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Linking Space: a Transit Oriented Design

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A Transit Oriented Design

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LINKING SPACE

A TRANSIT ORIENTED DESIGN
CLAREMONT CALIFORNIA

A Transit Oriented Design

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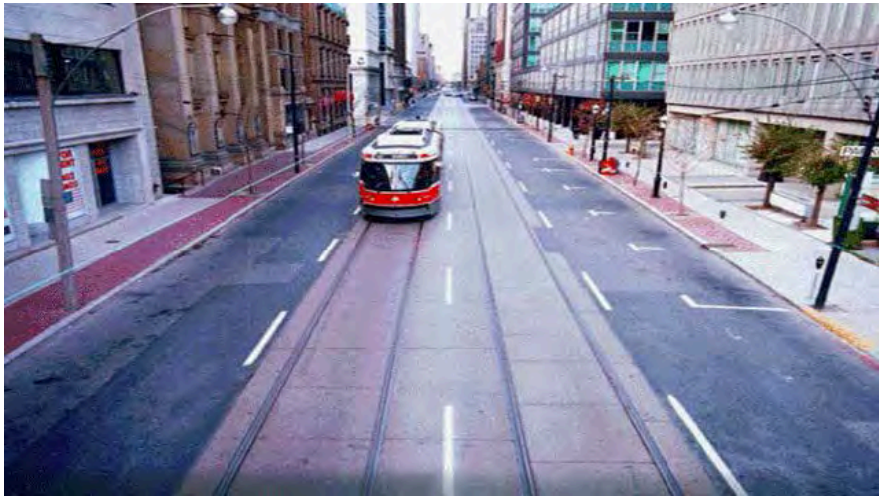
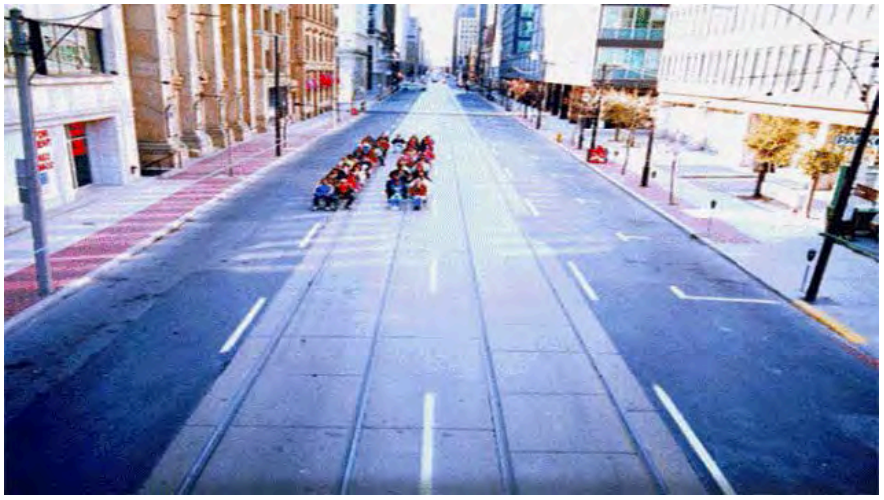
INTRODUCTION





Balloon Translation: Drive one day less and look how much carbon monoxide you'll keep out of the air we breathe."

"While the Chinese economy is booming, the skies above its cities are darkening." In major cities such as Beijing and Shanghai lives are in danger because of the "toxic gray shroud" that hovers over them. All forms of life are in danger. Phenomenal and unplanned growth is to blame and while the numbers of people, cars, cargo transport and exhaust emissions increase, organizations such as WWF are trying to curtail this tragedy. When and why did this happen? What could we have done differently as a human race to prevent this?

Some may dwell on the why, others may focus on what can we do now. WWF took on this challenge with vigor and expressed one tip in dramatic fashion which resonated with me. "Drive one day less and look how much carbon monoxide you'll keep out of the air we breathe." They developed a campaign with 20 other tips like this and engaged partners to support and market the cause. The campaign "20 Ways to 20%" got international attention, lots of press on TV, news channels, radio, and web sites including this web site which is sponsored by WWF: https://en.wwfchina.org/en/what_we_do/climate___energy/lclc/20_ways_to_20_/. The campaign has been received international recognition.

The campaign is truly respectable for attacking the existing problem. But what can I as an architect do to prevent this from happening in our world?

PERSONAL MANIFESTO

Architecture is a response to the world and how man occupies it. It is physical manifestation of how one interprets and responds to an environment. An architect's responsibility is to make a statement and illustrate it through a built work. The response to that statement can be bold, inadequate or fall somewhere in between but the response will never be the same for any two persons. Architecture is an artistic expression transformed into inhabitable space that allows for human interaction.

Today, we have a responsibility to focus architecture in a new sustainable direction; leveraging organic materials that we ultimately can give back to the earth.

In a city scape, sustainability can be understood in multiple ways. Many relate sustainability problems to preservation of natural resources, and solutions to what they can see on their trip home from work such as greenery growing up the side of a building or roof tops decorated with solar panels.

But what about the buildings and the structures we build, that stand tall through wind and storm and house us and our ways of life? Better yet, what about the air that fills those buildings – how can we keep it clean?

Design is no longer acceptable in itself. Now, the demands to construct using renewable materials are ever increasing but we can aspire beyond these tactics to include principled action in our work. From designer to construction engineer to real estate broker to inhabitant, we all need to focus on building a healthier life style not only for the people occupying the earth, but the earth itself. If we give back to the earth but don't change our views on how to occupy it, we are in a stale mate. We, must change the way we treat the earth into a symbiotic relationship if we hope to continue occupying it.

The creation of structure promoting environmental change that also creates social change has an even greater impact on society and how we operate and lends itself to a greater movement. Architects have to make or influence moral decisions every day. The decisions we make must encompass more thought on this level so that we continue to perpetuate a healthy environment for occupants, create an aesthetic space for people to enjoy, but beyond that we are creating behavioral change that is sublime but purposeful. We, as architects, can help this evolution, as we are the creators who build the environment and therefore have an obligation to be leaders in the movement.

As architects, how can we drive both environmental and behavioral change?

Cityscape planning. A city can be one of the most sustainable places to live if planned out with forethought into green energy and open space. The typical insinuation is that cities are unsustainable because they are polluted and densely populated. What isn't taken into consideration is that people are densely packed into an urban area where they take up less of a building footprint. Cities rely on public transportation allowing there to be less vehicles per person. Public transportation becomes central to the property and maturation of a city because it allows people to move from location to location easily and affordable. Architecture should promote this type of lifestyle whether in a big city or a rural area. Architecture needs to become more dense, allowing for more open green spaces with in the urban grid. In many cities there are blocks that could consolidate and permit the remaining land to be realized as green space.

Consider natural light as a resource. One of the most important things about architecture is natural light or the lack of it. Light evokes emotion in a space. Light alters the way we feel in a space and can change the presence of a space. Imagine you are walking down an alleyway that is sandwiched between two buildings, once during the light of day and once in the dark of night. When would you feel more comfortable, secure and a sense of freedom? Light gives freedom. However, in the dark you might feel like there is a sinister presence, restricted and a strong desire to get into the light.

