Reviving Upside-Down Architecture:
Using a historically transitional form of parking to reduce the impact of cars in mixed-use commercial areas

By
Stephanie Groll

BA in Psychology, (1994)
University of California, Santa Cruz

Submitted to the Department of Urban Studies and Planning
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Author

Department of Urban Studies and Planning
May 25, 2006

Certified by
Sam Bass Warner
Visiting Professor Department of Urban Studies and Planning
Thesis Supervisor

Accepted by
Langley Keyes
Ford Professor, Chair of MCP Committee
Department of Urban Studies and Planning
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ABSTRACT

In the quest to reduce American automobile usage, critics have pointed to abundant and free parking as the root of a self-reinforcing pattern of scattered development that has led to a narcotic-like automobile dependency. Progressive planners maintain that the presence of parking is detrimental to creating efficient, compact communities. But history shows that's not necessarily so. In the 1940s, Sears, Roebuck located some of its stores on streetcar lines and also provided parking on the roof, making the store accessible to both pedestrians and drivers. At the time, rooftop parking signaled a transition from density to sprawl, and from a transit-based transportation system to the auto. This thesis investigates whether this building typology can be used in reverse—to usher in another transition, this time revitalizing suburban settings toward compact development patterns that can support walkability and transit.

Three contemporary urban examples, in Los Angeles, Cambridge, and Boston, illustrate the suburban center redevelopment potential of “upside-down” buildings, the top-heavy stacked construction that puts parking above retail. Initial findings suggest, first, that strategically designed parking can encourage people to park once and walk to multiple destinations. This newly generated foot traffic contributes to a street vibrancy that is often lacking in car-dependent communities. Second, rooftop parking’s strongest trait is also its weakest. Parking that is hidden above ground level gives pedestrians a primacy they lack in traditionally suburban streetscapes. But it can create a perception that there is a parking shortage, and can hinder the adoption of the transitional form to accommodate both cars and pedestrians. Third, parking above retail captures rising land values in a way that surface parking does not. The typology physically accommodates the added retail space that only becomes possible with vertical parking. In addition to making the streetscape more urbane, it pushes the real-estate value even higher. Unconventional urban design and land use can prepare the built environment for a time when there will be many viable transportation options. At the same time, it can aid planners and “Complete Streets” advocates who want to break the chicken-and-egg cycle of automobile dependence.

Thesis Supervisor: Sam Bass Warner
Title: Visiting Professor, Department of Urban Studies and Planning
This one's for you, Dad.
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CHAPTER ONE

Introduction

America’s love affair with the automobile has reached epic intensity. People owned nearly fifty percent more cars and trucks in 1990 than they did in 1975, but the nation’s population only grew by fifteen percent (Downs 1992, 142). Car ownership is still increasing, as are the number of miles people drive and the number of hours they spend on the road (Census 2000). In the quest to reduce American automobile usage, critics have blamed abundant and free parking for reinforcing sprawling land use and an almost narcotic-like dependency on the automobile (Shoup 2005). Progressive planners maintain that the presence of parking is detrimental to creating compact communities, a necessary prerequisite for efficient and comfortable walking, biking, and transit-use (Dittmar and Ohland 2004). Mukhiija and Shoup (2006) write in their forthcoming study, “Quantity vs. Quality in Off-Street Parking Requirements”:

“Most parking lots are asphalt breaks in the urban fabric, and most parking structures present blank walls to the street. Parking lots and garages tend to interrupt the streetscape, expand the distances between destinations, and undermine walkability.”

But an old idea might prove that well-designed parking doesn’t necessarily disrupt the pedestrian environment. It might even enhance it. The idea is rooftop parking, an old solution to a transitional problem that has the potential to be reapplied as a new solution for a modern transition.

In the early 20th Century people began driving into city centers and streetcar suburbs, but these compact communities were not designed to accommodate cars. Some developers stored cars on the roof. In the 1940s, Sears, Roebuck, and Co. used this approach to accommodate transit-dependent shoppers while also luring the potentially huge purchasing power of automobile drivers. But it also addressed a bigger issue: cars were becoming the dominant form of transportation and their corresponding land use patterns were forcing a transition from high density to low density. This thesis investigates whether this building typology can be used to usher in a new transition, this time revitalizing suburban settings toward higher density and the transit use that it can support. These “upside-down” buildings might be just the tool suburban planners and developers need to painlessly intensify a community’s mix of uses while accommodating cars and pedestrians. By hiding parking and giving pedestrians a primacy they lack in traditionally suburban streetscapes, planners can
prepare communities for a time when more people will choose public transit.

The Sears precedent

When cars first came into widespread use, they gave people unprecedented mobility. But by the 1940s the rise of the automobile had already lead to the decline of downtown shopping districts; they simply weren’t designed to handle the traffic congestion and new demand for parking (Longstreth 1997). Department store giant Sears, Roebuck, and Co. took note, building a new kind of retail store designed to accommodate the automobile in order to attract more customers and improve sales. “Sears, Roebuck’s retail stores may not have begun the practice of making parking areas an integral part of a retail trade outlet, but they have unquestionably developed the technique to its highest point … While no figures have been made available, the provision of an ample parking space must be a strong inducement to shoppers.” (The Architectural Forum 1942, 208).

In order to financially support its practice of providing abundant parking, it located stores on relatively cheap, suburban sites that were also convenient to streetcars and pedestrians. In a review of five Sears stores designed for the motor age, Architectural Record noted in 1940 the potential for customers to arrive by many different types of transportation. “Each is so located that the potential customer may make the trip on foot or by automobile, and the suburban customer may stop and make purchases conveniently on the way either to or from the city” (Architectural Record 1940).
When lots were small, irregularly shaped, or too expensive to be used for surface parking, Sears piled cars on the roof. The Tenleytown Sears in Washington, D.C., had 241 parking spaces on the roof, as well as an escalator penthouse with vestibule for entering the store (The Architectural Forum 1942) (Figures 1 and 2). The Tenleytown Neighbors Association commemorates the 1941 arrival of the department store on its website: “The building, now landmarked, was an early example of an ‘upside down building’ because it had parking on the roof and the shoppers descended into the store on escalators.” Although pedestrians had to contend with five curb cuts that served two ramps up, two ramps down, and an entrance to the parking service area, the store was located on a streetcar line and built with wide sidewalks and no setback.

But Sears didn’t always provide pedestrian-friendly parking. One Sears store in Los Angeles in 1940 seemed to be engulfed by 475 parking spaces set on a 20-degree slope. (Figure 3). The relatively short street frontage was bookended by a delivery-truck entrance and a driveway for the parking lot. “Exterior displays occupy two levels: the upper show windows … have a vigorous billboard quality, designed to attract the attention of passing motorists
Figure 3. Aerial photo of rooftop and surface parking at Sears on Pico Boulevard in Los Angeles. Source: The Architectural Record, 1940.
and bus passengers” (The Architectural Forum 1940). The longer side featured display windows showcasing merchandise, along with the main entrance, which faced the lower level parking lot. Here too, Sears’ concern for the pedestrian was not a high priority. “Emphasis has been laid on this elaborate provision for parking because it typifies the designers’ approach throughout, with intense concentration on merchandising rather than ‘architecture.’ To judge from the distinguished example of commercial architecture which has resulted, the approach would seem a sound one” (The Architectural Forum 1940). This building was demolished in 2005, and neighbors are reluctantly awaiting a Home Depot and a Costco to take its place. They fought the new development, worried that it would attract too much traffic and lower their property values.

By the late 1950s, architectural magazines were in thrall to cars and the space they demanded in shopping centers and downtown areas. “A major requirement [for Sears] is that the store be accessible from all parts of the area over good arterial highways, and that it have plenty of space for parking, a necessity Sears foresaw back in the twenties, when it helped start the move to the suburbs. Parking is figured on a basis of 4 to 5 square feet of car space per foot of sales area, and almost all of the parking space is located out front” (The Architectural Forum 1958).

**Transportation-land use conundrum**

Today people drive because scattered land use patterns and the lack of comprehensive public transit leave them no choice. Ironically, developers trying to accommodate the widespread use of cars exacerbate the problem by creating still more sprawling communities. Parking scholars such as Donald Shoup have extensively documented the causal relationship between an abundance of parking and our ever-growing dependence on cars (Shoup 2005).

In the years after World War I, competition for scarce curb parking was fierce. Planners responded by mandating that all new and redeveloped projects build off-street parking, on the theory that increasing the supply was the best way to ensure ample parking for the newly generated traffic and foster economic growth. Unfortunately, expanding the supply only works until more cars come to compete for the new parking spots. And because people know they can park for free when they get to their destination, they overwhelmingly choose to drive. For this reason, Shoup calls off-street parking requirements a “fertility drug for cars.” As such, controlling parking is the biggest unexplored tool for reducing car dependence.
The cycle of automobile dependency (Figure 4) feeds on itself and ultimately stigmatizes alternative modes of transportation (Litman 2006). When parking is free and widely available, the true cost is borne by everyone in a city, in the form of higher rents and higher retail prices (Shoup 2005). Given a generous parking supply, dispersed development, and auto-oriented land use, can communities ever break the cycle? The answer is yes. One way is to adopt any number of best practices already being used in many cities (Zimbler 2005, 46; EPA 2006): adopting off-street parking maximums instead of minimums; establishing parking management districts; allowing shared parking between uses with different peak times; allowing fees paid in lieu of parking; requiring developers to set aside landscaped reserves that can be converted to parking later if needed; and allowing developers to build fewer parking spaces if they build bicycle parking, dedicated carpool spots, or unbundled residential parking instead. In addition to restricting the parking supply, a long-term parking plan should include ways to reduce demand for parking. These policies include parking cash-out programs, car-sharing programs, and employer-supplied transit passes in lieu of free workplace parking.

