

CENTER(ing) DISTRIBUTION

A non-degree-required thesis submitted to
the Master of Architecture Program
Department of Architecture

by

Aislinn Keenan

advised by

Jeana Ripple

May 2025

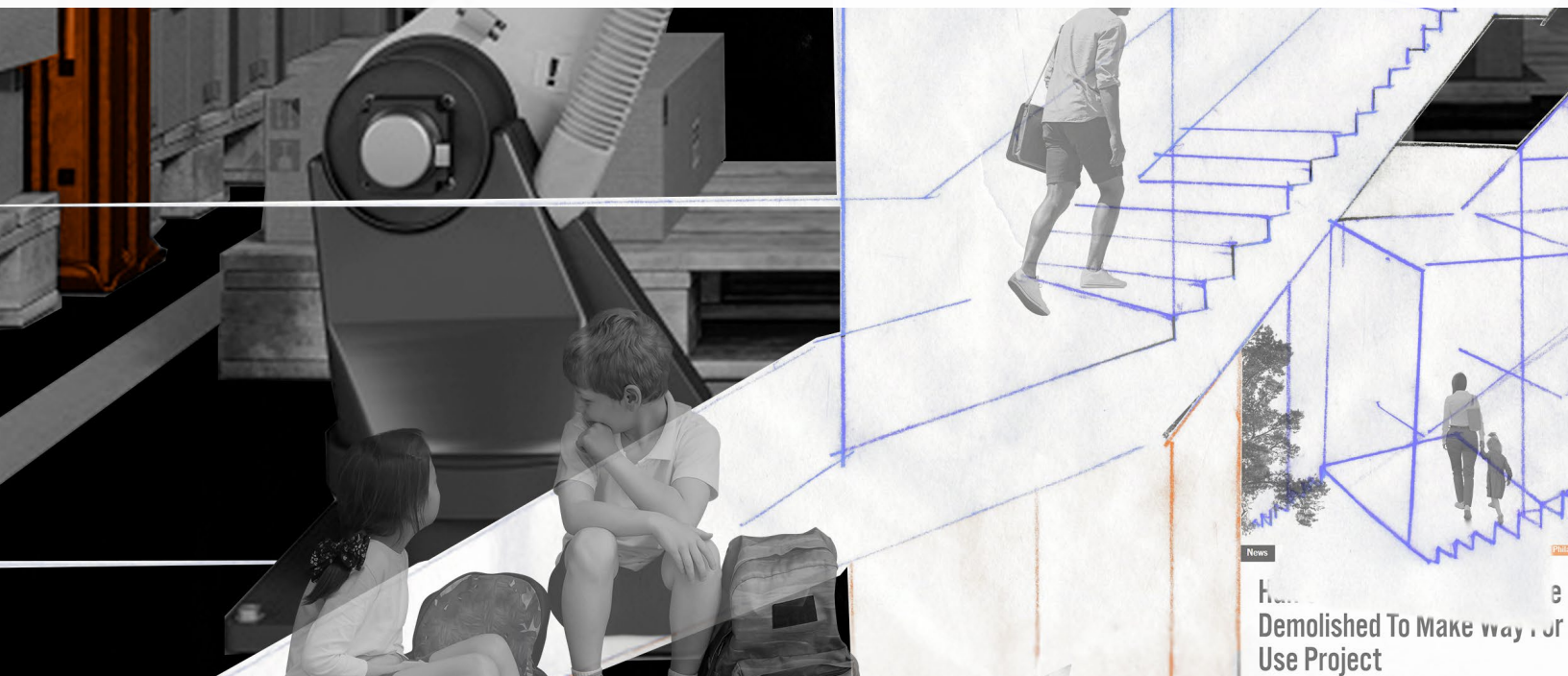
University of Virginia School of Architecture



CENTER(ing) DISTRIBUTION

Aislinn Keenan | Advisor: Jeana Ripple

University of Virginia Graduate School of Architecture | Spring 2025



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ABSTRACT

Shopping malls are experiencing rising vacancies as consumer habits shift online. The growth of e-retail has also expanded the need for suburban and urban distribution space. Simultaneously, the U.S. Surgeon General has called for investment in social infrastructure to combat the post-COVID loneliness epidemic. This thesis proposes redesigning underutilized malls as hybrid spaces that merge logistical distribution functions with the social essence of the shopping mall.

The design strategy preserves and enhances human-centric zones while generating revenue through attached distribution hubs. Rack-clad, high-bay storage structures can connect to former big-box stores, which are already suited for shipping and loading. These additions reduce the mall's sprawl and create last-mile distribution centers, while enabling reinvestment in social programming such as restaurants, recreation zones, and art spaces. The mall's previously useful social infrastructure, including promenades, escalators, and communal gathering areas, will be rearranged and reinforced to create havens, hubs, and hangout spaces.

Suburban malls are often located along wide, low-density commercial corridors that contribute to sprawl and social isolation. Redesigning them as hybrid centers requires negotiating human -scale accessibility, visibility, and aesthetics, which is an urgent challenge as automation and efficiency increasingly reshape the built environment.

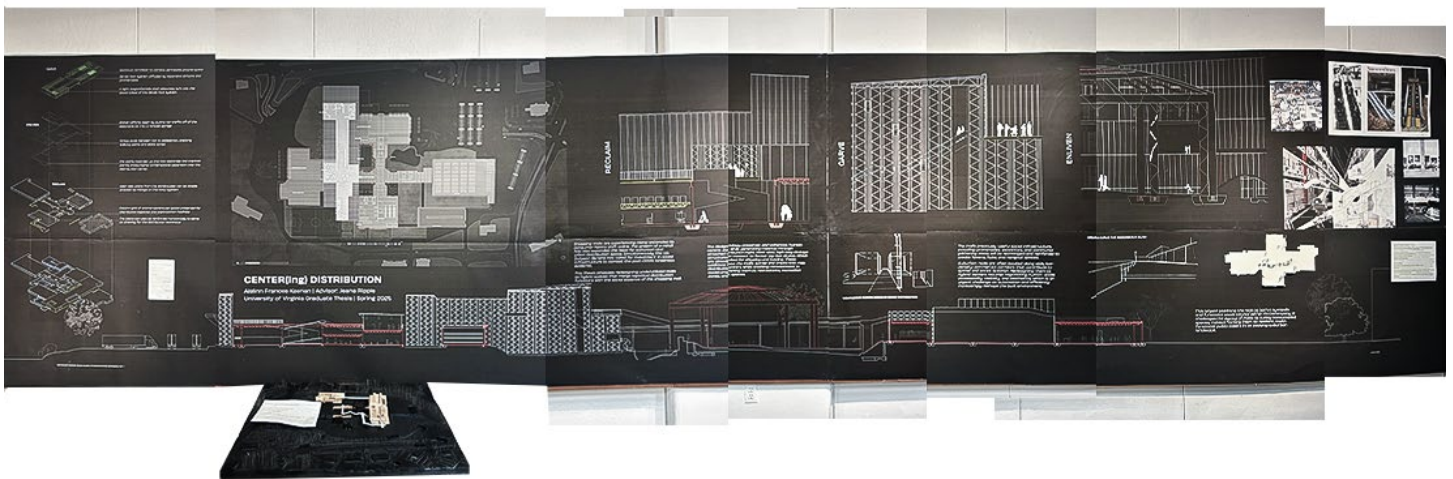
This project positions the mall as both a symbolic and functional social anchor within its community. It challenges the legacy of malls as purely consumerist spaces, instead framing them as resilient, multi-functional public assets in an evolving suburban landscape.

ACKNOWLEDGMENTS

Thank you to my advisor, Professor Jeana Ripple. Thank you to Professor Schaeffer Somers for sharing your own findings and research at Fashion Square Mall. Thank you to Tithi Sanyal for helping me find my footing in speaking about my idea. Thank you to Melissa Goldman and Trevor Kemp. Thank you to Professors Matthew Jull and Sasson Rafailov. Thank you to the rest of the faculty, students, and staff at the University of Virginia School of Architecture. And thank you SO(A)P.

IMPORTANT NOTE

This document is adapted from a presentation delivered to a panel of critics on May 6, 2025 at the University of Virginia School of Architecture. It serves only as a summary of that presentation. Maps and design drawings are cropped or resized to this format. For full size drawings, questions about the information, or considerations discussed, please contact the author directly.



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CURRENT STATE OF SHOPPING MALLS

CURRENT STATE OF SHOPPING MALLS

Malls have been closing at a rapid rate over the past thirty years. Between 1986 and 2016, nearly six hundred malls closed each year. Over the last decade, that number increased to over one thousand closures annually. On average, malls now sell for forty three percent less than their acquisition price.

Today, only about three percent of the peak inventory of twenty-five thousand malls in 1986 still exist, meaning only about seven hundred malls remain standing. The current vacancy rate in malls is around nine percent, which is significantly higher than the two percent average vacancy rate across all retail property types.

Roughly a quarter of the malls still standing are classified as "Class A" malls, typically anchored by high-end department stores like Neiman Marcus or Nordstrom. Most remaining malls are considered "Class B" or "Class C" malls. Class B malls may still operate with a patchwork of varied tenants, while Class C malls are often nearly vacant and in states of disrepair, verging on unusable.

While Class A malls are generally stable due to a consistent and affluent customer base, Class B and C malls are often on track for demolition or conversion to less beneficial community uses.




Image Credit: Lerner Enterprises

\$58 Data Center Campus on Former Landover Mall Footprint Could Break Ground by 2026

A major new data center campus on the vacant former Landover Mall site, Prince George's County's largest such project to date, could break ground as soon as 2026.

By PhilBurke

Oxford Valley Mall apartments could see first residents in July. How much is rent?

When will Adee Square at Oxford Valley Mall be ready for move-in? This is what the luxury units will cost to rent.

Jun 17, 2024

By Patch

Oxford Valley Mall Luxury Apartments Now Open

The first phase of the luxury apartments known as Adee Square is residents in Middletown Township.

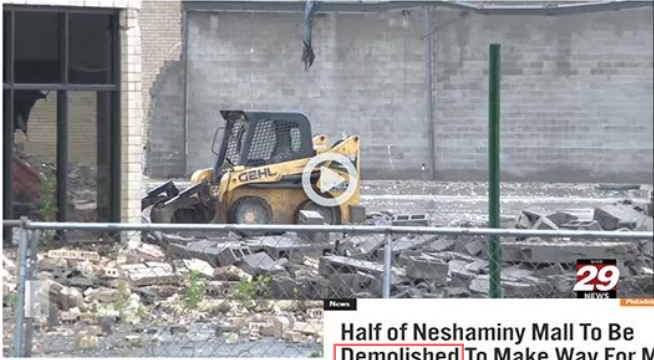
Aug 15, 2024

By LeventonNow.com

Upscale Apartments Rise At Oxford Valley Mall

Construction is advancing on the new upscale apartment complex Mall in Middletown Township.

Dec 11, 2023



Demolition is underway at Fashion Square Mall

By Amaya Mitchell

Published: Sep. 24, 2024 at 5:24 PM EDT

ALBEMARLE COUNTY, Va. (WVIR) - Demolition is underway at Fashion Square Mall in Albemarle County to make way for the new Home Depot.

There are detours around the area while demolition is happening.

The Home Depot will replace the location of Sears at Fashion Square Mall.

The grand opening is set for July 24, 2025.

Half of Neshaminy Mall To Be Demolished To Make Way For Mixed-Use Project

July 18, 2024 | Susan Harris, Philadelphia | 62

The new joint owners of the Neshaminy Mall in Bensalem plan to demolish up to half of it to redevelop the site for a mixed-use development.

CURRENT STATE OF SHOPPING MALLS

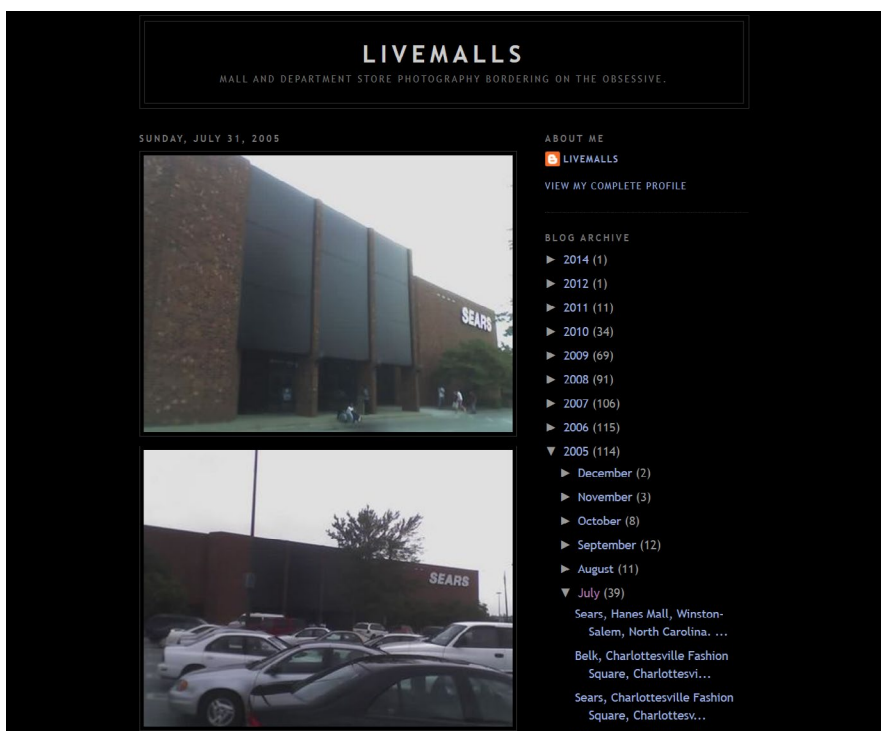
CLASS A VERSUS B AND C MALLS



"King of Prussia Mall | Montgomery County PA Shopping." Accessed February 17, 2025. <https://www.valleyforge.org/things-to-do/shopping/king-of-prussia-mall/>.

Class A malls comprise 25% of existing inventory.

Class A malls (\$500 or more in annual sales per sq ft) have a 3.6% vacancy rate.



Class B and C comprise the remaining 75%.

Class B malls (\$300 to \$500 annual sales per sq ft) have a 6.8% vacancy rate;

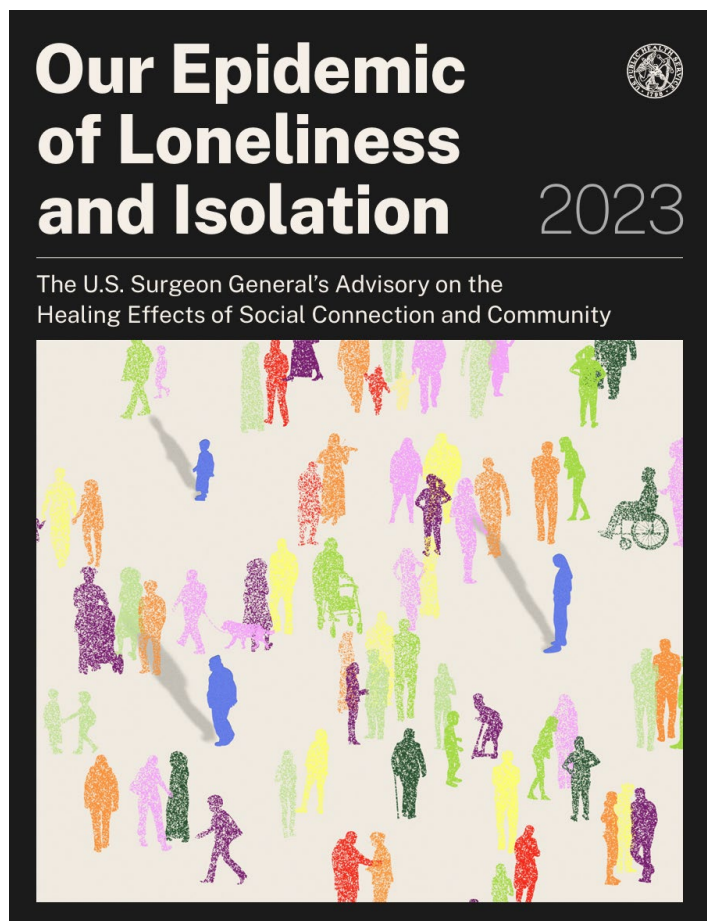
Class C malls with less than \$300 in annual sales per square foot have a vacancy rate of 10.2%, 18.6% higher than the overall vacancy rate for shopping malls.