Think through emotional impact. Architecture alters the way we feel in a space and can change the presence of a space. It is important that architecture incorporates natural light for spatial purpose but also for sustainable purpose. If a building can be lit naturally, with the proper window systems than enables it to reduce its energy consumption, especially in large building, than you are achieving success in purposeful design in multiple areas.

The art of creating a structure that blends fortress with purpose is what we, as architects, need to strive to design.

> "Architecture can be understood through a Sequence of Human Experiences."
>
> -Alvar Aalto

PROBLEM STATEMENT

Public transportation in the United States has not developed to be cutting edge. There are city pockets of robust public transport but generally these pockets are in major cities and even then they do not connect well, have accessibility problems and lacked planning for exponential growth years ago.

If public transportation was more advanced and emphasized in the US, everyone would prosper. If we looked towards green urbanism as a way of life, densified our living space, reclaimed parks and landscapes, and utilized public transportation we could benefit from reduced CO2 emissions for cleaner air. If we evolve the system to satisfy the needs of more individuals, and weave the system more closely to society, we can encourage urban advancement and at the same time, be kind to the earth. A well-organized plan for an upgraded system could provide revitalization to urban growth and advancement.

My passion as an architect leads me to create an Eco-friendly public transportation system hub in a city center that will offer a more efficient and successful means of traveling from the office to the park, or from the supermarket to the opera. Various systems could be included on multiple scales including trains, buses and bicycles. Visitors and inhabitants could pick the most effective means to travel regardless of their destination. Being able to associate activities with different modes of transportation will begin to influence how one can travel through and experience the city.

More efficient and Eco-friendly public transportation systems should be a forethought to the birth of any great city – big or small - and a priority investment in order to help create a more sustainable environment for all. Architecture should combine style and space with culture and behavior and work together to impact change.

A way to contribute is to architect communities, towns and cities before they are built to be people and planet friendly and sustainable for the long term. Center these communities around a public transit system that moves people and goods with a lower emission rate that could sustain impressive growth and still not become a threat.

> But I absolutely believe that architecture is a social activity that has to do with some sort of communication or places of interaction, and that to change the environment is to change behavior."
>
> Thom Mayne

PROJECT DEFINITION

I propose to impact change for people and planet by architecting a community within a dense living space that is sustainable by means of public transportation that would enable travel to all essential activities as well as many leisurely places, events, stores, shopping centers and theaters. The carefully planned and architected ecosystem would blend commodities of life with dense living spaces to provide a self-sustaining community within a city. People who work outside of the ecosystem could utilize it by connecting through branches of the public transportation system. People who live within the ecosystem could depend on various means to get around without having to own a car. The ultimate goal would be to reduce the need for individual vehicles for transportation.

The architectural purpose of this project is to provoke a cohesive relationship between people, how they move and how they live by integrating more attractive options for public transportation. The project will be a transparent architecture that through form and materiality allows for maximum function. The architecture will inspire a new way of life for people that is healthier and easier and more affordable. It will encourage investment in public transit as it becomes popular, dependable and central to life.

"We should concentrate our work not only to a separated housing problem but housing involved in our daily work and all the other functions of the city."

-Alvar Aalto

ARCHITECTURAL PROGRAM

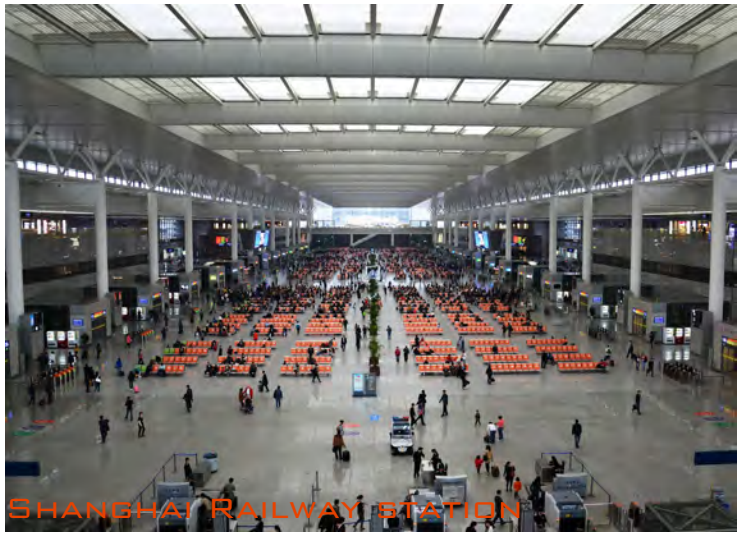
Metro Station = 50,000sqft
4 bus platforms & 4 train lines
120 Apartments = 120,000 sq.ft.
Hotel (60 rooms)= 36,500 sq.ft.
2 Conference Rooms & 5 meeting rooms
14 Restaurants = 57,500 sq.ft.
Retail = 49,500 sq.ft.
TOTAL= 313,500 sq.ft.

Parking (450 spaces)
200,000 sq.ft.
TOTAL= 513,500 sq.ft.

Exhibition hall = 20,000 sq.ft.
TOTAL = 533,500 sq.ft.

Transit Station |

Includes boarding platforms with indoor location to get away from the hot climate. Ticket and information counter will be located in the waiting, as well as, public bathrooms. There are offices in a more secluded are of the station for operations. The station will be accessible form the ground floor for 4 bus platforms and 4 train platforms.


Shanghai Railway station


Guangzhou South Railway station

Parking Garage |

The Parking structure is to be located below the building, minimizing traffic on the site. The Parking structure has the ability to house 450 cars. There are multiple ways in and out of the garage in order to increase flow of traffic.

Apartments |

1 Bedroom = 700sq.ft.
40 x 700 = 28,000sq.ft.

2 Bedroom = 1,000sq.ft.
40 x 1,000 = 40,000

3 Bedroom = 1,300sq.ft.
40 x 1,300 = 52,000

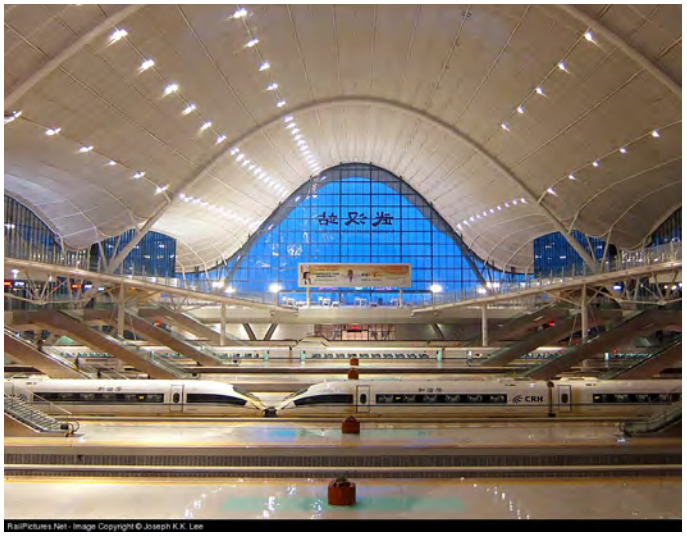
The apartments are located on the upper levels of the building for Privacy, views and spatial concerns.