**What about parking design?**

Combined with the policy tools listed above, communities might be able to use urban design to speed the process of breaking the cycle of car dependence in the suburbs. Most places
in this country won’t attract people unless they have a place to park. And without people, there is no vibrancy of human interaction. By controlling the design of parking, planners can make a community more compact and walkable, fostering a sense of place. “Nothing over the past century has proven as disruptive of traditional urban landscape as parking. Perhaps nothing has made American cities less memorable” (Jagle and Sculle 2004). The key steps? First, strategically placed parking can generate foot traffic. Thoughtful placement of the entrance and exit of a parking facility can guide people into a common area before they disperse to their offices, homes, shopping, and entertainments. Even if they’re just passing through a courtyard, it’s more pleasant than trudging across a big empty space.

Second, parking design can shape the way people use their cars. “Public parking spaces built with … in-lieu revenue allow drivers to park once and visit multiple sites on foot, thereby reducing vehicle traffic and increasing foot traffic,” wrote Mukhija and Shoup in their forthcoming paper about parking design (2006). In suburban settings, this is an important change in the way people use their cars. The experience of parking once and walking might only last for an afternoon, but it gives them a taste of freedom from driving. Multistory parking structures can support this new habit; they consume far less land than surface lots, can be tucked out of the way, and because they serve all the retailers, not just one, they can decrease the overall number of spots provided.

Third, some cities dedicate the first floor of public parking structures to retail uses in order to soften the structure’s impact on the street. I believe the most important effect of better-designed parking results from hiding this normally ubiquitous infrastructure from the public eye. It subordinates the car to the pedestrian, a subtle change that over time (and in combination with other demand management techniques) might shift people’s perceptions and re-legitimize other forms of transportation, such as walking, bicycling, and transit (Figure 5). Christopher Alexander, Sara Ishikawa, and Murray Silverstein wrote in their 1977 book, A Pattern Language: “After all, the effect of the cars reaches far beyond the mere presence of the cars themselves. They create a maze of driveways, garage doors, asphalt and concrete surfaces, and building elements which people cannot use. When the density goes beyond the limit, we suspect that people feel the social potential of the environment has disappeared.”

The Federal Transit Administration characterizes transit-oriented communities as having “design and development patterns that are conducive to the use of transit, bicycling, and walking to access opportunities—shopping, business centers, services, housing, and others,”
adding that transit-oriented development and community-sensitive transit can reverse sprawling development, which leads to increasingly longer car trips, poor pedestrian access, traffic congestion, and adverse environmental impacts (Building Livable Communities With Transit, date unknown).

**The retail component**

The most vibrant walkable places in the world—Paris, Amsterdam, and Mexico City—are compact, with a mix of uses, including retail. But retail is the delicate flower of development—it’s fussy, and needs precisely the right conditions to flourish. Developers tend this delicate flower because it attracts people to nearby offices and housing, which gives a place social vibrancy. Beyond the civic value of retail and the rental income and tax revenue, retail increases the value of local real estate by differentiating it from other less vibrant, less interesting developments. Vibrancy contributes to a sense of place, and that equals profit to developers and retailers. Vertically stacked structured parking makes it possible to create new interesting, mixed-use places because it consumes less land than surface lots. Linking it with retail makes it better integrated into the street.
Vibrant locales in the United States are worth a lot of money. People will pay a premium to live in Boston, San Francisco, New York, and even small towns like Northampton, Massachusetts. They're exciting and attractive and walkable.

**The parking-retail connection**

For street front retail to be successful, you need foot traffic and that means providing parking for customers. Old Town Pasadena launched a parking improvement district in the early 1990s, which became a wild success. Merchants and property owners originally opposed the plan to install meters because they worried that charging for street parking would scare off customers. But when they found out that the revenue would stay in the neighborhood to improve the streets and create a shopping and dining destination, they agreed to a $1-per-hour rate. Instead of scaring customers off, the meters encouraged turnover and attracted new customers. The city used part of this revenue and in-lieu fees to build a municipal parking structure. Los Angeles city planner John Kamp thinks that Old Town Pasadena’s success would not have been possible without structured parking.

From a developer’s perspective, you must provide parking because it is either required by the city or required by landlords leasing commercial space. Many compact, mixed-use, walkable places would never get financed, built, or improved without parking. But if we are going to create urbane environments, structured parking is the only way to go. Vast suburban-style parking lots, even in the suburbs, are dinosaurs in the new world order.

Even very mainstream investors who don’t care about urbanism’s ideals will see what a huge money-maker structured parking can be. Developers aren’t building badly designed developments because they are evil, they’re doing what they think makes them the most money. But if they see other developers make money on mixed-use developments with camouflaged structured parking, they too might embrace it. Better parking design might be an untapped resource that results in higher rents that offset the wasted space of big surface parking lots, the unsupported costs of parking structures, and the physical isolation of auto-dependent retail establishments.

Mukhija and Shoup argue that cars aren’t going away any time soon, so parking might as well be attractive. But it can do more—it can be beneficial and lay the groundwork for a future with more transportation options. To do this, we must design communities as if they’re built around a thriving transit system, and then it can come in more easily afterwards.
Stephanie Groll

**Why accommodate cars at all?**

Alternative transportation purists might turn their noses up at such a concession. But the right design today could very well pay off tomorrow. Getting people out of their cars and trying new ways of getting around means pursuing an agenda of reduced parking requirements and parking demand management, but it’s imperative that we also design for successful activity nodes by focusing on the public realm. People are going to drive unless they’re rewarded and encouraged to use transit or another means of transportation.

It is tempting to focus on research about transit service and bicycle and pedestrian facilities, as if the car didn’t exist. But until there’s a massive shift in America’s outlook and travel behavior, we must accommodate cars even as we encourage a transition away from them. To formulate a transportation future that doesn’t take cars into consideration seems futile and inefficient. Our opportunities for large-scale change lie with everyday Americans who are open to change and would drive less if there was an easier way to get to work or shopping.

**Case studies**

Maybe we can learn some lessons by looking at a small slice of automobile history. In the 1940s rooftop parking was a tool to accommodate an unexpected glut of cars. It also signaled a transition from density to sprawl, from transit to the auto—can it be used in reverse? If we give pedestrians back their place in the public domain, can this become a virtuous cycle? Because anecdotal research shows that people don’t like to park underground, and that underground parking can become mired in expensive and complicated mitigation practices, going up might be a promising alternative. Put parking on the roof and create compact development patterns that can support walkability and transit.

Three very different examples, in Los Angeles, Cambridge, and Boston, illustrate the potential and the pitfalls of upside down buildings to be a useful tool for suburban center redevelopment. In Los Angeles, I examine the Fashion District, a 90-block business improvement district in downtown LA that uses rooftop parking in much the same way Sears did in the 1940s. In Cambridge’s Harvard Square, I focus on a single parking garage that is wrapped in ground-floor retail and in Boston’s Back Bay, I investigate a six-story parking garage whose entire ground floor is dedicated to a grocery store.
Los Angeles Fashion District

In spite of its reputation for sprawling single-family homes and segregated land uses, Los Angeles is actually one of the densest metropolitan region in the United States. But density does not equal walkability. There is one place in LA, however, that is teeming with pedestrians: the Fashion District.

When I first visited the Fashion District for this research, I barely recognized the area as “The Alley” I used to visit years ago with my mother. A few times a year, we shopped for knockoff Guess Jeans and Ziploc bags of cheap jewelry. Lynn Myers, the Fashion District Business Improvement District managing director, agreed that many people remember it as the place they went for a special treat when they were young. “For me it was a special occasion to go to May Company with my mother,” she said. “That whole ambience of the place has always been there. No one planned it in this way—it’s doing it on its own. People recall the kind of environment where you can walk around, see and be seen. There are a lot of the same people still there, but now they’re retiring, moving on, selling their property.”

The LA Fashion District is an industrial garment-manufacturing district reborn as a regional retail and wholesale destination. Its bustling streets are filled with fabric hawkers, flag men beckoning drivers into parking lots, delivery trucks, bargain hunters and fashion buyers,

Figure 6. The newer buildings in the Fashion District typically have ground-floor shopping and rooftop parking. Source: Author.
business lunchers, film and TV crews on location and scouting wardrobe opportunities, fashion design school students and their teachers, residents, homeless people, and wholesale dealers. This is the heart of where fashion happens in LA, from creation to consumption and design to delivery. Just walking around is a fashion show in itself, so it attracts people who go for inspiration and to find materials for their own designs. Small-scale manufacturers can make clothing in the Fashion District quickly, cheaply, and efficiently because the industry is all there: the fabric, the sewers, the buttons, the trim, the beads, the showrooms, the buyers, it's all within a four- or five-mile radius.

The Fashion District Business Improvement District (BID) is 90 square blocks of 2,400 ground-floor retail stores and wholesale showrooms. The blocks are divided informally into different specialty areas—textiles, accessories, athletic wear, men's wear, men's casuals, kid's wear, retail only, retail-wholesale, wholesale only, flowers, housewares and electronics, and the district's specialty, contemporary young women's wear. More specifically, Fashion District goods break down to 80 percent contemporary young women's clothing, 80 percent of which is wholesale. Of those wholesalers, 80 percent also sell retail to the public on Saturdays. The district does $1 billion annually in retail sales and $7 billion in wholesale sales.

The Fashion District reflects the ethnic and economic demographic profile of the city of LA. The entire spectrum of fashion is represented in the district as well, which appeals to a range of shoppers, from those with a modest budget to people being fitted for their Academy Awards dresses. Bringing all those people into the same district contributes to a feeling of vibrancy.
Figure 8. Fashion District visitor map. Source: Fashion District Business Improvement District.
Although 35,000 manufacturing jobs have left LA County since 1997 and only eight percent of city land is still zoned industrial, parts of the Fashion District still have the feel of a working industrial district. It’s gritty and loud, with peeling paint on old buildings and an unkempt, historic city produce market (Figure 7). But construction on every block reveals the district’s widespread rehabilitation.

**The Fashion District was down and out**

It’s a turnaround that’s been ten years in the making. As recently as 1992 the area was considered dirty and dangerous, a manufacturing and wholesaling district whose industrial exodus left land values in decline and vacancies on the rise. Local business people decided to take matters into their own hands and formed the Downtown Property Owners Association (DPOA) in order to address these problems. In 1996, DPOA launched Los Angeles’s first business improvement district in order to “protect their investments and provide a clean, safe, and friendly place for business to thrive.” Figure 8 shows a map of the Fashion District’s current boundaries: roughly 7th Street stretching to south to 15th Street, and Main Street reaching east to Crocker Street. The northern part edges on LA’s historic core, which has some gorgeous high-rise turn-of-the-century buildings, but one- to three-story industrial buildings comprise most of the district (Figures 9 and 10).

