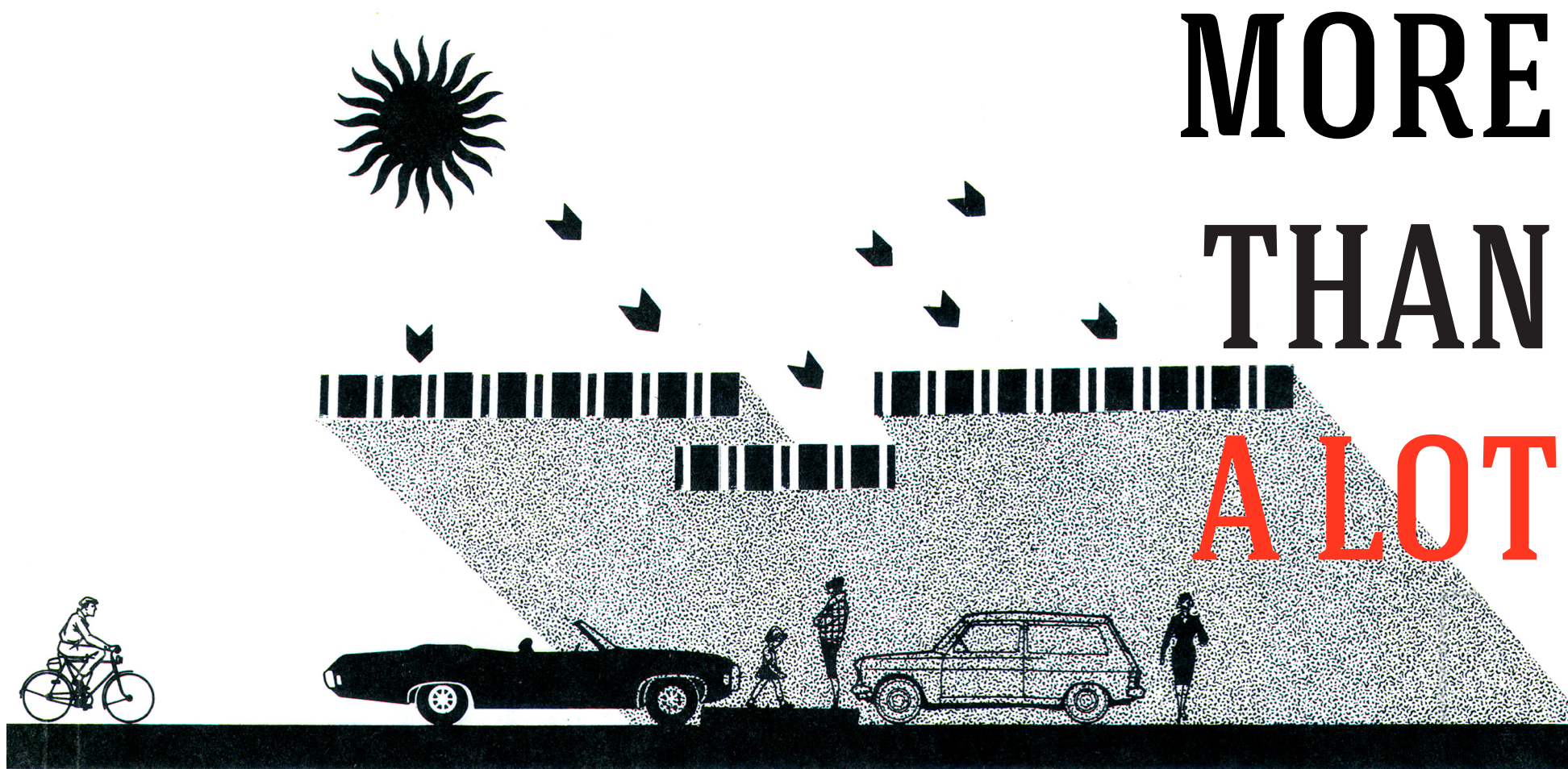


MUCH MORE THAN A LOT



KATHLEEN DEGNAN O'LEARY

PARKING LOT
CULTURE, USE,
AND DESIGN



**KATHLEEN
O'LEARY**

UC DAVIS

**LANDSCAPE
ARCHITECTURE**

**SENIOR
THESIS**

JUNE 2012

MUCH MORE THAN A LOT

A STUDY OF PARKING LOT CULTURE, USE, AND DESIGN

KATHLEEN O'LEARY - JUNE 15, 2012 - SENIOR THESIS

Presented to the faculty of the Landscape Architecture Department of the University of California, Davis, in partial fulfillment of the requirements for the Degree of Bachelors of Science in Landscape Architecture.

Accepted and Approved by

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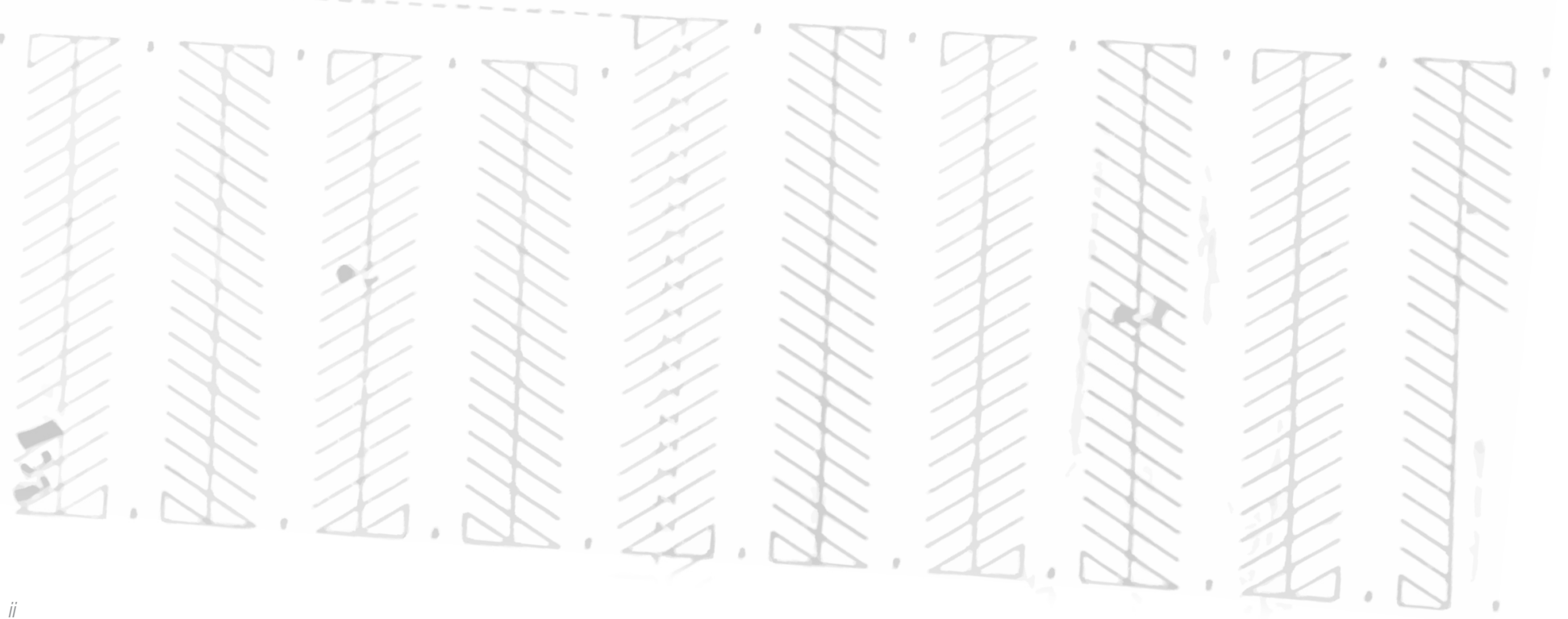
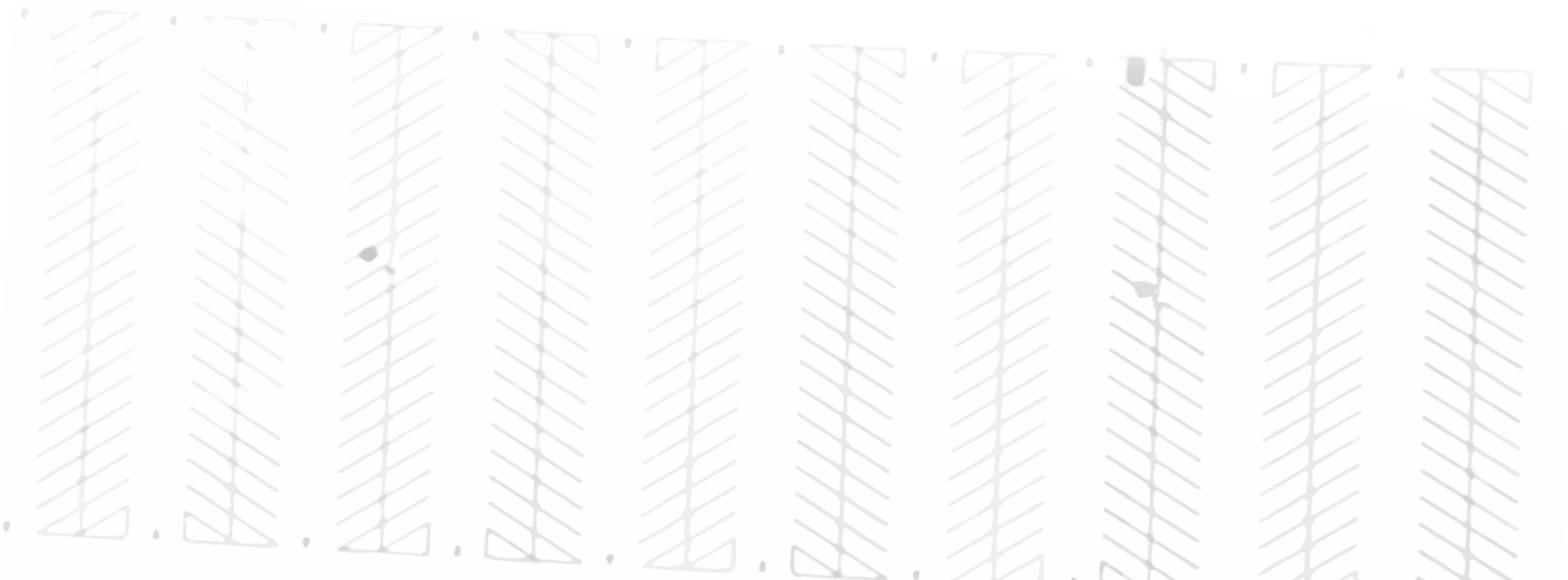


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NOTE: Cover page graphics (before alteration) originally from Parking Lot Landscape Development. Collected and Organized by Gary O. Robinette. ASLA. Environmental Design Press. September 1976.

ABSTRACT

They paved paradise
And put up a parking lot.
-Joni Mitchell, *Big Yellow Taxi* (1969)

To most people, parking lots are dull but useful. Space is set aside, municipal code requirements are followed, and there it sits - a vast black expanse of pavement, striped with enough spaces for the busiest day of the year. While the visual and environmental impact of the parking lot is largely ignored by most of its users, for my senior project I chose to explore parking lots. My project is divided into four sections. The first section gives a brief history of the car and the development of the parking lot to illustrate how the rapid expansion of the parking lot drastically changed our landscape. The second section is dedicated to the environmental impact of parking lots and how we use them in ways not anticipated by their designers or owners. The third section explores parking lots that have been given more thought and that are better incorporated into the fabric of their surroundings. In the fourth section, pulling from the knowledge I gathered from the first three sections, I redesign two existing parking lots with two distinct uses in mind - one that allows the car to dominate and one that reflects possible alternative uses appropriate for that location.

I explored several questions in this project: Can parking lots be greener, more aesthetically pleasing places? Can their negative environmental impacts be minimized or reversed? Can parking lots be better integrated into their surroundings? What do the spontaneous uses of parking lots teach us about how to design these places? Can these spontaneous uses inspire alternative design standards? Can parking lots be built to function as enjoyable social spaces similar to well-designed urban plazas and boulevards?

ACKNOWLEDGEMENTS

I want to thank _____ . You are great.

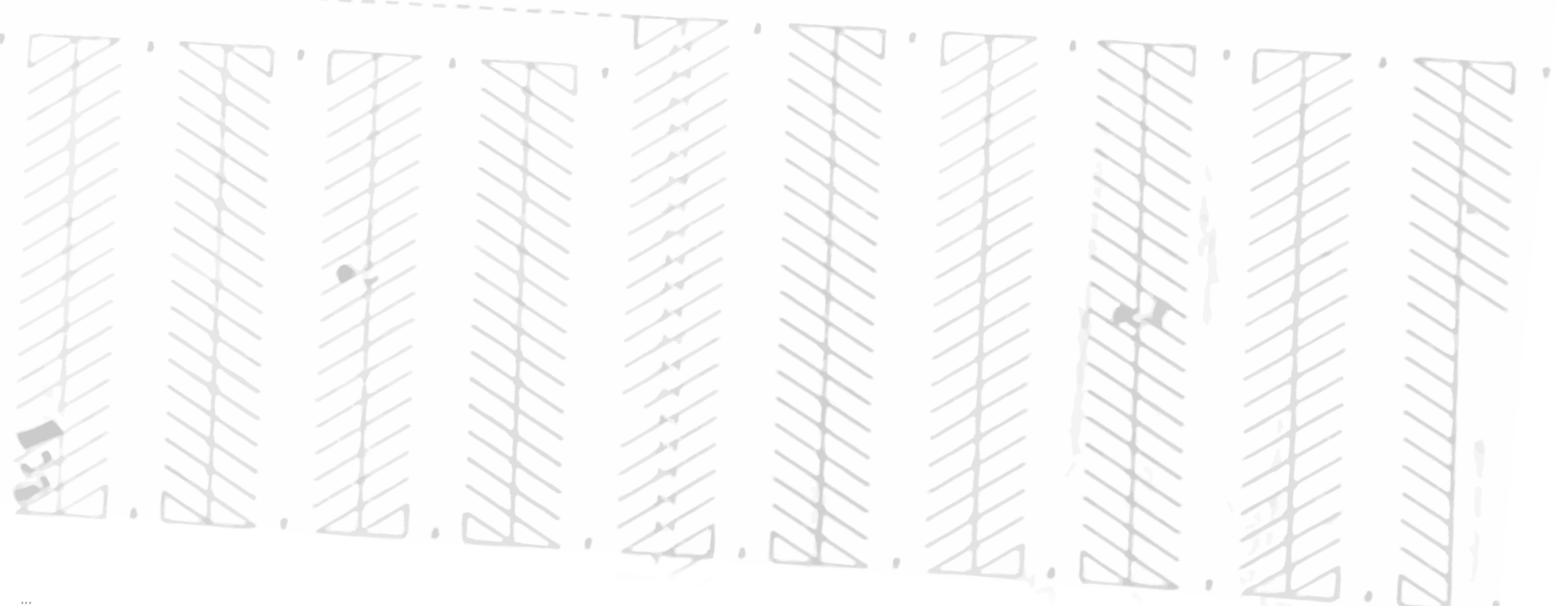
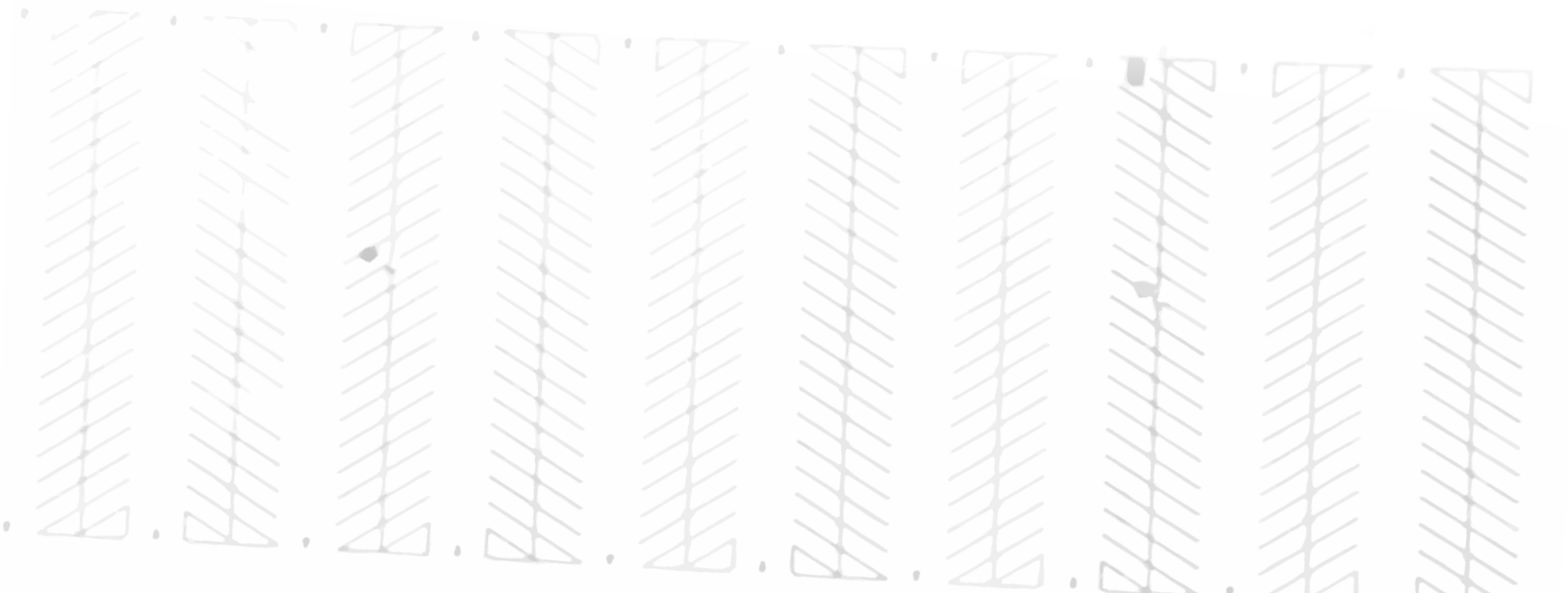
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PART ONE

PART ONE: INTRODUCTION

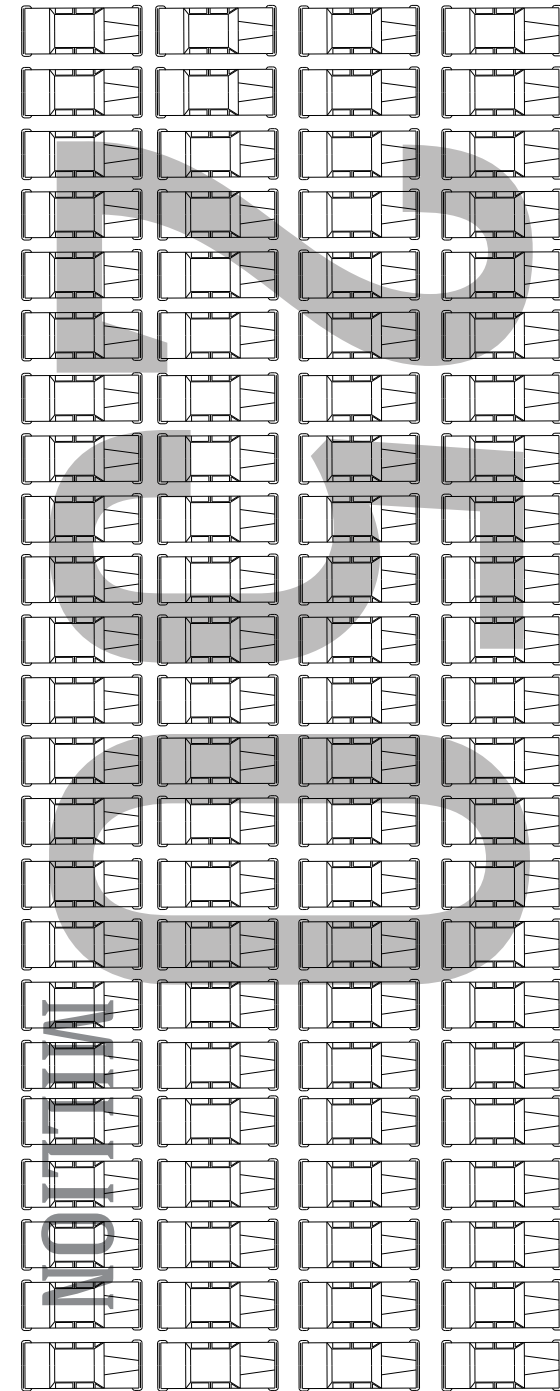
Parking lots are one of the few outdoors spaces pedestrians and cars share. Usually this sharing is for only the brief time when each is coming or going and neither is thinking about the other. However, there are other times when the parking lot gives up its car-dominant use and the pedestrians take over. When this happens, we can begin to see the parking lot as a potentially transformable space. My project I looks at where these alternative uses are taking place and where they might be fostered or encouraged. If we look at the parking lot as a blank slate, we can begin to see it as a more engaging space with wider uses. The parking lot can be transformed from a space exclusively for cars to a space that is - at least temporarily - a public space where cars are secondary and people are first.

Generally, one does not think much about parking until faced with the task of finding a place to park. At peak times, this may involve that doomed feeling that there is not a single empty space on the planet. This is especially true when people converge on a desired destination such as a shopping mall, a city center, a stadium, or a campus. When demand outstrips the supply of apparent parking spaces, tempers flare, blood pressures rise, and rules are often broken. But after a parking place is found, the problem fades from mind until the next time. Are there really not enough parking spots out there or is it just a cultural and psychological perception making us believe the opposite of the truth? In the United States, large areas of land are set-

aside for the sole purpose of storing cars during peak parking hours. “In some U.S. cities, parking lots cover more than a third of the land area, becoming the single most salient landscape feature of our built environment” (Ben-Joseph, 2012). Because of our reliance on cars, the parking infrastructure in the United States is massive. Why does this seem like a waste of space while at the same time there is “nowhere” to park? How many parking spaces do we really need?

To tackle this broad topic, I thought I would start at the most basic level – how many cars are looking for how many parking spots in the United States? There are more than 250 million registered cars in the United States; the average American household owns between 2 and 3 cars (U.S. Dept. of Transportation, 2010).

So how many parking spots are there for these approximately 250 million cars? Until recently there were no studies on the subject. In 2010, researchers at the Department of Civil and Environmental Engineering at the University of California, Berkeley took a “nationwide inventory” of parking spots in the United States and determined that there were between 800 million and 2 billion parking spots in the United States (Chester, 2010). That is a lot of spots - and the number is growing daily. These statistics show there are approximately 500 million more parking spots than there are registered cars – using their lowest estimate. Our frustrating



experience looking for parking is not a numbers problem but a distribution problem.

