RETHINKING
THE BOX

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El presente estudio está dedicado a todos los que me apoyaron en el largo del programa.

A la Universidad de Texas A&M, a los maestros de la Facultad de Arquitectura y a mi comité por ofrecerme los recursos, herramientas y conocimientos necesarios para concluir este trabajo.

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En memoria de Gerardo Treviño Chávez.

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The present study is wholeheartedly dedicated to all the people who supported me throughout the length of the Master's of Architecture program.

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In memory of Gerardo Treviño Chávez.

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Rethinking the box explores the idea of revitalizing a vacant grocery store using a more human- and nature-centered approach to create a residential development that promotes social interaction, diversity, environmental care, and active living. Retail stores are typically a reflection of pure capitalist motives and consumption behaviors, where the quest for the greatest and fastest return of investment becomes the main driver of the design decisions. These projects also reflect how modern societies function, with the automobile as the dominant mechanism for the development of daily operations. The result is a deep encroachment of large proportions with an interior atmosphere distant from the outdoor environment, surrounded by a vast asphalt plan dedicated to no living beings.

However, conventional retail stores are ceasing to be an important component of contemporary societies. This “retail apocrypha” is now leaving thousands of forlorn-looking buildings as concrete inescapable islands scattered across the American nation. And to make matters worse, the COVID-19 pandemic is accelerating the situation as the commerce experiences a substantial growth propelled by social distancing and isolation mandates imposed by the government. Experts asport that 1 in 4 shopping centers will close by 2025 (Cresnight Research & Credit Bureau, 2020).

Moreover, the shortage of affordable houses in U.S. continues to be present, with only 36% of the 10.9 million renter households living in extreme low-income conditions having access to affordable dwellings. This means that there is currently a shortage of 7 million affordable and available rental homes. Around 7.7 million extremely low income renter households spend more than half of their revenue on rent and utilities (NLHIC, 2020).

This situation is expected to worsen due to the economic distress caused by the COVID-19 pandemic. An unprecedented housing crisis might be on the way as an estimated of 30 to 40 million Americans are currently at risk of eviction (Aspen Institute, 2020).

The present study ascolas to create a potential response to the housing crisis by reusing and adapting these retail spaces, and it is motivated by a rejection to prevailing demolishing practices, generic and individualistic domestic architecture, and vehicle-oriented urbanism.

Three major research questions are explored during the process:
1) How can a vacant retail site be transformed into a residential development?
2) How can architecture support communities in the creation of intergenerational relationships in the domestic environment?
3) How can the built environment support people in the development of healthy lifestyles?

The goals of the study are to demonstrate that vacant retail sites can indeed be converted into sustainable and inclusive residential developments suited to every age group, last how alternative housing configurations and amenities could support intergenerational relationships without compromising the wellbeing, freedom, and privacy of the different age groups, and explore and implement architectural strategies that support active lifestyles.

The project consists in the design of an intergenerational community accommodating multiple cores to create a pedestrian-oriented destination that supports active lifestyles. Nature is incorporated to support the health of the population and reduce the concrete footprint that dominates the urban landscape, which is likely to be a major cause for the origination of new infectious diseases (Quinn, 2020).

The design process was guided by the following ideals: eliminate the grey dominance of the site by reintroducing nature, achieve an inclusive environment by integrating features that support the routines of both residents and outsiders of all age groups, accomplish a pedestrian-oriented development by limiting the circulation of vehicles, reject the conventional restrictions and divisions of current domestic environments, and support collectivism by strategically incorporating shared diverse amenities and architectural features that allow intergenerational interactions.

