,814,930	$8,666,470
337 Cumberland Avenue, Portland	Portland Housing Authority	48 affordable units for families. Mixed income, mixed use	$610,365	$6,103,650	$11,169,158
Valley Street Apts., Portland	Avesta Housing	48 affordable units for families; mixed income	$503,479	$5,034,790	$9,062,191
Mary Street Apt. Homes, Skowhegan	KVCAP	40 units of affordable housing for families; historic	$435,281	$4,352,810	$7,798,127

Here is figure 22 outlining the credit award winners from 2021. The majority of the projects were completed in Portland, although they are looking for more projects that are in more suburban and rural areas. The Mary Street Apartment project in Skowhegan was an adaptive reuse project.

5

BUILDING DOCUMENTATION

ABOUT THE PROPERTY

This property, at 300 Southborough Drive in South Portland, Maine, is a Class A office space that was built in 1987. The typical floor area is around 40,000 SF. There are three floors, portions have tenants to remain, with a bottom floor that has infrastructure for a large kitchen space or cafe. This supports my goal of creating a mixed use environment. The site is also situated in close proximity to a main commercial area, so it is an ideal location for employees in the area to live.

Although it is in the heart of the Maine Mall area, there is still a significant amount of privacy that the site offers. It is quiet despite being adjacent to the highway.

Like mentioned before, I want to tackle rethinking the landscape. The 19 acres offer a lot of landscaping opportunities and reclaiming some of that vast parking lot with 635 spots. That is an excessive amount. With this in mind, beginning to introduce new, independent structures on the site is not out of scope, to expand the use of the property.

Today, it generates about $226,800 in taxes a year. A study on the taxes generated by conversion will be done to determine the revenue it would generate.

BIRD'S EYE PHOTO (FIGURE 23)

MAIN ENTRANCE AND LOBBY (FIGURE 24)

(FIGURE 25)

ABOUT THE PROPERTY

Here are more specifications about the available space and condition of the building:

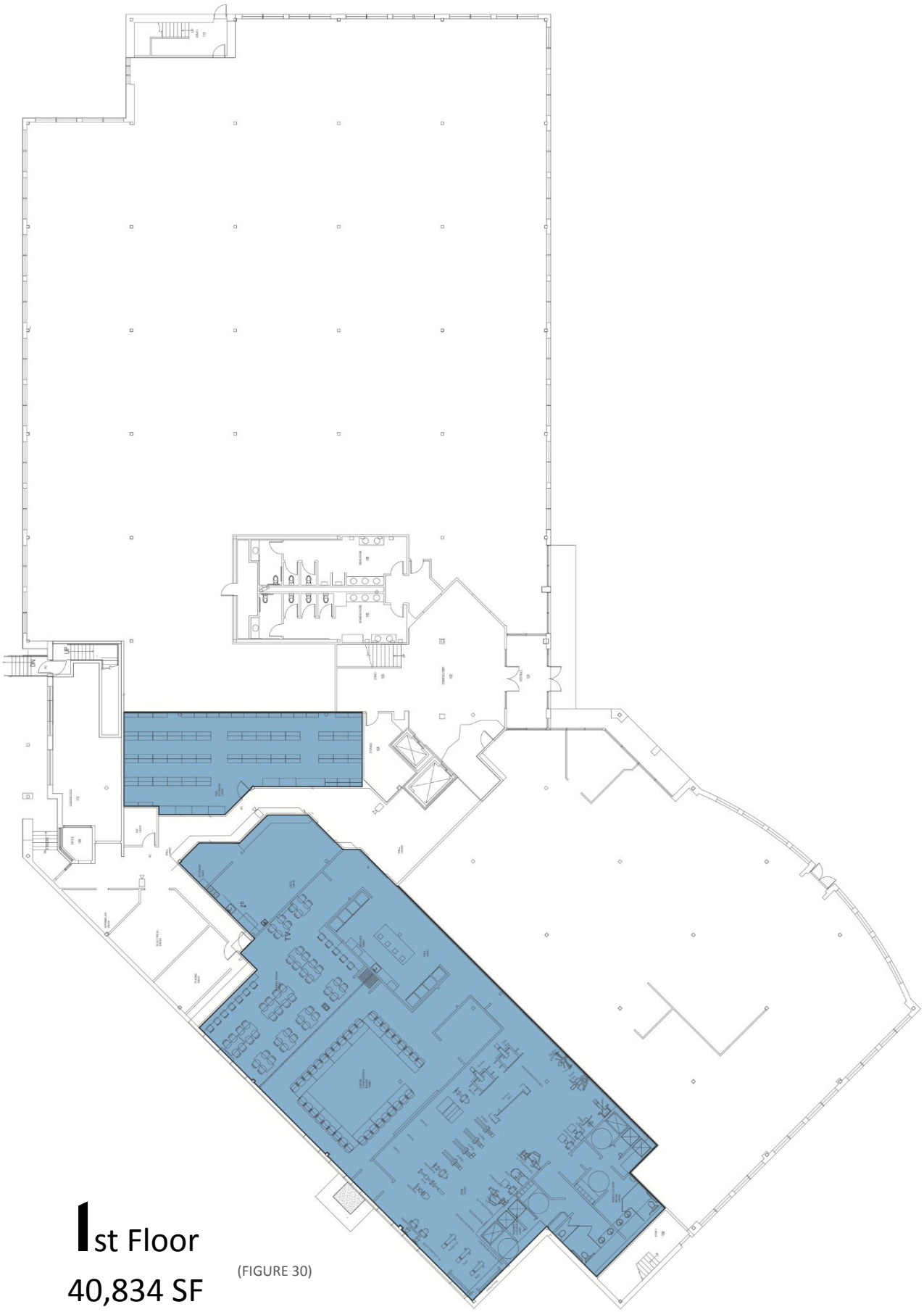
Owner	Metro 300, LLC	
Building Size	121,544± SF	
Space Breakdown	1st Floor	9,555± SF
	2nd Floor	8,819± SF
	3rd Floor	40,384± SF
Available Space	59,208± SF	
Site Size	19± acres	
Year Built	1987	
Number of Stories	Three (3)	
Assessor's Reference	Map 82, Lot 3	
Deed Reference	Book 26997, Page 151	
Zoning	IL	
Taxes	$226,862.16	
Building Construction	Steel frame, brick	
Roof	Rubber membrane, 6 years old	
HVAC	Natural gas-fired, forced hot air - multiple roof top units	
Utilities	Public water and sewer, natural gas, electricity, and cable	
Loading Dock	Two (2)	
Elevators	Three (3) passenger elevators	
Bathrooms	Multi-stalled, two (2) per floor - Class A finishes	
Parking	635 on-site parking spaces (5.47 spaces/1000 SF)	
Tenants	Maine Medical Partners, Mortgage Network, and United Health	
Location	Location offers direct access to the Maine Turnpike/I-95 and I-295. The site is near all Maine Mall area amenities and is within 2 miles of the Portland International Jetport.	
Signage	Property monument sign	

(FIGURE 26)

MAIN ELEVATION PHOTO (FIGURE 27)

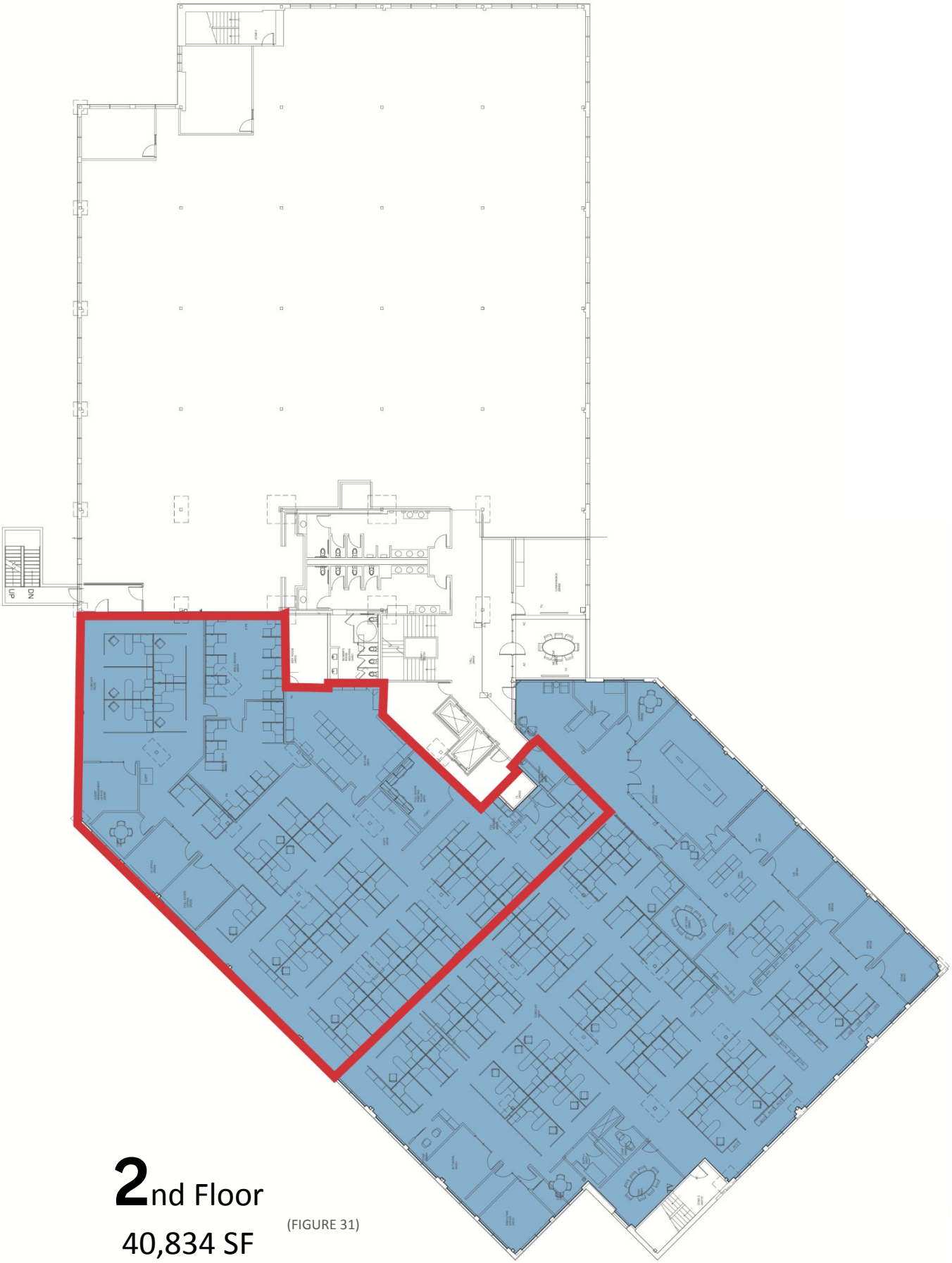
(FIGURE 28)

OFFICE SPACE AND CONFERENCE ROOM ABOVE LOBBY (FIGURE 29)



1st Floor
40,834 SF

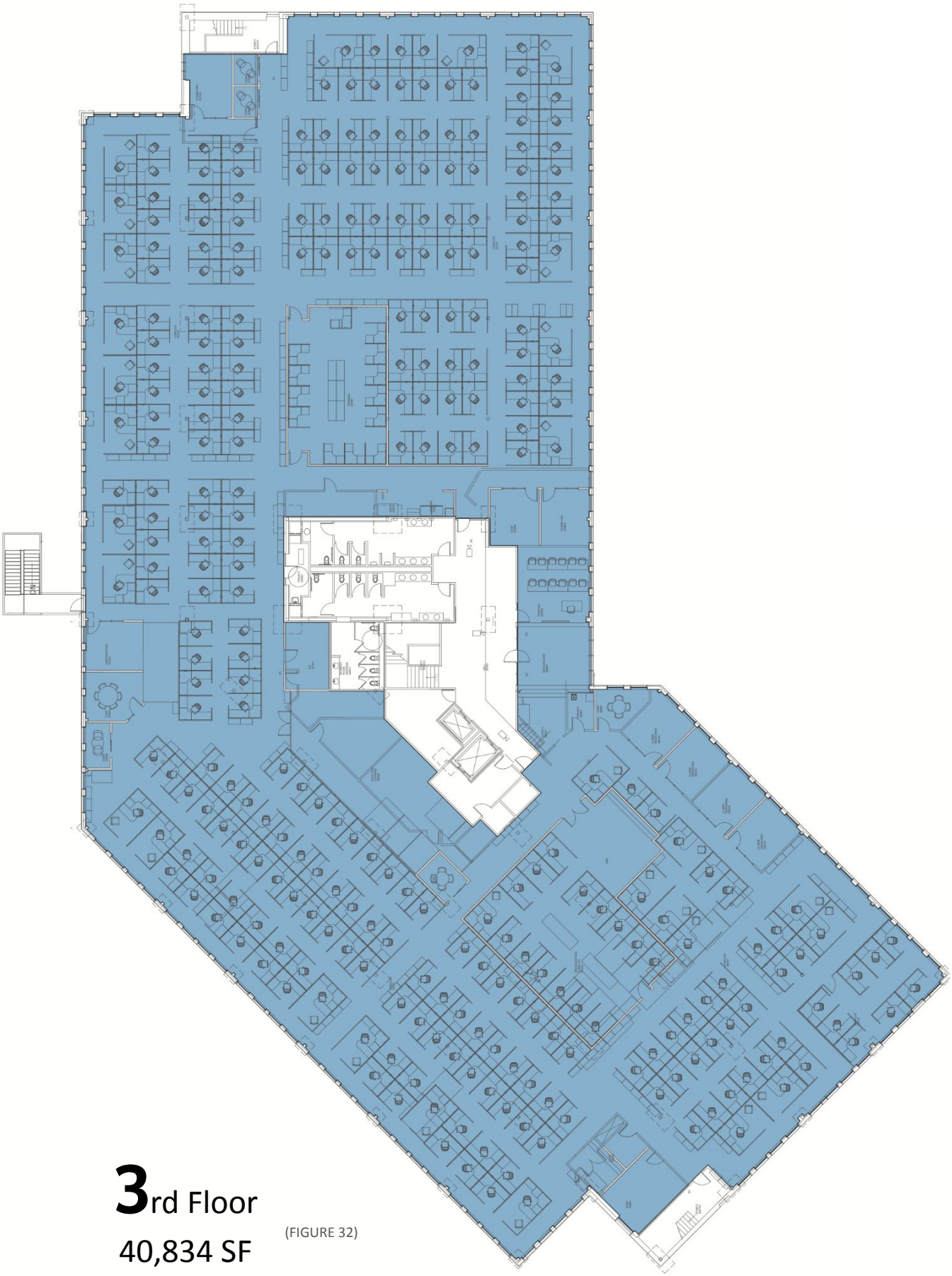
(FIGURE 30)



2nd Floor

40,834 SF

(FIGURE 31)



3rd Floor

40,834 SF

(FIGURE 32)

6

CLIENTS & USERS

CLIENTS

My theoretical clients would be the building owner, all businesses that occupy the building, all the tenants who live there, and the visitors of the space. Each of the individual needs of all clients will be taken into account.

Building Owner - Metro 300, LLC

For the project, I would theoretically buy the property from Metro 300, LLC, or, they would be willing to do the major revamp and I'd work with them to transform the building. In essence, I would either work as a developer or as the architect working for my client, Metro 300, LLC.

Existing Tenants - Maine Medical Partners, United Health, and Mortgage Network

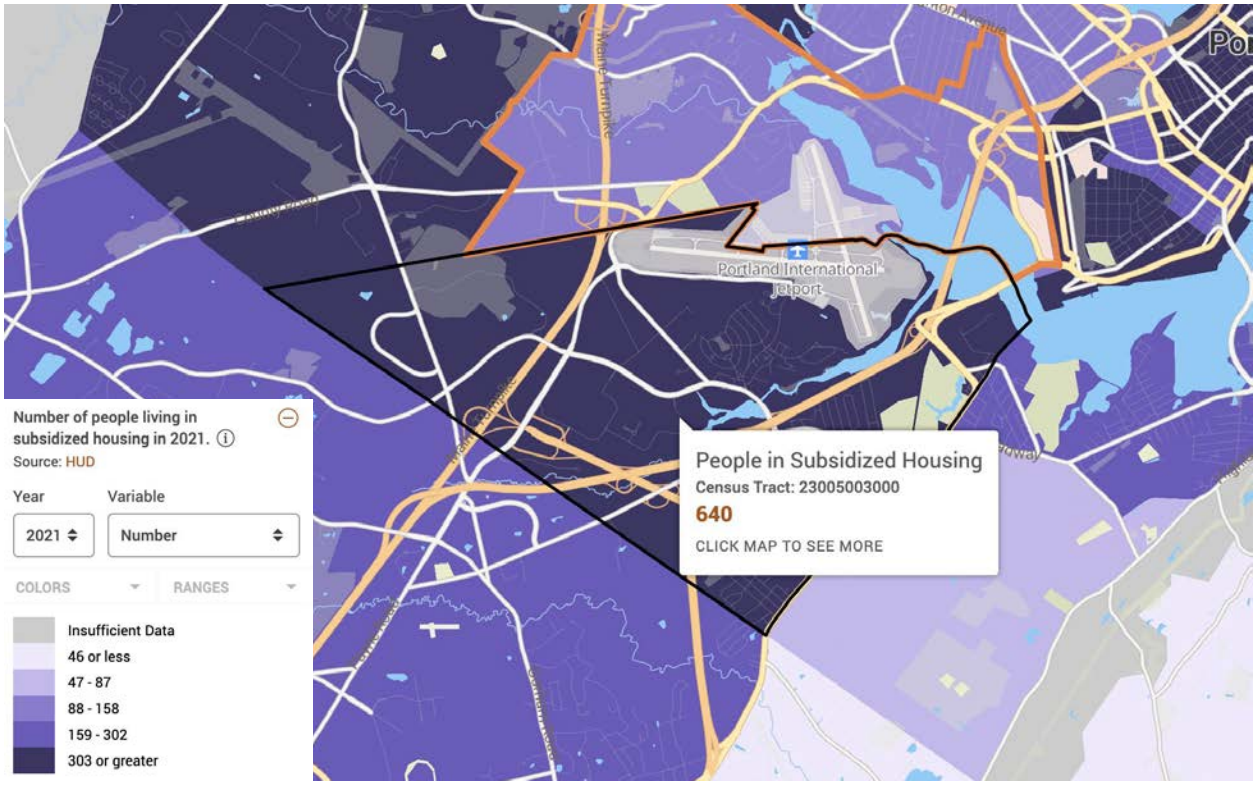
The existing tenants would also be taken into account in the adaptive reuse. Office space will still be a integral part of the life of the building and context. Their needs will be addressed and incorporated in the scheme. I believe it is important to allow tenants who like where they work, to be able to stay.

Renters - Low to moderate income families and singles

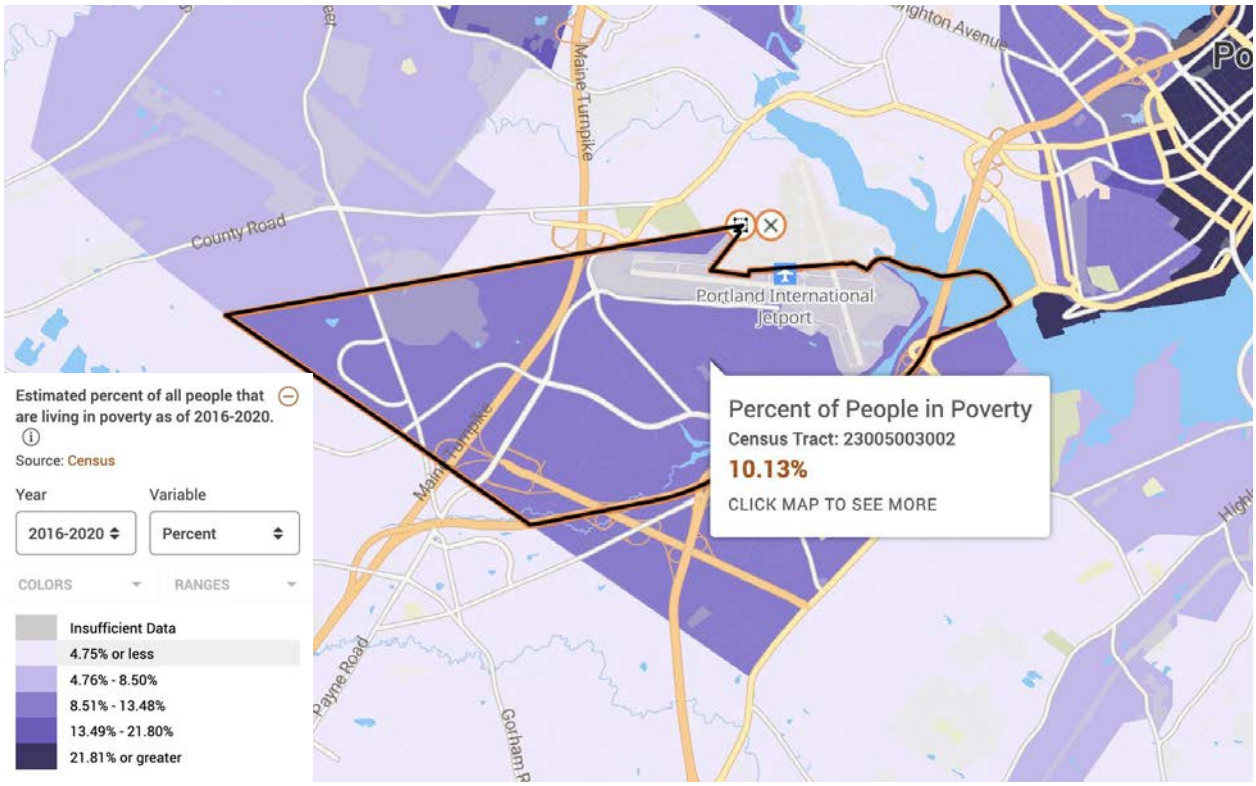
Offering a variety of unit options with adequate storage and access is key in designing for low to moderate families. Juggling affordability while also being sensitive to space needs will be a balancing act. As seen in the maps on the following page, the census block where my site is located is experiencing a higher rate of poverty and amount of people in subsidized housing. This population is the demographic I will be serving.

Visitors - A variety of people of different ages and backgrounds

Maine is a very popular tourist destination, especially during the summer months. The site would not only cater to Mainers, but also to all the out-of-state visitors. There will be an array of places where people can congregate, live, work, and play. The site will be accessible, to people of all ages, sexes, and backgrounds.



PEOPLE LIVING IN SUBSIDIZED HOUSING (FIGURE 33)



PERCENT OF PEOPLE LIVING IN POVERTY (FIGURE 34)

7

PROGRAM OUTLINE & AREAS

PROGRAM NARRATIVE

One would be able to access the site via public transportation with accommodation for private transportation as well. The first floor would house a restaurant to serve the residents, office workers in the building, people working nearby, as well as visitors to the area. It would have an active, outward facing storefront that is inviting. There would also be a shared community space preferably close to the lobby area.

Vertical connectivity between floors would be improved and would be used as an opportunity to let a lot of light in and create unique spatial conditions. These would serve both the residents and the office employees. The idea is to create a separation between the living and working areas, whether this is an explicit or implicit separation is yet to be explored.

Creating an active, lively, and inviting ground floor is essential in the success of a mixed-use building. I imagine that events could be hosted here, catered by the restaurant, where the office, or even residents could rent and invite people from all over the community. Accessibility, inclusiveness, and safety are a priority in the design and organization of spaces.

I imagine that both the housing units and the office spaces can overlook these multi- level courtyard spaces, allowing for more light and views outward. Creating a variety of spaces of different conditions cut and speckled throughout the building will give residents and employees more options to pick their favorite spot, whether it’s to read, play, collaborate, meet, or work.

LIST OF PROGRAMMATIC ELEMENTS

Floor by Floor Program	Square feet
➔ Active ground floors	
◆ Cafe	2,000 SF
◆ Conference center	1,600 SF
◆ Co-working Space	11,200 SF
◆ Fitness Center	3,200 SF
◆ Ice Rink/Community Gathering	
◆ Parking	
◆ Red Brook Walking Trails	

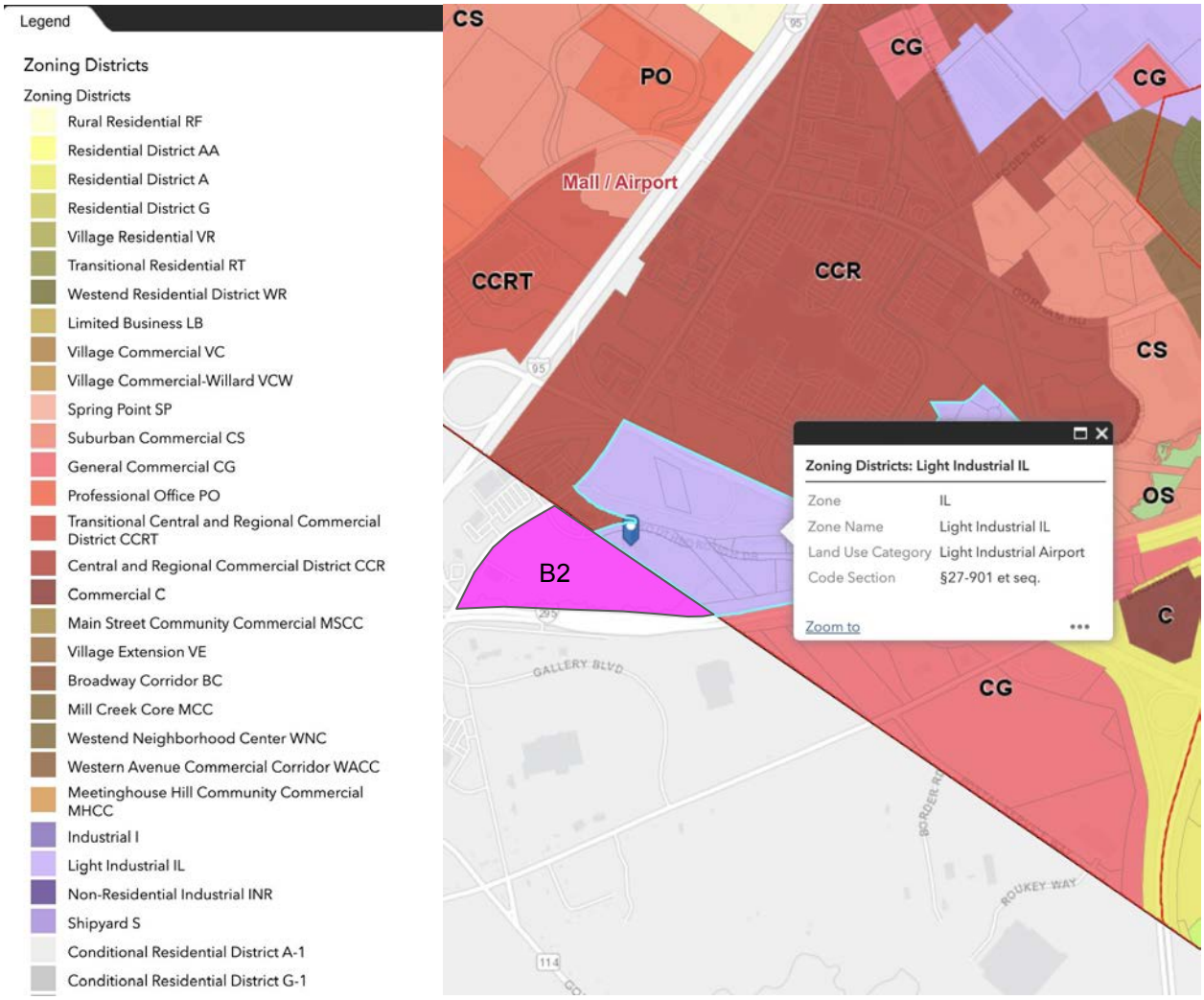
	Unit count
➔ Floors above	
◆ Residential	229 units

	Roof Area Percentage
➔ Roof	
◆ Solar panel array	50%
◆ Sedum green roof system	30%
◆ Trellised roof deck	15%
◆ Community BBQ/ Outdoor Kitchen	5%

8

REGULATORY ENVIRONMENT SUMMARY REPORT

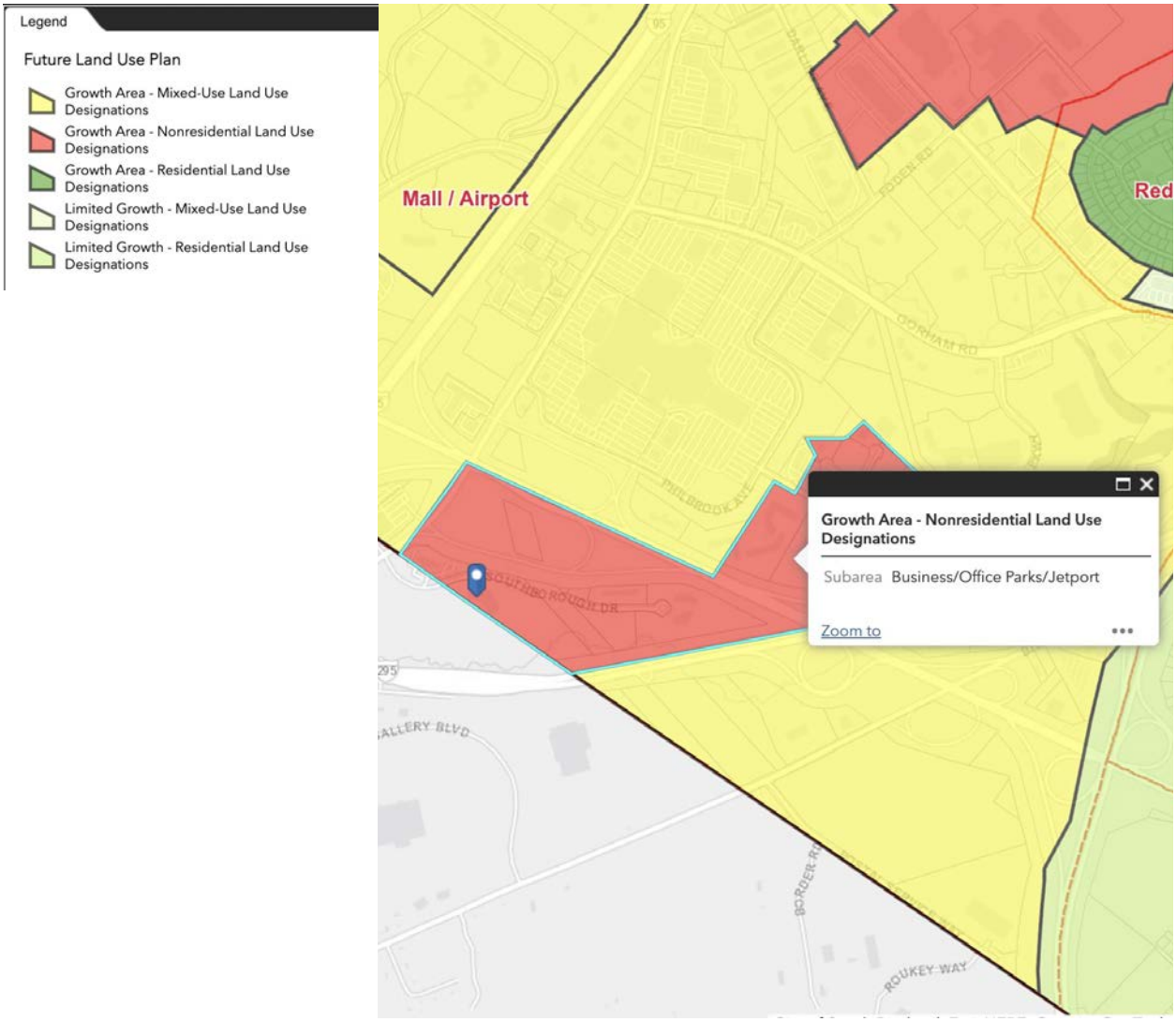
EXISTING ZONING DISTRICTS



https://southportland.maps.arcgis.com/apps/webappviewer/index.html?id=3c82c619da2f4d02ae3960adab2db764 (FIGURE 35)

Here is a map of the zoning district that the site is located in. It is zoned as Light Industrial (IL). As you can see, the district is bound by a Central and Regional Commercial District as well as General Commercial. The east side of the map shows where a large Residential District AA begins.