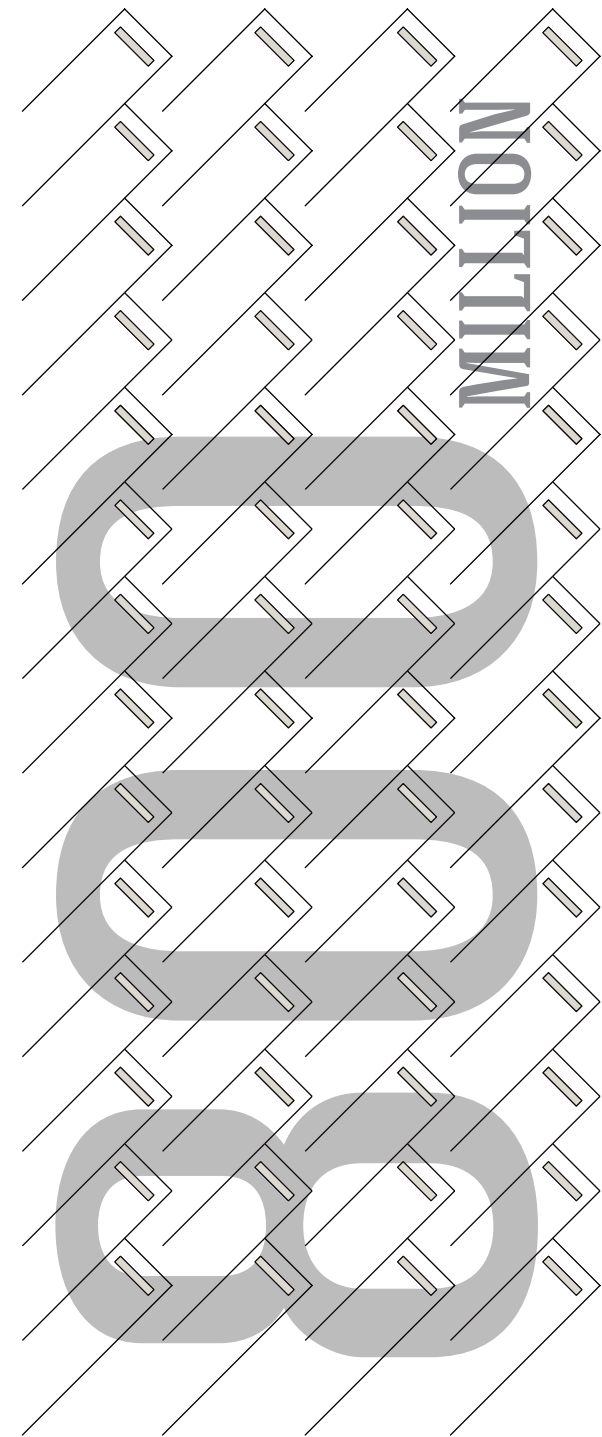
Are all the parking spots clumped somewhere – where no one needs to be? Byran Pijanowski, a professor of forestry and natural resources at Purdue University, uses Tippecanoe County, Indiana as an example to show that there is actually ample physical parking space provided even though our common perception is frequently the opposite. In Tippecanoe County there are 355,000 parking spaces, to 155,000 registered drivers. That is 250,000 more parking spaces than there are registered automobiles. “That means that if every driver left home at the same time and parked at the local minimarts, grocery stores, churches, and schools, a quarter of a million spaces would still be standing empty” (Mieszkowski, 2007). The ratios are shocking, with 3 parking spaces for every resident and 11 parking spaces for every family. Pijanowski did not count private lots or multi-story parking garages, meaning this calculation is a significant underestimate (Pijanowski, 2007). When the study made the local news, people were shocked. They said “Are you crazy? I can never find parking where I’m going!” (Mieszkowski, 2007).

Since the 1980s, city officials have relied on handbooks published by the Institute of Transportation Engineers (ITE) to establish the number of required parking spaces for any new development (Shoup, 2005). The focus of these ITE requirements is not on design, but in establishing the minimum number of spaces for peak use and the standard dimensions for stalls

and lanes. Sometimes municipal codes require perimeter plantings to reduce the visual impact of a parking lot. As a result, most parking lots have a similar bland aesthetic. After the fulfillment of these requirements, other types of design decisions are left up to the designers or architects and often they are not given much additional thought or any budget consideration (Ben-Joseph, 2012).

Donald Shoup - the “parking guru” - is a professor of Urban Planning at UCLA and the author of *The High Cost of Free Parking*. Shoup has looked at these parking lot requirements in great detail, studying the cost of parking lots to cities, to the environment, and to the economy. If a mall is being developed, these ITE surveys dictate how many parking spots there must be. These surveys measure two things to determine parking needs: the surface area of the site and the peak number of cars that may be demanded on the busiest day of the year (for shopping centers – the day after Thanksgiving, and for church parking lots, days like Easter and Christmas).

Shoup is a critic of these parking ratio formulas but has had little success in challenging them (Ben-Joseph, 2012). Shoup sensibly asks - what about the other 360-something days of the year (and especially in a poor economy)? Obviously, parking spots are left empty. His argument is that urban transportation engineers create precise numbers based on uncertain estimates. “It would be hard to find two variables that are more unrelated than floor area and parking demand” (Shoup, 2003). He also clarifies a common thought that we all know and that serves to reinforce the Tippecanoe



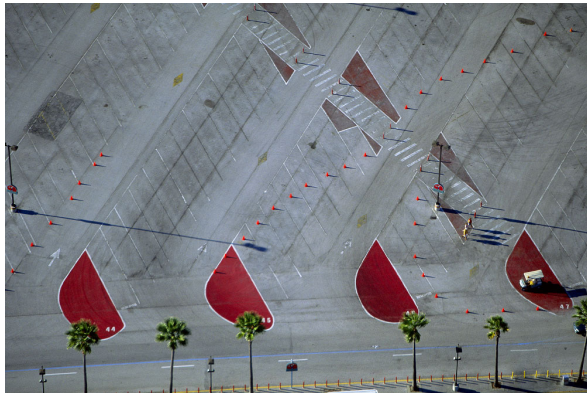


FIG 1.1

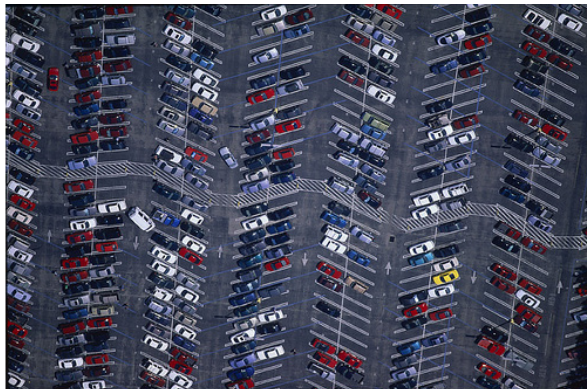


FIG 1.2

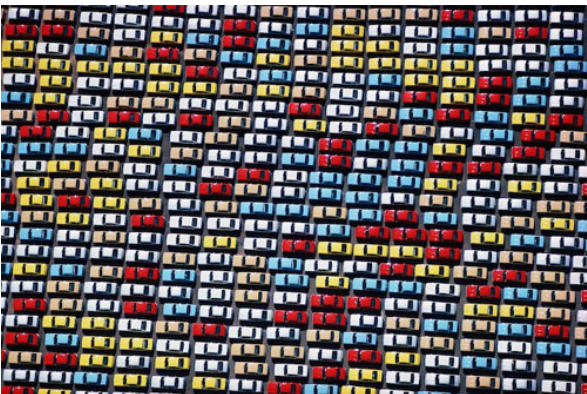


FIG 1.3

County example: a parking spot should be there when we want it and where we want it. The driver's sense of frustration when parking is hard to find stems from the fact that drivers believe free parking is a right and planners, developers, and most designers believe it is a mere formulaic spatial requirement set by those ITE handbooks.

America has been in love with cars since they first arrived in the early 1900s. Cars remade American geography: cars dominate the landscape both while they are in motion and when they are at rest. As long as cars exist, we will need space to put them – a lot of space. Shoup points out that 95% of the time cars are doing nothing - they are parked, each one occupying the standard 9 by 18 foot rectangle of pavement (Shoup, 2005). By the industrial age, it was clear that cars were causing congestion problems on city streets. Cities tried to address the problem by pushing back buildings, narrowing sidewalks, and widening streets, for the sole purpose of creating space for parking and improving traffic flow. This was not enough. Soon developers and business owners were required to provide off-street parking for customers and employees. (These requirements stemmed from what was the beginning of zoning laws.) This parking lot solution seemed practical at the outset, but in reality it promoted sprawl and weakened urban design by spreading buildings apart from one another to make room for acres and acres of blacktopped parking lots (Jakle & Sculle, 2005).

Parking lots are deeply integrated into almost every human settlement and are by now so ordinary to us that we tend to forget about them until we need

them and even then we only notice what we are after – the golden parking space. Because of this we also tend to forget about the importance of the pedestrian in the parking lot. It is simple logic that the number of pedestrians who use a parking lot will always be at least equal to the number of cars in the lot. The fact is that parking lots are used by both people and by cars, and yet the majority of physical lot design is for only one of those users. There is a clear need for multi-user designs.

What is there to do about these car dead-zones that rule so much of our landscape? This is the question I considered for my senior project. I looked at “good” pedestrian-friendly parking lots with flexible uses, and “bad” car-dominated parking lots, as well as the abandoned lots that are slowly finding new uses.

By observing social behavior and patterns of interactions between cars and pedestrians in parking lots, I hope to discover better designs for parking lots. How can we make parking lots supportive and encouraging to pedestrians? There may be no quick or easy answers. We need parking lots, but it seems they have just grown up in our midst without giving them much careful thought. Perhaps it is time to reconsider.



FIG 1.4

A BRIEF HISTORY

PARKING

The word traces its origins to the medieval Latin word *parricus*, meaning an enclosure.

A LOT OF HORSES

Before the automobile, people traveled primarily by horse or horse-drawn wagons. When you needed to park your horse you tied it to a hitching post, usually provided at the front of a building. This was also known as “curbing.” In larger cities, main streets would become congested with horses and wagons, just as they do today with cars (Jakle & Sculle, 2005).

The use of the hitching post continued until the number of curbed horses grew to be a problem. Large numbers of horses - and their manure and its olfactory side effects - created environmental concerns at these curbing stations. It soon became a standard practice to keep the horses at a safe distance, at the end of main streets in livery stables, barns, and corrals. This habit of clustering horses in one area transferred to cars when the automobile began to replace the horse (Ben-Joseph, 2012).

FROM HORSES TO CARS

When cars first became the prevalent means of personal transportation, motorists parked their cars at the same curbs where they had tethered their horses. Livery stables soon switched from boarding and renting horses to servicing and renting cars. Because early cars were usually open-topped converted carriages, covered parking was essential. Transforming the barn from horse stalls to parking places was not complicated (Miller, 1988).



FIG 1.5
Horses were parked at an angle to the curb as cars are today.



FIG 1.6
A victorious suitor mocks his competitor's automobile with a flat tire in 1914. Soon, Henry Ford's Model T, the machine for the masses, would replace the horse and buggy with other flights of fantasy.

A LOT OF CARS

As motor vehicles grew both faster and more numerous, they vied for space with the horse-drawn carts as well as each other. Cities began to develop and enforce traffic laws to deal with congestion and competition for space. There was a growing need to pave road surfaces, now used predominantly by cars and not the horse-drawn wagons they were quickly replacing. The rapid increase in automobile production quickly pushed the transition from municipally owned parking lots to private ones (Jakle & Sculle, 2005). Over the years, the number of automobiles in the U.S. and around the world, has increased exponentially (Car History, 2010):

- **1902:** 6,000 automobiles in the U.S.
- **1910:** 130,000 automobiles, and 35,000 other (trucks, delivery wagons, etc.) in the U.S.
- **1924:** 13.5 million passenger cars and 1.7 million trucks in the U.S.
- **1920-1929:** Production of cars jumps from 2 million to 5.5 million vehicles and annual registration jumps from 9 million to 26.5 million vehicles in these nine years.
- **1940s:** In 1940, the U.S. produced about 5 million cars. Between 1942 and 1946 no cars were produced because of World War II. The first luxury cars were made in the late 40s.
- **1960:** 28% of land in downtown L.A. was dedicated to streets and another 38% to off-street parking.
- **1972:** Detroit became known as the “Motor City” with 74% of the city’s downtown devoted to automobile movement or storage.
- **1980s:** The number of cars in the U.S. increased at a faster rate than the population.
- **1990s:** The number of cars increased in the U.S. by over 22 million.
- **2006:** Over 49,886,549 passenger cars in the world.
- **2009:** Over 600,000,000 passenger cars in the world.

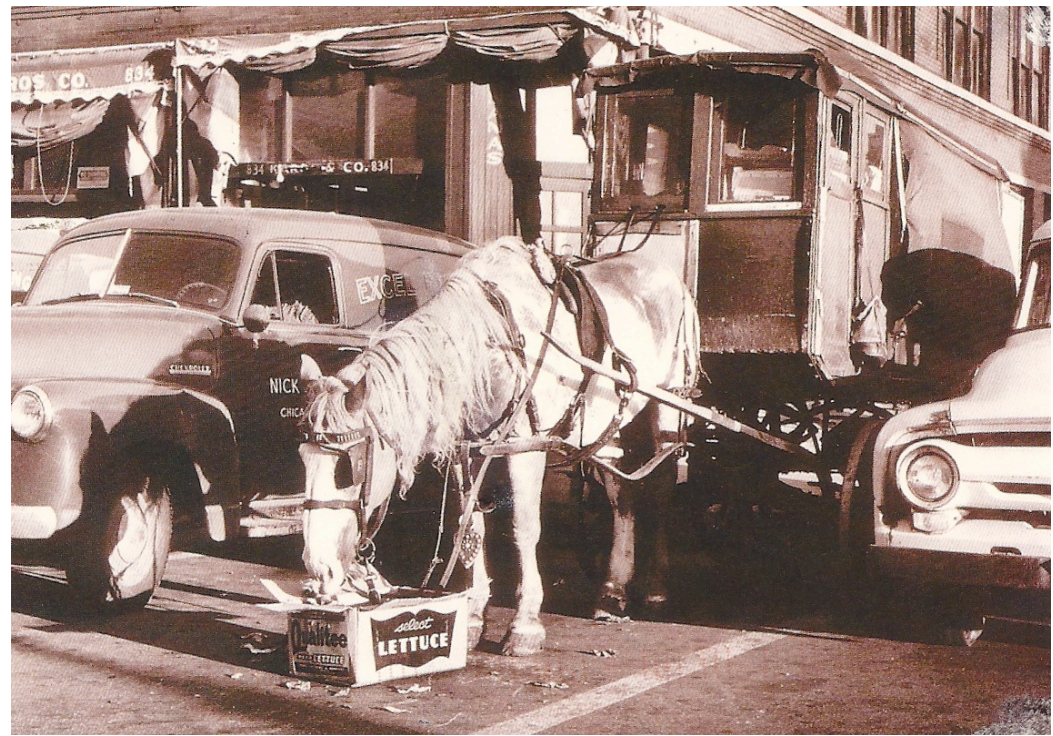


FIG 1.7
Postcard. A lettuce-eating horse parked with cars.

FIG 1.8
Chicago, Illinois 1929. Cityscape and a parking lot.



LOTS THEN, LOTS NOW

THEN: Urbanist Jane Jacobs was one of the first activists to attack the parking lot as an anti-urban form. Jacobs referred to urban parking lots as having “the curse of border vacuums.” A border being “a single massive or stretched-out use of territory.” She wrote that parking lots formed borders and borders in cities usually made for destruction of neighborhoods. Jacobs believed parking lots were “instruments of city destruction.” Her extreme position may have been necessary at this time as she witnessed how the insatiable appetite for cars changed cities. Jacobs believed that the automobile, and the infrastructure that came with it, was ruining the urban fabric: “city character is blurred until every place becomes more like every other place, all adding up to Noplace” (Jacobs, 1967).

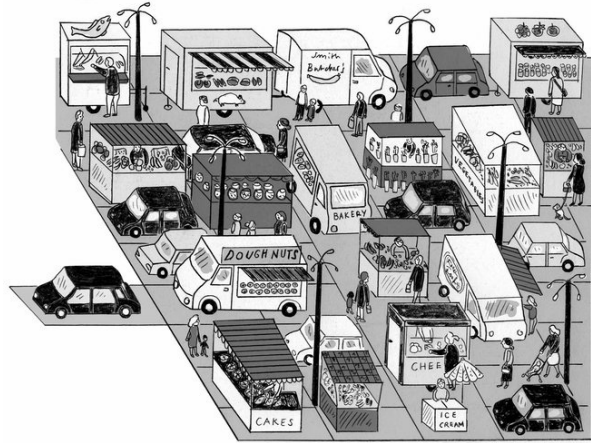
NOW: The most recent work on parking lots is from MIT professor and urban planner Eran Ben-Joseph. Ben-Joseph embraces parking lots, and rather than completely despairing of them, he believes we should give them more thought. “Despite their prevailing dullness and mundane design, parking lots are an integral part of our culture and social way of life. They should be treated not as a residual space of our built world, but as an integral part of it” (Ben-Joseph, 2012).

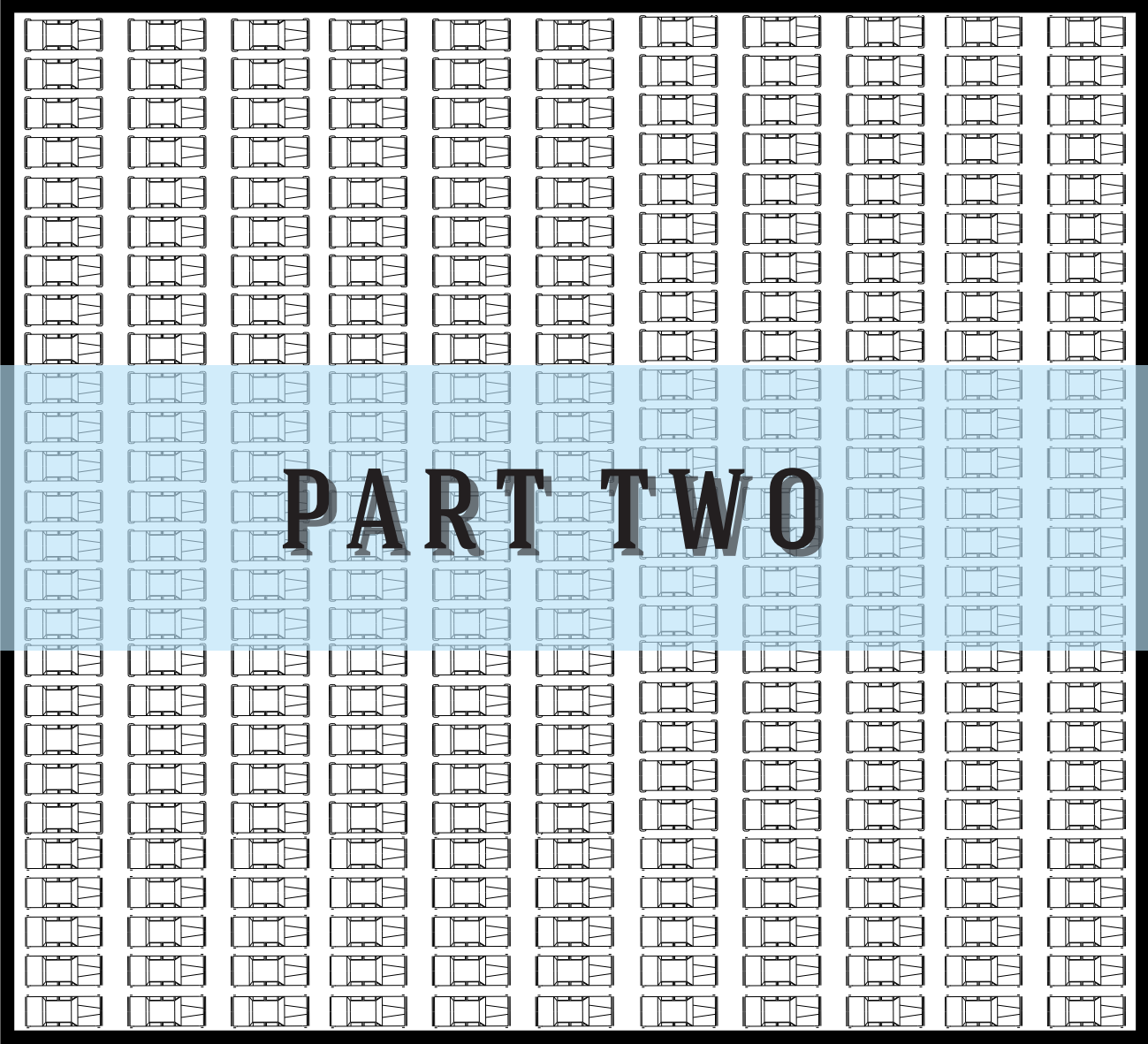


FIG 1.9
Chicago, Illinois. 1929. A parking lot full for a football game at University of Southern California (USC).

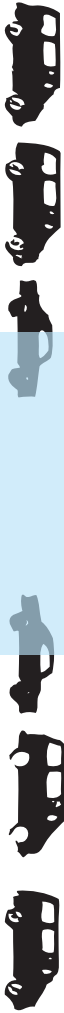
FIG 1.10
Columbus, Ohio 1964, Northland Mall grand opening. The mall is now defunct.

FIG 1.11
Energy Plaza in Denver, Colorado in the 1970s. Parking lots are everywhere.





PART TWO



THE ENVIRONMENT

Parking lots impact the environment in many ways - most of them negative. In this section, I have broken down the environmental impact of the parking lot into five categories: lighting, water, heat, landscaping, and spatial inefficiency.

The average parking lot uses a standard arrangement of space and a standard group of materials. In these five categories we are able to see the defects in the current approach to parking lots, and accordingly, can begin to understand how the parking lot may be changed.

Separation

between parking areas and circulation systems

between vehicular and pedestrian circulation



Seepage

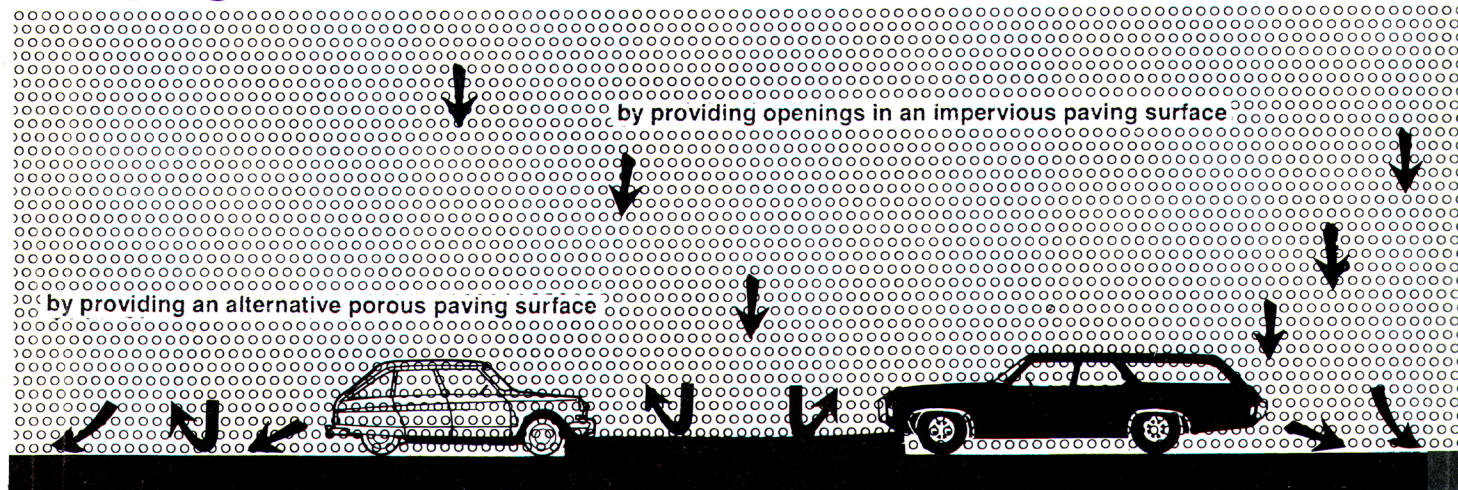


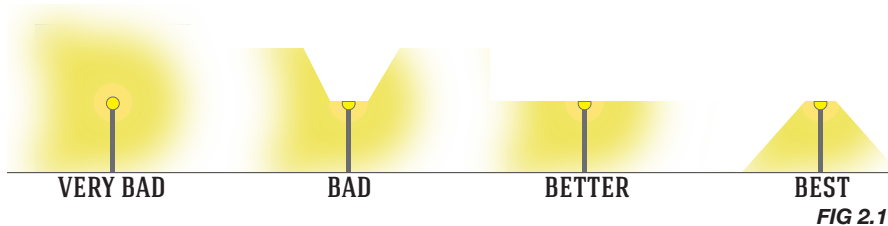
FIG 2.0

1. LIGHTING

Lighting is considered an important safety feature in most parking lots. The goal of bright lighting is to deter crime, foster a sense of safety in users, and increase visibility for drivers and pedestrians. While parking lots are frequently blazing with light as a consequence, more carefully designed lighting and a more thoughtful choice of light pole placement will create a much safer environment.