I aspire that this study becomes a valuable reference for future research of the same nature. A project like the one envisioned in the present document would potentially help reduce the shortage of affordable housing, provides low-income populations with opportunities to return to the cities, reduce carbon emissions and waste originated by demolitions and support the creation of cohesive and diverse communities where every member can cultivate a sense of belonging.
I grew up in Monterey, a metropolitan city located northeast of Mexico. Monterey is rich in many ways; it has a good economy founded on the manufacturing industry and a hard-working society. It has beautiful green mountains that guard it from severe weather, and it has countless leisure destinations including soccer stadiums, shopping centers, and restaurants. But I have been observed. The void economy has partly caused an uncontrollable urban sprawl resulting in traffic congestions that make people lose their sanity (literally), the mountains are being destroyed to satisfy construction demands or they have been invaded due to the shortage of land and capital obstructions, and leisure, well the soccer fields seem to have more greenery than the entire city. Today, Monterey, as many other cities around the world, has been shaped by humanity’s compulsion to progress and consumption, bad politics, and, you know the rest. The result is a landscape inundated with contamination, cracked streets, narrow sidewalks invaded by vehicles, few low-quality parks/open spaces, and cars, cars, and more cars. I was unceasingly overwhelmed with the greenness that surrounded me all the time, but lucky to have an escape by strolling at the remains of those green mountains every now and then.

I never knew I would be an architect; I just knew I liked to draw and imagine things I didn’t see in my day to day, and that I wanted to leave a positive mark in the world. I almost decided to be an industrial designer, but a few months before applying to universities, I had a life experience that changed my path. I went to do missionary work on the Sierra Madre in Durango, where different native communities live isolated from the urban and rural worlds. I was fortunate to meet the natives from the region, as they completely changed the way I was experiencing life. In short words, they showed me that more is not more, and that happiness is not a quantifiable noun. Even after living in homes made from rough wood, straw, rusty steel sheets, and earth: eating the same food (beans and rice) every day, having no electricity, kitchen appliances and shortages of water. The people of Durango showed me happiness, cooperation, and resilience in ways I had never seen before. I won’t lie, not everything was a bed of roses; they lived in very rough conditions with insufficient resources to satisfy their physiological and safety needs. But they lived in harmony, free from the greenness that dominates the urban world. This experience motivated me to pursue a degree in architecture, so I started aspiring and envisioning a different built environment. One that adapts to current technologies but reacts their actual excessive presence. One that unites all types of individuals rather than separating them. One that modifies an ecosystem rather than destroying one. One that does more with less, nor absolute green or gray, but a fair balance between both.
This study is motivated by a rejection of prevailing demolishing practices, generic and individualistic domestic architecture, and vehicle-oriented urbanism. Three major research questions are explored during the process:

1) How can a vacant retail store be transformed into a residential development?

2) How can architecture support communities in the creation of intergenerational relationships in the domestic environment?

3) How can the built environment support people in the development of healthy lifestyles?

The goals of the study are to demonstrate that vacant retail sites can indeed be converted into sustainable and inclusive residential developments suited to every age group. Test how alternative housing configurations and amenities could support intergenerational relationships without compromising the well-being, freedom, and privacy of the different age groups, and explore and implement architectural strategies that support active lifestyles. The study additionally seeks to propose a potential response to the housing crisis by reusing and adapting those retail spaces.

The retail project selected for this study is located in College Station, Texas, at the corner of University Drive Ave. and Tarlton St. The site has an area of approximately 10.5 acres and is currently occupied by three different buildings: a vacant grocery store, a bank, and a cluster of small commercial shops. Adjacent to the site is a large retail business, a park, and a fire station. Various residential developments are encountered behind the commercial strip that runs adjacent to the main avenue. The design process was guided by the following ideals: eliminate the grey dominance of the site by reintroducing nature, achieve an inclusive environment by integrating features that support the routines of both residents and outsiders of all age groups, accomplish a pedestrian-oriented development by limiting the circulation of vehicles, reject the conventional restrictions and divisions of current domestic environments, and support collectivism by strategically incorporating shared diverse amenities and architectural features that allow intergenerational interactions.
THE DOWNFALL OF RETAIL STORES