The business improvement district grew from 56 blocks to 82 blocks to its current 90-block size and provides supplementary city services. “As unglamorous as it is, a dirty alley scares people off,” Lynn Myers said. So the BID launched the Clean and Safe Team (Figures 11 and 12). Since 2000, the BID has put $510 million into the area to put up wayfinding signs, deploy an eighteen-member uniformed bicycle-patrol, conduct studies, and build name recognition for the Fashion District (it used to be called the Garment District). Whereas the BID originally told the city what needs improvement in the district, now the city comes to the BID asking for information in order to initiate improvements in the district. The BID collects data that the city doesn’t have resources to collect and has inspired numerous other business improvement districts, including the Jewelry District BID and the Toy District BID.

The BID is a special assessment district that collects fees from property owners to fund its services. If fifty percent of property owners plus one on a block vote to contribute to the BID fund, then the block is in. As with all economies of scale, having more blocks in the BID reduces the cost of services for everyone. The BID is on a five-year renewal cycle and will be renewed again in 2008. Now the area outside the official district boundaries is attracting development.
Kent Smith, the BID's executive director, calls the Fashion District a success. Pedestrian traffic counts by the LA Department of Transportation have seen a threefold increase in ten years. Developers have spent millions of dollars on real estate projects, and four new developments and six renovations or conversions are in progress now. Rents increased so much that real estate prices have gone from $100 per square foot to more than $400. That kind of price increase is unusual in other industrial districts, Smith said. In addition, all development is being built on spec. The location is so desirable—there is only a 1- to 2-percent ground-floor vacancy rate—that landlords don't worry about preleasing their space. One developer is tearing down the entire block at Olympic and Maple to build ground-floor retail with rooftop parking.

What is behind the Fashion District Revitalization?
The Fashion District got its makeover thanks to a lucky convergence of several factors. High land values and high demand for ground floor space pushed rents up, which left property owners with money to develop new property on parking lots. The Fashion District has added more than 500 wholesale showrooms since 2001. New stores caused an increase in traffic volume and pedestrian volumes that gave the place a feeling of excitement. The district also benefits from its proximity to Asia, from where most of the wholesale clothes are imported. Buyers come from the LA metropolitan region, out of state, and out of the country to comb the wholesale showrooms for the next big thing in fashion. But I believe the icing that holds the layer cake together is the way that private developers stacked parking on top of their buildings (Figure 13). They accommodated the ways of an automobile city and also offered urban advantages like walkability.
What makes a desirable store location?

To fully understand the effect that rooftop parking had on the Fashion District, we must look at which properties attract the most customers. The Fashion District gradually became a cohesive shopping district beginning in the late 1970s, when wholesalers started opening their back doors onto an alley behind Santee Street to sell excess stock and inexpensive closeouts to the public on Saturdays. Small, independent retailers and swap-meet sellers bought their merchandise on Santee Alley instead of from wholesalers in the California Market Center (California Mart), where clothes were more expensive and required large minimum orders. It didn’t take long for the California Mart to start producing inexpensive clothes specifically for Santee Alley.

This move generated foot traffic (the district attracts more than 60,000 retail shoppers a year) and pretty soon pure retail stores started opening up in the district. In some ways, the success of the Fashion District is a consumer rebellion against the packaged offerings of the mall. These lower-end retail stores pushed the higher-end wholesale market to Los Angeles Street. Produce wholesalers occupied the blocks from the City Produce Market’s current location west to Wall Street, but in the mid ’80s, women’s wear wholesalers began to move east when the area around Santee became retail-oriented with mostly cheaper goods.

Today Santee Alley has 300 stores in two blocks selling shoes, perfume, sunglasses, costume jewelry, purses, electronics, and more, in addition to clothes. At 2:15 on a Tuesday afternoon (not even their busiest shopping day of the week) there were throngs of people strolling, browsing, and eating (Figure 14). I heard more Spanish than English and a throbbing base rhythm. Sales people yelled “¡Pasale!” “¡Barato!” “¡Llevale!” “¡Tres por diez!” Developers learned from Santee Alley’s success and have replicated its form elsewhere in the district.
The San Pedro Wholesale Mart on the easternmost edge of the BID illustrates how valuable pedestrian-dominated alleys can be. The blocks along San Pedro and Crocker have wholesale showrooms that open onto alleys because buyers prefer to shop along pedestrian-only walkways (Figures 15 and 16). Even with the benefit of visibility that comes with a main-street location, outside stores don’t do the sales volume equal to that of the alley stores, and rents reflect that. Alley stores command $7 to $8 per square foot, while rents for outside stores are closer to $3 per square foot. The average store size is between 800 and 1,600 square feet, but some 200-square-foot spaces on Santee Alley rent for $20 per square foot, which works well for tenants who sell accessories.

Perhaps they are responding to being in a car-free environment. Christopher Alexander, Sara Ishikawa, and Murray Silverstein wrote in, *A Pattern Language*:

> We suspect that when the density of cars passes a certain limit, and people experience the feeling that there are too many cars, what is really happening is that subconsciously they feel that the cars are overwhelming the environment, that the environment is no longer ‘theirs,’ that they have no right to be there, that it is not a place for people, and so on” (Alexander, Ishikawa, and Silverstein 1977, 122).

Even worse than being in an outside store is occupying a sales space on a second level or higher. The difference in vibrancy on the second floor of the San Pedro Wholesale Mart was palpable. A man mopped the floor while two or three store owners looked on. One pair of buyers peeked into a store without crossing the threshold and then took the elevator down.
This, I am told, is what it’s like at the California Mart. Hassan considers the California Mart a colossal disaster. It is a multi-block building with many floors of showrooms and Hassan called it a ghost town. Showroom rents have fallen to $1 to $1.50 per square foot, because he says, the buyers are all out in the streets where the energy is. Ravi Khosla, a wholesaler in the Fashion District said, “Cal Mart is dead.” He would rather pay higher rent for less space in a location where more customers are likely to visit.

For this reason, Fashion District development will likely keep spreading east before it goes vertical. Hassan doesn’t see the advantage of stacking more uses, such as office, onto the new buildings. “The Fashion District builds short buildings because it’s a fashion district, not an office district,” he said. Upper floor space is only used as ancillary office space for downstairs retail and wholesale spaces. “It doesn’t pay to build vertical.” The typical building is between one and three stories tall, with ground-floor retail or wholesale, possibly 2nd floor offices, with rooftop parking above that. While it seems admirable that a traditionally sprawling place is producing vertically stacked uses in their buildings, I worry that building only 2 or 3 stories is shortsighted. What will happen when the land values rise again and property owners are stuck with stumpy buildings? Kent Smith of the BID says that they’re easy enough to tear down and redevelop, but he thinks that won’t happen for another twenty years.

Although the buildings are somewhat formulaic, developers do respond to the unique conditions of each site. In one alley that is too narrow for easy flow of foot traffic, two landlords voluntarily set their buildings back a couple of feet to make the alley wide enough to do showroom business (Figure 17). Developers also build in a way that keeps the space flexible. The new buildings on the east side of Crocker, a smallish street east of San Pedro, currently have their backs turned to the street, with entrances on a midblock alley (Figure 18). But when Crocker becomes livelier, landlords will split the stores in half and make two
Parking in the Fashion District

As part of its goal to become more business-friendly, the BID sought to “improve parking,” which meant to increase the supply of parking available in the district. “Parking is the number-one issue,” Executive Director Kent Smith said. “People always want more.” In 1998 there were 8,244 off-street parking spots in the BID, but new construction since then has bumped that number up a great deal (the exact number is unknown). The number of curb spots remains the same—1,555 (DPOA 1998).

In the 1980s, downtown LA had a peripheral parking strategy, which focused on how employees and employers experienced parking there (500,000 people work downtown). Fearing traffic congestion, the city set up free parking garages for people to park on the periphery of downtown and then take shuttles into the heart of the district. But no one parked there. They chose to pay a high premium for parking near their workplaces. So despite the city-funded peripheral parking, there was still a parking crunch downtown. “The downtown parking policy has undergone a shift from thinking of downtown parking as a commuter service to more of a cultural destination,” according to BID Executive Director Kent Smith.
Then as land values started rising, Fashion District parking lot owners sought to get more money out of their properties by either building on them or selling the land for others to build on. The real value, property owners realized, was in the ground-floor space, which was a desirable location for wholesale showrooms or retail sales floors. They had very little incentive to build higher than one- or two-stories.

Parking, they thought, was a waste of ground floor space. But the city still required developers to provide parking and developers knew that tenants had to offer it to customers and employees who drove to the district. Instead of putting it underground (which had a high construction cost) or on the surface (which had a high opportunity cost), they built ramps up to rooftop parking lots, sometimes with two or three floors of parking. This resulted in some steep parking ramps (much steeper than normal street grades) because they did what they had to in order to make the dimensions work. Because parking ramps take up the width of one to two stores—valuable real estate—developers sited them in the least desirable sales location.

Parking requirements
In 1999 LA adopted an adaptive reuse ordinance that allows downtown buildings built before 1974 to be converted to residential units without requiring any new parking spaces, but they must maintain the existing number of spaces (Subdivision 26 of Subsection A of Section 12.22 of the LA Municipal Code). In addition, LA zoning says that if a developer does not change a building’s use when he or she renovates, there’s no need to provide more parking (whereas it used to require one space per 500 feet of commercial floor area, per LA Municipal Code Section 12.95.3. subsection F. subdivision 2.a.). The adaptive reuse
ordinance was a response, in part, to LA's suburban style parking requirements that Kent Smith said are not appropriate for a downtown environment. Excess parking in downtown is bad for transit flow and the pedestrian environment, and it isn't always financially feasible for developers to provide much parking. "LA is trying to catch up with other cities," Smith said.