THE BROADER PROBLEMS

THE BROADER PROBLEMS

The decline of malls comes at a time when communities face a worsening loneliness epidemic. Nearly thirty percent of young Americans aged eighteen to thirty four report feeling isolated daily or several times a week. Following the COVID-19 pandemic, social interaction among young people has significantly decreased, contributing not only to emotional strain but also to economic loss. Absenteeism alone can cost companies \$154 billion annually. This widespread disconnection poses a threat not only to the economy but to democracy itself, as loneliness weakens individuals' sense of belonging and civic engagement.

In response, the U.S. Surgeon General outlined six pillars to advance social connection, one of which is investment in social infrastructure—places like havens, hubs, and hangouts, as defined by the APA, where people can gather with others from similar or diverse backgrounds. Shopping malls are uniquely suited to serve this purpose. Their spatial characteristics, including vast interiors, promenades, atriums, and communal seating, were originally designed with social interaction in mind. Malls like the Neshaminy Mall, my childhood mall in Bensalem, Pennsylvania, once thrived as public gathering places outside of work and home. Though plain from the outside, inside they were bright, animated, and full of possibility.



This reflects the original vision of mall creator Victor Gruen, who fled Austria during WWII and sought to recreate the civic life of European plazas within the American suburb. His malls were intended as protected town centers that would be clean, diverse, and convenient. They would also be communal spaces hosting not just retailers, but civic services and pedestrian-friendly zones.

However, by the turn of the century, Gruen's ideal was overtaken by commercial excess. The rise of mega malls and, eventually, the dominance of e-commerce shifted public preference toward isolated consumption. COVID-19 accelerated this trend, leaving behind underused physical retail spaces at a time when our need for meaningful social infrastructure has never been greater.

THE BROADER PROBLEMS

PHOTOGRAPHS FROM NESHAMINY MALL IN BENSALEM, PENNSYLVANIA



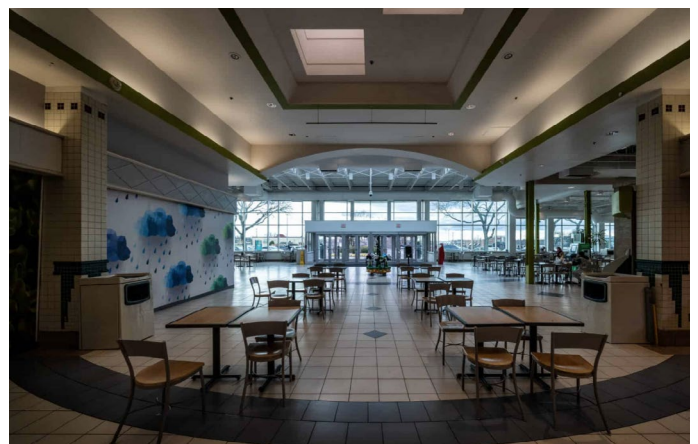
HAVEN ▽ LIGHT AND SPACE



HUB ▽ COMMUNITY CULTURE



HANGOUT ▽ PROGRAMMED NATURE



HUB ▽ MEETING PLACES

THE BROADER PROBLEMS

SOCIETAL LONELINESS EPIDEMIC



**15
cigarettes
per day**

The equivalent effect on our risk for premature death due to social isolation.

Loneliness is linked to higher rates of depression, anxiety, and suicide, and it can increase risks for heart disease, stroke and death (Center for Disease Control).



30%

Portion of young Americans aged 18-34 reported feeling lonely every day or several times a week (American Psychiatric Association).

Young people aged 15-24 reported 70% less social interaction with their friends post Covid-19 lockdowns, according the U.S. Surgeon General's Advisory.



**\$ 154B
PER
YEAR**

The cost companies incur each year due to absenteeism.

Loneliness thus threatens our economy, and even our democracy, as people feel less connected to the greater good of their communities (Cigna).

THE BROADER PROBLEMS

WHAT DOES THE SURGEON GENERAL CALL FOR?

HAVENS

Helps people belong and creates opportunities to support close ties - or "bonding social capital" - among people from similar backgrounds.



Relax

HUBS

Encourages people to interact with others from different backgrounds which can have a positive impact on the economic futures of low-income children.



Gather

HANGOUTS

Supports casual interactions, where people can live life in public. These can come in many forms including lakes, streets, plazas, green spaces, and sites for cultural and community festivals.



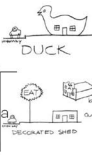
Saunter

THE BROADER PROBLEMS IT BEGAN WITH GRUEN

1938
Victor Gruen fled Nazi-occupied Austria and settled in the United States where he began a successful early career designing shopping centers. He celebrated consumerism as the basis of the American Dream post World War II.



1972
Learnings from Las Vegas is published. Robert Venturi and Denise Scott Brown teach about the concept of the "decorated shed" or building which communicates meaning through signs and billboards.



1982
Indoor shopping mall inventory peaked at a volume of 25,000 indoor shopping malls across the U.S.



1992
Mall of America opened its doors on August 11th with over 300 stores, an amusement park, and 13 million gallon saltwater aquarium.



1995
Box office hit movies like "Clueless" feature the Mall as a quintessential hub of American teen culture.



1956
Gruen and Associates designed the first enclosed shopping center in the world: Southdale Center in Edina, Minnesota.



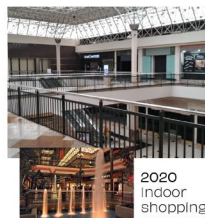
1978
Panels by Denise Scott Brown and Robert Venturi were installed on the Best Showroom in Langhorne, Pennsylvania.

freedom
American Dream
autonomy
germ-free
shopping
convenience
compactness
socialization
diversity
climate-controlled
aimlessness
free parking
haven
shared-space
strong civic life
pedestrian zones
entrepreneurship
exhibitions
non-overwhelming crowds
rides
instagram-worthy
isolated consumption
wi-fi
public-space
sustainability
haven
pedestrian zones
strong civic life
convenience
entrepreneurship
shared-space
drive-up convenience

2001
Amazon recorded positive income flow for the first time since its founding in 1996, recording 25 million customers



2017
Amazon unveils plans to place fulfillment center at site of North Randall shopping mall in Cleveland, Ohio.



2020
Indoor shopping mall vacancy grew 10.5% following COVID-19 stay-at-home orders.

2022
2 million square feet of mall space was demolished in 2022. The number of shopping malls decreased on average 16.7% per year between 2017 to 2022.



Numeric Change in Fastest-Growing Places by Distance From City Hall: 2018-2019 and 2022-2023

Distance in miles	2018-2019	2022-2023
Up to 10	154,058	125,687
10 up to 20	193,280	175,394
20 up to 30	168,630	211,499
30 up to 40	42,809	66,749
40 up to 60	11,720	25,361
Greater than 60	170	1,034

Source: U.S. Census Bureau, Vintage 2019 and 2023 Population Estimates, 2010 Census Special Report and authors' calculations.

2024
Demolition of the Sears at Fashion Square mall begins in preparation for a Home Depot projected to open in 2027. This project comes three years after owners of the mall file for Chapter 11 bankruptcy.



2007
Developers announce the retrofitting of Eastgate Consumer Mall in Indianapolis as a datacenter.



THE CASE FOR CHANGE

THE CASE FOR CHANGE

Developers are increasingly reinvesting in Class B and C malls, exploring a range of new anchor opportunities. Some attempt to sustain retail activity by cycling through small-business pop-ups, though these often generate insufficient revenue to maintain the mall's quality. Others have opted to re-purpose or demolish malls for mixed-use developments, academic facilities, housing, or, less favorably, for delivery and distribution centers. While these latter uses may seem community-detracting, they hold untapped potential.

The broader issue, however, stems from the mall's reliance on consumerism, a shift from Victor Gruen's original civic-minded vision. American shopping evolved from mail-order catalogs like Sears to car-centric malls, and now back home with the rise of Amazon. E-commerce continues to grow, and developers are responding with increasing investment in logistics infrastructure.

As demand for last-mile distribution increases, particularly in suburban and urban areas, a new type of anchor tenant is emerging: high-density, automated storage systems. Though only currently found in rural parts of Europe, these robotic warehouses, which are designed with minimal human interaction, may soon require large facilities in socially strategic locations.

This raises a provocative spatial proposal: what if malls, with their ample square footage and central locations, became the new home for these high-efficiency logistics hubs, balancing commerce with community-oriented design?

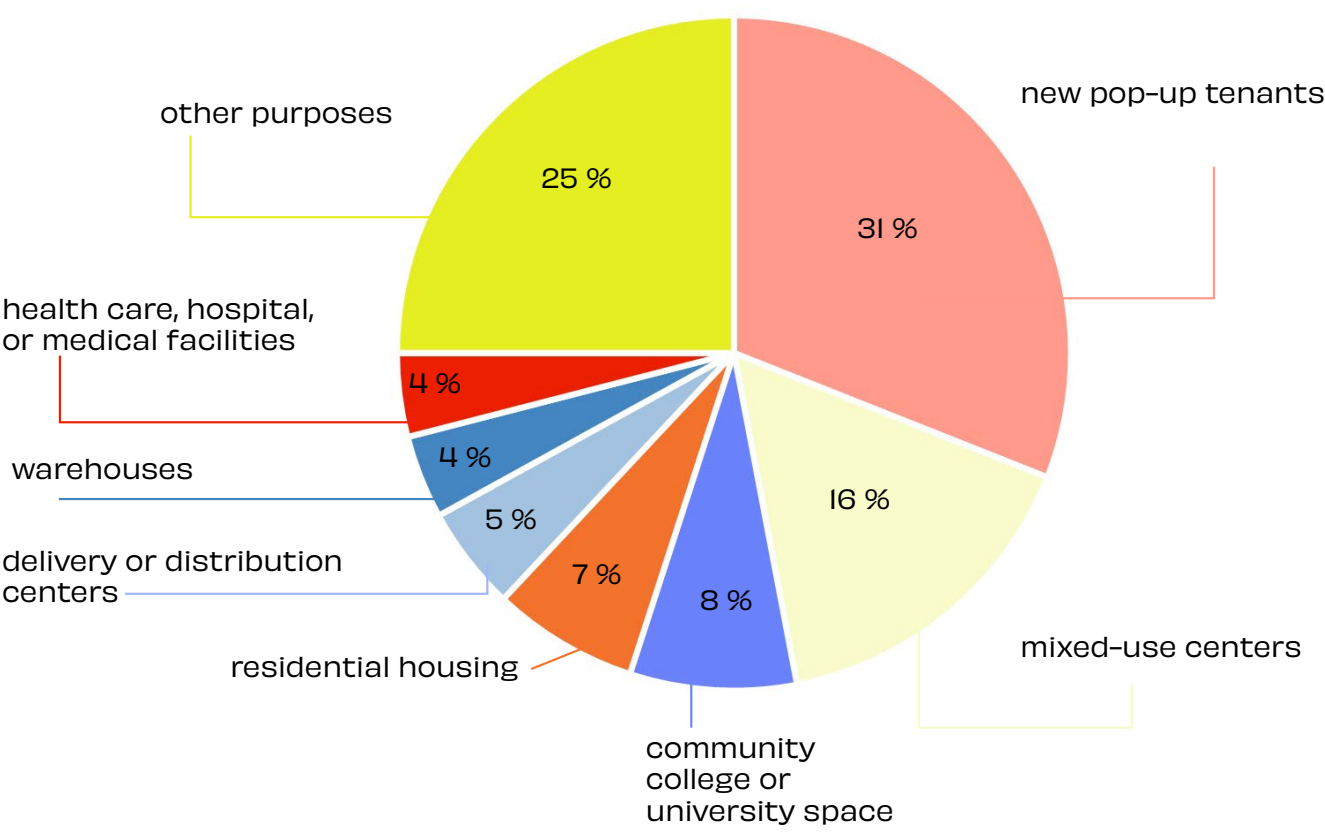


Fall/Winter Sears catalog from 1957. Archive: Wallis/Los Angeles Times via Getty Images



THE CASE FOR CHANGE

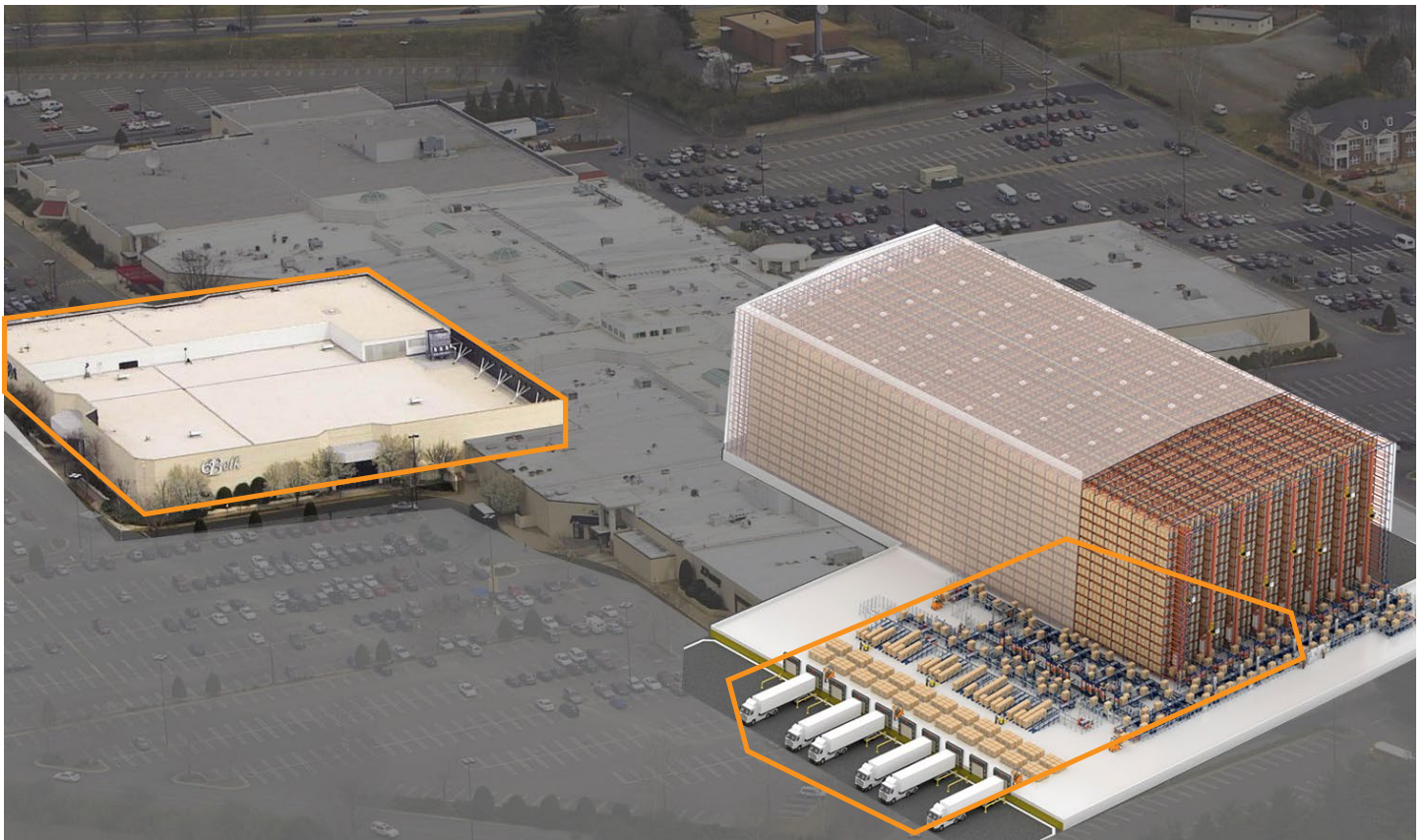
ANCHOR OPPORTUNITIES



Capital One Shopping. "Shopping Mall Closure Statistics (2024): Are Malls Dying?" Accessed February 16, 2025. <https://capitaloneshopping.com/research/mall-closure-statistics/>.