The world is in continuous change, and we must stop doing architecture based only on past practices and philosophies. We must find sustainable, humanistic, and environmental-friendly methods to transition our current environments into new settings that resonate along with our present. Social changes are emerging as more younger generations continue to embrace new technologies. Conventional retail stores are coming to be an important component of contemporary societies and have been collapsing over the past decade (Moody’s Analytics, 2020). This retail apocalypse is now leaving thousands of boxy-looking buildings as concrete inaccessible islands scattered across the American nation. And to make matters worse, the current pandemic is accelerating the situation as the ecommerce experiences a substantial growth propelled by social distancing and isolation mandates imposed by the government. Experts expect that 1 in 4 shopping centers will close by 2025 (Cowgill Research & Credit Suisse).

The “big box” building selected for this study has been another victim of the retail collapse. Located in 815 University Drive East, the building opened its doors in 1991. The function of the building has remained unaltered, serving as a grocery store until its closure in 2011. The store was acquired by H-E-B (KBTX, 2016) as a market strategy, which later limited the uses of the building. The store can’t be occupied to provide food or pharmacy services, which is the original function of the big box.
The relationship between the built environment and physical activity was studied throughout this study to implement urban features that support active living and help combat the development of chronic diseases. Physical inactivity is one of the main reasons for the development of chronic diseases and is accounted for 9.3% of all deaths occurring in United States (Carlson, Adkins, Vang, & Franklin, 2010). Many organizations and investigators have developed systematic reviews involving studies that analyze the effects of the built environment on people's physical activity with the objective of identifying evidence-based features that generate a favorable environment. This last term, in the architectural and built environment, is granted to physical settings that incorporate components that provide equal access to health resources and good quality of life. There is no clear and robust scientific evidence based on randomized trials that clearly and significantly associate an increase in physical activity with the modification of the built environment. Most of the observational studies revealed higher physical activity levels in populations living in activity-friendly communities.

Built environment attributes showing evidence of beneficial influence on physical activity coincide with the principles of new urbanism. The main elements identified are walkability, connectivity, mixed-use development and destinations, density and diversity, parks and greenery, public transport, and safety.

1) Walkability
This principle focuses on the development of infrastructures that supports nonmotorized means of transportation. Most of the evidence pointed at walking and biking as the best transport alternatives. The key elements of walkability are numerous pedestrian paths (sidewalks and walking trails) across and around the project and bike lanes with the same width of a typical automobile lane. It is also important to indicate that these features alone are not sufficient, and they must work in hand with other aspects like good public transport, shading elements, availability of destinations, and safety measures to become successful.

2) Connectivity
The networks behind this concept is quite simple. If people are to move naturally, they need to have a well-connected urban grid that facilitates the access. Cute-designs like interrupt circulation routes and create dead ends together with large blocks that create long walking distances are inadequate for active transport. On the contrary, people will likely move without the need of a destination if the urban grid is composed by small sub-modules and if it experiences no interruptions.

3) Mixed-use development and destinations
This principle follows the model of compact cities, which intends to reduce travel and accessibility by locating the most frequent destinations within a short distance from residential areas. The idea is to provide all recreational, cultural, and educational destinations in a walkable distance from the zones where people live. The consequence of this is that most city centers experience, where centralization and sprawl reduce and where automobiles becomes the only practical means of transport.

4) Parks and greynary
Many research studies have found a positive relationship between nature and people’s well-being. In fact, parks are vital elements for active living since they are some of the few places where people tend to do moderate to vigorous physical activities. Parks need to be numerous and must exist within a walkable distance (from 0.3 to 1 mile) from residents. The quality is more important than quantity when it comes to green spaces, and these need to be accessible, attractive and host accommodate specific functions to encourage their use. Moreover, walking and cycling trails also need to be accompanied by trees or in hot climates, which serve as canopies that provide shade along the circulation routes.

5) Public transportation
Quality public transportation infrastructure is vital for active living since it promotes walking and automobile reduction. Evidence suggests that people who commute to work by nonmotorized destinations tend to achieve greater MP/APA levels as a result of walking routines. Public transport must be in good conditions, present across the entire city, and abundant (to reduce walking times) to encourage people to move by nonmotorized means. Every community must have at least one public transport stop within a short walkable distance and people waiting for the service must be provided with a comfortable and safe environment.