FUTURE LAND USE PLAN



https://southportland.maps.arcgis.com/apps/webappviewer/index.html?id=3c82c619da2f4d02ae3960adab2db764 (FIGURE 36)

Here is a map of the future land use that the site is located in. It is planned to be zoned as a Nonresidential land use designation. The assumed reason this district is labeled as non-residential is that South Portland is making efforts to “reserve” land for specifically industrial use. They fear losing more and losing the revenue that industrial areas bring in. However, since the site is in an area that has no historic or current industrial use, I believe the case can be made to propose a variance to include it in the Mixed-Use Land Use Growth Area.

PROPOSING A MIXED-USE VARIANCE

To propose a mixed-use zoning variance, an application for a zoning variance would have to be submitted to the South Portland Zoning Board of Appeals in order to get this project underway. There are several requirements that must be met in order to submit the application.

One would file a miscellaneous appeal where the nature of the proposed use and variance would be explained and justified. In the next section, the specifications of the existing building would be noted. Attachments must be included such as, the deed to the property, existing photos, drawings and elevations, written support from neighbors, and other information on the character of the area. The last section is meant to simply make the case that granting the variance will be an overall benefit to the area and the city.

The following page shows the application form to propose a zoning variance.

ZONING VARIANCE APPLICATION FOR SOUTH PORTLAND

OFFICE USE ONLY: DATE APPLICATION SUBMITTED _____
APPLICATION # _____
FEE PAID $_____

APPLICATION TO SOUTH PORTLAND ZONING BOARD OF APPEALS

Name of Applicant _____

Applicant Mailing Address _____

Applicant Telephone _____

Applicant E-mail Address _____

Name of Property Owner (if diff than applicant)_____

Owner Mailing Address _____

Property Street Address_____

Tax Map _____ Lot_____

THE UNDERSIGNED REQUESTS *(check only one)*:

☐ 1. **Administrative Appeal.** Relief from the decision of the Building Inspector or Code Enforcement Officer in regard to the administration of the Zoning Ordinance. It is the applicant's contention that the following error was made in the decision made by the Building Inspector or Code Enforcement Officer:

_____
_____
_____
_____
_____

(Please attach additional sheets if necessary.)

☐ 2. **Miscellaneous Appeal.**

a. Nature of Miscellaneous Appeal (check one):
Off street Parking _____ [Sec. 27-152(c)(1) or (2)]
Changes to Nonconforming Use _____ [Sec. 27-302(d)]
Building Coverage or Impervious Surface Limits _____ [Sec. 27-303(f)]

Describe generally the nature of the proposed use: _____
_____
_____

b. Justification of Miscellaneous Appeal:
_____
_____
_____
_____
_____

(Please attach additional sheets if necessary.)

☐ 3. **A Variance:**

a. Nature of Variance. Describe generally the nature of the variance: _____
_____
_____

b. Justification of Variance:
*(Please attach these comments on **Part II**)*

PART I - FOR ALL APPLICANTS TO COMPLETE

Street address of property: _____

Existing use of property: _____

Property presently zoned as: _____

Proposed use(s):
a. Residence _____
b. Accessory Structure _____
c. Other *(explain)* _____

Lot width _____ Lot depth _____ Lot area _____

Percentage of lot occupied by building(s) _____

Height of structure _____ No. stories _____

Size of structure: 1st floor _____x_____ 2nd fl _____x_____ 3rd fl _____x_____

Existing setback dimensions: Front _____ Side(s) _____ _____ Rear _____

A COMPLETE APPLICATION MUST INCLUDE THE FOLLOWING:

1. A Mortgage Loan Inspection Plan that is to scale and indicates the lot dimensions, the location and dimensions of existing and proposed structures, the distances from existing and proposed structures to the property lines, location of abutting rights of way, and any other points or information you feel need clarification (*e.g.*, parking, lighting, sign location). (**Note**: If a variance request, the Code Enforcement Officer or Board of Appeals may require a survey prepared by a Maine licensed surveyor.)
2. A copy of the deed to the property.
3. Photographs of the existing site and its buildings.
4. Elevations (drawings, pictures) of any proposed new structure (s).
5. Any other information that you feel is relevant, such as written support from your neighbors, location of buildings on abutting lots, or character of the neighborhood.

Submit **TEN (10) PAPER COPIES** (an original plus nine (9) copies) PLUS an **ELECTRONIC SUBMISSION IN PDF FORMAT** of the application and any documentation available to support your claim. You will be notified of the scheduled hearing date.*

I hereby certify that the information contained in this application and any attachments thereto are true and correct. All proposed uses will be in conformance with the application and the South Portland Zoning Ordinance.

_____ _____
Date Signature of Applicant

*The Board of Appeals meets on the 4th Monday of every month (exceptions: Memorial Day and Christmas/New Year – call for dates), and all applications must be deemed complete at least twenty (20) days prior to the meeting date.

PART II – FOR VARIANCE APPLICANTS ONLY

A. Variance: Dimensional _____ **(fill out Parts A and B)**
Shoreland, Height, Sign _____ **(fill out Parts A and C)**

1. Nature of Variance: Please describe the zoning restriction sought to be varied:
_____
_____
_____

2. Location of Property:
Is the property located in the shoreland zone?
_____ Yes
_____ No

If so, applicant **must** proceed under **Part C.**

3. Type of Dimensional Variance:
a. If a dimensional variance is requested, please identify what type of dimensional variance is requested.
_____ Lot Area
_____ Lot Coverage
_____ Frontage
_____ Setback (size of yard)

b. If a setback dimensional variance is requested, please identify the proposed setback dimensions:

Proposed setback dimensions: Front _____ Side(s) _____ Rear _____

B. Justification of Dimensional Variance for Property Not Located in the Shoreland Zone:

In order for this type of variance to be granted, the applicant must demonstrate that strict application of the Zoning Ordinance to the applicant and the applicant's property cause practical difficulty and that certain additional conditions exist. Please explain how your situation meets each of the eight (8) criteria as listed below (attach extra sheets if necessary):

1. The strict application of the ordinance to the property precludes the ability of the applicant to pursue a use permitted in the zoning district in which the property is located.
_____
_____
_____
_____

2. The strict application of the ordinance to the property results in significant economic injury to the applicant.
_____
_____
_____
_____

3. The need for a variance is due to the unique circumstances of the property and not to the general condition of the neighborhood.
_____
_____
_____
_____

4. The granting of a variance will not produce an undesirable change in the character of the neighborhood and will not unreasonably detrimentally affect the use or market value of abutting properties.
_____
_____
_____
_____

5. The practical difficulty is not the result of action taken by the applicant or a prior owner.
_____
_____
_____
_____

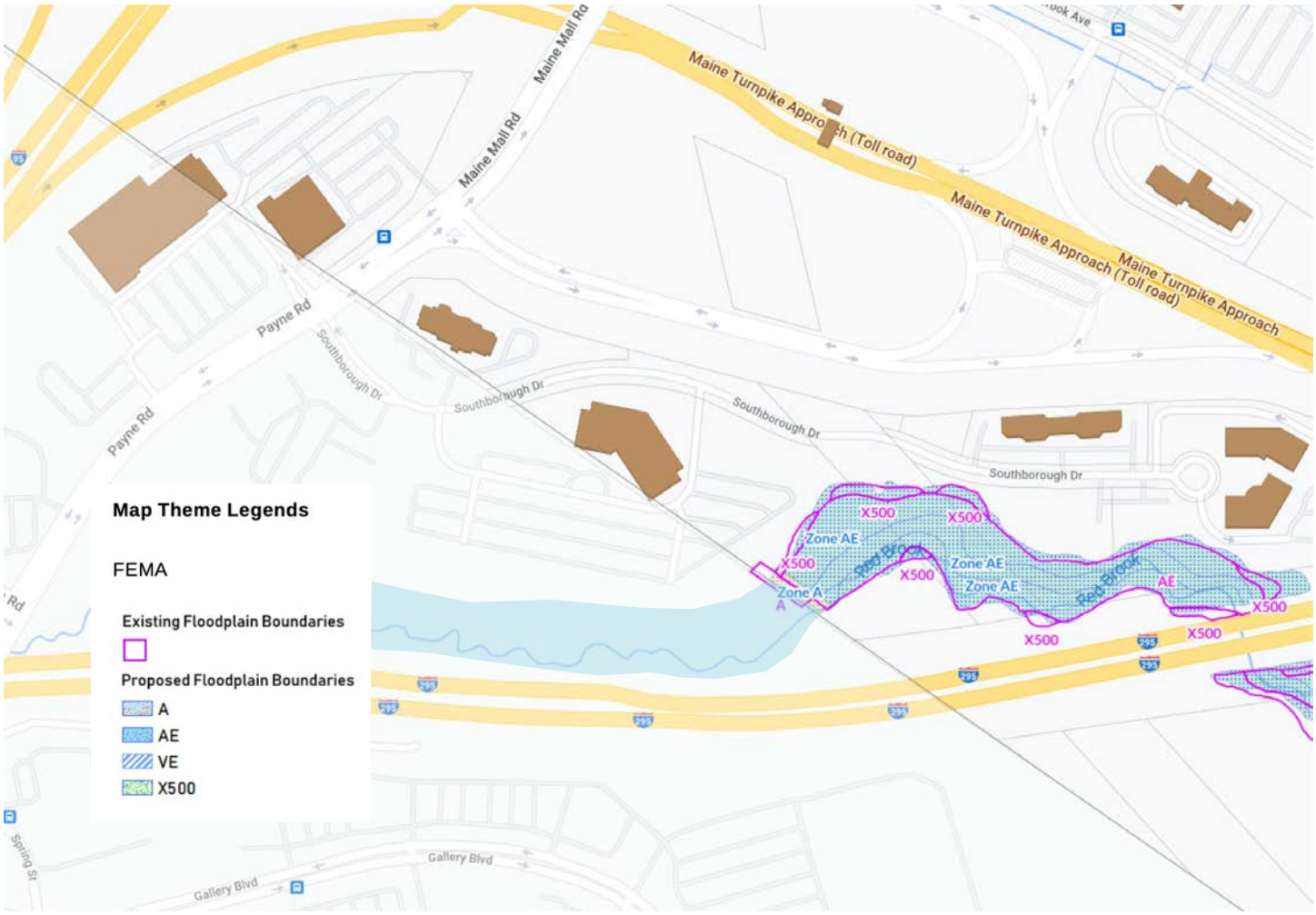
6. No other feasible alternative is available to the applicant.
_____
_____
_____
_____

7. The granting of the variance will not unreasonably affect the natural environment.
_____
_____
_____
_____

8. The property is not located in whole or in part within the shoreland zone.
_____
_____
_____

(FIGURE 37)

FLOOD MAP OF SITE



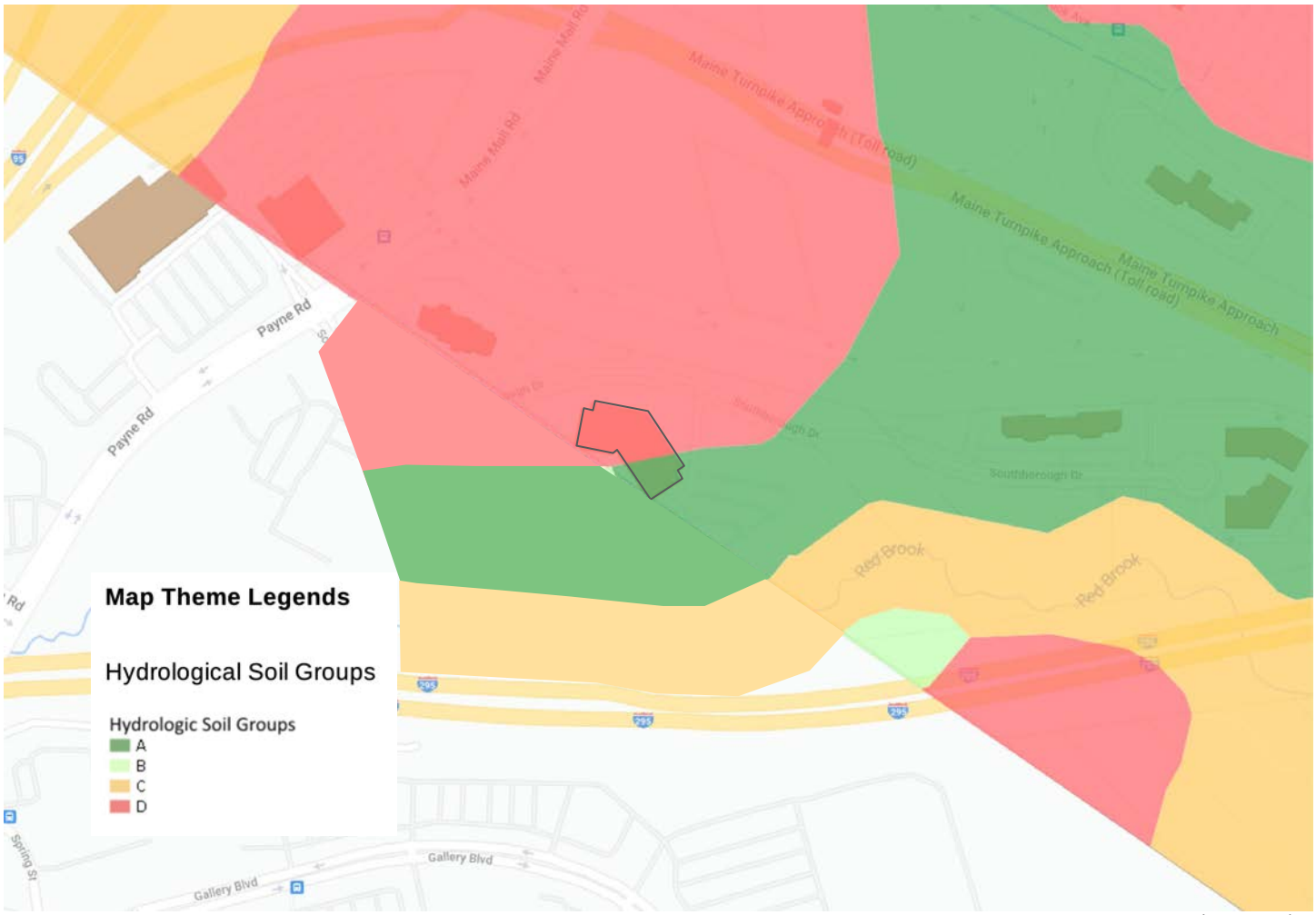
(FIGURE 38)

This FEMA flood map shows that Red Brook, that runs around the site at the southern and eastern sides, results in a floodplain.

It is an AE zone, which signifies that it is a moderate- to high-risk area that requires mandatory flood insurance if there is going to be structure there. The purple line shows the 500 year flood zone, which almost follows the outline of the AE zone.

This will be important when I start looking at expanding to areas other than the immediate 300 Southborough building.

SOIL MAP OF SITE

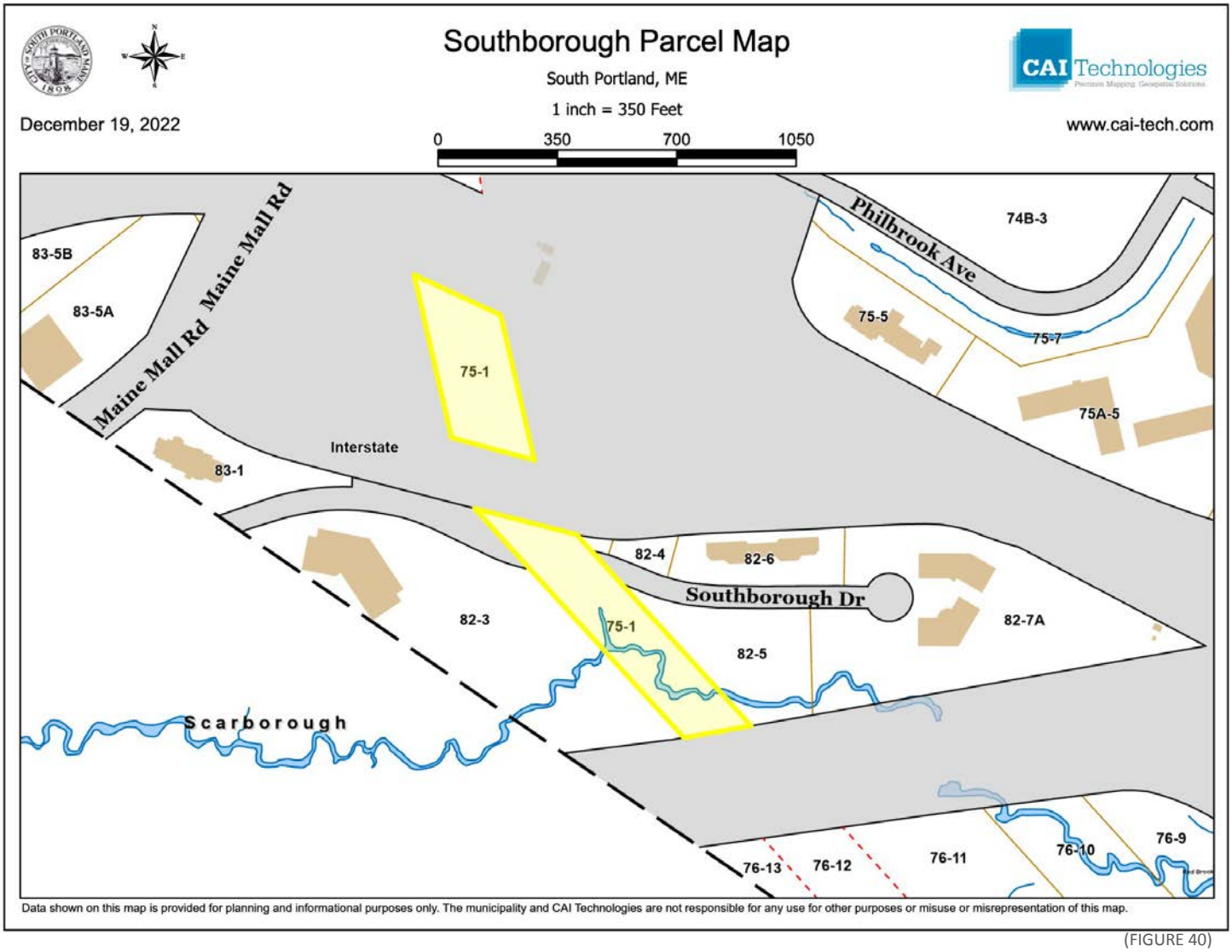


(FIGURE 39)

The site comprises of soil groups A and D, which is an interesting condition.

Group A soils typically have less than 10 percent clay and more than 90 percent sand or gravel and have gravel or sand textures. Soils in this group have low runoff potential when thoroughly wet. Group D soils typically have greater than 40 percent clay, less than 50 percent sand, and have clayey textures. Soils in this group have high runoff potential when thoroughly wet.

PARCEL MAP OF SITE



(FIGURE 40)

This map illustrates the parcel divisions and setbacks of the 300 Southborough and surrounding properties. The highlighted areas in yellow depict a right-of-way area for Central Maine Power. This means that no structure can be built within that strip.

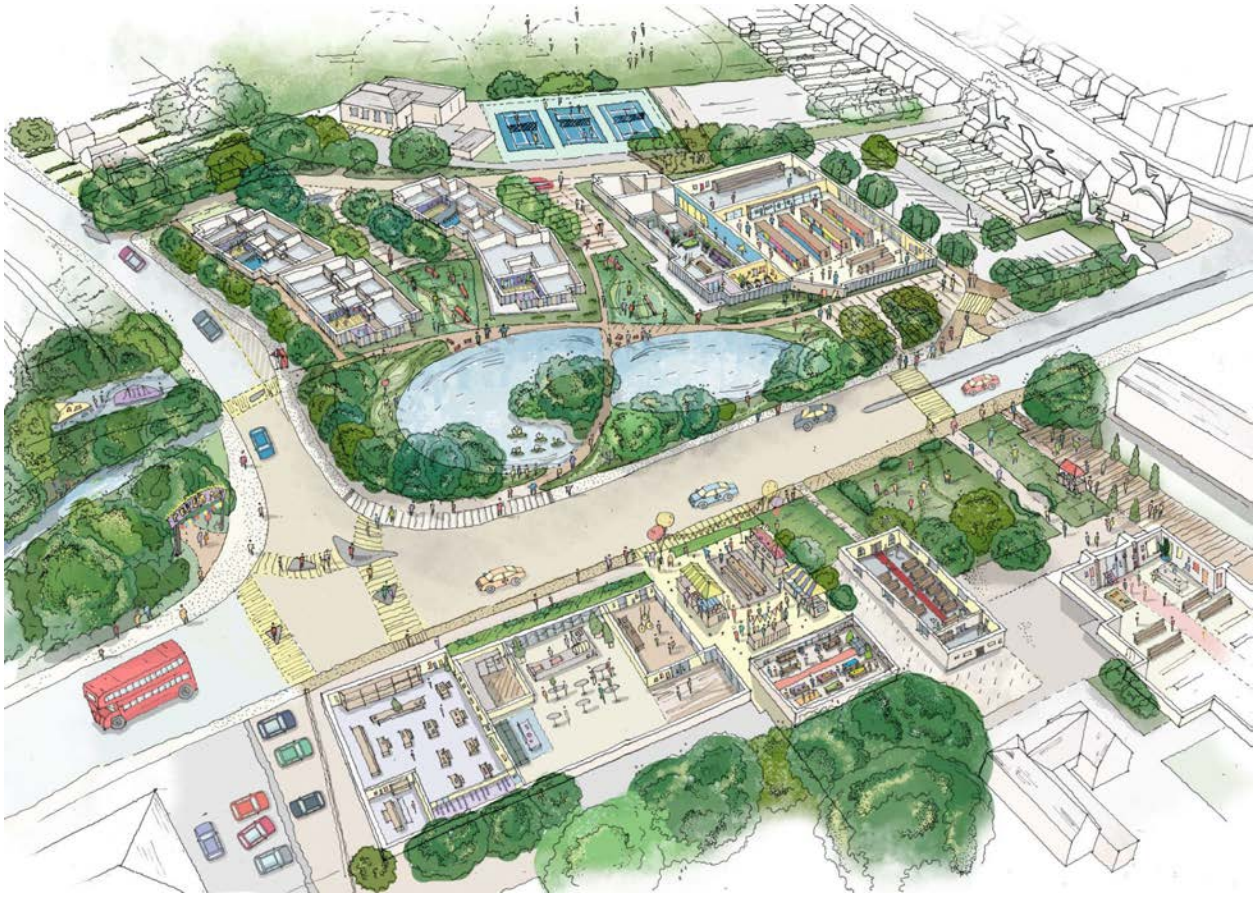
There may be further considerations for the other office properties, 82-6 and 82-7A, as well as the empty plots, 82-4, and 82-5 in my thesis. This map is important in understanding the limitations of the site and determining the extent of my intervention.

9

PRECEDENT ANALYSIS

1. AERIAL SKETCH OF SOUTH LONDON SCHEME | BPTW

ACTIVITY AND VIBRANCY AT THE STREET LEVEL



(FIGURE 41)

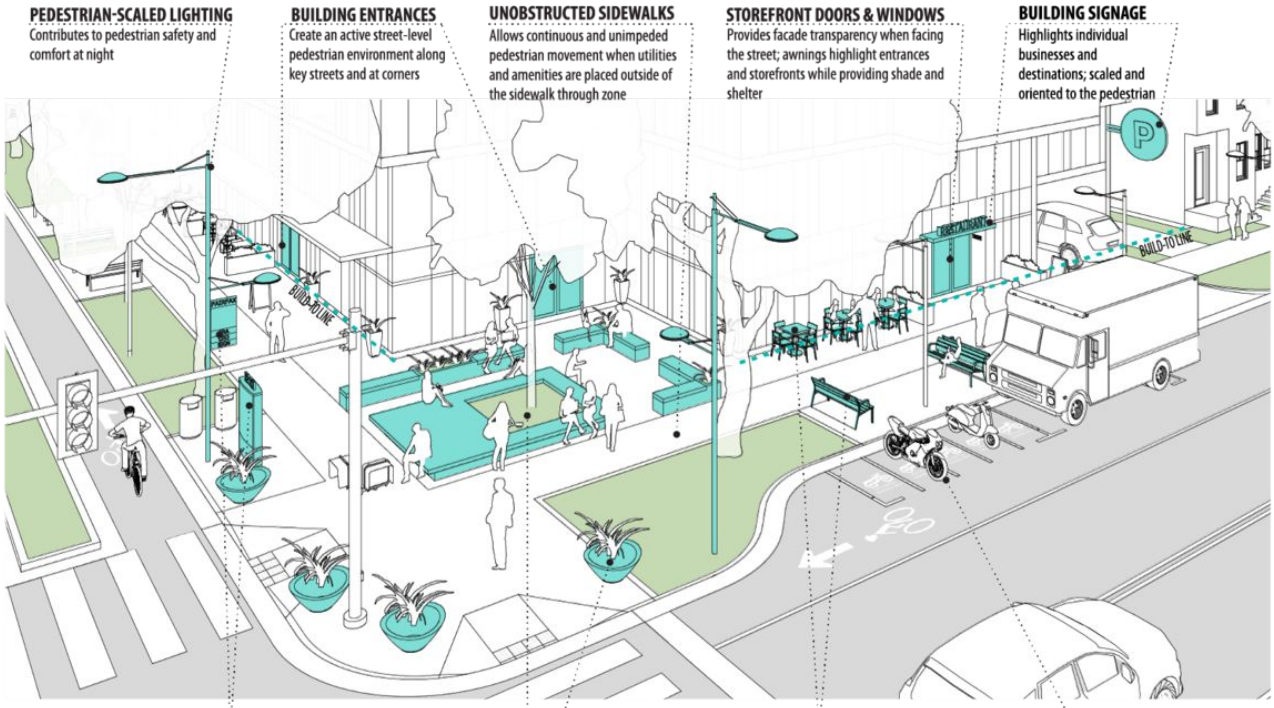
This sketch by BPTW exemplifies the vibrancy that can happen at the street level. The integration between modes of transportation and pedestrian movement is clearly articulated and coexist. There is a limitation of vehicular traffic in that there are purely pedestrian and biking pathways through the center of activity.

There is also an emphasis on the blending of program and uses. You see commercial activity blending into the street and greenery creating soft divisions between them. Through this, the relationships between interior and exterior are not as defined.

This precedent sketch is a great example of beginning to think about mixed-use environments at a high-level. This is a great starting point to think about the 300 Southborough site.

2. FAIRFAX URBAN DESIGN GUIDELINES

URBAN ELEMENTS AT THE STREET LEVEL



(FIGURE 42)

This diagram, featured in the first volume of the Fairfax Urban Design Guidelines, digs a bit deeper into specific elements that can be incorporated on the ground to urbanize and activate the street.

Signage and wayfinding is an important factor in design that is often an afterthought. This scheme highlights that it is successful when considered at a stage where it compliments the design and is seamlessly integrated. Branding also factors into this in a similar way.

Lastly, methods to pull visitors into the building and creating a barrier between car traffic and the sidewalk are effective in promoting a safe and successful storefront or corner.

3. VACANT OFFICE SPACE | ARTICLE BY JEFFREY MCKEAN of WATG

THE ADAPTIVE MICRO-COMMUNITIES OF THE FUTURE

PLAN SKETCH EXEMPLIFYING SCHEME (FIGURE 43)

The article by Jeffrey McKean of WATG discusses the idea of transforming a single building into a micro-community rich with all the amenities people need, like housing, retail, recreation, restaurants, park spaces, and other community elements. It engages in the conversation about office to residential and mixed-use conversion. the importance of adding flexibility and resilience to all places though mixed-use intervention.

This floor plan sketch illustrates a residential floor in the discussed scheme. Although this organization relies on being able to carve out the central bay to allow light in, the layout of units with at least one exterior wall included is a good model. The idea of carving into the deep floor plates that typical office buildings have is a great method to let natural light into the center. Another takeaway is the locations and various sizes of communal spaces that are placed around the plan. Providing variable size spaces offers variety to people who prefer different types of space. The last takeaway is the clear lines of circulation through the plan. Long corridors that let light through at the ends makes the space feel more open and airy.

3. VACANT OFFICE SPACE | ARTICLE BY JEFFREY MCKEAN

THE ADAPTIVE MICRO-COMMUNITIES OF THE FUTURE

3D MODEL VISUAL EXEMPLIFYING SCHEME (FIGURE 44)

4. FLEX FLATS | KTGY

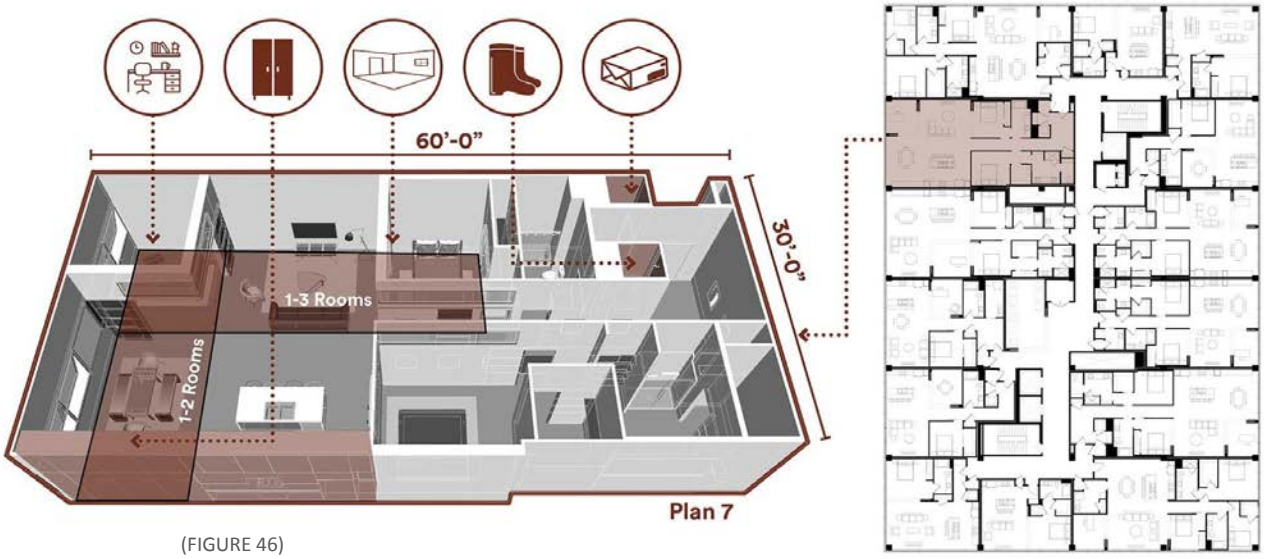
EXTERIOR RENDERING (FIGURE 45)

Using existing structures minimize construction waste and provides an opportunity to upgrade internal systems to increase energy efficiency. It also maintains the context of the neighborhood while responding to shifting needs within a community.