THE CASE FOR CHANGE

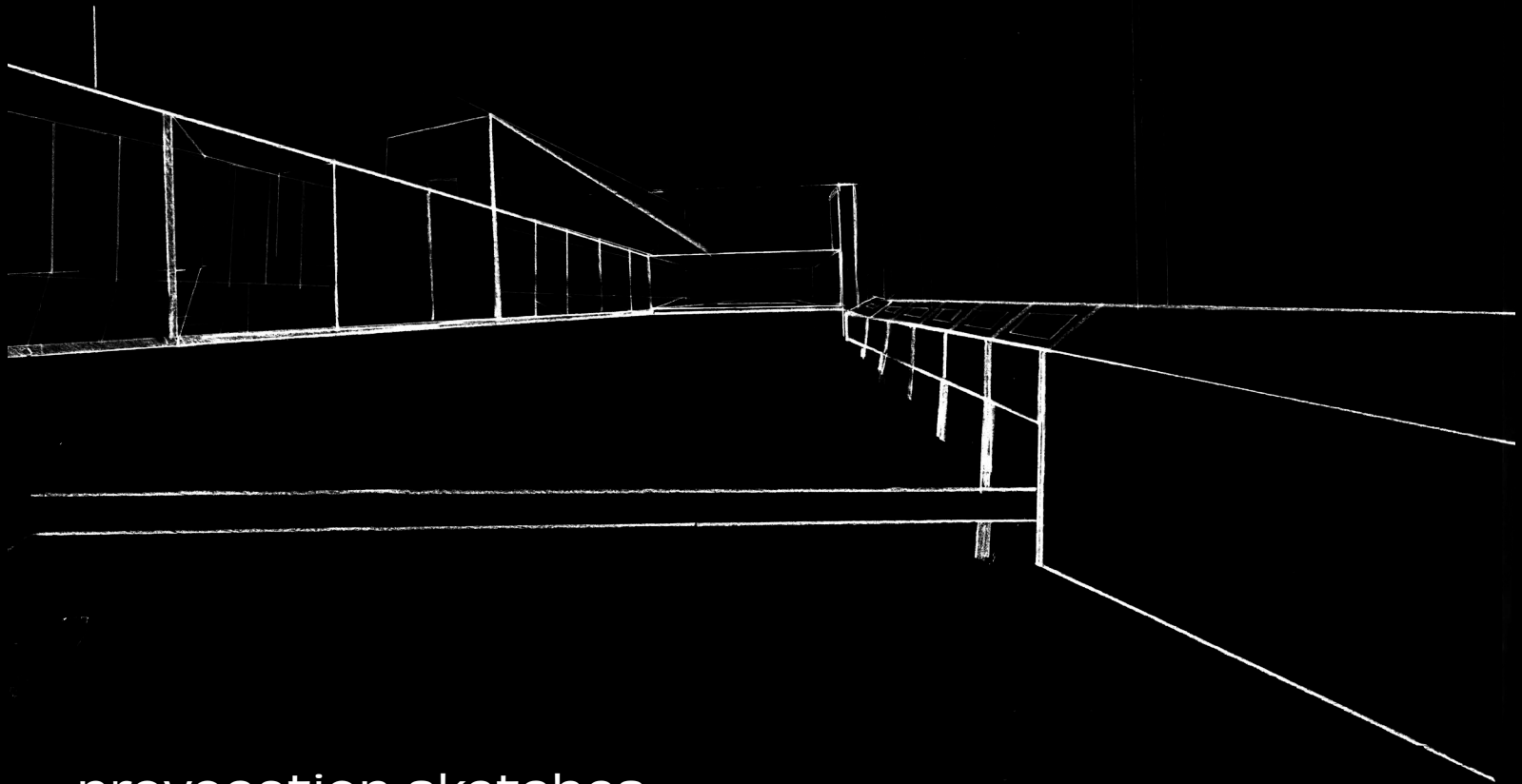
INTRODUCING MECACLUX



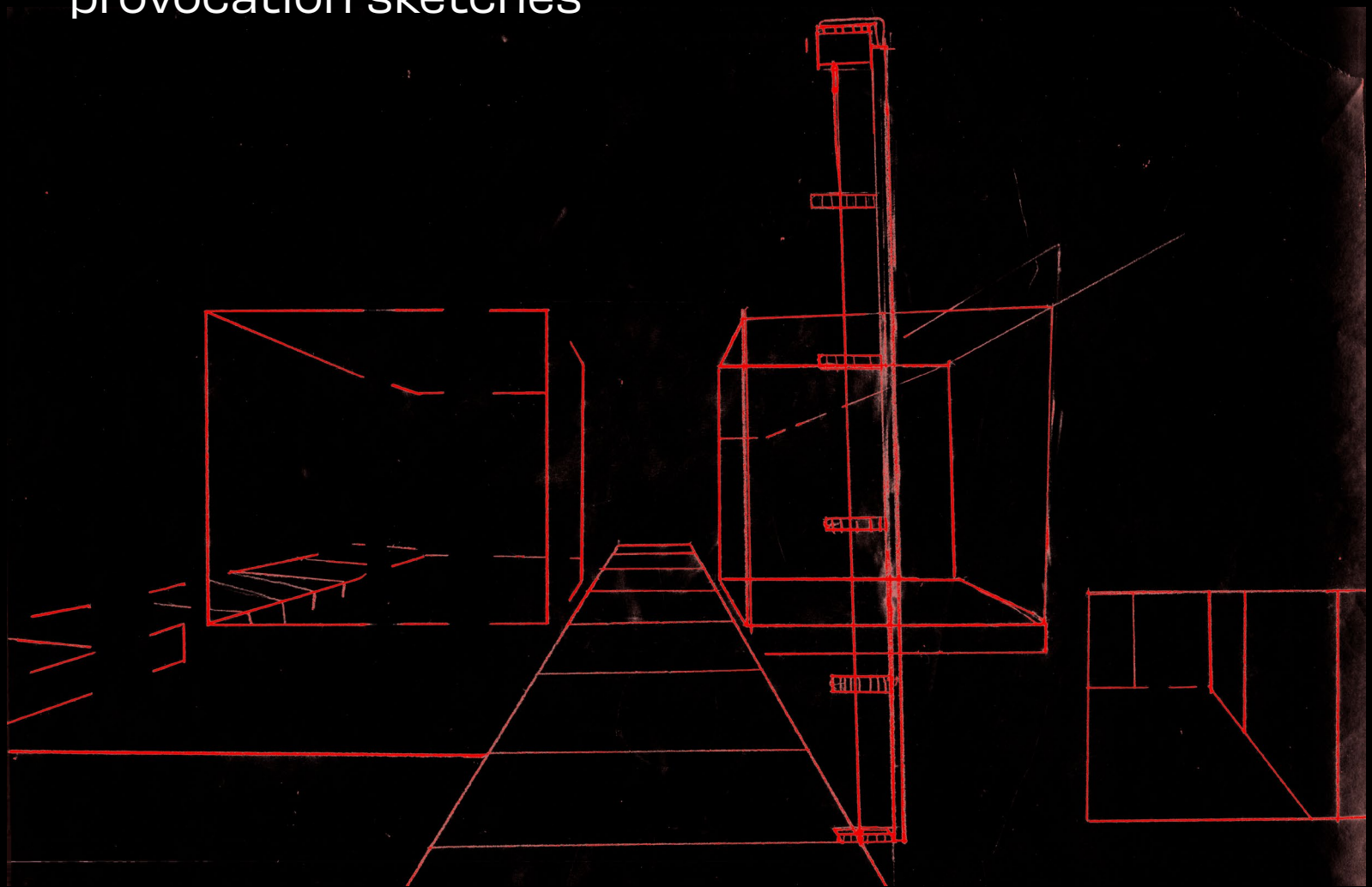
THE IDEA

THE IDEA

Underutilized malls can be redesigned as hybrid spaces that merge logistical distribution functions with the social essence of the shopping mall.



provocation sketches

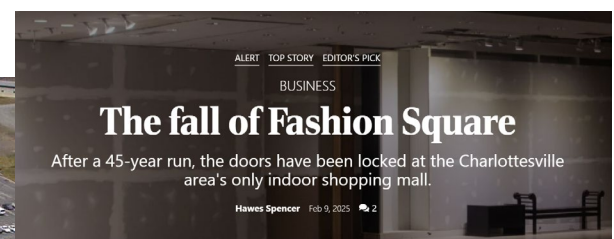


CASE STUDY

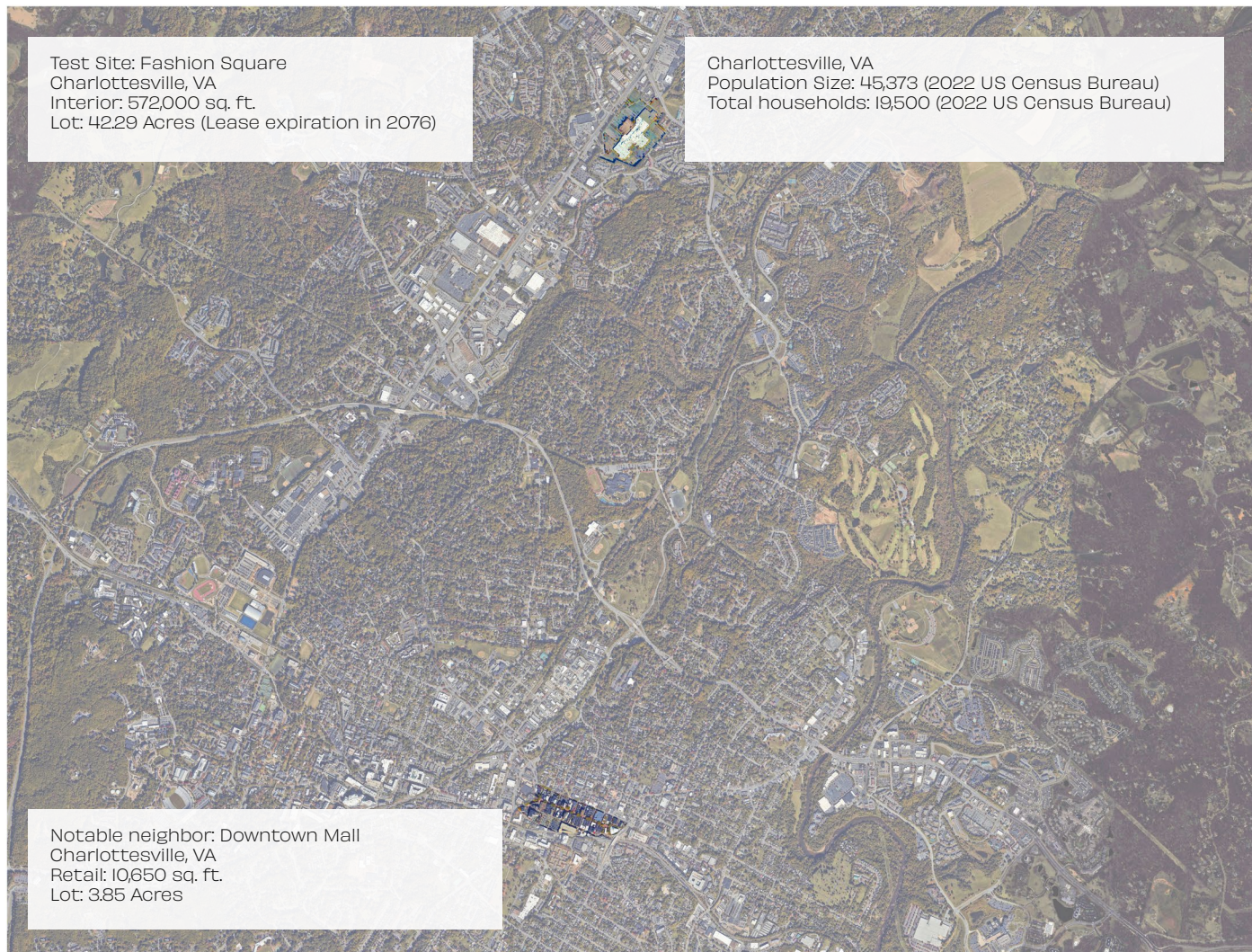
CASE STUDY AT FASHION SQUARE MALL

Fashion Square Mall was once a typical Class B mall, held together by a patchwork of tenants and anchored by a Belk department store that alone couldn't sustain the property. Many of its tenants had filed for bankruptcy, prompting community speculation about whether redeveloping the old Sears site into a stand-alone Home Depot might help fund the struggling location. Ultimately, on January 31st of this year, Charlottesville's Fashion Square Mall closed its doors for good. Yet, the site presents a compelling case study due to its neighborhood context. Directly behind the mall is a dense, largely low-income residential area with limited access to walkable or bikeable infrastructure—especially compared to the wealthier neighborhoods closer to the University of Virginia and the Downtown Mall. For residents near Fashion Square, car ownership is less common, and public transportation is more heavily relied upon, though Route 29 offers few accessible resources.

When I visited the mall in September to document its conditions, I found it still active: Belk was open, small businesses were operating, and shoppers were present. However, while photographing the site—particularly its abandoned storefronts—I was quickly stopped by security and issued a “mind your manners” notice. This sheet prohibited not only photography but a surprising number of everyday behaviors, underscoring the fact that, while malls may feel like public spaces, they are in fact private properties subject to strict surveillance and control. These rules ran counter to the original vision of Victor Gruen, who imagined malls as vibrant, civic centers where people could linger, interact, and engage. It became clear that the social spirit of the mall had eroded, replaced by a consumerist surveillance model that restricted spontaneity, expression, and community life. To honor Gruen's original intent, malls must be reimagined as spaces that allow for disorder, for skateboarding, music, protest, or even loitering. Above all, they should be places where people can gather freely and meaningfully.



Aerial photo of Fashion Square Mall in Charlottesville, Virginia by Ben Schumin



1980: Fashion Square opens on March 5 with room for 62 storefronts

2019: Sears leaves after the nationwide brand declares bankruptcy

2020: Bankruptcy closures include J.C. Penney, Charlotte Rosse, Crazy 8, Payless ShoeSource, Charming Charlie, Motherhood Maternity, Gap, and Buckle.

2021: Post COVID-19, J.Crew Factory, American Eagle, Sleep Number, AT&T, and GNC close.

2021: New owner buys the bulk of Fashion Square's assets at a foreclosure auction.