One obvious downside to all this illumination is light pollution. Light pollution is the artificial extension of daylight. Cities all over the world are lined with block after block of bright glowing streetlights, lit-up storefronts, illuminated billboards and parking lots glowing like the Las Vegas strip. Car dealerships, using towering mega-watt stadium lamps to show off their sales lots at night, are prime offenders. Pole lights, yard lights, porch lights, garage lights, and deck lights also banish the darkness. All of these combine to create that ubiquitous orange glow over our cities and suburbs. This light pollution vanquishes all but the brightest stars and planets in the night sky (IDA, 2012).

In addition to polluting the night sky, bad lighting causes glare, harsh shadows, and higher operating costs. To address these concerns, some cities are adopting outdoor lighting laws that require anti-glare, no-spill-off measures. These corrective steps include using correct luminary optics, improved pole placement layout, appropriate pole height, and shielding accessories to help reduce light pollution (Ben-Joseph, 2012).



At G'bessi Airport in Conakry, Guinea, students read under the dim parking lot lights. Approximately one fifth of Guinea's 10 million people have access to electricity. Those who do have electricity commonly experience frequent power outages. The airport parking lot is one place where the lights will never go out (Blackwell, 2010).



FIG 2.2
Bright lights from an auto dealership shine through the night.

FIG 2.3
Young adults in Guinea studying under the airport parking lot lights.

2. WATER

Asphalt and concrete are the most commonly used parking lot surface materials in the United States. There are many problems created by the use of these impervious surfaces. Asphalt and concrete do not allow water to soak into the ground to recharge the aquifer. Instead, runoff is directed into stormwater drains taking with it sediments bound to oil, grease, heavy metals, and other toxic chemicals left behind from human and auto use. When it rains, a one-acre parking lot can produce almost 16 times the volume of runoff as a similarly sized meadow (Ben-Joseph, 2012).

Storm drains lead to municipal sewer systems that are frequently over-capacity and overflows are common. When water leaves these systems, by necessity it goes into nearby bodies of water. These large volumes of runoff cause flooding, erosion of stream banks, damage to stream side vegetation, and can cause many other water quality problems that have a negative effect on wildlife ecosystems (USGS, 2012).

There are simple design solutions to slow down or reverse these problems. These can be added to existing parking lots or included in the development of new ones. Having water pass through catch basins or rain gardens is an approach used to slow down and minimize runoff. These vegetated systems use plants to infiltrate and filter water before it sinks back into the ground rather than a storm drain. Using porous surface materials also allows water to filter back into the aquifer. Permeable concrete and interlocking pavers are becoming more popular for several reasons: they minimize runoff, look attractive, and are easy to maintain (Perry, 2012).

Stormwater swales, planters, rain gardens, stormwater curb extensions, and green gutters all may be used to manage stormwater. In new construction, sensitivity to stormwater issues is leading to the use of better grading and more appropriate planting design.

In parking lots, it is important to recognize the vast opportunities to transform grey space into green space. "A joint study by the American Rivers, the Natural Resources Defense Council, and Smart Growth America showed that in some of the largest metropolitan areas, the potential amount of water not infiltrated annually ranges from 14.4 billion gallons in Dallas to 132.8 billion gallons in Atlanta. Atlanta's "losses" in 1997, for example, amount to enough water to supply the average daily household needs from 1.5 million to 3.6 million people per year" (Ben-Joseph, 2012).



FIG 2.4
Oil spills and other sediment from cars sits on the surface of impervious parking lots.



FIG 2.5
Parking lot floods push oils, heavy metals, and other sediment into the drains and can cause water quality problems.

FIG 2.6
Before/After: Stormwater facilities can be constructed using curb cuts and a certain plant palette. The plants' absorption of water will lessen the amount of water sent to waste water facilities.



3. URBAN HEAT ISLAND EFFECT

In our cities, asphalt and concrete surfaces dominate the landscape. Once naturally vegetated landscapes are now rooftops, streets, and parking lots. Temperatures of paved surfaces can be 50° to 90° F (27° to 50° C) hotter than in vegetated areas. This drastic rise in temperature is caused primarily by the dark grey-black coloring of asphalt and the low moisture content of impervious materials. Paved areas collect heat throughout the day, and at night the heat is slowly released, creating a dome of elevated warmer air temperatures called the “urban heat island” (Berdahl and Bretz, 1997).

A study comparing land types and temperatures done by NASA in Hunstville, Alabama illustrates the urban heat island effect. Specific temperatures were measured over a mall and its surrounding parking lot and a nearby forest area for comparison. The mall and parking lot reached temperatures up to 113° F, while the nearby forest only reached an average of 85° F during the same time period. Researchers also compared temperatures at different locations within the parking lot. The spot check temperature in the middle of the parking lot (where there was no vegetation) reached 120° F. In a vegetated island that contained a few trees, the temperature was reduced by almost 30° F (Luvall and Quattrochi, 1996).

Trees and plants provide shade, but also absorb the heat from the sun. Can parking lots be more like plants? What if lots could absorb the heat just like the plants do. Novotech, Inc. in Acton, Massachusetts is currently developing new technology for that purpose. In Novotech’s system, the heat absorbed by the asphalt pavement is used to make hot water or the heat energy is used in absorption chillers to provide cooling for nearby buildings. Novotech is currently testing its technology which it estimates will heat water to 150° F, more than warm enough for most hot water needs. This heat transfer process will also help remove heat from the pavement, reducing the urban heat island effect. While this system is not yet available, its concept sounds promising (Hasek, 2010).

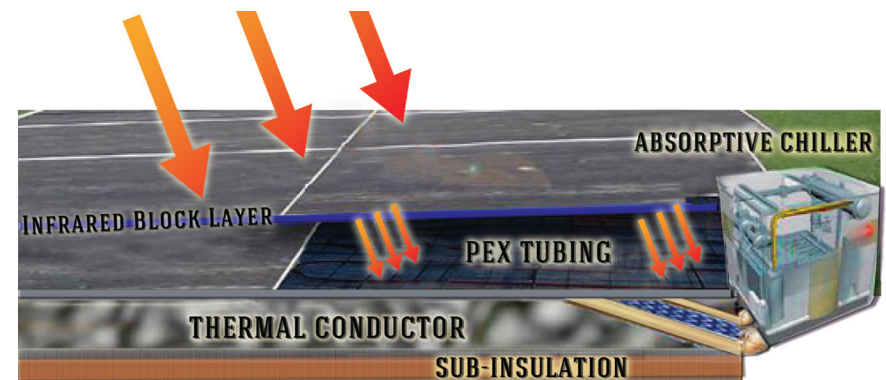
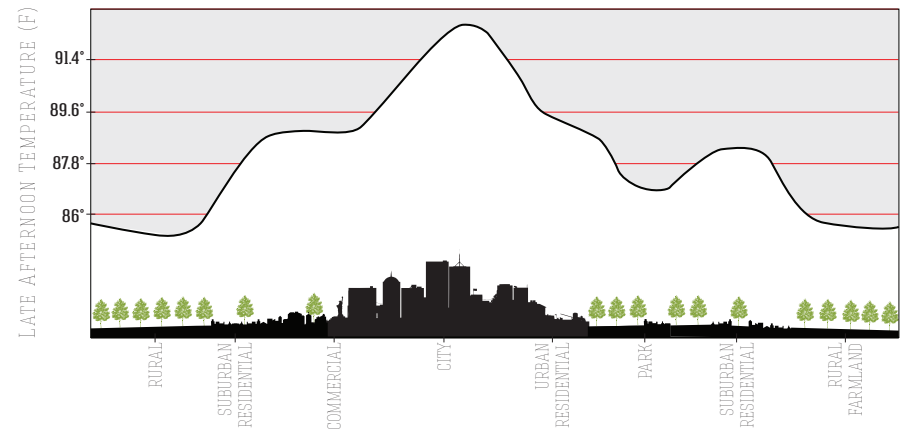


FIG 2.7
Looking at average temperature versus land type shows the urban heat island effect.

FIG 2.8
A hot, dry, barren parking lot in Las Vegas, Nevada.

FIG 2.9
Novotech's thermal conductor underneath asphalt can heat water for nearby buildings.

4. LANDSCAPING

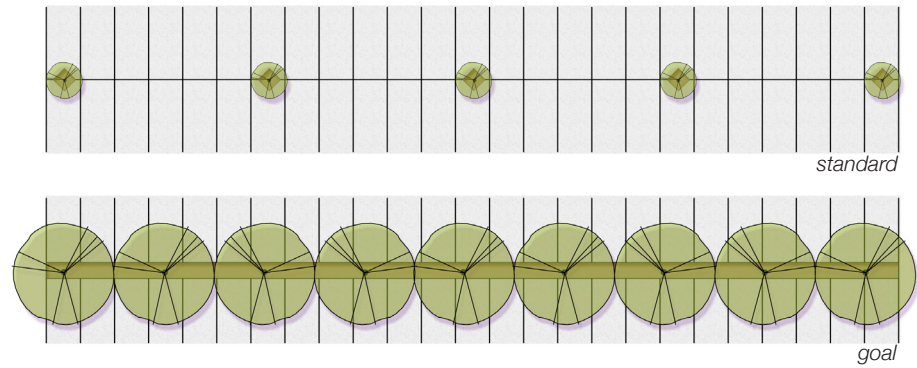
Most parking lots are minimally landscaped. City requirements for parking lot landscaping usually demand a percentage of landscaped area to paved surface area between 2 to 10 percent landscaped lot coverage. These city codes usually don't specify how the landscaping is to be distributed, and in most instances, if the landscaping is there at all, it is pushed to the edge as a buffer between the lot and its neighbors. This sort of perimeter planting results in minimal shading to the pavement.

In addition, if there are less than 20 parking stalls, most municipal lots do not require any interior vegetation whatsoever. Some cities have lower requirements. For example, in Colorado Springs, Colorado, a lot with 15 or less spaces requires interior lot planting; in Salisbury, North Carolina, it is 12 spaces; and for Virginia Beach, Virginia, it is only 10 parking spaces (Wolf, 2004).

Some cities have other more specific interior landscape requirements. For example, the city of Portland, Oregon, requires one large tree for every three parking spots, or one small tree for every two parking spots. Portland also requires that at least 20% of the trees be evergreen (City of Portland, 2011).

Sacramento, California, has even more complex landscaping requirements to ensure that there is proper shade coverage. The city hopes to have 50% of its parking lot surfaces shaded within the next 50 years. The amount of shade per tree is determined by using a calculation to find the percentage using the parking lot square footage and the tree crown square footage (City of Sacramento, 2003). (An example is shown in Figure 2.10).

While universal solutions are impossible to define, thought given to landscaping parking lots will no doubt lead to improved design and less negative environmental impact.



PARKING SPACES: 50
 STALL DIMENSION: 18' X 8'-6"
 NUMBER OF TREES: 5 (9 10' CANOPY)
 TOTAL AREA: 7,650 SQ. FT.
 SHADED AREA: 312.06 SQ. FT.
PERCENTAGE: 4.7% (TOP)

PARKING SPACES: 50
 STALL DIMENSION: 16' X 8'-6"
 NUMBER OF TREES: 9 (20'-25' CANOPY)
 TOTAL AREA: 7,650 SQ. FT.
 SHADED AREA: 4,417.87 SQ. FT.
PERCENTAGE: 57.75% (BOTTOM)



FIG 2.10
 A canopy shade cover study comparing 4.7% and 57.75% landscaping.



FIG 2.11
 Perimeter landscaping in a Chicago stadium parking lot.

FIG 2.12
 Interior landscaping in a parking lot in West Manchester, N.H..

5. EFFICIENT SITE DESIGN

CAR SIZE, STALL ARRANGEMENTS, CIRCULATION

Parking spaces have to accommodate cars of varying sizes. Typical parking spaces range from 8.5 to 10 feet wide and 18 to 20 feet long. Parking spaces are generally oriented at angles of 90°, 60°, 45°, or 30°. The width of access lanes between the bays of stalls also varies depending on stall orientation. For 90° parking stalls, access aisles are between 20 to 22 feet wide. For angled parking stalls, these aisles can be narrower - a minimum 12 feet. However, this sort of angled parking permits fewer stalls.

PEDESTRIAN CIRCULATION

Pedestrian circulation in parking lots is very important. The layout should be intuitive, safe, smart, and convenient. There should be space for movement between cars and curbs for people. It is important to consider direction of destination. It is smart to round the edge of curbs because people take shortcuts whenever possible.

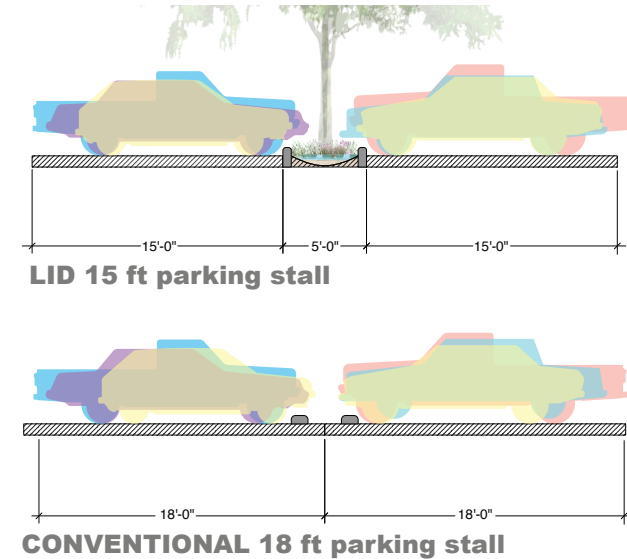
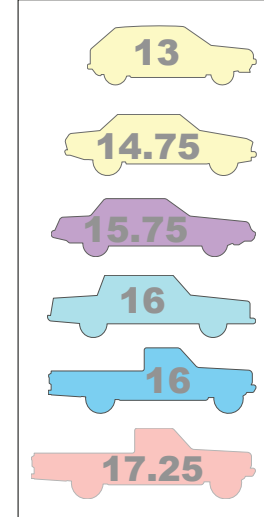
FIVE PASSIVE SPACE SAVING STRATEGIES

1. Reduce Parking Stall Lengths: 14' to 15' from stripe to wheel stop.
2. Reduce Travel Aisle Widths: 20' to 22' max for two-way head in parking.
3. Combine leftover space with required perimeter landscape space.
4. Reduce or eliminate under-utilized parking stall areas.
5. Switch from angled parking to 90 degree parking for more landscape space.

SIMPLE DESIGN PROCESS - STORMWATER

1. **ADDRESS THE SITE.** Emphasize efficient site design to maximize potential landscape area and minimize impervious surface. Design the site to drain stormwater runoff and minimize underground piped infrastructure. Add new trees and preserve existing mature trees.
2. **CHOOSE STORMWATER FACILITIES OPTIONS.** Implement stormwater facilities that actively capture and treat runoff from impervious surfaces. Design vegetated swales, planters, rain gardens, and other stormwater facilities based on a site's contextual land use and the various constraints each site presents.
3. **INCORPORATE ALTERNATIVE TRANSPORTATION.** Green streets and parking lots are not just about managing water; they should also provide and promote options for alternative transportation. Whenever possible, incorporate pedestrian walkways, bike lanes, and mass transit (Perry, 2012).

AVG CAR LENGTHS



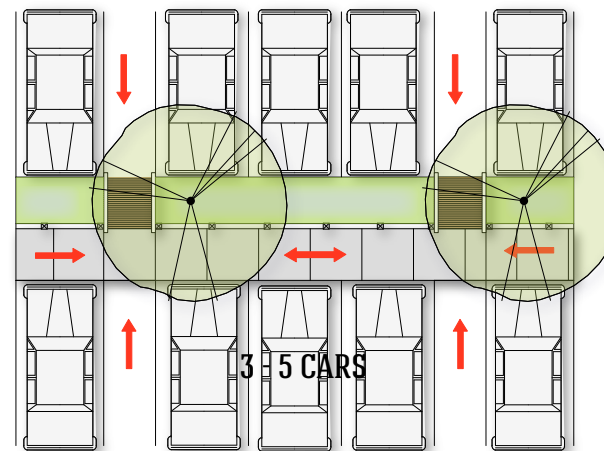
Chapter 33.266
Parking And Loading

Table 266-4
Minimum Parking Space and Aisle Dimensions [1,2]

Angle (A)	Width (B)	Curb Length (C)	1 Way Aisle Length (D)	2 Way Aisle Width (D)	Stall Depth (E)
0° (Parallel)	8 ft.	22 ft. 6 in.	12 ft.	20 ft.	8 ft.
30°	8 ft. 6 in.	17 ft.	12 ft.	20 ft.	15 ft.
45°	8 ft. 6 in.	12 ft.	12 ft.	20 ft.	17 ft.
60°	8 ft. 6 in.	8 ft. 6 in.	16 ft.	20 ft.	17 ft. 6 in.
90°	8 ft. 6 in.	8 ft. 6 in.	20 ft.	20 ft.	16 ft.

Notes:
[1] See Figure 266-4
[2] See Section 33.266.130.F.3 for information on parking spaces for the disabled.

PEDESTRIAN DESTINATION DIRECTION



PERPENDICULAR PEDESTRIAN FLOW to stormwater facility alignment

FIG 2.13
Average car lengths with 15ft vs 18ft stall lengths.

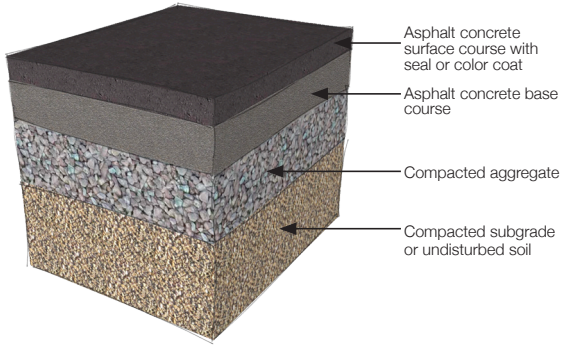
FIG 2.14
General dimensions and orientations of stall lengths, aisles, and angles.

FIG 2.15
Circulation of automobiles and pedestrians should be simple and direct. It must be easy to use.

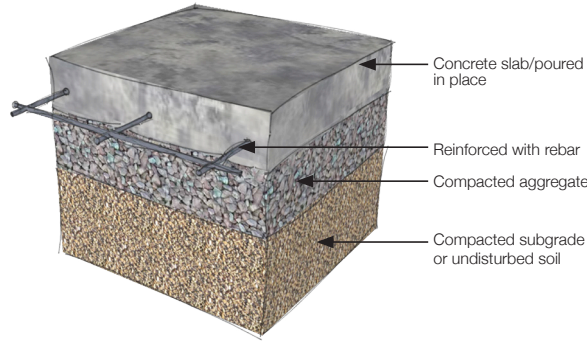
SURFACE MATERIALS

IMPERVIOUS SURFACES

1 ASPHALT PAVEMENT



2 CONVENTIONAL CONCRETE



WHY CHOOSE PERVIOUS PAVING?

PROS:

Reduces the size of stormwater treatment measures.

Can be the only viable option in ultra-urban conditions or in parking lots that are interiorly drained.

Can be used on multiple street and parking lot applications with a wide variety of materials available.

CONS:

May require well-drained native soil.

Has a higher installation cost and can be difficult to maintain if not installed correctly.

Has a limited infiltration effectiveness on street slopes over 5%.

PROS

Asphalt is durable and resilient. Can be used in areas that receive heavy traffic and high speeds.

Low up-front costs in construction.

Can be stamped with patterns and comes in various colors.

If maintained, asphalt parking lot ranges from 10 to 15 years.

CONS

Lifespan is shortened by several years if neglected.

Asphalt is impervious.

Dark color generates a lot of heat. Can soften in warm weather.

Prone to pot holes and rutting.

May produce glare when dark and rainy.

Uses more oil in production than concrete. Soluble by gasoline, kerosene, and other petroleum solvents.

PROS

Concrete is strong, good for heavy traffic.

Has a smooth surface.

Low heat absorbency because brighter color. Will not give off as much heat and offers better visibility day and night.

Less potholes in comparison to asphalt.

Concrete is recyclable.

Available with several finishes, colors, and various textures.

CONS

Old concrete can chip, flake, or break.

To repair, you usually need to tear it up and replace it.

Concrete is much more rigid than asphalt, does not have as much flexibility.

Can cause glare.

Joints are required.

Some types can deteriorate from de-icing salts.

Conventional concrete



Pervious concrete



FIG 2.18

SURFACE MATERIALS

PERVIOUS SURFACES

1 PERVIOUS CONCRETE PAVEMENT

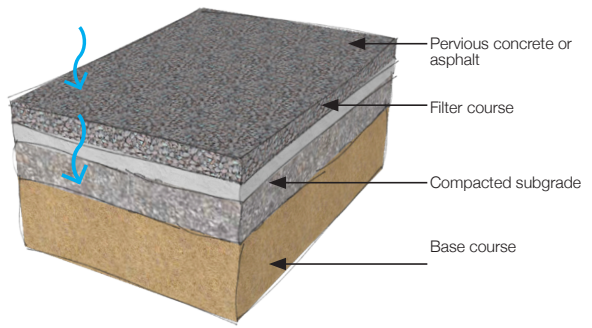


FIG 2.19

2 PERVIOUS INTERLOCKING JOINT PAVERS

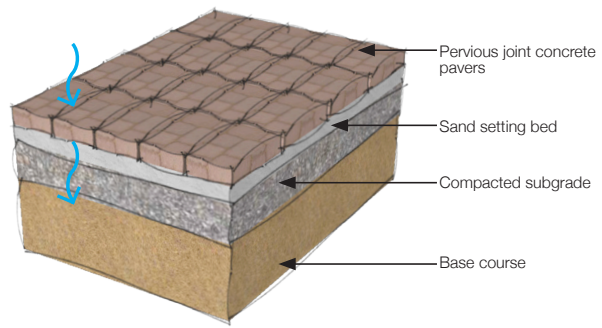


FIG 2.20

3 REINFORCED GRAVEL GRASS PAVING

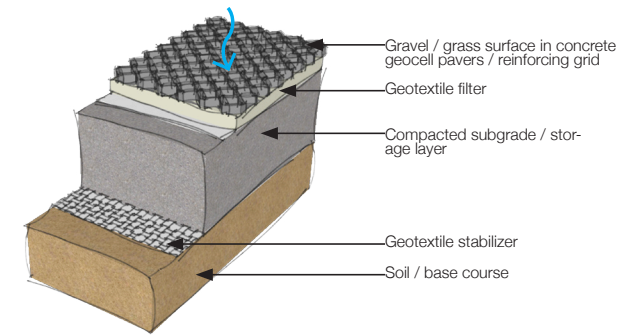


FIG 2.21

PROS

Porous spaces allow water to pass through, reducing the size of stormwater treatment measures.

Pervious asphalt/concrete is becoming more common and can be used in both street and parking lot conditions.

Muffles noise and reduces hydroplaning.

CONS

Pervious asphalt can be prone to rutting.

Both technologies have a higher cost to install compared to conventional paving and requires maintenance to limit clogging.

There is little design flexibility.

PROS

Pervious asphalt/concrete is becoming more common and can be used in both street and parking lot conditions.

This system is widely applicable to both small and large paving applications and offers good design flexibility.

CONS

Can require more labor to be installed, especially to meet ADA requirements.

Repairs can more easily be made.

PROS

Reinforced grid systems have overall less material to install.

Does offer some flexibility with types of gravel color and low planting types.

CONS

Are limited to low-use areas such as residential driveways and parking lot applications. May not be suitable in colder climates where snow plowing is needed.

Very few examples are available to show widespread success.