This research and development project done by KTGY examines the potential of 70s and 80s stand-alone office buildings. With this example, each unit is accommodating the 30-foot-column grid typical to many conventional office buildings. Unit depths are varied from 30 to 60 feet, as needed for different layouts.

This precedent helps me understand the difficulties of working with the deeper floor plates that office building typically have. They often result in longer, narrower units with a taller floor-to-floor height. There may be issues with maximizing natural light penetration.

4. FLEX FLATS | KTGY



(FIGURE 46)

This diagram identifies the breakdown of programmatic elements are organized within an example unit. There is an emphasis on ample storage space, open concept, a mud room, and a package delivery box.

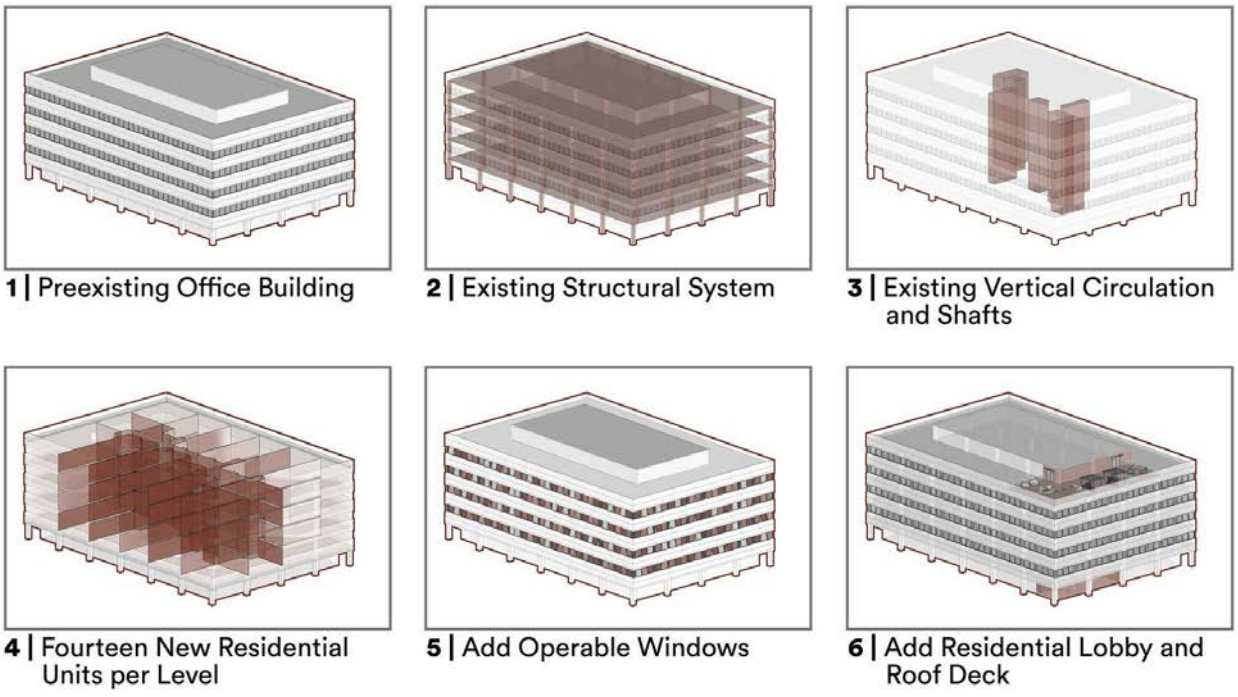
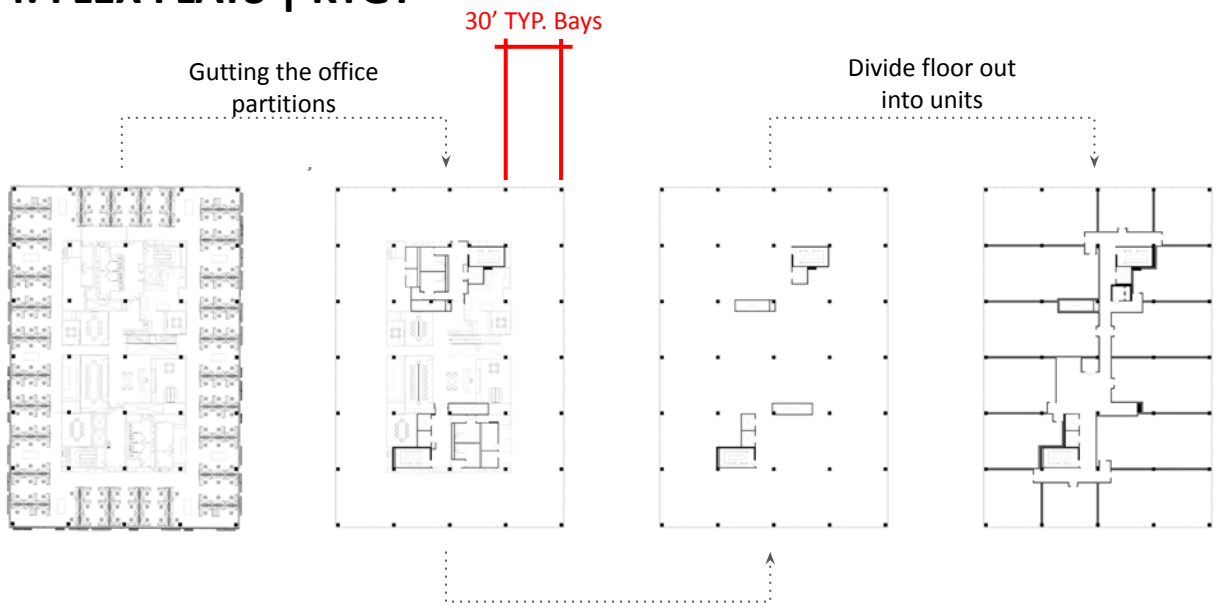
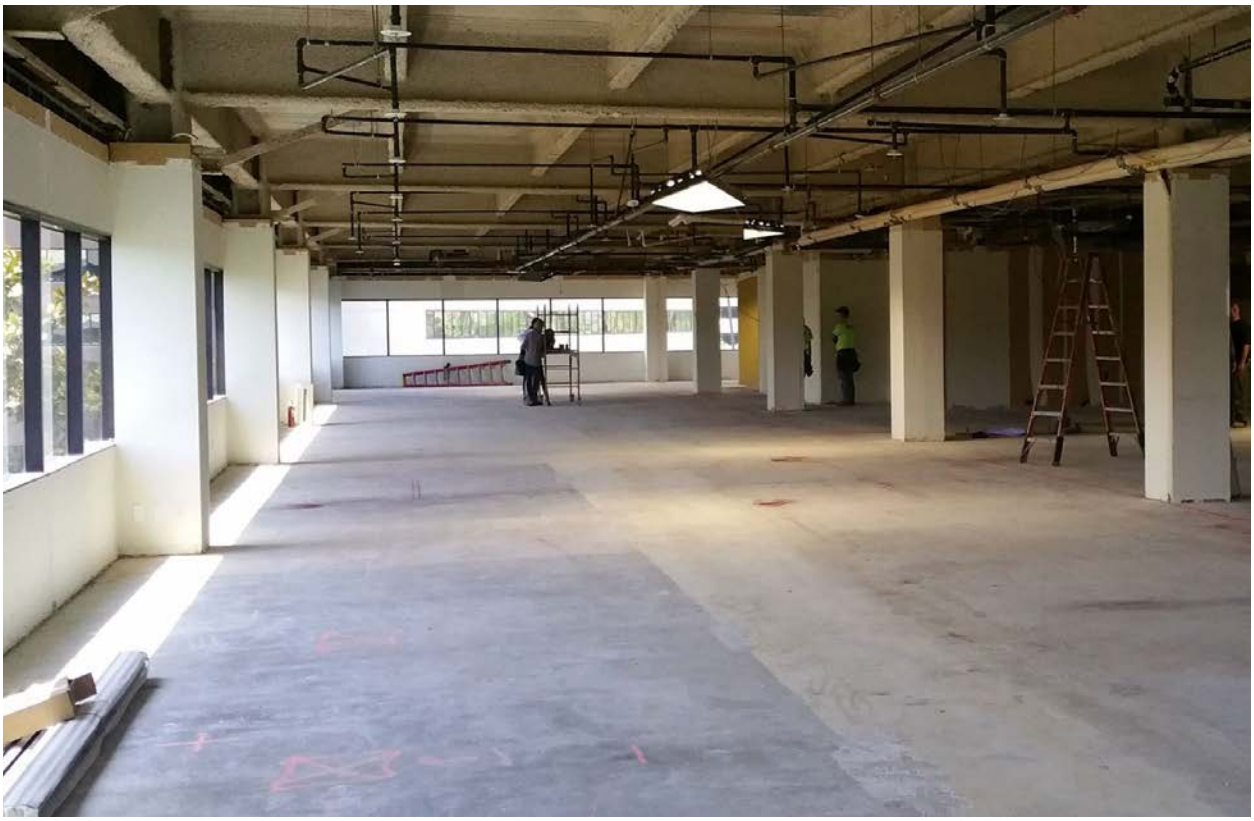


DIAGRAM OF APPROACH (FIGURE 47)

4. FLEX FLATS | KTGY



TRANSFORMATION DIAGRAM (FIGURE 48)

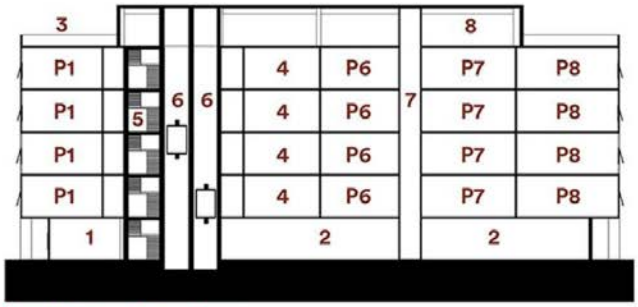


EXISTING STRUCTURE IMAGE (FIGURE 49)

4. FLEX FLATS | KTGY

Typical Residential Level

(FIGURE 50)



Building Section

ACCESSORY USES

1 RESIDENTIAL LOBBY
2 OFFICE SPACE
3 RESIDENTIAL AMENITY ROOF DECK
4 SHARED RESIDENTIAL LOUNGE
5 EXISITING EXIT STAIRS
6 EXISTING ELEVATOR
7 EXISTING SHAFTS
8 EXISTING MECHANICAL
9 ELECTRICAL ROOM
10 TRASH ROOM

RESIDENTIAL UNITS

P1 30' X 24' UNIT | 720 SQ. FT. | 1 BEDROOM | 1 BATHROOM
P2 30' X 31' UNIT | 953 SQ. FT. | 1 BEDROOM | 1 BATHROOM
P3 30' X 42' UNIT | 1,102 SQ. FT. | 1 BEDROOM | 1 BATHROOM + FLEX
P4 30' X 39' UNIT | 1,146 SQ. FT. | 1 BEDROOM | 1 BATHROOM + FLEX
P5 30' X 54' UNIT | 1,522 SQ. FT. | 2 BEDROOM | 2 BATHROOM + FLEX
P6 30' X 62' UNIT | 1,730 SQ. FT. | 2 BEDROOM | 2 BATHROOM + FLEX
P7 30' X 62' UNIT | 1,806 SQ. FT. | 2 BEDROOM | 2 BATHROOM + FLEX
P8 30' X 62' UNIT | 1,875 SQ. FT. | 3 BEDROOM | 2 BATHROOM + FLEX

This diagram shows the 1 bed, 2 bed, and 3 bed unties, all of which have their own 2 arrangements and square footage. This precedent is especially useful when I get to the stage of starting to design unit types and iterations. Movable walls, built-in storage, drop zones, and package storage closets are incorporated for additional flexibility.

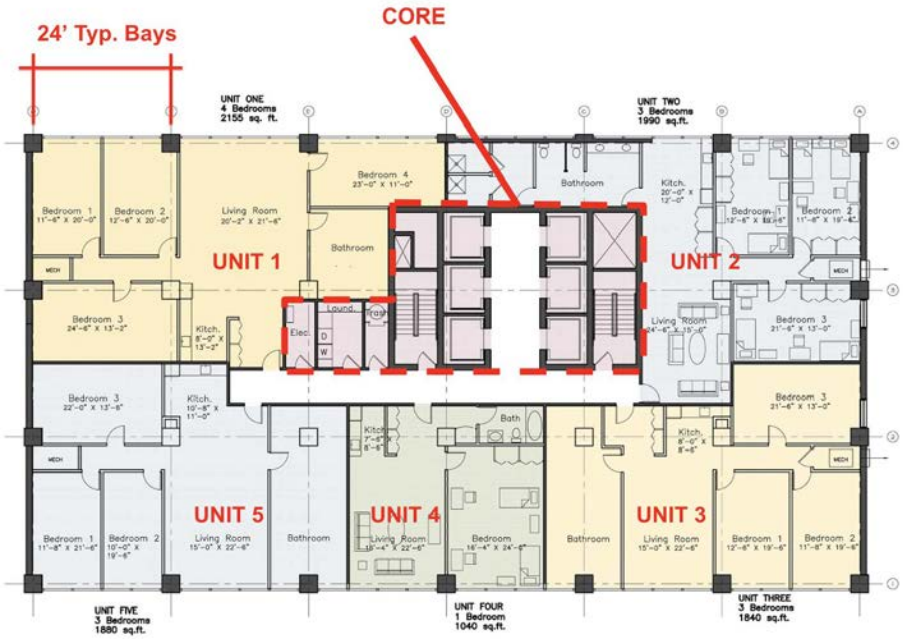
5. STUDENT HOUSING RETROFIT | Seiler + Drury Architecture

BIRD'S EYE IMAGE AT SUNSET (FIGURE 51)

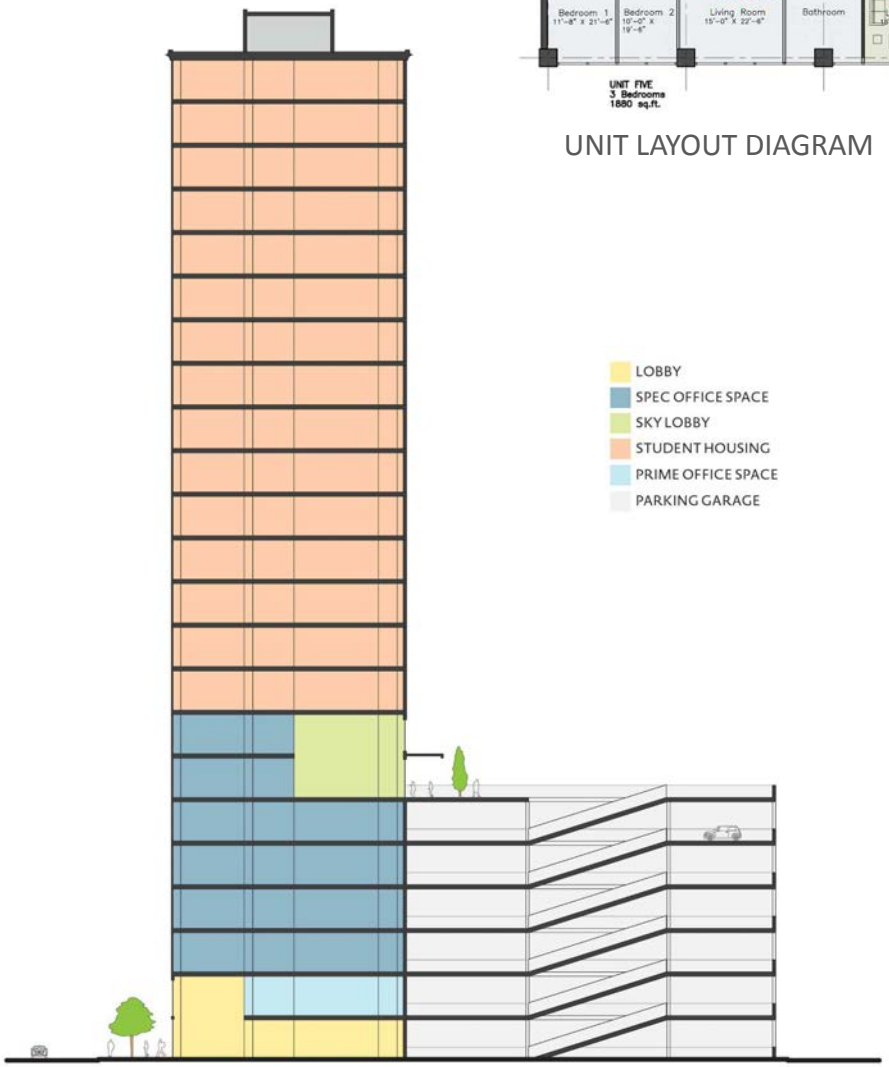
This is an adaptive reuse project by Seiler + Drury Architecture of a 22 story office building dating from 1970. It is in the National Register of Historic Places for being the first Modernist tower in Dayton Ohio. The owner wanted to downsize the existing office space and transform the upper floors into student housing to service the nearby Community College.

Although this is not a suburban office building, this precedent is useful in analyzing different unit layouts and organizations based on the size and beds in each. It may be helpful to look at suite-style organizations to see if it's something that could be implemented at the 300 Southborough site. It also gives insight into how one can adapt to the existing structural grid system.

5. STUDENT HOUSING RETROFIT | Seiler + Drury Architecture



UNIT LAYOUT DIAGRAM (FIGURE 52)

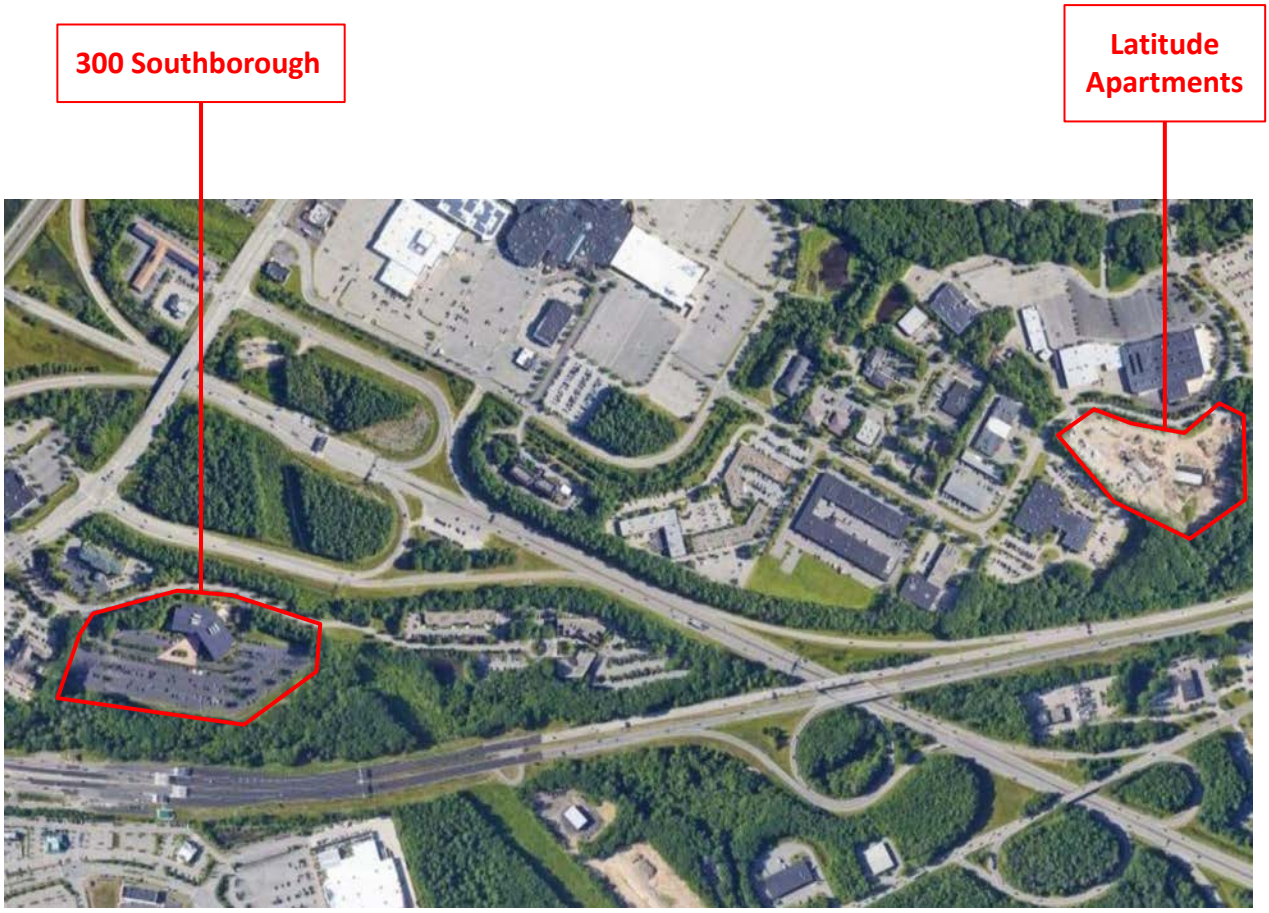


COLORED BUILDING SECTION (FIGURE 53)

The section articulated the clear designations between program in areas.

It feels like a very resolved way to downsize the office space and add housing above.

6. LATITUDE AT SOUTH PORTLAND | Archetype Architects



(FIGURE 54)

This apartment complex, located in a traditionally commercial area called Clarks Pond, was just completed and opened their doors to new tenants in Fall of 2022. It pet friendly and moderate- to higher- income priced, which therefore serves that class of people. This project does add to the limited housing stock and benefits the community, but leaves out the group that is in the most need.

Latitude at South Portland set an important precedent for my thesis project and affirms that the City of South Portland are willing to diversify this commercial area with a range of land uses and promote growing environments.

6. LATITUDE AT SOUTH PORTLAND | Archetype Architects

(FIGURE 55)

The complex includes 4 buildings, each roughly 68,500 SF. There are a total of 256 units, mainly one to two bedrooms. The map above shows Red Brook east of the complex, which is the same brook that runs along the Southborough site.The listings also offer rendered floor plans, as shown below, to illustrate unit organization. This is also helpful in my thesis to imagine various program configurations within each unit.

2 BED UNIT (FIGURE 56)

1 BED UNIT (FIGURE 57)

6. LATITUDE AT SOUTH PORTLAND | Archetype Architects

AERIAL VIEW OF BUILDING 340 (FIGURE 58)

COMMUNAL OUTDOOR KITCHEN

COMMUNAL WORK STATIONS (FIGURE 59)

7. 200 5TH AVENUE WALTHAM, MA | Craft Food Halls

(FIGURE 60)

This retrofit of an existing office building in Waltham, MA offers insight into the activation of a previously shut-off ground floor. In this project, the front entrance was inverted so that is is a more exterior space that pulls you in. From there, the new, roughly 10-12 foot deep deck is connected to the entrance and wrapped along the left half until the building edge. Choosing to implement an exterior storefront entrance greatly enhances the visitation of people who may not even work in that building.

The deck itself is a community asset that employees of the building and restaurant visitors can utilize. Including communal areas for congregation and variety is a fairly simple and effective way to improve the vibrancy of an area.

7. 200 5TH AVENUE WALTHAM, MA | Craft Food Halls

OLD PHOTO OF OFFICE BUILDING

NEW PHOTO OF OFFICE BUILDING WITH ACTIVATED GROUND FLOOR

10

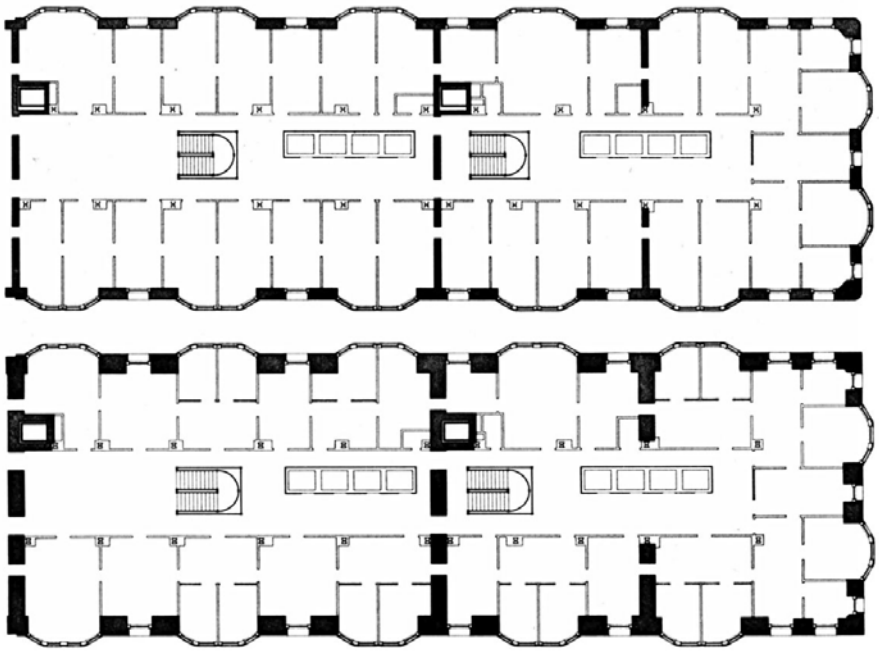
OFFICE TO RESIDENTIAL CONVERSION

History and Morphology of the Office Building

1870s-1920s

Office Buildings in the U.S. have a relatively short history, with building technology development being limited before the Civil War. However, from 1870 to 1920, the population in the U.S. doubled, leading to a significant increase in white-collar work and a subsequent demand for office space that skyrocketed by five times (Hysom and Crawford, 145).

Chicago played a pivotal role in the early innovations of office building design and environment. The devastating 1871 fire that engulfed Chicago's city core, while tragic, paved the way for buildings that incorporated the latest advances in construction (Hysom and Crawford, 145). Prior to this event, load-bearing masonry walls posed a major constraint on tall building design. Architects had to continually increase wall thickness by 4 inches for each additional floor (Hysom and Crawford, 145). As an example, the Monadnock Building, constructed in the early 1890s and standing at sixteen stories, boasted ground-floor walls that were approximately six feet thick (Hysom and Crawford, 146). Fortunately, the increasing development of steel construction beginning in the 1880s proved instrumental in resolving this issue and facilitating the construction of taller buildings.



Comparing the 3rd floor (bottom) and 14th floor (top) load-bearing walls of the Monadnock Building

History and Morphology of the Office Building

1920s-1950s

Integrations and innovations, such as steel construction among others, sparked a boom in big office construction, particularly in the city centers. These locations were ideal, as they housed all the necessary facilities to support businesses, including the post office, law firms, restaurants, and banks. The seamless flow of information through these city cores was fully capitalized upon. By the 1920s, office construction had reached its peak, and American city downtowns became synonymous with towering office buildings (Hysom and Crawford, 146).

However, the office building construction and development slowed down during the 1930s and 1940s, primarily due to the impact of the Great Depression and World War II (Hysom and Crawford, 146). The resurgence of development in the early 1950s marked a turning point for tall office buildings. Advancements in building cladding technologies, such as stainless steel, aluminum, glass, and precast concrete, along with improvements in central air systems, brought about a transformative change in the character of new office spaces (Hysom and Crawford, 147). These developments resulted in larger floor plate sizes and lower ceilings, effectively increasing interior density and capacity (Hysom and Crawford, 147). Furthermore, the widespread use of high-speed, automatic elevators during this period played a significant role in shaping this building typology.

One Hundred Barclay in New York City, built in 1927

Seagram Building in New York City, built in 1958

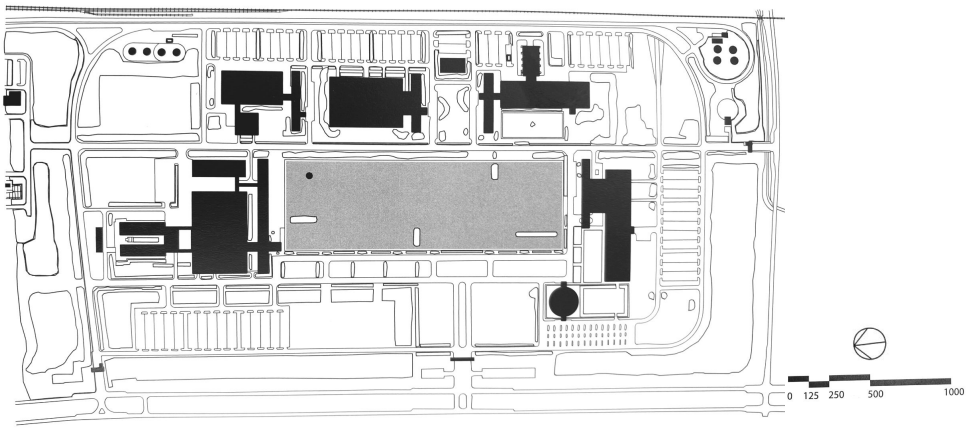
History and Morphology of the Office Building

1950s-1960s

The implementation of the Interstate Highway System in the late 1950s initially brought about positive effects, particularly in terms of improving accessibility for commuters heading to city centers. The new highways facilitated faster and more efficient travel, reducing the time it took for people to reach their destinations. As a result, commuting became easier and more convenient, allowing workers to live in the suburbs while still being able to work in urban areas. This shift led to the increased development of suburban communities and a subsequent increase in the number of white-collar workers residing outside of city limits (Hysom and Crawford, 147).

The corporate environment responded to this trend by adapting to the changing residential patterns of their employees. Companies began constructing office parks and industrial areas in close proximity to the newly built interstate highways. These parks offered numerous advantages, including lower rental and land costs compared to city centers (Hysom and Crawford, 147). Additionally, the availability of larger plots of land allowed for the expansion of facilities and the creation of sprawling corporate campuses. Moreover, the proximity to major transportation arteries ensured that employees could easily access these locations, making them desirable for businesses looking to establish a presence away from the bustling city centers.

As a result of this trend, the landscape of business and commerce underwent a significant transformation by the 1960s. The once-dominant city centers experienced a decline in corporate presence, while suburban areas saw a rise in the concentration of office and industrial parks. The benefits of building away from cities, such as cost savings and proximity to employees, enticed many companies to embrace this decentralized approach (Hysom and Crawford, 147). This shift not only impacted the physical layout of urban and suburban areas but also had far-reaching economic and social implications, shaping the development and growth patterns of cities and their surrounding regions for decades to come.



Site plan of the 1956 General Motors Technical Center in Warren, Michigan, an early corporate campus

History and Morphology of the Office Building

1970s, 1980s, and Today

In the late 1970s, a significant shift in the job landscape took place as blue-collar workers became less prominent while white-collar jobs experienced a notable increase (Hysom and Crawford, 147). This transformation was largely driven by advancements in workplace technology and efficiency. The advent of personal computers, FAX machines, copy machines, and satellites played a crucial role in reducing the need for physical proximity and reliance on traditional facilities (Hysom and Crawford, 147). Consequently, office spaces began to spring up in suburban areas and on the outskirts of cities, as opposed to being concentrated in urban centers. As the 1980s drew to a close, further technological developments aimed at boosting productivity and reducing space requirements started to emerge, a trend that continues to shape the office environment today.