Hotel |

50 rooms @ 400 sq.ft.
10 rooms @ 1000 sq.ft.
46,000sq.ft

The hotel is available for all travelers to use. The hotel has a business aspect of it, including:
2 Presentation rooms @ 2,000 sq.ft.
5 Meeting Rooms @ 500 sq.ft.


Guangzhou West Railway station



Restaurant |

Restaurants will be scattered among the ground floor. They consist of large chain restaurants at 7,500 sq.ft. As well as cafes and delis at 2,000 sq.ft.. There is a hotel restaurant and bar for night time entertainment.

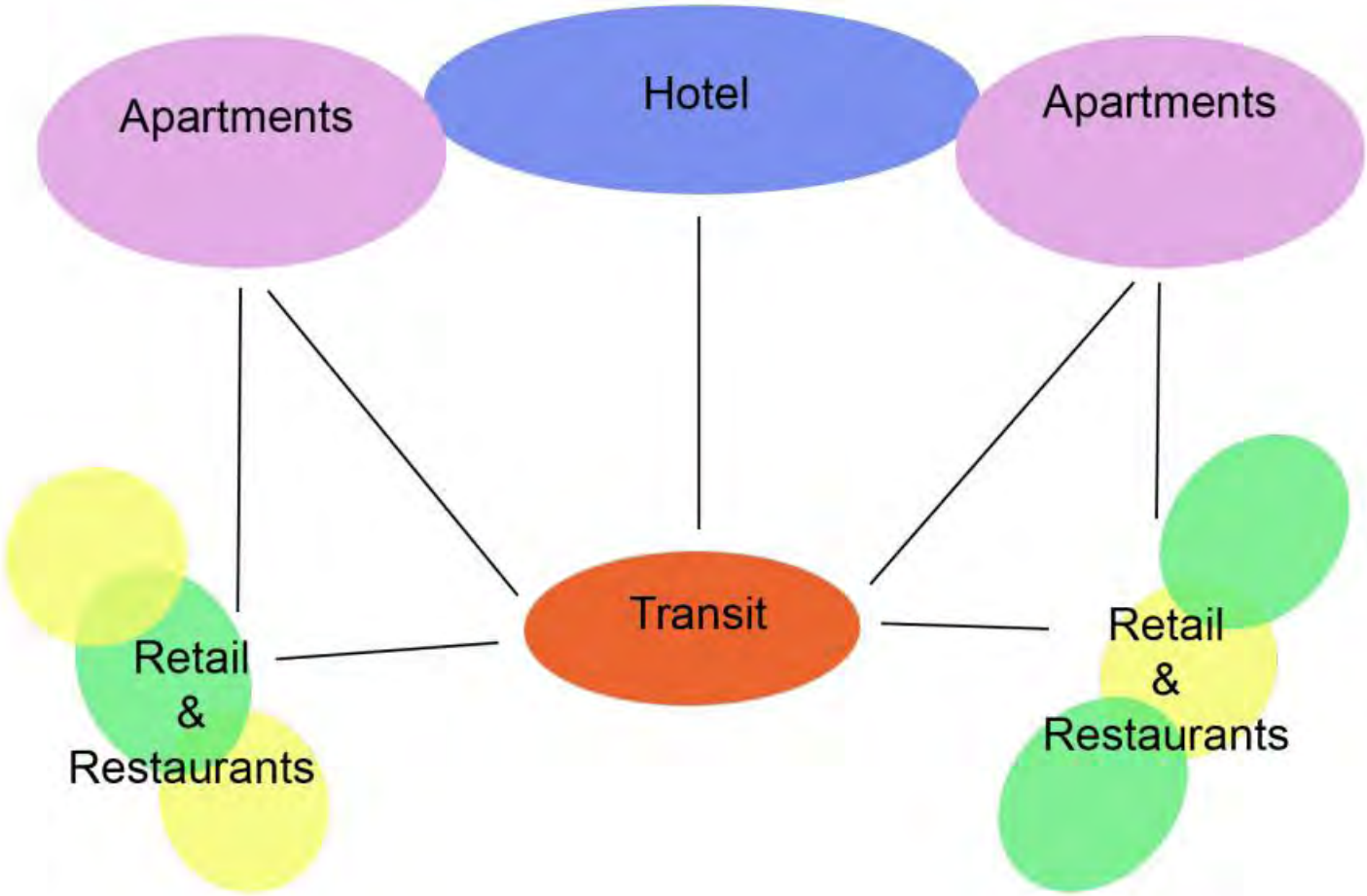
Retail |

There are multiple parts of the retail. There are your typical chain stores at 6,000 sq.ft. and boutique stores at 1,500 sq.ft.. The boutique stores include shopping, as well as, a convenient store, bike rental, and laundry mat.

Exhibition Hall |

The exhibition hall will hold events for businesses as well as for the college near by. The Exhibition hall will be equipped with its own bar and bathrooms.

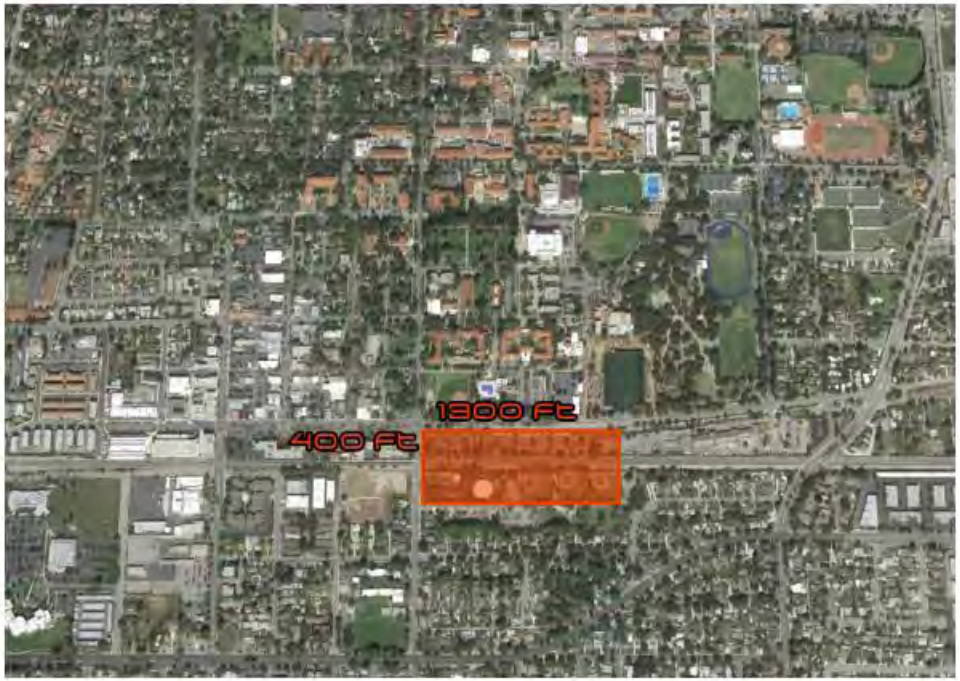
Program Relationships



SITE

CLAREMONT, CALIFORNIA |

Claremont California is a 12+ square mile town with a population of 34,926 residents (2010 US Census). Residing on the eastern border of Los Angeles Country and just south of the San Gabriel Mountain The town is famous for its many colleges, tree lined roads and historic buildings. In 2007, it was named CNN and Money Magazines Fifth best place to live in the united Stated and highest rated in California. The town has been nicknamed "The City of trees and PH-D's" due to its Tree lined streets and High population of residents with doctoral degrees.

