I, Joel Spearman, hereby submit this work as part of the requirements for the degree of: Master of Architecture in: School of Architecture and Interior Design
It is entitled: Interaction through Transfer

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Interaction through Transfer

Thesis
By

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Abstract

Connection between two objects is rarely seen as important as the objects connected, serving only as a means of utility and function. A city may be remembered for its destinations, but the connecting spaces determine the character of the city. An impersonal connection isolates individuals in a city denying a personality and identity to the city and individual. The car has created this isolation by allowing urban sprawl, and by limiting interaction between people.

A single architectural or urban design project cannot stop urban sprawl, and a city will never stop outward growth. Isolation, addressed locally in singular projects, encourages alternative means of transportation between destinations encouraging interaction. This thesis will study how to address and encourage interaction through connection, taking the form of connecting Third Street Promenade to the Santa Monica Pier in Santa Monica, California, locally, while addressing the relationship to greater Los Angeles.
# Table of Contents

Abstract ..................................................................................1

Introduction ..............................................................................2

Establishment of Transfer .........................................................5

Interaction as character of a city .................................................11

Impacts of the Automobile on the city .......................................18

Site Analysis ..............................................................................23

Local Precedent – IIT Campus Center .......................................31

Local Precedent - DAAP ..........................................................38

Design Process ..........................................................................45

Conclusion ................................................................................100

Appendix A: Los Angeles .........................................................I

Sources

Image List
Introduction

Cities are a series of connections between destinations. Destinations become the focus in many cities but the connections and how users transfer between them define the city and establish character. In a city such as Los Angeles, connection in the form of an intricate highway network and dependence on the car has created an impersonal character. The automobile has led to the expansion of the city and reduction of interaction among citizens. These are two of the larger issues that confront the modern city. This thesis will analyze both the local and citywide scales, with a focus placed on the local by providing a connection between Third Street Promenade and Santa Monica Pier in Santa Monica, California.

Cities consist of numerous destinations such as homes, offices, retail, restaurants, cultural locations, and sources of entertainment. These destinations create the need and substance of a city, but the connection and areas of transfer provide the public space. The areas of transfer in a city are the streets, sidewalks, porches, lobbies, parks, and anywhere that facilitates interaction between destinations. Transfer is what takes place in these connections, and transfer is interaction, an exchange between two entities. Exchange
between individuals or spaces can only happen in these secondary or transfer spaces.

The interaction inside a city is what creates its culture and character. Destinations form the images within a city, as they tend to be the picturesque locations of the city, therefore the places create memories. The spaces between define the city, establishing the characteristics and traits. In a city like New York or Chicago, the predominant means of transfer is a public rail line; the city is alive, busy, and constantly moving. These cities allow this public space to remain public and encourage social interaction in all spaces between destinations. In a city like Los Angeles and Phoenix, the predominant means of transfer is private transportation on an extensive network of roadways; the city is isolated, disconnected, and impersonal. These cities privatize these public spaces of transfer. In cities that allow the connections to remain public space, the user can feel a sense of ownership in their city and develop a sense of community. In a city that privatizes these public connection spaces, users only feel a sense of ownership of their personal vehicle and isolation from their surroundings.

The automobile has led to this disconnect inside of cities, especially Los Angeles. Automobiles have allowed cities to expand exponentially outward in the form of urban sprawl and to reduce the interaction among citizens. Urban sprawl is not the enemy of cities often described, but rather, a natural evolution of the city caused by a wide variety of reasons. As elevators allowed for skyscrapers, cars allowed for sprawl, without them these phenomena are not really possible; but, skyscrapers and sprawl do not happen.
simply because they can. Cities are constantly evolving and despite planner’s best attempts, city infrastructure cannot keep up, but must adapt and serve the city as it grows. Sprawl is not the most sustainable or desirable form for a city, but this problem cannot be solved or altered with a single architectural or urban design project, only by a series of projects and policies implemented citywide, supported by both citizens and politicians. A lack of interaction in areas of transfer is a local issue addressed in a single project.

The goal of this thesis is to work inside this issue of transfer, at both local and citywide scales. The thesis will focus on creating a local direct connection between two prominent Los Angeles destinations in Santa Monica; Third Street Promenade and Santa Monica Pier. The citywide aspect of the thesis topic will use a transit station to connect to greater Los Angeles and act as an extension to the existing public transportation system, part of a system to unite the sprawl and adapt the infrastructure. In any form of transfer, an exchange will take place, but not just among users and citizens but between spaces. The pier shall affect the promenade and vice versa, while at the same time, greater Los Angeles should influence this new transfer location.
Establishment of transfer

The basic definition of transfer is to move from one to another, often applied to a student changing schools, an organ to a new body, computer data, or an individual between spaces (www.dictionary.com).

With this wide application, it is important to establish a set of parameters for transfer and any deviations of this word as it applies to this thesis. Transfer is an exchange between two entities that encourages interaction between these two. While this definition varies only slightly from the basic definition, the word “exchange” and inclusion of interaction greatly changes what qualifies as a transfer. Exchange includes the property of moving, but also includes more subtle ways of transfer including dynamic movement, copying, and impressing. Interaction is to act on one another or together, affecting one, both, or something periphery to change. This exchange and interaction does not need to be equal between the two entities or even limited to two entities. Precedents of both cities and singular projects, applications of theories on transfer from other occupation fields, and architectural theorists create the basis for the definitions and applications of transfer.
Transfer applies to a variety of fields of study. In relation to science, transfer applies to qualities like temperature and energy. Heat is transferred between objects through the molecules that make them up. The higher the temperature, the more energy each molecule has. This higher energy causes the molecules to move in an “excited” state, causing them to collide at a high rate. When they collide with a molecule of a lower energy and temperature, some energy transfers from the lower energy molecule, this slows and cools the first molecule, while speeding up and heating the second molecule. This collision is a basic interaction between two molecules. Through enough collisions, all molecules will become a single stable temperature. This demonstrates a transfer of interaction at the smallest possible scale, the molecular level. Both molecules that collide change and alter each other, the basic definition of transfer encouraging interaction.

In the field of economics, exchange theory works with exchange, interaction, and therefore transfer. In a traditional economic theory, the exchange takes place between a
single actor (user) and a market (Willer, 7). This eliminates an interaction, as a market is an abstract concept of environmental parameters, like market price. This means that in a traditional economic theory there is an exchange but no interaction, meaning that there cannot be a transfer, as it requires both. Transfer, in an economic sense, is not the exchange of goods, but works as more of a social structure. Social structures are organizations of power in the economic system. Without transfer, social structures cannot exist. In this traditional economic model transfer cannot exist because the market determines everything denying any actor involved power. In exchange theories, exchange takes place between two specific actors, causing them to interact (Willer, 7). Transfer exists in exchange theories because it accounts for both exchange and interaction, resulting in a social structure. While transfer may be a term with broad application, it is still limited in its range of description. Therefore, additional terms to fully discuss the topic are as follows: Transference, Copy, Mobility, Connection, Shift, and Relocation. While these terms

**Transfer Variations**

**Shift** - Is a movement between two entities coupled with a change or alteration. This term thought of as the gears in a car, or the tectonics of the earth. In a car, a **shift** takes place in the gears based on the speed and movement of the car and the gears inside, altering the behavior and rhythm of the engine. A **shift** in the tectonics of the earth moves plates that make up the earth's crust, changing the geography of the surface, creating a ridge or trench. The exchange that takes place is in the movement between spaces. The interaction comes from the change or alteration. The change that takes place during the movement is a reaction from the first, altering itself to become the second. This interaction builds upon the interaction in **copy**. Architecturally, shift is applicable to volumetrically representing movement or an unbalanced geometry. It could also be applicable to establishing a vocabulary discussed in **transference** and **copy**.

**Relocation** - Is a movement to a new location with no copy or alteration. Often thought about in changing jobs or moving residences, relocation displays exchange as a simple movement in a single direction. Like copy, the encouragement of interaction is more difficult to define. To move in a single direction from old to new affects neither the old nor new. The interaction of relocation takes place in the surrounding environments. Moving in a single direction will leave a void in the environment of the old and insert something different to the new. How these environments change and adapt to the relocation shows the interaction. Architecturally applied, relocation is a standard practice in private residences or programmatic functions. Homes, especially modular, often move from location to location, and are built to do so. The impact of moving a single home has limited impact on the surrounding environment, leaving or filling only a single generalized plot of land. A larger impact happens when cities rezone or move areas of the city, taking what was a residential area and introducing an existing retail corridor here. Where that retail corridor was leaves a void in the city and local economy, while the new location for the retail corridor changes the dynamic of a residential community.
establish some overlap, all are a form of transfer that encourages interaction.

Transfer encouraging interaction is predominately associated with the users who occupy the spaces and move between them, but the interaction can take place between the spaces themselves. All the previously mentioned terms are applicable to an interaction between spaces. In transference, copy, and shift an established dialogue in architectural language between two spaces or projects creates an interaction. While both spaces may stand and be understood independently, together they create a deeper meaning and organization. An example of this would be the Aronoff addition to DAAP at the University of Cincinnati. Using transfer of transference, copy, and shift, the addition was able to reference the existing buildings by using their form and organization to create a process of design. These references carry through the new building using a new architectural vocabulary, while this new vocabulary extends, in pieces, through the existing buildings establishing a visual interaction. Connection between the spaces can influence the organization of the spaces, as the spaces can influence connection. How these spaces accept the means of connection, signal the entry and exit of the spaces, as well as, what type of connection is encouraged. This establishes the interaction between the means of connection and the spaces, and the interaction between the two spaces. Transfer in terms of relocation is by necessity an interaction between two spaces, often impacting the spaces more than users. A void left in one space, while something new introduced in another space. These spaces are linked and interact differently than in other forms of transfer, there is no dialogue between the affected space, but their interaction takes place
through a third party, that which moves.

The transfer of users is the other aspect of transfer between spaces. This aspect of transfer is on a personal level, stimulating interactions among people. The terms of transfer are more limited when dealing with users as transference, copy, and shift are not immediately applicable. Mobility and relocation are directed at users in a more precise manner. Connection is the physical link between two spaces providing the opportunity and access for user interaction. Mobility applies to user interaction as the actual movement and pattern users take between spaces. Stimulating interaction through mobility can be done through movement patterns and how the patterns themselves interact. As opposed to roadways and rail lines, a direct path and avoidance of intersections may not be desirable, as they limit opportunities for interaction. Relocation, again, deals with the movement of the user, but this exchange moves in only one direction. A group of users moves from one area to another and interact with their environment and users of that environment.

The greatest amount of interaction takes place during transit, between spaces. An example of this, at a very small scale, would be passing through the hallway in a building. When in any particular room users are limited in their interaction with others, whereas in a hallway users are moving and come into contact with a wider variety and greater number of others. Unplanned meetings and interactions take place on a regular basis in between destinations. On a slightly larger scale this type of transfer takes
struggling through reduced enrollment, a lack of density through the campus center, and a disconnect between academic and residential sides of campus. IIT commissioned Rem Koolhaas and OMA to design and build the McCormick Tribune Campus Center and help reconnect the campus. This building pulled a collection of student programs from around campus and united them in a solitary building on campus. This collection of student programs created a bridge between the academic and residential sides of campus, create a buffer of student life between school and home. To facilitate movement of students through the building and to each side the designers continued existing pathways through campus through the new building. This coupled with the collection of program captured “the sum of students” and created a density of building and students through the center of campus (www.oma.nl). This building helped to provide an easier mobility through campus to allow students to relocate between academic and residence.