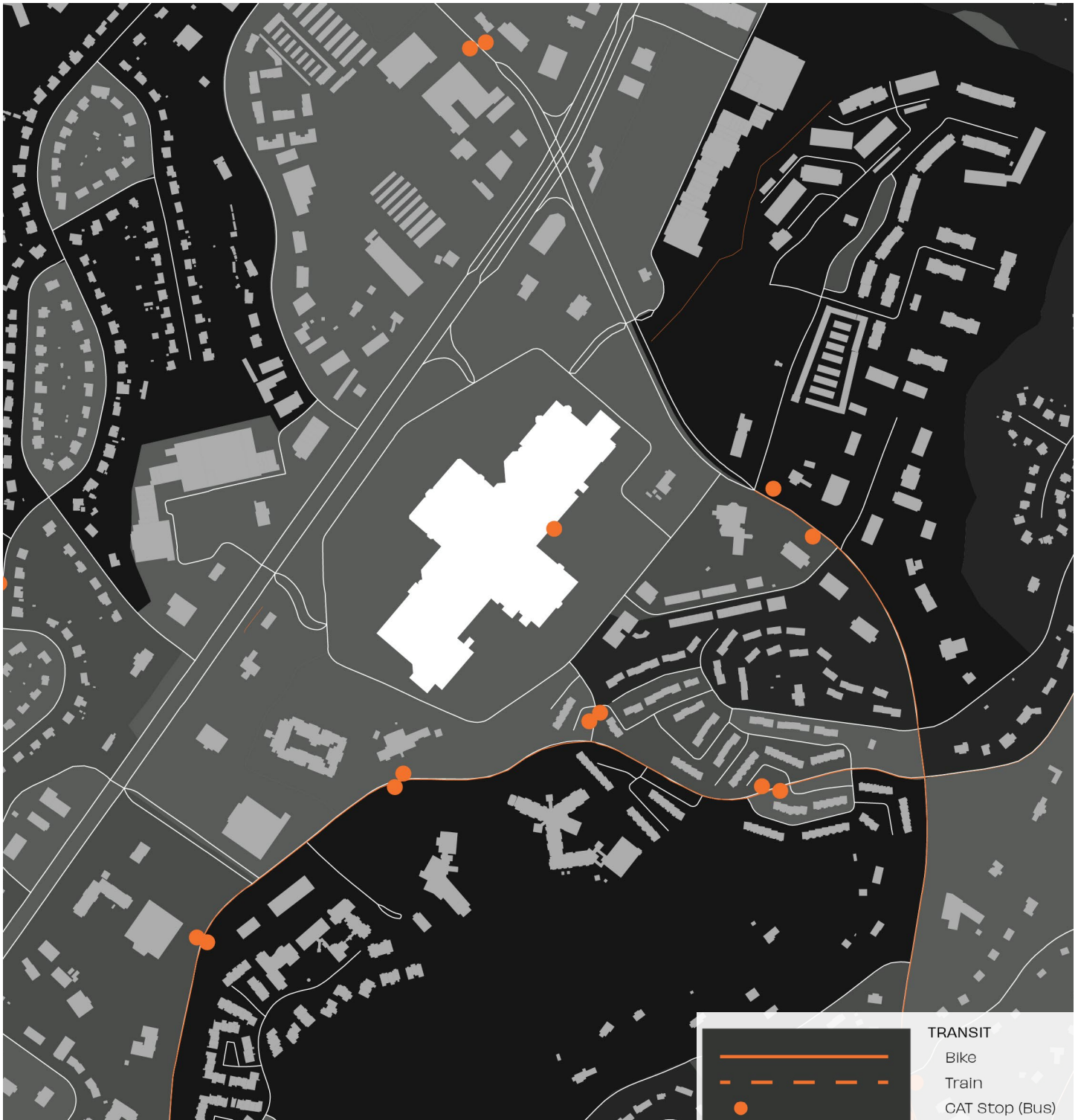
2022: Home Depot buys the former Sears site.

2024: Build-a-Bear closes. Remaining businesses dwindle to Lids, Health Plan Massage, Beautiful Eyebrows, Claire's, and Nails Next Door.

2025: Fashion Square closes on January 31. (Except for Belk). Home Depot raises their sign to open in late summer.

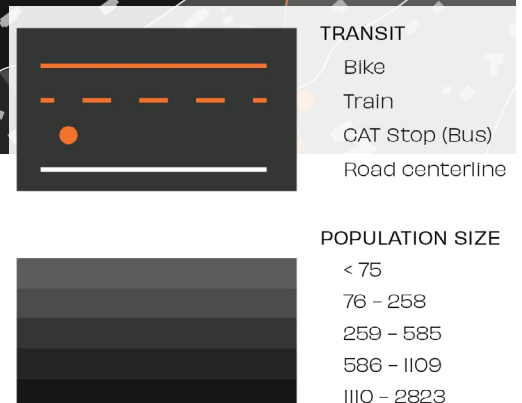
CASE STUDY

SURROUNDING POPULATION DENSITY



1 : 10,000

* This is a crop of a larger map. Please contact author directly for original file.



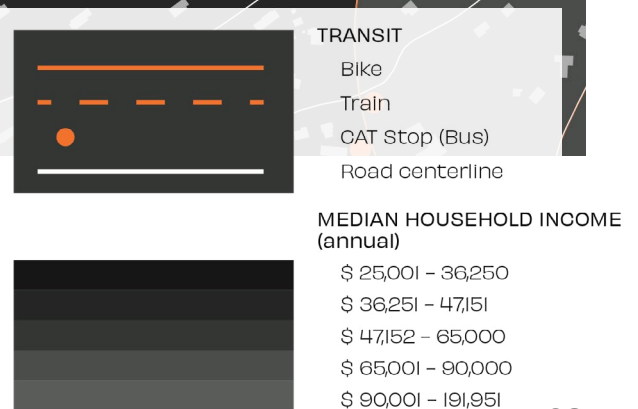
CASE STUDY

SURROUNDING AVERAGE HOUSEHOLD INCOME



1 : 10,000

* This is a crop of a larger map. Please contact author directly for original file.



CASE STUDY

EXISTING CONDITIONS



CASE STUDY

THE PACIFIED AND DISTRACTED

Use of obscene language or gestures. Racial, religious, gender or ethnic slurs.

Behavior that is disorderly, disruptive, or that endangers others

Defacing damaging destroying or shoplifting any property
Littering

Running, skating, skateboarding, rollerblading, hover boarding, and bicycling, "Horse play", loitering, obstructing or interfering with the free flow of customer traffic

Fighting, harassment, shouting, offending others, sexually explicit language, or provoking confrontations

Use of the property in an improper or unsafe manner

Loud behavior, the playing of musical instruments or audio devices, and the blocking of store entrances, walkways, fire exits, or escalators/elevators

Clothing that does not adequately cover the body. All patrons must be fully clothed and cannot wear indecent, inappropriate or gang-related attire.

Clothing that obscures the face, unless worn for cultural, religious, or medical conditions, or mandated by public health officials.

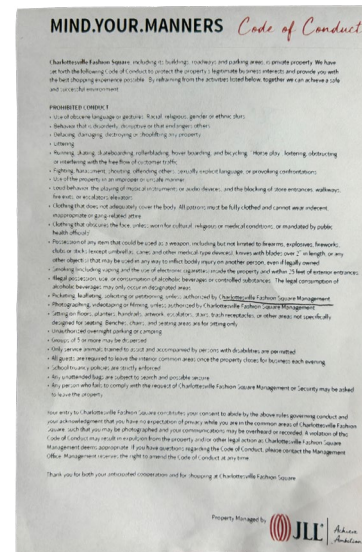
Possession of any item that could be used as a weapon, including but not limited to firearms, explosives, fireworks, clubs or sticks (except umbrellas, canes, and other medical-type devices), knives with blades over 2" in length, or any other objects that may be used in anyway to inflict bodily injury on another person, even if legally owned.

Smoking including vaping and the use of electronic cigarettes inside the property and within 25 feet of exterior entrances

Illegal possession, use or consumption of alcoholic beverages or controlled substances. The legal consumption of alcoholic beverages may only occur in designated areas.

Picketing, leafleting, soliciting or petitioning, unless authorized by Charlottesville Fashion Square Management.

Photographing, videotaping or filming, unless authorized by Fashion Square Management.



Sitting on floors, planters, handrails, artwork, escalators, stairs, trash receptacles, or other areas not specifically designed for seating. Benches, chairs, and seating areas are for sitting only.

Unauthorized overnight parking or camping
Groups of 5 or more may be dispersed

Only service animals trained to assist and accompanied by persons with disabilities are permitted.

All guests are required to leave the interior common areas once the property closes for business each evening

School truancy policies are strictly enforced. Any unattended bags are subject to search and possible seizure.

HOW IT WORKS

HOW IT WORKS

This project explores how to redesign a mall for patrons who aren't there to shop, and how to work with a somewhat unglamorous anchor tenant like Home Depot, which has recently replaced the old Sears at Fashion Square Mall. A key design challenge was addressing the vast expanse of impervious pavement by introducing permeable surfaces to enhance environmental performance and pedestrian use. Early speculative collages explored potential futures for the site, ranging from bleak over development and isolated infrastructure to more radical, utopian transformations. However, these helped clarify more grounded, site-specific strategies.

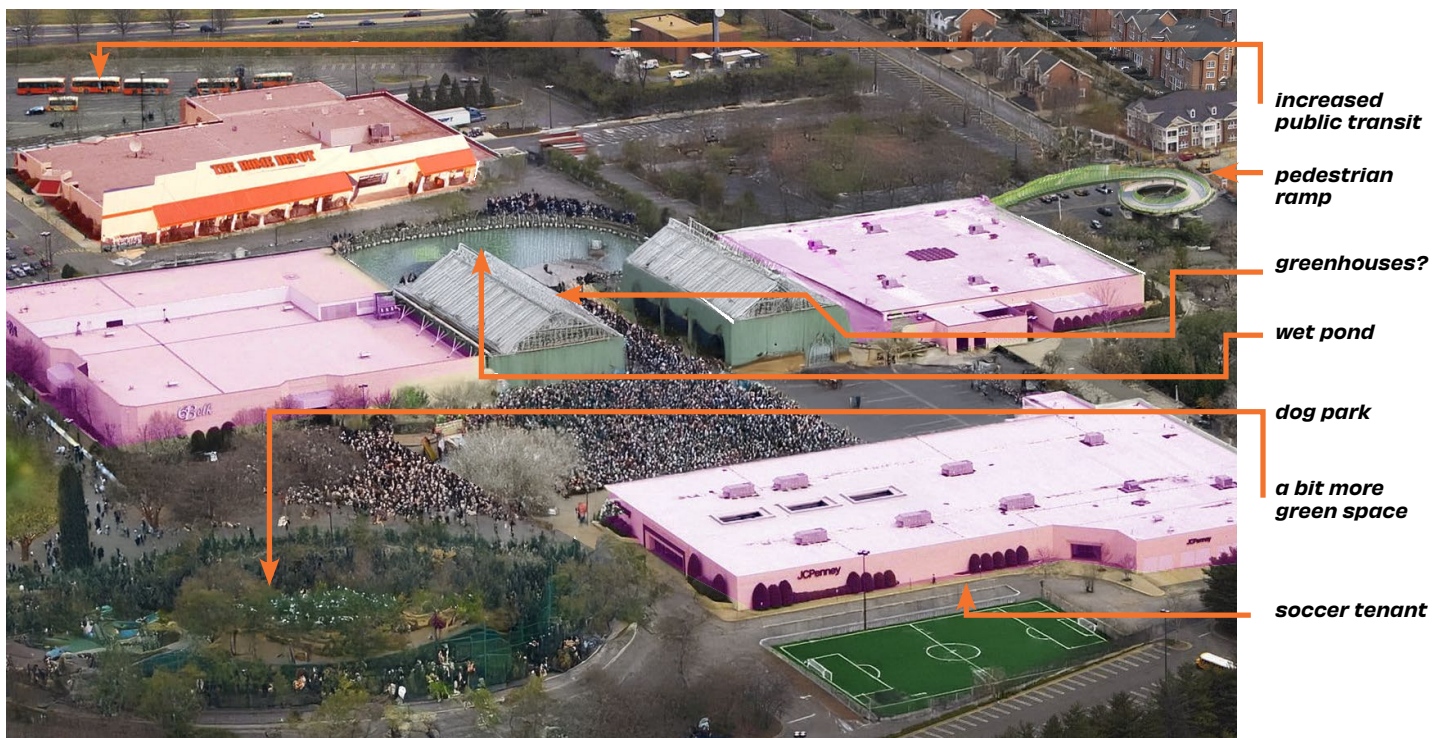
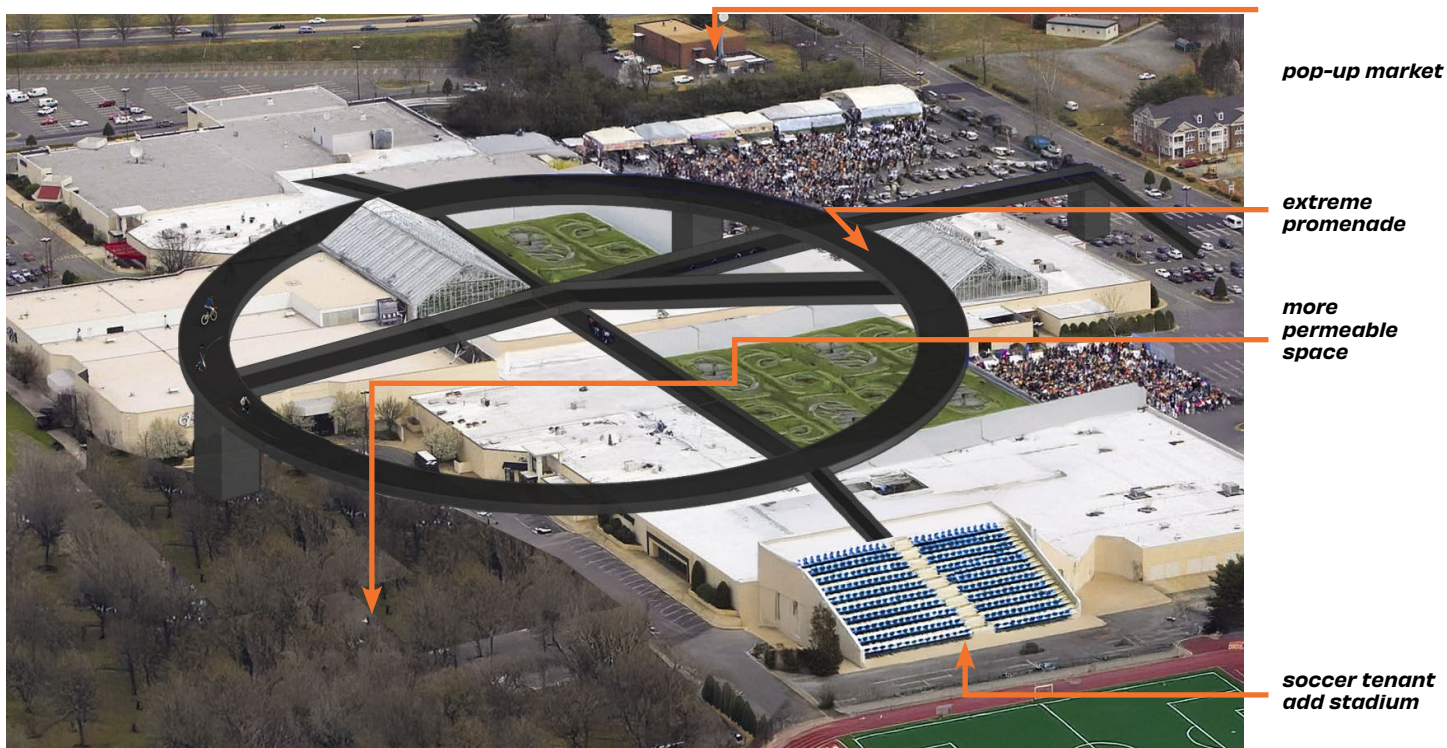
The final design proposes three main spatial strategies. First, reclaim the existing mall structure by removing outdated partitions, retaining warehouse areas for the new tenant, and preserving promenades and gathering spaces that support social interaction. This also involves reusing excavated steel and open-web joists in creative ways, such as structural bridges or shelving, to add architectural value. Second, carve into the dense distribution core to insert breathable, human-friendly zones using light materials like polycarbonate to make parts of the logistics system accessible. Third, weave in new architectural interventions like ramps, green space, and skateable terrain by reusing materials from the site itself.