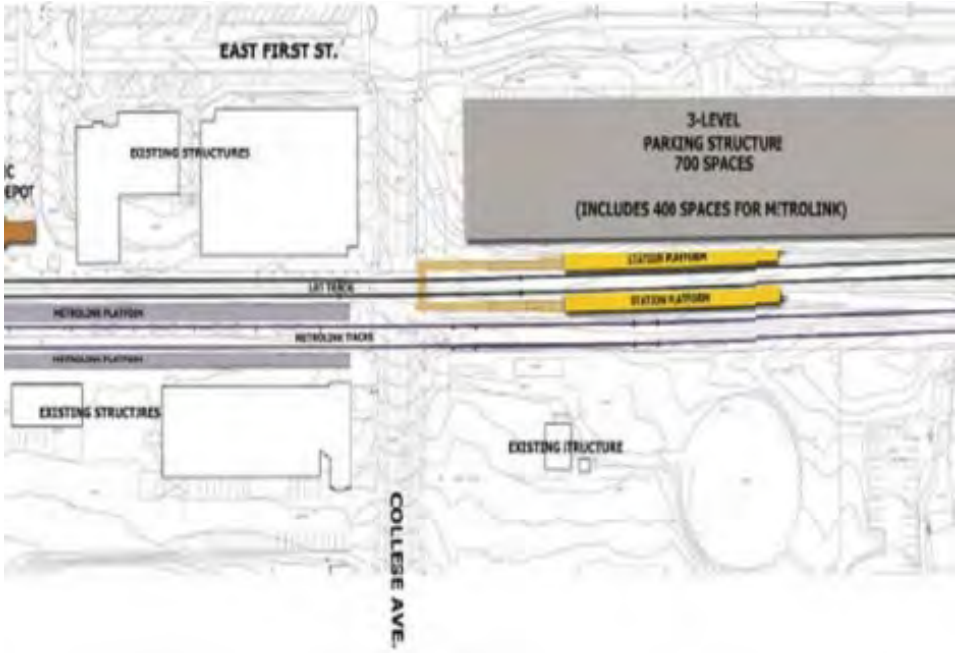


The Metro Gold Extension Plan

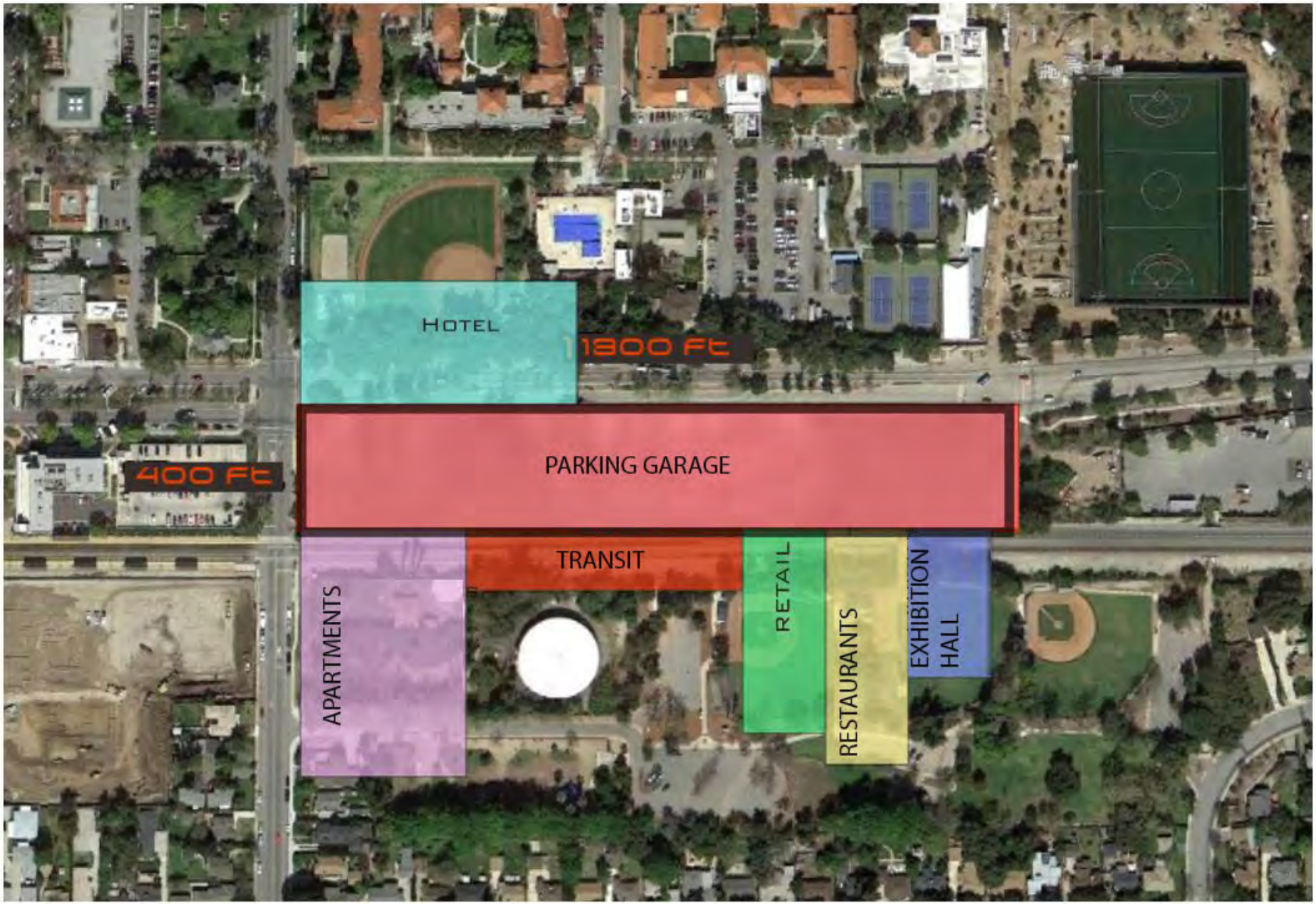
http://www.metrogoldline.org/

In 2007 The Metro Gold Line ranked Claremont one of the best cities for a Transit Oriented Development. Claremont already had a Metrolink operation serving the community. The addition of a Metro Gold Line light rail system would share the station location and right-of-ways would make the prospects of creating new developments possible. The Development would be planned around an improved public transit system. Claremont propelled TOD construction toward faster completion. In 2007 due to the economy this idea was put on the back burner but in a 2010 study the plan would still read as effective but they would update it to be even better.