Transfer can occur anywhere from a molecular level to a citywide level, and anywhere in between, but to do so transfer must have both exchange and interaction. This transfer can be between two spaces or two users, but both must have changed or been affected by this interaction. This thesis will focus on how to create a transfer between two spaces, but encourage an interaction for both the spaces and the users.
Interaction as character of a city

The interaction between spaces relates architecturally to a city, the interaction of users relates to the humanity of a city. The more interaction between users in a city, the more personable, social, and active a city becomes. This link between the city and the interaction inside is captured in *De Volkskrant*, a Dutch newspaper that asked Dutch expats to name the most beautiful view of their current cities. A young art dealer living in New York responded: “The most beautiful view is in the subway, where you see all the nationalities of the world. The wonder is that everyone feels they are a New Yorker and an American” (de Certeau, 86).” This is an important quote because it took place shortly after the September 11th attacks on the World Trade Center. Michel de Certeau expanded on this, “The dynamism and pride of New York is no longer symbolized by the tall buildings, but by the diversity and energy of its population (de Certeau, 86).” This illustrates how the citizens and where they interact define a city, not the destinations or tall buildings. Michel de Certeau builds upon this interaction, stating, “They do not talk with each other, hardly even look at each other, and they still seem somehow familiar with one another. And the place where you sense this most intensely is obviously that remarkable subterranean transport system which interconnects every part of that immense city and all its different groups of inhabitants (de Certeau, 86).” Certeau shows that this interaction does not need to be direct, but a subtle understanding locating this interaction not in a single location, but in a location that connects the rest of the city.

Cities are an assembly of a series of destinations and buildings that are the visual memories of a city, but what connects these destinations create the identity of a city. New York, London, Chicago, Los Angeles, San Francisco, and Boston provide good examples of connection and transfer defining the city.
New York City

New York City is a dense city of 8 million people\(^1\) known for the destinations of Times Square, Rockefeller Center, the Empire State building, and Radio City Music Hall, among others. New York is connected by a road system on a strict grid lined with sidewalks and an extensive metro system. The city’s metro system connects the entire city, allowing for quick access anywhere, providing quick mass transportation that encourages interaction between the users. In addition, the city is pedestrian friendly with numerous wide sidewalks and crosswalks. While large quantities of streets typically create an impersonal city, New York works around this problem, as a majority of the traffic is taxis, buses, and city vehicles like police or fire vehicles. Because of the entire city being connected by transportation that encourages interaction, the city feels personable, alive, and vibrant despite its intimidating scale.

London

London is a city of 7 million people\(^2\), which often draws comparisons with New York City. While slightly more sprawling in size, the comparisons are mostly accurate and reasonable. London is known for the destinations of Trafalgar Square, Big Ben, the Parliament, and the London Eye. Like

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1  U.S. Census Data from 2000 tract.
2  U.K. Census Data from 2001 tract
New York, London is connected by an extensive metro system, the famous London Underground. Unfortunately, the Underground is becoming very expensive and cost prohibitive, but the mass transportation system of buses is very affordable and popular. This bus system works as a transfer, similar to both New York and London’s metro systems, encouraging interaction while providing a fast, reliable means of transportation. The character of London is very similar to New York City, a personable, vibrant, and connected city.

**Chicago**

Chicago is a much smaller city than London or New York at just under 3 million people\(^3\), but still one of the largest in the United States. Chicago is known for destinations of Sears Tower, the Magnificent Mile, Navy Pier, Millennium Park, and Wrigley Field. The city has a similar pedestrian and automotive aspect to New York, promoting a walk-able city while providing significant infrastructure for private automotive transportation, primarily in the form of taxis and public works vehicles. Chicago makes use of a public metro system that is primary above ground, resulting in a slightly different character than London or New York. The result of these forms of connection is a city with the character and feel of a large, dense, active city, which because of the elevated rail lines is divided into sections and grouped together, leading to geographic terms like “the Loop” in Chicago.

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\(^3\) U.S. Census Data from 2000 tract.
Boston

Boston is the smallest city looked at with roughly 600,000 inhabitants\(^4\). Boston is known for the destinations of Fenway Park, Harvard Square, Paul Revere House, Boston Common, and Bunker Hill. Boston like New York, Chicago, and London has an extensive metro system that allows for quick travel to almost anywhere in the city, but this system differs in its layout. The city’s metro system uses a spoke design to organize the metro system, leading to a focus on central critical parts of the city, providing a hierarchy in the city. There are also, a series of roads that link the two halves of Boston divided by a river. The roads bridge over, creating key locations on both sides of the river. In addition to creating importance along the river, these roads intersect at numerous squares around the city, creating the centers for many communities inside Boston. Combining these important locations on each side of the river with the center of the spokes in the metro system and the city squares show what the city has placed an emphasis on economically and culturally, representing its character. At the emphasized locations, are places like Harvard, MIT, Boston University, and the historic downtown. The emphasis placed on transfer, connection, and what is connected; create a city of historical values and higher education.

San Francisco

San Francisco is a much smaller city than Los Angeles at three quarters of a million people\(^5\). San Francisco, though only the fourth most populous city in California is one

\(^4\) U.S. Census Data from 2000 tract.

\(^5\) U.S. Census Data from 2000 tract.
of the most famous, with destinations of Alcatraz, Chinatown, Golden Gate Bridge, Transamerica Building, and Fisherman’s Wharf. Located on a bay, water and elevation change become dominant factors in transportation throughout the city. A series of bridges connect the multiple cities located around the bays, while cable cars serve as the dominant means of mass transportation. These bridges are an extension of roads through the surrounding cities and serve as strategically placed connecting lines to allow San Francisco, Oakland, and others to serve as one united city with each community having its own identity. Cable cars are an evolution of inclines needed because of the many hills and sharp elevation changes. While there is an underground system of transportation, public transportation relies on more surface based transfer, due to the elevation changes, making a system as extensive as New York or London difficult. Though San Francisco is still a very large city, the means of transportation and transfer give San Francisco the character of a friendlier, small city, encouraging a substantial amount of interaction between its citizens and different locations throughout the city. Surface cable cars and rail lines allow users to interact with the city and different spaces to interact without dividing the city into sections like Chicago.

**Los Angeles**

Los Angeles is a difficult city to establish boundaries for, as it is spread over a very large distance. The population of the city of Los Angeles is just under 4 million, the county of Los Angeles is just under 10 million, and Los Angeles Greater Metropolitan area is
13 million people. Los Angeles is known for destinations of Venice Beach, Sunset Strip, Rodeo Drive, the Hollywood sign, and Santa Monica Pier. Los Angeles is a series of roads; a rotating grid structure connected by long boulevards defines the city streets with state highways and interstates layered on top creating a spider-web of intersecting roadways. Majority of Los Angeles streets and boulevards have sidewalks lining them, but they are underutilized, as Los Angeles is too large to be a walking city. Only in certain locations are there large populations of pedestrian traffic, such as Third Street Promenade in Santa Monica and Hollywood Boulevard through Hollywood. Public transportation is not a popular means of transportation as the metro does not link a substantial amount of the metropolitan area and buses are slow and unreliable. The sheer size of the city prevents taxis from being a cost-effective means of transportation, leaving citizens to rely on their car and extensive system of roadways to transfer. The car dominates Los Angeles; the ratio of 5 cars for every 3 people is the inverse of the national average of 3 cars for every 5 people. This dependence on the car leads to Los Angeles having the character of an impersonal city, whose citizens live in their car, isolating themselves from the city and other citizens.

These cities receive their character from transfer between destinations because the connections between are public space. Streets, sidewalks, metro stations, buses, and

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6 U.S. Census Data from 2000 tract.
trains are part of the public realm. Cities that maintain the connections as public space, New York, London, Chicago, San Francisco, and Boston, create more welcoming, friendly cities. Cities like Los Angeles use transfer strictly for functional purposes, focusing on simply moving from place to place, reducing the public realm.

In all of these cities, the connection of destinations and the quality of transfer help to define the character of the city. This is possible not because the cities intended on making metro systems or cable cars the focus of their city, but because these elements of transfer creating the connection are the public space of the city. When experiencing a city, the public space between the intended destinations are what users experience, therefore creating their view of the city and its character. While transfer may not be the only item that influences the character of the city, it is perhaps the most powerful and most difficult to change. If a city is perceived as dirty or boring, solutions of public works or program in the city can quickly be implemented, but a city that feels disconnect, impersonal, and isolated is not as easy to correct. These are problems with the infrastructure and connection in the city; the public space of the city is not functioning properly or perhaps does not exist. In the case of Los Angeles, the city needs to reclaim the public space from the private space of the car and allow for transfer between citizens and city spaces.
Impacts of the Automobile on the City

The automobile has influenced the city immensely, allowing for quick convenient travel to almost everyone. While the car has provided for a variety of freedoms, it has also led to disconnect and alienation inside of cities. Cars have allowed cities to expand exponentially outward, and reduction in the interaction of citizens. The automobile has, not caused the expansion of cities outward, or urban sprawl, but has been the enabler of this process. The private ownership of automobiles is one of the biggest positives of the car, but also leads to an isolation of users from the city and each other. Passengers in a vehicle become inactive observers of the city and each other instead of actively participating in their surroundings and other users. The personal automobile will always have a place in the modern city, but cars often limit cities by a dependence on them. Destinations and connections that function without automobiles are often the most successful locations in a city, providing a human scale encouraging interactions.

The expansion of the city outward was not caused by the automobile, but a natural evolution of the city. Historically cities have fluctuated between growth outward and growth upward. The Roman Empire cited as having collapsed, in part, because of its stop in outward expansion. As the empire continued to conquer other civilizations and grow outward it had a constant flow of new check labor through slavery, when this expansion ceased, the civilization began to collapse under the weight of itself. The empire could no longer afford to maintain the standard of living it had established, leading to rebellion and the eventual collapse of the city (Willer, 24). While this lesson may only apply partially to modern cities, it is important to see that without continued growth for new resources cities can collapse under their own economic structure. In most cases, these “new resources” are a desire for ownership of a home and plot of land. Historically, people have been pulled to the frontier, new unsettled land, to start over or create something entirely their own. In the past it was large portions of unexplored land,
like the establishment of settlements in the new world of North and South America, the explosion westward during the gold rush, or the current move to the suburbs, the former countryside. There is a long-established pattern of decentralized, low-density development. Cars and roadways have allowed this to happen at an increased rate, making transportation from suburban centers of living to the city possible. This pattern of decentralization first led to a separation of sectors of life, living, work, entertainment separated into different sectors of the city. Because of this pattern, businesses began to move to their employment pool, creating not a centralized city, but a multi-centered city.