(Pros/Cons: Time Saver Standards For Landscape Architects and Perry)

THE TEMPORARY

FLEXIBILITY = COMPLEXITY

“No better place than the flat, empty horizontal surface of a parking lot for festivals, markets, open theaters, dance parties, formalized or spontaneous” (Ben-Joseph, 2012). While parking lots are designed for one precise function, and permanently striped to establish that function, they are essentially blank spaces that easily lend themselves to multiple different uses. Spontaneous and temporary users reveal the many possibilities of a parking lot. Because of their blankness, parking lots are highly malleable. The apparent black and white simplicity of the parking lot masks its complexity; temporary users reveal it.

FLEA MARKETS

ALAMEDA NAVAL AIR BASE

The Alameda Naval Air Base in Alameda, California, has been sitting empty since 1997. The air station consists of giant paved areas including two 8,000-foot runways and over 30 miles of roads. Buildings, left empty because of asbestos, and a recently-installed skate park line the entry of one particular unused parking lot. This lot is converted into a giant antique sale on the first Sunday of every month. With spectacular views of the city, the sale is packed by six o'clock in the morning with bargain hunters coming from all over Northern California. Food stalls and trucks line each side of the space making it a pleasant family outing for those interested in more than a great flea market find (Alameda Naval Air Museum, 2012).

BART PARKING LOTS

BART's Ashby Station parking lot in south Berkeley has been converted into a flea market every Saturday for the past 30 years. The South Berkeley Neighborhood Development Corporation has made numerous attempts to develop this lot into residential buildings, but the plans have failed every time. The flea market organizers backed with strong public support have opposed any development. “There is no alternative location that provides the same benefits, security, and central location in the community as the one the Flea Market currently occupies. Moving the Flea Market means killing it” (Brenneman, 2005).

Other BART parking lots also make for great use at night or on the weekends. On Thursday nights at the Rockridge BART station young adults play foursquare on courts drawn with chalk. Some nights the lot is used for medieval jousting reenactments (Woodall, 2011).



FIG 2.22
Alameda Naval Air Base parking lot is transformed into a giant antique sale.

FIG 2.23
Hundreds of parked cars at the antique sale with San Francisco in the background (top right).



FIG 2.24
The Ashby BART parking lot flea market has been happening every Saturday for over 30 years (left).

FIG 2.25
The Ashby BART parking lot during the week (top right).



FIG 2.26
Young adults play four square in the Rockridge BART parking lot on Thursday nights.

PERFORMANCE

SOUTH BY SAN JOSE // SXSJ

The parking lot at Hotel San Jose in South Austin, Texas, is converted into a free concert and food and market area every year for five days during the famous South by Southwest Music Conference and Festival (SXSW) in Austin, Texas (Hotel San José, 2012).

SHAKESPEARE'S LOT

In the Lower East Side of Manhattan there is an enormous parking lot across the street from a small theater. For years the lot sat empty at night until the theater realized it would be a great space to hold free shows during the summer. Only after a petition drive and hundreds of signatures did the theater get the city's permission to use the lot. For over twenty years, between July and August, "Shakespeare in the Park(ing) Lot" has been held, drawing over 200 people a night while still providing some parking (Shakespeare in the Park(ing) Lot, 2012).

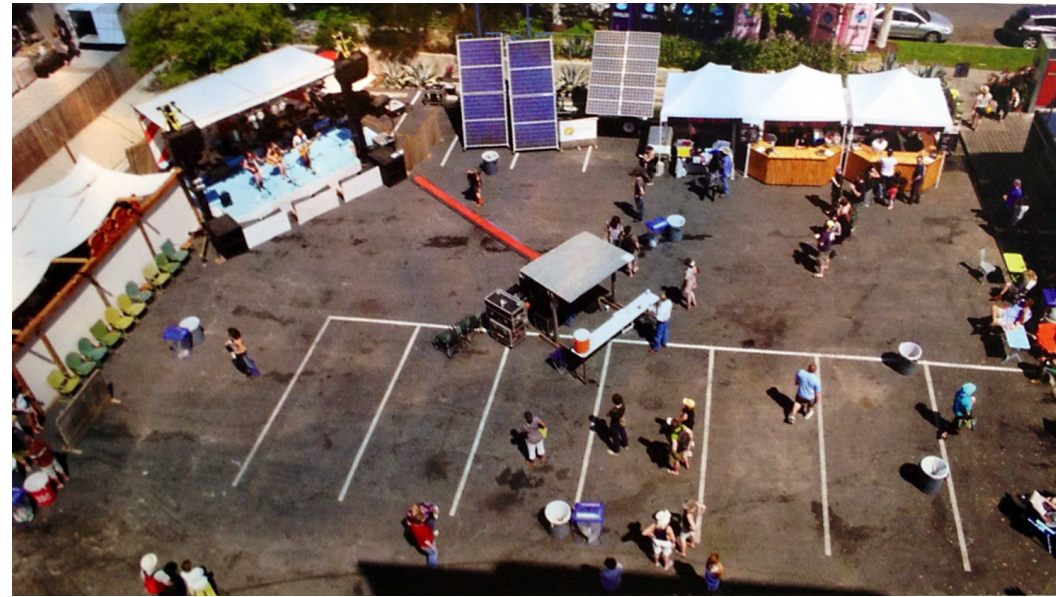


FIG 2.27

Every year at the SXSW music festival a concert is held in the Hotel San Jose parking lot.



FIG 2.28

Audience and cast members are watching Henry V performed in the parking lot at Ludlow and Broome in Manhattan.



FIG 2.29

A Shakespeare in the Park(ing) Lot performance in the summer of 2011.

MOVIES IN THE LOT

BANK OF AMERICA

In the Bank of America parking lot in downtown Berkeley, outdoor movies are held once a week in the late summer months. For the evening, the entire block is closed off allowing pedestrians to rule the road and set up chairs in the parking lot. This also lets all the restaurants along the block expand out into the street for outdoor dining. There are chair rentals for \$5, popcorn is sold, and the restaurants offer food to go. Families are encouraged to participate in costume contests relating to the theme of the movie. There are also the normal quirky Berkeley street performers offering free entertainment before the movie begins.

FOOD

FOOD TRUCKS // OFF THE GRID

Food trucks can be found underneath freeways, parked at curbs, scattered in vacant lots, on the edges of parking lots, and in many other places. The type of food offered from food trucks has become just as diverse as their locations. You can find taco trucks, Ethiopian food trucks, Indian food, Vietnamese food, coffee, fresh pasties, Korean BBQ, hot dogs, and the list goes on. Off the Grid (or OtG) is an ongoing organized gathering of food trucks. Off the Grid began in June of 2010 with the simple idea that grouping street food vendors together similar to an “Asian night market” would create an experience that would allow neighbors to connect with friends and families. Since 2010, Off the Grid has worked to develop markets that are located in under-used spaces in the urban cores of cities. In 2010, Off the Grid opened 3 markets. In 2011 Off the Grid opened 9 more (About Off the Grid, 2012).



FIG 2.30
Photo of the Bank of America Parking Lot movie night in Berkeley, California.

FIG 2.31
Pirates of the Caribbean costume contest in the Bank of American parking lot.

FIG 2.32
Restaurants take advantage of the closed street to serve dinner outdoors.

FIG 2.33
Five dollar chair rentals for the night.

FIG 2.34
Off the Grid in a CVS Pharmacy parking lot in downtown Berkeley every Wednesday.

SCMFVA

The Southern California Mobile Food Vendors Association (Socal MFVA) has recently joined forces with parking lot owners. The organization's idea is to establish permanent parking spaces for food trucks in a few specific lots. Many trucks in the SCMFVA pride themselves on providing organic healthy meals with ingredients straight from the farmer's market. The website socalmfva.com has a complete list of their current parking lot locations and times for food truck events (Socal MFVA, 2012).

FOOD TRUCK CORNER

The Santa Monica Gourmet Food Truck Corner opened in 2010 in an empty parking lot along Santa Monica Boulevard with seven to eight trucks serving dinner and lunch all week. They served over 500 customers the opening day. Although the owner of the lot was committed to growing the food truck lot into a popular destination, zoning issues prevented this from happening. A few days after the opening, the food truck corner was shut down along with their future plans for the lot to include WiFi, tables, bike racks, and a dog area. Now the Santa Monica Gourmet Food Truck Corner is open only on Tuesdays with an online calendar and other Twitter updates (William-Ross, 2010).

FARMERS MARKET

Farmers markets often set up in parking lots. Parking lots have good spatial organization for vendors, and temporary canopies can easily define specific areas. In Oakland, the DMV parking lot is one successful example. The DMV lot has a small creek running along its perimeter where groups of people gather and play; the lot turns into a bright social scene, whether people are there for the food or not.



FIG 2.35
Off the Grid in San Mateo, California on Tuesday evenings for dinner.

FIG 2.36
Lines at the Food Truck Lot in Santa Monica, California.

FIG 2.37
A farmer's market at a parking lot in Old Town Calabasas in suburban Los Angeles.

BOONDOCKING

“Boondocking” means free camping in a vehicle. Boondockers are common users of parking lots. Walmart welcomes boondocking with its huge parking lots that rarely (if ever) reach capacity. They allow the unused spots to be used by RVs and other large camping vehicles. Walmart stores are open 24 hours a day, allowing the “campers” to come get any needed supplies, any time of the night.

Many websites assist boondockers in finding parking lots and other similar places where they will be welcome to stay the night. One of these websites, called boondocking.org, provides a public forum for discussion and a thorough list of all known free auto-accessible camping spots. The list is organized by state as well as specific mapping coordinates (Wells, 2012).



TEMPORARY ECOLOGY

OVERFLOW LOTS

The Fly is a large riverfront park adjacent to the Audubon Zoo in New Orleans, Louisiana. Between the zoo and the Fly is a grass-covered parking lot (or park) used for overflow parking on busy days. When not in use, the field reverts to green open space.

You can find this form of overflow parking in other large venues and stadiums, for example Crissy Fields Park in San Francisco and Sun Life Stadium in Miami, Florida. At Sun Stadium parking areas are grass, while travel aisles remain paved for heavier traffic.

Generally, stadiums can be some of the most wasteful and under utilized type of parking lot. They may be filled during home games for one short season, and then only if the team has a strong fan base. Even then, the lot may well sit empty for the remainder of the year.



FIG 2.38

Boondocking is encouraged in the giant Walmart parking lots that rarely, if ever reach capacity.

FIG 2.39 / FIG 2.40

Some of the Fly's grassy fields next to the Audubon Zoo in New Orleans are used for overflow parking areas.

FIG 2.41

The Sun Life Stadium in Miami, Florida. Parking areas are grass while travel aisles remain paved for auto traffic.

TAILGATING

SPORTS TAILGATING

“Tailgating” is the time-honored tradition of sports fans setting up barbecues and coolers in arena parking lots before an event. It is a growing activity, and has become a more and more complex undertaking. The San Francisco 49ers give instructions and diagrams for the correct way to set up a tailgate party in their parking lot. At large events, advertisers and mainstream media also set up temporary stages in parking lots to broadcast pre-game shows and other types of entertainment for the captive parking lot tailgaters (Tailgating At Candlestick, 2012).

The website tailgating.com documents the travels of its founder, Joe Cahn, as he visits parking lots across the country. Cahn is always on the lookout for examples of specialty cooking at tailgate parties. He writes about each tailgate event and posts pictures, videos, and recipes from his travels (Cahn, 2012).

ART TAILGATING

Tailgating ideas have also reached the art community. The Santa Fe Opera throws black-tie tailgating events in the parking lot, offering pre-opera dinner, wine, and entertainment (Santa Fe Opera Dining Options, 2012).

Tailgating is also common before concerts, with drinking, socializing, and getting ready for the show. The classic documentary “Heavy Metal Parking Lot” portrays the life of die-hard Judas Priest fans in the parking lot before the concert in the 80’s.

The Brooklyn Museum in New York City holds an event called “First Saturdays.” Every first Saturday of the month there is live music, art exhibits, food, and drinks, all in the parking lot. There is a very similar event in Oakland called “First Friday.” There are gallery walks and food carts, many of which are set up in parking lots.



FIG 2.42
Tailgating out of the back of a truck before a sports game.

FIG 2.43
Diagram from the San Francisco 49er’s website showing the correct way to set up your tailgate party.

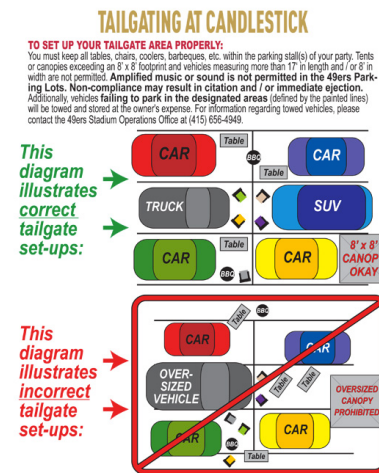


FIG 2.44
A still from the movie *Heavy Metal Parking Lot*, a documentary about a tailgating party before a Judas Priest concert in the 70s.

FIG 2.45
A black-tie tailgating party in the Santa Fe Opera House parking lot.



COMPETITIONS

CARSCAPE

In the mid-1980s, the city of Columbus, Ohio hosted a parking lot design competition. The site for the competition was an existing publicly-owned surface parking lot in downtown Columbus. The Columbus Carscape Competition was held with hopes that it would bring the creativity and interest usually reserved for downtown renovation and planning to parking lot design. Around the time that Columbus was developing a revised master plan for its downtown area, a new approach to parking lots was proposed.

The city invited architects and landscape architects to submit innovative designs for a 300-car municipal lot to be built in three phases: from a 30-car lot to a 150-car lot, to 300-car lot. Over 130 entries were received. Although the competition was site-specific, the three phases allowed design to be applied to a variety of sizes of lots and in turn made them suitable for many downtown areas as well as shopping centers and industrial parks. The results of the competition demonstrate the variety of possible approaches, from temporary changes to permanent solutions (Miller, 1988).

The winning entry came from Eric R. Kuhne & Associates. Their parking lot design has been described as a transformation of a parking lot into a park and an urban plaza under a canopy of trees. Many of the entries provided innovative ways to integrate parking lots into the urban landscape. The competition was extremely important because it not only addressed the problems of parking lots, but offered a variety of possible solutions (CivicArts, 2011).

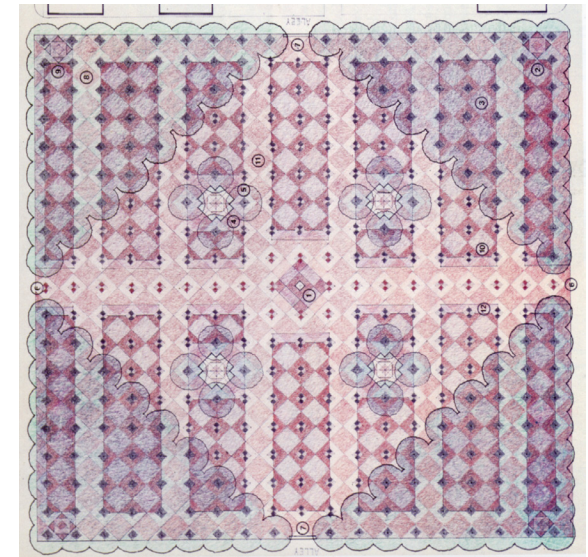
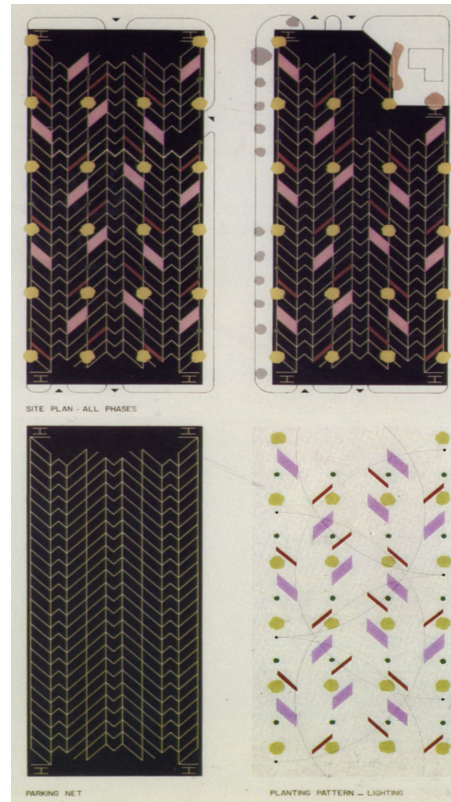
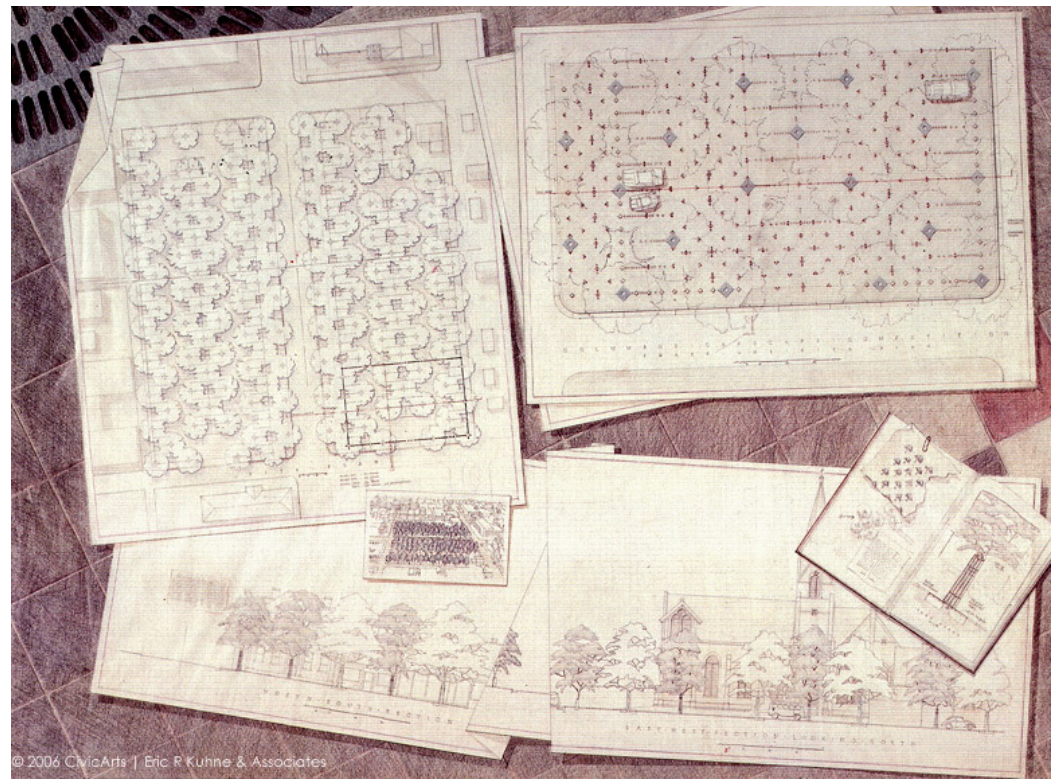


FIG 2.46
The Carscape Competition's winning design by Eric R. Kuhne & Associates.

FIG 2.47
Clif Balch/Moji Baratloo Architects - Third Place Winner.

FIG 2.48
Odell Associates Inc. - Second Place Winner.

DEAD MALLS

"In the Meantime, Life with Landbanking" is the name given to the design of Interboro Partners' winning entry to the 2002 LA Forum for Architecture's "Dead Malls" Competition. The competition asked contestants to envision a future for a dead shopping mall of their choosing. Interboro's project was a reimagining of the Dutchess County Mall in Fishkill, NY.

The firm made a short slideshow narrated by "The Mall." The Mall was given a man's low, scratchy, sincere voice with a thick east coast accent. He describes himself as having "all the parking a regional shopping mall like me would ever want." In 1998, management officially closed his doors, and four years later he was considered a "dead mall." "That's what they have taken to calling me. Anyway, it's what people mumble when they whiz by on I-84. The only problem is: I'm not so sure I'm dead." The Mall then points out many reasons he does not think he is dead, although "granted, I came very close to death indeed." He points out that many bus routes still go through The Mall's lot and stop to pick up travelers and commuters. People still use him to sell things: there are events like flea markets, food carts, and a piano & organ repair warehouse. He is a temporary home for things like boondockers, unfinished kit houses, and construction storage. He has a recurring cast of characters: dog walkers, travelers, and even golfers practicing their putting.

The project was inspired by a conversation the firm had with the mall's developer, who made it clear that he was "landbanking" the property, meaning he had no immediate plans to develop or sell the mall. His plan was to sit on it, to wait for land values in the area to increase, and then either sell it at a profit, or redevelop it himself when there was less risk. Interboro Partners decided "to not be critical of the developer's strategy and instead accept it as a constraint and imagine what we might be able to make of the property 'in the meantime.'"



FIG 2.49 - FIG 2.54

Stills from Interboro's "In the Meantime, Life with Landbanking" Slideshow. A "dead mall"

FIG 2.50

There are still a few buses routes that loop through the site.

FIG 2.51

Toilets are just one sign of life at the "dead mall".

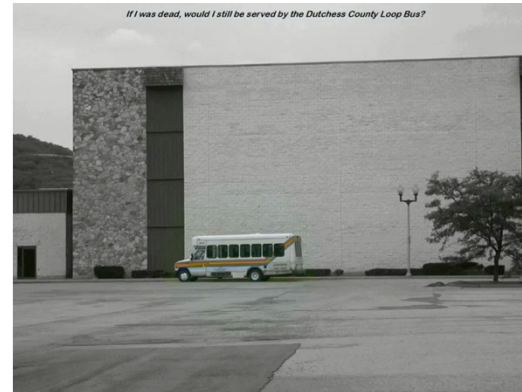


FIG 2.52

Dog walkers come through the parking lot frequently from nearby neighborhoods.

FIG 2.53

The lot is right off the freeway. Truckers come for hot dogs at this make shift rest stop.

FIG 2.54

There is ample space for golfers to come practice their putting in private.



DEAD MALLS (cont.)

Interboro looked at the specific activities that already occurred regularly on the site, no matter how dull or boring they were. By “exaggerat[ing] this fragmentary logic” their design rejected the idea of a traditional master plan. Instead the firm submitted a collection of small, cheap plans that would develop over time, each of which could lead to a variety of possible future uses.

Interboro separated these ideas, or “interventions”, into three categories. Continuing with the idea of the mall as an ailing person, the company gave the categories names relating to medicine and health. The first category was “*Incubating Healing Cultures*” with the purpose of intensifying existing dynamics on the site. One example in this category was a “Hot Box.” The Hot Boxes plugged into the mall’s former loading docks. They were attractive mobile containers that include bathrooms, a conference center, copy machines, and related office infrastructure. The second category was “*Adrenaline Shots*,” or short-term interventions that “take advantage of the ample supply of space and the absence of neighbors.” This group included a nightclub, a car wash, a summer stage, and a beer garden. The third category, “*Get the Blood Flowing*,” attempted to introduce nodes of community life, like a temporary town square. They proposed a fitness center, a day care center, a sculpture garden, a recycling center, hiking trail access, and a Revolutionary War monument (Armborst, D’Oca and Theodore, 2002).