http://www.metrogoldline.org/



Program on Flat Site



Transportation Demographics

Worker Population - 16,226

People who take :

Public Transit -	595

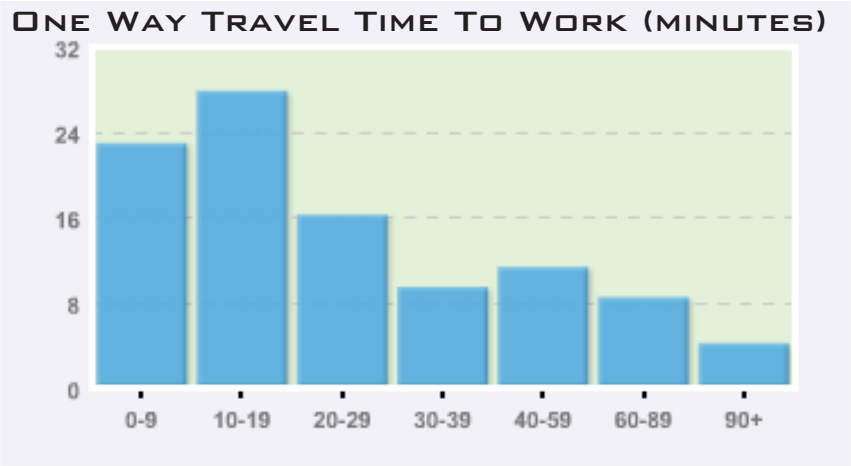
Car, truck or van:

Alone -	11,574
2 person Carpool -	761
3 person Carpool -	293
4 Person Carpool -	42

Cities Near Claremont, CA

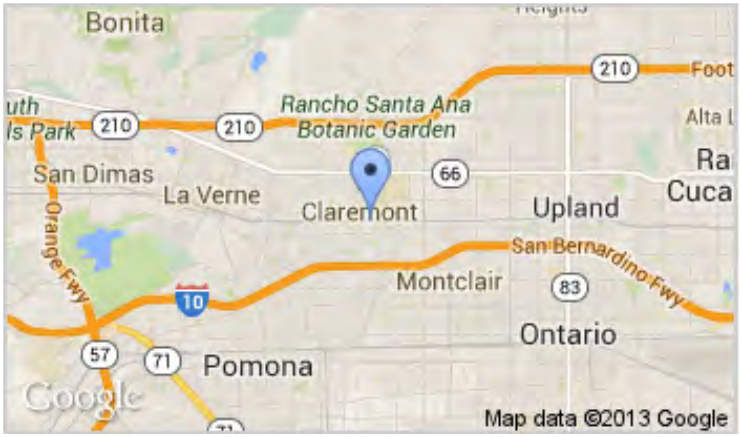
City	Miles	City	Miles
Claremont, CA	0	Chino, CA	6.6
La Verne, CA	3	Glendora, CA	7.8
Montclair, CA	3	Charter Oak, CA	7.9
Upland, CA	3.5	Rancho Cucamonga, CA	8.1
Pomona, CA	4	Covina, CA	9.2
San Antonio Heights, CA	4.5	Chino Hills, CA	9.3
San Dimas, CA	5.5	Diamond Bar, CA	9.5
Ontario, CA	6.6	Citrus, CA	9.8

The average time travels to work is 11.5% greater than the National Average. The number of people who carpool to work is 34.6% less than the California average and 19.9% less than the National Average. The Ontario International Airport is 7.8 miles away from Claremont.



Amtrak station

200 W. 1st St.
Claremont CA 91711

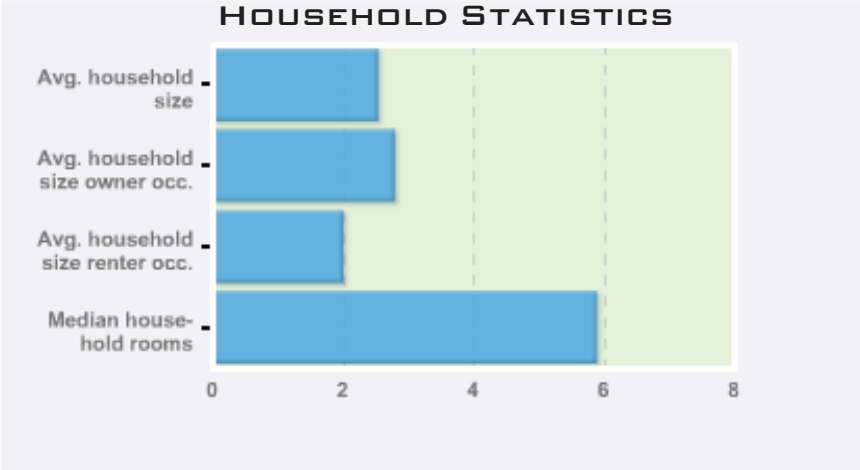


Amtrak Station Information

Located 1.1 miles from Claremont city center
Served by a thruway bus not by train
Has no ticket office
Does not handle checked baggage
Luggage assistance not available
Wheelchair accessible
No public restrooms available
Full Food service available
No automated teller machines available
Public transit connection available
Public telephones in the station

Household Demographics

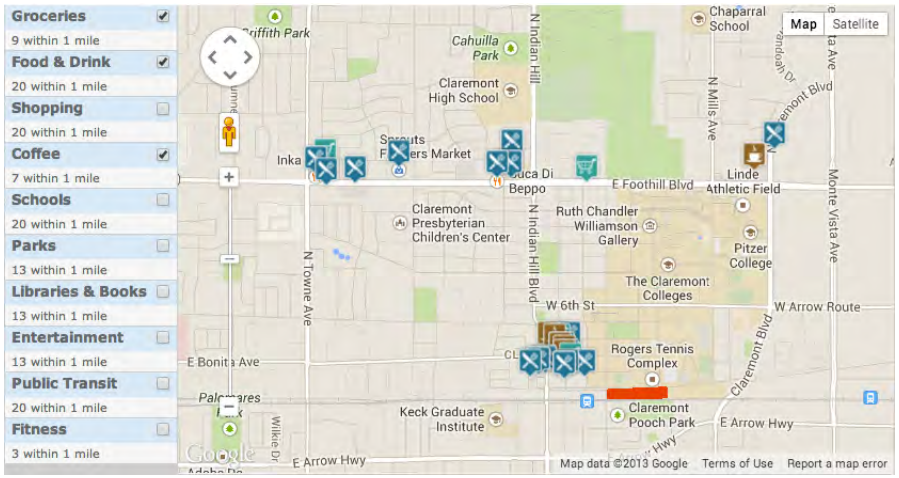
The median home value in Claremont is 196.7% greater than the National Average. The median price asked for homes in Claremont is 301.6% greater than the National average. The median rental rates in Claremont are 45% greater than the National average.