The automobile has helped to define the city, and has served as the solution as many times as it has served as the problem. In 1950, a sociologist made a connection between a decline in the central business district of Los Angeles to the inaccessibility of downtown by automobile (Brodsly, 12). This prompted the development of radial freeway routes to connect downtown to major suburban developments, leading to a renaissance downtown. Suburbs are often thought to have followed highways and roads, but the highways are meant to connect to other cities or infrastructure, and suburbs like businesses locate in proximity to these for convenience. Author of LA Freeways, David Brodsly says, “if I were called on to cast my judgment on the L.A. freeways, it would be simply this: they make sense (Brodsly, 1).” Highways do make logical sense, but in the early 1960’s the Buchanan Report warned of “the adverse effects cars could have in urban areas if they were not controlled.” This resulted in the concept of “traffic calming” in Germany stemming from the term Woonerven in the Netherlands in the late 1960’s and early 1970’s (Schrijnen, 128). Traffic calming is reclamation of urban space for pedestrians and...
cyclist, similar to pedestrianization. The goal of traffic calming is not to set policies against the car, but “for the ‘emancipation’ of the pedestrian, the reclamation of public and cycle transport and the preservation of the historic environment.” This is an example of how cities grow naturally, faster than the infrastructure that supports them, despite a city’s best attempt. Cities are now attempting to adjust their structure of location, from a centralized to a multi-centered city, and their means of connection, traffic calming and pedestrianization, to the new city while still working towards the future.

The car has allowed for expansive growth and freedom in the modern city, but this same growth and freedom has allowed cities to grow to the extent of disconnection and isolation. Infrastructure is now catching up to the development of the city and attempting to fix some unforeseen problems of the modern city. Cities will not abandon the idea of urban sprawl, but new city centers will emerge in the suburbs, creating a metropolitan area of multiple centers and communities linked through new forms of connection and infrastructure. These city center may experience a time in which density greatly increase and city structures similar to those before sprawl will develop in mass, or cities may continue to develop in the current pattern of low density. City planners will attempt to predict and build for these futures, but infrastructure will consistently be catching up to the rest of the city.

The larger problem signified in the automobile is the reduction of interaction among citizens. Automobiles reduce interaction because of the speed in which they move and...
the barriers they form in the city. With the exception of rail transportation, nothing in a city moves at the speed an automobile does through a city. Minimum speeds through a city in a car are 25 miles per hour, in comparison; Lance Armstrong averaged this speed on a bicycle in the 2005 Tour de France (www.letour.fr), and the world's fastest man runs at 22.7 mph in 100 meters (www.sciencenews.org). A car has only the means of interacting with other automobiles at this speed, a practice that is not entirely safe, though practiced at places like the Sunset Strip, or Las Vegas strip. Interaction with the city becomes difficult as well; as cities and building design had to radically adjust in the 1920’s through the art deco style to become perceivable to passengers in a car. The drive-thru is an evolution created entirely for the car to eliminate the need to leave the car to obtain food or common conveniences and reduced interaction to a single person at a window for car passengers. Beyond the ability to abstractly watch the city pass by from inside a car and the interaction between the city and the infrastructure making the car possible, automobiles are severely limited in their interaction with the city.

The infrastructure that makes automobiles possible interacts with the city by creating barriers and altering the structure of the city. Majority of roadways through a city take place a ground level and simply intersect through a traffic light, stop or yield sign, however, as roadways continued to develop
and evolve, a second layer of highways formed. This created multiple levels of roads, altering the state of the city. The second and sometimes third layer of highways led to a complicated system of overpasses, bridges, on and off ramps. The same way an elevated rail line can group and section off a city, overpasses and elevated highways separate and divide. Separation and division is not always a negative aspect in a city. The 405 in Los Angeles separate many beach communities and cities from greater Los Angeles, isolating them from the greater context of the city. Roadways can create boundaries without a change in elevation as well. Wide streets with heavy traffic can prevent pedestrian activities from crossing to the other side of the street. The danger the car provides to the pedestrian can be a preventing factor in the transfer of pedestrians to different destinations. An example is the site of this thesis; little to no transfer takes place between Third Street Promenade and Santa Monica Pier because of the difficulty that crossing multiple busy intersections presents to pedestrians.

The car has made the life of everyone in a city easier, but has added much complexity to the city. The Automobile has added flexibility, the ability to go more places, further away in a shorter amount of time. However, the car has helped citizens move further away from their places of employment, meaning that there is no net gain in time from the speed of the car. It has also divided cities into multiple different communities and groupings.
Site Analysis

Santa Monica has always been a special destination inside of Los Angeles. Beginning as a place that a railroad “carried young lovers out to the beach at Santa Monica and gave local merchants, manufacturers, farmers, and winegrowers a harbor closer to San Francisco than San Pedro” and currently as a place of tourism, upscale business, and important access to the ocean and public beach system (Weaver, 35). The aspect of business and industry in Santa Monica has shifted away from manufacturing and farming but remains an important center for business in the form of retail, dining, tourism, and offices. Today, Santa Monica is a major destination for tourism and recreation for citizens of Los Angeles, most often associated with the shopping on Third Street Promenade, and nightlife and entertainment of Santa Monica Pier. In a city defined by automotive traffic and highways, these two main destinations limit vehicular access to create pedestrian friendly environments. These destinations are successful because of this pedestrian emphasis, creating interaction between users and the city, and the program that creates the spaces. However, both remain isolated from each other, despite their close proximity. By connecting these destinations, Santa Monica can establish a network of transfer that allows for a wide variety of interaction, and allow the two spaces to interact.
Figure 20: Site Overview
Third Street Promenade is a four block long stretch of Third Street lined with retail, movie theaters, and a limited number of restaurants and clubs. At the south end of the promenade is a large mall designed Frank Gehry, Santa Monica Place. The four block stretch is restricted to cars, allowing them only to use the cross streets. In replace of typical asphalt street is a brick road with a series of benches, landscape, and fountains. The urban façade of both sides of the street is complete with no empty lots. In fact, the entire block on each side is dense and full, with the back half of the blocks used primarily for parking garages and private businesses.

By severely limiting vehicular access to and through Third Street, the area is pedestrian friendly, encouraging interaction among users between shops. The only interaction between vehicle and pedestrian is at the cross streets through an enlarged crosswalk at a light, timed to give advantage to the pedestrian. Vehicular traffic moves east to west, towards the coast, through majority...
of the site, and moves back to the east at the north and south extremes of the promenade, on Colorado Avenue, Broadway, and Wilshire Boulevard. Pedestrian traffic works much the same way as traditional vehicular traffic. Starting at a parking garage, located around the outside of Third Street Promenade and at the Frank Gehry mall, moving along the right side of the street, turning around and proceeding down the other side of the street, with a the landscaping acting as a median. This circulation creates a counter-clockwise movement along the promenade, with the median providing opportunities to cross to the other side.

Santa Monica Pier is located at the termination of Colorado Avenue, which runs behind the Frank Gehry mall. The pier bridges over the intersection of the Pacific Coast Highway and Interstate 10, and continues over the beach, extending over the ocean. Immediately after the arching bridge over the highways, there are a few souvenir shops and snack bars with access to the beach below. This access to the beach is important as this marks the beginning of Santa Monica beach. Not that the beach isn’t used or doesn’t extend to the north, but the large elevation difference between the city and the beach to the north create access problems, the beach is primarily for residential use as well. Continuing through the pier leads the user to a large parking lot on the left side that occupies the first half of the pier. Beyond the parking lot is the carnival-like atmosphere.
famous to the pier. Small roller coasters and a large ferris wheel are the signatures of the pier, but other rides exist as well as carnival games, an arcade, and food. The pier narrows beyond the carnival until its termination, where it once again widens to include a restaurant and an administration building for a government coast and beach patrol.

Access to Santa Monica Pier is very limited, a single bridge connects the pier to the rest of the city, and a set of stairs connects the beach to the south. This limited access creates a linear pattern of movement. The vast majority of users enter on the bridge from the city. The bridge overcomes a major boundary between Santa Monica and the pier; Interstate 10 and the Pacific Coast Highway merge at this location, cutting away land as the two lowered highways join. The bridge must incorporate both pedestrian and vehicular traffic and transition between the higher elevation of the city and the lower elevation of the pier. The vehicular traffic down the center of the bridge forces pedestrians to the outside to walk a steep ramp and stairs creating one side for leaving the pier and one for entering the pier. At the base of the bridge is the access to the beach, which is only active during daylight hours. The access to the beach merges into the pedestrian traffic from the bridge seamlessly and circulation continues through the pier in a completely linear fashion, not that different from Third Street Promenade, with movement patterns, not differing greatly from street traffic, on the right. The sole exception to this is the area of the amusement park, which, while part of the pier, acts as a separate programmatic element. Movement through the amusement park is dynamic as groups of people move from one event, ride, or game to the next. This creates a more interactive and entertaining element than the pier itself,
because of the increased interaction that takes place through this means of circulation. The pier itself has less interaction among users than the promenade, primarily because of the lack of program on the pier. The pier becomes, in part, about being out over the ocean, and creating an interaction with the space around the user.

The site, the area between, is a stretch of two blocks severely underutilized. The blocks are full of parking lots, empty lots, and an incomplete urban façade. There are several single story motels with courtyard parking, and a McDonalds that has a parking lot that fills half the block. What exists fosters no movement between the promenade and the pier. The current condition is a left over, stuck between two destinations, with only the benefit of proximity.

Circulation between the pier and promenade, on the site, is divided and broken, with no clear path or series of paths to establish connection. Without a clear connection, transfer between the two primary destinations is limited. Movement between the pier and promenade currently takes place around the current site, divided between a path down Broadway across Ocean Avenue into a small coastal park that ends at the bridge to the pier and a path across Second Avenue to Colorado Avenue that terminates at Ocean Avenue and the bridge. Beyond the problem that these paths split the users in half, major roads provide substantial barriers in pedestrian movement in both paths. All the roads that need to be crossed to traverse between Santa Monica Pier and Third Street Promenade are larger four to eight lane busy boulevards that receive an increase in traffic due to the impacts of closing Third Street for the promenade. While ample
crosswalks are provided, busy boulevards that provide only forty seconds to cross at intermittent periods can create mental walls of automobiles difficult to find motivation to cross. Increasing the lack of motivation to move between the pier and promenade is the lack of suitable program on the site. The program on the site is not of interest to users of either the pier or promenade, consisting mainly of motels that discourage density on the site, parking lots, and fast food dining. These programs prevent circulation through the site by further catering to the automobile and blocking any possible paths through with private courtyards and parking. The site needs to be re-programmed and opened up to establish a connection between the pier and promenade. If the new program is, predominately, a new station of the red line metro a connection could also be made into greater Los Angeles. This new program would allow the surface level of the site to redevelop to establish a direct connection between the pier and promenade, allowing users to avoid much of the traffic that separates the destinations currently. The site would need additional parking, created by the transit station and park and ride system Los Angeles employs, potentially allowing for the interaction of multiple types of transportation that provide connections and transfer through the city. The program on the site should be a mix of retail, entertainment, offices, hotels, and apartments that currently makes up the surrounding area. Circulation through the site should not follow the precedents provided by the pier and promenade. While these destinations do allow transfer, encouraging interaction, they do not maximize this transfer. They are linear and efficient, moving people in singular linear directions. Interaction is at its most efficient when more organic or fluid in form, as this creates the most intersections.
Third Street Promenade and Santa Monica Pier are popular pedestrian oriented destinations separated by underutilized blocks, but divided by several busy streets. The blocks between these destinations provide an opportunity to easy tie into the existing red line metro system, providing Santa Monica with a connection to greater Los Angeles that will encourage transfer and interaction to their city and between two of the city’s most important destinations. Continuing the development of an underground station to the surface level would provide this connection between the destinations to foster movement between destinations. This redevelopment would be a continuation of the programs of each, and allow pedestrians to interact between themselves, with other forms of transportation, and with each space.
Local Precedents – IIT Campus Center

The campus at Illinois Institute of Technology (IIT), originally designed by Mies Van Der Rohe, was divided both literally and figuratively by the elevated L-line and program. Rem Koolhaas, through his design firm OMA, used their project for a new campus center building, The McCormick Tribune Campus Center, to unite the two halves of campus and demonstrate the school’s technological prowess. Through this building OMA provides a definitive example of transfer and connection.