Developer Hassan said that providing parking is simply a formality to get building permits with the city, that the tenants are more concerned with having more floor space than with where they or their customers are going to park. "If the city didn't require parking, landlords wouldn't provide it. The ground floor is valuable—you don't want to encumber it with parking," he said. "Store owners would rather pay $100 per month to park somewhere else than use that space on their property." Still, he admitted that landlords depend on having someone nearby include parking in their projects.

The Community Redevelopment Agency is also developing a new Parking Policy Framework including a parking overlay district meant to reflect an area's proximity to transit. The historic core would be subject to parking requirement maximums, while the multimodal area would have reduced minimums, and the peripheral area would be entitled to a little more parking, but not as much as areas outside of downtown. The adaptive reuse ordinance changed everything—that's when the CRA, the City of LA, and developers started to see the possibility of making the Fashion District into a dense urban place and how parking played a role in doing it.
Still, Smith stresses the importance that developments must have some parking component. Although the Fashion District is well served by transit, serviced by a subway and two bus lines, the BID does not have data on how most of its visitors travel to the district. Kent Smith said that regular customers often arrive by bus (Figure 19). The E route Dash bus—the route that serves the Fashion District—is the most heavily used of all the Dash routes. But for shoppers who come on Saturday (the Fashion District's busiest day), transit isn't a great option because they have families with them and don't want to carry packages on the train or bus. BID Managing Director Lynn Myers' vision for the Fashion District is a walkable district served by a trolley or light-rail that connects all of downtown LA's thriving districts. “You would have a way to get around without getting into the car,” she said. “The Dash bus needs to be repackaged. It needs to be more exciting.” Until transit improves, most people will continue to drive to the district.

The BID is trying to increase parking in some areas of the district where there are shortages, such as the areas near 9th and Los Angeles streets. From a retail perspective, the Fashion District has all the parking concerns that other retailers have. A steady flow of buyers comes in daily and they want a convenient place to park in front of their destination. While rooftop parking in most parts of the district has satisfied bulk of demand, there are a few places that could use a parking structure. The city is building a mixed-use parking structure on MTA property at 6th Street and Maple, next to the Santee Village residential area. MTA buses will
As mentioned above, the Fashion District had surface parking as late as '99 when new construction began to eliminate many of surface lots. And what’s left of the lots aren’t always available as public parking. Some owners rent to film companies who take up entire parking lots for weeks at a time while filming. DPOA’s 1998 Parking Improvement Recommendations and Implementation Strategy document sounded an alarm: “…at the current pace of new construction and economic resurgence in the Fashion District, parking needs will be under-supplied within two years.” While this message was intended for the ears of public sector officials, it was the private sector that responded. Many developers are including parking in their plans, sometimes more than they originally displaced.

**Rooftop parking**

With curb parking at a premium, putting parking above the stores was the next logical step. None of the local planners or developers remembers who started the rooftop-parking trend in the late ’70s (Hassan, a local developer and real estate broker who helped the district transform itself over twenty-five years, thinks the first one was built on Maple Avenue, between Olympic Boulevard and 11th Street). But it quickly became the accepted way to build in the Fashion District (Figure 20 and 21). Not only does rooftop parking preserve almost all ground-floor space for showrooms, it also allows stores to locate close together so customers can see a lot without having to walk very far. With relatively few surface parking lots, the pedestrian environment in the Fashion District is almost unparalleled in LA, (aside
from pedestrian-only streets, such as the 3rd Street Promenade).

"The great thing about turning surface parking lots into buildings is that you don't have any more missing teeth in streetscape," Smith said. The majority of developers have built out to the property line and divided the building into many narrow storefronts using lots of glass, which made new opportunities for window-shopping. "We see it as an enlightened response to an increase in density," he said. Enlightened or not, it surely is a market response. Developers aren't wasting a single square foot.

**Why not underground parking?**

Developers prefer to build parking on the roof and not underground for practical reasons; digging down is expensive and difficult. Developers were searching for the least expensive way to provide parking that wouldn't rob them of their most lucrative real-estate space. The industrial district has a lot of utilities underground, so unless the site originally had a basement, developers put parking on the roof. Digging down in infill sites also demands that adjacent properties be shored up and most developers would like to avoid the possibility of compromising neighboring foundations. They also worried about getting too close to the water table, which can weaken the structural integrity of the building. The downtown water table is about seventy to 100 feet down, which allows for four levels of underground parking (nine feet per level, with thirty feet of dirt below that). There's also a psychological reason to build rooftop parking. Hassan said, "People like a feeling of safety, of being in the open, on the roof, in the light. They don't want to go underground."
But building parking on the roof comes with its own engineering complications. Developers want to build in a way that minimizes the number of support columns and shear walls in the ground floor of the structure because they don’t want to cut up the sales space. They strive for the most open floorplan below that can still support a parking deck above. This compromise often results in narrow deep storefronts common in the Fashion District (Figure 22).

Visitors pay between $3 and $18 per day to park in the Fashion District, depending on the location of the parking and whether it’s a market week, which happens five times a year. This gives landlords an added revenue stream: they rent their parking stock out to local and national parking operators who charge the public to park. There are many different operators—Athena, Arrow, Prestige, Central, and also independent one-man operations—and they’re all making money. The parking spots are well occupied because the general public shares them between myriad destinations. That way, an unpopular store isn’t left with an empty parking lot. Parking attendants serve as surveillance, which creates a feeling of safety.

**International developers**

Smith offered one possible explanation for why Fashion District developers thought of the rooftop parking solution. “Now they’re Angelinos, but a great many of them were born outside the country. They’re bringing other perspectives here,” he said. “There is a strong Middle Eastern group of developers there and a strong Korean group. Among tenants, there are Latinos, Middle Easterners, and Asians who came by way of Brazil and South America. LA has the third highest foreign-born population in the world. Miami is number one because of the Cubans. Next is Toronto. LA is way ahead of London and New York. They understand the importance of urbanization of the street.”

But John Kamp, planner for the City of LA, sees it a different way: “They’re Korean, they’re Persian, they’re from places where that whole concept of setbacks with parking in front is totally foreign to them,” he said. “They don’t have a high-minded urban design reason to do it. It’s just the way they do it.” And because each project is built by a different independent developer, the district has what Kamp calls a “kooky mishmash” of different styles. Taken as a whole, it works.

The Fashion District is an example of what can be done with a modest investment. Developers created a street grid with lots of individual small businesses that collectively add up to an interesting place in which to walk around. There are some challenges, though—as a
Stephanie Groll

Figures 23 and 24. Old building with an updated facade (left). Most developers exploit corner lots with highly visible designs (right). Source: Author.

former industrial area, the small sidewalks are not conducive to large crowds moving around. This makes for congestion, but that congestion creates a sense of liveliness.

Uniformity of design

Planners and residents agree that LA badly needs urban design guidelines, and there are city rumblings of doing guidelines for downtown. Maybe now that there are residents moving in, they will demand it (more than 1,000 new residential units in the process of being adaptively reused (conversions of historic buildings). With foreign low-wage competition and the eviction of local sweatshops, upper floor manufacturing spaces are going residential, being turned into live and live/work lofts for rent and for sale. The residents will demand design standards for things like parking: for instance, limiting curb cuts and long blank walls on parking garages. This new residential component will help transform the Fashion District into the 24-hour seven-day-a-week “urban center” that the BID is trying to create.

Even without design guidelines, the Fashion District has managed to do pretty well. Mukhija and Shoup point to New York’s Lower Manhattan Plan use of build-to lines “define visual corridors and maintain street continuity” (Mukhija and Shoup 2006). Fashion District developers do this because it’s the best use of the land. With no coordinated planning, there’s been a nimble response from private developers; many individual developers have produced buildings with a similar style. On 12th Street at Crocker, landlords refaced the many original one-story industrial buildings to fit in with the aesthetic of the Fashion District, which has a kind of Latino new-urbanist feel (Figures 23 and 24). “I think developers see what works and what attracts customer attention and they go in that direction for design,” Myers said.
Zoning also played a part in the uniform look of the place. In the ’80s, the city down-zoned from a floor-to-area ratio of 13:1 to between 6:1 and 3:1, which limited how high the developers could build. As it is, Hassan of Quantum Associates said, not all developers build to their maximum allowed FAR because again, it’s ground-floor retail that makes the most money. In addition, the Fashion District was originally zoned for industrial uses, which created the district’s uniform look of low-slung warehouses and loft-style garment manufacturing buildings.

**Fashion District case observations**

**Strategic parking can be beneficial**

How do we recognize that people are going drive without encouraging them with abundant parking? Perhaps the key is to shape how they use their cars: park once and walk around their destination. Strategically designed parking generates foot traffic. LA city planner John Kamp said that Pasadena wouldn’t be successful without its parking structures and gold line access. “Now they’re talking about a parking structure in Silverlake and on Sunset,” he said. “On the one hand, I think do we really want another parking structure? On the other hand, people are going to drive and park, and then they’ll walk. Structures bring foot traffic that you wouldn’t get otherwise.”

For a place like the Fashion District, where some people arrive by car and some by transit, rooftop parking does a good job of accommodating that mix without reminding the casual observer that an aerial photograph would show a blanket of cars laid down on the district. But it’s important to note that the Fashion District is not thriving because it has parking. It is the combination of available parking with the urban fabric around it: a contained, walkable commercial district. “The physical form is there and parking just serves as a foot-traffic generator,” Kamp said. “But parking on Wilshire Boulevard wouldn’t necessarily do the same.
Stephanie Groll

Figure 26. Pedestrians' perspective of side-by-side ramp construction (see Figure 27 for aerial photo of same building.) Source: Author.

thing because it is a linear strip.”

Curb cuts need to be coordinated
Curb cuts are usually a dangerous disruption for pedestrians on a sidewalk (Mukhija and Shoup 2006). Although each rooftop parking lot in the Fashion District has its own curb-cut to allow for ingress and egress, there isn’t a lot of in-and-out traffic like that if typical car-based destinations because people park once and walk all day. Most of the cars come out around closing time at 5 or 6 p.m., but pedestrians rule the rest of the day. “Try driving down Maple at 3 p.m. and you’ll easily get stuck in sea of pedestrians,” Kamp said.