These strategies aim to bring a new social essence to a corridor typically defined by sprawl and isolation. Ultimately, the project argues for reimagining malls as hybrid, multi-functional public assets, balancing automation and efficiency with human-centered design, and positions them as potential social anchors within the evolving suburban landscape.



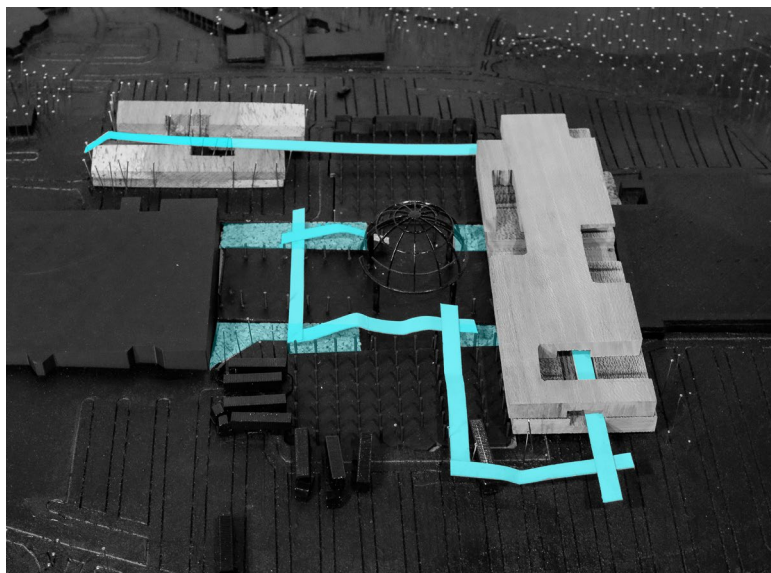
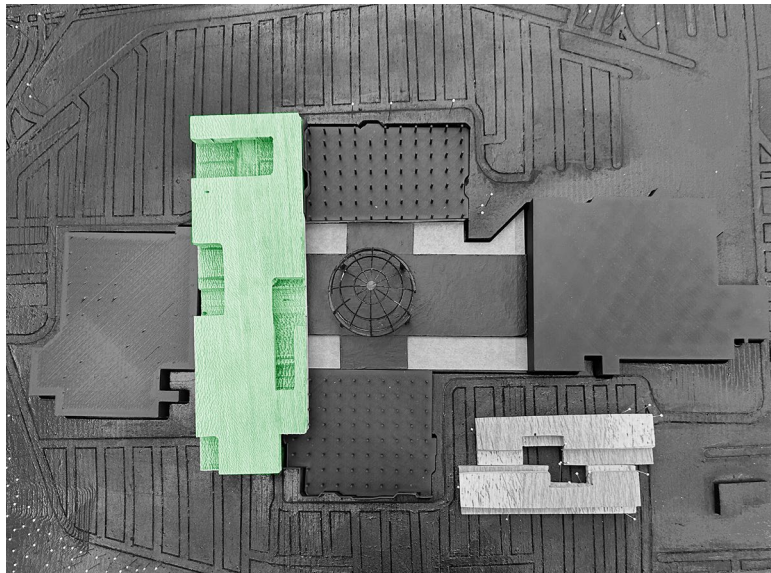
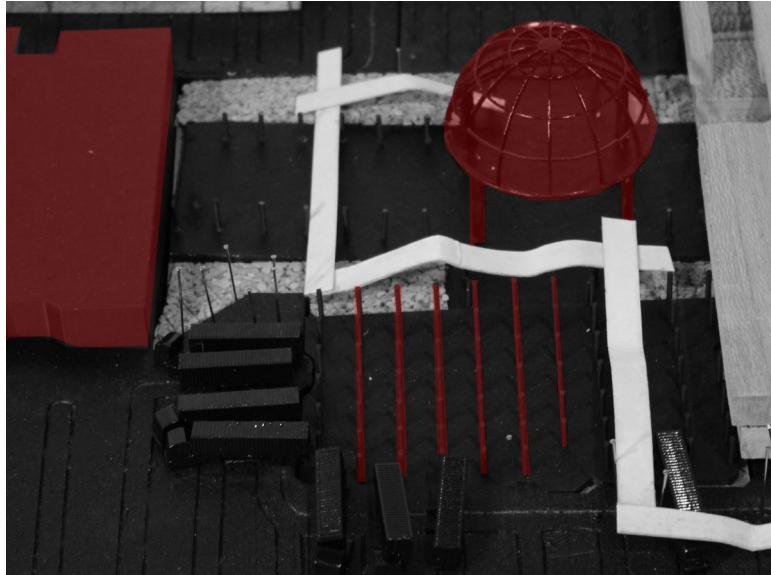
HOW IT WORKS