Figure 28: Illinois Institute of Technology Campus
The IIT campus is laid out with the academic portion of campus located to the west of the elevated rail, and the residential, student life portion of campus located to the east of the rail. Parallel to the elevated rail is State Street, the major street that runs through the campus. This street, according to Mies master plan, was to be a street of dense activity so to help the campus work into the urban condition. On the academic half of campus buildings are predominately two-stories with a few four-story buildings and one significant tower of nine stories on the south end. These buildings are organized on the twenty-four foot grid of the campus, and laid out so that buildings line up but also overlap to frame views and almost always have one of Mies’ twenty-four buildings in view. The student life side of the campus has mainly four-story buildings with a few eight-story buildings. These buildings use the same grid and tend to align, while allowing for overlap as well, but the buildings are clustered to create more courtyard-like environments, and a more personable communal atmosphere.

The programmatic separation on campus divides the campus. When this is coupled with the lack of density along State Street, a vacancy through the center, a lack of a personable scale around the elevated rail, and a sharp reduction in the number of students it was designed for in the 1970’s, the division becomes more severe. The campus, while award winning, was struggling to provide a pedestrian atmosphere or create an urban condition, both critical for a college campus located in a city like Chicago.

OMA, led by Rem Koolhaas, was commissioned to design a campus center building that would house both student and Figure 29: Campus Plan before McCormick Tribune Campus Center
administrative functions, effectively creating a student center and a place for student led activities to meet and interact with faculty and administration. The building would unite dining halls, student organization offices, a bookstore, coffee bar, recreation facilities, and faculty center placing many different functions previously spread around campus in one central location. Because of this collection of programs, the building provided the ideal vehicle to reconnect the campus, and act as a point of transfer.

Program becomes important when creating a location of connection and transfer. Without sufficient and appropriate program, the space cannot function properly, as there is a reduced desire to pass through the space. In Santa Monica, the two-block site between the Santa Monica Pier and Third Street Promenade is too large of an area for a metro station to adequately connect and encourage transfer between the destinations. Therefore, additional program needs to be added to the site to influence travel through the site to the destinations. This program, pulled from both locations, will encompass retail, dining, entertainment, offices, hotels, and apartments. This program will not be as dense as either destination, as it is not the primary purpose of the site, transfer is. Like the McCormick Tribune Campus Center, program in the site will help to blend the two connected destinations, reducing the division that exists between them.

The first thing that Koolhaas did was to go against the master plan and the idea that this building should be located between State Street and the elevated rail. While Koolhaas respected Mie’s plan, he feared that this would further isolate the two sides of campus. Instead he reduced the suggested height of the building to two stories and extended the building to take up a single block, located between State Street and Wabash Avenue, and between 32nd and 33rd Streets. This is located directly in the center of the campus, helping to fill a large portion of the vacated middle.
Filling the entire block with the campus center meant that the elevated rail would have to be incorporated into the design of the building. This solution becomes the visual signature of the building. The elevated rail is roughly fifteen to twenty feet in the air and occurs almost directly in the middle of the campus center. The roof of the building is at its lowest point at the elevated rail, so that it passes just below the existing rail, and extends upwards towards the two sides of campus. A tube of corrugated steel and concrete then encompasses the elevated rail, to minimize the noise made by the trains and unite it with the building. By incorporating the elevated rail, Koolhaas has used what used to be the physical separation of the campus and made it part of the solution for reconnection. In addition to this, the fanning out roof limits isolated views of the rail line, and helps to solve the problem of a lack of personable scale. Rem uses the roof to shield from the elevated train and unify the heterogeneity below, and uses the tube to, “Release(s) the potential of the No-Man’s land around the elevated (www.oma.nl).”

Figure 30:
Elevated Rail merging into the McCormick Tribune Campus Center through the tube.

Figure 31:
Sections showing scale of campus before the campus center (above) and the scale of campus after the campus center (below)
Roadways provide a similar barrier between the pier and promenade that the elevated rail line did on campus. The separation caused by automotive traffic creates a problem for pedestrians to move easily between the pier and promenade, as the only access between is a few crosswalks through four and six lane streets. The largest boundary is Ocean Avenue, running along the west side of the site. Using an elevation change pedestrian traffic will be able to interact visually with the roadway, but proceed past the roadway freely. This elevation change could take the form of a bridge over the roadway, connecting with the bridge that provides the entrance to the pier, or take the form of a tunnel beneath the roadway. The campus center did not turn its back to the elevated rail line, instead it embraced it, making it part of the building. The site should embrace the automobile in the same way, not banning it from the site or surrounding areas, but provide a safe means of interaction between the automobile, pedestrian, and rail traffic.

Koolhaas creates a successful building using transfer in part because while he is creating something entirely new and different on the campus, he is not completely separating himself from the history of the context, but embracing it. On the site for the McCormick Tribune Campus Center is a Mies Van Der Rohe building, which instead of being destroyed, was built around and incorporated into the design, being converted into a dining hall. The elevated rail line, while added to, retains its original structure that penetrates through the new building. This is one of three structural systems through the new building, the second being the new structure for the elevated rail. The third structure is for...
the building and is based upon the twenty-four foot grid of the campus plan. In addition to the same dimensions of the campus plan the columns take the shape of a traditional Mies column, that of a wide flange beam placed vertically. Perhaps the most important aspect that Koolhaas maintained from the existing campus, in terms of transfer and connection, is that of the circulation paths. Koolhaas maintained the existing paths that students had used to travel from one side of campus to the other in the building. These paths of circulation go against the orthogonal plan of the campus.

The paths through the building are the connection between the two halves of campus, providing a pedestrian transfer through the building. These paths are the dominant interior figures in the building, creating “islands” of programmatic elements (www.oma.nl). They cross through the entire building and themselves, creating an environment of interaction. Relating this type of transfer and connection to a city scale, Koolhaas relates this city scale down to his building, ”By not stacking activities, but by positioning each programmatic particle as part of a dense mosaic, our building contains the urban condition itself (www.oma.nl).”

Koolhaas’ attempt to use circulation paths as pedestrian streets with the programmatic islands metaphorically acting as buildings to recreate the urban condition directly relate to process of creating a connection in an urban setting between two urban features. Koolhaas recognized that simple linear circulation paths that intersect at ninety-degree...
angles perform functionally, but circulation paths that intersect at odd angles, blending and weaving together, encourage more interaction creating more transfer. When applied to the site in Santa Monica this idea builds upon the observation that Third Street Promenade and Santa Monica Pier do not encourage maximum interaction because of their linear circulation routes, and the site to be developed between should break the tradition circulation around the block pattern. The site should promote multiple paths through, but intersect these paths, creating different experiences and forcing interaction with all paths and users. The programmatic elements pulled from the pier and promenade should be placed throughout these sites at moments of intersection, capturing ideas from the urban scale, and reducing them to a more human scale, stimulating interaction.

The McCormick Tribune Campus Center connects the academic to the residential. More importantly the building helps stimulate campus life, placing it back to where it was when enrollment was higher, back to that for which Mies Van Der Rohe had designed for. The stimulation of student life is because of the interaction that the transfer creates. In the intersection of students’ lives on campus, they meet and interact on their way to the destinations of class and home. While Koolhaas breaks some of the principals and keeps others that Mies enacted, Koolhaas’ ultimate goal was to pull the campus back to what it the original design intent. The campus center allows for space to transfer between urban life and the academic world. The transfer space created in the site between the pier and promenade can stimulate both destinations by allowing and encouraging, a currently limited, transfer, in the same way the campus center stimulates both sides of campus. Santa Monica can build upon the ideas of using program to bridge between two important destinations, how to handle paths of circulation to capture the sum of users, and recreating the urban condition at a human scale.
Local Precedents – DAAP

In 1988 Peter Eisenman began design on an addition, named the Aronoff, to the Design, Art, Architecture, and Planning college at the University of Cincinnati, which was famously exhibited in 1991 at the Fifth International Architecture Biennale in Venice. Construction started in 1993 and completed in 1996, and the building was to add some 300,000+ square feet to the existing three buildings while providing connection between them. The DAAP building, added years earlier, already connected the two existing buildings, Alms and Wolfson, but the connection was simply two stairways between the buildings, done to allow for the varying floor heights between the buildings. Eisenman, as famous for his buildings as he is architectural theory and dissections thereof, used a rigorous design process involving the concept of transfer to create the form of the new building and connection to the existing.

Unlike Rem Koolhaas and his McCormick Tribune Campus Center, this building was not critical in the connection of the campus, or even the three existing buildings. However, the campus at this point was a series of isolated buildings spread out across a campus of parking lots, which perhaps used the addition as a springboard for a campus overhaul, in terms of connection and transfer. This building was necessary programmatically, but became a testimony to what Sanford Kwinter describes as “Courage”, of both the architect and the client (Kwinter, 155). Beyond programmatic needs what “Piranesi-Effect Eisenman seeks is specifically the effect of unforeseeable complexity that arises from multiple interfering structures blindly pursuing their own clockwork logic (Kwinter,
Kolbowski builds on this same idea saying, “…The design of the building does not develop from the functional requirements. The methodology used by Eisenman Architects broadly acknowledges its debt to an overdetermination of design methodology (Kolbowski, 136).” What both authors describe, is that while the building was built for functional and programmatic needs, the driving force and brilliance behind the building was the unflinching design methodology guiding the design, a significant portion of which came from the forms of the existing buildings.

This design methodology is two parts, the box geometry and the composite figure. The box geometry, based upon the standard “box”, housing a studio, corridor, and offices. The boxes were placed in a line and that line was transformed to a curve to contrast the rectilinear forms of the existing buildings. The boxes then overlapped based upon a logarithmic formula to insure no repetition. Each box in this curve was rotated on two axes, each different and randomly. The curve, produced in triplicate, creates a torqued series, which was produced in triplicate to create a self-similar series. This tangle of boxes leads to the form of the s curve of the building and the eventual college hall, or grand stair and café atrium.

The composite figure is the half of the
design methodology that deals with the existing building. The composite figure began as the “chevron” taken from the hallways of the central existing building, DAAP. It too, was produced in triplicate and rotated so that they ran parallel to the north face of each building, the three create the composite figure. The area between each chevron is referred to as a chevron zone. The composite figure is then laid into the box geometry to create the parti of the building. Where the chevrons intersect a box, the box geometry is displaced in the chevron zone. The chevrons were continued through the new building and used as the generator for the landscape.

Where the box geometry is displaced by the chevron and the overlap in the box geometry intersect the Aronoff addition has its finest moments. The misplaced, the overlapped, and the finest moments are at the intersection of new and old. The café atrium rises through as a void between the addition and the added to. Chevrons bridge between, isolating, cutting, and collaging views. Silvia Kolbowski describes the new

Figure 36:
From top to bottom: Existing Building with Chevron; Existing Building traces of Chevron.