6) Safety
None of the above features can be successfully applied without having the walkable infrastructures as a top priority. If residents of a community do not perceive that they will be free of harm while performing certain activities they would likely build or reject completely. This is translated to protective barriers for people walking and biking and heavy traffic congestion around the entire project, and in general a built environment free of dangerous features such as sharp cliffs, cliffs and difficult barriers in terraces and high spaces.
The American Association of Retired Persons (AARP) has developed a tool to measure the livability of neighborhoods, states and cities based on seven core domains: housing, neighborhood, transportation, environment, health, engagement and opportunity. The score ranges from 0 to 100, and the average composite livability index is 55. The zone where the project is currently scoring 43 as a result of a low performance in the following:

1) Middle third (Middle third - of all US neighborhoods)

1) Housing
Housing costs:
- $363 per month
Housing cost burden:
- 16.1% of income spent on housing

2) Neighborhood
Access to grocery stores and farmer’s markets (within a half-mile):
- 1.2 miles
Access to libraries (within a half-mile):
- 0

3) Transportation
ADA-Accessible stations and vehicles
- 70.5% of stations
Walk trips
- 0.5 miles
Traffic congestion
- 14.4 hours spent in traffic per person per year

4) Environment
Water quality
- 14.4% of people are exposed to health-based violations
Air quality
- 35.5% of people exposed to near-roadway pollution

5) Engagement
Opportunity for civic engagement
- 3.9 opportunities per 10,000 people
Cultural, arts, and entertainment institutions
- 0 institutions per 10,000 people

6) Opportunity
Economic opportunity
- 3.7 jobs per person
Multigenerationality (Age diversity index)
- 0.8 out of 1

LIVABILITY INDEX

HOUSING CRISIS & INEQUALITY

U.S. currently experiences a severe shortage of affordable rental homes, with only 35% of the 10.9 million renter households living in extreme low-income conditions having access in affordable dwellings. This means that there is currently a shortage of 7 million affordable and available rental homes. Moreover, around 7.7 million extremely low-income renter households spend more than half of their revenue on rent and utilities. 45% of this group is comprised by seniors and disabled, and people of color are more likely to fall in this category (NLCHC, 2020). The COVID-19 pandemic is expected to exacerbate this condition, and an unprepared housing crisis might be on the way as we set an estimated 30 to 40 million Americans are currently at risk of eviction (Aspen Institute, 2020).

A recent report from the Center on Budget and Policy Priorities (CBPP) reveals that millions of Americans are currently experiencing food, housing and employment hardships. The data also evidences the longstanding inequalities existing in the American nation, as Latino, African American, and immigrant households in general experience a greater distress from the economic impact caused by the pandemic. An estimated of 10.7 million adults living in rental housing, equivalent to 15% of the total adult renters in U.S., are not caught up on their rent. From the total of adult renters unable to pay rent, 22% are African Americans, 20% Latinos, 19% Asian and 9% White Americans. Moreover, approximately 4 in 10 children living in rental houses live a household suffering from both food insecurity and inability to pay rent.

Additionally, the survey conducted by CBPP provided data on the number of adults experiencing difficulties to cover usual household expenses including food, rent or mortgage, car payments, medical expenses, or student loans. 67 million adults, equivalent to 29% of the total adults in U.S., report complications to cover one of these usual expenses. A considerably larger number of Latinos (39%), African Americans (42%), and other multiracial individuals (38%) compared to White Americans (23%) declare difficulties to pay usual household expenses.