SPECULATIVE COLLAGES CONTINUED



HOW IT WORKS

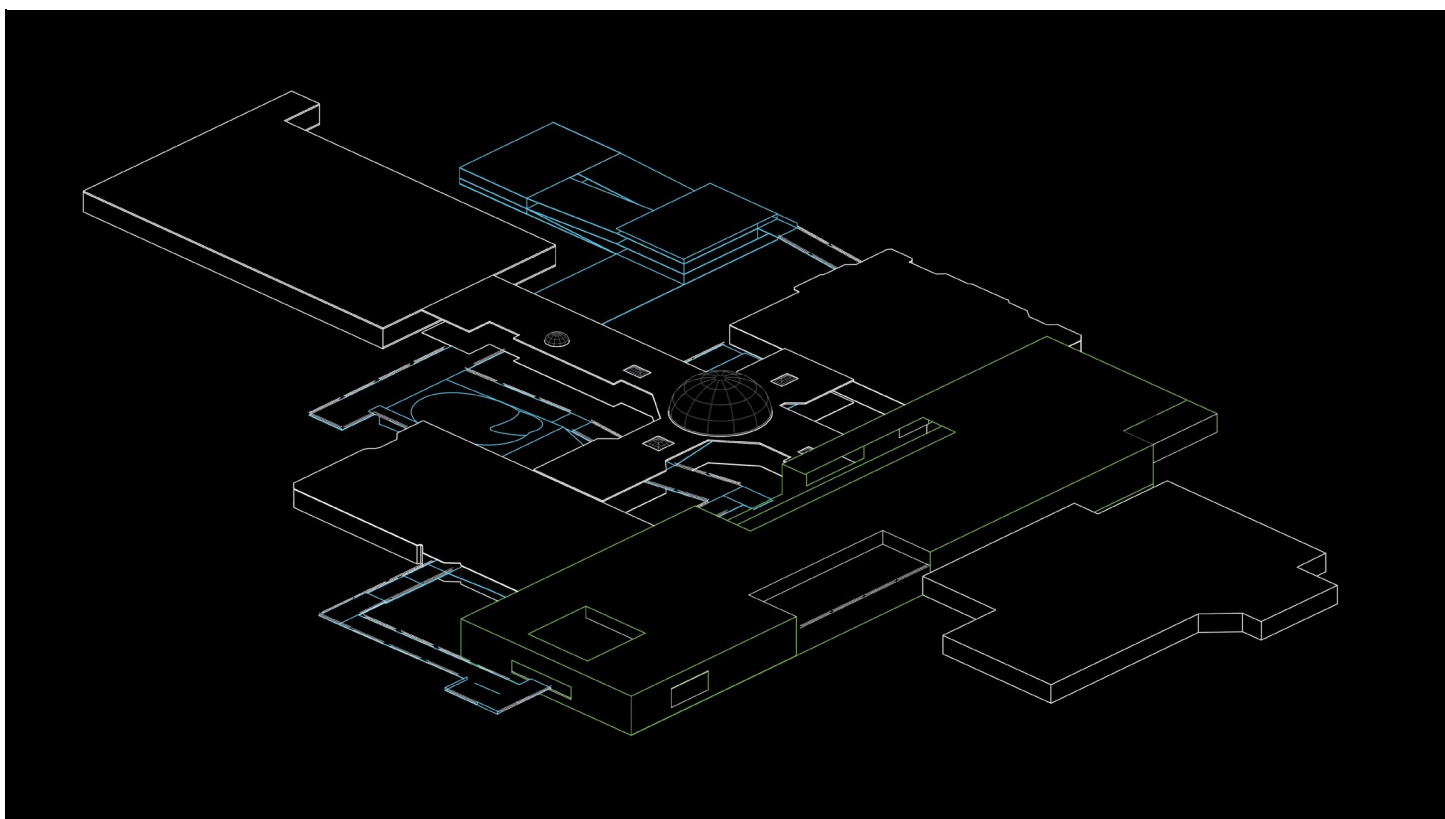
PROCESS MODEL

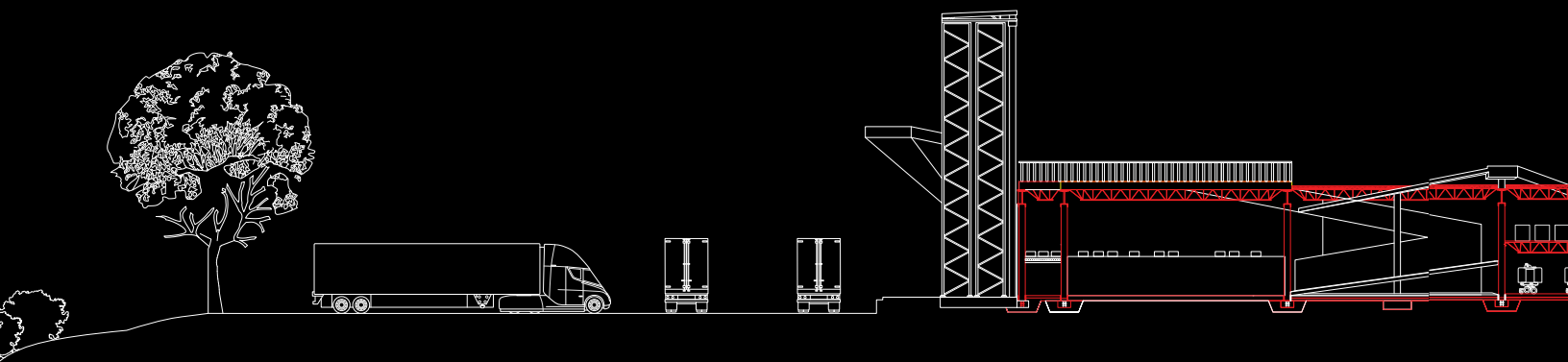




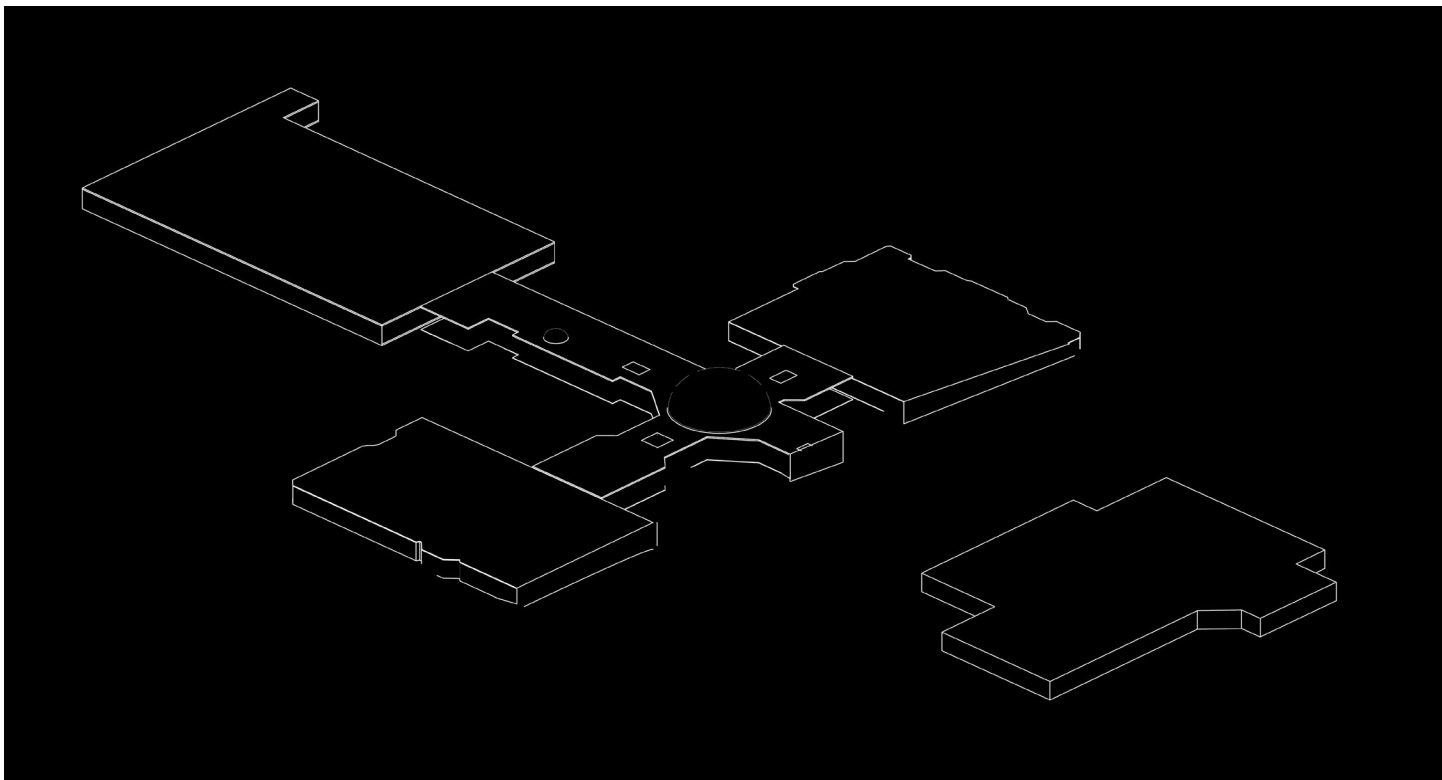
HOW IT WORKS

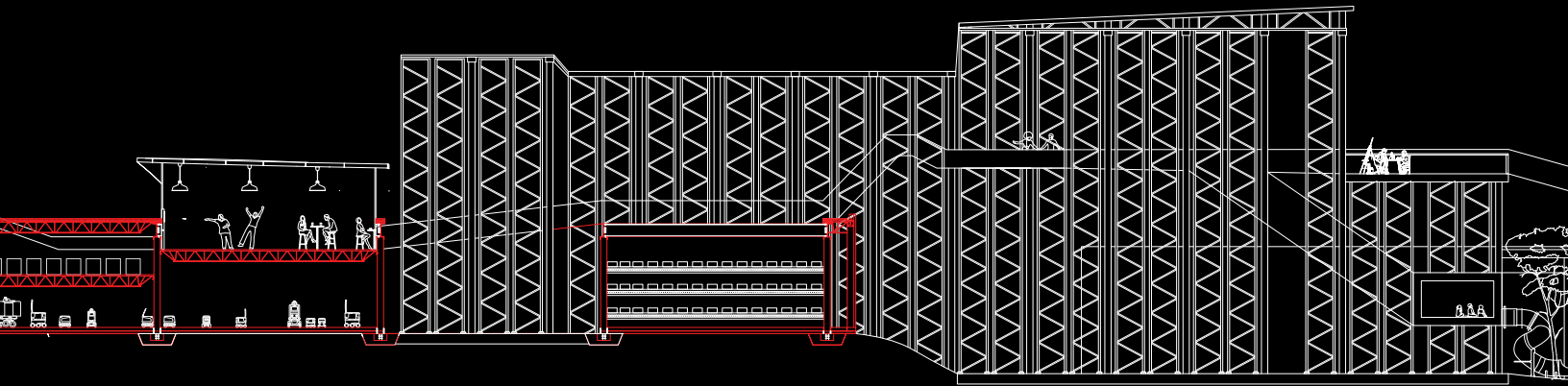
THREE SPATIAL STRATEGIES



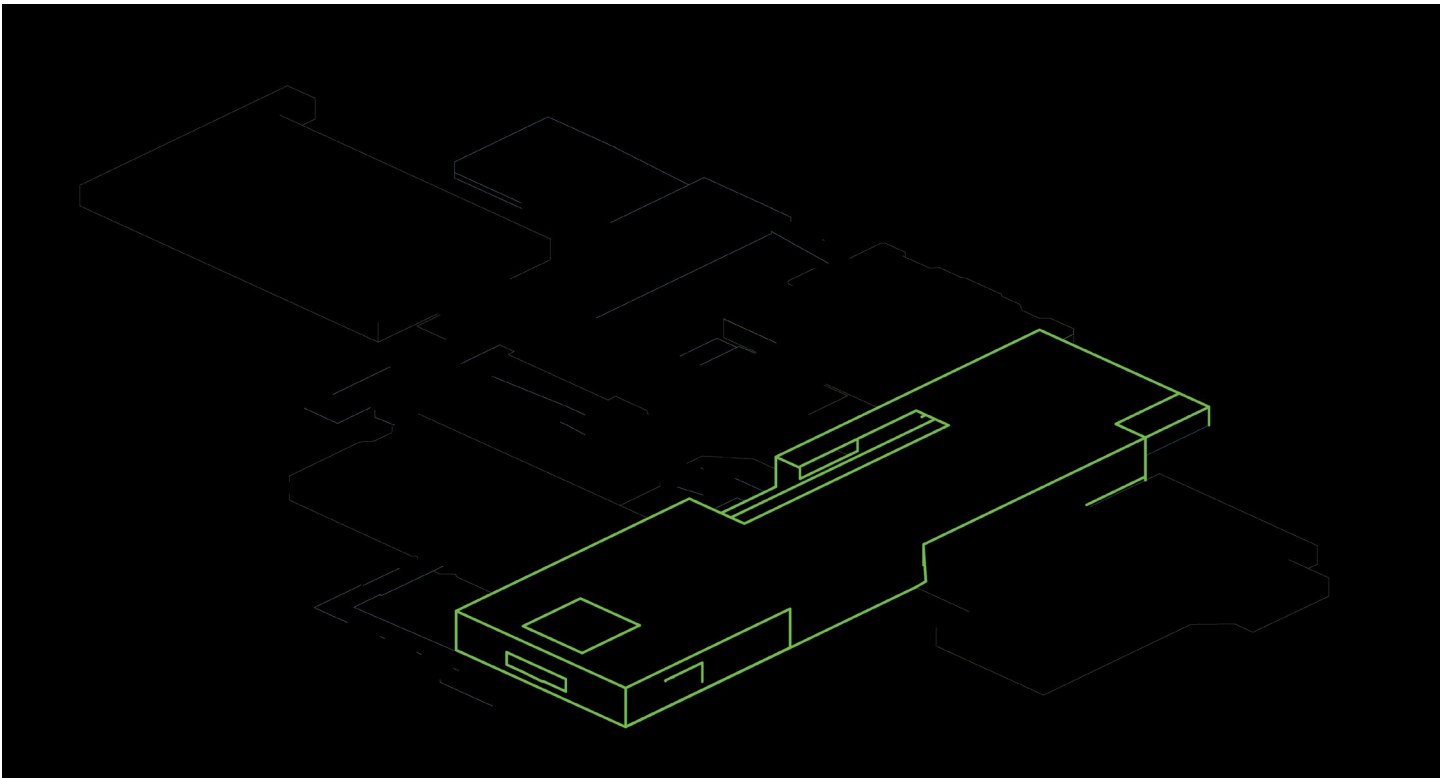


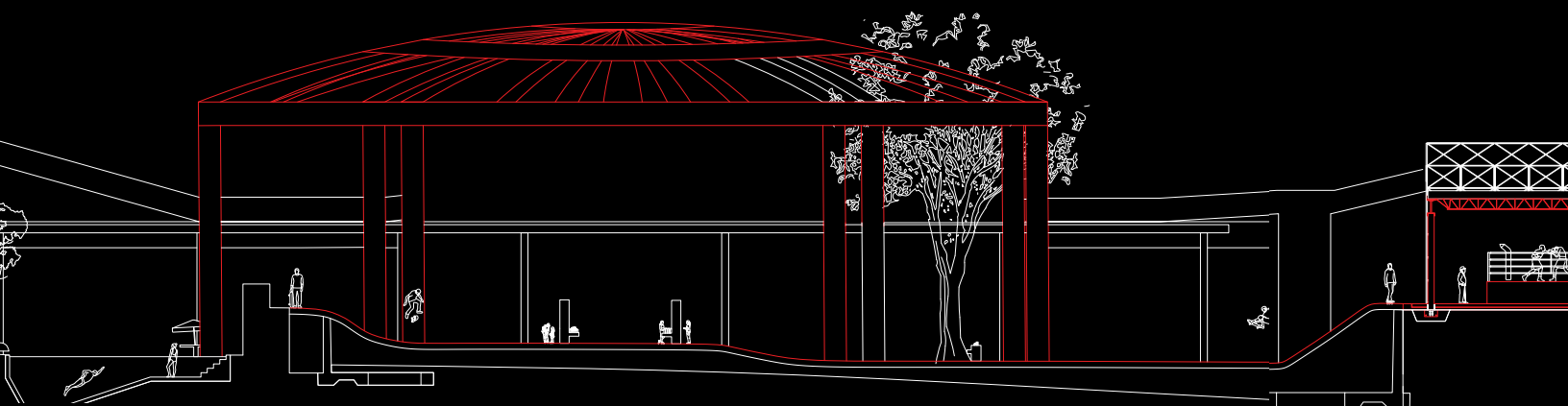
I. RECLAIM THE EXISTING STRUCTURE



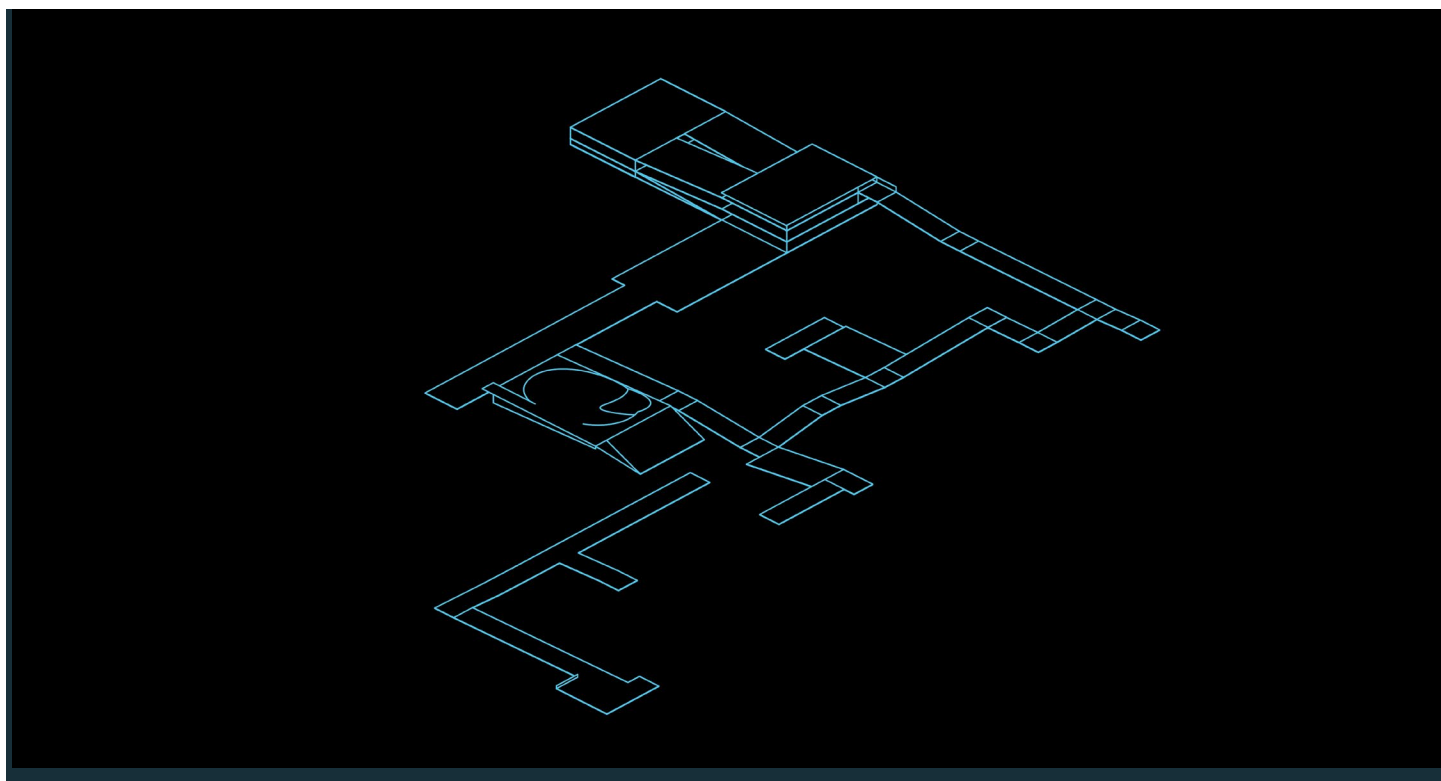


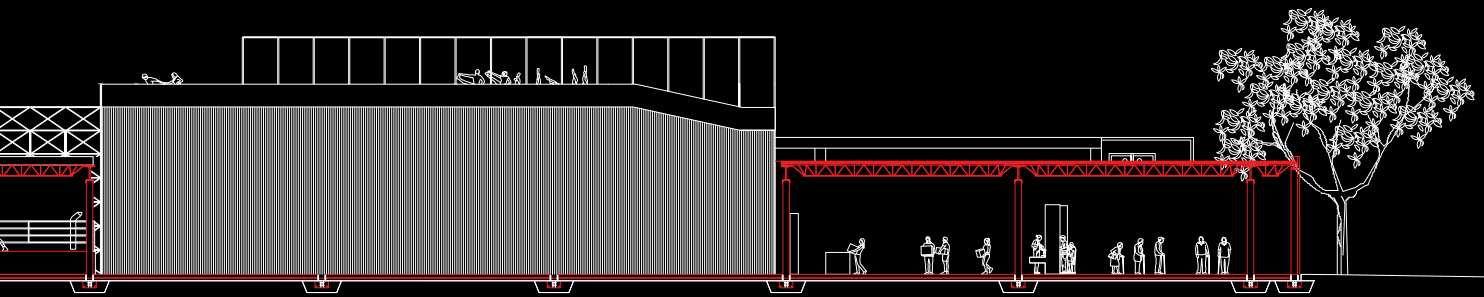
2. CARVE AT THE NEW ANCHOR TENANT



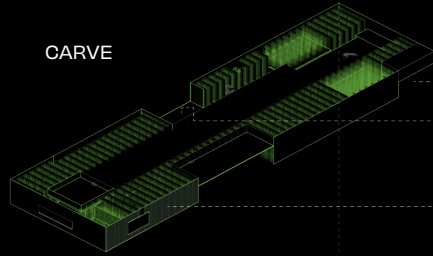


3. ENLIVEN THE SITE





CARVE

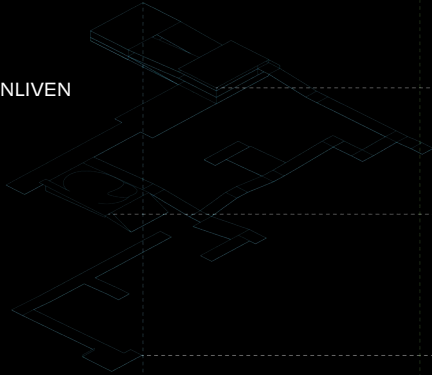


spacious cantilever to achieve permeable ground quota

dense rack system diffused by expansive atriums and promenades

a light polycarbonate shell welcomes light into the social areas of the dense rack system

ENLIVEN

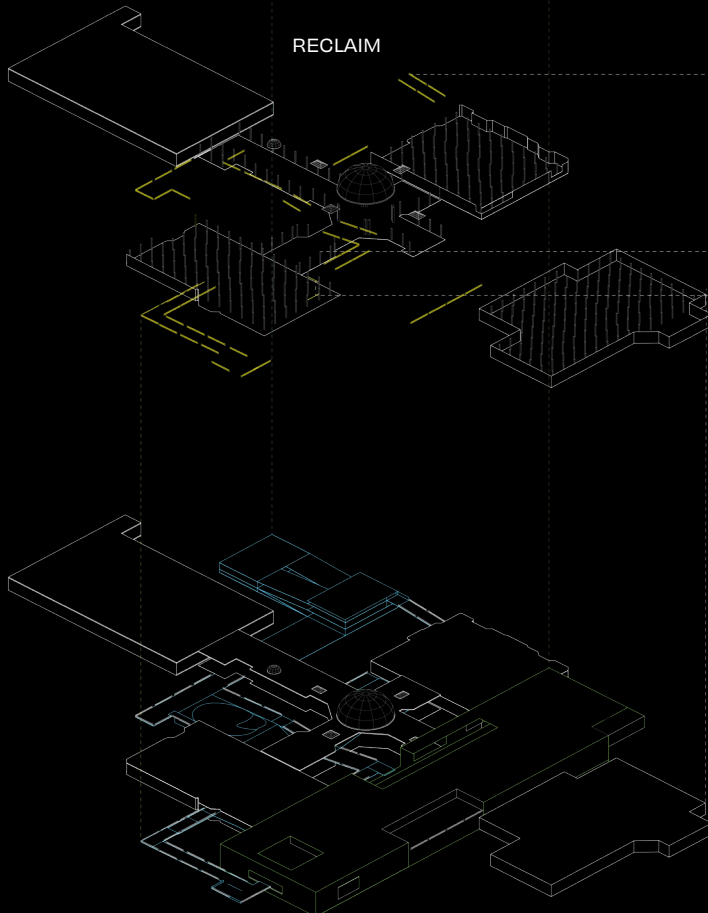


enliven efforts begin by pulling car traffic off of the expansive lot into a ramped garage

ramps scale between car to pedestrian, creating walking paths and skate zones

the paths meander up and into balconies and overlook points, encouraging contemplative ascension over the distribution center.