Figure 37:
Void created by the overlapping box geometry.
building as a “Leaning-up-against type of architecture” as it leans on the buildings (Kolbowski, 134). Though it also never seems to really touch the existing, leaving spaces like the café, 3000 entry, and exterior courtyard between. She continues on to point out that the addition embraces the old with a veneer, stating how a veneer always leans (Kolbowski, 134). Therefore, while the addition is leaning on the existing yet seemingly not touching, the addition blurs the distinction between them by wrapping parts of the existing or adding false columns as part of the composite figure of the existing. The language of the addition is veneered and extended into the existing to purposefully confound the difference between old and new.

The idea of a veneer, that uses a new vocabulary, placed into existing buildings to blend between the existing buildings and an addition is a type of transfer named transference. Transference is a clear exchange between the existing buildings and new addition, and creates an interaction that alters the existing, adding another layer of meaning to both the old and new. This type of transfer is particularly useful in application to building a new addition and extension between two existing destinations and event locations that use similar but different vocabularies that the addition must merge and connect. Applied to this thesis, the new addition can flow into both Santa Monica Pier and Third Street Promenade, or allow those to flow into the new addition to strengthen the connection.
between the addition and each addition. The technique that initiated the blending from new to old was through the process of “leaning”, at an urban scale, not confined to a single building or complex this can still be done, but more metaphorically than figural. What is built on the site will not appear to lean on either the pier or promenade, but the pier and promenade will provide the basis for what will be built on the site. The addition will rely upon the successes and program of both destinations to justify a station, and guide the connection between.

While the chevrons provide the bulk of the circulation through old and new, and therefore are the locations of connection and transfer, the predominate location of circulation and transfer is the grand stair, or college hall. The grand stair is the dominant figure of the new building, beginning at the base of Crosley Tower and the DAAP associated parking garage and extending through the building and to ground level at the 6000 floor. This serves as a multipurpose space for circulation, critique space, pause, and meeting. This space is the location of interaction, designed specifically for that, people meet and converse, both purposefully and spontaneously. From the grand stair the user can look to many different levels and locations, making visual connection to the café, 3000, 4000, 5000,
6000 levels, college offices, studios, and an art gallery. The grand stair was designed to be a source of interaction and a spine for the building, proposing that interaction, transfer, and connection were the spine of this building, appropriate for a building that was intended to bring together a wide variety of majors; design, art, architecture, and planning.

These chevrons represent the existing circulation and were used to help create and guide the new addition. In Santa Monica, at the site, there are two types of chevrons affecting the surrounding spaces, with the addition of another chevron planned for the addition. The two existing chevrons are the chevrons created by the pedestrian traffic in both destinations, and the chevrons of the roadways, with the additional chevron to be the extension of the rapid rail transit system. In the Aronoff the chevrons defined the paths of circulation, creating connection through all four buildings, providing the means of transfer for users and the combination of spaces, but they also weave and interact with each other. Applied to the local site in Santa Monica the three types of chevrons should provide the same connection and transfer they do in the Aronoff, they should also, interact between themselves, providing a transfer between the three modes of transportation. Logistically, they cannot intersect and weave in the same way because the three modes of transportation are not equal, but can also interact by being on the same site, visually connecting and serving similar functions. Elevation changes will be needed to provide this interaction safely. Interaction between train, automobile, and pedestrian while breaking the boundaries inherently created by road and railways will be difficult to achieve without using primarily visual connections and elevation changes.

The Aronoff addition to DAAP was conceived to add a significant amount of program while linking together three existing buildings to house four broad majors under one roof. This in itself leads to the idea of connection, but Peter Eisenman used connection
and transfer as the guiding forces behind his extensive design process. The result is a building that “leans” heavily upon the existing to establish a new vocabulary, possibly ornament, and redefine connection and transfer. Connection and transfer are more than just the basics of linking one to the other for movement; it is about the interaction of the users and spaces. The users of the building are forced into contact with one another, as the buildings are forced into a dialogue between each other taking place at the formation of a large central atrium space. Blurring the line between old and new, communication, and circulation, Eisenman provided how transfer and connection can be created at a building scale. These lessons can also be placed into an urban scale in Santa Monica between Third Street Promenade and Santa Monica Pier. By allowing the new connection site to build upon the ideas of both destinations while introducing a new vocabulary between and blending into them and using the idea of chevrons as circulation paths and connection routes that stimulate interaction at each level and between each level.
Design Process

This thesis looks to create a link to greater Los Angeles while primarily connecting Santa Monica Pier to Third Street Promenade. To do this a metro station serves as the catalyst for redevelopment of two blocks located directly between the two destinations. While the metro station serves as the focus for the project, the buildings and development on the two blocks serve as the initial aspect of design. The current development on site is severely underutilized, not providing sufficient program or density to encourage a connection between the pier and promenade, making developing program and density a priority on the site. For a metro station and pathway of transfer to be successful in this location, the new development needs to provide sufficient density and program to generate a critical mass of users through the site.

The design can be broken down into five critical stages; ideal program layout, view and density development through pathways, introduction of orthogonal influences, re-creation of the city grid, and design refinement. This first four stages deal almost exclusively with creating the proper density and distribution of program through the site, and the final two are development of the architecture of pathways through the site encouraging transfer, including the station itself.

Stage One: Ideal Program Layout

To begin this stage, an ideal layout was created for each of the following things on site; direct pathways, retail, restaurants, hotels, offices, metro station, bus stop, and park. Once an ideal layout was created for each, they were then layered over each other, in different orders and sequences to create several options to formally guide the development of the two sites. The original version started with using the retail...
(promenade) model as a base, subtracting from the buildings the pathways that created the most direct connections. This process was duplicated multiple times with the pathways oriented differently each time. This resulted in a very fragmented distribution of program, so the office and hotel layouts were layered on this to add additional program back into the blocks. The office and hotel were kept in their entirety and used as tower connections between the first floor retail. The layered of park pathways make up the next layer, they carved away and subtracted from the office and hotel layers. The final layer was an introduction of a bus stop pathway through the site, which split the west end of the block, adding another path through the development. The result was a very fractured development, which while engaging and visually exciting, created too many unusable and odd building spaces. Specifically at the entry points to the site, exciting forms were developed, but this version demonstrated this approach could be successful, but would need to scaled back to create usable forms.

Further versions of this process resulted in began with different starting points and took both additive and subtractive approaches. While the original goal of this stage was to create a basis for formal structure to the development on the site, none of the final versions resulted in definitions of space suitable for the intended program. However, the process did establish the diagonal directly linking the corner in closest proximity to Santa Monica Pier to the two closest access points to Third Street Promenade as a valid and logical primary circulation path. When this strong diagonal linked to other circulation paths through the site, the center of the site opened with the creation of an open plaza, coinciding with the location of the station platform below. While this diagonal and central plaza above the metro station platform show as successful design aspects, the emphasis to entrances to the site seem to be backwards in their hierarchy. Circulation paths open the site more to less important entry and exit points, while limiting the three primary points of exchange located on the diagonal.
Figure 42:
Ideal layout of Third Street Promenade development on site
Figure 43:
Diagram of ideal movement paths on site
Figure 44:
First conceptual design based upon overlaid ideal programs
Figure 45:
Second design of stage one design
Figure 46:
Final design of stage one design
Stage Two: View and Density Development through Pathways

Taking all the variations created from the first stage of design, a singular design was taken into a three dimensional extrusion of clay modeling to analyze the sightlines through the site and density of development. The first extrusion was based entirely on the designs from the previous stage, and yielded a design that emphasized the large central plaza, but also the least important entry and exit points. The designs created narrow, uninviting entry/exit points at the emphasized locations, not opening the development up to either the pier or promenade. Instead, the design created an inwardly focused development that encouraged little interaction with the surrounding spaces and even less transfer through the site.

To correct these problems, the second design looked to “open” the development at the entry/exit points along the established diagonal. To do this multiple paths are used instead of a single path making a larger opening. Because of the larger openings, the emphasis on the diagonal connecting the pier and promenade is diminished. Secondary points of access are still addressed equally in this scheme, resulting in paths through the development slicing through the diagonal in the opposite direction. These diagonals create a confusing pattern of circulation in the site, by deviating only slightly from the encouraged movement between Santa Monica Pier and Third Street Promenade. The development now opens itself more to the nearby destinations, but the interior has become further fragmented and disjointed. While this solution proves not to be any closer to a final solution than any of the previous, it does begin to show that by opening the three primary points of access in such a way, smaller public squares can be developed at each of these locations. In this version, these small public squares are not emphasized until towers introduce the locations of greater importance. These towers are out of scale,
but look to place importance at certain locations and frame views. This version shows that the number of paths needs to be reduced, the angles of the pathways need to be simplified, and that by opening access points more and locating public squares near them the diagonal circulation can become more powerful.

The final version of this stage aimed at opening the access points to the site, exaggerating the diagonal circulation, and simplifying the pathways through the site. Using the multiple path approach of the previous version as a start point, the diagonal circulation sought to unite these. In previous versions, the diagonal circulation was treated like any path through the site, a set width, which united two locations, in this version the three plazas create a triangle used for the diagonal circulation. This results in an elongated central public plaza that extends to each of the access points. In previous versions secondary access points connected to multiple locations inside the site, but to simplify the circulation they now only connect into one location along the diagonal circulation near one of the secondary plazas, reducing the number of secondary pathways from six to three. This creates a hybrid between the first and second version of this stage in design. The elongated central plaza is a large space throughout the site that allows a focus within the development, while still opening the site to encourage a connection through to the destinations on each side. This version leaves much larger sections of built space from program than the previous two, as the first two resulted in small shards of programmed space because of the numerous paths through at odd angles. While the programmed space for the first two had very tight angles making much of the space unusable, the third version creates blocks of program that is too large when compared to the context of Santa Monica. Another problem with this version is that while the pathways through the space are much more organized and refined, they still do little to actually engage and connect with Santa Monica Pier and Third Street Promenade. The other glaring problem with this version, as well as all the previous, is that the angular structure of the development does
not work well into the context, as both the pier and promenade are based rigidly on the city grid.

This stage refined the pathways through the site, simplifying the circulation to three predominate entries with a large elongated plaza serving as the means of connection through the site, and a few pathways linking secondary access points to the plaza, creating an inviting development encouraging movement through the site with ample space for pause and interaction. With the limited number of pathways and limited development, vertically density still is not ideal, but the travel through the site is at a comfortable scale for pedestrian traffic. Views from the site into the context still need to be addressed, as only views into and through the site were included in the design up to this point. Along with views the design needs to incorporate the surrounding context into design further.
Figure 47:
First version of Clay model designs
Figure 48:
First version of Clay model designs perspective down diagonal
Figure 49:
First version of clay model designs overview
Figure 50:
Second version of clay model designs
Figure 51:
Second version of clay model designs perspective down diagonal
Figure 52:
Second version of clay model designs overview
Figure 53:
Second version of clay model design
Figure 54:
Third version of clay model design
Figure 55:
Third version of clay model design perspective
Figure 56:
Third version of clay model design perspective down alley
Stage Three: Introduction of Orthogonal Influences

With the importance placed on the diagonal through the site to directly connect between the pier and promenade but the understanding that the development needs to sit well in context of orthogonal city blocks the development became a developed courtyard of unique geometry surrounded by a ring of orthogonal development. In this stage, the ring around the development worked to allow the development to blend into the context, while still opening at two of the locations from the previous stage. However, in this stage, they are not angular pathways that emerge at these locations, but larger clear openings defined by breaks in the orthogonal buildings at the perimeter. Once inside this ring of development, the programmatic forms are once again angular, creating a different world inside the site, free from the constraints of the context.