Therefore, the need for affordable housing is increasing, and we must create alternatives that help mitigate the impact of this future potential housing crisis. This study justifies this problematically with the real estate apologists to propose a partial solution to the shortage of affordable housing. The adaptation of retail buildings would likely require less resources to accommodate low-cost housing, diminish the carbon emissions resulting from new construction or demolitions, reduce the energy consumption of the dwelling units (exterior skin’s protective action from solar radiation), and create opportunities for lower-income populations to live in areas closer to the center of cities as retail buildings usually occupy convenient territories.
The site selected for this study is located in College Station, Texas, at the corner of University Drive Ave. and Tarwin St. The site has an area of approximately 10.5 acres and is currently occupied by three different buildings: a vacant grocery store, a bank, and a cluster of small commercial shops. Adjacent to the project, along the main avenue, are retail businesses, a park, and a fire station. Various residential developments are encountered behind the commercial strip that runs adjacent to the main avenue. The existing bank and commercial shops are still in operation. The grocery store has been vacant for almost 10 years.
TOTAL PROJECT AREA: 466,745.31 SQFT

DWELLING AREAS
- Individual
- Couple
- Young family
- Extended family
- Elderly
- Temporary

SUPPORT AREAS
- Management
- Parking
- Services

PUBLIC SPACES
- Indoor Recreation
- Outdoor Recreation
- Health Support
- Education

NATURE
- Parks
- Gardens

“We must understand that we are not the only living beings in this planet. We are all parts of the same system, which must remain in balance if it is to operate flawlessly. I propose a 50-50 use of land. Half for us, half for the local biome”.
MAIN DRIVERS OF THE DESIGN

"A place that adapts to current technologies but rejects their actual excessive presence. One that unites all types of individuals rather than separating them. One that modifies an ecosystem rather than destroying one. One that does more with less, nor absolute green or gray, but a fair balance between both".

The design process was guided by the following ideals: eliminate the gray dominance of the site by reintroducing nature, achieve an inclusive environment by integrating features that support the routines of both residents and outsiders of all age groups, accomplish a pedestrian-oriented development by limiting the circulation of vehicles, reject the conventional restrictions and divisions of current domestic environments, and support collectivism by strategically incorporating shared diverse amenities and architectural features that allow intergenerational interactions. The idea is to convert these concrete inaccessible islands, which become no man’s land, into healthy places that resonate stronger with the current needs of all living beings and the world.
CONCEPT

1) DEFINE

GROUP FORM
by FUMIHIKO MAKI

2) REPEAT

STORE'S ENCLOSURE

3) MEDIATE

METABOLIC MODULE + VARIATION

CONNECTIVITY = LIMITLESS FORM

INTEGRATION OF COURTYARDS

FACADE PERFORATION

SHADING DEVICES

DWELLINGS ORGANIZATION (GROUP FORM)

PERIMETER WALKWAYS AND SOCIAL DOMAINS

"A collective form with no clear start nor ending. A place where every individual can feel part of the same community".

"Big box retail buildings were typically designed to fully operate through active systems. Interventions are necessary to create a strong dialogue between the structure and the environment".
AGAINTS CULTURE: VEHICLE-ORIENTED URBANISM

Retail stores are typically a reflection of pure capitalist motives and consumption behavior, where the quest for the greatest and fastest return of investment becomes the main driver of the design decisions. These projects also reflect how modern societies function, with the automobile as the dominant mechanism for the development of daily operations. The result is a deep encroachment box of large proportions with an interior atmosphere distant from the outdoor environment, surrounded by a void asphalt plain dedicated to no living beings. The building codes stipulate that we must always seek for the welfare of the population. This study envision an alternative where people can have equal access to health resources, affordable housing, and inclusive spaces. An environment that takes into consideration the needs of everyone, and not just those of the few.