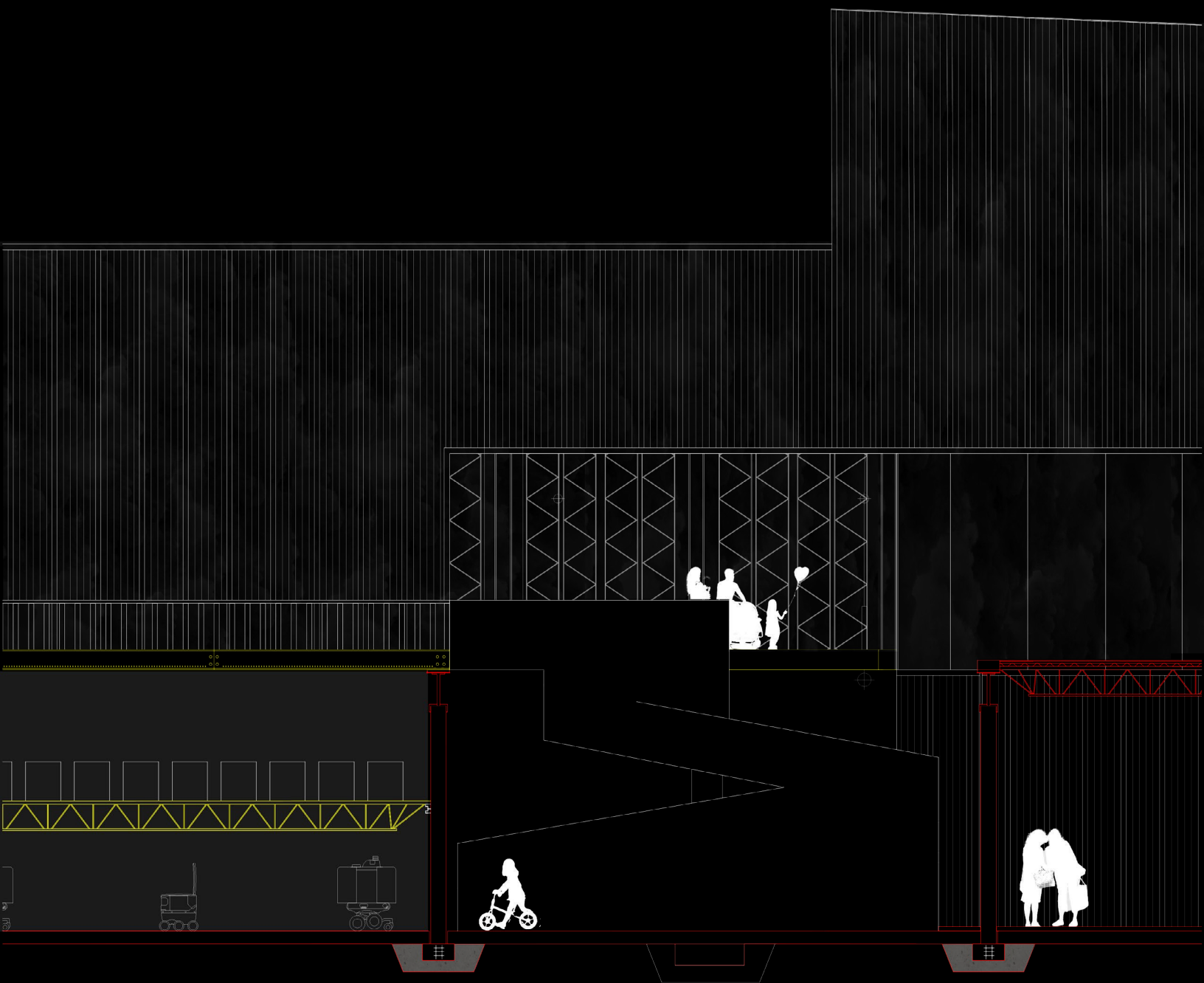
RECLAIM

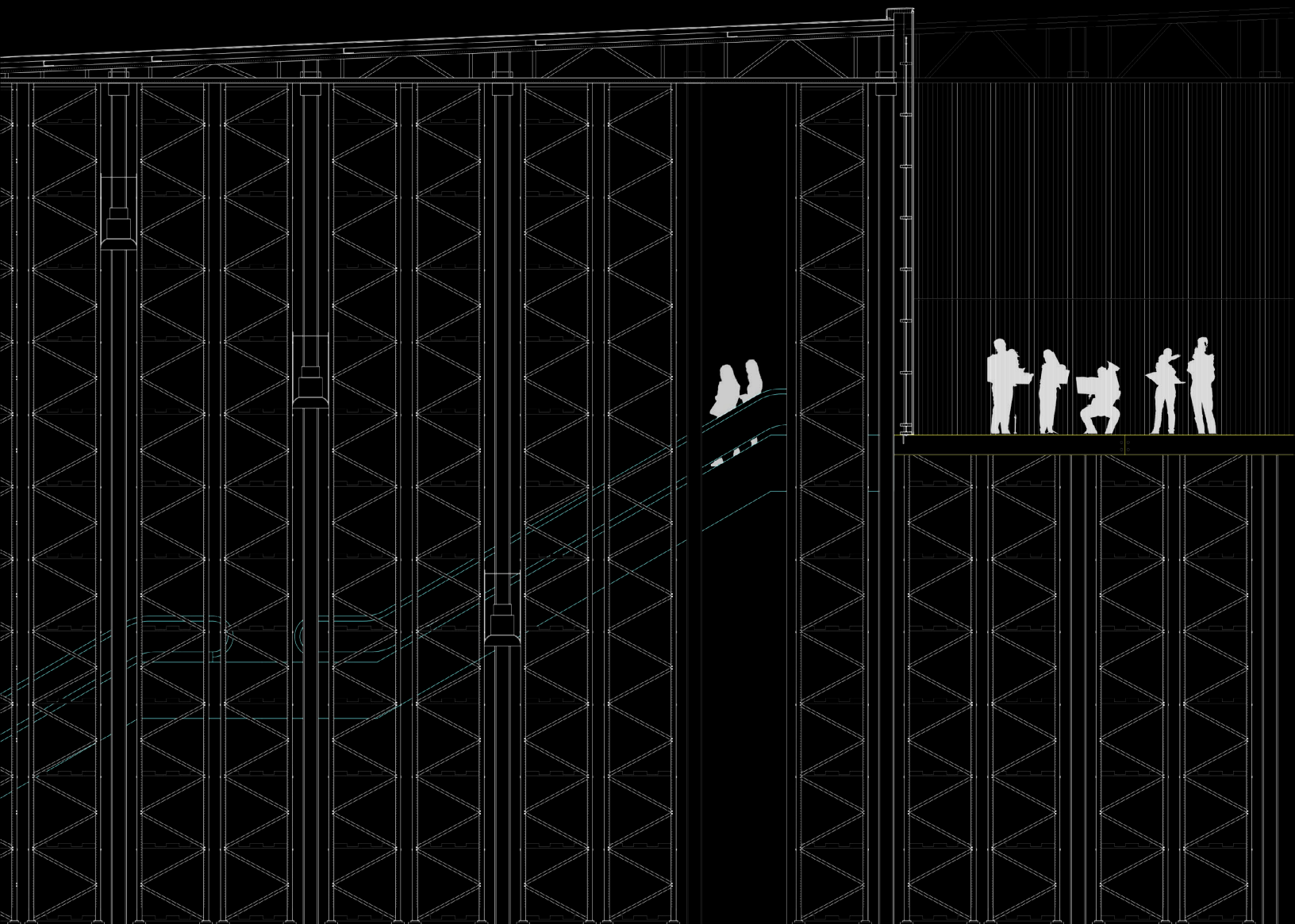


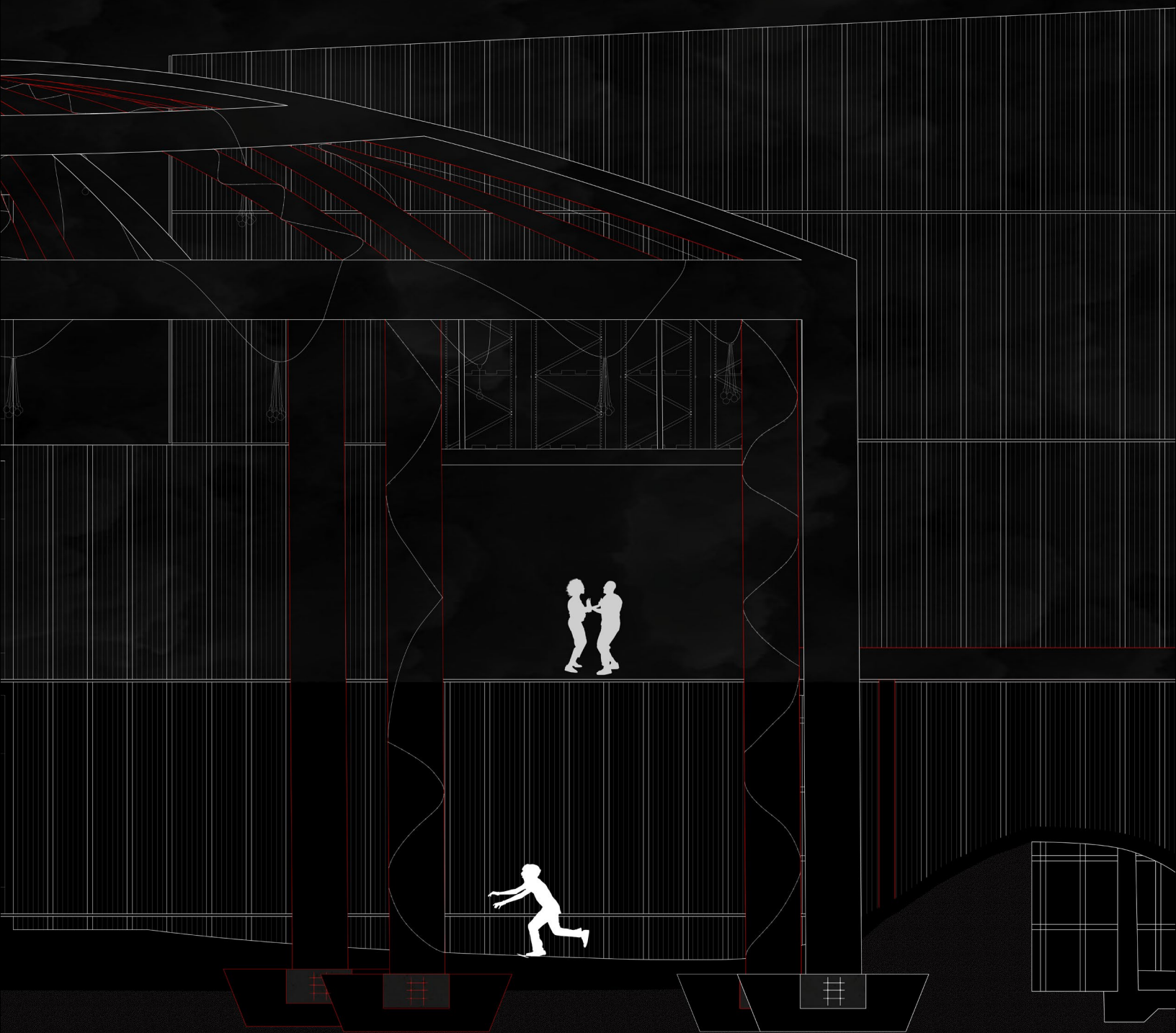
open-web joists from the warehouses can be double stacked as railings on the ramp system

Column grid of anchor-warehouse space preserved for distribution logistics and organization facilities

The joists can also be reinforced horizontally to serve as shelving for the distribution warehouse







GLOSSARY

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Glossary

- Anchor Tenants – the first and usually the biggest company to rent space in a shopping center or building, who it is hoped will attract other businesses.
- Classes of Malls
 - o Class A Mall – \$500 or more in annual sales per square foot. A classification that indicates to investors and retail owners that high foot traffic and/or wealthy patrons will frequent the mall. Only about 25% of the existing inventory of indoor shopping malls qualify within Class A as of 2023. The existence of an anchor store such as Nordstrom or Neiman Marcus, or a retailer such as Apple or Lulu Lemon, is often (but not always) an indicator of a Class A mall. Example malls: King of Prussia in Pennsylvania, Scottsdale Fashion Square in Arizona, the Mall of America in Minnesota
 - o Class B Mall – \$300–\$500 in annual sales per square foot. This classification comprises about 38% of the existing mall inventory. These malls are generally anchored by known retailers such as Dick's Sporting Goods or Kohls, but many are undergoing renovation to accommodate parking-lot facing retailers such as Ulta or Dave N Busters.
 - o Class C Mall – \$300 or less in annual sales per square foot. This classification generally indicates to investors that these malls are on the brink of closure as they have notable vacancies and attract lower-quality tenants than A or B malls. These malls are usually not anchored by any notable retailer. An example of a Class C mall is Fashion Square in Charlottesville. (<https://www.fool.com/investing/2018/02/21/what-is-a-class-a-mall.aspx>)
- Hangout – space that supports casual interactions, where people can live life in public. These can come in many forms including lakes, streets, plazas, greenspaces, and sites for cultural and community festivals.
- Haven – space that Helps people belong and creates opportunities to support close ties – or "bonding social capital" – among people from similar backgrounds.
- Hub – space that encourages people to interact with others from different backgrounds which can have a positive impact on the economic futures of low-income children.
- Last Mile Logistics: Last mile logistics refers to the sorting and delivery of goods in the final mile to the customer.
- Loneliness – While loneliness can have positive connotations in philosophical contexts and in some evolutionary theories, the core elements of the concept of loneliness are unwelcome feelings associated with a lack of companionship, either in quantity or quality. Cognitive processes determine how a person processes the feeling of loneliness. Taking this, Paplau and Perlman [20] formally defined loneliness as "the unpleasant experience that occurs when a person's network of social relationships is deficient in some important way, quantitatively or qualitatively." Loneliness is a multidimensional phenomenon with 3 clear, major components [21]. The first component is deprivation, which can be called the core component. The second component is the temporal dimension, that is, whether the feeling of loneliness is perceived as changeable or hopeless. The third component is that of different types of emotional aspects, such as feelings of sorrow, sadness, guilt, and shame. The deprivation and emotional components of this understanding of loneliness point to the personal and social determinants of loneliness. Thus, loneliness can be the result of emotional isolation caused by the absence of attachment and social isolation caused by the absence of community
(<https://pmc.ncbi.nlm.nih.gov/articles/PMC10654910/#:~:text=Studies%20have%20shown%20that%20loneliness,mental%20health%20issue%20%5B18%5D>)
- Mecaclux
 - o Stacker robots – robots used to automate the storage and retrieval of pallets and boxes. They move both horizontally and vertically within storage aisle to deposit and retrieve goods from racking structures.

- o Picking robots – an automated system powered by artificial intelligence to work autonomously to select inventory from high-density storage shelves

- o Rack Clad Warehouse – racking supports stored loads of inventory as well as form part of the building structure to resist external forces such as wind and snow. Most rack clad warehouses are automated systems that use robotic equipment for load handling.

- Types of Shopping Centers

The following definitions come from: Musil, Jackie. "7 Types of Retail Shopping Centers." TriLand, January 21, 2023. <https://www.trilandproperties.com/7-types-retail-shopping-centers/>.

- o Malls- located throughout the US and are designed primarily as open-air enclosed spaces. The ICSC report identifies two primary types of malls including Super-Regional and Regional Malls. They are often anchored by two or three apparel anchors or a movie theater and feature many apparel tenants and restaurants.

- Trade area size: 5 – 25 miles

- Acreage range: 60 – 120 acres

- o Lifestyle Center – having gained popularity in the early 90's, lifestyle centers are retail centers catered towards upscale consumers providing a higher-end shopping and dining experience than your typical mall. These assets are usually located in affluent suburban areas and many times are open-air retail centers.

- Trade area size: 8 – 12 miles

- Acreage range: 10 – 40 acres

- o Power Centers – Commonly known as "big box" locations and are retail centers which will typically be leased to discounters, home-improvement retailers, and large specialty chains. Examples include Lowe's, Sam's Club, and Best Buy.

- Trade Area Size: 5 – 10 miles

- Acreage range: 25-80 Acres

- o Community Centers – larger version of a neighborhood center and will typically offer a wider range of apparel and other soft goods than a neighborhood center. It is common for a community center to have a grocery store and many other day-to-day necessity tenants.

- Trade Area Size: 3 – 6 miles

- Acreage size: 10 – 14 acres

- o Neighborhood Centers- The most common and recognizable retail real estate in the US which is anchored by your typical grocery store and caters to the day-to-day needs of the community. Tenants typically include grocery stores, pharmacies or drugstores, banks, hair and nail salons, and some medical providers.

- Trade Area Size: 3 miles

- Acreage Range: 3 – 5 acres

- o Convenience Centers – smaller properties that usually service the immediate retail trade area. Examples include 7-eleven or other quick service convenience stores located in a small retail building usually less than 30,000 square feet.

- Trade Area Size: < 1 mile

- Acreage Range: < 3 acres

ANNOTATED BIBLIOGRAPHY

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The History and Deterioration of Shopping Malls

Description: This category of sources examines brick and mortar trends over the rise and fall of societal materialism and capitalism in post WWII America. The definition and history of the original American shopping mall concept is evaluated as a community builder and simultaneously a small business detractor.