The orthogonal ring around the development ranges from one to four stories, based upon a need for view into and out of the site, with the south and east side predominately a full four stories and the west and north sides primarily a single story. The outer ring of development would be a continuation in style and form of the existing buildings around the site, singular multistory buildings that link to form a continuous street front. The continuous street front would break at the two locations on the east side providing the most direct access to Third Street Promenade. The ring also breaks at the corners of the site, to provide necessary exits from the site, in the form of narrow alleys. The remaining three access points to the site are emphasized connections to Palisades Park that links into the pier. At these three points, stair towers are created to provide a connection that bypasses the barrier of automobiles on Ocean Avenue. A bridge that extends over the street, allowing users to make the visual connection that the towers connect the park to the development, connects the towers closest to the pier. The other two sets of towers connect with a tunnel under the street, providing an interaction with the ticketing level
of the metro station. The stair towers provide the only access to the metro station below on the west side of the site, with the access on the east side in single story sections of the outer ring at the primary entrances. Throughout the center of the site, visual access to the metro station occurs in large open-air skylights.

These skylights through the site follow the diagonal logic established previously. The building development through the center of the site also follows this diagonal logic, creating a foreign atmosphere in the context of fractured geometry. This fractured geometry works predominately in the same framework as previous stages with similar pathways and directed movement. The evolution though the center of the site was the introduction of a second level of pathways. The second level followed secondary circulation pathways and focused on creating views to the pier and mountains to the north. The introduction of the second floor allowed for more vertical connections visually and the opportunity to replace program removed to create large pathways at ground level.

This stage of design was a definitive step in the correct direction, in respect to working into context and overall design, but the ideal of a courtyard development and the location of the stair towers undermined the concept of the diagonal. The diagonal has shown to be a more powerful design than a courtyard with a successful contextual ring. The challenge continues to be how this diagonal can be utilized without creating a fractured geometry that creates building forms with unusable space. In addition to this, this stage has shown the importance of creating a development that works into the orthogonal context of the site, creating an inviting development, not an alien form. The addition of a second floor of development is an idea in the correct direction, but needs further refinement in respect to views that are framed, and what is connected on the second floor. The stair towers provide a visual connection from the park and pier into the site and are a clear step in the right direction, but their location needs work, and what their true design is still needs to be decided.
Figure 57:
Ring of orthogonal development in Stage three design
Figure 58:
First floor plan of Stage three design
Figure 59:
Second floor plan of Stage three design
Figure 60:
All plans overlaid of Stage three design
Figure 61:
Station plan of Stage three design
**Stage Four:** Re-Creation of the City Grid

In response to the positive adjustments in the previous stage of conforming to the orthogonal influences of the site, the city grid entered into the design. Instead of providing only a ring of orthogonal development, the entire site became a reference to the city grid of the city, reducing the proportions of a standard city block throughout the site. The two-block development became a grid of 4 by 8 city blocks measuring seventy feet by one hundred and forty five feet, with streets twenty feet wide. To incorporate the entry points of the site and the diagonal circulation through the site the grid was further reduced to break the larger blocks into four smaller blocks with an alley of ten feet, with some blocks removed to encourage the circulation and make room for the stair towers. A large city block has been removed and replaced with a skylight into the metro station, which uses the city grid as an organizing element for circulation. To replace the programmatic spaces removed for circulation a second and third level of development. The stair towers were extended upward a level to create access to a second level on the north and west sides of the site. The third level is on the southeast corner of the site and connects directly into Santa Monica Place, an anchor to Third Street Promenade with a bridge over the street, and connects to the second level on the site with a large ramp over the main circulation space of the site. The pathways for the second and third stories are based on views to the pier and the Santa Monica Mountains to the north, as well as providing access to as many buildings as possible.

The concept of using the city grid and creating a city at a small scale on the site relates to the macro scale of the thesis, connecting the city, and creating transfer to improve the character of the city. Pedestrian walkways through the site are the metaphorical city...
streets, making the most of the public space in the city of this development, encouraging interaction at each intersection.

This provides a very solid basis for the design, a development to create the transfer between Santa Monica Pier and Third Street Promenade, as well as Santa Monica to Greater Los Angeles. However, this provides only the basis, the bones to the design, it does not singularly establish transfer. As the design continues to develop, transfer will be further improved and established, but this excitement to the design needs to still be added. Transfer through the site will build upon the strong diagonal established in previous stages; the reference to the city grid, pedestrian dominated interior streets and alleys, and the multiple levels of development.
Figure 62:
Design board for Final Winter quarter presentation
Figure 63:
First floor plan for Stage four design
Figure 64:
Second floor plan for Stage four design
Figure 65:
Third floor plan for Stage four design
Figure 66:
Station floor plan for Stage four design
Figure 67: Diagonal Diagram of Stage four design
Figure 68:
Targeted views of Stage four design
Figure 69:
Section A through Site
Stage Five: Design Refinement

With the basis of the design established, the design focus became the station, and the primary paths through the site. The diagonal that connects between the pier and promenade through the site creates a very large plaza through the center of the site. While this is a nice large space, it is probably too large, and reduces the impact of using the created city streets as pedestrian circulation. To encourage circulation to only take place on the streets and alleyways, the streets and alleyways are placed at a different elevation than the city blocks. The city blocks maintain the consistent slope from the northeast corner to the southwest corner, a slope of twenty-five feet. The streets and alleyways run in a series of ramps and planes to navigate the slope, while still meeting the sidewalk evenly at all entry points. While some of the city blocks are raised, creating masses, some are also removed entirely to create skylights for the station below. To emphasize the diagonal connection between the pier and promenade a large arching bridge that extends through the entire site, establishing a direct visible connection between the pier and promenade. This bridge rests on and slices through the raised masses of city blocks using them as a means of structure and for handrails. The city blocks not used for support of the large bridge become the skylights, located primarily near the stair towers, becoming a visual cue to the entry and exit points. The large bridge through the site adds another layer of circulation navigating between the ramps connecting the second and third levels of development and the ramped and constantly changing elevation of the ground level of circulation.

The station below uses the city block grid as a guideline for design, using the space carved out by the diagonal as the mass of the ticketing level. To add excitement and activity to this level, program was added to the level corresponding to the same grid.
To further guide intuitive navigation to the correct stair tower color-coded ramps work around these islands of program on the pedestrian circulation paths of the grid. This color-coding continues on the walls tile that gradient from blue to green, to yellow, to red, to purple back to blue, depending on the stair tower, of the same color they lead to. Tile covers the ceiling as well, but a semi-reflective black tile taking the form of the undulating ceiling. The curved form is a result from the ramping and sloping of the ground level pathways, simplifying the multi-faceted form into a sweeping curve with skylights punching holes.

Three parts primarily make up the ground floor; the direct connecting bridge through the site, the sloped pedestrian pathways, and the programmatic building blocks the pathways serve. The bridge at a macro scale relates to an interstate through a city, but at the local scale references the pier using metal planks as the walking service, a shift of the wood planks on the pier. The bridge also serves as the diagram of the primary goal of the thesis, providing a direct connection between Santa Monica Pier and Third Street Promenade. The bridge has two different handrails, the concrete of the heavy masses that support it, and glass handrails elsewhere. The pedestrian pathways are an obvious reference to city streets at the macro scale, but reference the promenade at the local scale, using the same brick in the same pattern for the ground plane. The pathways look to accomplish transfer through this reference by then shifting the ground plane of the same material. The elongated means of connection between the pier and promenade works to encourage interaction between pedestrians by requiring multiple turns to navigate the site and creating as many intersections as possible. Pedestrians also interact with the built space around them by using the heavy masses supporting the bridge to create more density and intimate spaces while providing distant views out of the site to desired destinations such as the park, pier, and promenade. The programmatic building blocks are not the design goal of this project and therefore materials are not specifically called
out, but could range anywhere from brick to steel and glass. Specific programmatic function is not specified either, though the northwest corner of the site, as well as along the diagonal, would most likely be retail and dining with the southeast corner of the site would be more residential, hotel, and office uses. More isolated blocks serving ideally as hotels and apartment buildings. Their dimensions and locations are specific to the site though, and regardless of the program that would eventually move into the spaces, they would maintain these proportions.

The second and third floor, housing relocated program, creates views and provides overviews of the site. With less program, larger more open plazas exist. These larger plazas begin to disintegrate the city grid established below, so this grid is expressed by providing a single flooring type, of concrete, over both the building blocks below and pedestrian walkways and cutting a six-inch wide gap between the walkway and building. This subtly displays the grid, maintains the plaza appearance and provides light to the darker alleyways below. Like the bridge below, two different types of railings exist, a parapet extension of the building blocks below when a railing is needed with a building below, and a perforated metal version of the glass handrails on the bridge at the locations over the pedestrian pathway. The program on the second and third level, like the ground level, is not directly specified on function, but is ideal for outdoor dining at locations near the plazas and views, and residential, offices, and hotels in the more isolated locations.

The design works to accomplish transfer at both a macro and micro scale, connecting Santa Monica to greater Los Angeles, and Santa Monica Pier to Third Street Promenade. Having a metro station at the core of the site accomplishes the macro scale, but extends this by using transference of the city scale to a smaller scale. The design also makes a copy of the surfaces in both the locally connected sites and then shifts them, by either level changes or a change in material, to establish a transfer between this site and the pier.
and promenade. The bridge provides the most direct connection between the pier and promenade, adding greater mobility between the sites. The second and third levels are a relocation of program from the ground floor, that provide views to the local sites being connected, and greater Los Angeles that Santa Monica now has greater mobility to. The second and third floor also provide the best location to observe the multiple levels of transfer that take place on the site, providing a view to all six levels of the site at a single location, visually connecting the entire site to itself and to the surrounding environment, both near and far.
Figure 71:
Ramping diagram of ground floor plan
Figure 72:
Transfer bridge conceptual sketch
Figure 74:
Sketch of Station plan and ramping system
Figure 75:
View from Second level at Pier corner
Figure 76: Overview of Site and Bridge
Figure 77:
Overview of Site and Bridge from Promenade corner
Figure 78:
View on Bridge
Figure 80:
View in Station
Figure 81:
View under bridge and second level
Figure 82:
View from Promenade corner under Bridge
Conclusion

Cities are a series of destinations connected by an intricate network of streets, sidewalks, highways, and rail lines. These destinations create the memories, points of origins, and ends, but movement between these define the city, establishing the character. The connections in the city serve as un-programmed, utilitarian public space. When connection spaces provide a successful transfer in a city, the city seems alive, vibrant and flowing, when a city does not provide a successful transfer the city becomes compartmentalized, impersonal, and stagnant. Los Angeles has privatized their public space by connecting destinations almost solely by roads, highways, and the automobile, allowing for minimal interaction between citizens. Los Angeles is developing a mass transportation system that is reliant on a combination of buses, above ground rail, and subway. This thesis works towards creating a successful connection of transfer by creating an end of line metro station in Santa Monica, linking Santa Monica to greater Los Angeles connecting through western Los Angeles, an area also lacking a successful means of connection.