Most of our current urban environment do not escape from the fate and neglect non-motorized transportation, resulting in environments with a weak or null pedestrian infrastructure. Other additional factors as a large-scale urban grid, low-quality public transport, and unavailability of destinations within walkable distances contribute to an absolute automobile dependence (Sellers et. al., 2015). Around 80% of the population of College Station drive their personal vehicles alone, and very few residents report walking (0.7%), micro-mobility mechanisms (2.4%), and public transportation (1.9%) as their most common means of transport (United States Census Bureau, 2019). The area where the project is located has a low livability index score (which measures the livability levels of American neighborhoods) mainly due to bad performance in affordable housing, public transport, proximity to destinations, equality and age diversity, and social engagement (AARP, 2018). All these factors are reflected in health indicators, as 70% of the city’s population falls within the overweight and obesity categories (Center for Community Health Development, 2019). Therefore, the relationship between the built environment and physical activity was studied throughout this study to implement urban features that support active living and help combat the development of chronic diseases, which is the leading cause of death in America (CDC, 2020). Sidewalks are introduced across the entire project to support walking, along with trees to provide shading during hot weather. Three different parking lots were strategically located around the periphery of the site to support walking across the development and incentivize active mobility. Outdoor diverse amenities including open green areas, a school, a wellness center, grilling spaces, and a gathering area were integrated using a decentralized approach to provide various destinations within walkable distances and encourage the use of non-motorized means of transport.
AGAINST CULTURE: GENERIC HOUSING

Most of current housing developments disregarded the fact that our societies are not composed by just one family structure. Generic housing forces the creation of insular communities that hinder many individuals and other types of families from living in the same territory. A predominance of row houses also exists around the entire American nation, which in hand with individualistic cultural aspects creates an environment of full seclusion. There is a great lack of architectural features that support collective behavior, which reduces the opportunities for local social interaction. Many neighborhoods around the world capitalize housing to the maximum extent possible to obtain the highest and fastest return of investment. This translates into few low-quality shared spaces where residents hardly have opportunities to develop strong bonds with their neighbors. Moreover, many of the public spaces integrated in communities lack appropriate infrastructure to hold various leisure activities. The result are open low-quality spaces underutilized because of the limited activities that can happen in these zones. According to Lee, Min, and Ohm (2010), public spaces should be composed of a proper balance between nature and built features to ensure that diverse activities can be performed, and that pleasant visuals are achieved through the use of vegetation. Unfortunately, many multi-family developments integrate nature just in residual or transitional spaces such as easements, parking corners, and buffer zones next to dwellings’ windows used to provide privacy. Although these areas satisfy essential needs, they rarely promote local social interaction. Relationships can only be developed through time spent together, and many communities fail to provide destinations where residents can share that time. Today around 65% of Americans report infrequent communications with their neighbors (Pew Research Center, 2019). Although the reason behind the lack of social interaction in the American is greatly attributed to cultural aspects, I believe that lies in architectural grounds too. Therefore, this study endeavors an alternate approach for developing housing, one that embraces diversity and supports intergenerational relationships to help societies build a greater sense of community. Various structures of different scales are scattered across the interior of the present grocery store’s structure, which are connected through circulation elements to achieve a collective form and ensure that every resident feels part of the same community. These buildings incorporate 5 different types of dwellings for singles, couples, elders, young families, and extended families to maximize the opportunities for people from different background to live there. Moreover, diverse amenities are strategically distributed along the perimeter of the grocery’s store interior to allow social interactions between different age groups. This ensures that residents are connected from the moment they arrive, unlike the conventional arriving by car to a garage or a parking lot in proximity to the dwellings. The public spaces also hold different activity densities to ensure different intimacy levels.
“Generic housing results in exclusive environments suited only for a specific target population. This study proposes a combination of different dwelling alternatives to increase the opportunities that any individual has to live in this development. Inclusion is only achieved through universal design.”
THE SOCIAL DOMAIN