The rise of office technology and its impact on productivity has had a profound effect on suburban office buildings. Many of these structures were constructed during the 1980s but have since operated below full capacity (Hysom and Crawford, 147). Their sprawling nature and the rapid pace of productivity technology advancements have contributed to this underutilization. These buildings were designed to accommodate larger workforces that were becoming increasingly unnecessary due to technological advancements. As a result, the suburban office building stock has been characterized by periods of low occupancy, highlighting the need for adaptive strategies to match the evolving demands of the modern workforce.

Today, the trend of leveraging technology to enhance productivity and reduce space requirements continues to shape the office landscape. With the advancement of remote work, digital communication tools, and cloud-based services, physical proximity is becoming less crucial for collaboration and efficient workflow. The COVID-19 pandemic further accelerated this shift as organizations embraced remote work on a large scale. As a consequence, the concept of a traditional office has evolved, and companies are reevaluating their spatial needs and exploring flexible work arrangements. The ongoing exploration of technological advancements and the quest for increased efficiency will likely continue to redefine the nature and location of office spaces in the future.

Office Building Classifications and Conversion

Present day office building classes can help one gauge the character and condition of a building. It can be a useful first step in analyzing the performance abilities and the potential for rehabilitation, which could involve an office to residential conversion.

Building classes offer a categorization system to define office buildings as Class A, Class B, or Class C, where A is the most desirable, and C the least. However, categorization isn't always limited to these three classes as new typologies have been created through conversions and other new environmental standards becoming commonplace. Office buildings have been classed AA and even AAA based on elevated performance in terms of construction, materials, workplace environment and wellness standards. It is commercial real estate agents, owners, and managers who are the main individuals who determine the classification of an office building. Some factors that are considered in the classification process include building age, condition, access to amenities, location, rental rates, curb appeal, historical significance, maintenance, ownership, infrastructure, technology integrations, and certifications like LEED, WELL, etc.

There is no science to the classification process. Oftentimes it can be pretty subjective. For example, a Class A office building in a suburban or small town setting will most likely not share a bulk of its characteristics with a Class A office building in New York City (Plante & Rigg). Therefore, classification determinations are heavily influenced by context and the local building stock.

Office Building Classifications and Conversion

Diving deeper into Class A, B, and C office buildings in the context of their sub-market, there are common assumptions made about buildings within each of these categories. These can help inform whether a building can be successful in rehabilitation. So the question then arises, which of these classifications is most suited for office to residential conversion?

Starting with the lowest, Class C. It is tough to make a case for any building when it has inadequate access to amenities and is in need for extensive renovation. A Class C office building is usually outdated in terms of technology, infrastructure, and finishes (Golden). It is also common for these buildings to be architecturally less desirable. The often limited access to amenities, isolated nature, and reliance on the personal vehicle make them a poor candidate for conversion. An important point to bring up again is that the classification process is subjective and individual conditions of each building must be looked at before disregarding it as an option simply due to a Class C determination.

Moving up to Class B buildings, they tend to be on the older side, but still have good management and maintenance. It could be said that there are two types of Class B buildings. First is the building that is better located than its Class C counterparts, but still lacks adequate access without a personal vehicle. Second is the building that has lost its Class A status due to lack of maintenance and updates. This second type mentioned has the ability to regain its Class A designation through minimal refinishing, rehabilitation, etc (Golden). Class B buildings with access are the most ideal for office to residential conversion as the rehabilitation process will solve most of the issues preventing a Class A categorization.

Class A office buildings often represent the newest and highest quality office buildings with new finishes (Golden). Only if there is significant, long term vacancy and underuse should these be candidates for conversion as they are the most desirable spaces and support a healthy working environment. Otherwise, it is difficult to make the case to convert a newly updated space that is active with tenants.

Challenges with Office Building Conversion

1. Structure

In office buildings, the structural system can differ significantly from residential buildings.

Firstly, the structural bay widths tend to be larger compared to residential buildings. This is primarily because office spaces often want to have open floor plans with flexible layouts to accommodate various configurations and office furniture arrangements (Reepmeyer).

Secondly, office buildings generally have higher floor-to-floor heights compared to residential buildings. This is primarily due to the larger requirement for services, such as mechanical, electrical, and plumbing systems, which need to be accommodated within the ceiling space.

Lastly, the floor plate depth, or the distance between the exterior walls of a building, can vary significantly between office and residential buildings (Reepmeyer). In office buildings, the floor plates are typically deeper due to the need for larger open spaces and the departure from reliance on natural light. Today's new office buildings tend to address the recognition that natural light is a major benefit to workplace environments, and contribute positively to productivity and moral.

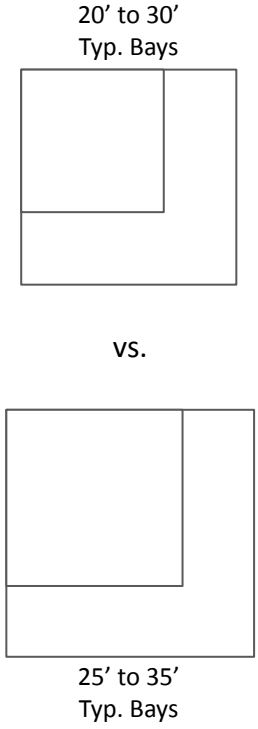


Diagram of typical structural bay widths of housing (top) vs. office (bottom)

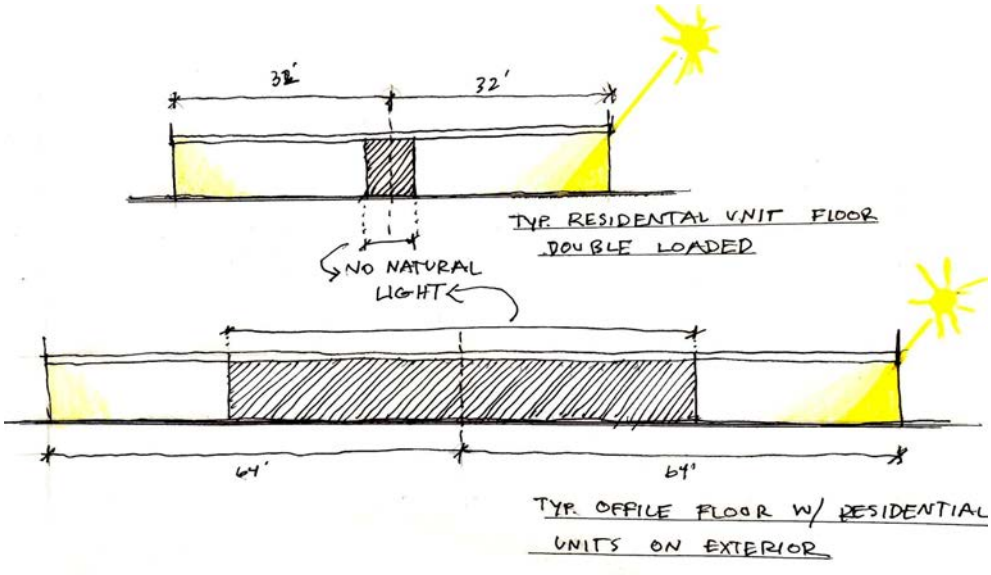


Diagram of typical building widths of housing (top) vs. office (bottom)

Challenges with Office Building Conversion

2. Infrastructure

The number of bathrooms in an office building is typically much lower than what would be required for residential units. Additionally, office buildings usually have smaller or centralized hot water systems, whereas residential units generally require individual hot water supplies. These centralized heating systems are very common in office buildings, so upgrading or decentralizing water heating systems to service individual units may be necessary. Lastly, the electrical distribution system may have to be reworked to service separate residential units (Reepmeyer).

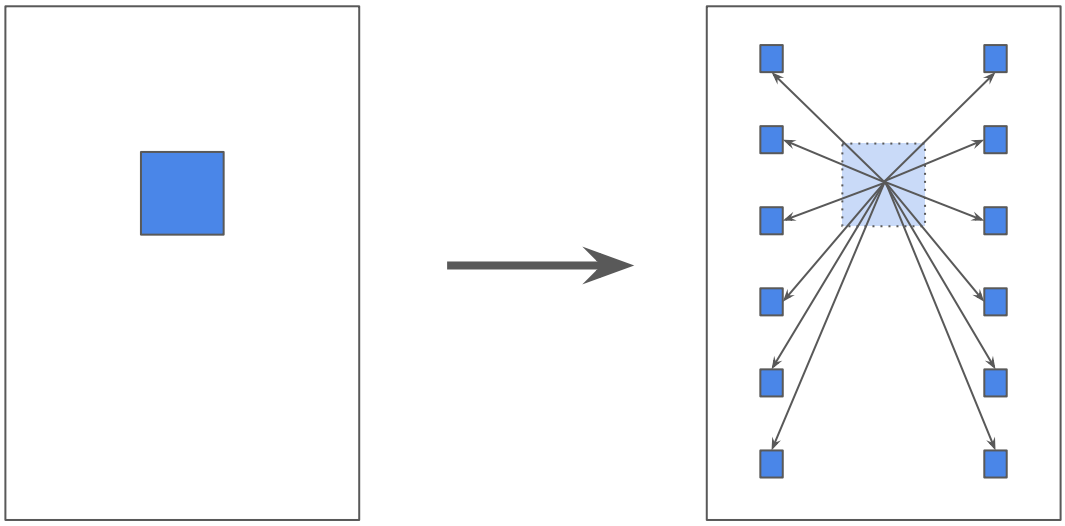


Diagram showing the decentralization of plumbing needed for conversion

3. Zoning

Some municipalities are stricter than others when it comes to zoning regulations, so it is important to be aware of the attitude that a place has towards granting variances. It also increases the chances of a successful application if there is precedence nearby or in adjacent places highlighting the potential of a similar project.

Challenges with Office Building Conversion

4. Cost

There are several costs associated with conversion. Various adaptations and improvements to the existing office building's structure, infrastructure, envelope, etc. are often costly. Weighing the cost versus benefit is essential.

Cushman & Wakefield, a commercial real estate services firm, reports that the typical yearly asking rent for office space in the United States is $35.63 per square foot. If we consider a 1,500 square foot office suite, the monthly rent would amount to approximately $4,454, which is significantly higher than the national median rent of $1,527 per month for residential properties. Conversions are often only feasible if the office space is not being leased and has had long-term vacancy for several years.

Chart comparing U.S. Office vs. Housing Rental Costs of a 1500 SF space

5. Location

Some office buildings, usually the suburban office typology, are isolated in nature. This presents several challenges including a lack of amenities and services, limited collaboration opportunities, transportation challenges, and reduced company visibility.

Comparing an isolated suburban office building (Meadow Brook in Birmingham on the left) vs. an accessible office building (20 Massachusetts Ave. in Washington D.C. on the right)

Methodologies of Office to Residential Conversion

1. Remediate Lack of Natural Light Penetration where Necessary

Like Mentioned before, office building floor depth is much larger than a typical residential building. This causes issues with getting natural light into the areas closer to the core. When converting the space to residential units, it is especially critical to provide adequate natural light for each space.

One method is by cutting down the distances to the core. This can be executed in ways like terracing or creating notches in the exterior. This increases the amount usable, naturally lit spaces for residences. Another method is by carving out courtyards or atriums in the center of the building to allow light in. This can be difficult as many office buildings have their cores in the center. Offsetting these atriums, light wells, or courtyards to be adjacent to the core can be a beautiful design condition.

This “carving” method becomes less feasible the more floors the building has. For example, carving out a light well in a 3-story office building will be must less of an undertaking than carving out a 30-story skyscraper. Therefore, tall metropolitan office buildings with deep floor plates are not the best candidates for residential conversion.

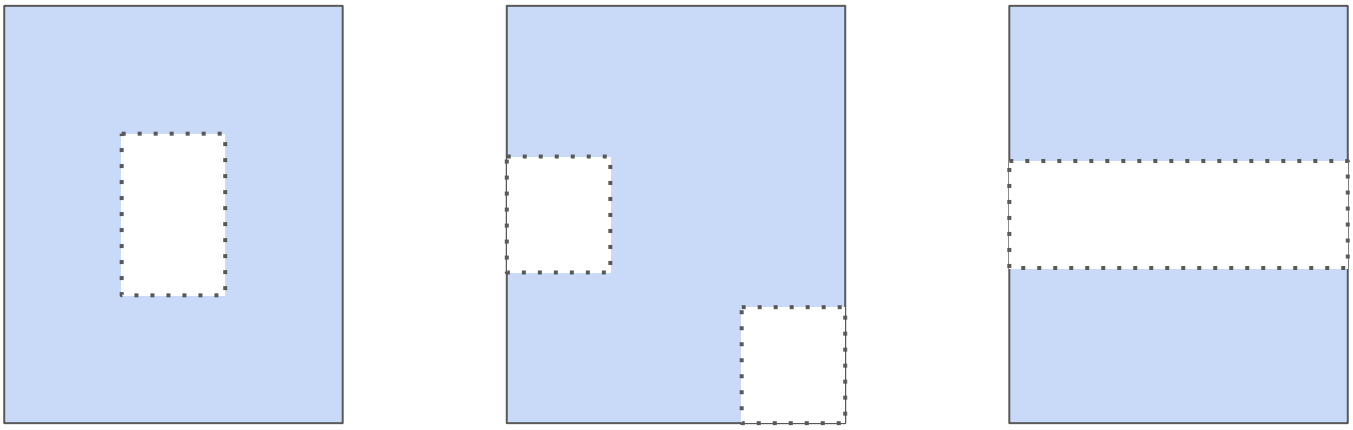


Diagram of ways of carving out a large floor plate to maximize sunlight (from left to right: cutting out middle, cutting from edge, cutting through building)

Methodologies of Office to Residential Conversion

2. Supplement and/or Improve Structure to accommodate Residential Loads where Necessary

In some cases, the existing structure may be insufficient to support the anticipated residential loads. Reinforcement measures may include strengthening foundations, integrating load-bearing walls and columns, and improving floor systems.

The foundation is crucial for supporting the entire structure. It may need to be reinforced by underpinning, adding additional footings, or using advanced techniques like micropiles or helical piles.

Walls and columns may need to be strengthened to handle the increased loads. This can involve adding steel or concrete reinforcements, increasing the size or number of structural members, or introducing new load-bearing elements where necessary.

Office floors are typically designed for light loads, so strengthening them is often necessary. This can involve adding extra beams, increasing the thickness of floor slabs, or using materials with higher load-bearing capacity, such as reinforced concrete.

3. Supplement and/or Improve Existing Infrastructure to Accommodate Residency

Converting an office building for residential use can present several infrastructure challenges, particularly in the areas of plumbing, heating, and electricity.

There are two main considerations with plumbing. The plumbing system would need to be expanded to accommodate additional bathrooms or en-suite facilities in each residential unit. Upgrading the hot water infrastructure, such as installing separate water heaters or a centralized system capable of supplying multiple units, would be necessary.

Offices also often have centralized heating systems with settings that maintain a uniform temperature throughout the building. Residential units typically require individual zoning capabilities and temperature controls to cater to the preferences of different occupants.

Lastly, residential units usually require separate electrical metering for billing purposes. This may involve installing individual electrical panels and meters for each unit, which could require modifications to the existing electrical distribution system.

Methodologies of Office to Residential Conversion

4. Incorporate and make Connections to Amenities and Services to Support Modern Living

To create a modern living experience, it is essential to incorporate and make connections to amenities and services that cater to the needs of residents. One effective way to achieve this is by providing amenities on the ground floor, thereby creating a vibrant and convenient "destination" within the living space. This approach allows residents to have easy access to a range of services and facilities, enhancing their overall quality of life.

Some ground floor activators could include a variety of offerings such as a fitness center, a grocery store, a coffee shop, a co-working space, and/or a community lounge. These amenities not only provide immediate access to daily necessities but also foster a sense of community by encouraging social interaction among residents and visitors. The ground floor can be designed to be open, inviting, and aesthetically pleasing, creating an attractive environment that draws residents in and encourages them to spend time in the shared spaces. This destination-like setup can also attract businesses and entrepreneurs to establish their services within the building, creating a diverse and dynamic ecosystem. By offering a mix of amenities and services, the ground floor becomes a hub of activity and enhances the overall livability of the space. It not only meets the needs of modern living but also contributes to the well-being and satisfaction of residents, fostering a strong sense of place and community.

Sketch of active ground floor by Barefoot Planning + Design showing active frontages, visibility, protections, and buffers

Methodologies of Office to Residential Conversion

5. Apply for a Zoning Variance if Necessary

When applying for a zoning variance, like mentioned previously, it is crucial to thoroughly understand the goals and objectives of the local jurisdiction. Each jurisdiction may have its own specific priorities and concerns when it comes to zoning regulations. By familiarizing oneself with these goals, applicants can tailor their variance requests to align with the jurisdiction's objectives, increasing the likelihood of a successful application.

In recent years, many local jurisdictions have recognized the urgent need to address housing shortages and office vacancies. As a result, some of these jurisdictions are implementing more lenient zoning regulations in areas heavily impacted by these issues. Therefore, when applying for a zoning variance in such areas, it may be advantageous to highlight how the proposed project aligns with the jurisdiction's goals of alleviating the housing shortage and reducing office vacancy rates. This can help demonstrate the potential benefits and value the variance would bring to the community, increasing the chances of a favorable decision.

6. Seek Affordable Housing Grants and other Financial Assistance to Increase Feasibility

The Low Income Housing Tax Credit (LIHTC) is a federal program designed to encourage the development of affordable rental housing for low-income individuals and families. Under this program, states have the option to provide a supplemental credit to further support affordable housing initiatives within their jurisdictions. This supplemental credit can be automatically added to the federal LIHTC or offered through a separate program for those who don't receive the federal credit.

There are variations in the approach to State level supplementing to the LIHTC. In Arkansas, the state supplements 20% of the allotted federal LIHTC. This means that developers who qualify for the federal credit can receive an additional 20% credit from the state, enhancing the financial viability of their affordable housing projects.

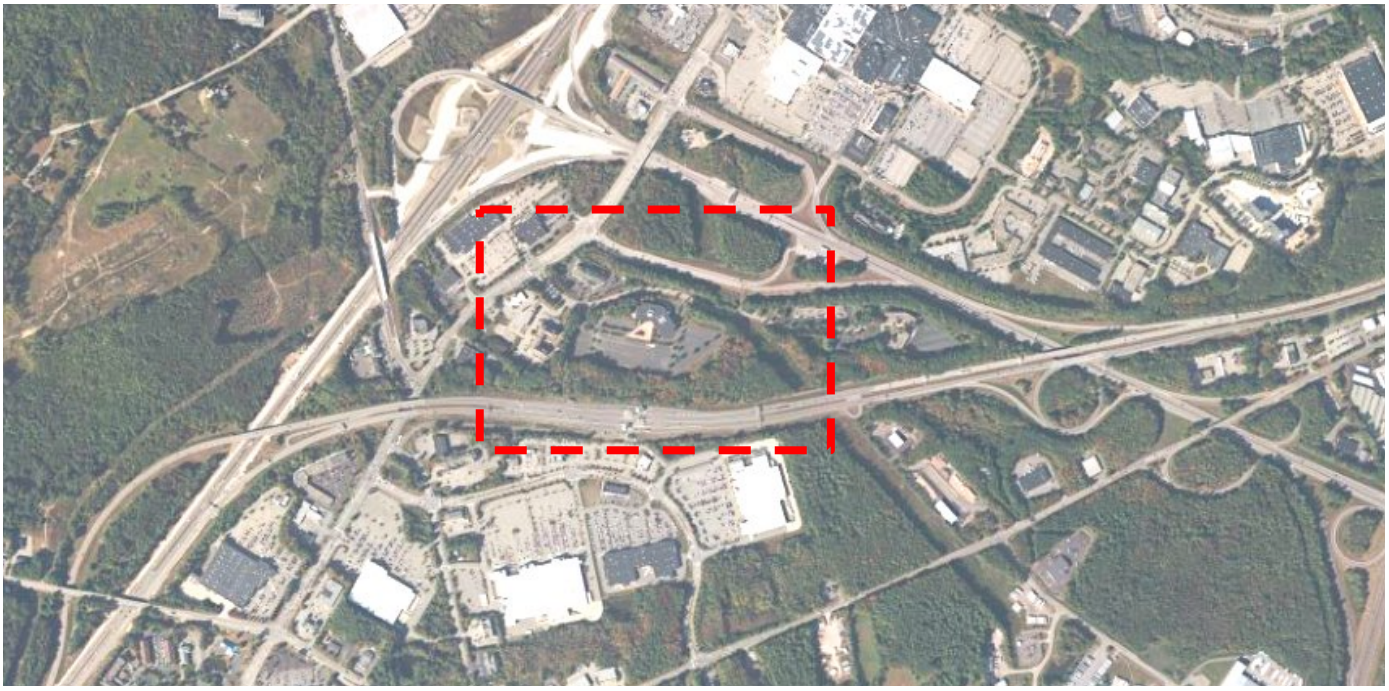
In Massachusetts, the supplemental credit is awarded over a period of five years. Developers must adhere to certain compliance requirements, such as maintaining the affordability of the housing units for a minimum of 45 years. This longer compliance period ensures that the affordable housing remains available to low-income individuals and families for an extended period of time.

As another example, Nebraska offers a more substantial supplement by providing 100% of the federal LIHTC through its own program. This means that developers in Nebraska who qualify for the federal credit can also receive a matching credit from the state, effectively doubling the financial support available for their affordable housing projects. The state's supplemental credit is awarded over a six-year period, further assisting developers in covering project expenses.

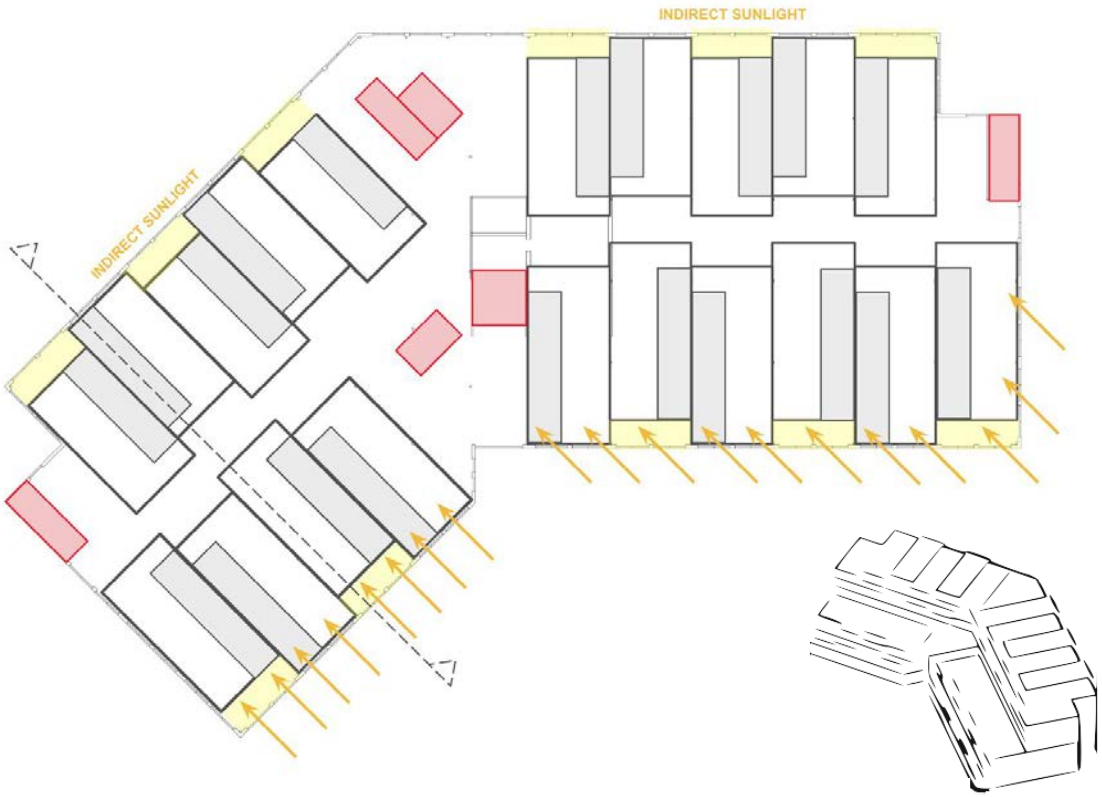
11

DESIGN PROCESS

EXISTING SITE PLAN

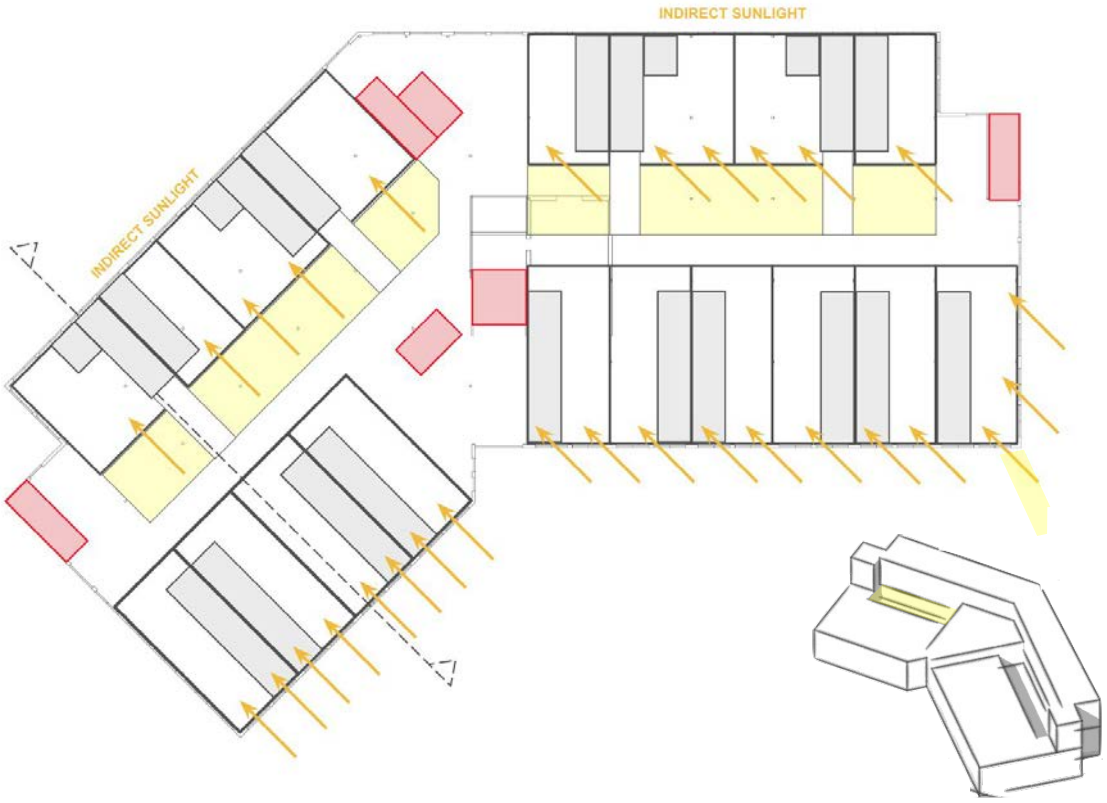


POSSIBLE CARVING METHODS TO LET LIGHT IN



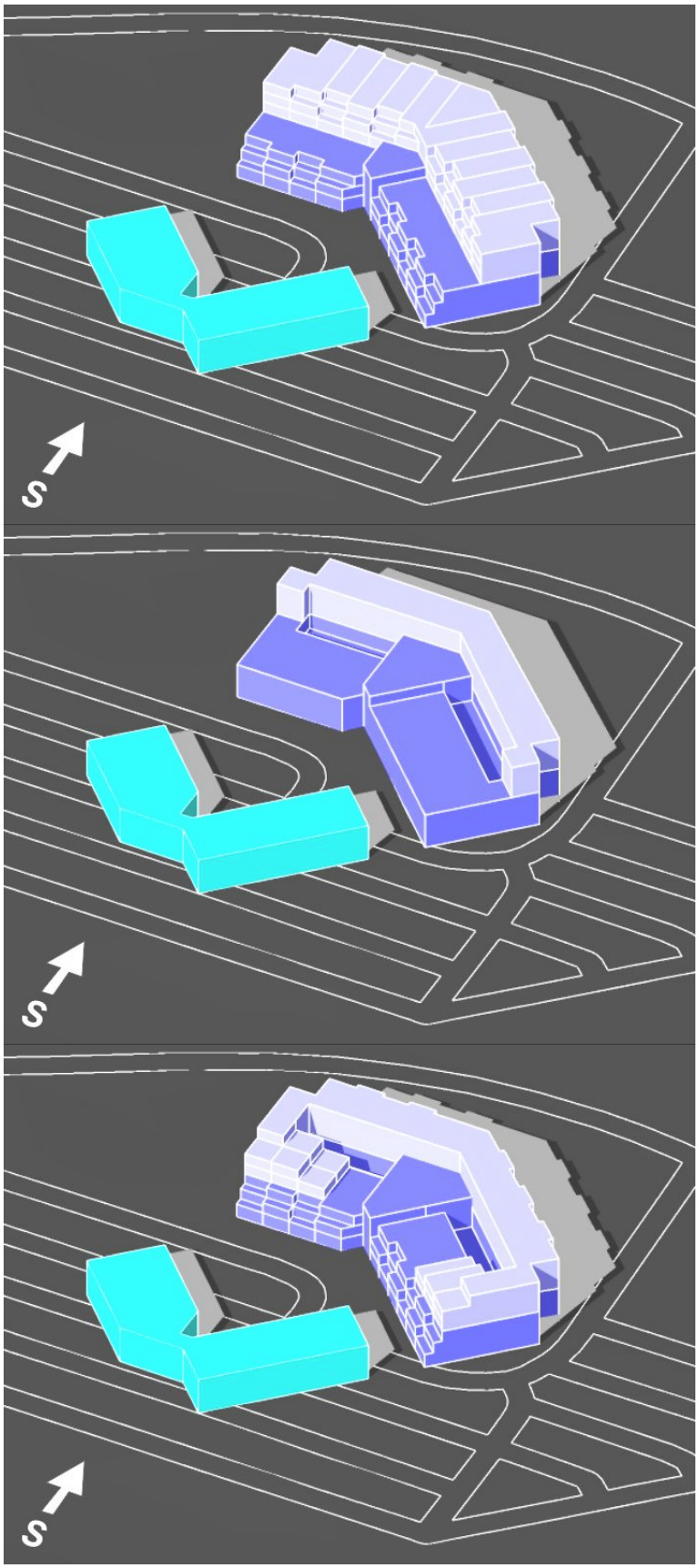
As mentioned in the previous chapters, some building adjustments are often necessary to let natural light further into the building. This first diagram exemplifies the method of carving from the exterior of the building to let more light in from the sides. This method was ultimately not chosen to be the primary method to adapt the existing structure.