At a local scale, the thesis continues the exploration of connection and transfer by using the metro station as a catalyst for development between Santa Monica Pier and Third Street Promenade, two of Santa Monica’s greatest destinations, creating a connection of transfer between these destinations. The current conditions on site disconnect the two destinations by providing no clear path between the pier and promenade, isolating pedestrian traffic at each destination with large busy roadways as boundaries, and providing no program of interest on the two blocks between. By redeveloping the two blocks, isolated between Third Street Promenade and Santa Monica Pier, with a direct path connecting the two, which focuses on the metro station, pedestrians will have a clear path of travel between. A series of stair towers connecting the multiple levels of
the connecting site reducing the impact of the dividing roadways, extend the pedestrian-oriented atmospheres of the pier and promenade. The entertainment and retail based programs of the pier and promenade continue in the connecting site in the rigid structure of scaled down city blocks. This provides a logical arrangement of program, while creating sufficient density, and referencing connection on a citywide scale.

The metro station in Santa Monica connects Santa Monica and other western communities of Los Angeles to greater Los Angeles, but also has a local focus of connecting destinations at its location. While the thesis looks at reconnecting the city, the connection at a local level and transfer among users are the driving forces of the project. By extending the station vertically to the street level and two stories above, pathways are created inside the site, to Santa Monica Pier, and Third Street Promenade. Making use of this vertical extension clear connections are made between destinations, but these connections encourage transfer between spaces and users, creating interactions between the two spaces, and between users.
Appendix A

Los Angeles

Los Angeles is one of the most American of all American Cities, symbolizing the best and the worst of the country. A city loved for movies, music, and Hollywood, is indicted for being the definitive example of urban sprawl, congested traffic, segregated populations, and polluted air. That is Los Angeles today, but has not always been its identity; once a small part of Mexico that resisted the United States and everything it stood for. While Los Angeles has transformed and changed dramatically over its history, the city has always been an alluring and desired location, regardless of its faults. The first ever visit to the original civilization at Los Angeles by Spanish explorers a Franciscan priest noted in his diary that despite “three consecutive earthquakes in the afternoon and night, this delightful place among the trees on the river” had “all the requisites for a large settlement (Weaver, 11).” Even now as being the best and worst of America, people continue to migrate west to Los Angeles because “myth-makers keep picturing it as a semi tropical adaptation of Sodom and Cedar Rapids (Weaver, 27).” Tracking the evolution of Los Angeles from a small Mexican village to the sprawling metropolis we know now greatly aids in the understanding of modern day Los Angeles and helps when focusing on designing a specific public project for a Los Angeles community.

Spanish settlers were the first to inhabit the area to become Los Angeles beyond native Angelinos in 1771 with the Mission San Gabriel Arcangel (Weaver, 15). In 1781, forty-
four settlers arrived to claim lands promised to them by the government (Weaver, 17). Of the forty-four only two were Spaniards the majority of them were Native Americans, African Americans, and those of mixed ancestry (Weaver, 18). The area newly named *El Pueblo de la Reina de los Angeles*, or The Town of the Queen of the Angels, tripled in size within ten years, making a home for families with names that would influence Los Angeles like Sepulveda, Pico, and Figueroa (Weaver, 19). Los Angeles was becoming known for a climate encouraging long life, claiming nine of eighty adults reached the age of ninety, resulting in the look of a retirement village for old soldiers (Weaver, 19).

In 1822, news was received that Mexico had won its independence from Spain and the citizens of El Pueblo promptly changed their flag and celebrated (Weaver, 20). This would be a different reaction than when California would become part of the United States, in 1846, following the lead of Texas. Governor Pio Pico would warn Californians of “hordes of Yankee emigrants” continuing by saying (Weaver, 23):

> “*They are cultivating farms, establishing vineyards, erecting mills, sawing up lumber, building workshops, and doing a thousand other things which seem natural to them, but which Californians neglect or despise. What then are we to do? Shall we remain supine, while these daring strangers are overrunning our fertile plains, and gradually outnumbering and displacing us? Shall these incursions go on unchecked, until we shall become strangers in our own land?*”

Perhaps never before has a governor been so correct about the future of California and a group of people so distinctly polarized. Modern California has created “strangers in our own land” but Californians still do neglect or despise many of those things mentioned and their modern equivalents but perhaps nowhere else are they more dependent or numerous than in California and Los Angeles. What changed El Pueblo to Los Angeles and what Governor Pio Pico feared was the influence of the Yankee dollar and the effect
it would have on the citizens. An Indian who lived into the twentieth century remembers this change vividly saying, “When Indians died, the villages ended. We, all the people, ended (Weaver, 24).”

The town quickly updated and brought up to the “standards” of the eastern cities in the United States. Gas lamps were installed in the city, in addition to running water, and a sewer system. The southern portion of the city quickly Americanized banning bullfighting and creating a club “for the promotion of the manly art of base ball playing (Weaver, 29).” Those to the north held strong in their Mexican values and still resembled the adobe Mexican village littered with goats, chickens, with a reputation for cockfighting, gambling, drinking, and brawls (Weaver, 29).

City improvements continued when then State Senator Phineas Banning pushed through two railroad bills to have Los Angeles invest $225,000 in two railroads connecting the city (Weaver, 34). These railroads drastically altered the value of property throughout the city, what was $14 per acre is now $80 per acre (Weaver, 34). This only amplified when “The Octopus” and the first transcontinental railroad reached Los Angeles (Weaver, 35). “The Octopus” was a railroad connecting San Francisco to Los Angeles making demands from any city it passed through. If these demands were not met, the railroad would go around the city causing it to wither and die. Los Angeles gave in to the demands of the railroad giving it, among other things, a railroad that “carried young lovers out to the beach at Santa Monica and gave local merchants, manufacturers, farmers, and winegrowers a harbor closer to San Francisco than San Pedro (Weaver, 35).”

Figure 84: Political Cartoon of the Octopus railroad
In 1881, the one-hundredth anniversary of the city, the population had reached 12,000, but with the potential for growth from the railroads, the city would quickly expand and according to newspaper editorials, “the era of development has but just begun (Weaver, 42).” In comparison to cities in the east, Charles Fletcher Lummis was the first city editor for the *Times* newspaper and came from a similar position in Chillicothe, Ohio. Lummis described Chillicothe as “a beautiful old town of 5,000 people” and Los Angeles as “a dull little place of some 12,000 persons (Weaver, 44).” Currently, this comparison would be written with Chillicothe as the “dull little place”, but the distinction between Los Angeles and Chillicothe begins to work with the modern aspect of the characters of the city. Los Angeles is a city of “persons” not “people” and while “beautiful” could be attributed to the city, it would not be in the same rich context as Lummis used to describe Chillicothe.

In the next ten years, the population of Los Angeles would increase from just fewer than 12,000 to over 50,000, with much of that coming in the first 5 years (Weaver, 47). This was a result of railroads competing for business with rate wars, and heavy advertising by developers in newspapers. This sudden population explosion left park commissioners struggling to find open public space in the city, a problem some would say still plagues the city, saying, “There has, until recently, been so much open ground in all directions within half a mile of the city center that the need of breathing spaces has not been felt (Weaver, 47).” This, coupled with the fact that at the height of the boom no street in the city had been paved, shows the inability
of city infrastructure to keep pace with the evolution of cities. However, by 1891, there were 87 miles of paved road and 78 miles of paved sidewalk, but still experiencing pollution never before seen, and anticipating even more pollution, especially near Santa Monica beaches (Weaver, 47). Through all this development, politicians in the city were determined to further “Americanize” the city to continue further development. Among the items to help was to change all the names of the streets to be named after Yankee subdividers rather than Spanish explorers or Mexican colonists, saying that names like Alcantara, Arapahoe, Cerro Gordo, Juanita, and Montecito could “prove very troublesome to newcomers from the East (Weaver, 49).”

In the next thirty years Los Angeles would continue to grow explosively and develop several of the important industries that would carry it through to modern Los Angeles. Population had grown to over 100,000 people by 1900 and city officials saw this growth as only the beginning, using the motto that could still apply today of “Big is Good, Bigger is Better, Biggest is Best (Weaver, 53).” To accommodate for this growth, Los Angeles built “The Panama Canal of the West”, a 250-mile long aqueduct that would increase the water supply from supporting 200,000 to over 2,000,000 (Weaver, 53). Henry E. Huntington worked to “join this whole region in one big family”, linking the city with his red interurban and yellow local trolley cars (Weaver, 58). Linking most of Los Angeles, the transportation was affordable costing five cents for local trips, fifteen cents for half hour trips to Pasadena, fifty cents for an hour-long journey to Santa Monica, and one dollar for a hundred mile trek down to Long Beach and San Pedro (Weaver, 59). With the help of the mass transportation system population tripled to 320,000 people with 7,800 in Santa Monica alone, the city had also grown to ten times the size of the original Spanish land grant. The editor of Express quoted as saying, about the new city (Weaver, 59):

Page V
“It will retain the flowers and orchards and lawns, the invigorating free air from the ocean, the bright sunshine and the elbow room, which have marked it as peculiar in the past and which now are secured for all time by the abundance of the water supply. It will not become congested like the older cities, for the transportation lines, built in advance of demands, have made it possible to get out in the midst of the orchards and fields for home making.”

It is clear from today’s perspective that this has always been the goal of the city, to retain the feeling of openness and ownership while still growing to become a powerful and beautiful metropolis. The mass transportation system, viewed as the way to do this, providing freedoms in location to live, distance from the congestion of the city while still having quick access to this city. Unfortunately for Los Angeles, the invention of the horseless carriage in 1897 would slowly develop into the automobile and take control of the city, taking advantage of the desire for ownership (Weaver, 60).

The city also continued to struggle with public space, sacrificed in their desire to grow quickly. The city, wanting quickly to Americanize and rid itself of the image of El Pueblo and the Spanish settlement began giving away thirty-five acre lots if $200 of improvements were done in a calendar year (Weaver, 58). As a result of giving away that amount of land in 1891 the 450 acres of Elysian Park made up 80% of the municipal park system, meaning only 560 acres were still controlled by the city from the original 17,172 acres the city originally inherited (Weaver, 58).
In the early 1900’s, Los Angeles began to develop many of the characteristics we see today in the city, the obsession with the car, dependence on oil, congestion, highway development, and Hollywood. In 1910, Los Angeles had more cars per capita than any other city, were the 3rd largest producer of oil (largest in the west), A Packard dealer had a proposal to connect Los Angeles to San Francisco by means of a great highway, and movies were becoming a dominant industry in the world, lead by Los Angeles (Weaver, 67). Traffic was becoming a serious issue to the city as early as 1910. The city was quickly turning from pedestrian friendly to car friendly to the extent it could endanger the lives of pedestrians, to protect the citizen a plan developed to ban parking in the downtown area, causing great debate. The law passed, but downtown businesses suffered, and multiple car parade protests organized, leading to the reversal of the law (Weaver, 93). The city of Los Angeles gave into the demands of the car, and was entirely dependent on it from this point on. The city was not just obsessed with the car; they were obsessed with airplanes too. Multiple record flights originated from Los Angeles including the first cross-country flight, and multiple records for speed. Los Angeles also became the center of aviation in the United States with one third of the nation’s air traffic centered here.