Even though cars don’t drive in and out during the day, however, there’s no reason to have more curb cuts than are absolutely necessary. (Figures 26 and 27 Elevation and aerial view: A double ramp on Pico near Wall leading to two rooftop parking lots is 40 feet wide. It could have been 20 feet wide with a little coordination.) There have been several instances where separate owners demolished adjacent properties during the same time period and put up new buildings with rooftop parking, each with its own entrance to parking. I recommend that the BID assist property owners in coordinating and retrofitting their driveways to allow one entrance point for multiple parking lots.

Ensure visibility
“Everybody’s biggest complaint is that there’s no parking in the Fashion District,” BID managing director Lynn Myers said. Actually, there’s plenty of parking, just no uniform signage. Signs range from large, clear lettering to human “flag men” standing all day and waving an orange flag to catch the eyes of passing drivers (Figure 28). “Some people think this is caution sign and drive the other way,” Myers said.

Because rooftop parking isn’t visible from street, visitors don’t know which buildings
have it, or which parking lots have spaces available. The BID is looking into options for clearer, more consistent signage to make them more available to the public. It also wants to provide up-to-date parking information on its website and in PDA-downloadable form. It is currently designing a valet parking system that would allow people to drop their cars at a central curbside location and pick them up at the end of the day; their cars, meanwhile, would spend the day tucked away in the sky.
CHAPTER THREE

Harvard Square Parking Garage

The Harvard Square Parking Garage is located across the street from Harvard’s John F. Kennedy School of Government on the corner of JFK and Eliot streets in Harvard Square (Figure 29). Its 208-car capacity stacks into five levels of parking and cars enter and exit on Eliot Street. The ground level of the brick building is wrapped in 8,000 square feet of retail.

**History of the Harvard Square Parking Garage**

The garage was built in 1985 on a former gas station site by Trinity Property Management, Inc. When the two brothers who owned the gas station decided to retire, they could have sold their property to Harvard University, which was champing at the bit to acquire this prime piece of land. Instead, they sold it to John DiGiovanni, a Harvard Square developer and property manager. "It had zero to do with real estate acumen and everything to do with fact that they really liked my dad," said John DiGiovanni Jr., the son of DiGiovanni and the current president of Trinity Property. For two years they talked verbally about how they would organize it the deal—there was nothing in writing. Because DiGiovanni had done business in the Square for years, he knew by instinct that a parking garage would do well there—the shops would keep growing towards the Charles River. The site is on a major artery, which makes for a good spot to encourage people to get out of their cars and walk around the square.

![Figure 29. Harvard Square Parking Garage wrapped in ground-floor retail. Source: Author.](image)
As the story goes, DiGiovanni knew that Harvard and the general public would fight the possibility of having a parking garage on the site, so he had a full set of drawings made under a code name. He instructed the architects to design it completely to code so that the same day the title transferred, DiGiovanni could obtain a building permit. The Harvard Square Parking Garage was on its way to being built in the blink of an eye and not even a powerful entity like Harvard could stop it. Harvard did, however, convince DiGiovanni to restrict the number of spaces that Trinity Property built so the height of the garage would fit better with the rest of the buildings in the area.

Mukhija and Shoup confirm Harvard’s reservations in a forthcoming article, writing that parking structure designs “only occasionally enhances the built environment ... Because the private economic incentives for good design are weak, parking structures, even more than other buildings, need architectural controls and review to ensure good urban design” (Mukhija and Shoup 2006, 14). But DiGiovanni didn’t need architectural controls to ensure that his project met high urban design standards. He loved Harvard Square and included retail on the ground floor because he wanted to soften the impact of a parking garage placed at the entrance to Harvard Square. For the same reason, the top level is set back a bit from the rest of the building to make it look less massive (Figure 30). The garage won a couple of awards (including a Massachusetts Governor’s award) and was mentioned in a number of publications as an example of good parking architecture.
Like his father, John DiGiovanni Jr. has an interest in preserving Harvard Square as an authentic urban place. "Streetscape is incredibly important to getting sense of place. It makes people feel great to be in the place and they don't even know why," he said. "I'd rather see retail, office, service, and restaurants rather than looking at grills of cars. Of course the right lighting, width and height of buildings, and landscaping all come into play. But having something interesting to look at every twenty to thirty feet is key."

The pedestrian experience

Never having walked by the site's original gas station, I can only assume that the garage development makes for a more pedestrian-friendly environment than the gas station it replaced. There is one curb cut where there used to be three and the retail space filled in a prominent gap in the streetscape. Its brick façade blends into the neighborhood, a strategy that was Mukhija and Shoup wrote was common in the early 19th century to improve urban design. "A more contemporary approach is to 'wrap' a parking structure with retail or other uses. Robert Dunphy, Deborah Myerson and Michael Pawlukiewicz (2003, 11) suggest that 'creative designers can wrap a parking structure with retail shops, eateries, residences, and services, such as dry cleaners.' In addition to concealing the parking, the wrap strategy leads to a mixed-use development that further enhances the quality of the built environment." (forthcoming, 14) Overall, it's an effective way to insert garage into urban context.

Still, the Harvard Square Parking Garage is not perfect. The one remaining curb cut is 30
feet wide and the retail along JFK Street is sunken a few feet below and set back from the sidewalk, so it has a slightly removed feel (Figure 31). But perhaps the biggest criticism of the garage is the fact that the retail is wrapped around the building instead of taking up the entire ground floor. Wrapped retail often results in small store dimensions, which restricts its ability to attract anything but the lowest quality stores: cell phone stores, ATMs, and other stores that don’t encourage people to spend time in the area. The narrow, shallow stores along Eliot are occupied by a Hertz rental office (Hertz rents spots in the garage above), Sabra’s middle eastern take-out restaurant, Charlie’s Barbershop, and several indoor Bank of America AT The stores along JFK are bigger: Redline restaurant and Woolcott & Co. knit shop. The prime real estate on the corner is occupied by Dunkin’ Donuts, which is surprisingly effective in keeping the area lively. Trinity Property wanted a shop at the key corner of the building that opened and closed late. There were a couple of cafés in the corner space before Dunkin’ Donuts came in, but they didn’t last. Trinity forbade the use of its brand colors, pink and orange. Instead, the chain kept the old “Elliot Street Café” sign outside and used an uncharacteristic color scheme: mahogany and marble, crimson and gold (Figure 32). “It doesn’t look like Dunkin’ Donuts, but it tastes like Dunkin’ Donuts,” DiGiovanni said. This low-quality retail didn’t destroy the rhythm of Harvard Square because it doesn’t need high quality retail to bring the neighborhood alive. The Square was already thriving as a major tourist attraction and student hangout. Customers arrive on foot, on bikes, in cars, and especially on public transit—the MBTA reports the Red Line Harvard Square stop as its second busiest stop in the subway system.
DiGiovanni's efforts paid off. Many people don’t realize there is a parking garage behind the stores (Figures 33). But this is a problem from Trinity Property’s standpoint. “The great part is it doesn’t look like a garage. The difficult part is it doesn’t look a garage,” the junior DiGiovanni said. “Its strongest trait is also its weakest trait.” If he were building the garage today, he would have put in more visible public parking signs.

Nevertheless, the project was economically strong from the start. “The moment we opened the doors, there was a 25 percent bump on the value relative to cost,” DiGiovanni Jr. said. Trinity Property’s goal is to turn over each space two to three times per day. The company also tries to limit monthly parkers, instead preferring to sell their debit system wherein customers can purchase $120 worth of anytime parking for $100. The system is aimed at public transit riders who need to drive every now and then.

Harvard Square Parking Garage case observations
Is it replicable?
It is unclear whether this model can be successfully replicated because the land value of the property was worth more than DiGiovanni paid for it. The brothers who sold the gas station didn’t actually own the land it was on. Congress passed a law in the ’60s that encouraged large oil companies to share the wealth with small gas station operators who had been with the oil companies for years. It required them to give operators the land on which
the gas stations stood. Therefore, the brothers acquired the Harvard Square property after negotiating with Gulf Oil, and DiGiovanni paid them something in addition to that.

**Why it worked in Harvard Square**
The decision to add retail on the ground floor of a garage is site specific. As with any market analysis, retail’s feasibility depends on the same things a retail feasibility study would even if it’s not located below a parking garage.

Average retail rents in Harvard Square range from $50 to $150 per square foot depending on size of the space, which dictates the type of retail that it attracts. “It’s not the rent for one particular space, but how they all work together,” DiGiovanni said. “Since we’re not in solely parking business, we also manage retail and office space, so our parking pricing set at a level that encourages people to come there. We’re in the real estate business and we just happen to have parking garage.” A developer’s choice to build a parking garage with ground-floor retail relates to the whole area, not just the specific building. Contrary to Mukhiya and Shoup’s assumption that “patrons who park in the structure … provide a built-in clientele for the retail businesses,” the retailers in the Harvard Square Parking Garage are not dependent on the parking to attract customers. “That would never work,” DiGiovanni said. Trinity also does not depend on the 8,000 square feet of retail to support the parking above. The garage serves a larger need in Harvard Square, which is part of what makes it work. It is still a place where most locals visit without a car, but the garage increased the intensity of all the uses in the square. The garage helps protect Trinity Properties’ other buildings. By attracting more people it is something of a cousin to the rooftop parking in the Fashion District.

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Figure 34. Harvard square Garage parking prices.
CHAPTER FOUR

Westland Avenue Garage and Whole Foods Market at Symphony

The third case in this study, Westland Avenue Garage, is different from the first two in that it looks very obviously like a parking garage. Whole Foods Market Symphony sits at the base of five floors of parking that twist up in a hulking concrete spiral (Figure 35). When I first saw it from a few blocks away, I thought, "How very Soviet." I couldn't see the grocery store below until I walked closer, to within 200 feet. The store sign barely shows up against the concrete and is nearly obscured by public art. But once I was standing across the street, I saw cheery shoppers streaming by in every direction carrying Whole Foods bags and skipping between cars idling at the stop sign on Westland Avenue. To the left towards the Fenway was a lovely Back Bay street and to the right, a quiet street lined on one side with unadorned 1960s architecture containing retail space (Figures 36 and 37).