POSSIBLE CARVING METHODS TO LET LIGHT IN

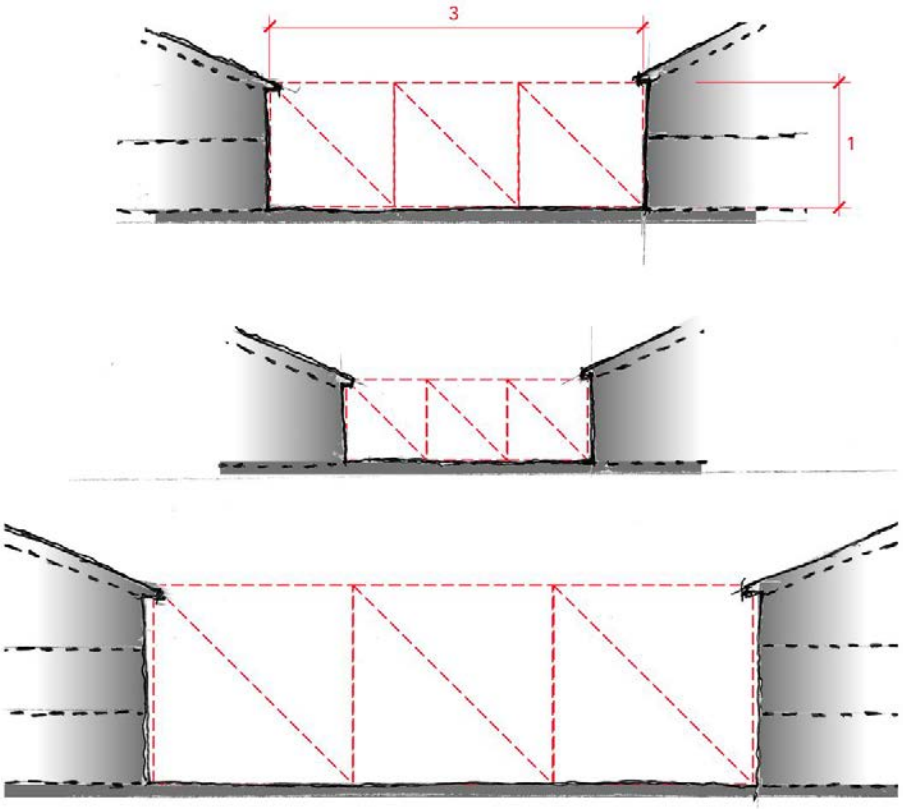


This initial diagramming of the existing building exemplifies the method of carving into the center of the building to let light in from above. This method is the most successful with this building shape and core situation. This allows for units on the north side of the building to get access to southern light. In addition, more floors can be added to the north side to densify the amount of units in the building without interfering with the amount of sunlight entering from the atrium cut.

POSSIBLE CARVING METHODS TO LET LIGHT IN

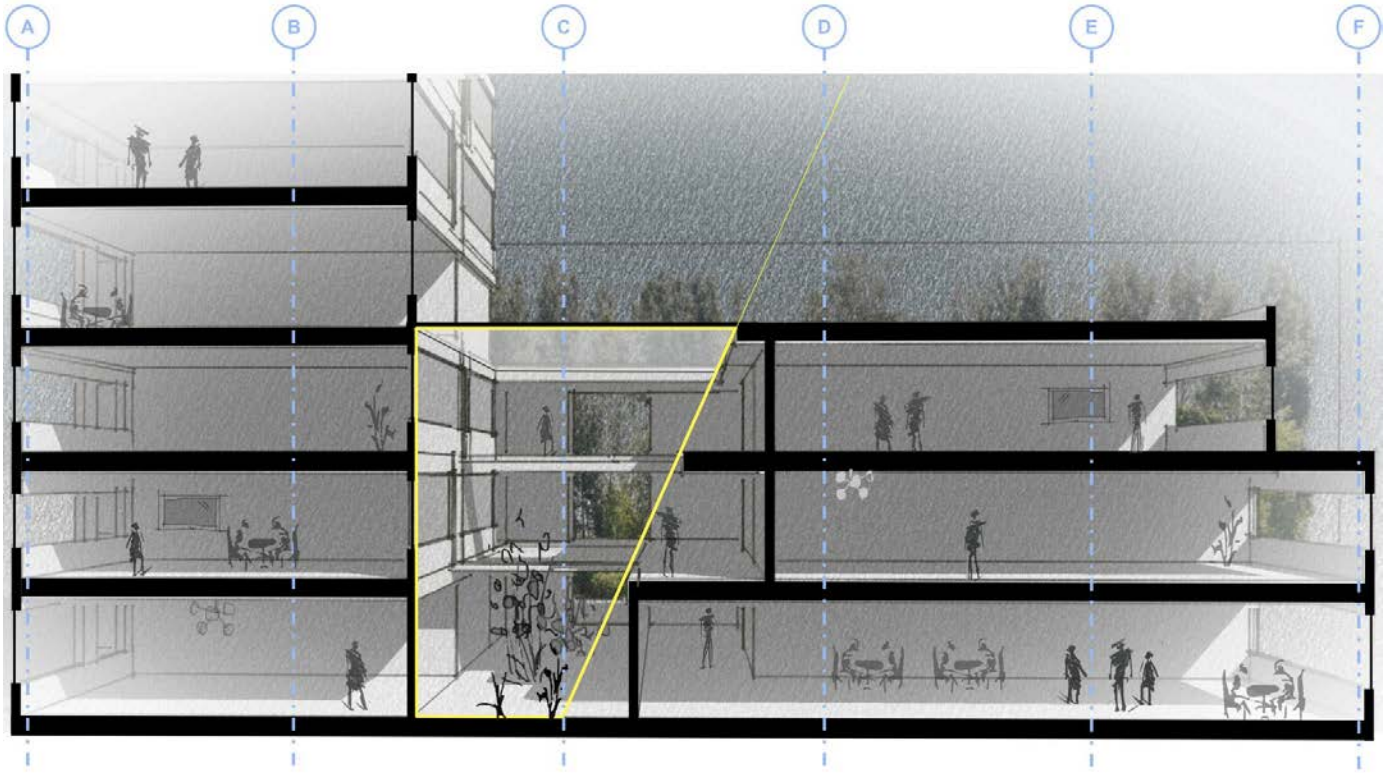


BUILDING HEIGHT TO OPEN SPACE RATIO



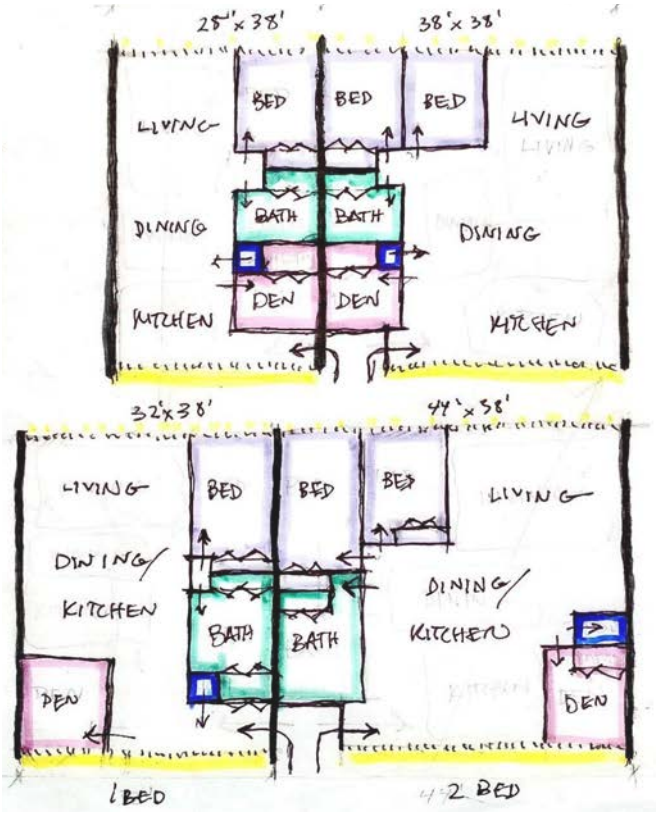
The most comfortable streets and spaces for the human scale fall between a 1:2 or 1:3 ratio. This means for every one unit of height of the bounding buildings, there is 2 to 3 of the same unit of width between buildings. This principle was used to provide a comfortable scale for the site.

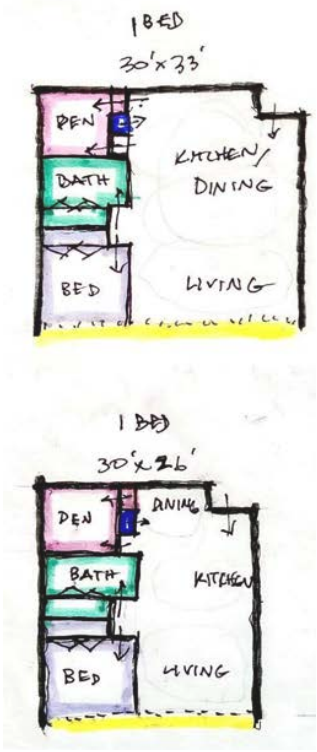
SECTIONAL CONSIDERATIONS

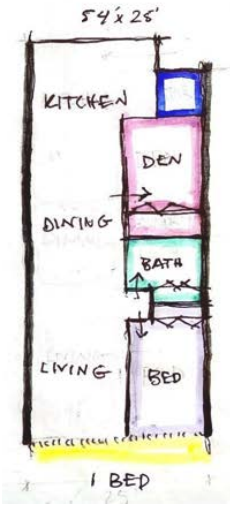


This initial section perspective exemplifies the carving method and the light that is now permitted to enter the lowest floors of the existing building. As you can see, it improves the natural light quality exponentially for the northernmost units. This section also begins to look at adding additional floors above the northernmost units.

INITIAL UNIT DESIGN

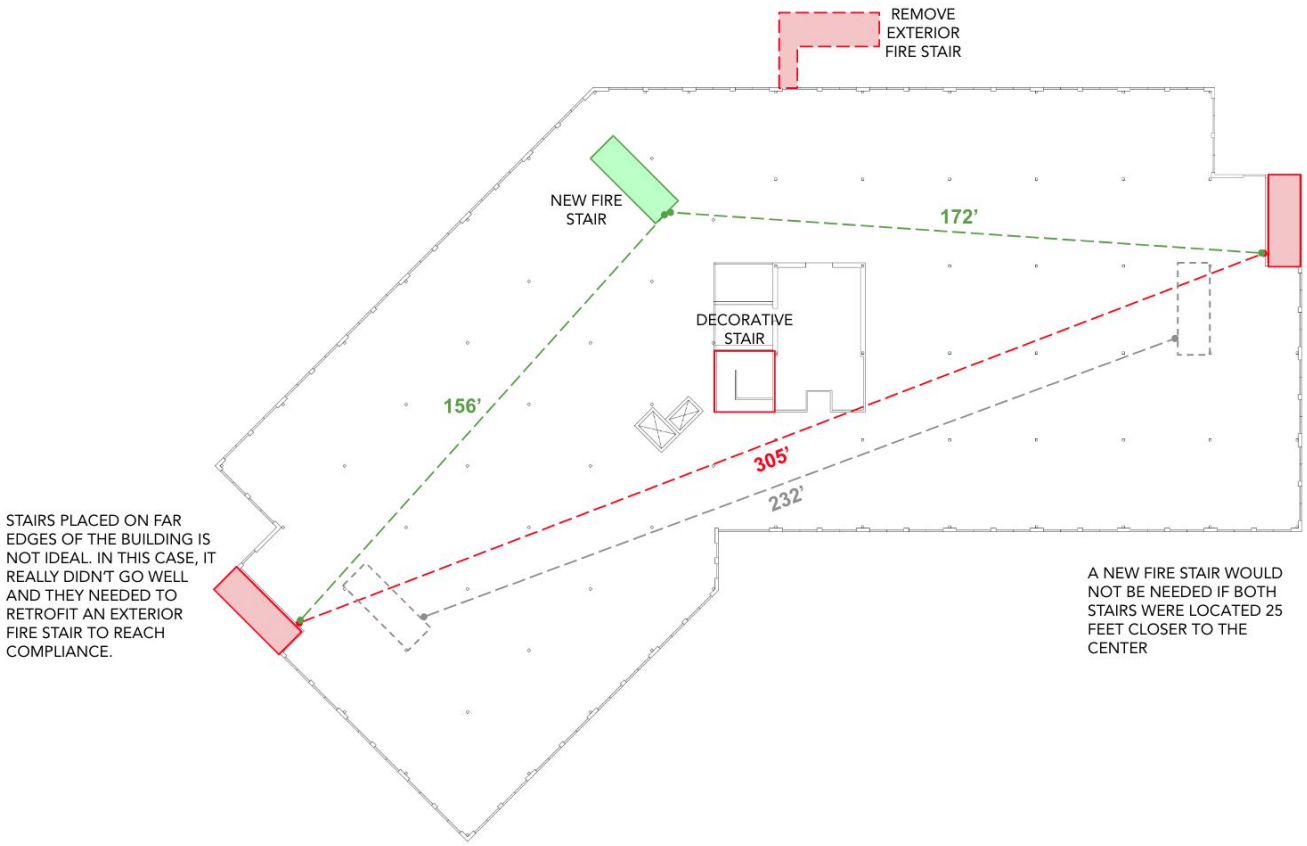






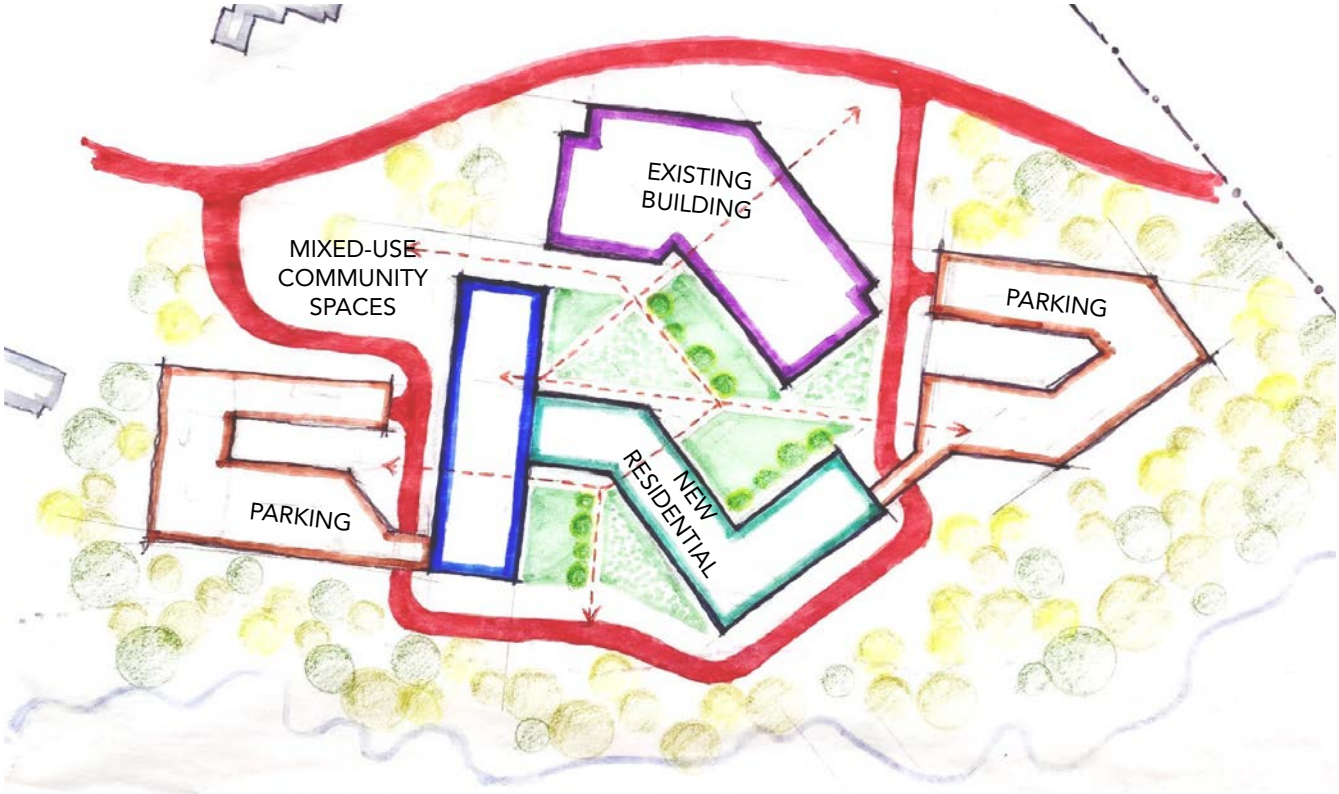
Here are a few initial unit sketches. They start to show the method of pushing the individual rooms to one side of the units to leave a large open style plan to hold the kitchen, dining, and living space. The most challenging units are the 50-foot long units in the existing building. The shape limits a variety of organizations that could happen.

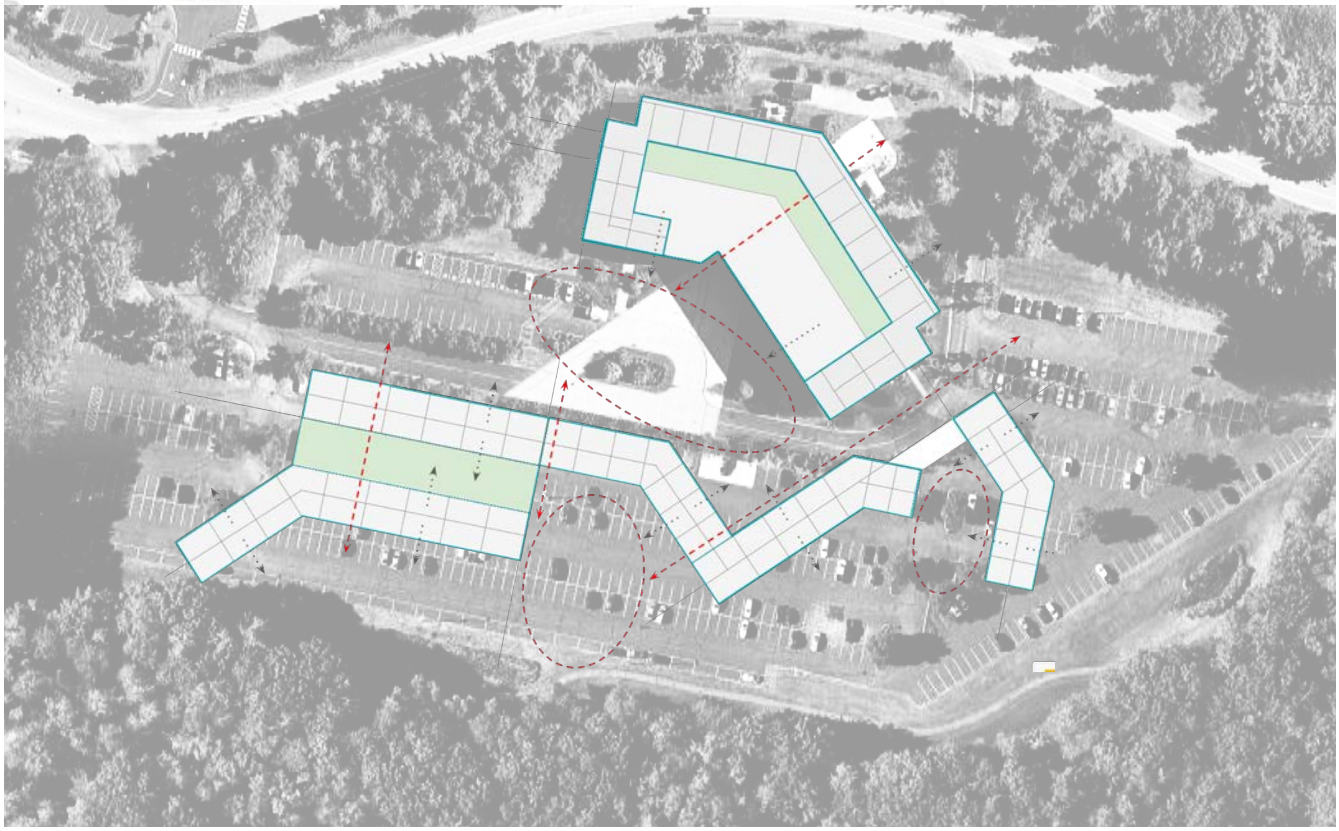
RESOLVING EXISTING FIRE STAIR ISSUE



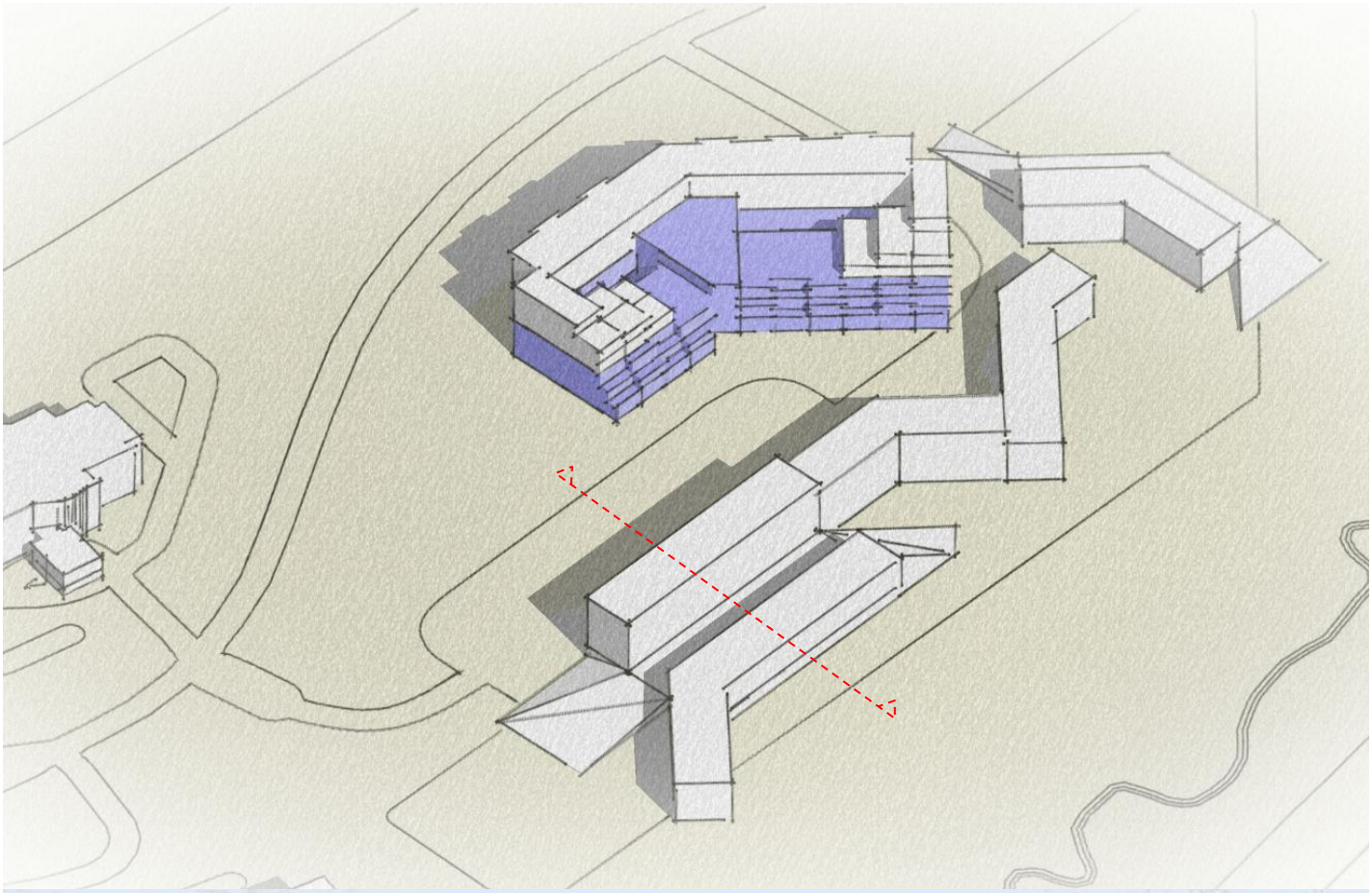
An obstacle with the existing office building is an issue with the fire stairs. A third stair needed to be retrofitted onto the exterior because of the location of the two others that are pushed to the exterior of the building. The maximum distance between fire stairs is 250 feet. A new stair needs to be added inside, splitting the distance between the two on opposite ends to remove the metal exterior stair.