The 1920’s and 1930’s we decades of continued explosive growth, having recently passed San Francisco as California’s largest city at 577,000 in 1920 the city had a population of 1.25 million by 1930 and 1.5 million by 1940 (Weaver, 83). While the previous decades had begun to establish the basis for modern Los Angeles, the 1920’s and 1930’s define modern Los Angeles. The sprawl of the city reached new unimaginable heights; citizens of the city realized their dependence on the car and some of the consequences of this, the development of downtown as a financial and business center, and definition and allure of Hollywood.
Los Angeles was developing an industry of expansion. The city was using the power of vast water resources to annex cities and continually add to Los Angeles; in 1900 the city was 43 square miles but by 1923 the city was 391 square miles, with an additional 80 square miles added by 1929 (Weaver, 89). The city was coupling this growth with an explosive real estate market. Land values were growing exponentially overnight.

To illustrate this the *Times* traced two single lots originally bought in 1864 for $1 and a promise to build ditches was on those thirty city blocks (Weaver, 99). The lots split and small fragments of the whole sold for $5000 ten years later, $30,000 by 1894, and by 1924 were worth $1,650,000 an appreciation of 164,900 percent in 60 years (Weaver, 99). This explosive growth only added to the lack of public space in the city. It was said in 1920 that if you “Were to soar above Los Angeles today in an airplane you would view a city that in area is the largest in the United States. You would see its outstanding features as, first of all, a huge gridiron of wide business and residence streets where thousands of motor cars skim about like great water spiders (Weaver, 92).” This positive attitude from above differs greatly from John Pastier, 53 years later who viewed Los Angeles from a blimp saying, “Streets, freeways, parking areas, and gas stations occupy perhaps as much space as residences, and this automotive domain is rarely pleasant from either the air or the ground (Weaver, 93).” John D. Weaver builds upon this saying, “Except for its inadequate parks and for hillsides that developers had found out costly to mutilate, the only green spaces to be seen were cemeteries and golf courses (Weaver, 93).”

Los Angeles grew, in importance, into an industrial center for the United States. Beginning with establishment of a significant port in San Pedro, Los Angeles was able to take some of the port business originally associated with San Diego and San Francisco. Industry development grew to include crude oil and the production of tires and kerosene, becoming the second leading producer of tires in the United States through Goodyear.
Tire (Weaver, 63, Tygiel, 3). Industrial growth promoted growth of downtown and the associated businesses. In 1926, twenty-three buildings reaching the downtown height level went up, with an additional twenty going up the following year (Weaver, 107). All this industrial growth pales in comparison to the main area of business growth in LA, movie production.

Today, Hollywood is viewed as the capital of the movie making industry, however it was not until after Los Angeles was the premiere destination to make movies did Hollywood, in 1913, ever become mentioned in connection with movies (Weaver, 79). By 1919 eighty percent of all movies were made in Hollywood and by 1929 the Big Eight companies of Hollywood made ninety percent of the major movies, controlled the theatres they were showed in, and distribution rights (Tygiel, 3). Movies became quite a large industry nationwide, becoming the fifth largest industry in the nation.
by 1917 (Weaver, 80). Movies allowed Los Angeles to combine their desire to grow and advertise their city with an industry capable of great income.

Like most of the United States, World War II had a dramatic effect on Los Angeles. Pearl Harbor led to a series of air raid sirens and fears that Japan would attack the United States through Los Angeles. The paranoia of war with the Japanese, coupled with already bad race relations in Los Angeles, caused the city began locking up Japanese-Americans, from both first and second generations, without reason and targeting Mexican-Americans as sources of riots and gang activity. LA intensified the divide that already existed inside the city, because WWII allowed them to publicly show their discriminations. Minorities in Los Angeles had been pushed to less desired areas of the city and were isolated there, away from the more glamorous areas of the city like Hollywood, Santa Monica, and Venice. Mexican-Americans rebelled against this by moving and expanding into these areas of the city, leading to much violence and many arrests throughout the city. World War II led to further dissention and isolation throughout Los Angeles, further forcing an enormous city from a clear identity.

Post-war Los Angeles went through another period of expansive growth based upon government land subsidies for soldiers in suburbs and a desire to move west once returning from the war. The city continued development of the pre-war city, but no longer doing so with reckless abandon, finally seeing the consequences and problems of the cities current growth. Los Angeles began to Establish procedures and plans to reduce pollution and smog in the city, develop a mass rapid transit system, cost prohibitive real estate, and end extreme racial segregation. Despite pressure to implement these plans, and the best intentions of those creating the plans, the city has done little to curb these problems only crisis in the city force change, such as the race riots in Watts. An author on Los Angeles summed up the city’s faults and virtues by saying, “its belief in newness and bigness, its addiction to fads, its hope for the future, its willingness to try anything
once, its idealistic pragmatism, its cultural groupings and materialistic grain” concluding that Los Angeles directly correlates to “our national character writ large (Weaver, 159).”

Los Angeles today is still struggling with the sprawling size caused by decades of aggressive growth selling the American dream. A city divided by the only thing that links the metropolis, the automobile and its highways. The love affair with the automobile has all but eliminated a mass rapid transit system once touted as the most advanced the United States, and placed Los Angeles as the “number one smog town” (Weaver, 138). In addition to the division highways and automotive traffic create, the city has segregated itself in a desire to become this American dream, isolating and limiting the minorities, who originally founded the city, into ghettos and less desirable places into the city.

Los Angeles has a wonderful and colorful history from which to learn and build. Having successfully built an image of itself that it desperately has attempted to do for the last 250 years, the consequences of these decisions has placed the city in a difficult situation. Because of this, the city has the opportunity and difficult task of reshaping itself by altering and building infrastructure to support and reconnect the existing city, maximizing their image of the American dream while reducing the negatives of the city. By expanding the existing mass rapid transit system and creating transfer points at the stations that are located near and between destinations in the city, not in them, the city would become more interactive and social. This transportation system would more efficiently connect the sprawling metropolis, reduce dependence on the car therefore reducing pollution and smog, and allow the city to reduce segregation and benefit from its diversity.
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Figure 2: Third Street Promenade. Author.

Figure 3: Urban Sprawl.  http://www.ucsusa.org/gulf/pixgulf/solutions_speed06.jpg

Figure 4: Not Used

Figure 5: Not Used

Figure 6: Not Used

Figure 7: DAAP addition, Aronoff Building. http://www.daap.uc.edu

Figure 8: McCormick Tribune Campus Center on IIT campus by OMA. http://www.iit.edu

Figure 9: New York City.

Figure 10: London.

Figure 11: Chicago.

Figure 12: Harvard Square, Boston. Allstondave.

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Figure 14: Los Angeles. http://www.photo.net/photo/pcd0222/los-angeles-traffic-44.4.jpg

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Figure 17: Art Deco street front. http://www.teachingheritage.nsw.edu.au/b_expressing/resources/writz01_150.jpg

Figure 18: Dense layering of Los Angeles freeways. http://www.flatrock.org.nz/topics/environment/assets/fuel_cells_may_come.jpg
Figure 19: I-405 dividing Los Angeles. http://www.photo.net/photo/pcd0222/los-angeles-traffic-44.4.jpg

Figure 20: Site Overview. Google Earth, Author.

Figure 21: Third Street Promenade. Author

Figure 22: Traffic at Third Street Promenade. Author

Figure 23: Santa Monica Pier. Author

Figure 24: Pacific Park on Santa Monica Pier. http://www.pacpark.com

Figure 25: Bridge to Santa Monica Pier. Author

Figure 26: Buildings on Site. Author

Figure 27: Crosswalk at Ocean Avenue. Author

Figure 28: Illinois Institute of Technology Campus Plan. http://www.iit.ed

Figure 29: Campus plan prior to McCormick Tribune Campus Center. Author

Figure 30: Elevated Rail merging with McCormick Tribune Campus Center through the tube. http://www.iit.edu

Figure 31: Sections showing scale of campus before the campus center and the scale of campus after the campus center. Author

Figure 32: Campus Plan highlighting existing pathways through the building. Author

Figure 33: Diagram of the building plan showing the islands of program. Author

Figure 34: 4000 entrance to DAAP. http://www.daap.uc.edu

Figure 35: Phase Shift Plan; Phase Shift Section; Torqued Solid / Torqued Trace Series, Plan; Torqued Solid / Torqued Trace Series, Section. Representing the box geometry. Eleven Authors In Search Of a Building

Figure 36: Existing Building with Chevron; Existing Buildings traces of Chevron. Eleven Authors In Search Of a Building

Figure 37: Void created by overlapping box geometry. Author

Figure 38: Café that inhabits the created void. Author
Figure 39: Grand Stair at 5000 level. Author

Figure 40: Bridge visually connecting the 4000 and 5000 levels. Author

Figure 41: Diagram of Site and Influences. Author

Figure 42: Ideal layout of Third Street Promenade development on site. Author

Figure 43: Diagram of ideal movement paths on site. Author

Figure 44: First conceptual design based upon overlaid ideal programs. Author

Figure 45: Second design of stage one design. Author

Figure 46: Final design of stage one design. Author

Figure 47: First version of clay model designs. Author

Figure 48: First version of Clay model designs perspective down diagonal. Author

Figure 49: First version of clay model designs overview. Author

Figure 50: Second version of clay model designs. Author

Figure 51: Second version of clay model designs perspective down diagonal. Author

Figure 52: Second version of clay model designs overview. Author

Figure 53: Second version of clay model designs. Author

Figure 54: Third version of clay model designs. Author

Figure 55: Third version of clay model designs perspective. Author

Figure 56: Third version of clay model designs perspective down alley. Author

Figure 57: Ring of orthogonal development in Stage three design. Author

Figure 58: First floor plan of Stage three design. Author

Figure 59: Second floor plan of Stage three design. Author

Figure 60: All plans overlaid of Stage three design. Author

Figure 61: Station plan of Stage three design. Author
Figure 62: Design board for Final Winter quarter presentation. Author

Figure 63: First floor plan for Stage four design. Author

Figure 64: Second floor plan for Stage four design. Author

Figure 65: Third floor plan for Stage four design. Author

Figure 66: Station floor plan for Stage four design. Author

Figure 67: Diagonal diagram for Stage four design. Author

Figure 68: Targeted views of Stage four design. Author

Figure 69: Section A through site. Author

Figure 70: Section D through site. Author

Figure 71: Ramping diagram of ground floor plan. Author

Figure 72: Transfer bridge conceptual sketch. Author

Figure 73: Conceptual section. Author

Figure 74: Sketch of station plan and ramping system. Author

Figure 75: View from second level at pier corner. Author

Figure 76: Overview of Site and Bridge. Author

Figure 77: Overview of Site and Bridge from promenade corner. Author

Figure 78: View on bridge. Author

Figure 79: Section perspective of site. Author

Figure 80: View in Station. Author

Figure 81: View under bridge and second level. Author

Figure 82: View from Promenade corner under Bridge. Author

Figure 83: Aerial of Los Angeles downtown.
http://www.aerialimages.com/fineart/scenic/Los_Angeles/los_angeles.jpg
Figure 84: Political cartoon of the Octopus railroad.  
http://userwww.sfsu.edu/~aomendoz/octopus.jpg

Figure 85: Streets of Los Angeles in 1900.  http://www.csulb.edu/~odinthor/ECom.jpg

Figure 86: Highway cutting through Elysian Park.  

Figure 87: Panoramic map of San Pedro Port.  
http://www.historicmapsrestored.com/panoramicmaps/california/sanpedro1905.html

Figure 88: Hollywood Sign.  http://wwp.greenwichmeantime.com/time-zone/usa/california/los-angeles/hollywood/hollywood.JPG

Figure 89: Hollywood Hills, Los Angeles.  Anders Brownworth  