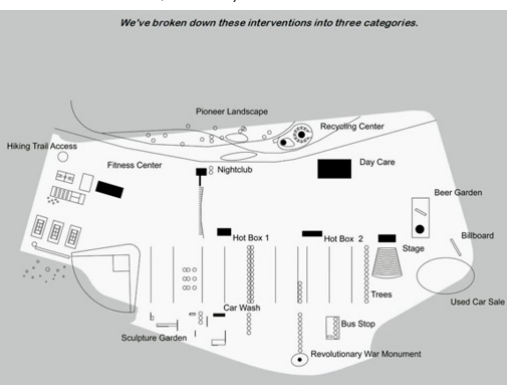
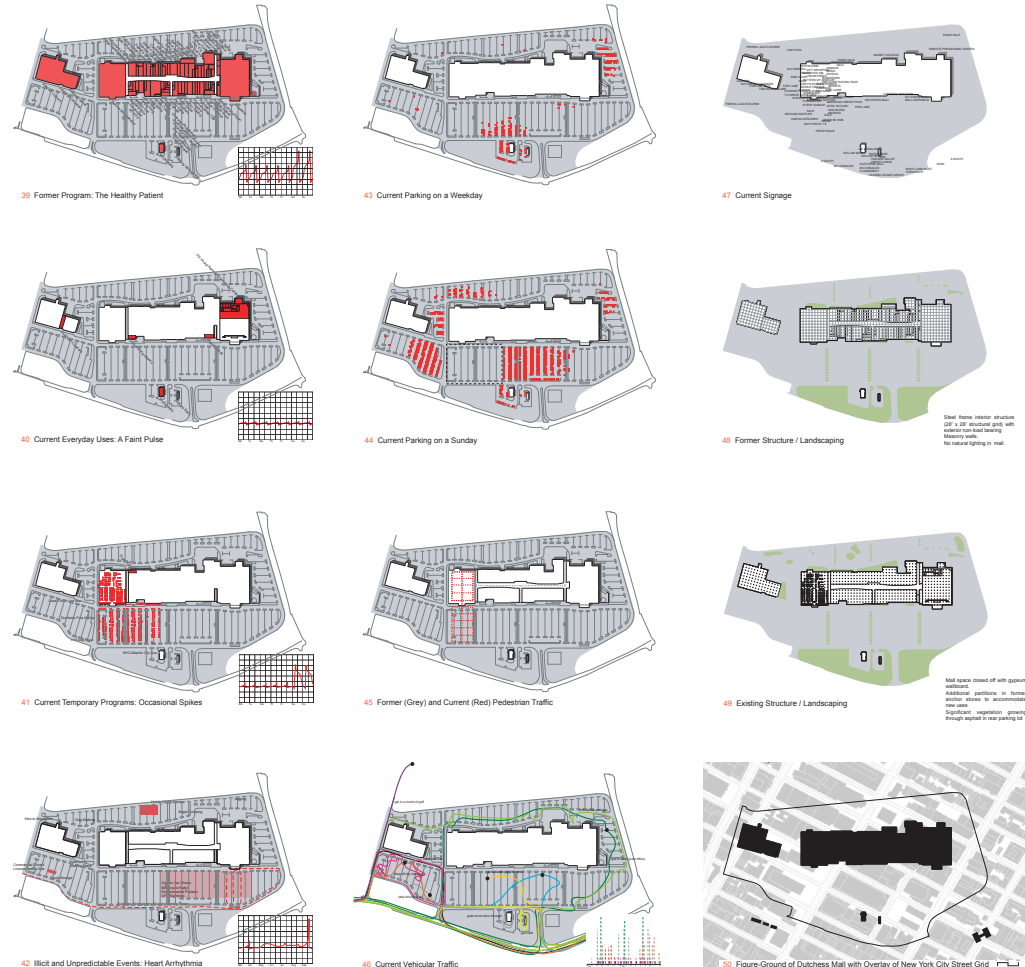


FIG 2.56
A plan showing activities from the three categories of interventions.

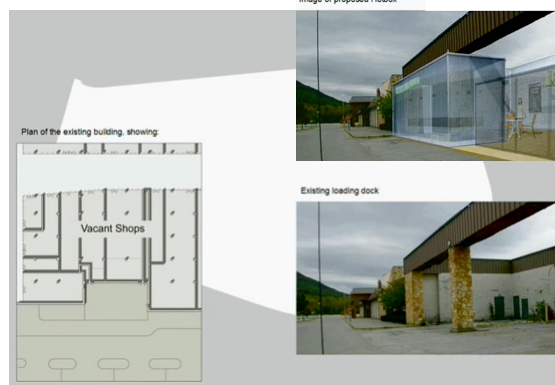


FIG 2.57
An example from the “Incubating Healing Cultures” category is a Hot Box.



FIG 2.58
A Daycare Center is included in the “Get The Blood Flowing” category.

FIG 2.55
Sample of Interboro’s “In the Meantime, Life with Landbanking” diagrams separating various land areas and uses, proving what was thought to be a dead, is really alive.

ART

GHOST PARKING LOT

Designed and built by James Wine from the design firm SITE in 1977 at a shopping plaza in Hamden, Connecticut, the Ghost Parking Lot consisted of twenty junk cars partially submerged and buried in concrete at the edge of a shopping center parking lot. A plaque in the parking lot explains that the purpose of the project was to take “two typical ingredients of a suburban shopping center, automobiles and asphalt, and transform them into another frame of reference.” Mr. Wine explains “public art often derives its meaning from its location. You go to a parking lot and expect to see cars in the lot, not under it. It’s inverting expectations. You’re seeing something in a place which makes sense, but whose presentation does not. Now remove this from the parking lot and place it in a museum and it loses all meaning, all relevance.”

Five years after the original installation, asphalt was poured over the concrete and it completely covered many details of the cars. The asphalt began to crack and crumble, exposing the rusty metal from the cars below. The ghost parking lot was demolished in 2003 due to poor maintenance (Kirby, Wilkins and Smith¹, 2004).

CARS ON A SPIKE

Berwyn’s Cermak Plaza Shopping Center is a standard strip of retail stores in Chicago, except for the eight cars impaled on a forty-foot-tall spike in the middle of the parking lot. This spike of cars, named Spindle, was built in 1989 by the artist Dustin Shuler and is best known for its appearance in the movie “Wayne’s World.” After almost twenty years of harsh Chicago weather, the eight cars were battered, rusty, and so encrusted with pigeon droppings that, according to Mayor O’Connor, even power-washing couldn’t get the cars clean (Kirby, Wilkin and Smith², 2007). The Spindle was taken down in May of 2008 with plans for a drive-thru Walgreens to take its place. There are potential plans for relocating the Spindle, but because of the condition of the cars and the high cost, nothing is certain (Noel, 2008).



FIG 2.59-2.61
Twenty junk cars are submerged in concrete at the edge of a parking lot.

FIG 2.62 / 2.63
The Spindle in its early days. The Spindle being dismantled.

PARKING LOT ART SHOW

The Parking Lot Art Show takes place (obviously) in a parking lot. The Southern California-based Parking Lot Art Show was founded to find emerging artists and to give them a chance to show their work in a unique place. The show is able to change locations and to find new ways to showcase different types of art. The first show was in 2009. Seven artists presented their work inside eight big moving trucks. The show featured work from photographers, painters, and designers (Kantner, Pfleeger and Renee, 2009).

ART IN THE PARKING SPACE

Art In The Parking Space was a yearlong project sponsored by an organization called LA><ART. Over a year, invited artists created temporary and ephemeral works of art in parking spaces across Los Angeles. Dancer Anita Pace's work, *Dance Here, Here Dance*, took place in two adjacent parking spaces in the back lot of LA><ART. According to the artist's statement, the dance played on the classic dimensions of a parking space, using a metronome to beat the same rhythm as this square footage: 130 square feet and 130 beats per minute. The dance was accompanied by a DJ mix of music based on a theme "around the utilitarian, dystopian and sentimental experiences of 'parking'" (Neidich and Bajo, 2011).

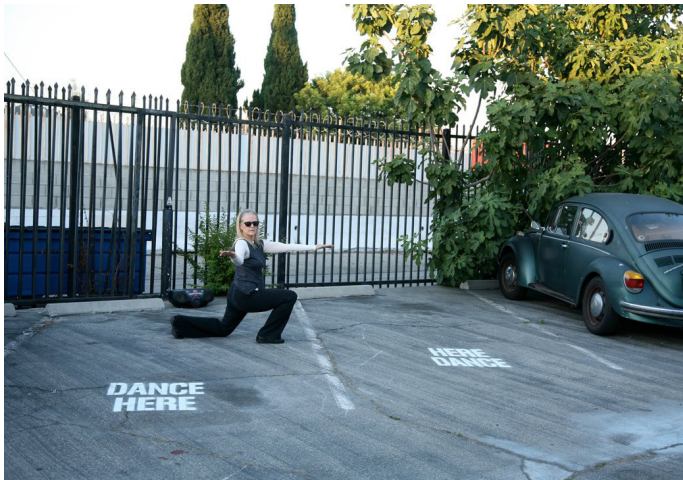


FIG 2.64

An art show takes place inside moving trucks in the parking lot of a cafe in Los Angeles, California.

FIG 2.65

The poster for the Parking Lot Art Show resembles a standard parking street sign.

FIG 2.66

Art work was hung on wood boards inside the trucks.

FIG 2.67

Anita Pace dances in her parking stall art installation.

FIG 2.68

Dance Here, Here Dance installation from Art in the Parking Lot.

ACTIVISM

Recently there are many organizations drawing attention to unused or ignored city spaces. Although these projects are not strictly about parking lots, they are drawing attention to the many overlooked areas that surrounds us. Helping the public to see these potential spaces is a valuable first step. After learning to look carefully, perhaps for the first time, we will be able to begin a dialogue about possible beneficial changes. Here are a few examples of the many such thoughtful projects underway.

PAVEMENT TO PARKS

Pavement to Parks is an organization in San Francisco devoted to converting grey space to green space. As they describe the problem, 25% of SF's land area is paved, an area greater than all of the city's parks. Their projects seek to temporarily reclaim these unused zones and turn them into new public plazas and parks. During the period of temporary closure, the success of one of their new plazas can be evaluated in order to understand what adjustments might be made in the short term, and ultimately, whether the temporary closure should be a long-term community investment (Pavement to Parks, 2012).

PARK(ING) DAY

Park(ing) day is an annual event in which citizens, artists, and activists collaborate to temporarily transform metered parking spaces into temporary public places. The project began in 2005 when the San Francisco design firm, REBAR, converted a metered parking space into a temporary public park in downtown San Francisco for two hours. The event has since grown into a global movement (including Davis for the first time last fall in 2011). The point of Park(ing) Day is to bring attention to the need for open green space in dense urban environments. REBAR hoped to generate a "critical debate around how public space is created and allocated, and to improve the quality of urban human habitat...at least until the meter runs out!" (REBAR Group, 2012).



FIG 2.69
Before: Pavement to Parks saw a potential unused triangular shaped space between lanes separating.

FIG 2.70
After: Once a space that was easily overlooked was transformed into a small park in the intersection of Guerrero St and San Jose Ave in San Francisco, CA.

FIG 2.71
SWA Group participated in Park(ing) Day in San Francisco in 2010.

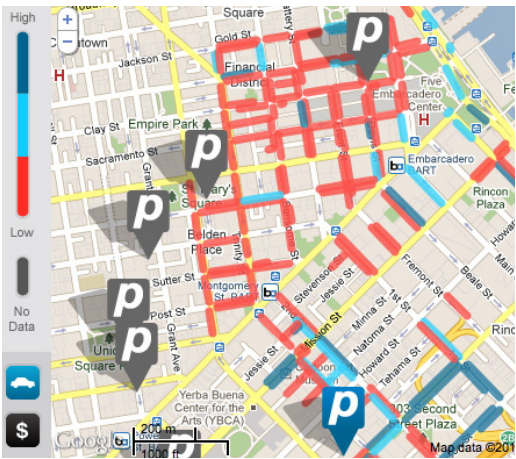
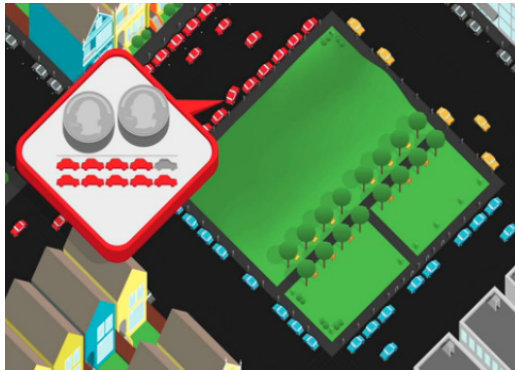


FIG 2.72
SFPark online shows where there is and isn't parking available.

FIG 2.73
SFPark sensors know when parking spaces are empty. This updates an online system.

FIG 2.74
Meter prices change in attempt to achieve the goal of there always being one open space per block.

FIG 2.75
A Parking Public tour in the rain in Brooklyn, New York.



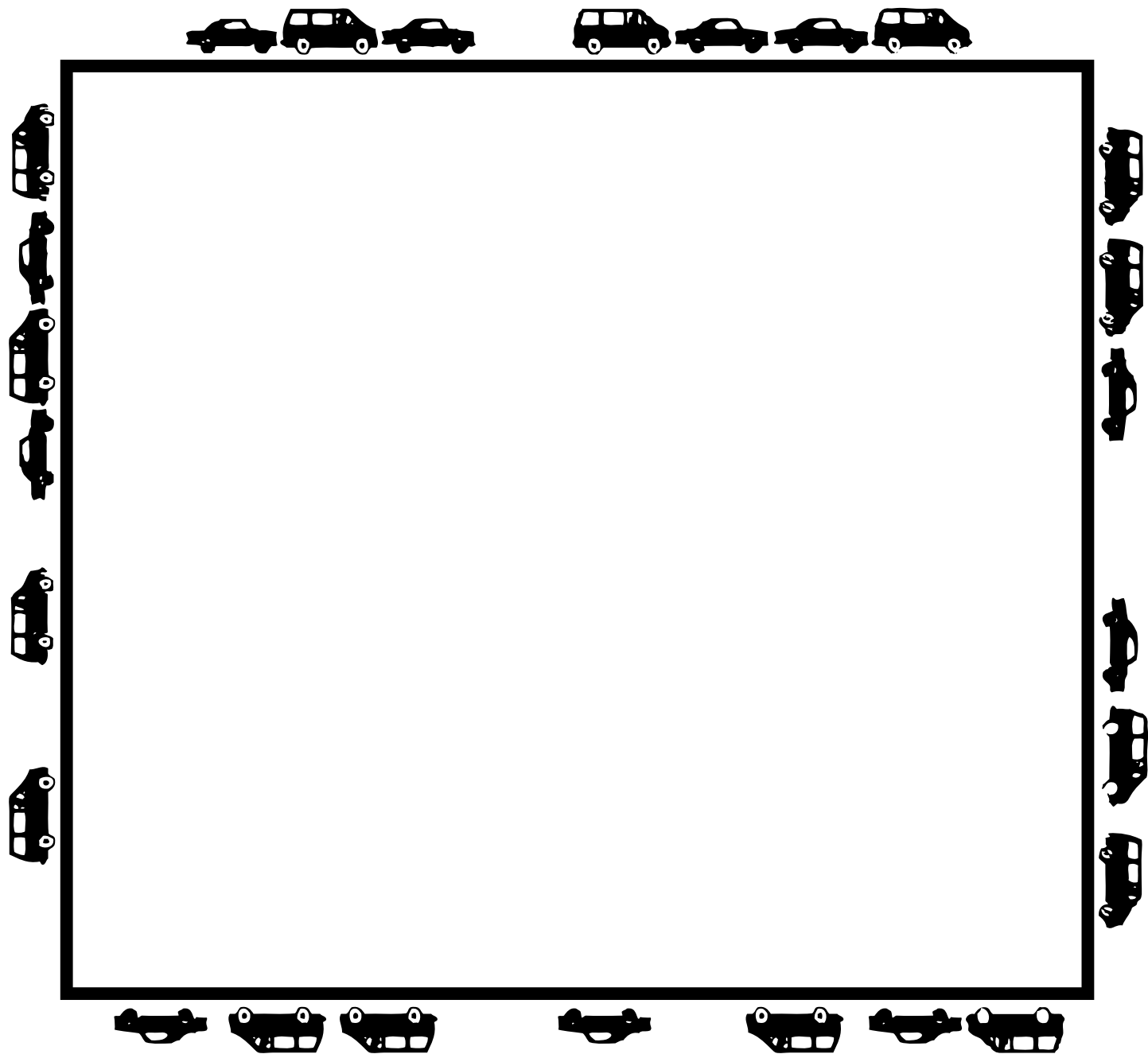
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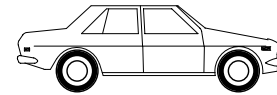
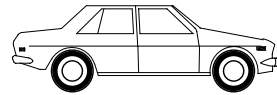
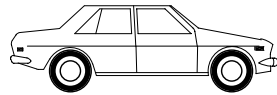
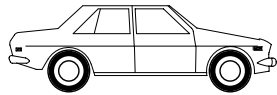
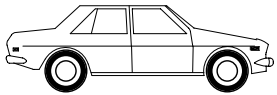
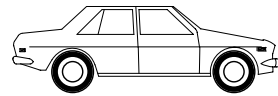
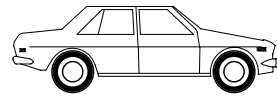
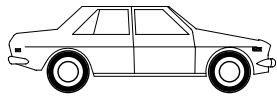
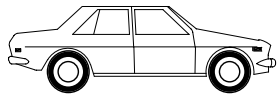
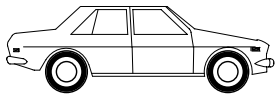
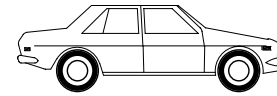
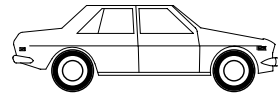
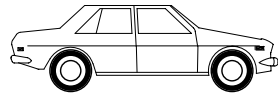
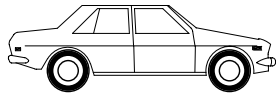
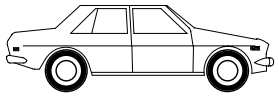
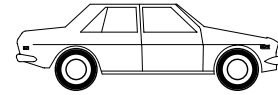
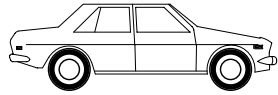
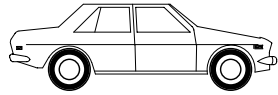
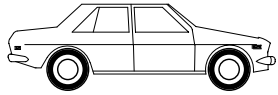
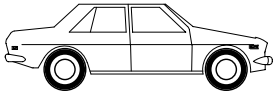
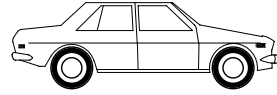
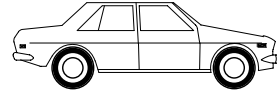
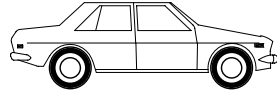
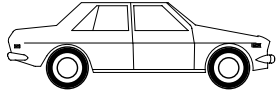
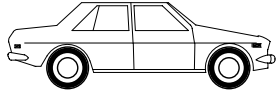
Parking on the street in certain parts of San Francisco can be extremely hard. In response, the San Francisco Municipal Transportation Agency (SFMTA) established a pilot program that is “pioneering the world’s most advanced parking management system. Using sensors, new meters, and demand-responsive pricing.” The SFpark website explains how the program works. SFpark collects and distributes real-time information about where parking is available so drivers can quickly find open spaces using their smartphones or the internet. To achieve the right level of parking availability, SFpark periodically adjusts meter and garage pricing to match demand to encourage drivers to park in under-used areas and garages, reducing demand in over-used areas. The goal is to readjust parking patterns in the City so that parking is easier to find (SFMTA 2012).

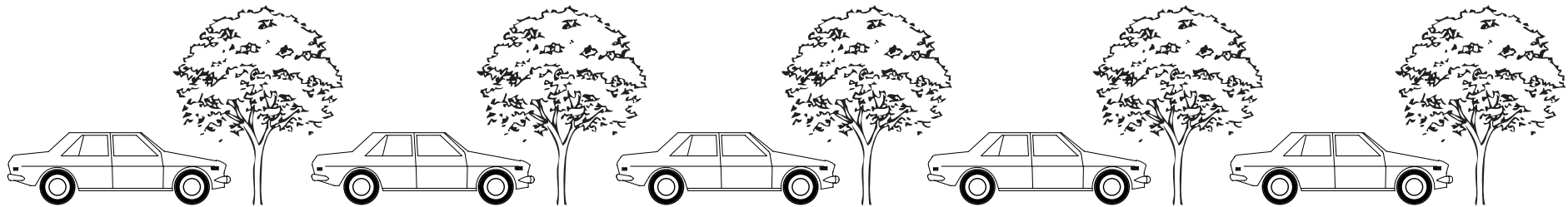
PARKING PUBLIC

Parking Public is a research initiative from a group called the Temporary Travel Office. The group is documenting the history of parking lots in Champaign, Illinois, Hollywood and Los Angeles, California, and Brooklyn, New York, relating them to the “ideology of utopian capitalism.” The Temporary Travel Office offers guided and self-guided tours of parking lots in these areas to foster a better understanding of how parking fits into our “desires and frustrations for livable spaces.” The group has led tours of surface parking lots since 2005 and has produced a documentary called “Parking Public: A Tour into the Storage of Utopia” (Temporary Travel Office, 2012).

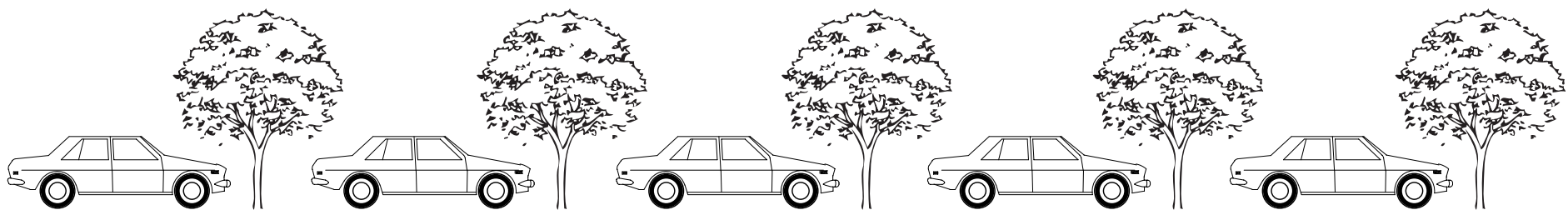








PART THREE



A LOT BETTER

INTEGRATED PARKING LOTS

The parking lot is the first impression of the place you are going: it is the arrival area, the gateway through which you enter. You pass through it again when you leave. Whatever the reason for using the parking lot – shopping, working, living, traveling, visiting – it undeniably sets the tone for a place and a tone for the surrounding architecture and landscape, whether you realize it or not. We often fail to appreciate that the parking lot has such a significant function.

Parking lots are rarely designed with this gateway function in mind. When they are, the effect can be striking. The next section briefly discusses examples of parking lots where this gateway aspect has been addressed.

DIA ART FOUNDATION - Beacon, New York

The Dia Art Foundation is a non-profit organization that largely supports conceptual art from the 1960s and 70s with an emphasis on site-specific installations. In 2003, Dia opened a museum in a former factory on the banks of the Hudson River about an hour and a half north of New York City (DIA, 2011).

Working in collaboration, the architecture firm OpenOffice and the artist Robert Irwin renovated the old factory, creating a simple yet striking building, which combined the “rectilinear logic of the early-twentieth-century” with the organic sloping topography of the site. The parking lot, which acts as an entrance to the site, received as much thought as every other aspect of the project. Visitors arrive on a small road “allowing a glimpse of the buildings set behind a geometrical grove of canopied trees” (Ben-Joseph, 2012). Every couple of parking stalls is hugged with a planter box defined by Cor-Ten steel.

There is a graceful transition from the entry road into the parking lot through an alley of fruit trees directly aligned with the museum entrance. The lobby inside the museum is quite small because Irwin and OpenOffice saw the parking lot functioning as the lobby to the museum (Ben-Joseph, 2012).

“In the building itself, Irwin has inserted four clear glass panels into the structure’s many large, multi-paned frosted windows. This creates a precise blurring of outside and inside, one that would be appreciated by the many Dia artists who have worked with perceptual conundrums and by those who have preferred to work with the landscape itself” (Stevens, 2003).

Dia is an example of how the parking lot entrance to a place matters. This well thought-out parking lot shows how the parking lot itself can complement the architecture, the landscape, and the art inside the building. It is itself as important as the other elements of the place.