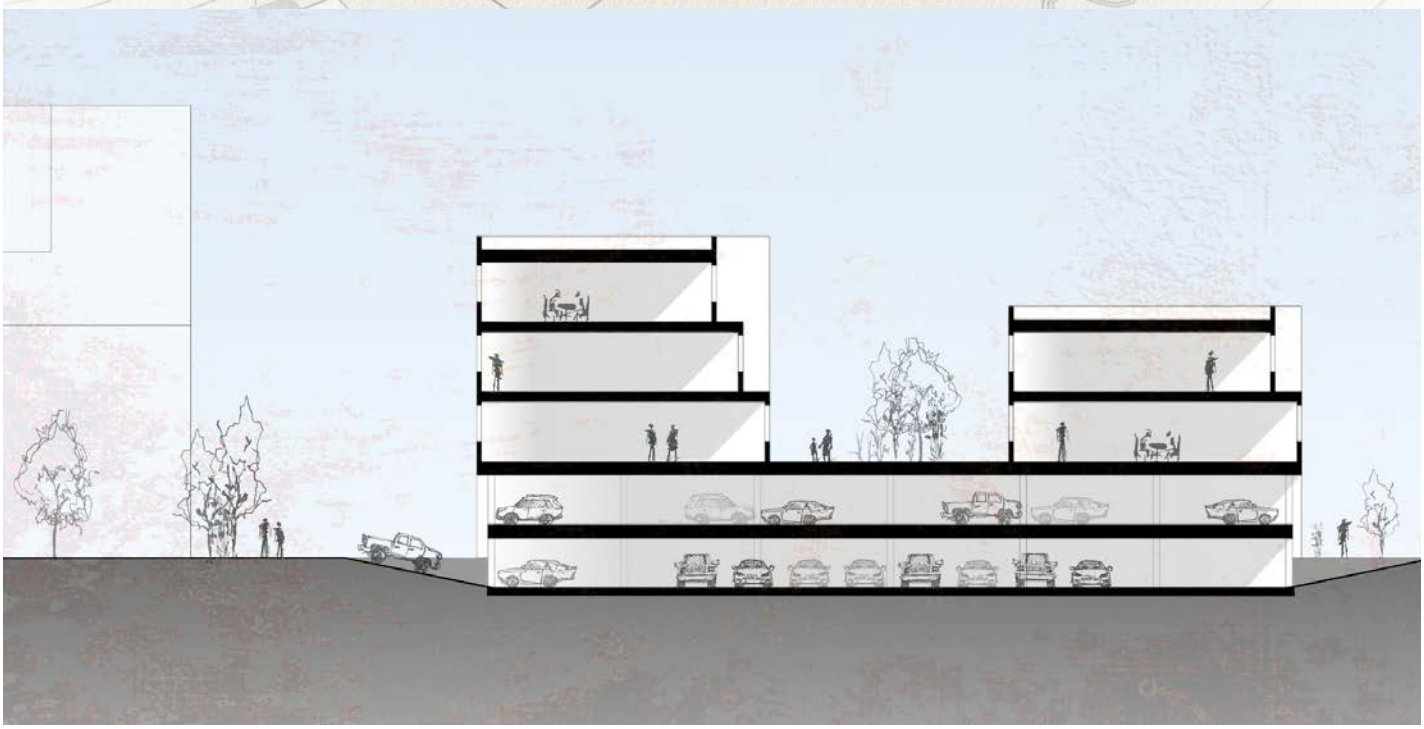
SCHEME A INITIAL DIAGRAMMING



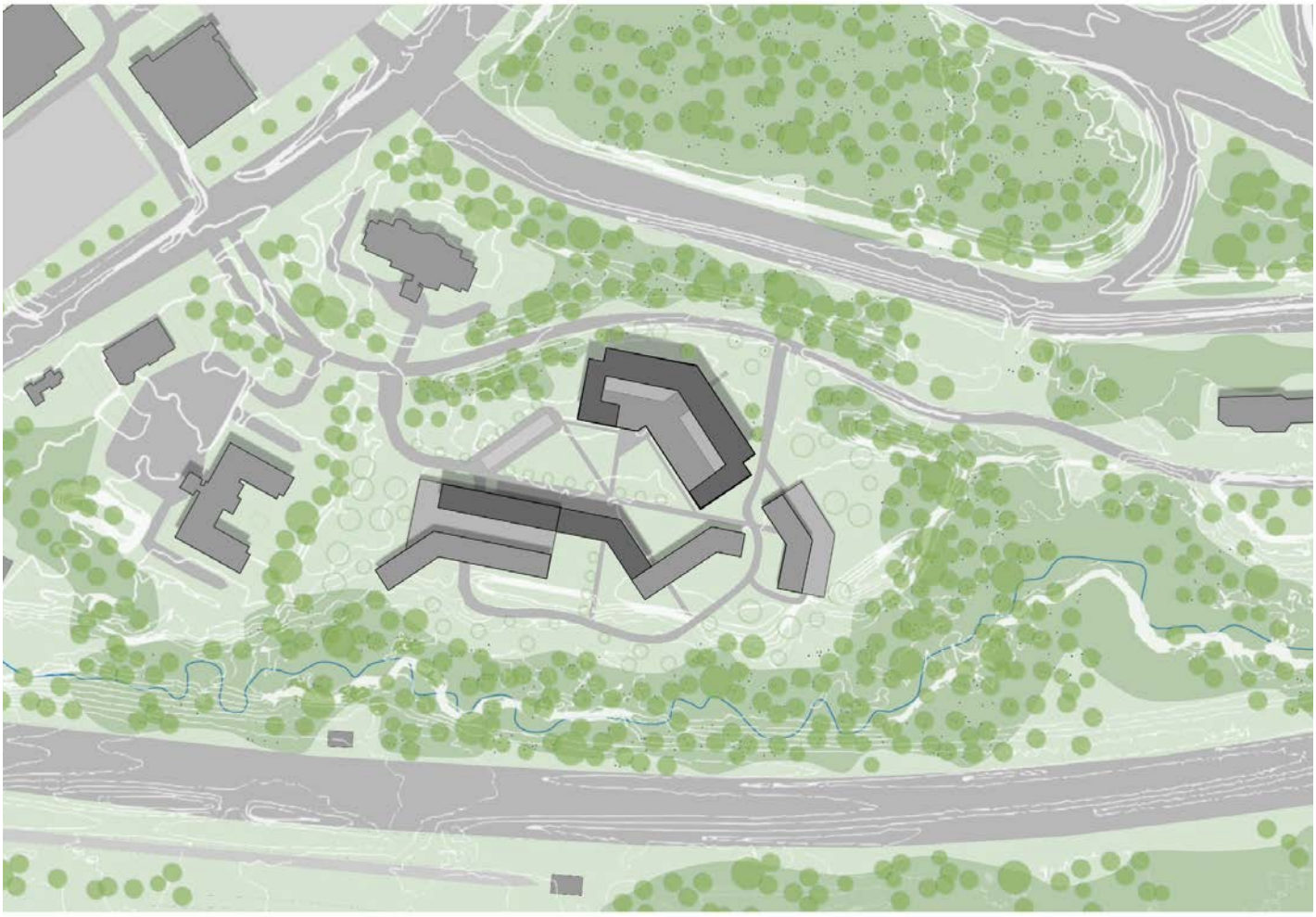


SCHEME A 3D AND SECTION



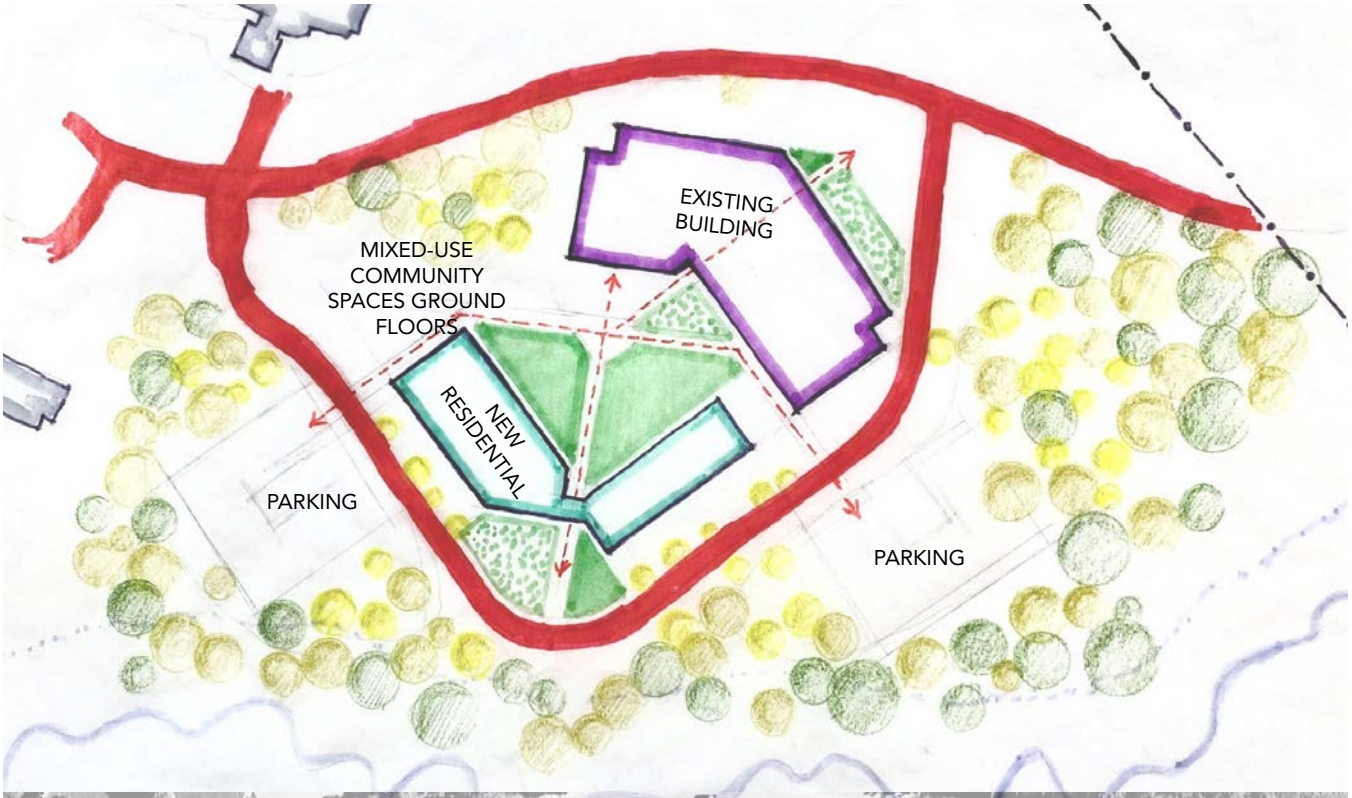


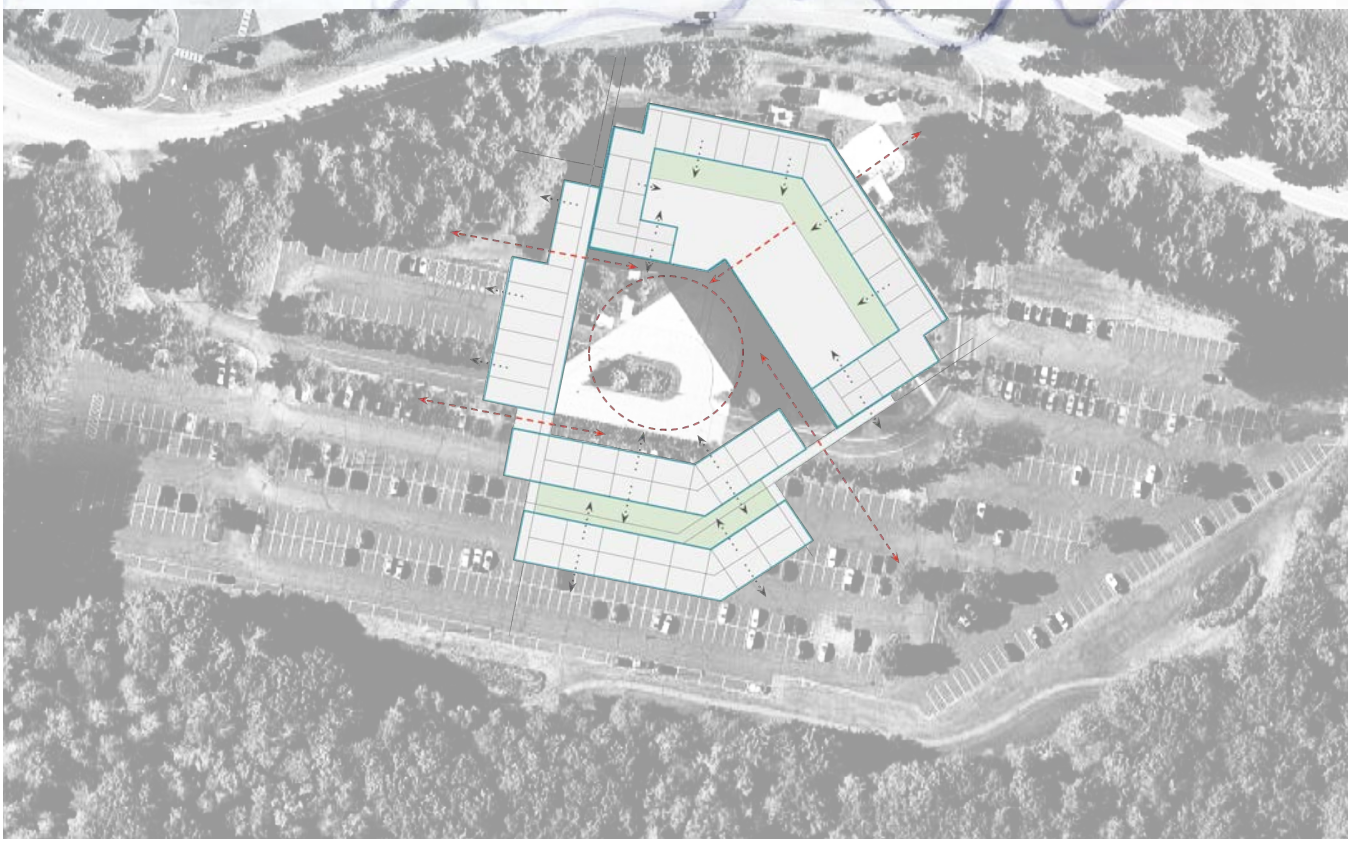
SCHEME A SITE PLAN



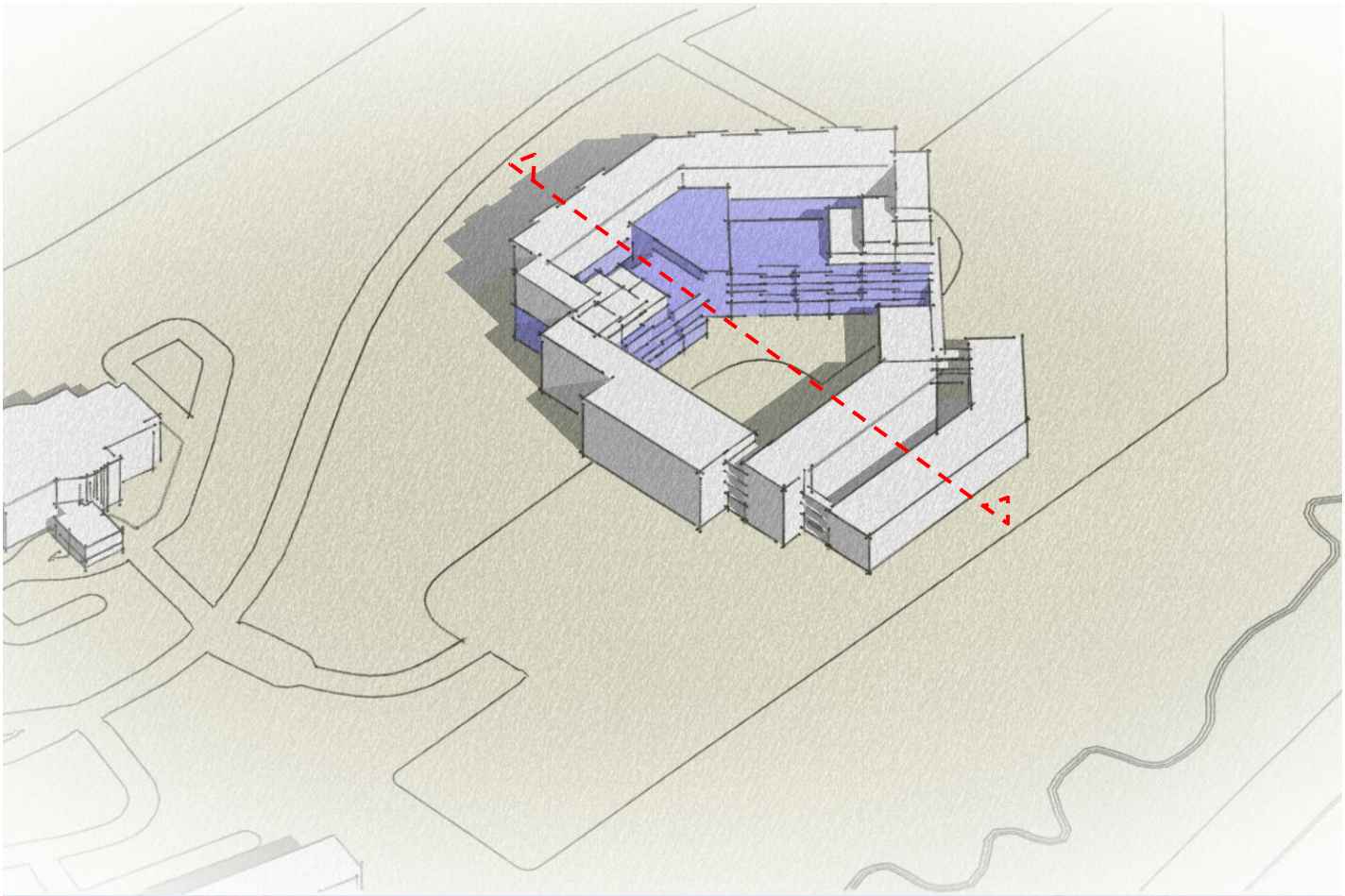
This first scheme begins exploring the creating of a campus to provide the necessary vibrancy to create a destination. This scheme also plays with the 45 degree turn that was derived from the existing office building. It creates openings and closures that fram views towards nature as well as shared courtyards that open up their own interesting programmatic opportunities. Parking in this scheme is semi-buried into the ground to free up the ground space for permeable surfaces and other program.

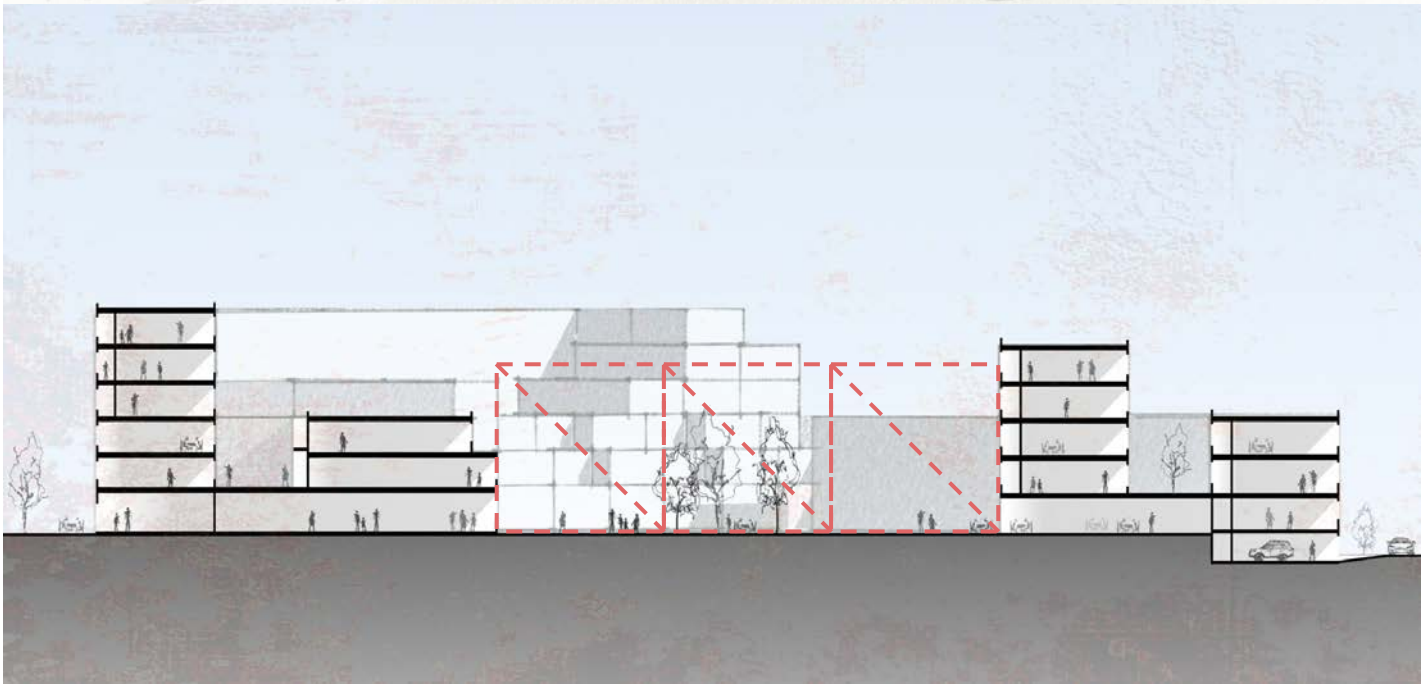
SCHEME B INITIAL DIAGRAMMING



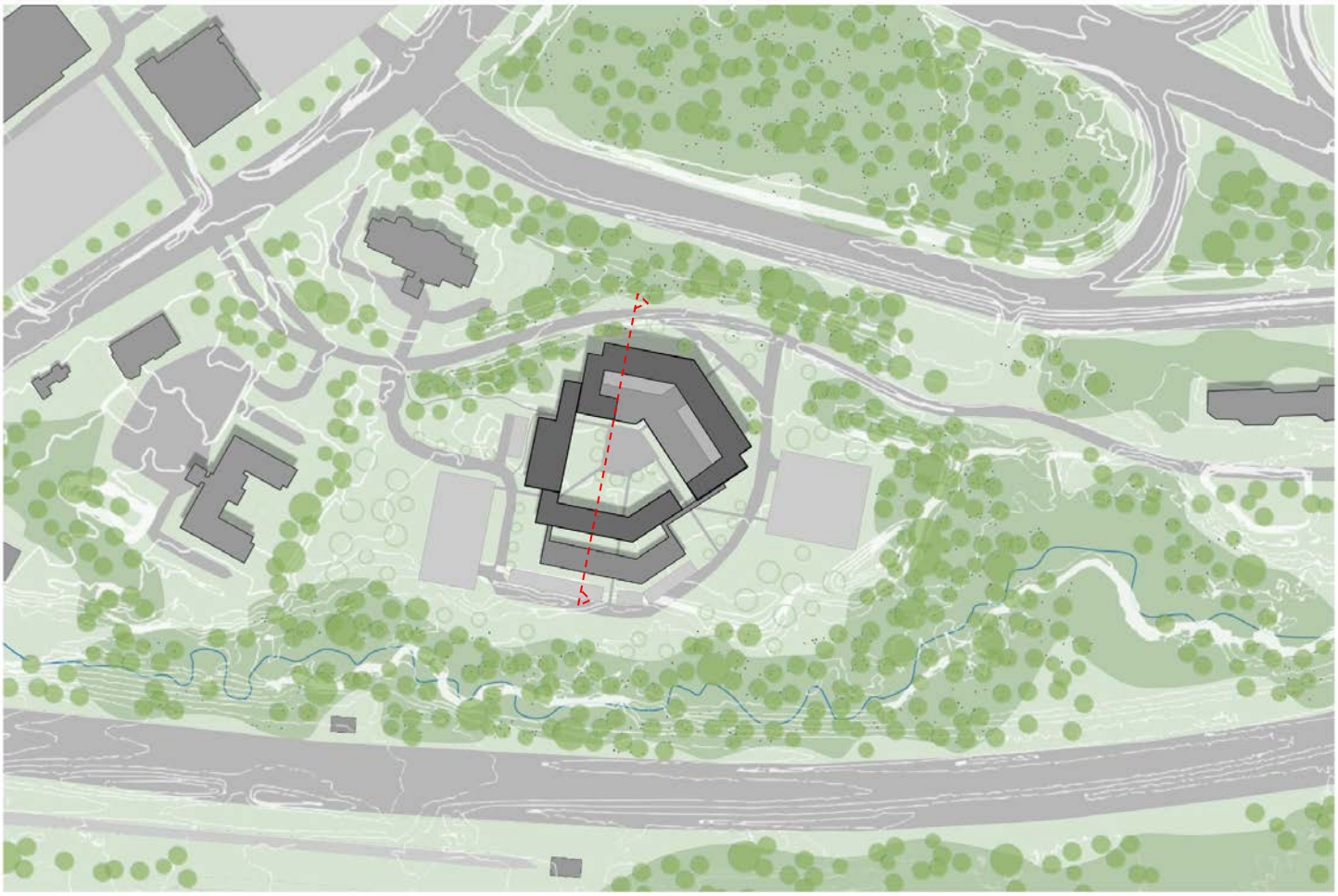


SCHEME B 3D AND SECTION





SCHEME B SITE PLAN



Scheme B takes a different approach by being more closed and contained. This scheme provides a retail or commercial frontage at the main entrance that is separate from the residential interior. Although this creates an interesting formal condition, it was determined to not be conducive to a mixed use environment that is welcoming and allows for the mixing of people. This scheme also doesn't address parking in an integrated way, rather it uses portions of the existing lot.

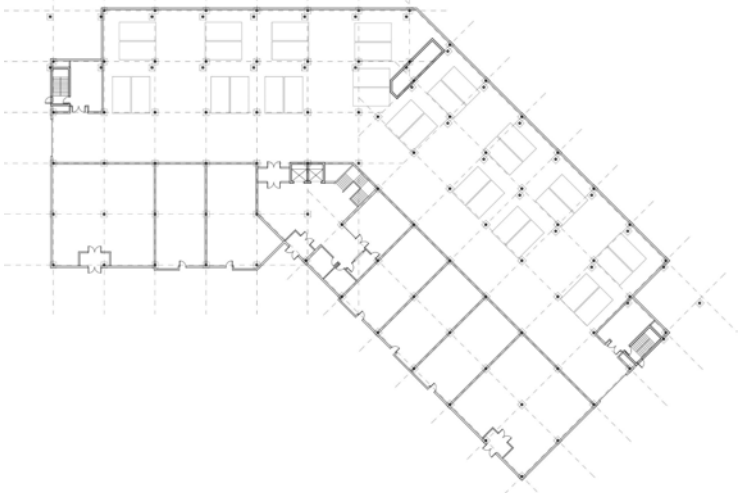
COMBINED MIDTERM SITE PLAN

This site plan combines the best parts of Schemes A and B. From scheme A, the lessons about creating a mixed use environment that engages with all parts of the site were derived. Additionally, placing the parking for residents underneath the buildings were determined to be a good use of the site and provides protection from the snow in Maine's long winters. From Scheme B, the pairing of buildings was continued into the combine plan. As seen above, this allows for a cohesive language to continue throughout the buildings that unites them. In addition to the lessons from the schemes, this plan integrates a raised landscaping language above the parking levels.

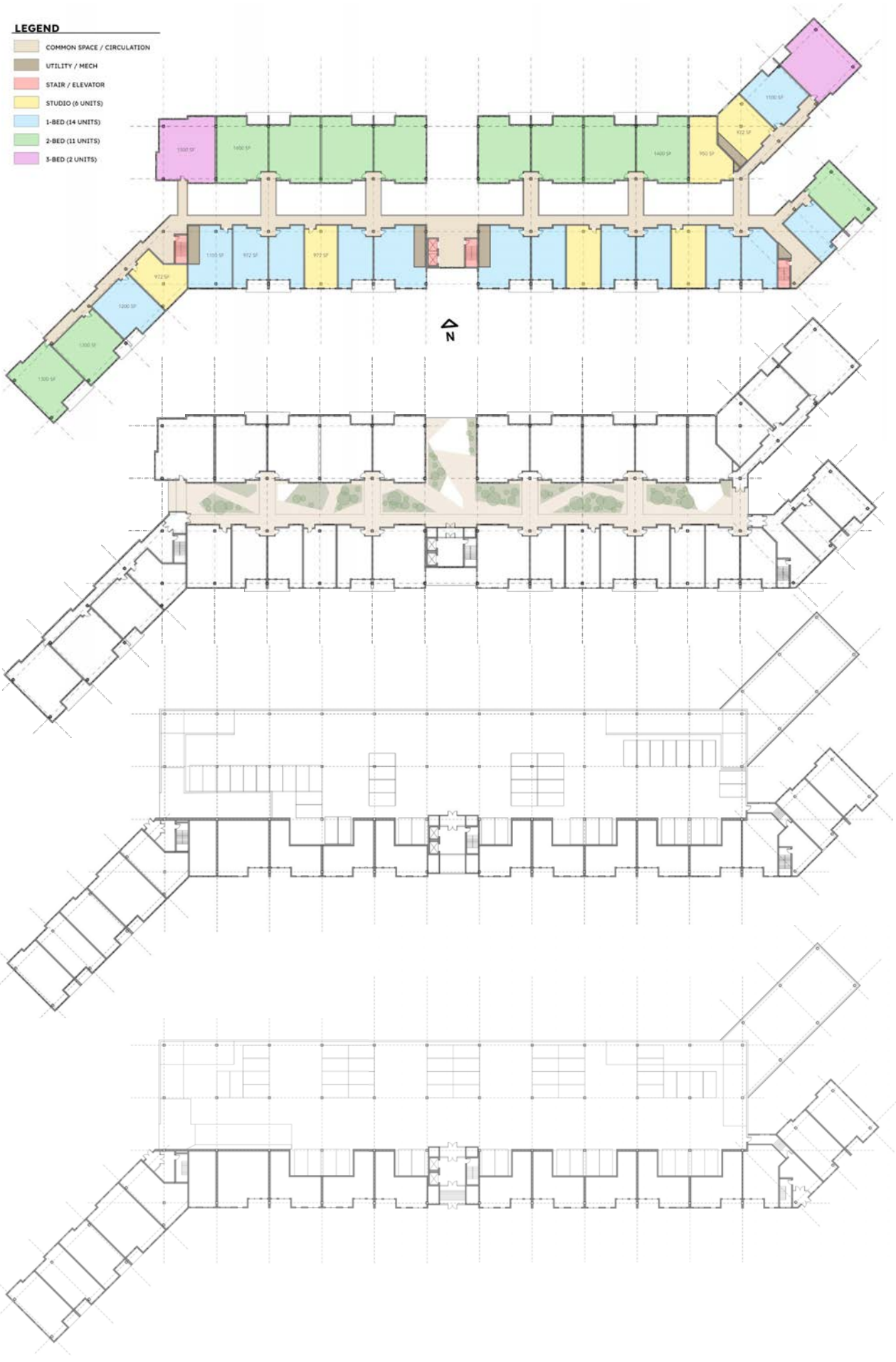
MIDTERM SITE SECTIONS

As mentioned on the previous page, There is a cohesive language made with the raised landscaping above the parking levels. The lower site section exemplifies the bridging method to arrive at the northernmost building in the pairings. The 35-foot gap between the paired buildings allow for sunlight to enter into the northern building without issue. The sectional quality begins to relate and emphasize the methods of converting the existing office building into a viable residential environment.

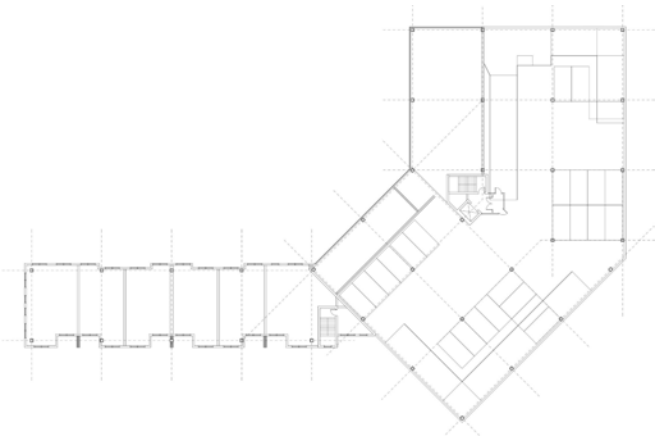
BUILDING 1 80% FLOOR PLANS

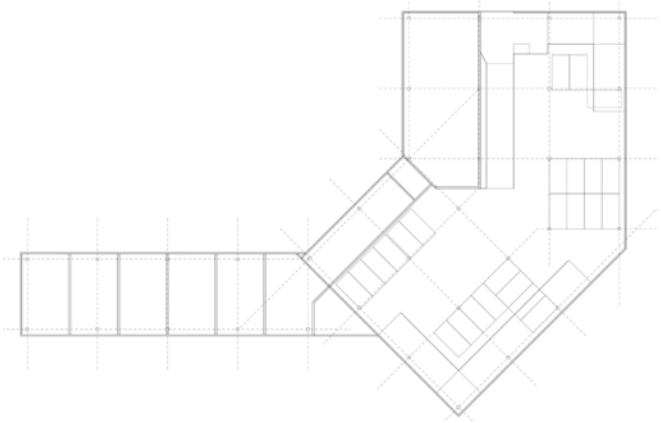


BUILDING 2 80% FLOOR PLANS



BUILDING 3 80% FLOOR PLANS





ELEVATION STUDIES

The initial elevation study uses a series of principles that are carried out through all three buildings in ways that respond to the interior program. First, Wherever there is a public amenity, the facade is lifted and becomes full glass. Second, the balconies become recessed within the facade and is wrapped with a material that contrasts with the flat plane of the exterior. Third, there is a wood and grey rainscreen panel system that highlights the living versus bedroom spaces. Lastly, in addition to the wood and rainscreen panels, the window sizes and types allude to the program within.

SECTIONAL STUDIES

These revised building sections show the parking semi-buried in the upper section, but with a townhouse style unit on the south side that has its own front entrance. The parking is located on the less desirable north sides of the buildings where access to sunlight is limited. Similarly in the bottom section, the parking is located on the north side to preserve ground floor frontages for a restaurant or co-working space.

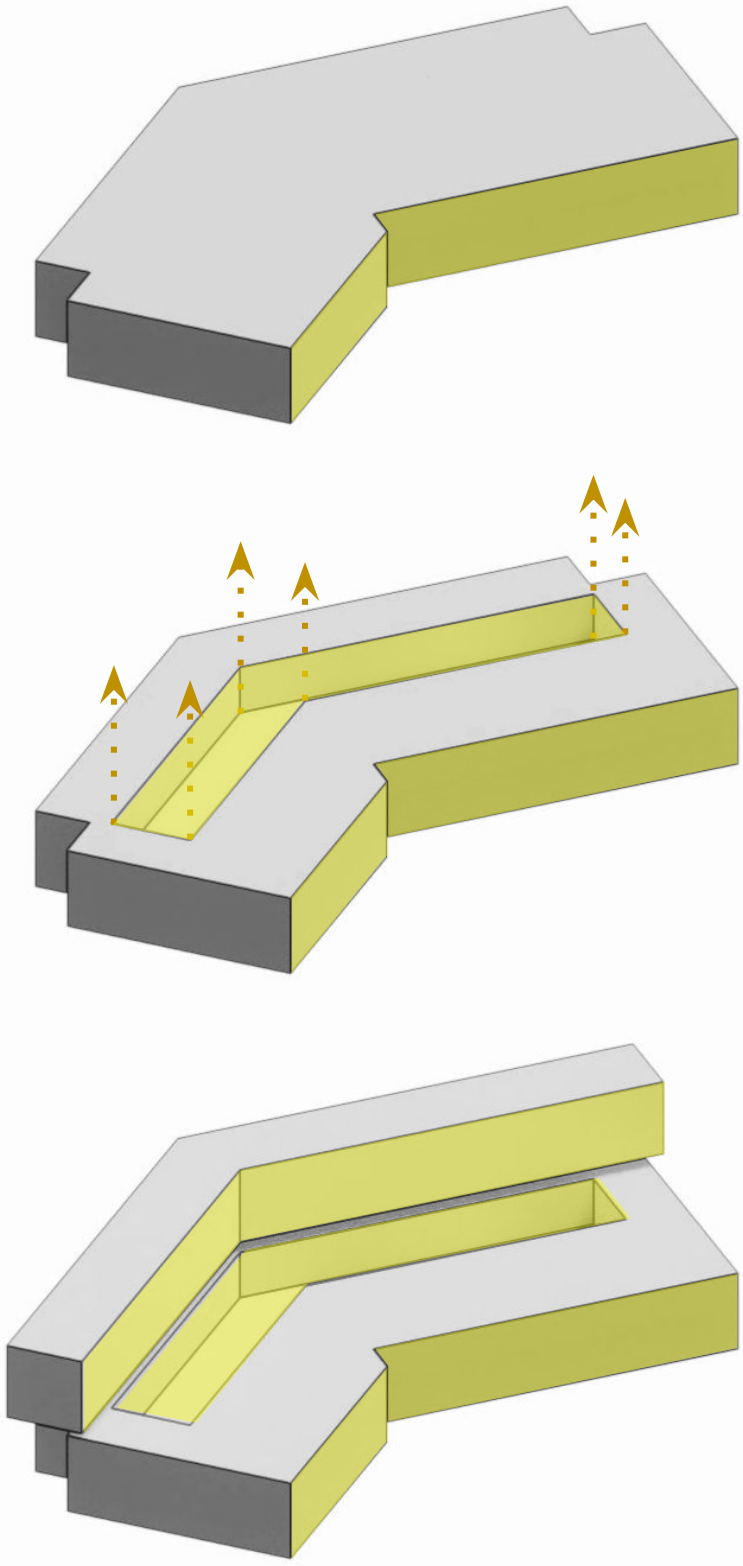
3D DEPICTION

This 3d shows the set of principles used to distinguish parts of the site and building interiors. It also shows the bridging method to access northernmost units above the second floors. Although very preliminary, this image became an integral tool in further design and articulation of the project. It revealed that the roof surfaces need design attention as well as 3d site modelling to capture the essence of the place.