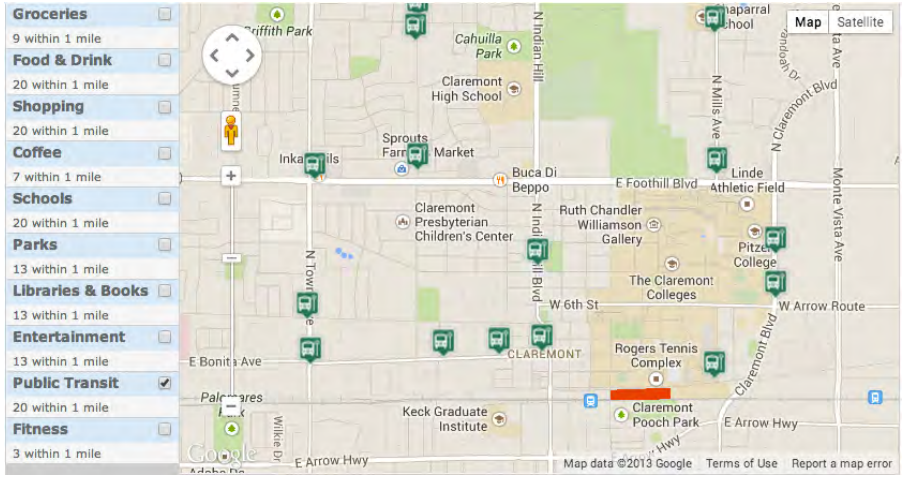


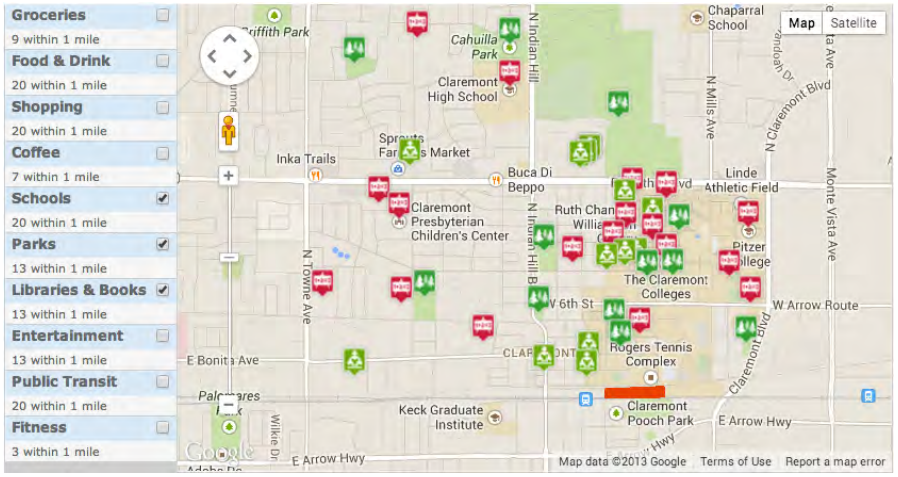
Claremont Housing Overview

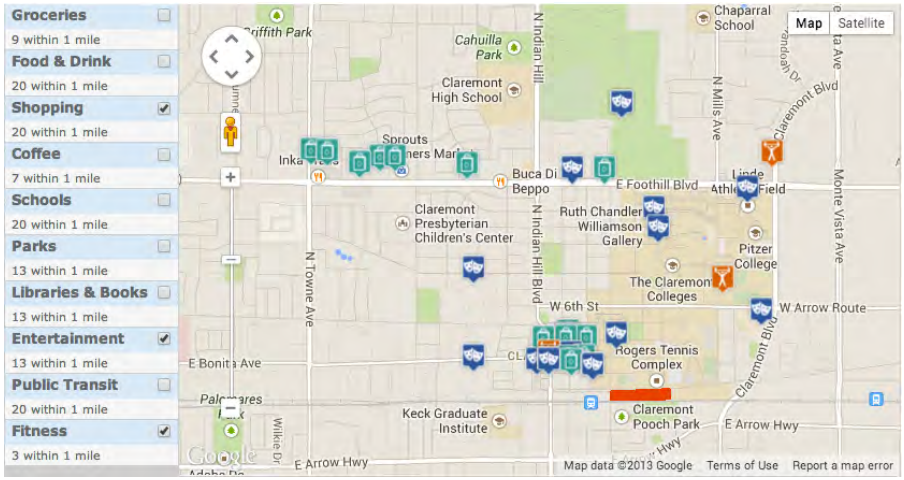
Statistic	Claremont	California	National
Average number of people per household	2.5	2.9	3
Median value owner occupied home	$594,600	$448,669	$200,419
Median property taxes paid	$2,887	$2,550	$1,696
Median rent asked	$1,162	$1,205	$801
Percent owner occupied	73.8%	65.3%	72.3%
Percent renter occupied	26.2%	34.7%	27.7%