“Relationships can only be developed through time spent together. Diverse social incentives are strategically organized to connect all the age groups of the community.”
The current culture considers demolition as the most logical alternative in the events that retail buildings cease to be profitable, as they usually do not possess numerous attributes to hold alternative functions. However, the care for the environment is ceasing to be an option, and it is vital to generate alternatives that extend the life span of buildings to reduce the carbon emissions resulting from construction and demolitions. This study proposes several built interventions to convert a grocery store into a structure competitive with residential use. The building’s existing structure is composed of a steel frame system. Columns are arranged every 32 feet on center in both directions to support trusses that run in one way, which in turn hold the posts that carry the load of the roof. The exterior walls are built with a concrete masonry unit (CMU) cavity wall system. This system is composed of an interior CMU wall, an intermediate void, and an exterior CMU veneer attached to the interior wall through steel ties. The roof of the building is made of a composite system, which incorporates a layer of reinforced concrete over steel corrugated panels. There are several challenges implicit in the repurposing of heavy retail buildings. These projects totally or substantially operate through active systems, which demands the demolishing of portions of the present structure and the integration of new structural components to achieve appropriate passive lighting and ventilation. These alterations must additionally be consistent with the new function of the building, supporting the needs of the new occupancy type.

This study proposes small openings on the exterior walls of the building and the introduction of steel frames to protect the cavity of the system, together with the incorporation of tensile structures for a passive waterproofing action.

The existing envelope of the store is recognized as a protective mechanism from solar radiation and water, which allows the use of austere materials for the interior residential unit and a reduction in the energy consumption of HVAC systems. Cross natural ventilation is achieved through the new openings integrated in the existing envelope, and warm air is released through the roof’s apertures located over the courtyards. Moreover, operational overheats might be encountered since there is a limitation on the variety of machinery that can be used in the interior of the building. As a result, this study proposes the establishment of a modular unit (1/4 of the 32’ x 32’ bays) which dictates the size of the apartment units, allowing a systematic prefabrication of small lighter components that facilitate the construction processes. Furthermore, this study proposes the use of crossed laminated timber (CLT) as an eco-friendly strategy due to the material’s ability to capture and store carbon dioxide. However, this study acknowledges the need of lightweight construction systems due to the structural capacity limitations that retailers stores may have. Systems composed of lightweight materials such as sheetrock, plywood, structural insulated panels, sandwich, light-gauge steel, and lightweight can be used to avoid expensive foundation interventions. The idea is to provide sustainable quality housing by taking advantage of the store’s structure, which acts as a protective shell that isolates the interior buildings from all exterior conditions that typically cause deteriorations with the passage of time. This protective action from indifferent weather brings a unique opportunity to implement austere materials with less embodiment energy.
ELEVATION & SECTION
The present study was inspired by several urbanism movements including new urbanism, compact city, neighborhood unit, garden city, and smart growth. These movements have one main common goal, to achieve healthy people-oriented built environments by developing less land, increasing density and mixed-use zoning, integrating infrastructures for active transportation, and designing more territory for nature. The idea is to build in a more conscious manner by reducing the scale of cities and communities and mixing different zoning to diminish automobile dependency and achieves healthier and more ecological environments. However, most of these movements mainly focus on new development.

This study emphasizes the importance of reusing alternatives for existing construction. It explores opportunities to improve current built environments with a reasonable number of interventions to limit carbon emissions. It attempts to illustrates an approach in which we could transform vacant construction into people-oriented developments that are sustainable for environmental care, inclusion, social development, and well-being. A site that balances the natural and built environment to create a place that achieves the best possible use of the land. A destination that embraces quality of life not just for people, but for the rest of beings living in the same ecosystem. A place free from the barriers that typical multifamily domestic architecture imposes, where people from different backgrounds can live together.

The study departs from post-capitalist ideals to depict an alternative aimed to provide residents with the resources required to meet their fundamental needs (Black-Neese, 1989). The project distinguishes from conventional multifamily developments as it:
- Integrates diverse dwelling types together to maximize the opportunities that any individual has to live in the community.
- Adapts an existing vacant building to get maximum benefits out of it (energy efficiency, protection from inclement weather, and low carbon emissions).
- Aloosts an extensive area for public space to support community and social interaction.
- Strategically organizes public spaces to incentivize intergenerational relationships.
- Limits motorized circulations and integrates commercial, cultural, institutional, and natural destinations to encourage active mobility.
- Designates a large territory for nature, to admit local biomes and support health.