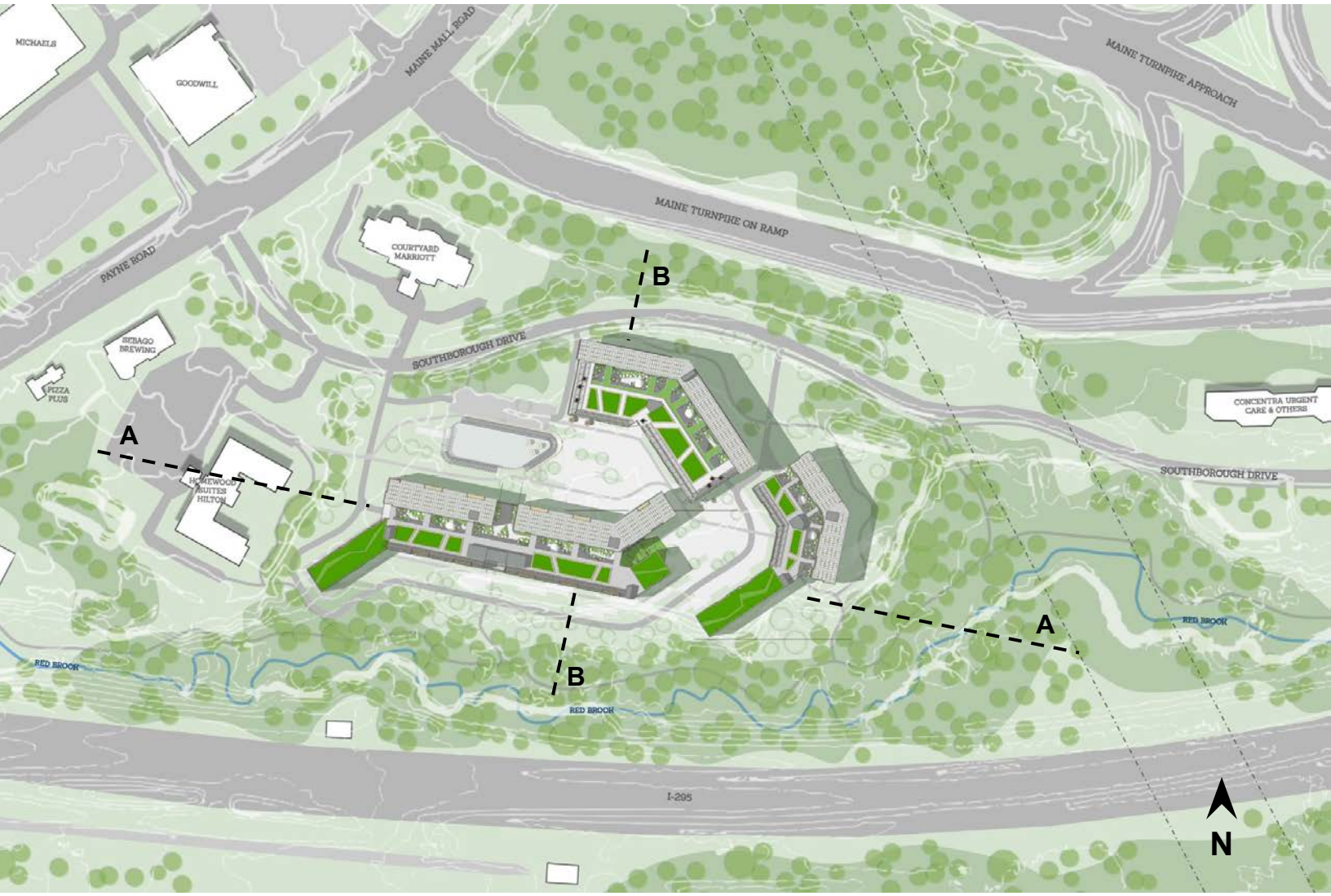
12

FINAL DOCUMENTATION

EXISTING BUILDING CONCEPT DIAGRAM



FINAL SITE PLAN



This final site plan highlights the various connections, paths, and amenities that are located on the ground floor and roofs, the raised landscapes above the parking, and the bridging to units. The final design incorporates a community ice rink that can be flooded and used by residents and the public for at least 4 months of the year, because of Maine's cold winters. In the off-season, it can be used as a market space, event space, and community patio. Paths connecting to nearby buildings and amenities and along Red Brook are incorporated to facilitate site interaction. Maine also has very warm summers, so shading is also necessary. Planting and replanting trees within the courtyards and along the pathways can help keep paved or semi-paved areas cool in the summer.

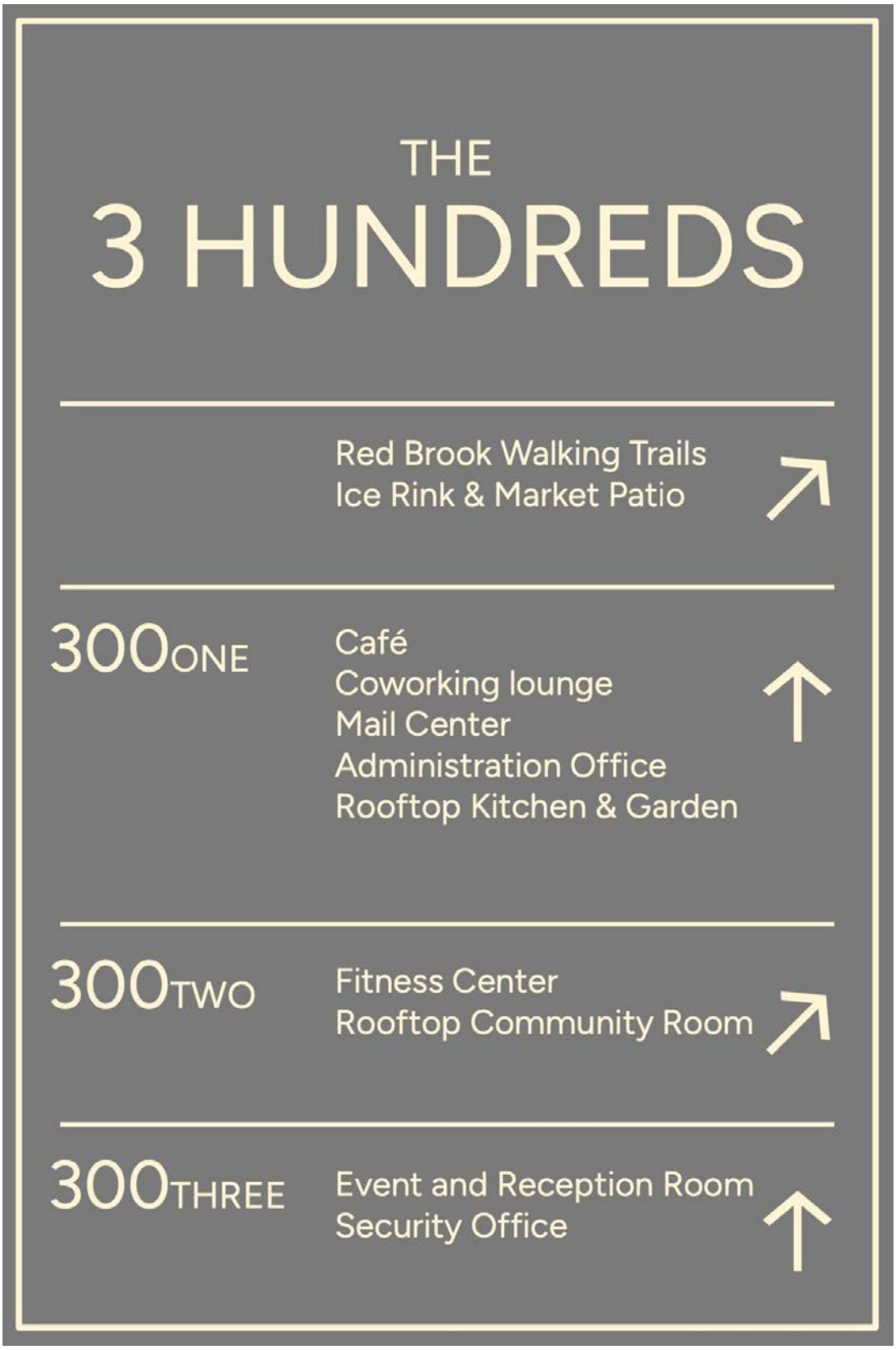
SITE SECTIONS

These site sections exemplify the parking recessed under each building and the raised landscaping with the bridges across. These also highlight the low rise nature that mimics the height of the greenery on the site.

SITE AXON

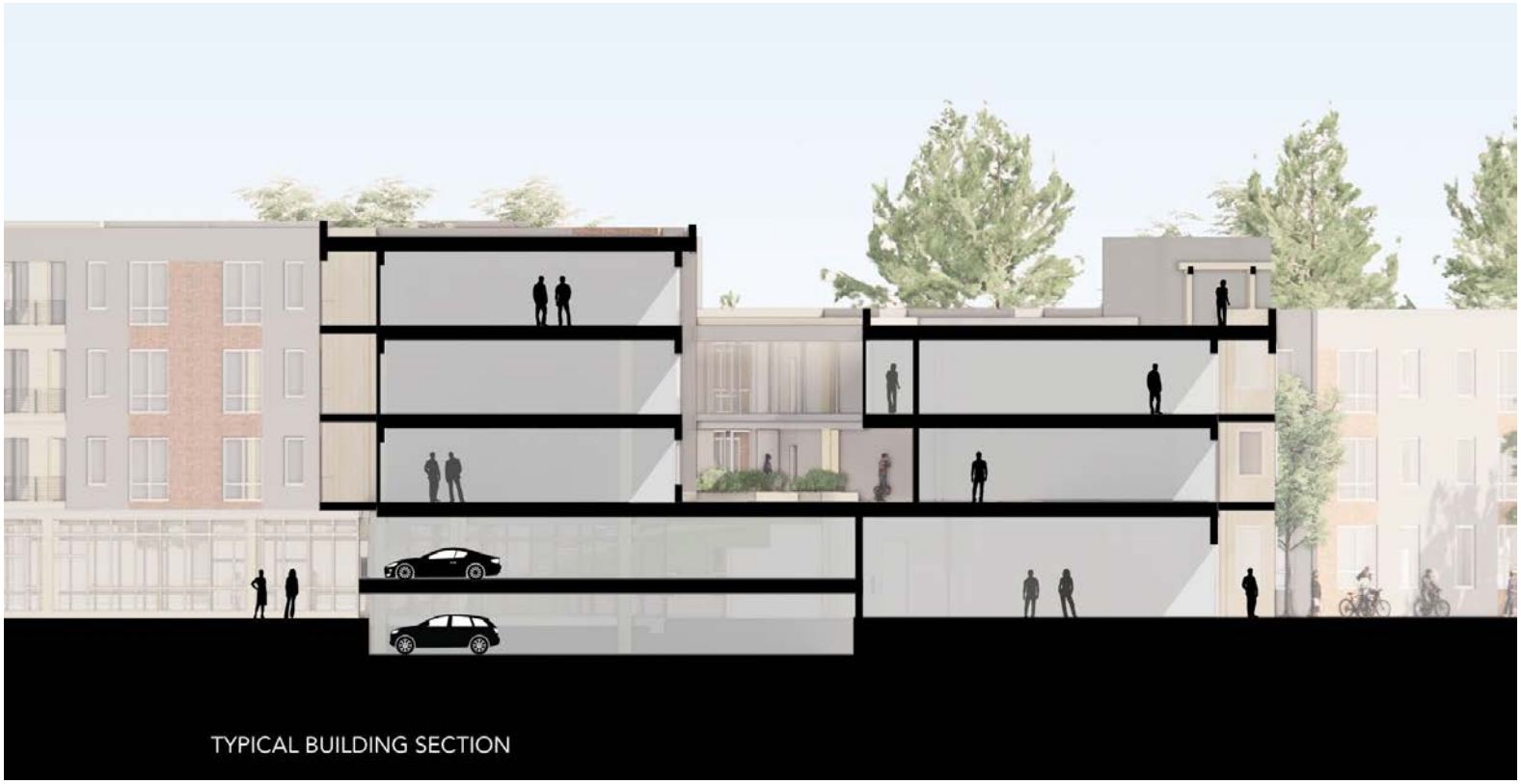
This site axon captures the essence of the project. It's low-rise nature allows for it to blend with the immediate landscape and heights of the trees. It effectively creates a new environment that reclaims the existing sea of parking with nature. It also embraces the potential that "left-over" sites have in creating a new type of community.

SAMPLE SIGNAGE HIGHLIGHTING AMENITIES



EXPERIENTIAL VIEWS

BUILDING SECTIONS

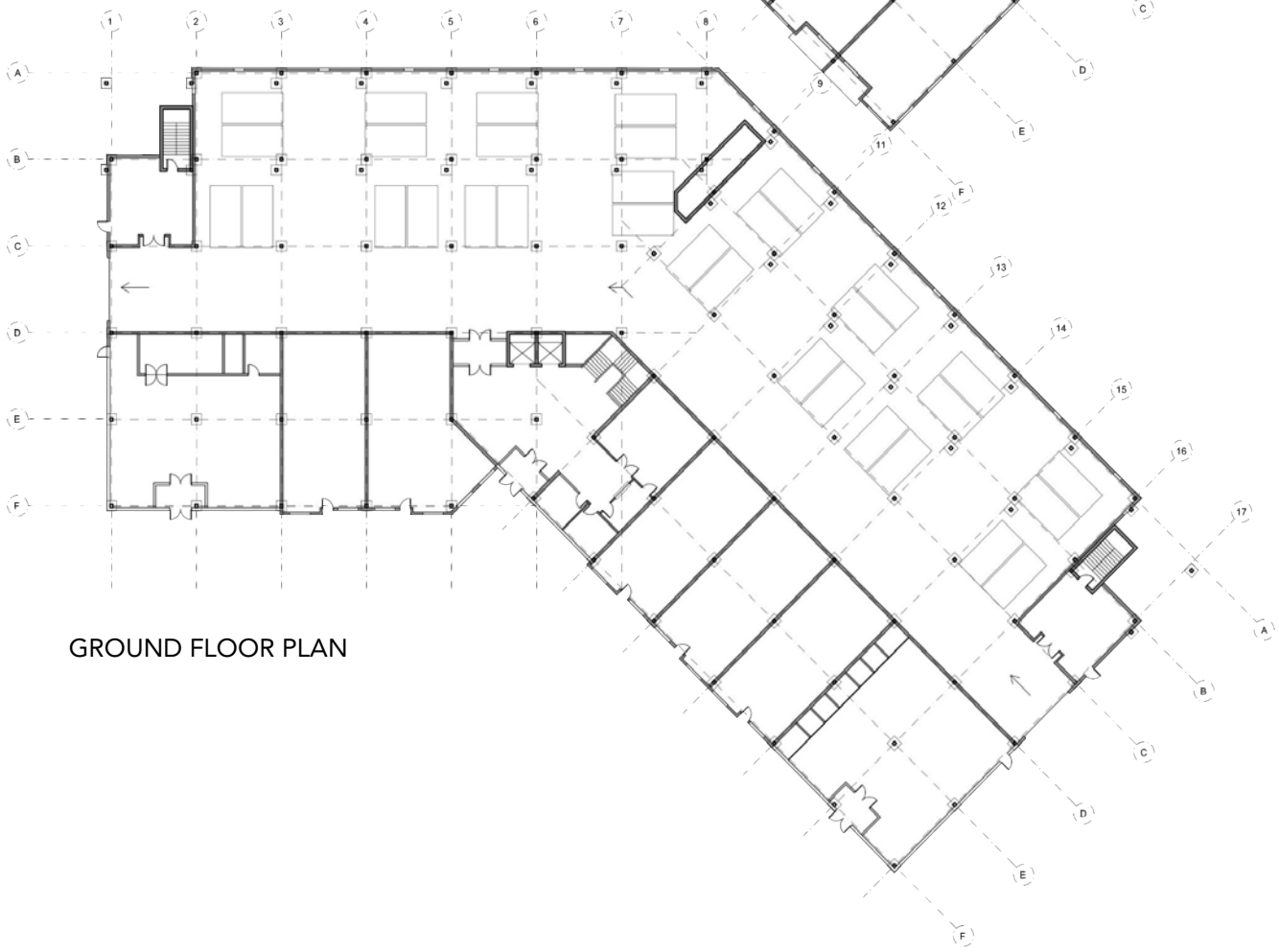


TYPICAL BUILDING SECTION

BUILDING SECTION

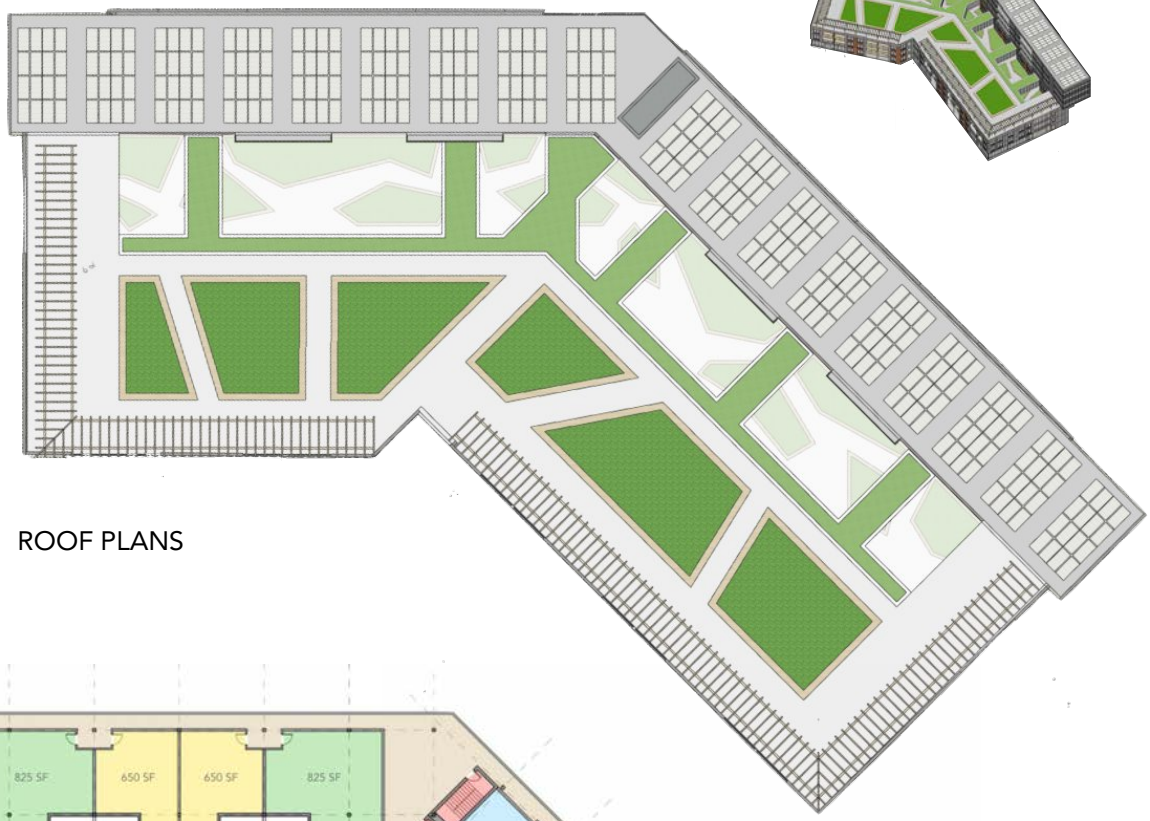
BUILDING 1

SECOND FLOOR PLAN



GROUND FLOOR PLAN

BUILDING 1



ROOF PLANS

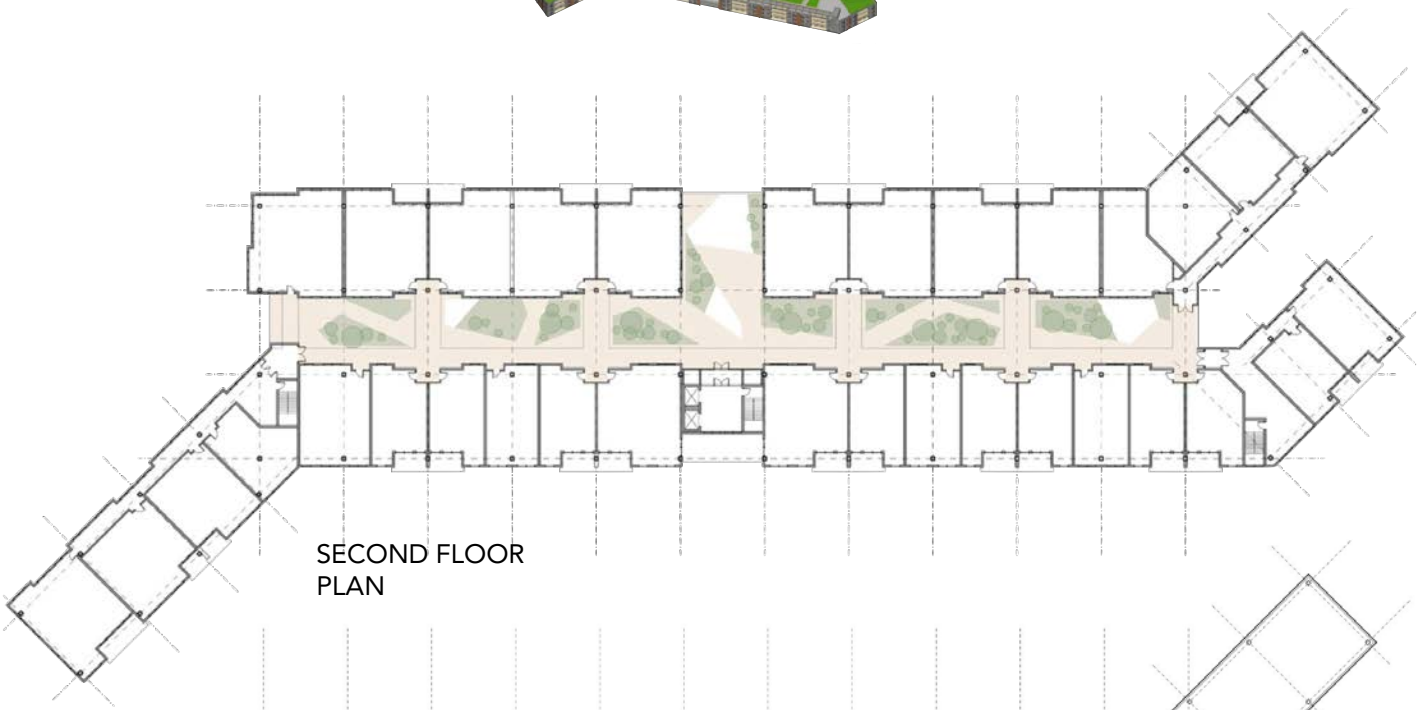
LEGEND

- COMMON SPACE / CIRCULATION
- UTILITY / MECH
- STAIR / ELEVATOR
- STUDIO (6 UNITS)
- 1-BED (7 UNITS)
- 2-BED (6 UNITS)
- 3-BED (1 UNIT)