History of Westland Avenue Garage

Boyd/Smith Inc. completed construction the 305-car Westland Avenue Garage in 1973 (designed by The Architect's Collaborative, a Walter Gropius spinoff firm). It was intended to serve the retail and 508 housing units in the Church Park Apartments, which encompasses an entire block on Massachusetts Avenue between Boylston Street and Westland Avenue. It included retail on the ground floor to serve the neighborhood—a Boston Redevelopment Authority requirement. The odd size and shape of the Westland Avenue lot inspired the

Figure 35. Public art blocks the view of the Whole Foods Market at the base of the Westland Avenue Garage. Source: Author.
garage building's semicircular configuration (Figure 38), which is built around an open core that holds equipment for the grocery store: a condensation unit, an oil tank, and a backup generator (Figure 39). Cars park along the inner and outer edges of the curving ramp (Figure 40).

The area is thriving now, but in the 1970s it was one of the poorest in the city. It was home to new immigrants and plentiful prostitution and drugs. The architecture of Church Park Apartments and the Westland Avenue Garage came out of the Urban Renewal era, when planners were swinging a wrecking ball to solve the city's problems (Figure 41). The BRA wanted to see a parking garage go in on the site because there were no other garages nearby, and it required ground-floor retail for the same reason. (The retail below the garage and Church Park Apartments is almost all service retail and attracts shoppers from the surrounding neighborhoods; Boyd/Smith estimates local shoppers at 60 percent of total clientele.) To entice a tenant to lease the retail space below the Westland Avenue Garage, property manager Boyd/Smith offered a very favorable lease, including a 40-year term and free parking for store customers. In today's market the lease would cost about $35 per square foot and, depending on the tenant, Boyd/Smith would try to negotiate a percentage of store sales. Stop and Shop took the bait. "At that time it was a great deal for us," Bill Smith Jr. said. "We needed someone to come in." Theft was such a problem for Stop and Shop that the store attached tall metal poles to the shopping carts so workers knew where customers were at all times. Stop and Shop sold its lease to Whole Foods in 1994, but Smith said the transferred lease terms are still worth it. "Whole Foods has had a huge impact on the area. They turned it around," he said. The Christian Science property, Berklee School of Music students, and newcomer residents of the Back Bay and South End also gentrified the area.
When Whole Foods came in, its designers let the site characteristics dictate the adjustments it made to the existing grocery store. The original store had the same footprint as it has today, but the windows were blocked off. Whole Foods gutted it during the renovation to make room for a bigger sales floor. It also cleared the area in front of the windows. This was no small gesture. By placing transparent glass between pedestrians on the street and the bright produce and activity of the store inside, Whole Foods broke down a barrier between the business inside the building and the neighborhood (Figure 42). Regional Construction Manager Tim White said it was worth losing significant wall display space that other grocery stores gain by going windowless.

“There have been psychological studies showing that humans function better in an environment with natural light,” White said. “We want to bring as much light as possible into our stores. People just feel happier with sunlight, whether that’s customers or team members.” Their challenge is to mitigate the ultraviolet component of light that advances the spoiling of food. “You won’t see a lot of skylights in produce departments.”

The windows allow a view to the street on all sides except on the northeast side, where the windows are blacked out in order to conceal the food preparation area and walk-in refrigerators (Figure 43). This area is physically blocked inside, so the store will not change the configuration to accommodate transparent windows for sidewalk viewing on that side. This gives the building a discernable front and back. The entrance to the store and parking garage is in the front. A smaller loading dock with trash facilities is in the back, as well as a pedestrian entrance to the parking garage.

“The customer experience is one of Whole Foods’ five core values,” White said, because
a good customer experience translates into a good sales performance. As new innovations prove successful in new stores, they use them in some way in existing stores. “The company president believes that to create the best customer experience, we need to constantly be innovating and improving our stores.” That philosophy echoes the thinking that Sears embodied in its heyday, which ironically lead to the no-windows innovation that Sears launched in Chicago in 1934 (Forum 1935), as well as its decision to provide plenty of convenient parking. In spite of fears that customers might have unfavorable psychological reactions to a lack of windows, they decided that thanks to modern air conditioning and lighting systems, a windowless store would keep out noise and soot, be more energy efficient, and increase the shelf- and display-space by ten percent, which allowed for more merchandising arrangements. Sears left narrow vertical window strips over each entrance to allow shoppers to match colors in natural sunlight. The Chicago store opening drew 160,000 customers in November 1934. Seventy years later, Fortune would call these windowless stores the precursor to big box stores (Fortune 2005). In contrast, Whole Foods “creates a good customer environment” with big windows for natural sunlight and as big a café-seating component as possible in order to foster community. “We want them to come in and relax. Stay for a while,” White said. Sears offered efficiency as the ultimate customer experience, but Whole Foods is providing the experience of a sunny, relaxed illusion of the café-leisure life that passersby can see from the sidewalk (Figure 44).
Garage earns profit for Boyd/Smith

Smith calls the Westland Avenue Garage a very successful property. “Building the parking has paid for itself,” he said. “It provides constant income.” Parking at the garage costs between $5 for half an hour to $26 for 24 hours (see Figure 45 for a complete list of parking prices). He attributes its success to the location—it is the only garage in the area and serves as the main garage for the Boston Symphony Hall, which hosts up to three events a day during concert season. People drive in and out all day long. Concerts fill most of the spaces, but it varies depending on the concert and weather (Figure 46). The garage even gets a few new Red Sox fans who stop at the first parking garage they see, thinking there will be no parking closer to Fenway Park. Smith also credits Whole Foods with lending an upscale feel to the neighborhood after its massive renovation, which generates profit for the parking garage.

Whole Foods gets sixty dedicated spaces as part of its lease, but customers never use all sixty spaces at once. Although Whole Foods offers one-hour free parking validation with a $5 purchase (Figure 47), only about 4 to 6 percent of the validations are used at any given time (more customers drive in summer). Marketing team leader Chuck Olivieri said the $5 minimum purchase for validation isn’t a hard and fast rule; they will validate even if people spend less and will reimburse customers for parking charges over their allotted hour. Still, Olivieri said that many customers don’t think to park in the garage. During the day, more customers park at the meters along Edgerly Road than in the garage, but between 6 p.m. to 8 a.m. residents can park there at no charge, so there is usually no room for customers at night.

The store hasn’t done a formal mode share study, but Olivieri estimates that ¼ of the customers walk to the store and another considerable portion arrive by public transit. The
bik rack was filled to capacity (eight bikes) as soon as Whole Foods put it out, so they added
two more racks. Those are now filled too, although it is unclear whether all the bikes belong
to customers. The fact that Whole Foods doesn’t use up its sixty parking spots is apparent in
an employee perquisite—workers who drive to work can stop outside the store to run in and
get a parking pass, park in Westland Avenue Garage, then return the pass at the end of their
shifts. There are a limited number of parking passes, and Olivieri said that many employees
take advantage of the system. Westland Garage also rents 150 spots to neighborhood
residents who pay by the month for either 24-hr parking or night-only parking.

Overall, the garage spaces are used very efficiently. When monthly parkers leave, parking
attendants fill those spots with concert-goers’s cars. Because Whole Foods never uses all
sixty spots at once, other drivers use the spots that belong to Whole Foods. The parking
attendants have a feel for how many reserved spots to leave open at once.

The land value factor

“Whole Foods is more tenant-oriented rather than building its own stores. Especially in
urban locations where ground is so expensive,” Whole Foods regional construction manager
Tim White said. By renting space, they preserve capital for other business opportunities. In
a similar vein, Sears built their stores to their own specifications and then sold the property
to a landlord who leased the store back to them. He looks for sites that also have an office
and residential component. In urban environments this tends to be the best bet for getting
into the market. Then they take advantage of vertical parking by acquiring the number of
underground or structured spaces they think would work well for that store location.

Standard retail parking requirements call for five spaces per 1,000 square feet. “If we can get
more that’s great,” White said. But there are some Whole Foods projects that have less. If it is in a location with good transit accessibility and they see the potential for future success of the store, they will accept less parking. “Or in the case that we’re working with a good developer, a good quality landlord who owns the center and won’t sell the property, it’s worth it to us to get in there even with less parking,” White said. “Plus, it’s a known fact that there are people who like to live in the city. Some people don’t own cars but still shop.”

The type of parking they supply depends on the particulars of the location. “Structured parking for retail is expensive, especially if you stack it vertically,” White said. Surface parking costs $1,500 to $3,000 a space. Structured parking costs more than $20,000 a space. Underground is even more. But White said it is worth the high cost to build stacked parking because a vertical treatment in urban setting is the only way to afford the high cost of land.

**Small purchases add up to profitability**

By White’s account, the Symphony store is successful: “It has strong sales.” Because the Symphony store is completely mature—it has been in operation for at least five years and experienced team members keep it running smoothly. “Corporate tends to throw more money into old stores [rather than building new ones] because they have to depreciate less,” White said. “So it’s like throwing lots of money to the bottom line.”

Whole Foods Symphony is 25,000 square feet total (with an 8,000-square-foot sales floor),
which is small compared to the direction that Whole Foods corporate is heading with its new large-format stores. White said that Whole Foods chose to move into the Symphony location because the surrounding neighborhood had people with the company’s target demographics, such as education level and average income. “Our customers know it’s a status symbol to carry a Whole Foods bag,” he said. “They want organic food or need gluten-free or allergy products. But even with Whole Foods’ niche natural foods market, White said that conventional grocery stores draw nine out of every ten customers, so Whole Foods needs to locate in denser populations with more education.

Olivieri said their shoppers represent a cross section of the city, with lots of diversity, but that there are very few families who stop there. The largest number of shoppers are students from the immediate neighborhood, but they also get a fair amount of customers from the South End, Back Bay, and Charles River Apartments. He said that families tend to come from Jamaica Plain. Workers come from nearby offices for lunch and dinner—they buy a sandwich, chips, and a drink, which brings down the average sale amount.