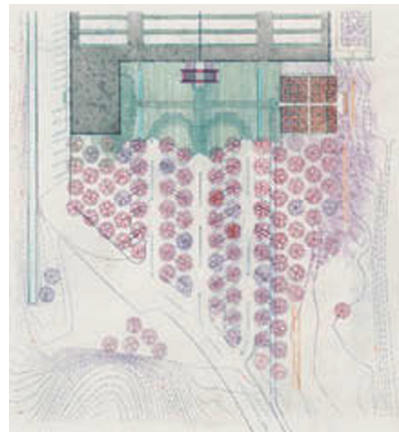


FIG 3.1
Flowering trees line the parking lot and the entrance to the building.

FIG 3.2
Tree lined plan of the lot.

FIG 3.3
Entry road sloping into down into the parking lot, you can see the entrance to the building through the trees.



FIG 3.4
Metal edging and lighting details of the planters.

FIG 3.5
Planters are cut into the sidewalk.

ZENITH CONCERT HALL - Limoges, FRANCE

Sitting in a 16-acre site in a densely wooded area on the outskirts of Limoges, France, the Zenith Concert Hall was designed by the architect Bernard Tschumi with the landscape architect Michel Desvignes.

The parking lot, with 1,500 spaces, incorporates elements of the rural site into its layout and materials. The ten-acre field (parking lot) is covered with grass and local volcanic gravel for load-bearing capacity. It is planted with 300 trees and lit with short bollards and five giant luminous balloons. From the rendered plan you can see the gradient from the surrounding forest fading into the parking lot. This creates a pleasant meadow-like setting in a stadium parking lot - a place that normally feels bland and vast (Welch, Lomholt and Lomholt, 2012).

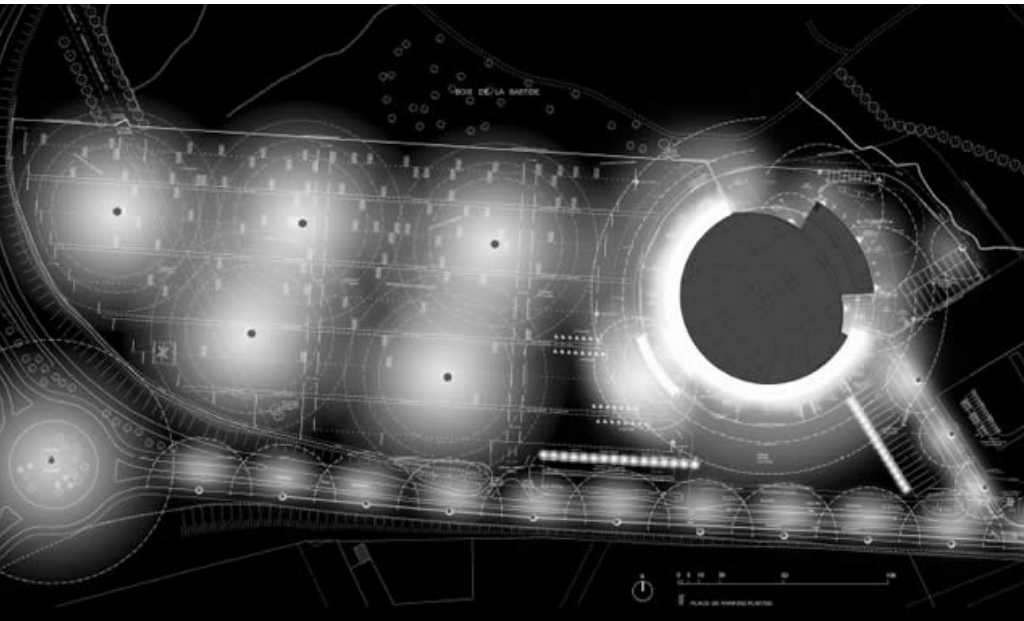
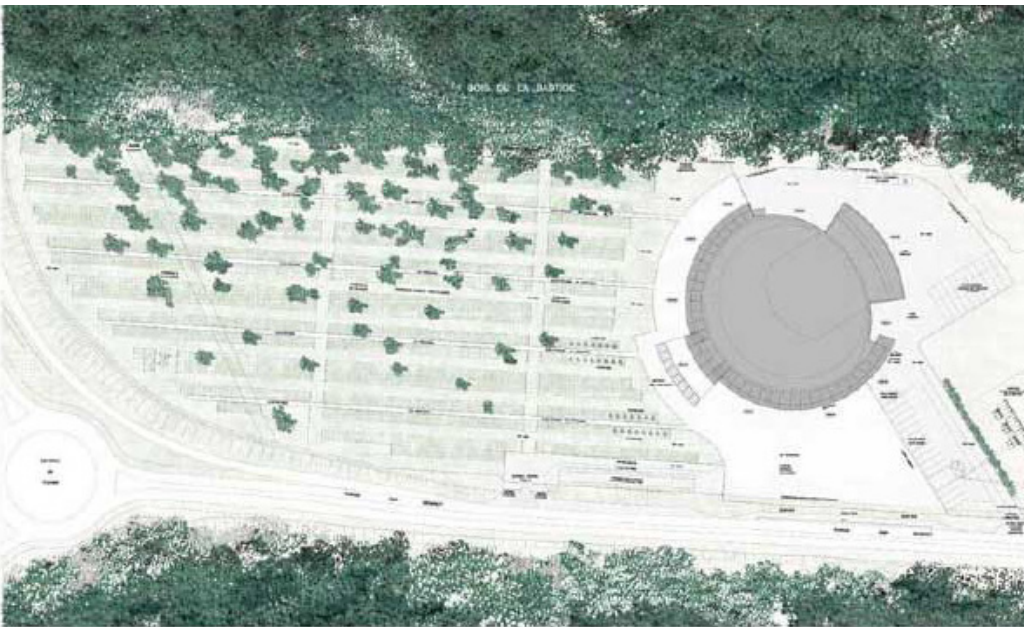


FIG 3.6
Site plan, day-time view.
Shows the gradient from
the surrounding forest into
the parking lot.

FIG 3.7
Site plan, night time view.
Shows placement of the
five illuminous balloons.

FIG 3.8
One of five balloon-like
light structures in the
parking lot.





FIAT'S LINGOTTO - Turin, ITALY

The Fiat Lingotto Factory, redesigned by Renzo Piano, integrates the building with the landscaped parking lot. The design brings the landscape inside the building, and the building into the parking lot. By eliminating curbs and islands – something so common in parking lot design – and replacing them with a grid of trees, the parking lot is almost unrecognizable.

The planting density is the reverse of that used in Zenith Concert Hall where the trees gradually get thinner as you approach the building - here they become denser as you approach the entry to the building (APCOA, 2012).



FIG 3.9
The grid of trees in the parking lot becomes more and more dense as it approaches the building.

FIG 3.10
Curbs and islands do not exist in this parking lot. In between stalls are trees and strips of pavers.

FIG 3.11
Young trees planted will soon have canopies covering almost the entire parking lot.

STORMWATER / ECOLOGY

EL RIO DE LOS ANGELES STATE PARK

The state park parking lot is full of passive stormwater facilities including a native plant palette, permeable pavers, and many infiltration areas. The use of different textured materials, curvilinear parking forms, and the diverse native plant and rock garden areas creates much more than just stormwater facilities (Nitpicker, 2007).

YUNNAN, CHINA

Women in Yunnan, China, seed a grass concrete parking lot. The image of the women, the scattered green squares, and the mountains behind them creates a strange and beautiful contrast. The parking lot will collect stormwater and reduce runoff.

LODI, ITALY

This small parking lot is constructed with what look like three different types of interlocking or permeable pavers. They both assist in the natural hydrological system and improve the look of the parking lot.

CURB CUTS

Curb cuts are simple notches made in a curb allowing water to flow into the landscaped area rather than into a drain. They are simple and extremely effective ways to stormwater retrofit any parking lot.



FIG 3.12
The parking lot at the El Rio de Los Angeles State Park has many stormwater facilities.

FIG 3.13
Women seeding a grasscrete parking lot in Yunnan, China.

FIG 3.14
A parking lot in Lodi, Italy, is made with many types of pervious pavers creating textures that are much more interesting than the standard asphalt.

FIG 3.15
Curb cuts allow water from the lot to sink back into the ground and water plants.



WIND, SUN, ELECTRIC

SOLAR TREES

Most solar panels are fixed, oriented in the direction where the sun is strongest. Envision Solar, a San Diego company, has a new device where panels are mounted on a gimbal that tracks from East to West and North to South, to follow where the sun is oriented. With this flexibility in movement, solar trees are producing 20% more electricity than fixed panels. They call them “Solar Trees” and, when there are many, a “Solar Grove” because they simultaneously provide shade – just like a tree would (Envision Solar, 2010).

ELECTRIC CARS

It is becoming more and more common to find electric car charging stations on streets and in parking lots. Special size parking stalls for these smaller vehicles are now seen in many parking lots as well. State parking lots in Sacramento, California, are all equipped with EV charging stations and have electric cars for administrative rental and use (Klass, 2012).

WIND TURBINES

The wind turbine in the parking lot of the Great River Energy Cooperative Headquarters in Maple Grove, Minnesota provides 10% of the electricity for the surrounding buildings. Great River Energy is a not-for-profit electric cooperative generating and transmitting energy to its members. The company leads by example, encouraging the wise use of energy through conservation and energy efficiency. Their headquarters is one of the most energy-efficient and sustainable buildings in the state (Green River Energy, 2011).

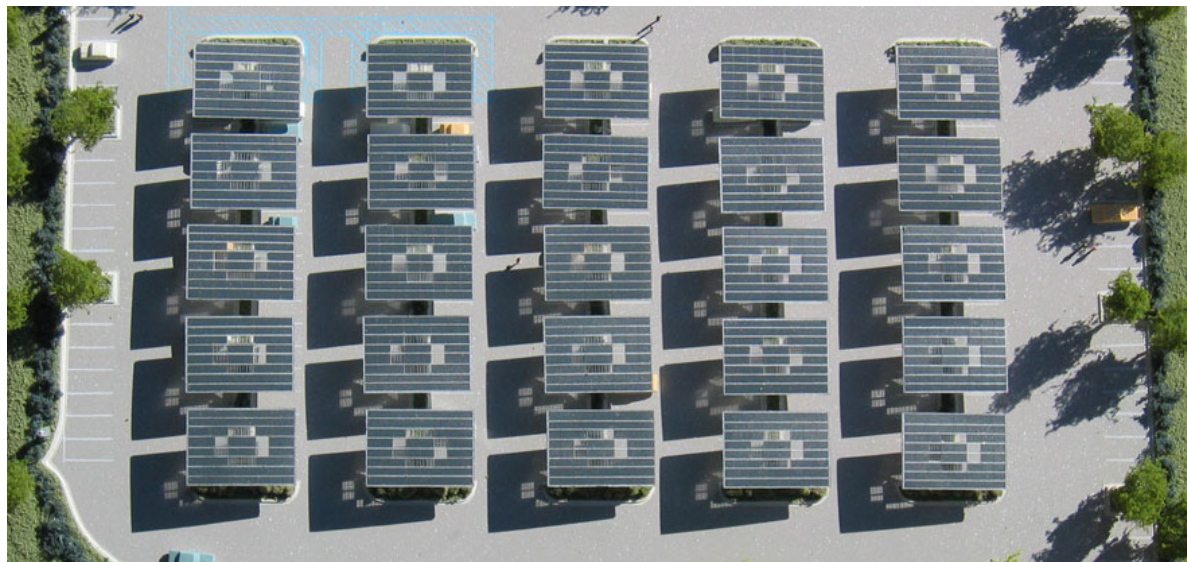
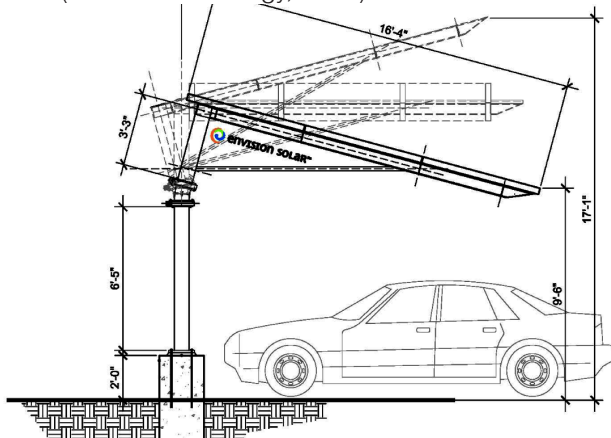


FIG 3.16
Electric car charging stations in a parking lot in Palo Alto, California.

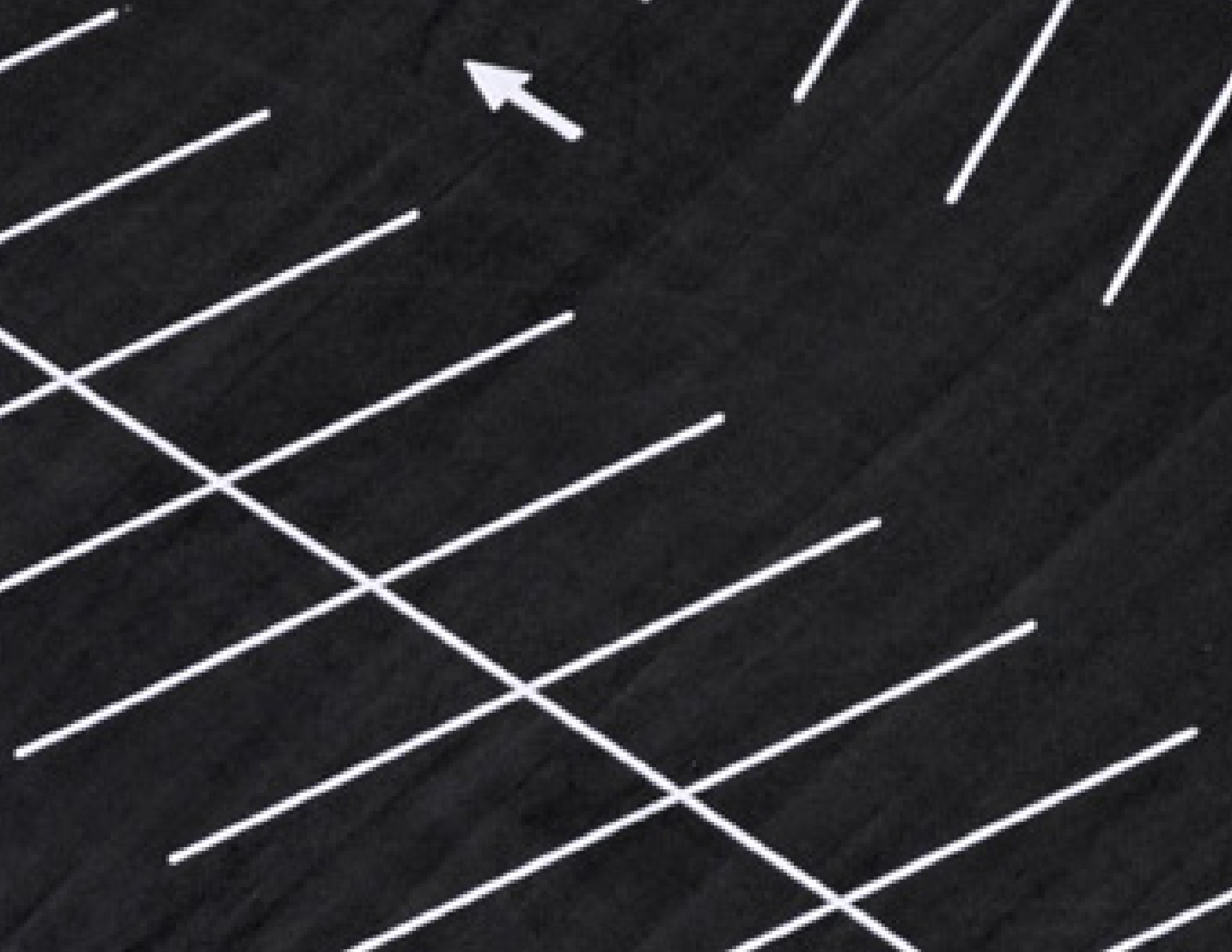
FIG 3.17
Wind turbine at Great River Energy Cooperative in Maple Grove, Minnesota provides 10% of electricity for the surrounding buildings.

FIG 3.18
Solar Tree® structure with CleanCharge™, an outlet for charging cars at General Motor's, MI facility.

FIG 3.19
A Solar Grove® installed in a parking lot in San Diego, California. The panels move with the sunlight.

FIG 3.20
Section of the Solar Tree Socket, a smaller model of the solar “tree”, showing the tilting movement the canopy overhang makes.





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PART FOUR: THE DESIGN

My goal for part of this project was to explore design alternatives for two existing parking lots in the bay area, including the proposals for temporary uses for each parking lot. I designed each parking lot with the focus of departing from the car-oriented use to a more social, people oriented use. Two plans are included in this section for each parking lot: the normal day to day use plan and the proposed alternative use plan.

As designers, we create places for the future; we make predictions about how people will use space in the future based on observations of the present. We strive to anticipate change in use that may make designs obsolete, or dangerous. Because of this, my goal was to explore how to design with flexibility and complexity in mind using the parking lot for this exploration. To achieve this goal, I researched many aspects of parking lot use, design, culture, and construction, as a tool to begin my design process.

After choosing the two parking lots, I conducted site analysis through direct inconspicuous observation and documented how the lots are currently being used. Neither of these lots had any specific “extracurricular” uses (i.e. flea markets, farmers market, etc.) so I avoided things like questionnaires. (Also what people say is often different than what they might do.) This site analysis method is similar to that used by Whyte (1988) who used film as a tool to study social behavior and patterns of pedestrians in urban public plazas and spaces. His film proved that social patterns were consistent based on the design of built

environment. This revealed how to redesign public spaces to be more livable and appealing. A parking lot is not a plaza or an exact destination, it is used as an interlude, or a point in time between two scheduled activities. Unobtrusive observation will provide a more accurate picture of how people behave after they park and head on to whatever immediate destination they have. I believe this method will allow me to develop design solutions for such “interval” activity.

“The possibility of the area not only being a parking lot but also a place to be used by people for activities other than parking. The car is, thus, made a less dominant feature of the space. Even when filled with cars these designs evoke other uses, adding vitality to the space.”

The amount of creativity, energy, and planning that goes into the design of these parking places, especially compared to other elements of the built environment, is minuscule. Yet, in terms of their visual impact, their land usage, or any other measure, these is almost no other place of the public environment that people experience more in their daily lives.”

-Caterine G. Miller, Carscape: A Parking Lot Handbook.



PART FOUR: LOT ONE

lot 1

4th St. lot // Berkeley, California
H2fitness - Spengers - Amtrak - Shops

This parking lot has approximately 325 parking spots – at least half of which are never used. It is owned by Spenger's restaurant to the east. The lot is bordered by 4th Street to the east, Hearst Avenue to the north, University Avenue to the south, and rail road tracks to the west. This parking lot is in the center of diverse forms of commercial and residential activity and has the potential to become a vital part of the area.

H2Fitness is the only building located in the lot. People from the fitness company use the many unused bays of stalls to jump rope, do lunges, sprints and other types of exercise.

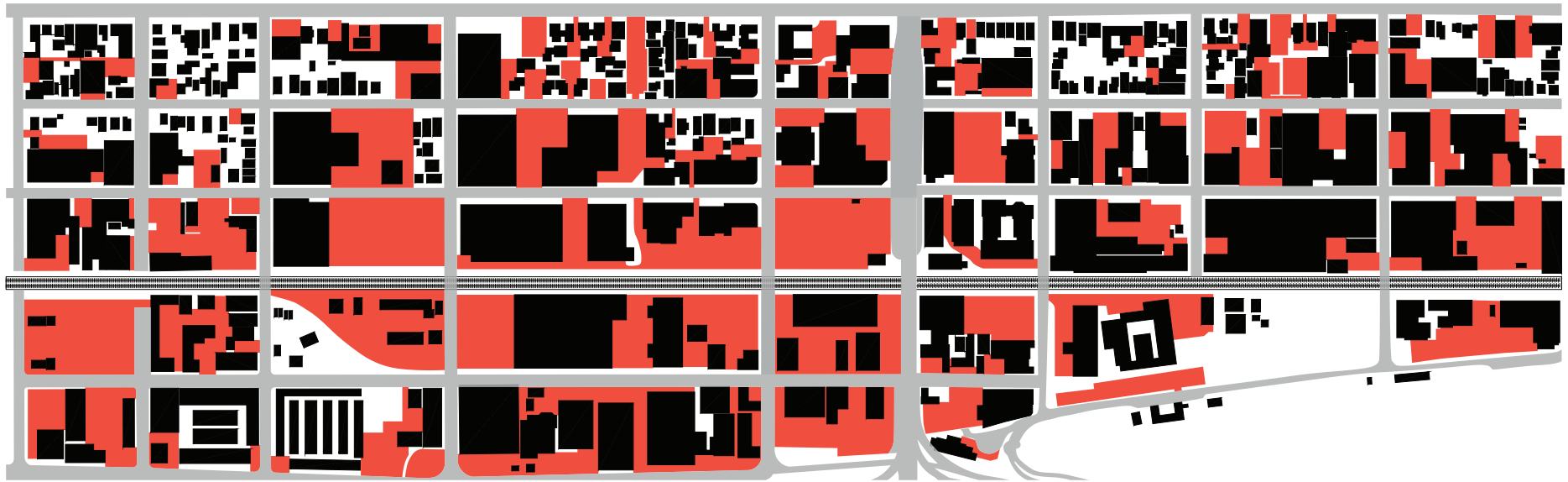
The 4th Street retail area receives constant heavy traffic because of its many upscale shops and restaurants. This tree-lined street has a lush pedestrian-scaled landscape, with plenty of outdoor spaces for sitting and socializing. It feels safe, it is well lit at night, and is overall a pleasant experience. The environment on 4th Street's shopping area is in stark contrast to this under-used and underdeveloped parking lot.

There are other parking lots integrated into the 4th Street shopping area that are free. These lots are much more appropriate for their surrounding environment, but are small, heavily used, and often inefficient. On street parking is metered

Across from the south side of the lot is a new apartment building. One block south is the somewhat hidden pedestrian bridge over the freeway to the Berkeley Marina and Aquatic Park.



CONTEXT

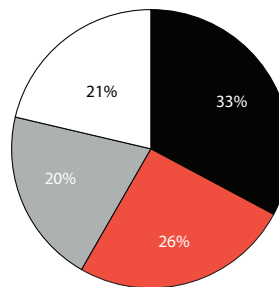


BERKELEY, CALIFORNIA

zoning: commercial, manufacturing, mixed use-residential, mixed use-light industrial

includes: residential, park, restaurants, transportation hub, schools, health clinic, art studios, animal pound, banks, fitness center

Diagram shows urban conditions and surface lots' coverage. Does not include residential driveways.



- BLACK** = building footprint
- RED** = surface parking lots / industrial staging areas
- GREY** = roadway
- WHITE** = open space / pedestrian / permeable surfaces / parks

EXISTING CONDITIONS

PARKING SPOTS: There are currently 325 stalls, although the lot is never near half the capacity, except perhaps in the week before Christmas when shopping is at its peak. Along the rail road tracks on the west edge of the lot, about 35 stalls are partially covered with dirt and trash, and this area is often taken over by a homeless encampment.

STALL ORIENTATION: The stalls are at 90° and 45°. Old parking stall lines with different orientations are still visible on the asphalt. This is misleading and confused parkers often take up more than one spot.

LANDSCAPING AREA: There is minimal perimeter landscaping primarily on the north and east side of the lot. The most landscaping is along the south edge, between the Amtrak Station and University Ave, where there are twelve Bradford Pears and a 3-foot high hedge adjacent to the sidewalk. There are also 2-3 large trees near the hull of the U.S.S. Indiana boat across from the entrance to Spenger's Sea Food Restaurant. One of the trees has been taken over with ivy.

LIGHTING: The lot has poor lighting and it exists in only a few areas. The lights look like old stadium lights and the wires are visible. The light post heads are directed at 45° angles contributing to some light pollution. Just outside the parking lot in the Amtrak Station the lights conform to the standard street lights for the city of Berkeley.