Key terms: brick and mortar, materialism, capitalism, small business detractors

American Planning Association. "Site Design, Parking and Zoning for Shopping Centers." Accessed October 20, 2024. <https://www.planning.org/pas/reports/report59.htm>.

This site features several plans which can be used as a basis for understanding standard American shopping mall layout. There is also an explanation of the parking spot requirements in shopping centers, including visual diagrams of shopping mall and parking layouts. These diagrams are impactful visualizations of how shopping mall layouts exist as compared to historic gathering places and public architecture as defined in later sources. Engstrom, Leonard. The Southdale Center. 1956. Photographs. <https://libguides.mnhs.org/southdale/images>.

This is a collection of historic images of the Southdale Center, America's first enclosed shopping mall and the national symbol of materialistic, consumerist postwar America. These images provide context to the conditions of the site as the shopping mall was being built. They are also visual aids for the vision behind Victor Gruen's first design for an indoor shopping mall.

Goss, Jon. "The 'Magic of the Mall': An Analysis of Form, Function, and Meaning in the Contemporary Retail Built Environment." *Annals of the Association of American Geographers* 83, no. 1 (1993): 18–47. <http://www.jstor.org/stable/2569414>.

This publication defines the concept of pseudo-place, or a seemingly public place that is controlled by a corporation. It discusses how architects and developers facilitate consumption and retail profits through the exploitation of the power of place. Concepts such as credit card citizenship within a seemingly democratic space are discussed to highlight how designers have used their knowledge of space to create communal, yet transactional spaces.

Gruen, Victor and Larry Smith. *Shopping Towns USA: The Planning of Shopping Centers*. New York: Reinhold Pub. Corp, 1960.

This book provides a preface about the life of Victor Gruen, the father and architect of the American indoor shopping mall. Victor Gruen, an immigrant from Austria, regarded consumerism as the basis for the American Dream post World War II. The book is then an explanation by him and Larry Smith, an economist, about the evolution and importance of shopping malls in the USA.

Lange, Alexandra. *Meet Me by the Fountain*. New York, NY: Bloomsbury Publishing, 2022.

This book gives a history of the rise of the American shopping mall in postwar America. Lange evaluates pedestrian friendly accessibility and climate-controlled spaces as positive aspects of shopping malls versus the retail and profit driven aspects that led to the downfall of these shopping centers.

Lawless, Seph. *Abandoned Malls of America: Crumbling Commerce Left Behind*. New York, NY: Racehorse Publishing, 2020.

This is a series from Seph Lawless in which he documents two abandoned and broken malls in Ohio. It positions the research with powerful images of the current state of deteriorated and decrepit shopping malls.

Longstreth, Richard W. *The American Department Store Transformed, 1920–1960*. New Haven [Conn.]: Yale University Press, 2010.

Longstreth provides a summary of the evolution of department stores between 1920–1960 in the United States. This book highlights the success and draw of department stores which became central to city planning, but also to the design of Gruen's vision for protected indoor community as the anchor tenants of indoor shopping malls.

Venturi, Robert, Denise Scott Brown and Steven Izenour. *Learning From Las Vegas*. Cambridge, Mass: MIT Press, 1972.

Robert Venturi and Denise Scott Brown teach about the concept of the "decorated shed," or a building which communicates meaning through signs and billboards. They push against the sole celebration of modernist architecture in which form strictly follows function. This research explains the domination of symbol over space. Scott-Brown's diagrams of iconography along the Vegas retail strip assist in this argument, but also serve as representational inspiration for this thesis project.

Adaptive Reuse Forecasting and Evolution of Environmental, Social, and Government ("ESG") Reporting Requirements

Description: This category engages industry experts and practitioners over the adaptive reuse types of shopping malls. They present topics such as developer behavior, climate change, construction costs, and community-building to evaluate the possible outcomes of different design approaches.

Key terms: Developer behavior, climate change, construction costs, community-building, ESG

Bernhard, Jayne M., "Stores as Schools: An Adaptive Reuse Alternative for Communities Dealing with Underutilized Commercial Space and Overcrowded Schools" (2008). Master's Thesis 1911 - February 2014. 144. <https://doi.org/10.7275/500977>

Bernhard presents a thesis documenting twelve cases in which public school districts inserted schools into reused shopping malls. She dives deeply into three of the cases to present the common factors in these projects that successfully reuse the built form of a shopping mall to aid other school districts in undertaking similar initiatives. This thesis hopes to provide a knowledge base to guide governments looking to implement this adaptive reuse type.

Brounen, Dirk and Gianluca Marcato. "Sustainable Insights in Public Real Estate Performance: ESG Scores and Effects in REIT Markets." (2019).

This study evaluates how ESG ratings and public real estate performance in the United States Real Estate Investment Trust ("REIT") market interact. The authors analyze the adoption and scores of available ESG ratings and how they effect the REITs.

Dunham-Jones, Ellen. "Retrofitting Suburbia." Presented at the TED, Atlanta, January 2010. https://www.ted.com/talks/ellen_dunham_jones_retrofitting_suburbia?hasSummary=true.

Ellen Dunham-Jones talks about how to rebuild "broken suburbs" via the rehabilitation of dying shopping malls and dying "big-box" stores. She also suggests the use of endless parking lots as thriving wetlands which serves as a programmatic inspiration for this thesis project.

Hebb, Tessa, James P. Hawley, Anas G. F. Hoepner, Agnes L. Neher and David Wood, eds. *The Routledge Handbook of Responsible Investment*. London: Routledge, 2015.

This source provides a history of the United Nations Principles for Responsible Investment initiatives which has led to about one third of the world's financial assets being managed with a commitment to ESG criteria. This book provides a wide overview of the impacts of these initiatives on the global financial crisis and serves as a handbook in the expanding ESG discipline. This new source helps explain how the evolution of social impact standards in our real-estate market might cause developers to change their objectives for adaptive reuse projects.

Heinrich, Ami. Squared Away: Adaptive Reuse of America's Homeless, 2023. <https://www.youtube.com/watch?v=lvcyfXDtpHE>.

This short but captivating video rifts on the original Eames "Powers of Ten" film to propose that the shopping malls could be used as homeless shelters thus leaving "abandoned places and abandoned people squared away." This is not an academic source, but rather a programmatic and representative inspiration for how the design stage of this thesis project may take shape.

Mantey, Dorota. "Local Centres In Post-socialist Suburbs: Redefined Concept and Retrofitting Perspectives." *Moravian Geographical Reports*, vol. 30, no. 3, 1 Sep. 2022, pp. 192 – 210.

This article looks at the necessity of local shopping centers as third places. It gives a design evaluation of current shopping malls and explains the fallbacks to how retrofitting these spaces may not be beneficial as social centers. This research is based out of Poland, thus providing a different social and geopolitical context, but documents spatial arrangements to prove the necessity of third places site in the locations of retail sites.

Ng, Artie, ed. *Financial and Technological Innovation for Sustainability: Environmental, Social and Governance Performance*. Abingdon, Oxon: Routledge, 2024.

This source gives an overview of emerging global sustainability reporting standards and aligned ESG reporting requirements for accountability and transparency of corporations in development economies. It also provides case studies for corporations that meet these requirements and explores the implications of a green capital market.

Pilgreen, Todd. "Reinventing the Mall | Dialogue 35." Gensler. Accessed February 20, 2024. <https://www.gensler.com/dialogue/35/reinventing-the-mall>.

Pilgreen summarizes the latest pro-forma and market cap reports from large developers such as Cushman & Wakefield to demonstrate why Gensler is undertaking adaptive reuse projects in shopping malls. This article also articulates why a "Class A" mall is not necessarily in trouble and why Gensler, the largest architecture firm in the world, is engaging in the renovation of shopping malls.

Yang, Eunhwa, Sungil Hong, and Yujin Kim. "Factors Influencing Adaptive Reuse of Declining Shopping Malls in the Us: A Multi-Stakeholder View." *JOURNAL OF GREEN BUILDING* 17, no. 2 (March 1, 2022): 83–108. <https://search.ebscohost.com/login.aspx?direct=true&db=edswah&AN=0008170256000005&site=eds-live>.

This journal article looks at seven factors in deciding whether to adaptively reuse a shopping mall: physical, economic, functional, technological, social, legal, and political. It then evaluates these factors from the lens of investors, architects, engineers, contractors, professionals, developments, and building manager groups. A&E experts reported technology as the least important in the decision to adaptively reuse shopping malls. Investors and regulator groups reported social factors as being the least important. This data is important to the lens of this thesis that aims to convince financial stakeholders of the importance of reinvesting in shopping malls as culturally relevant town centers.

Adaptive Reuse and Existing Mall Case Studies

Description: This category compiles various examples of adaptive reuse of shopping malls and the subsequent successes and failures of these designs. These case studies show different levels of local government spending and investment and how that affects citizen retention in these towns. It also evaluates the effects of CO2 emissions with regards to climate change considerations.

Key terms: government spending, investment, citizen retention, climate change

Arquitectonica. Brickell City Centre. 2016. 150,000 square feet. <https://arquitectonica.com/architecture/project/brickell-city-centre/>.

This project displays the successful development of a mixed-used shopping mall which also serves as an architectural attraction for the city of Miami.

Elletson, Grace. "The Macy's High School Makeover: A 10-Week Miracle in Burlington." *VT Digger*, January 31, 2021. <http://vtdigger.org/2021/01/31/the-macys-high-school-makeover-a-10-week-miracle-in-burlington/>.

This article presents a specific case study of a high school in Burlington, Vermont that was moved into an abandoned Macy's department store. It provides details of the communities' reaction to the adaptive reuse of the store and the students' adjustment to such a space.

Henry, Craig, and Frank Ricks. "Thinking out of the Box: 3 Keys to Successfully Renovating Retail Centers." *Commercial Construction & Renovation* 19, no. 5 (July 2020): 66–72. <https://search.ebscohost.com/login.aspx?direct=true&db=hjh&AN=144914797&site=eds-live>.

Henry and Ricks evaluate the Hill Shopping Center in Dallas as a successful case study in the renovation of a 1977 shopping mall into a mixed-use office and retail space. They summarize the key design considerations as incorporating "ah ha" design elements, preserving and enhancing the structure (instead of demolishing), and focusing on tenant brand identity.

Hoxha, Visar. "Sustainable Impact of Adaptive Reuse of Communist Style Shopping Malls in Kosovo." *Property Management* 37, no. 5 (September 18, 2019): 662–83. doi:10.1108/PM-02-2019-0010.

This paper studies communist-era shopping malls in Kosovo that are being adaptively reused. It shows developers that adaptive reuse costs less than redevelopment and proves that CO2 emissions will be reduced through the redevelopment of these malls. It also stages a narrative around the collective memory of these shopping malls and the case for improving social life and public space by preserving and adapting these communist structures.

Mavros, Kara. "A Defunct Shopping Mall in Taiwan Is Transformed into a Public Park." *Architectural Record* 208, no. 5 (May 1, 2020): 35–36. <https://search.ebscohost.com/login.aspx?direct=true&db=bvh&AN=812683&site=eds-live>.

This journal article reports on the MVRDV adaptive reuse project of a 1983 China-Town Mall into Tainan Spring: "a sunken urban lagoon." It presents the design decisions made by the architects and the resulting favorable reviews of residents.

MVRDV. Tainan Spring. 2020. 54600 square meters. <https://www.mvrdv.com/projects/272/tainan-spring>.

This is a non-text source, or architectural precedent, that shows the adaptive reuse of a shopping mall as an urban park. This park is an extreme case example of how very little part of the shopping mall is used as structural support, but rather the remnants of its infrastructure serve as a protective barrier to new social and cultural programming.

Webb, Michael. "Reviving Dead Malls: A Competition Seeks Ways to Regenerate Shopping Centers." *Architecture* 92, no. 4 (April 1, 2003): 41–42. <https://search.ebscohost.com/login.aspx?direct=true&db=bvh&AN=469721&site=eds-live>.

A competition was held in Los Angeles in the early 2000's to evaluate how shopping malls might be reused one day. This article provides a few less standard ideas including a women's prison and a recreation green space. While this presents design strategies from two decades ago, the ideas presented are still unique regarding possible considerations for reuse types.

Williamson, June. "Dead and Dying Shopping Malls, Re-Inhabited." *Architectural Design* 10, no. 5 (October 1, 2017): 84–91. <https://search.ebscohost.com/login.aspx?direct=true&db=bvh&AN=781130&site=eds-live>.

Medical malls, office space, megachurches, and ethnic malls are presented in this article as programmatic opportunities to use the vast floor area and parking facilities in abandoned shopping malls. The article is largely a collection of examples and includes adaptive reuse projects such as city halls and schools.

THIRD PLACES

Description: This category defines and studies third places, or the physical place where people gather or relax outside of home and work. The aim is to evaluate how local governance can invest in meaningful third places as community builders for societies filled with social animals. This category thus also contains case studies of various types of third places to better understand how we can program the adaptive reuse of shopping malls.

Key terms: local governance, third places, community builders, social animals

Cantillon, Zelmari and Sarah Baker. "DIY Heritage Institutions As Third Places: Caring, Community and Wellbeing Among Volunteers At the Australian Jazz Museum." *Leisure Sciences*, vol. 44, no. 2, 1 Mar. 2022, pp. 221 – 239.

This case study shows the effects of a heritage institution as a third place and discusses the concept of third place as 'serious leisure'. It offers interviews of frequent visitors to the Australian Jazz Museum who consider the building to be their space for caring community and wellbeing.

The Great Places Erased by Suburbia (the Third Place), n.d. <https://www.youtube.com/watch?v=VvdQ38IK5xg>.

This is an introductory video that explains the concept of Third Places as community builders and why car-dependent suburbia has almost-erased them completely.

Goosen, Z. and E. J. Cilliers. "Enhancing Social Sustainability Through the Planning of Third Places: A Theory-Based Framework." *Social Indicators Research*, vol. 150, no. 3, 1 Aug. 2020.

This article proposes a theory-based framework for how to implement Third Place considerations in urban planning. It looks within the South African context but is a unique lens into the growing field of social sustainability studies.

Hoxha, Visar. "Sustainable Impact of Adaptive Reuse of Communist Style Shopping Malls in Kosovo." *Property Management* 37, no. 5 (2019): 662–683. doi:<https://doi.org/10.1108/PM-02-2019-0010>.

This is a study based in Kosovo about the adaptive reuse of communist style shopping malls and its impact on job creation, revitalization and social dynamism of the surrounding area, and extension of collective memory and identity for the community. Variables about the lower cost of reuse versus demolition, economic and tourism development, and increase of property prices are discussed. This source is also useful due to the nature of the design of these shopping malls, as the aesthetic appeal is not widely agreed upon, but the preservation of them is nonetheless praised.

Lee, Narae. "Third Place and Psychological Well-being: The Psychological Benefits of Eating and Drinking Places for University Students In Southern California, USA." *Cities*, vol. 131, 1 Dec. 2022.

Lee looks at cafés and spaces for eating or drinking as understudied third-places. She studies 722 students at the University of California, Irvine and finds that cafes and coffee shops have psychological benefits like those of urban parks.

Rhubart, Danielle, Jennifer Kowalkowski, and Tarya Pillay. "Third Places in Rural America: Prevalence and Disparities in Use and Meaningful Use," *IO4* (2023). <https://doi.org/10.1016/j.jrurstud.2023.103153>.

This article evaluates 1135 rural working-age adults to descriptively measure how they interact with third places. It acknowledges a predominant focus on third places in the urban environment and questions the association of third places with socioeconomic status and cultural identity.

Williams, Seth A. and John R. Hipp. "How Great and How Good?: Third Places, Neighbor Interaction, and Cohesion In the Neighborhood Context." *Social Science Research*, vol. 77, 1 Jan. 2019, pp. 68 – 78.

This article helps situate the importance of third places in neighborhoods as they relate to cohesion and neighborly interaction. It also discusses the specific context of third places in poor neighborhoods.