According to Olivieri, this store has one of Whole Foods’ smallest purchase sizes: It averages $10 and under (other stores have average purchase sizes twice as big). But because its sales floor is only 8,000 square feet, the Symphony store ranks high in sales per square foot. Olivieri estimates that the store gets about 8,000 customers a day (Whole Foods’ fifth largest customer count), but records about 20,000 register rings a day. That would seem to
suggest that people are shopping more than once a day, for lunch and dinner, or snack. In addition it would make sense that customers who come on foot would shop more often for small amounts of food, a habit that is also consistent with the shopping patterns of students and less affluent clientele. Stores in more suburban areas of Massachusetts and Rhode Island have fewer customers and bigger sales.

**Deliveries**

It's not obvious from outside the building where the loading dock is located. Urban environments don't usually have visible loading docks because they have been fitted into the buildings. The building is sort of a peninsula, so there's no real back. Whole Foods Symphony receives 18-wheel trailer trucks in a door to the left of the parking garage entrance. The store doesn't have a lot of freezer space so they get more deliveries (sometimes more than once a day), which because it is on a day-stocking schedule often disrupts the neighborhood traffic flow. As with most urban stores, trucks aren't permitted to idle long because neighbors complain about noise. On the other side of the building, there is another small receiving area with a trash dumpster that takes up most of the space. Small trucks and vans make smaller deliveries here.

**Westland Avenue Garage case observations**

The Westland Avenue Garage had mixed results. From close up, the Westland Avenue Garage feels great. The upper floors of parking are above a normal line of sight and the
building height and setback fits in with its neighboring buildings. It’s easy to cross the street at midblock because traffic often moves slowly and pedestrians have a clear view of oncoming cars. The large windows on the front and side of Whole Foods create a relationship between the building and the street. The Church Park Apartments, which encompasses a massive city block, has several public passageways that give pedestrians a short cut between Massachusetts Avenue and the grocery store (Figure 48).

Unfortunately, the garage is not as inviting from far away. The line of site from Massachusetts Avenue is nearly obscured by the Church Park Apartments (Figure 49). It appears to be built to catch the eye of passing motorists and not pedestrians, which makes sense, but could still benefit from a little tinkering. If the model is replicated, developers should focus the eye on the lower part of the building, where pedestrians are drawn. Even the triangle park on Westland Avenue, which used to be solid concrete until the Symphony and the BRA improved it with plantings, didn’t make me think, “Well that looks like a nice place to stroll. I want to see what’s over there.” In the cold months it was hard to tell there is a grocery store on the ground floor until I walked closer. But it’s more attractive in warm weather, when Whole Foods turns the sidewalk into an outdoor café (Figure 50). The modern architecture of the garage is quite interesting when contrasted against the traditional Back Bay rowhouses, so it is regrettable that it sits behind the Church Park Apartments. I like the fact that each parking floor appears to be level with the ground instead of following the slant of the internal ramp.

As with the Harvard Square Garage, the Westland Avenue Garage contributed to the economic health of the ear by increasing the intensity of use. The Symphony Hall in particular benefited from the garage’s addition to the neighborhood. It helped the Symphony retain its functionality because it was built in an era when the cultural institution was faced with dwindling patronage. Like Sears, the Symphony needed to retain its transit-dependent customers and also attract people who came by car. The Westland Avenue Garage made that possible.

And yet, despite its advantage as one of the only garages in the area, the mostly service retail shops and low-end restaurants at the base of the Church Park Apartments don’t capture the heavy pedestrian flow that streams between the Symphony and the garage. Au Bon Pain is the one exception. Perhaps it is a few too many steps out of the way or that patrons don’t have shopping on their minds when the show lets out. Whatever their reasons, it is clear that the retail in the immediate area does not depend on the garage for customers.
<table>
<thead>
<tr>
<th>DAILY RATES</th>
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<tbody>
<tr>
<td>Up to 1/2 hour</td>
<td>$5.00</td>
</tr>
<tr>
<td>Up to 1 hour</td>
<td>$10.00</td>
</tr>
<tr>
<td>Up to 1 1/2 hours</td>
<td>$15.00</td>
</tr>
<tr>
<td>Up to 10 hours</td>
<td>$19.00</td>
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<tr>
<td>Up to 12 hours</td>
<td>$21.00</td>
</tr>
<tr>
<td>Up to 14 hours</td>
<td>$23.00</td>
</tr>
<tr>
<td>Up to 24 hours</td>
<td>$26.00</td>
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<table>
<thead>
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<th>MONTHLY RATES</th>
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<tbody>
<tr>
<td>Daily 6 a.m. to 7:30 p.m.</td>
<td>$185</td>
</tr>
<tr>
<td>Overnight 5 p.m. to 9:30 a.m.</td>
<td>$130</td>
</tr>
<tr>
<td>Includes weekends and holidays</td>
<td></td>
</tr>
<tr>
<td>24 hours</td>
<td>$280</td>
</tr>
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</table>

Figure 45. Westland Avenue Garage parking prices.
CHAPTER FIVE

Cost of parking

The question of cost is an important one. Simply put, the more a developer spends on design and construction, the less he or she gets to claim as profit. Tim White, a regional construction manager for Whole Foods said you can only do high-quality development if you’re turning a profit. “In terms of saving on parking costs, the first choice is surface. Next is structured parking not attached to your property. Then structured parking, attached. (Standalone parking structures have different structural needs than attached structures. Super-columns get costly to add.) And then going underground is even more expensive because you have excavation costs, you’ve got to cut through rock, the dewatering issue, which might mean a lifetime of running a pump to keep the area dewatered. Maintenance costs for underground are significant,” White said. “At end of the day it’s about making money.”

But as mentioned in the introduction, a well-designed streetscape will likely command higher than average rents, so the extra expense for stacking and hiding parking could pay for itself. “There’s been the New Urbanist revival of downtowns, even in secondary and tertiary cities, that puts retail on the bottom of huge multi-level parking decks to maintain some streetscape,” said Greg Vaca, a real-estate specialist at of UBS Investment Bank. “Now people are building more parking decks because land is expensive in downtown areas.”

The cost of parking is so significant that it’s hard to generate enough income to offset the expense of building a parking structure. Unless there is a separate market for parking that justifies the cost, it’s often too expensive. But if you can justify the cost, it allows you to put more income-generating uses on site, which allows a higher net density. In the end, developers need a lot of scale (more cars and more rentable floors) for the structured parking to be worth the fixed capital costs: stairwells, ramps, and elevators. But one level on the roof has less ramp to build and less to drive than a multi-floor structure.

To determine the financial cost of parking, developers consider the number of spaces, the cost per space, and the opportunity cost of the land. Cost per space includes land, construction, maintenance, utilities, insurance, administrative costs, and operating costs (Tumlin, and Siegman Summer 1993). Because land values vary greatly between communities, the cost per space will be slightly different based on local market conditions. A piece of real estate on a corner lot in Harvard Square can be worth four to five times as
Stephanie Groll

much as one four blocks away.

Each new parking space a developer builds adds to the project’s price tag, so developers want to create economies of scale. It certainly is costlier to put up rooftop parking deck than to provide surface parking, but that argument is only compelling where land is abundant and cheap. Where it’s scarce, developers are willing to incur the cost of building vertical parking because they can make more money on the ground-floor uses. The question is, what kind of vertical do they build? A standalone garage, one with ground-floor retail, or underground. See Figure 50 for average parking construction costs. With the recent construction boom in China and other rapidly developing countries, steel and concrete are becoming much more expensive and that has put a damper on development in general. Because it’s so expensive to build parking, developers almost always prefer to build the least they can while still satisfying customer demand. “Anything is more profitable than parking,” Vaca said. “Until you get so suburban that land is so cheap it stops being an issue.”

<table>
<thead>
<tr>
<th>PARKING CONSTRUCTION COSTS</th>
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<tr>
<td>Surface</td>
<td>$3,000 per space</td>
</tr>
<tr>
<td>Structured (naturally ventilated, must have</td>
<td>$15,000 to $18,000</td>
</tr>
<tr>
<td>50% open air ventilation to qualify for</td>
<td></td>
</tr>
<tr>
<td>“natural ventilation”)</td>
<td></td>
</tr>
<tr>
<td>Structured (wrapped with other uses and</td>
<td>$30,000</td>
</tr>
<tr>
<td>artificially ventilated)</td>
<td></td>
</tr>
<tr>
<td>Underground</td>
<td>$30,000 to $50,000</td>
</tr>
<tr>
<td>Rooftop</td>
<td>Adds 25% to construction costs</td>
</tr>
</tbody>
</table>

Figure 50.

In some ways, it makes perfect sense to transfer an open-air surface lot to the roof of a one- or two-story building. The parking deck also serves as a roof, so developers don’t have to pay for the finishes. There’s also less need for costly ramp space. But in the most expensive cities in the United States, like New York and San Francisco, developers are only willing to build underground. For example San Francisco developer Liz Moore of Shamrock Realty said she would only build underground parking on any available piece of land because she’d rather take advantage of upper levels for light and air to build housing. “When a piece of land is available in San Francisco, there’s no way you’ll build parking above retail,” she said. “Residential above commercial, sure. But never parking.” (Moore 2006)
Structurally speaking

Developers generally are more comfortable separating retail and parking because there are added structural requirements to building parking above retail. “Cars are pretty unfriendly on the ground and up in the air,” said Boston developer and architect Peter Roth. “They are costly heavy moving objects.” Retail buildings need to have a wide floor plan with no columns and cars need those columns to support them. This part of the structure is three to four times more expensive than the rest of building.

Developers who stack different uses must make sure that the upper floor uses sit directly on top of the bottom uses. If not, they will have to pay for a roof, landscaping, and waterproofing for that little lip, whose marginal cost can be $40 a square foot.