Amenities Demographics

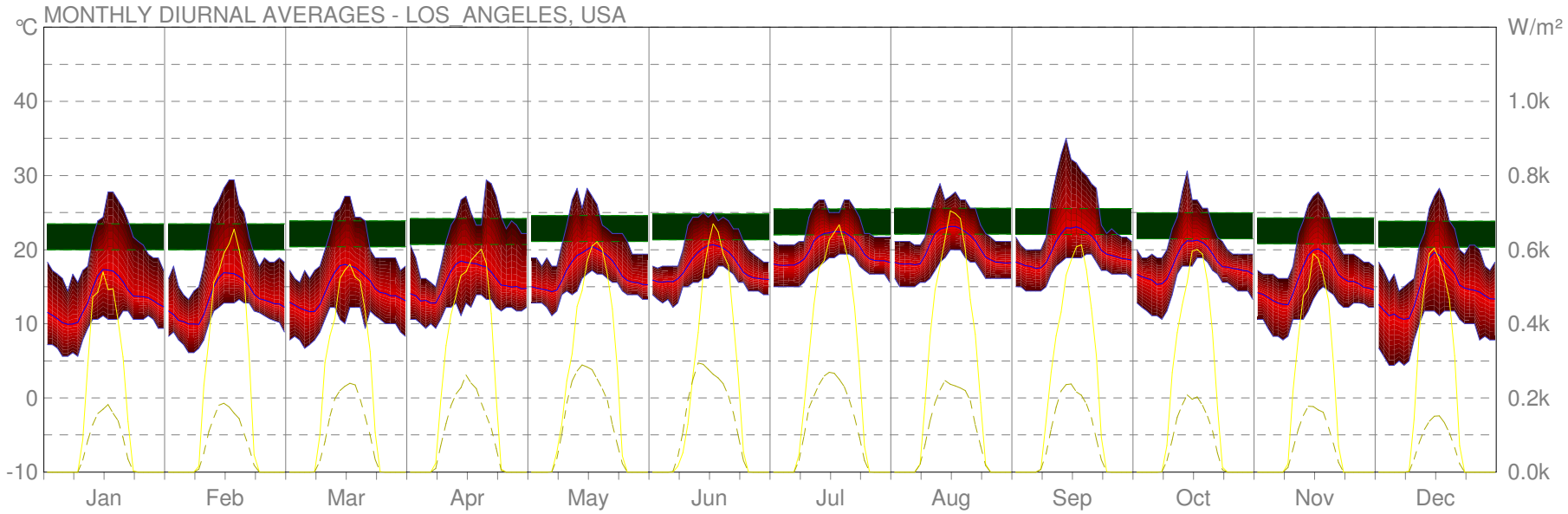


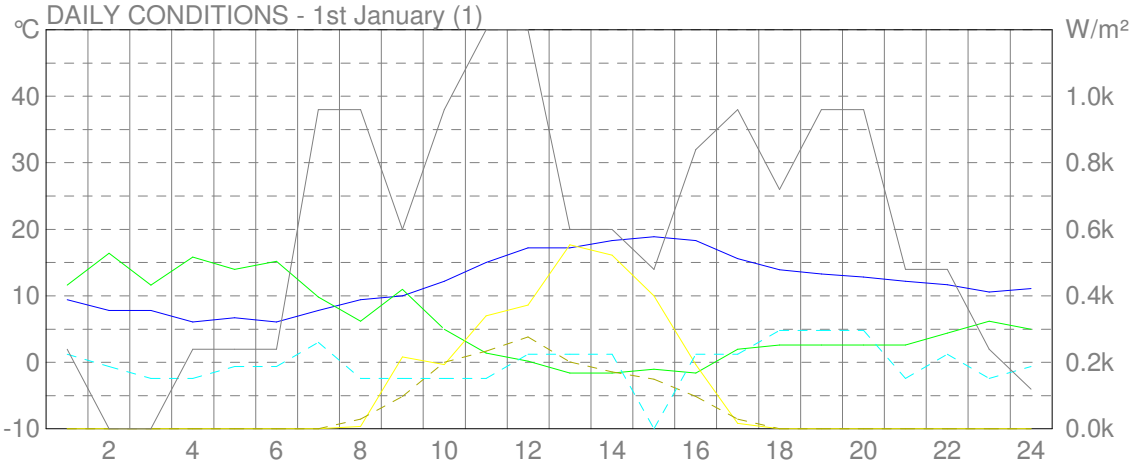






Climate





LEGEND

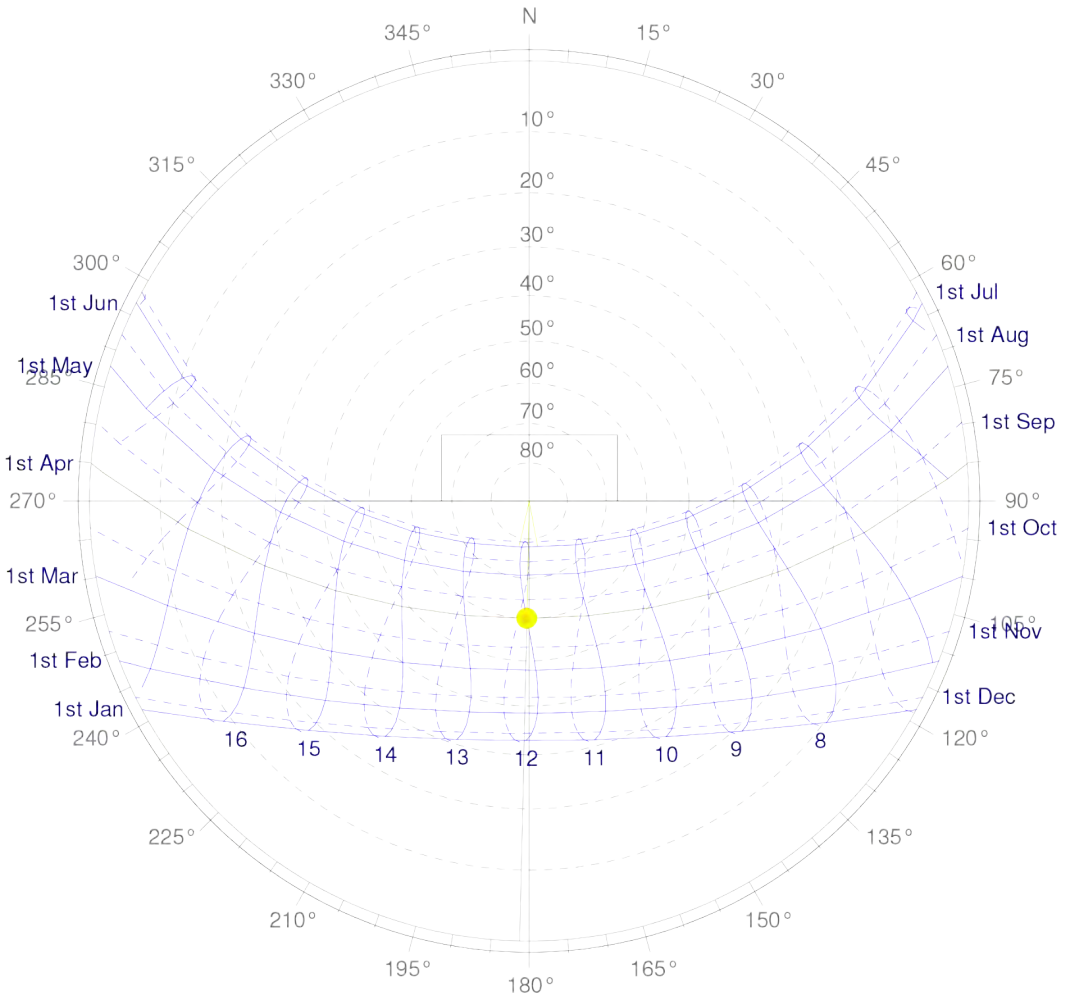
Comfort: Thermal Neutrality

Temperature	Direct Solar
Rel.Humidity	Diffuse Solar
Wind Speed	Cloud Cover

Sterographic Diagram

Sun Position: -178.7° , 60.1°

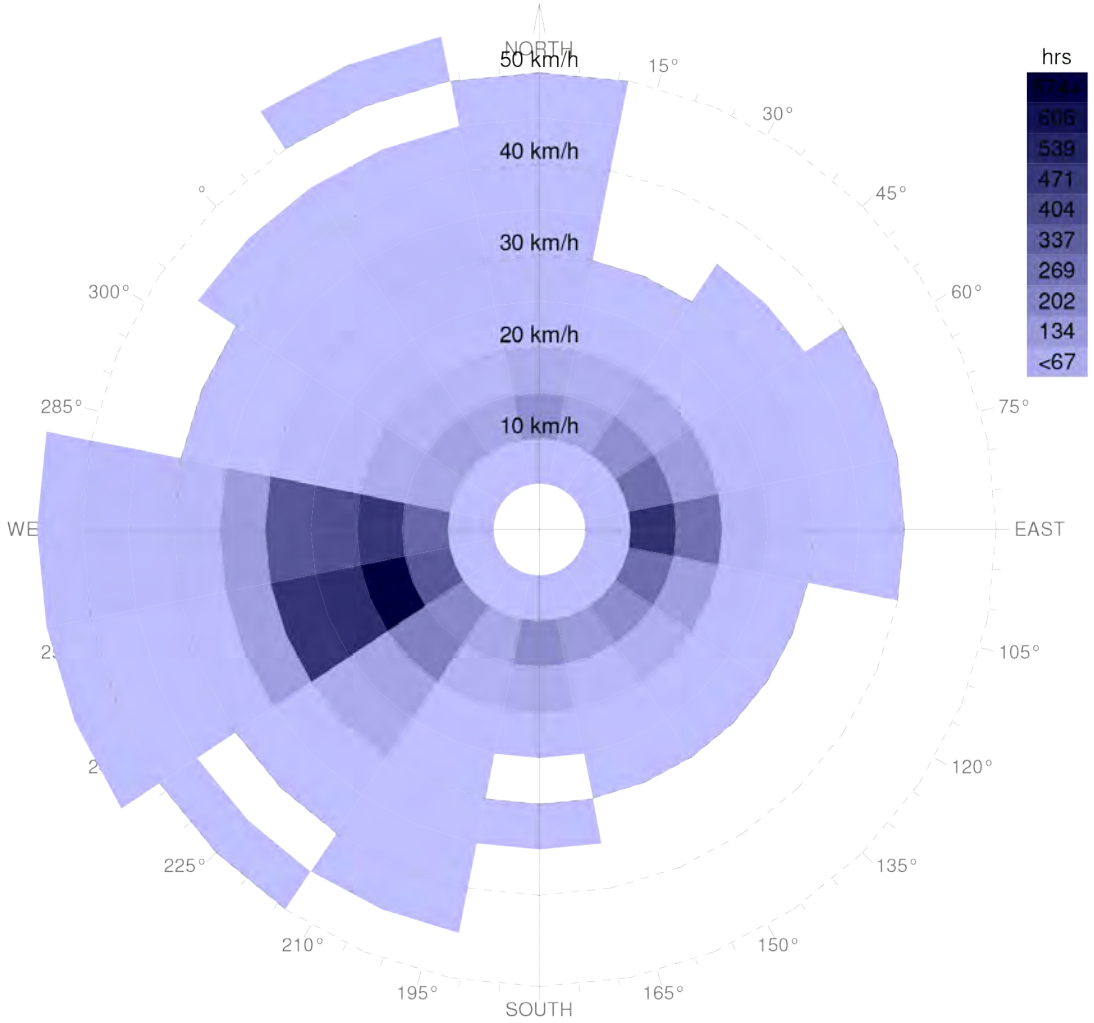