Among the challenges inherent in the development of a project of this nature are:
- Current building codes full compliance giving that a building is built inside a building.
- Social disturbances resulting from living in proximity with public spaces and diverse age groups.

• Disruptions derived from the spatial qualities that result from living inside an enclosure (visuals, noises, natural lighting).
• Structural capacity of existing structures and the need for lightweight components for the interior development.
• Passive design strategies in buildings that are typically designed to fully operate with active environmental systems.
• Design strategies in synergy with construction processes that allow the assembly of structures without the need of heavy machinery.

This study considered several limitations, which must be considered for future studies of similar nature:
- The methodologies used to develop the concept (collective form through modular units based on existing grid) is only considering the typical grid (around 20x30 ft.) of big box buildings. However, there is a wide range of retail formal typologies including strip malls, L-shaped centers, cross-mall centers, street-level buildings, and U-shape stores. Structural grids vary and the approach for distributing public space might not be fully comparable with other forms.
- This study proposed the use of CLT for the construction of the interior structures due to its environmental attributes. However, not all retail buildings are designed to withstand such dead loads. Other lightweight materials like sheetrock, plywood, structural insulated panels, metal, light gauge steel, and light wood can be explored to avoid expensive foundation interventions.
- The study neglected an iconic element (a big arch) that emphasizes the main entrance of the existing building to illustrate a more simplified and generic response. Nevertheless, similar components are present in retail buildings, and these elements need to be addressed in a conscious manner.
- The study considered that the grocery store had no interior partitions. However, this is not typical in retail buildings and demolitions must be ideally minimized to reduce waste and carbon emissions. Interior enclosed spaces could be potentially used to hold administrative or public uses.
- The proposal developed during this study centers on interventions with specific built features compatible with the existing shipping systems (CMU cavity wall and composite roof). However, a thorough analysis must be undertaken to ensure that openings remain consistent with other wall and roof systems.
- I aspire that this study becomes a valuable reference for future research of the same nature. A project like the one envisioned in this present document would potentially help reduce the shortage of affordable housing, provide low-income populations with opportunities to return to the cities, reduce carbon emissions and waste generated by demolitions and support the creation of cohesive and diverse communities where every member can cultivate a sense of belonging.

CONCLUSIONS & LIMITATIONS
REFERENCES


- Chamayeff, S. & Alexander, C. (1963). Community and privacy; toward a new architecture of humanism. "The enemy number one of humanity is the car". Contemporary societies have a great dependence on motorized means of transport, which is reflected in the way our cities are designed. "Walking has been nearly eliminated today". Large distances are required to fulfill everyday tasks. "The devotion to automobile has serious consequences". Today our streets are dead and there are very few opportunities for local social interaction. People live secluded and can't find the privacy they seek even in the interior of their houses. There is a great need for meaningful transitional spaces, that allow privacy and collectivity at the same time.


- Kotzhas, K. (2002). JuriSpace. Architecture has become generic and profit-driven, and no longer resonates with the surrounding environment. Extreme consumption and materialism predominate in current societies, which only benefits the economically stable sector of the population. This generates divisions between the different members of societies and hinders social cohesion. Architects have become servants of this system, designing projects to fulfill the requirements and desires of the few. The real tasks are buildings with no fundamental meaning, which harm existing environments rather than improving them.


- Lynch, K. (1984). Site planning. Third edition. Ecosystems have been constantly changing since the beginning of time, with or without human interference. Our challenge is to read and understand current ecosystems to minimize the impact of new interventions. It is about creating new settings that consider all the environmental factors to create places in harmony with the natural domain.


- Maslow, A. (1943). A theory of human motivation. Every individual possesses existential fundamental needs that must be met to be a achieve dignified living conditions. I believe there is a positive relationship between architecture and people’s ability to fulfill most of these fundamental needs, and that the design of every community we develop must be guided by all these elements to truly create people-oriented architecture.