But ramps are an even bigger issue than columns. They are expensive to construct, consume a lot of space, and are hard to handle architecturally. The maximum slope for a sidewalk is 20 to 1, which means a 1-inch rise for every 20 inches of run. Vehicles climb a 1 to 10 maximum pitch, so they need a huge amount of ramping. Also, ground-level retail in parking structures needs an immediate incline to free up most of first level for retail. Some developers spend a lot of money covering and landscaping ramps. Roth looks for opportunities where there are grade changes on the site so he can get cars into storage with a minimal amount of ramping. When integrated into the parking field, ramping is more efficient and can even be sculptural. Would he build rooftop parking? “Sure. If geotechnical concerns meant I couldn’t go down. If I could make it work in the urban design context (by embedding or surrounding the parking with other uses). But I would have to do a site-specific cost-benefit analysis to seek best program of uses,” Roth said.

Besides being bulky, cars are heavy. It costs a lot to get them up and costs a lot to keep them up. Their live load capacity—the component of structural design that’s not the weight of the building, such as people and furniture—requires three to four times as support as much for a residential structure. That’s 150 to 200 pounds per square foot compared to a residential live load of 50 pounds per square foot. Industrial buildings are 100 to 200 pounds per square foot. Office requires 80 pounds live load.

Suburban parking tends to be either surface or a detached structure because the developer will likely sell it to a parking manager who could run it more effectively than a mall can. UBS’s Greg Vaca said there is a new trend towards building freestanding parking garages that are associated with retail areas, especially in downtown areas. Customers pay about $1 to $3,
but that's usually subsidized by the mall manager in some way. Whether a garage or rooftop lot charges a fee to park depends on their particular circumstances. It won't be enough to sustain construction costs; retail rents are normally set high enough to cover that. But parking fees might be charged to pay for cleaning and surveillance.

**Other cost considerations**

There's the question of maintenance, disabled access, and ventilation, which all add to the cost of parking. With surface parking, the only necessary upkeep is periodic repaving, repainting the lines, and in some climates, shoveling snow. According the Vaca, the cost associated with the upkeep of structured parking decks is much greater. For disabled access Developers either build elevators, which adds to the overall project, or they provide required spaces at ground level and provide the rest on the roof. In addition, wrapped parking can add to the cost if mechanical ventilation is required. If cities require developers to do wrapped parking they might offer them a greater floor area ratio (Mukhija and Shoup 2006). “FAR is a premium you look for to help offset the cost of building a more expensive garage,” New Boston Fund president Kirk Sykes said. “FAR is helpful because if you can go up, you can pay for a lot more.”

How does this play out in my case studies? Fashion District developer Hassan said that rooftop parking adds 25 percent to the cost of construction—raising the cost from about $80 per square foot to about $110 per square foot. But as noted earlier, developers are confident that the value of their commercial space would not be as high if they hadn't built rooftop parking. In addition earthquake-prone California has very strict structural requirements, so Fashion District developers had to build a baseline standard into their projects anyway. Adding supports for rooftop parking didn't change the costs that much. The developers of the Harvard Square Parking Garage and the Westland Avenue Garage both agree that their projects would cost more to build today than when they originally built them. Boyd/Smith spent about $2 million to build the Westland Avenue Garage in 1973 dollars, or about $6,500 a space. At the time the price seemed high, but Boyd/Smith predicted (correctly) that the market would support the garage. It was a Baumol Effect of sorts: Build it now, it's a bargain.
CHAPTER SIX

Conclusion

Sears captured a moment in time when cities were rapidly suburbanizing. If rooftop parking was used to swing our country in the direction of sprawling land patterns and our ensuing car-dependence, can it be used in reverse? Can rooftop parking lead to renewed density and facilitate our shift away from single occupancy driving? Can it facilitate the transition gracefully? I looked at three case studies in urban areas that are served by multiple transit lines. To assess whether this typology has a broader application in suburban areas, I propose the following next steps for future research.

Establish feasibility thresholds
At a minimum, further study should seek to establish the parameters under which this transitional density-gaining device is feasible—financially and physically. What are the cost-benefit thresholds that must be met before a developer will consider this form? What is the land value below which it isn’t worth the extra initial cost of building structured parking, because the retail rents aren’t high enough to allow the developer to recoup those costs in the form of higher rents? What are the lowest rents in a commercial district that would support this form? Is there a density threshold? How many other retailers or employees must there be nearby?

Understand value capture
Parking above retail captures rising land values in a way that surface parking does not. As land becomes scarcer, developers can squeeze more money out of their lots by using every square foot of ground floor space for income-earning uses. The alternative (retail with surface parking) uses the land inefficiently because the majority of the land is devoted to a non-revenue-producing use (free or low-price parking) whose only benefit to the developer is that it supports the revenue producing use (retail). With parking above retail, the retail space is larger than it otherwise could be. So the typology is allowing developers to “capture the rising real-estate values” by physically accommodating the added retail space that only becomes possible under that circumstance. In addition it makes the streetscape more urbane, increasing the social value and pushing the real-estate value even higher. More study is needed to fully understand the relationships involved in value capture.
Design a two-phase launch of this typology

The success of the Fashion District shouldn’t be dismissed as a function of a niche market in a funky part of LA. Its building typology also has the potential to transform wide swaths of suburbia. The key is to test its effectiveness in the neighborhoods that witnessed its original incarnation: streetcar suburbs. And then take it to the place where it will have the most power to improve people’s quality of life: the mall.

Test case 1: Streetcar suburbs

Coolidge Corner in Brookline, MA, has a perfect parcel on which to deploy the intervention. There’s a 138-spot surface parking lot on the southwest corner of a block behind the historic theater (290 Harvard Street) that serves the area’s shops (Figure 50). It leaves a long gap in the pedestrian network on Centre Street, is located a block from two MBTA Green Line stops, and is visible from Beacon Street, where the train travels. The land must be worth more than the money made on parking but the parking is necessary to help support the stores, so the context warrants a Fashion District-like building. The neighborhood can capture that rising land value by pulling a Sears, but in reverse. Instead of trying to keep the transit-dependent customers and attracting new drivers, using the typology today can keep driving customers while attracting new pedestrians and transit riders.

Coolidge Corner is an appropriate test locale for this typology because the values of the town are right; I suspect that there would be public support to try something innovative that lends new primacy to pedestrians. The surrounding neighborhood’s historic fabric is almost entirely intact, except for the test parking lot and seven smaller nearby parking lots. A one-
to three-story building would complement the setting. The idea is to debug the typology in transit-rich, urbane environments before deploying it in the real market—the suburbs.

**Test case 2: Suburban malls**

Let me emphasize that I think parking, in all its forms, should be restricted to the greatest degree possible in transit-rich cities in order to preserve walkability and support transit service. But in suburban communities, where the automobile is still the dominant mode of transportation, we need to provide some parking to people who will continue drive until they have other options. The mall stores need to retain all their current car-driving customers while attracting a new walking and transit-taking clientele. The parking lot might sit half-empty in April, but it’s 100 percent full during the holiday shopping season. That’s when retailers make all their money, so they won’t voluntarily give up that parking just because it’s good for urbanism. Planners need to provide a graceful transition.

Although many American cities weren’t designed for density, parking above retail can retrofit them for it. Suburban communities often have a finite amount of land that is zoned for commercial use and in many places it is entirely built out already. The only commercially zoned space left is the vast parking lot that surrounds the mall. To densify the suburban mall, whose expanse of cheap asphalt has luckily served as a land bank until now, a developer need only lift the surface parking onto the roof of the mall and fill the void with new uses. It allows the community to continue growing, but with transit instead of cars. Future research should focus on practical steps for deploying this typology in a mall environment. What are the zoning issues involved in adding a high school, new office and residential uses, an intermodal transit facility, or whatever intensifies the land use? Is it best to lay the new uses out in a grid pattern with new streets or alleys to make it walkable?

**Strategic placement of parking**

Parking, when done right, can generate pedestrian trips. Initial research indicates that a grid network of streets encourages people to park once, then meander around a shopping district. But in retail space that is built along boulevards, people tend to park, shop, and drive two blocks to park and shop again. Further research is needed to discover the nuances of this dynamic.

**Drawbacks of this study**

There were a few important drawbacks of my study. Firstly, I was working with imperfect data. Developers were either reluctant to divulge information about their costs and profits
Best practices for building parking above retail

Recruit a parking pioneer
In areas where developers uphold the status quo, communities will need to attract a bold developer who is willing to be the first in a market to try this parking typology. When others see that improved street design translates into higher commercial rents, they will be see the wisdom in the design investment.

Improve public awareness of hidden parking
Rooftop parking’s strongest trait is also its weakest. Parking that is hidden above ground level gives pedestrians a primacy they lack in traditionally suburban streetscapes, but it can create a perception that there is a parking shortage, and can hinder the adoption of the transitional form to accommodate both cars and pedestrians. Adequate signage, public awareness programs, and creative services such as public valets can make a new system user-friendly.

Set up district-wide shared parking
A consistent thread throughout the cases is that parking is open to the public, not dedicated to the retail in the building. This forces people into the public realm between their private cars and their private destinations. It also allows planners to make district-wide assessments for where to provide parking, how much is really necessary (single level rooftop or multi-story structure). Shared centralized parking consolidates cars in one area and fill in surface lots. The challenge is to design parking for efficient use of the spots. Part of the solution, if the Boston’s Westland Avenue Garage is any indication, might be to over-commit the spaces and then employ experienced parkers who have a feel for the rhythm of the customers so they know when to stop filling spots with hourly parkers.

Share ramps where feasible
Building less parking can have a twofold benefit for the pedestrian environment. Aside from
the obvious benefit of constricting the parking supply, it might also result in smaller curb
cuts. For example in L.A., developers who build more than twenty-five parking spots must
provide a parking ramp at least eighteen feet wide for two-way access. But if they build fewer
than twenty-five spots, the ramp dimensions are cut in half, and they can squeeze in another
narrow store along the street. But unless there is some coordination between developers of
adjacent properties, the street might end up with two narrow ramps located right next to
each other or a greater number of curb cuts placed at large intervals.

Unconventional urban design and land use can densify the built environment to prepare it
for a time when there will be many viable transportation options. At the same time, it can aid
planners and “Complete Streets” advocates who want to break the chicken-and-egg cycle of
automobile dependence.
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