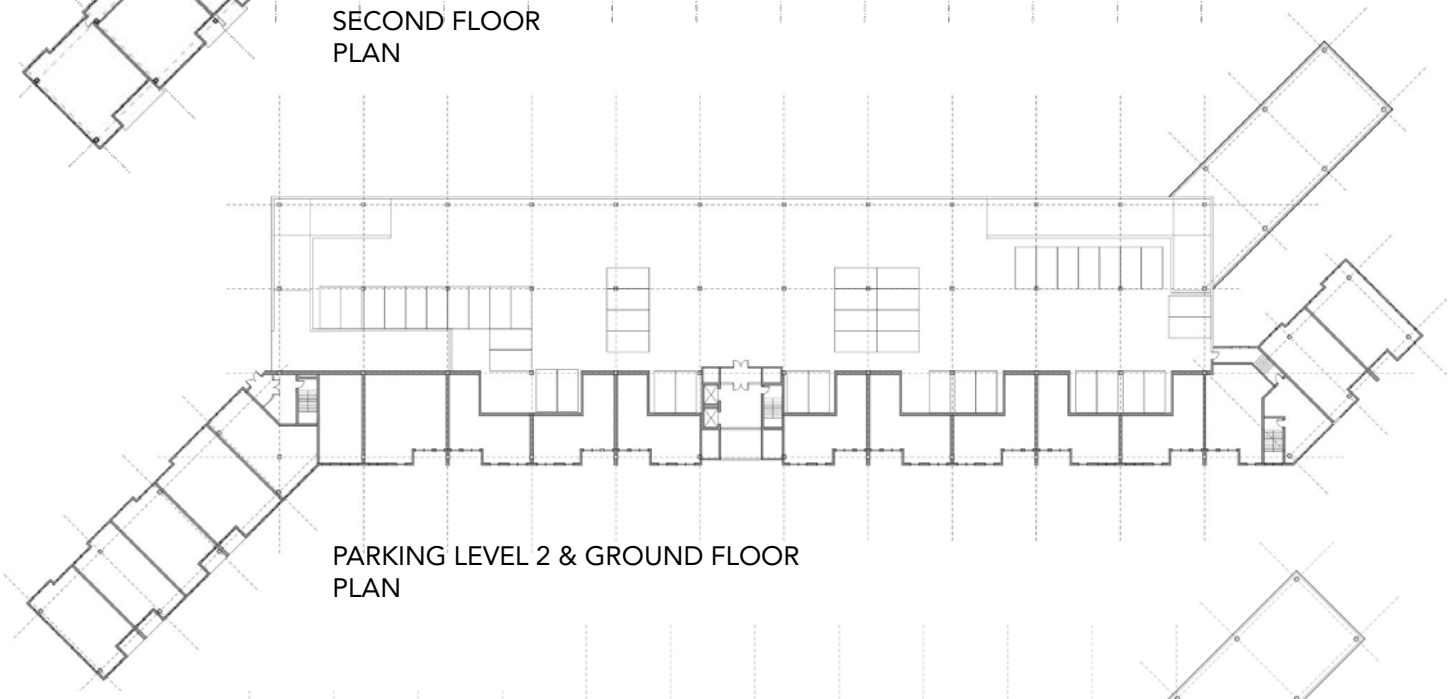
FOURTH, FIFTH, AND SIXTH FLOOR PLANS

THIRD FLOOR PLAN

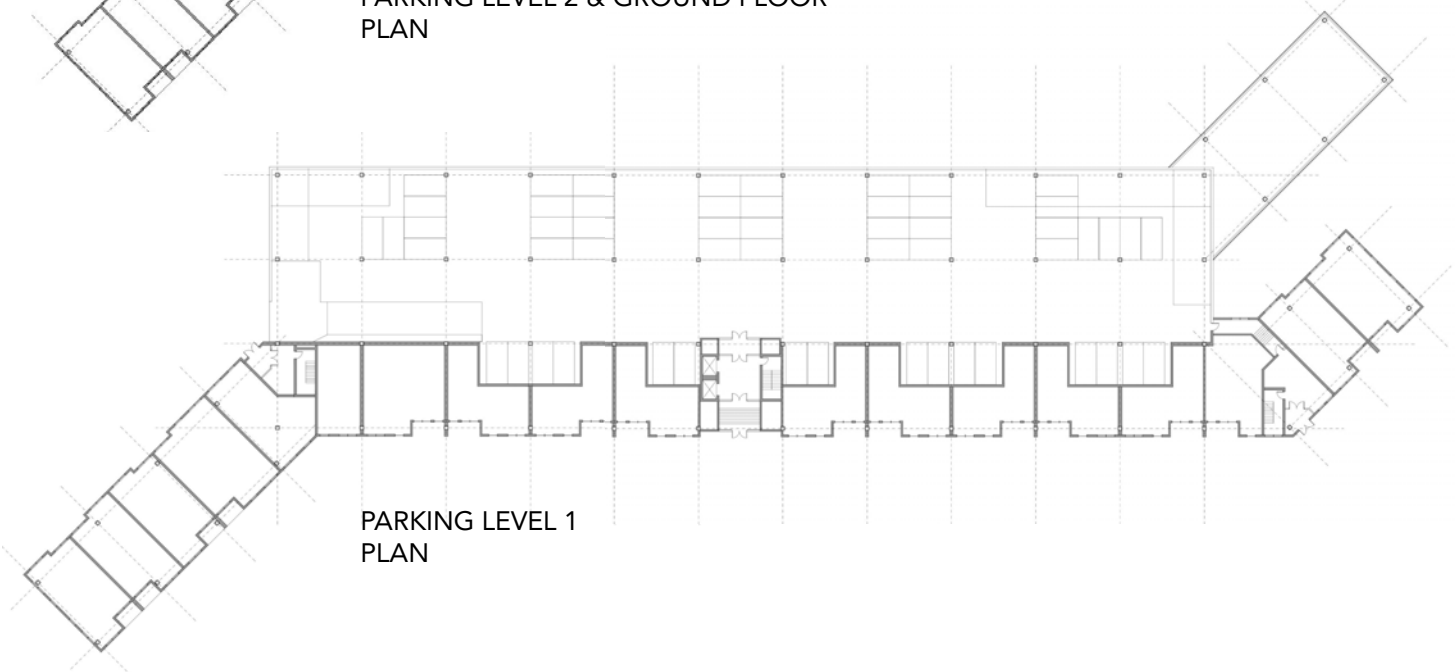
BUILDING 2



SECOND FLOOR
PLAN

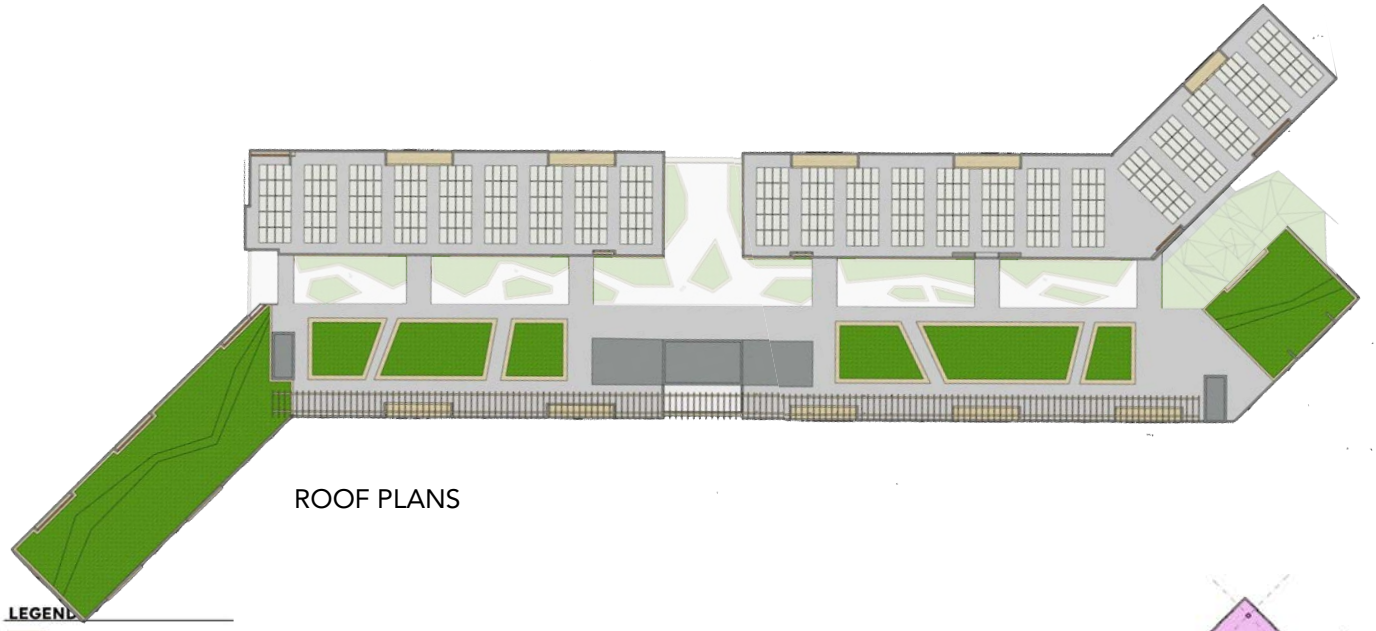


PARKING LEVEL 2 & GROUND FLOOR
PLAN



PARKING LEVEL 1
PLAN

BUILDING 2

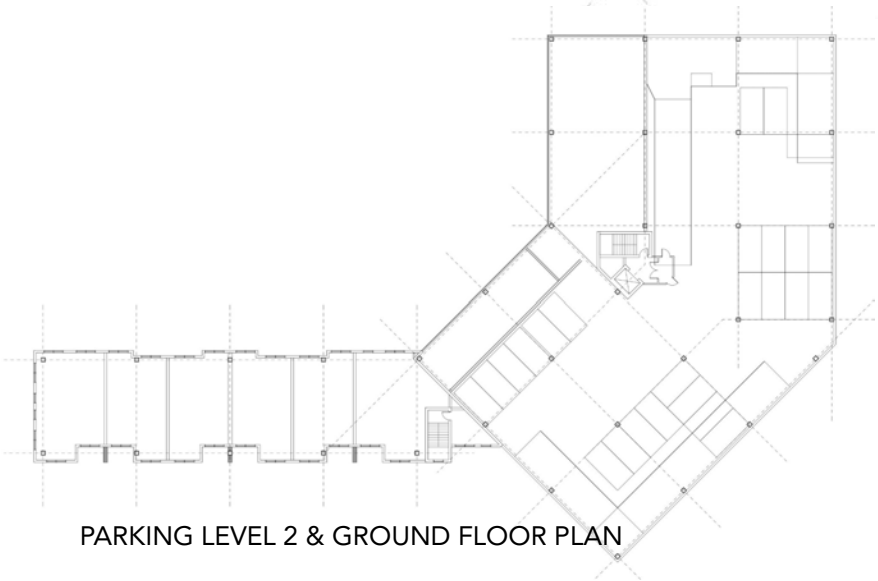


ROOF PLANS

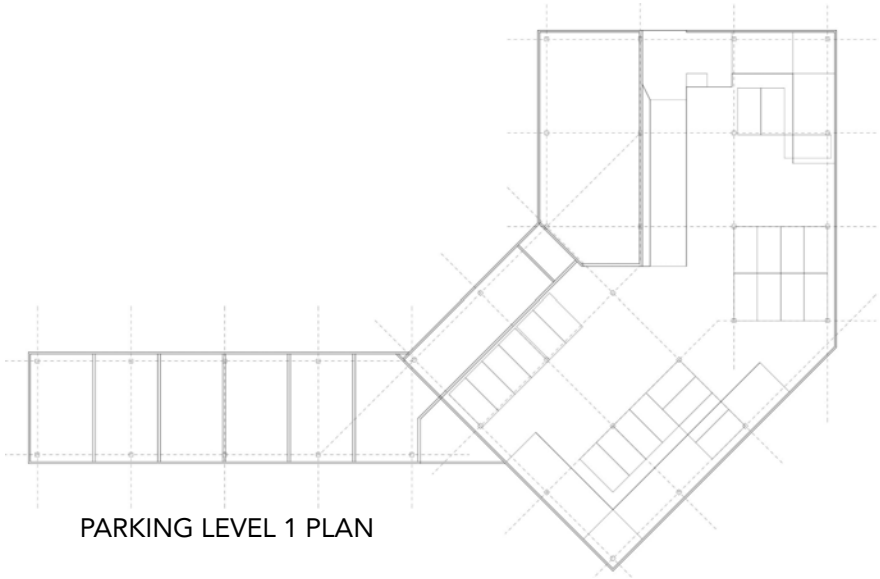
THIRD & FOURTH
FLOOR PLANS

BUILDING 3

SECOND FLOOR PLAN

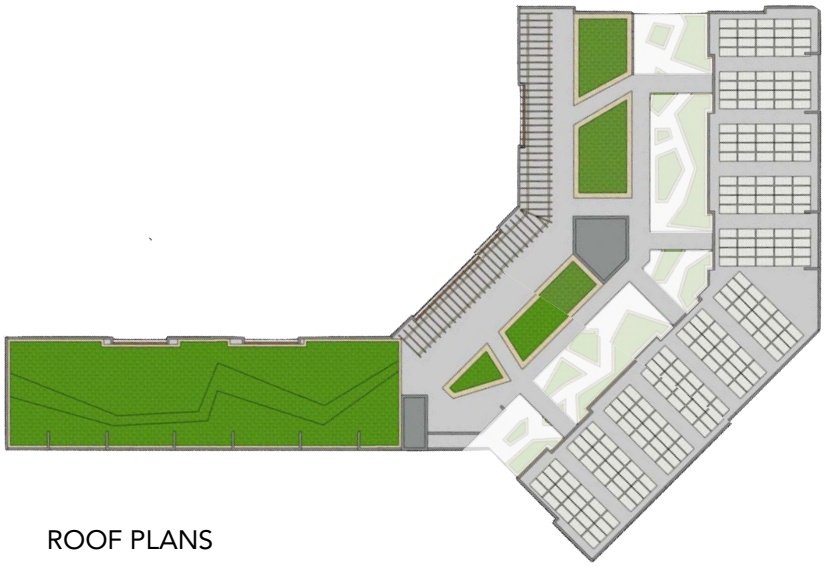


PARKING LEVEL 2 & GROUND FLOOR PLAN



PARKING LEVEL 1 PLAN

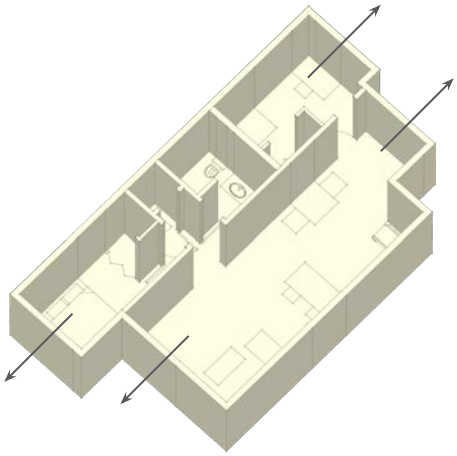
BUILDING 3

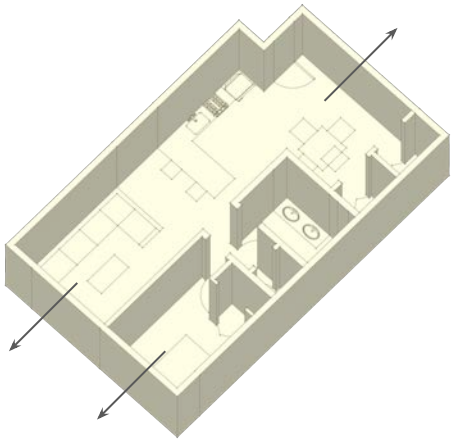


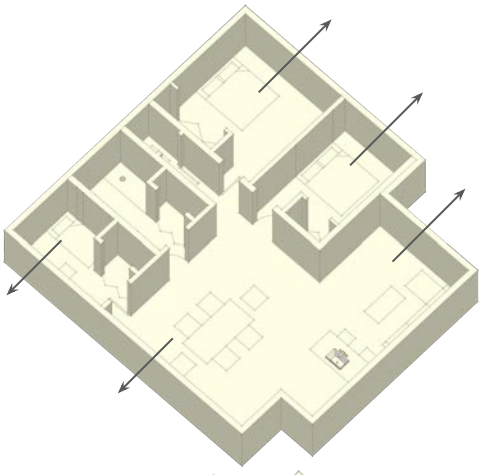
ROOF PLANS

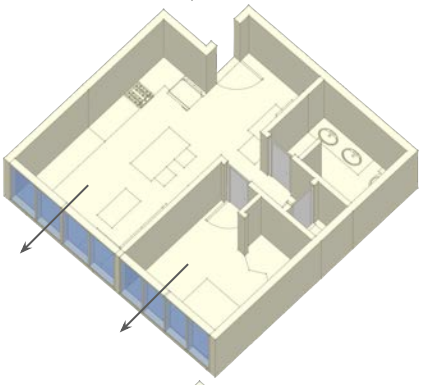
THIRD & FOURTH
FLOOR PLANS

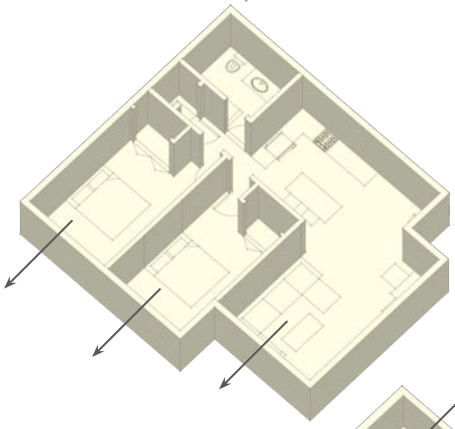
UNIT TYPES

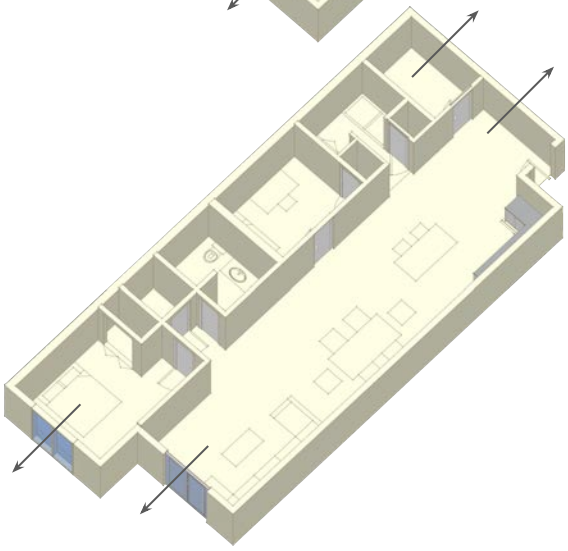












The final unit designs ensure that all bedrooms and living rooms have access to a window for natural light. Some units have windows on both ends. Because of this, these can usually have more than one bedroom. Some of the wide units have space for two bedrooms side by side. The units range from studios to three bedroom units to allow for families of many sizes to be able to live here.

TYPICAL ELEVATIONS

TYPICAL PUBLIC GROUND FLOOR EXTERIOR ELEVATION

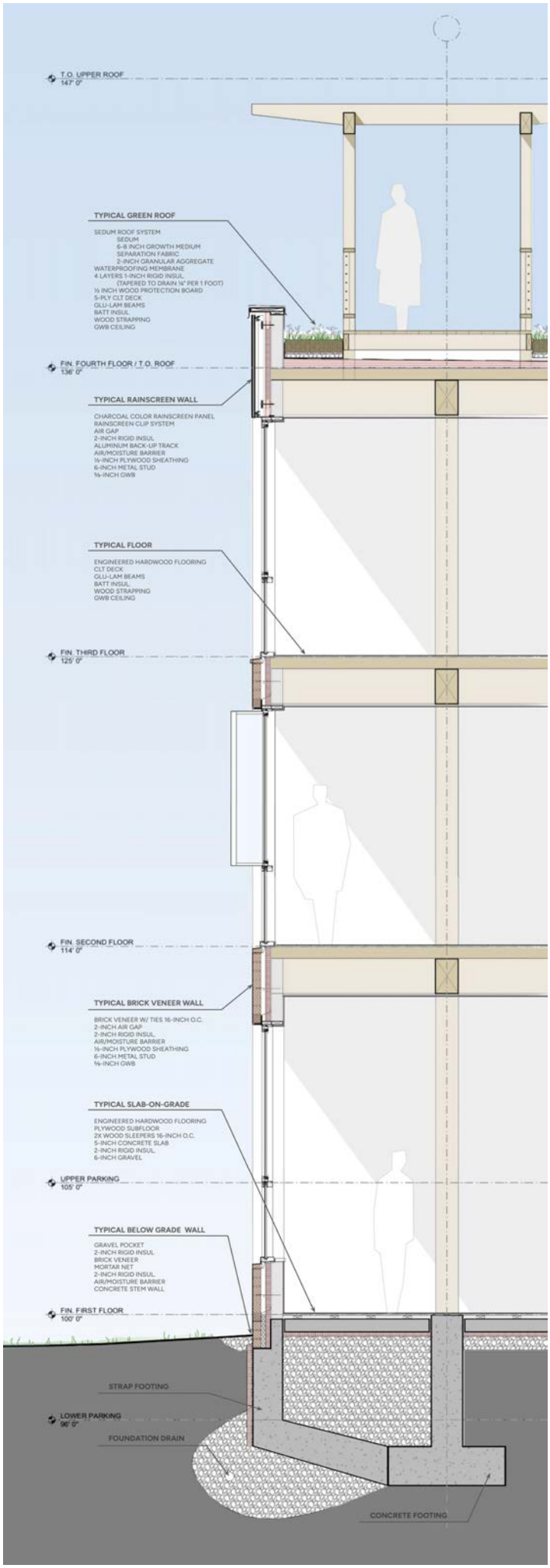
TYPICAL RESIDENTIAL EXTERIOR ELEVATION

INTERIOR COURTYARD ELEVATION

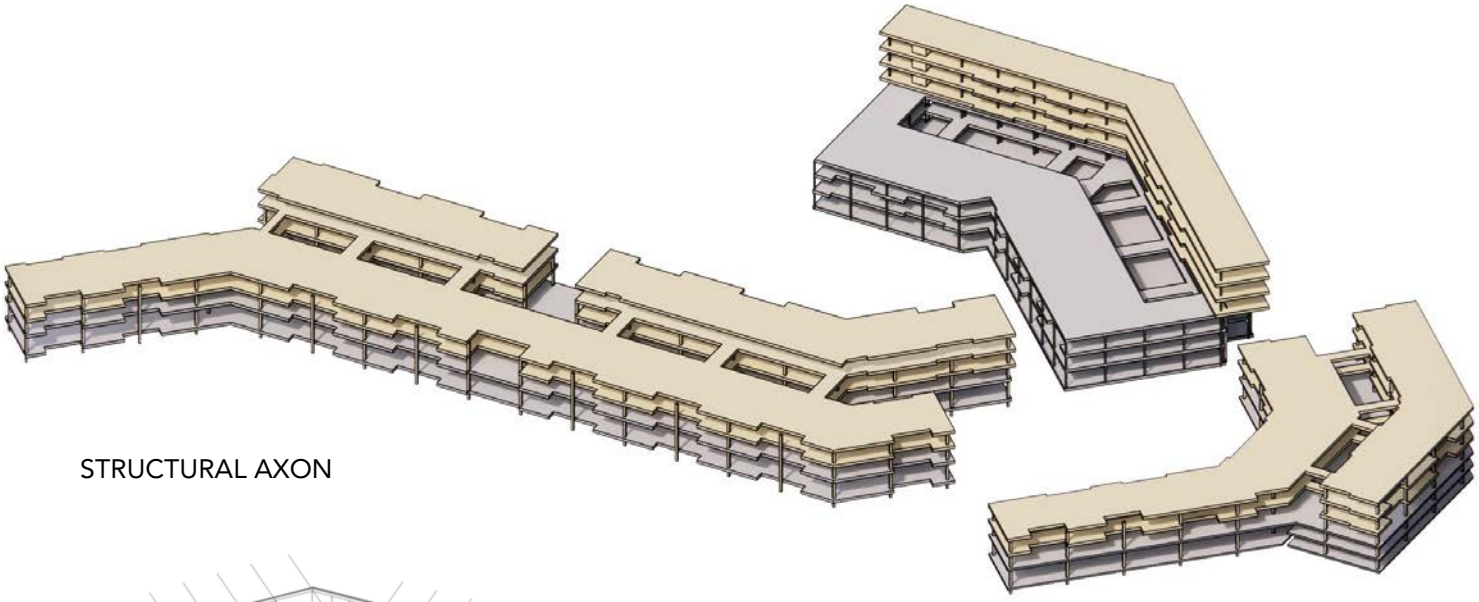
TYPICAL NEW WALL SECTION

For the final facade scheme, a continuous plane is maintained where the balconies for each unit are cut into it. The palette contains charcoal colored rainscreen panels, reclaimed brick from the existing building, and 6 inch pine boards that wrap the deck, walls, and ceiling of the balconies.

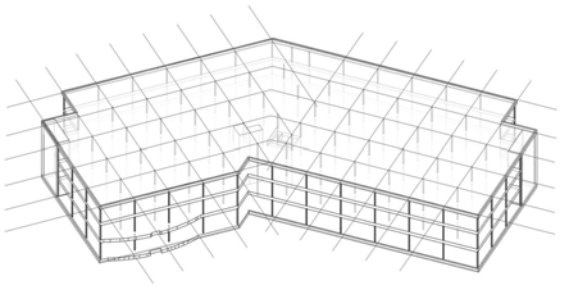
The facade is offset by 6 feet from the column grid and is supported by a concrete shelf connected to the footings. There are floor to ceiling windows that allow for maximum light into the living spaces. At the roof there is a trellised roof deck that runs flush with the facade. It is surrounded by a sedum green roof system that allows residents to meander along the roof among the greenery.



STRUCTURE



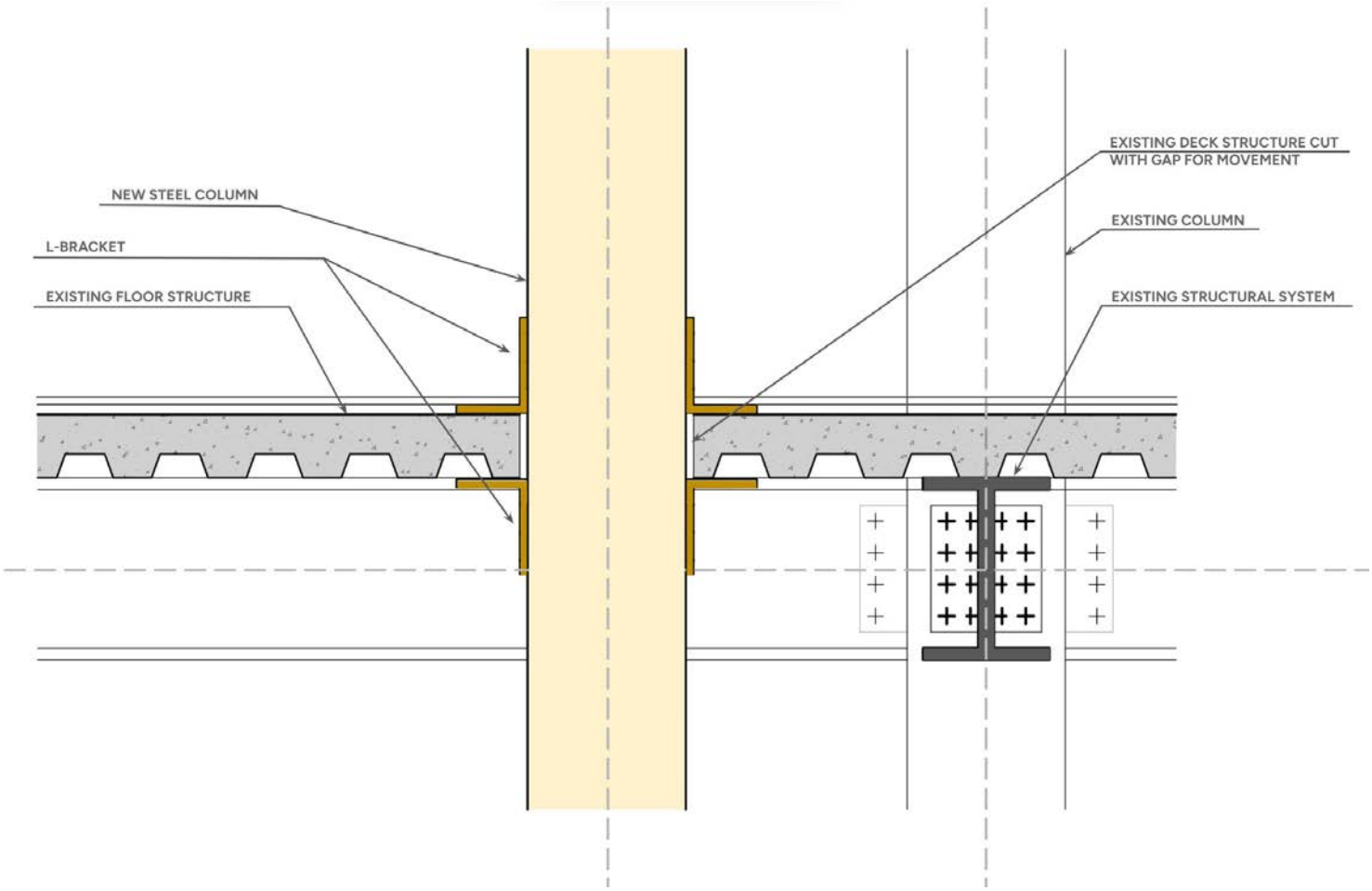
STRUCTURAL AXON



EXISTING STRUCTURE: 25’ BAY
STEEL FRAME

The new structure for building 2 and 3 will consist of a concrete base floor with a glu-lam and CLT structure above. The typical bay spacing for the new structure is 32 feet square. The existing building 1 structure will be its existing 3 level steel frame with a steel structure and CLT deck above. The bay spacing of the existing structure is 25 feet square. The new construction above the existing shares the sam bay spacing, but is supported independentluy and offset from the existing bays to avoid intersection.

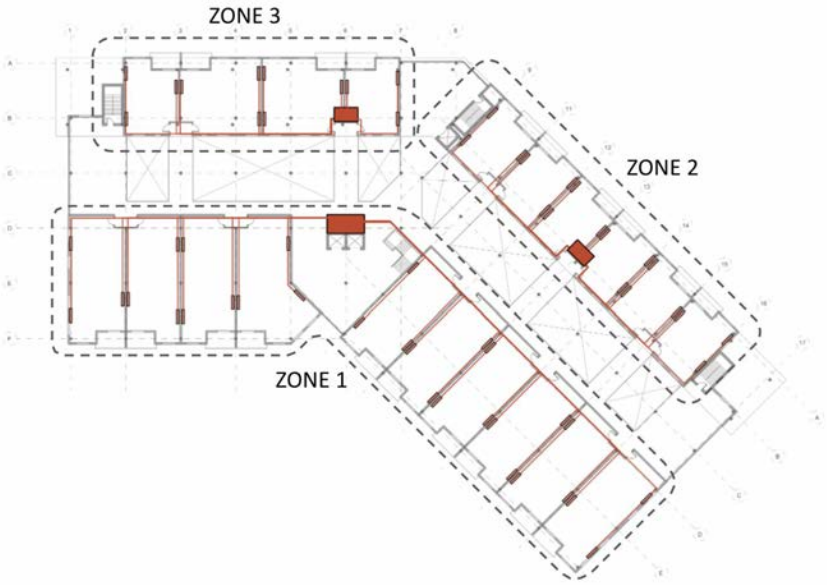
NEW COLUMN THROUGH EXISTING STRUCTURE DETAIL

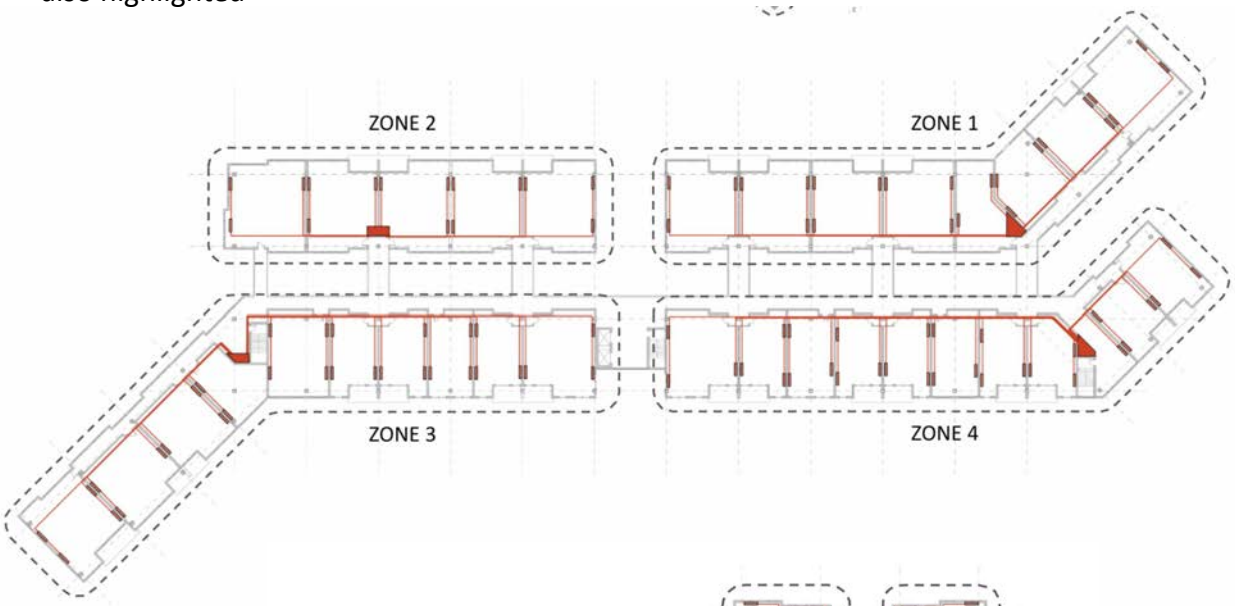


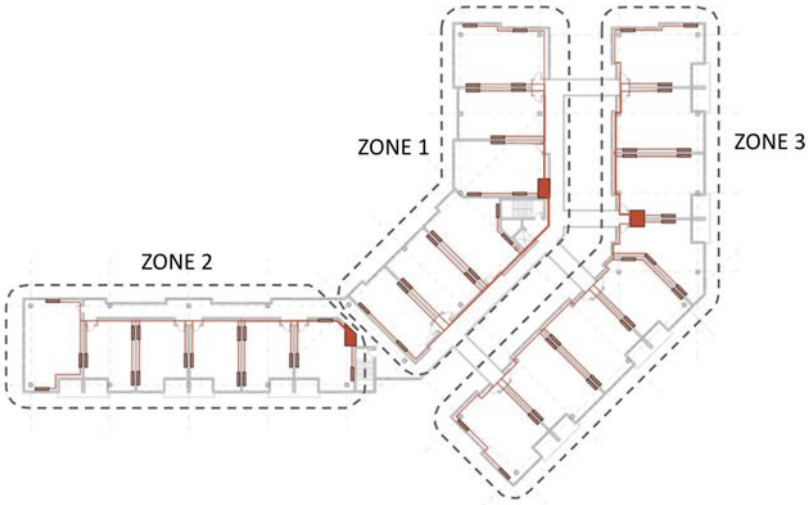
This detail shows the condition of the new structure passing throught the existing building structure. The column has room to move freely past the existing structure to carry its own load within the system.

MECHANICAL SYSTEM

A VRF system with individual fan coil units into each unit is used to heat and cool the units. Each unit can control the temperature independently. Public spaces like the building lobbies, fitness center, cafe, and co-working space is heated and cooled through the air. These diagrams also show the vertical shafts where the air ducts come down throught the buildings. The different zones are also highlighted







RENDERINGS

RENDERINGS

VIEW OF BUILDING 2 FROM COURTYARD

This view highlights the smaller courtyard space bound by all three building. The public vs. private facade treatments are also exemplified here with the lifted facade.

SITE BIRD'S EYE PERSPECTIVE

In conclusion, there are many degrees of intervention that can be taken in adapting an office building to residential and mixed use. This project exemplifies a higher degree of site intervention to create a vibrant mixed use environement that one, stand-alone building can't provide. I hope that this project can inspire and help inform future redevelopment of buildings like this that still hold value.

Thank you.

13

ANNOTATED BIBLIOGRAPHY

ANNOTATED BIBLIOGRAPHY

Castells, M. “Space of Flows, Space of Places: Materials for a Theory of Urbanism in the Information Age”. The City Reader (2020).
Annotation:

This piece talks about the factors which changed urban spaces in the early 21st century. These factors shape the function, meaning, and forms of urban space. It also talks about how we are in the information age where we are seeing hybrid cities. This is a mixing of digital and physical communities. I want to learn more about this hybrid situation we are living in and how it can shape design.

City of South Portland Comprehensive Plan 2012 Update. City of South Portland, 2012. Print.
Annotation:

This source provides key information on South Portland’s goals for future development. It has given in-depth descriptions of land use and community development goals. There is a strong emphasis on smart growth, and limited growth in designated areas of the city. This information strengthens my argument for adapting the site into a mixed-use environment.

Dunham-Jones Ellen and June Williamson. Retrofitting Suburbia : Urban Design Solutions for Redesigning Suburbs. 1st ed. John Wiley & Sons 2009.
Annotation:

The book explores the history and development of suburbs, the problems they face today, and the potential for retrofitting these areas to meet the needs of a changing population and address issues such as traffic congestion, environmental degradation, and social isolation. It offers a range of case studies and examples of successful suburban retrofit projects, as well as practical advice for planners and policymakers looking to implement similar initiatives. It will be an integral resource as a craft my thesis to address such topics.

Eggimann, S. The potential of implementing superblocks for multifunctional street use in cities. Nat Sustain 5, 406–414 (2022). https://doi.org/10.1038/s41893-022-00855-2
Annotation:

This article provides information on a study of the Barcelona superblock as a sustainable transformation of the existing fabric. There is an emphasis on limiting car traffic and creating safer interior pedestrian streets. This information is valuable because it takes an existing condition and proposes a solution that preserves the architecture while being modern and sustainable. I was to learn more about these solutions that respect historic preservation while also being forward-thinking.

ANNOTATED BIBLIOGRAPHY

Haynes, Deborah J. “Ruth Wallen and Beverly Naidus: Exploring a City Block as a Micro-Ecosystem.” Art Journal 65, no. 1 (2006): 69–70. https://doi.org/10.2307/20068446.
Annotation:

This article talks about the experience of walking a city block and observing it. They stress the importance of being aware of the “eco-context” of where important conference event happen. When there is more awareness, a stronger sense of community arises and people feel less marginalized and isolated. This insight will help me in understanding the micro-ecosystem I choose to study.

Marshall, Aarian. "The Plight of the Suburban Office Park." The Atlantic, January 6, 2016, Web. December 12, 2022 <https://www.theatlantic.com/business/archive/2016/01/decline-office-park/422811/>.
Annotation:

The article makes the argument that Class A office space, which is often isolated due to its orientation around the car, is not ideal anymore. Today’s workers want to be able to go to lunch or the gym without having to get into a car. There is a shift happening with working and housing preferences. There is a desire for a well-connected and urban, open floor plan. A lot of the office space is not designed to meet the needs of companies anymore. The article also mentions that there are also talks about other developers who are playing with the idea of adding farmers’ markets, hotels, and housing to office parks.

McKean, Jeffrey. "Vacant office space: the adaptive micro-communities of the future." WATG. August 5, 2021. Web. December 12, 2022 <https://www.watg.com/vacant-office-space-the-adaptive-micro-communities-of-the-future/>.
Annotation:

This article discusses the idea of transforming a single building into a micro-community rich with all the amenities people need, like housing, retail, recreation, restaurants, park spaces, and other community elements. It engages in the conversation about office to residential and mixed-use conversion. the importance of adding flexibility and resilience to all places though mixed-use intervention.

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Annotation:

This piece discusses how we should design these tall office buildings that social and economic conditions have demanded. The overall anatomy of the building is explained. It is stressed that the outward expressions take cues from the individual program within. In other words, the outside must express the “inner life” of that thing. This idea is valuable in my research because it is another take on “form follows function” which may be a good starting point in form generation.

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ADAPTIVE REUSE
OF THE
SUBURBAN OFFICE BUILDING

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