SEATING / SITE FURNITURE: There is no seating on the site. The closest seating areas are benches on the Amtrak platform. There are no bike parking facilities other than those in the Amtrak area. Occasionally, bikes are locked to the chain link fence along the side of the parking lot nearest to the railroad tracks.

SURFACE: The asphalt paving is generally old and cracking. The lot is flat. There are drains in the corners of the lot. When it rains there are puddles scattered all the lot.

DESIGN CONSIDERATIONS: Potential improvements – Shellmound historic preservation. Pedestrian circulation to and from 4th Street stores to the Amtrak Station and the AC Transit Bus stop. H2Fitness exercise areas. Forming a better connection to the Marina and Aquatic Park.

DIRECTLY ADJACENT BUILDINGS/AREAS: H2Fitness Center, Spenger's Seafood Restaurant, Amtrak Station, AC Transit Stop, 4th & U Housing Development, Mac Cosmetics, Anthropologie, Paper Source, Brennan's, Grocery Outlet, Mechanics Bank, Rabat, The Mac Store, Aveda.

OTHER USES: Diners from Spenger's Seafood Restaurant park in the lot for free. People from H2Fitness use the parking lot for exercise.



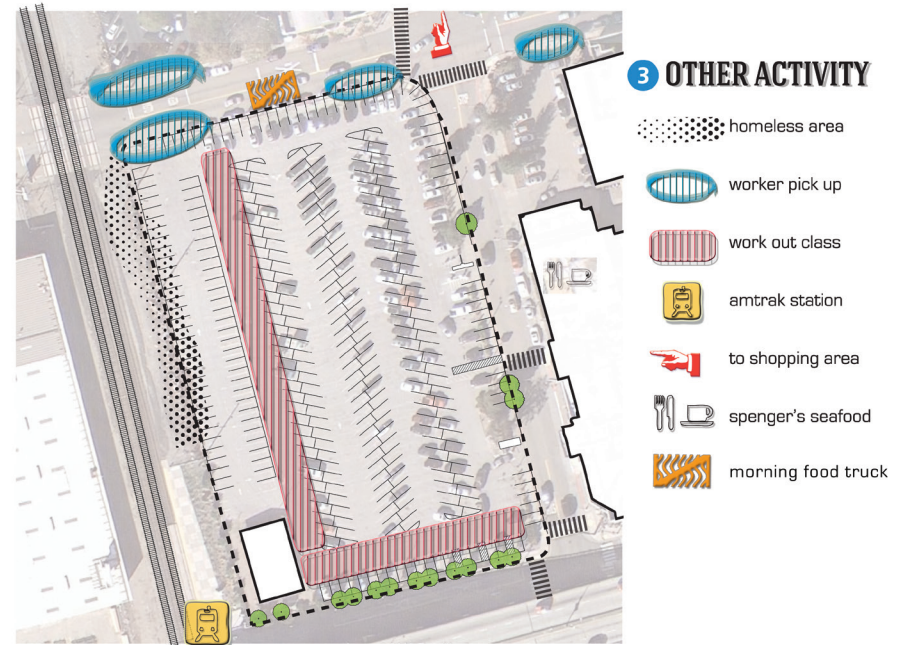
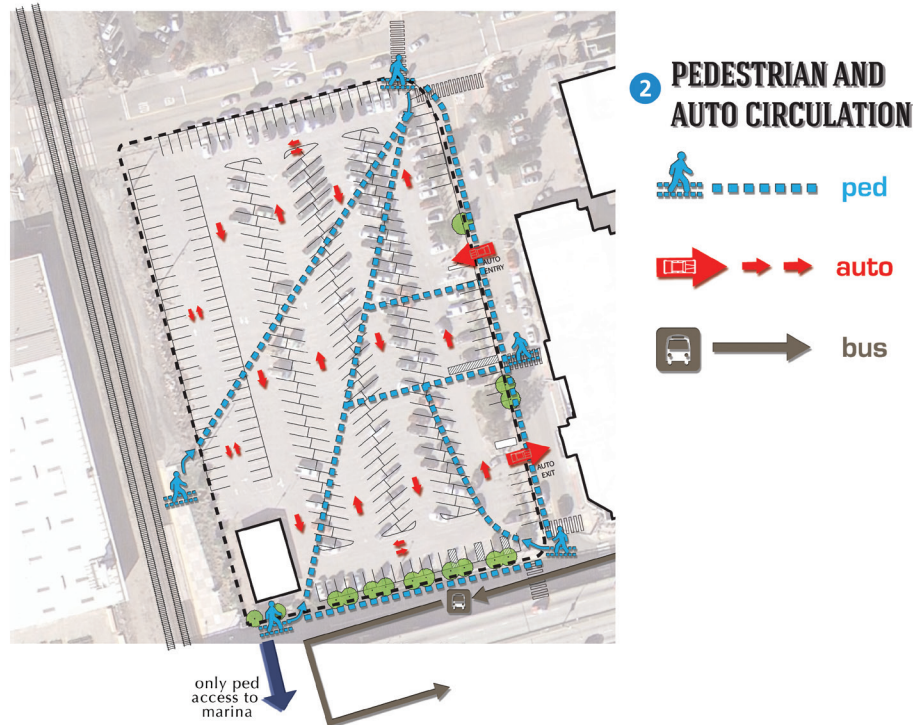
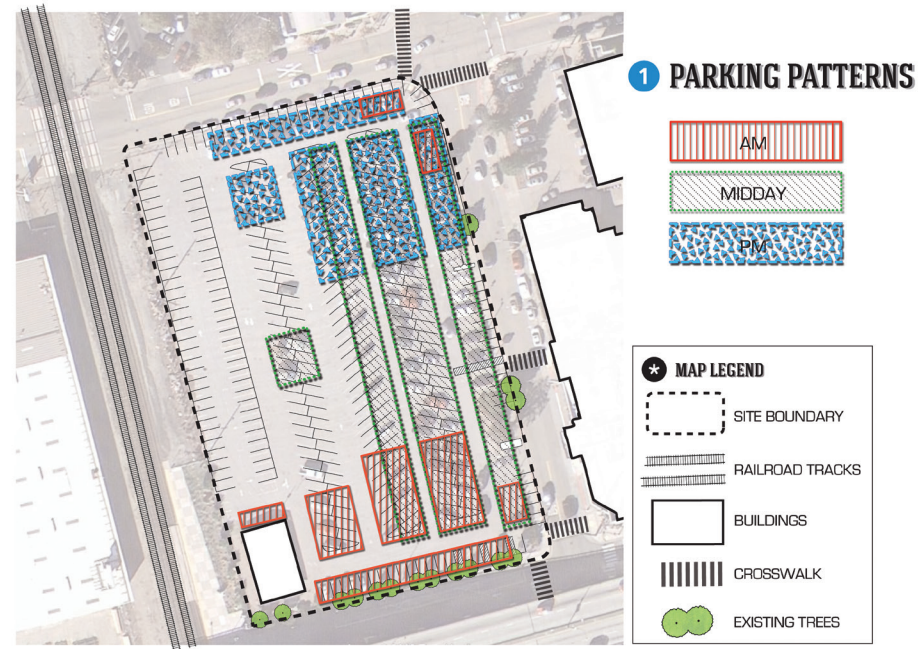
SITE ANALYSIS

1 PARKING PATTERNS: There are strong patterns for parking in this lot. Toward the south east end (marked in red) there is much higher use in the morning. This is most likely because of commuters, early fitness classes at H2Fitness (the small building in the lot), and some residents from the adjacent apartment building. There are a few cars that park in the north east (top right) corner in the morning because of the 4th Street shops, but not many because there are free surface lots and a plethora of street parking in the area.

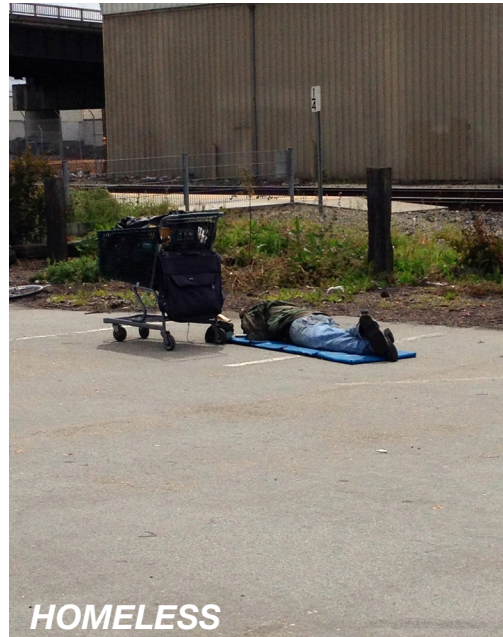
In the middle of the day, especially on weekends, the first three rows of the east side are somewhat full because of the shopping/eating activity along 4th Street. The west edge (left side) of the parking lot is almost always a dead zone. The evening is similar to midday, but more cars are in the south east corner (bottom left) from Spenger's Restaurant.

2 PEDESTRIAN AND AUTO CIRCULATION: The strongest form of visual pedestrian circulation is a diagonal path across the lot - from the south west corner to the north east corner. The south east corner, where the H2Fitness building is located, could act as a gateway to the hidden pedestrian bridge to the Berkeley Marina which is one block away to the south.

3 OTHER ACTIVITY: There is not much activity in the lot, but what little activity there is, uses either the large area on the west side of the lot (near the fitness center) that is almost always left empty or the edge of the north side of the lot.



THE SITE





MASTER PLAN



ENLARGEMENTS

NORTH CORNER ENTRANCE



The north east corner of 4th Street and Hearst Avenue ushers pedestrians into the proposed 4th Street parking lot open space. Linear concrete beams point in the direction of the parking lot and act as a gateway. The lot's perimeter parking stalls are finished with grasscrete. The interior stalls are paved with porous concrete with a narrow green gutter between the bays of stalls.

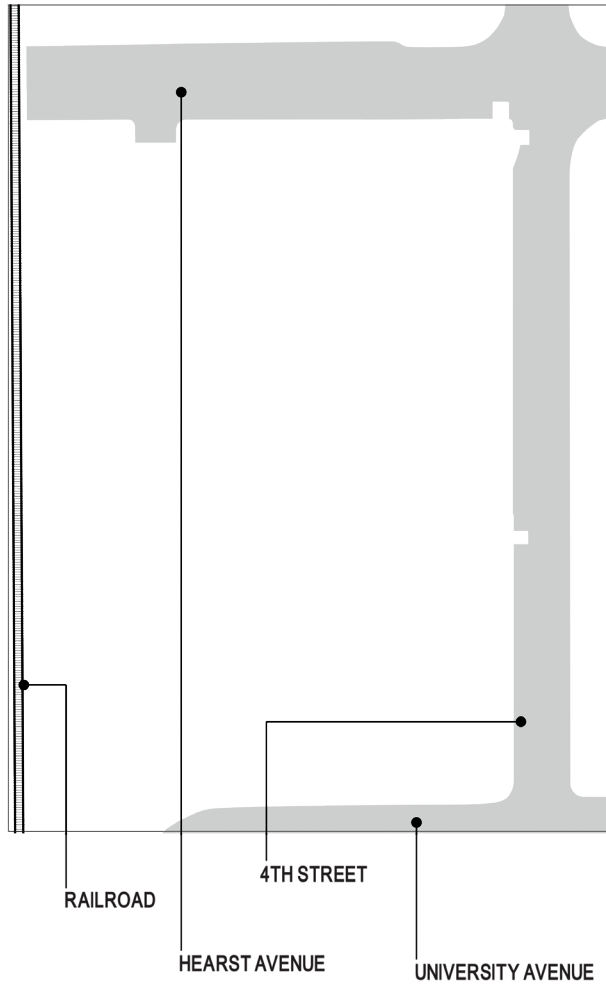
SOUTH CORNER ENTRANCE



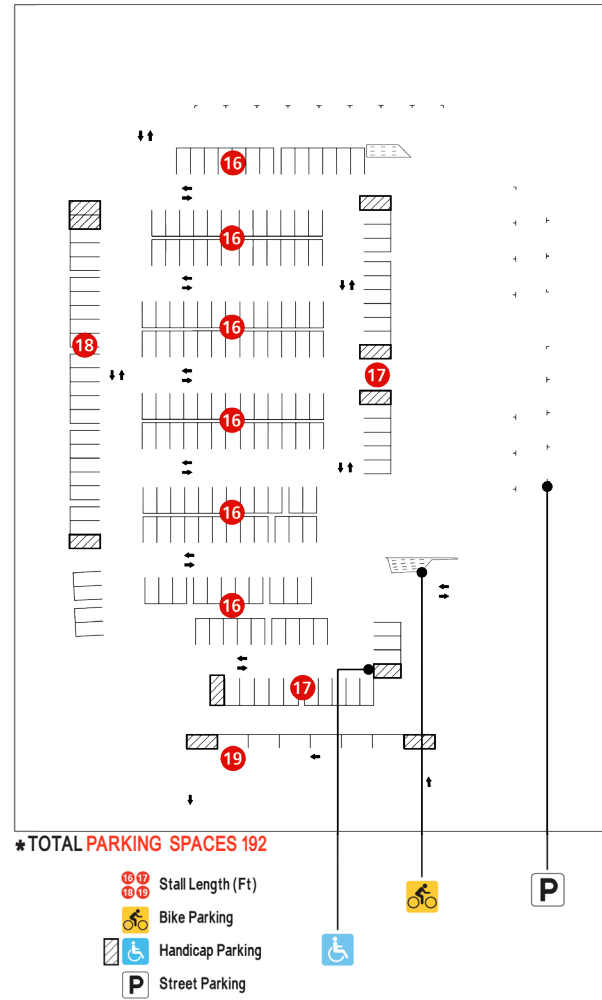
The south east corner of University Avenue and 4th Street is improved with a large stone bench with a planting area in the middle. In order to expand the pedestrian zone for Amtrak passengers, there is a new pick-up/drop-off "street" that cuts into the existing parking lot. This new small street includes 8 parking spots, 2 of which are ADA accessible, and a covered bus stop. The use of permeable pavers strengthen the connection to the adjacent 4th and U Apartment parking lot as well as the connection to the pedestrian bridge to the Marina.

LAYERS

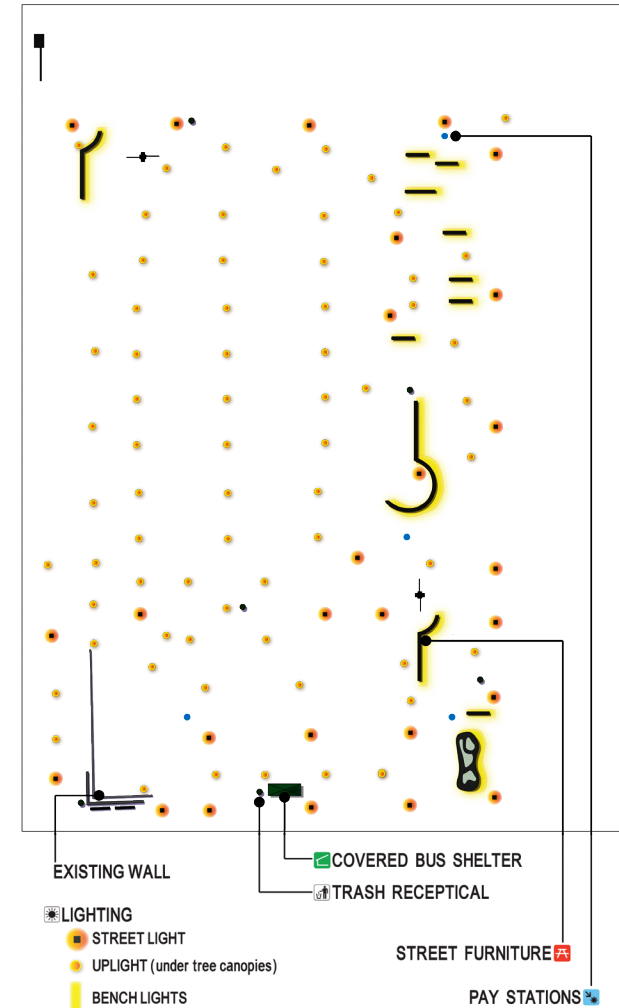
TRAVEL



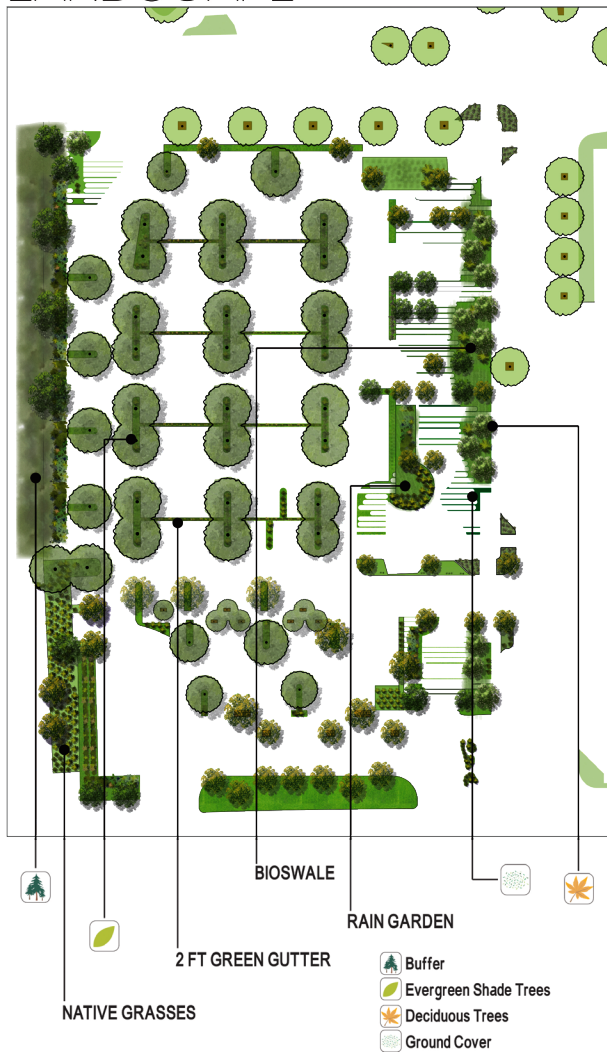
PARKING NET



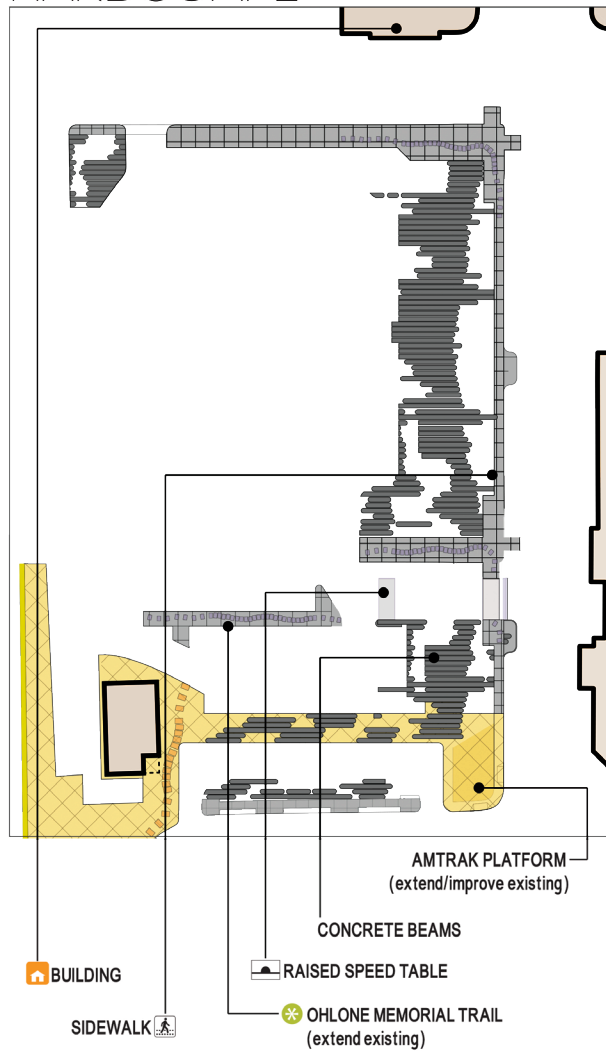
FACILITIES



LANDSCAPE



HARDSCAPE



STORMWATER



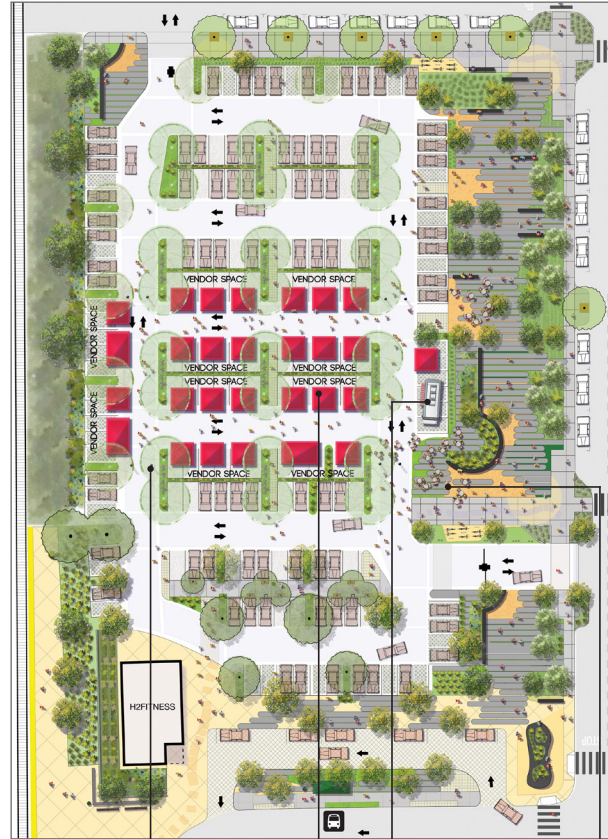
FLEXIBILITY

The parking lot is broken up into “rooms” through landscaping and driving surfaces that are more textured than asphalt. This diagram shows how the parking lot can be broken up into three rooms. In each circumstance there are enough parking spots to accommodate the users.

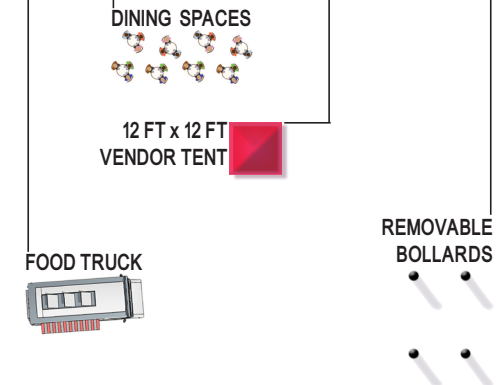
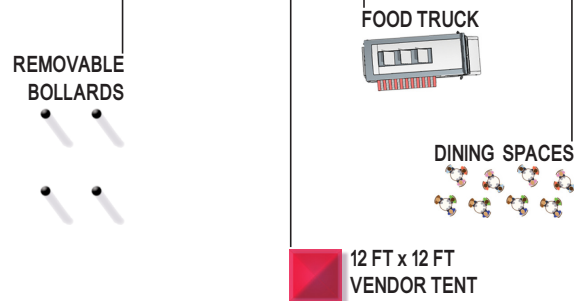
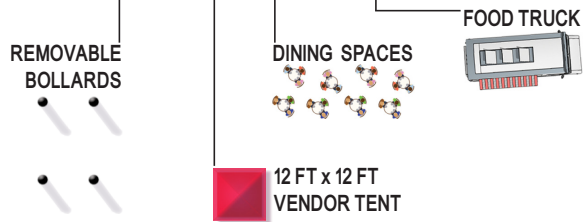
ZONE 1
125 PARKING SPOTS STILL AVAILABLE



ZONE 2
129 PARKING SPOTS STILL AVAILABLE



ZONE 3
139 PARKING SPOTS STILL AVAILABLE



INTO THE LOT

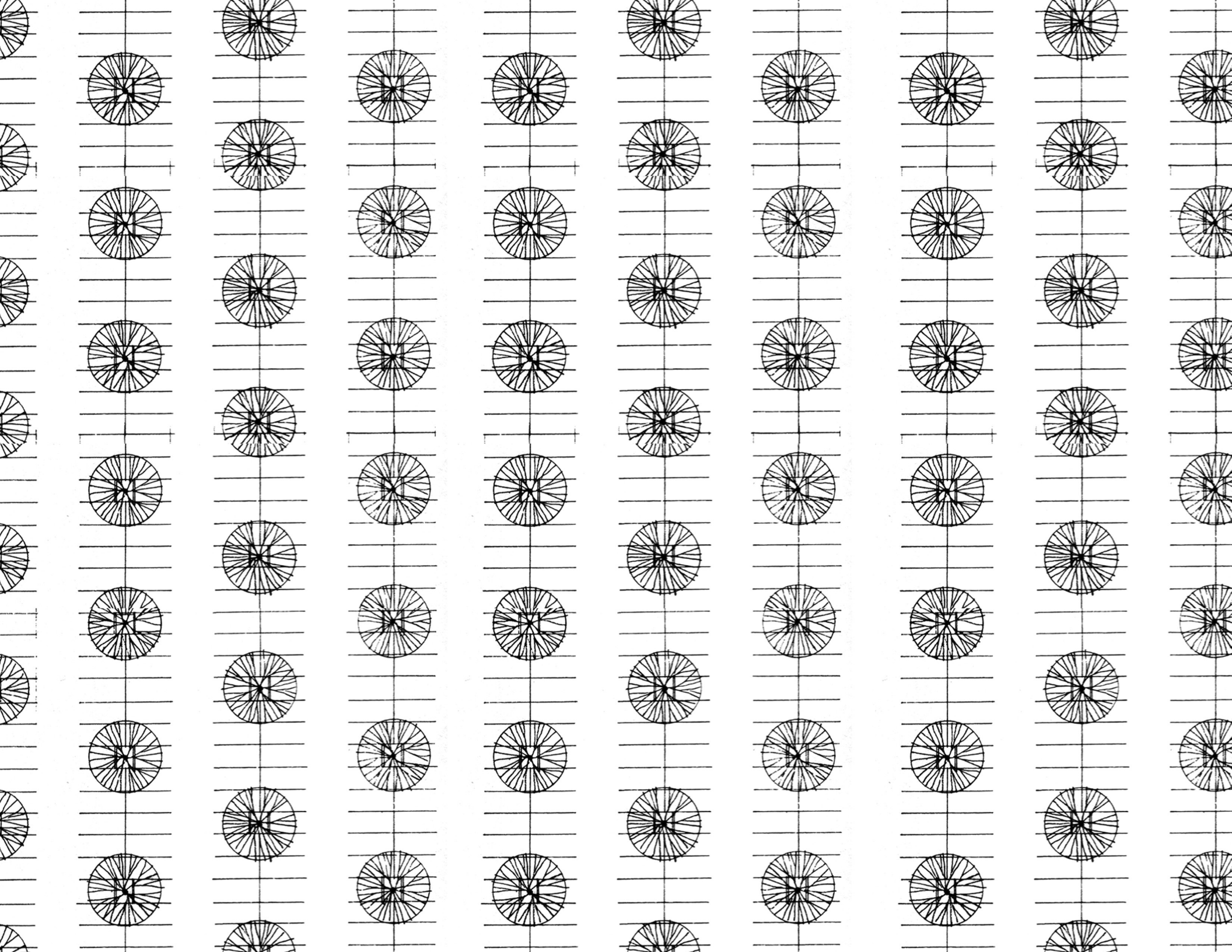


This is a view into the parking lot from the north corner of 4th Street and Hearst Avenue. Pushing the parking stalls back from the edge of the street allows for an extension of the pedestrian activity that already exists along 4th Street and eliminates the current dead zone at this end of the parking lot.

Inside this new park area, concrete beams “deteriorate” into rain gardens on either side. Plants are able to grow through the cracks between the beams and smaller trees shoot up along the walkway.

This parkway brings you through the site into the parking lot. The parking lot is shaded by trees planted in rows between the parking stalls and at the end of each section of stalls. The parking lot itself is heavily equipped for collecting stormwater.

Within the parkway there is a memorial pathway for the Ohlone Tribe as a continuation of the murals painted on the underside of the freeway overpass at the nearby Amtrak station. There is also space for public art installations, permanent seating, and space for a variety of temporary uses.





PART FOUR: LOT TWO

lot 2

433 miller ave // mill valley, CA
upper cervical - puravena - coho - creek

This parking lot has 13 parking spots. The lot is for a small commercial building with three businesses. The building is on Miller Avenue, a busy street that has just undergone major streetscape retrofits that added a large number of parking spots in the center of the wide street median. The city has plans to add more street improvements in the future.

The property connects directly to a creek. Across the creek is a large city park. There are several unpaved paths connecting the lot to the creek and along the edge of the creek formed solely by foot traffic. There are also several paved paths - not clearly marked - which do not lead to any apparent desired destination. There are two bridges crossing the creek, neither of which adequately connects people to the creek or to the park. This lot has an extremely high potential to do just that- it could lead people to the creek and across to the park and the surrounding neighborhood.

There are currently two businesses in the building: a chiropractors office and a small spa. The front space will soon open as a café. The cafe will bring foot traffic from both the businesses along Miller Ave and from nearby residential areas.

According to the city, the opening of the third business means the current 13 parking spaces must be increased to 17.



CONTEXT

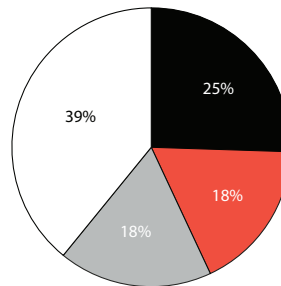


MILL VALLEY, CALIFORNIA

zoning: neighborhood commercial, historical, professional administrative, single family residential, multi-family residential, open area, community facilities, planned development

includes: commercial strip, grocery stores, parks, spas, salons, art studios, galleries, architecture firm, health clinic, banks, pet hospital, autoshops, fitness center

Diagram shows urban conditions and surface lots' coverage. Does not include residential driveways.



- BLACK** = building footprint
- RED** = surface parking lots
- GREY** = roadway
- WHITE** = open space / pedestrian / permeable surfaces / parks

EXISTING CONDITIONS

PARKING SPOTS: There are currently 13 parking stalls. With the proposed remodeling to include a cafe, 17 stalls are required. This seems a bit generous because of the plethora of parking directly around the site. New streetscape on the Miller Avenue center median has provided many more spots than before. There are also many public parking lots within 100 feet of this lot.

STALL ORIENTATION: The stalls are all at 90° angles

LANDSCAPING AREA: There is an existing sidewalk planter at the entrance of the lot with a small tree. There are oleanders lining the edge of the site bordering the properties. There is an old fence dividing the first six parking spots with the back walk that has a hedge along it. The back end of the site is attached to a creek lush with trees and landscape. Purevana, one of the businesses on the property has decorated their entrance with potted plants.

LIGHTING: Lighting is provided by street lights and the existing exterior lighting on the building itself.

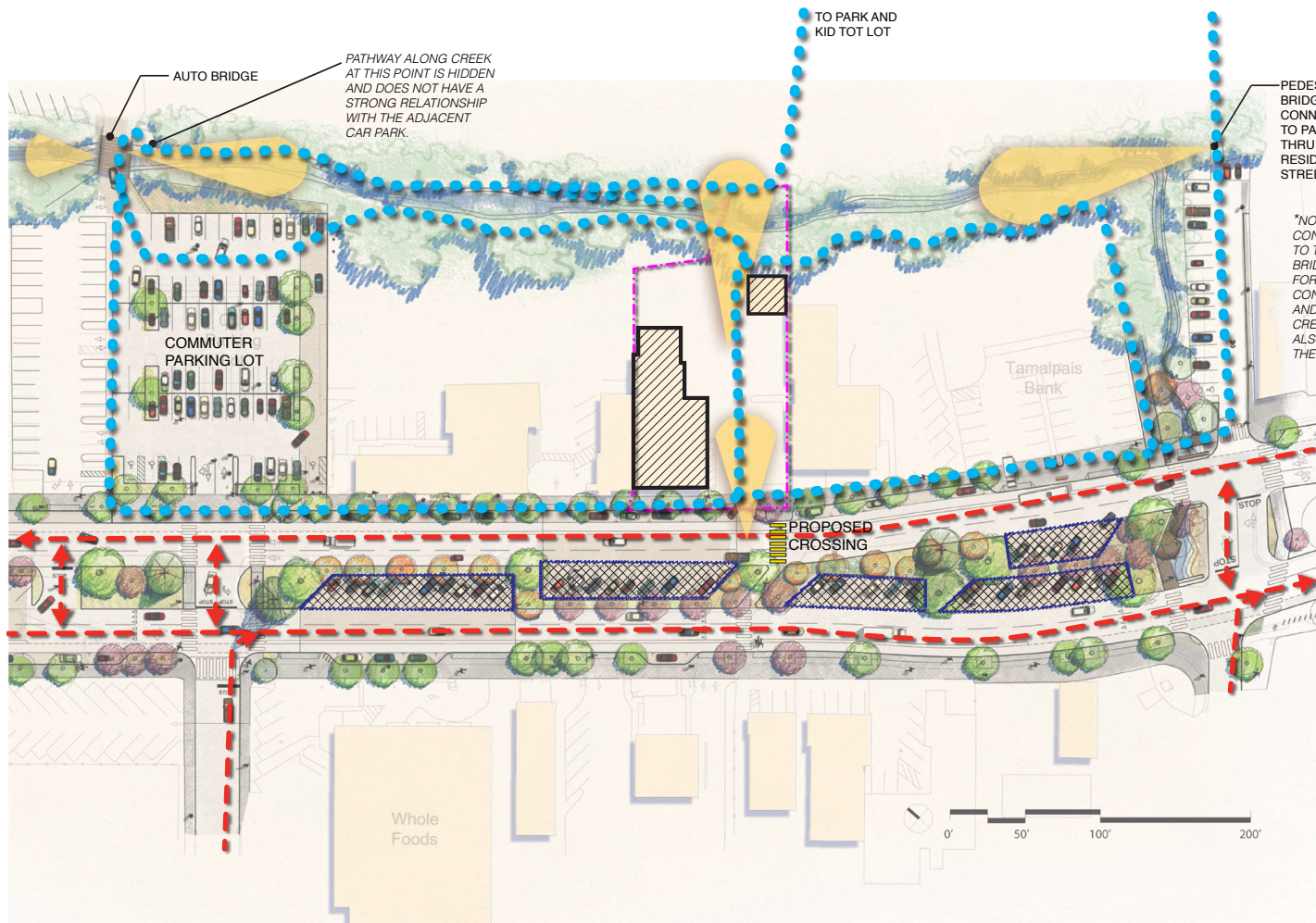
SURFACE: The surface of the lot is asphalt. The entry to the front store is concrete. There are no curbs between the stalls and the sidewalk or any of the planter areas.

DESIGN CONSIDERATIONS: The site was an old auto shop. The architecture and over hangs show this.

ADJACENT AREAS: Miller Avenue is a busy commercial street leading into downtown Mill Valley. Near this lot there is a Whole Foods market, a burger cafe, and many other businesses. The opposite side of the site, across the creek, is Sycamore Park, a large city park which is surrounded by a quiet tree lined residential neighborhood.



SITE ANALYSIS



*** MAP LEGEND**

- PROPERTY LINE
- PEDESTRIAN LOOP AROUND THE SITE
- AUTO
- ▨ NEW PARKING AREAS
- VISUAL CATCHMENTS
- ▨ BUILDING ON SITE

THE SITE



VIEW FROM MEDIAN



STREET VIEW ENTRY



SIDEWALK



LARGE SET BACK



PROPOSED CAFE FACADE



PLANTS / OLD AUTO SHOP OVERHANG



FRONT PARKING



BACK PARKING

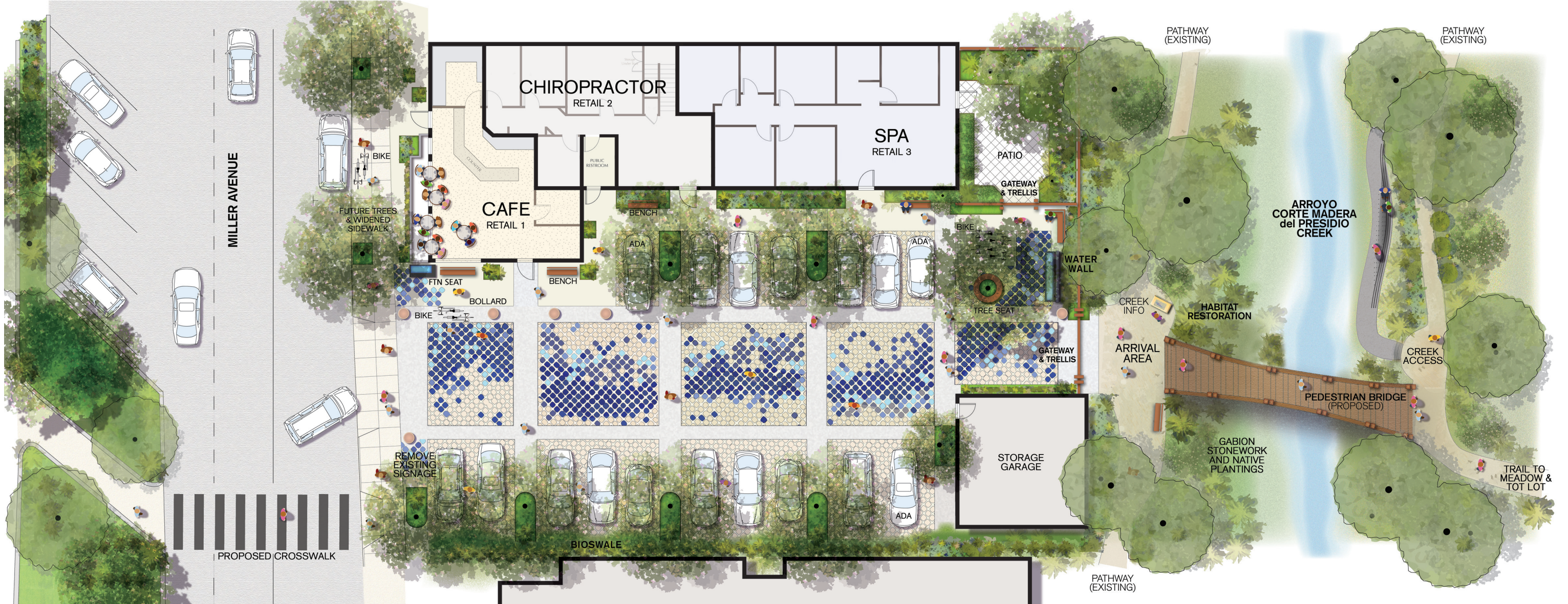


CREEK ACTIVITY



DIRT PATHS FROM THE LOT

MASTER PLAN



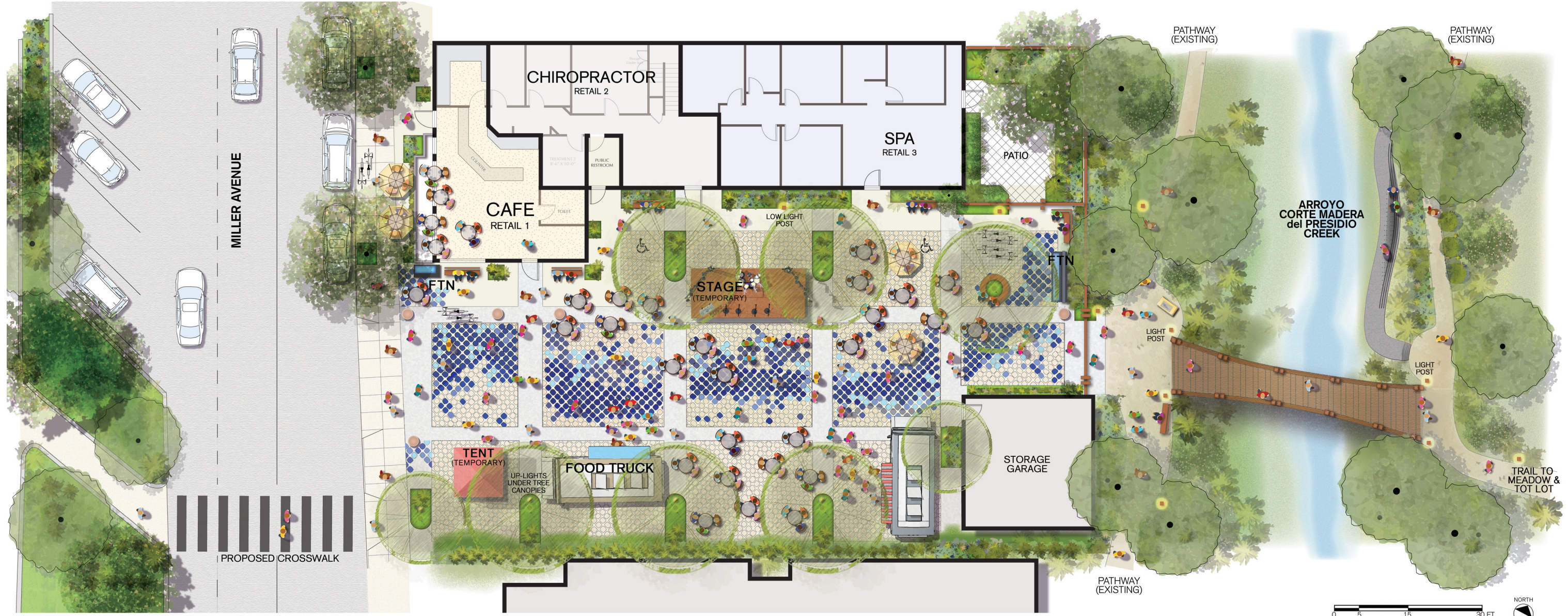
GARDEN COURTYARD - PARKING

CONNECTING THE STREET TO THE CREEK THROUGH THE PARKING LOT

NEW TREES, NEW PAVING, WOOD FINISHES
17 PARKING STALLS, 3 ADA ACCESSIBLE



FLEXIBILITY



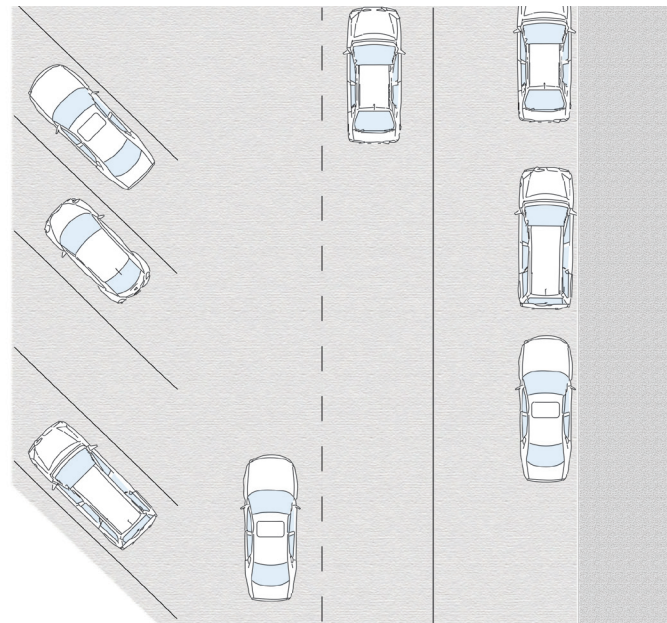
Roger Schow, the owner of this parking lot, wants to be able to use this lot as a place for events. He envisions weekly gatherings with food trucks and live music or entertainment. This plan illustrates that option.

ALTERNATIVE PLAN - NO PARKING
 FOOD TRUCKS, DINING, LIVE MUSIC
 0 PARKING STALLS

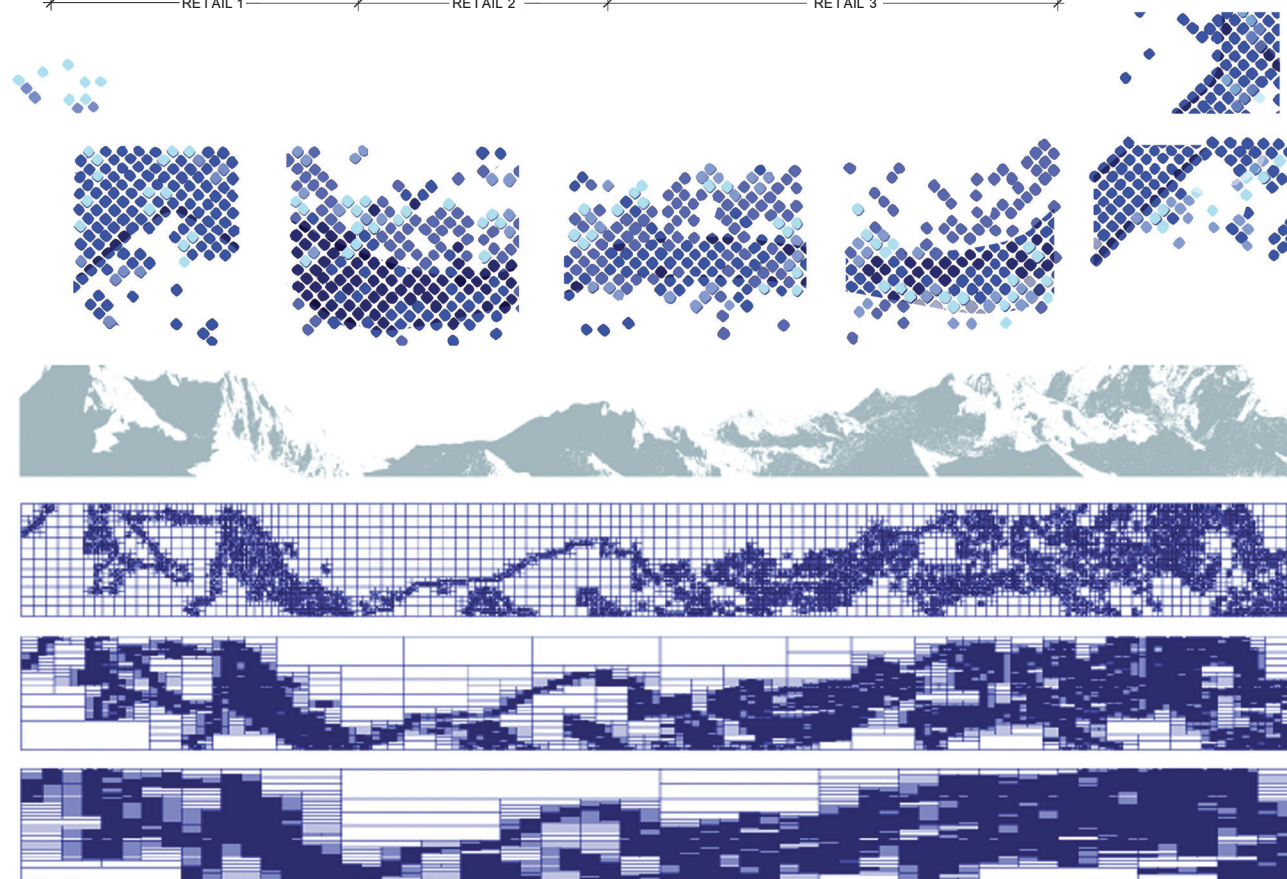
THROUGH THE LOT



URBAN STREET



RIPARIAN CORRIDOR



The design for this parking lot was based on strengthening the connection from the city street to the natural riparian corridor. To achieve this, I created a paving pattern through pixelating images of the creek and nearby Mount Tamalpais to create a visual connection as well as an abstract one. The pixels represent the creek fading into the street. The paving pattern is created with permeable pavers of various shades.

THANKS **A LOT!**