Man has always explored ways to harness the sun's power and at that same time reduce the negative effects of it. Architects today must not only design buildings to collect energy from the sun to provide heating and lighting, but also to reject solar energy when it can lead to overheating of the building. This is known as passive solar architecture.



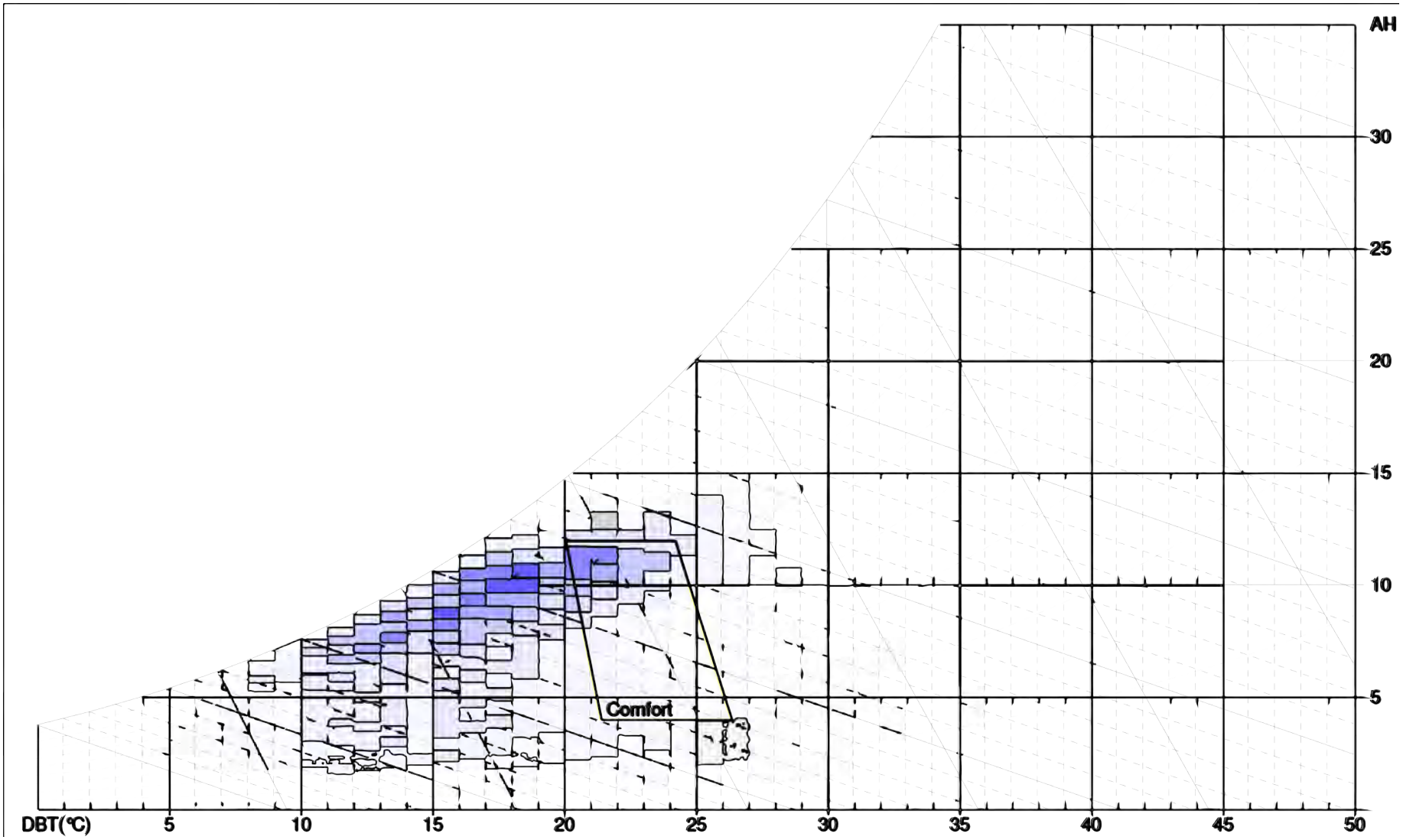
Prevailing Winds

Wind Frequency (Hrs)

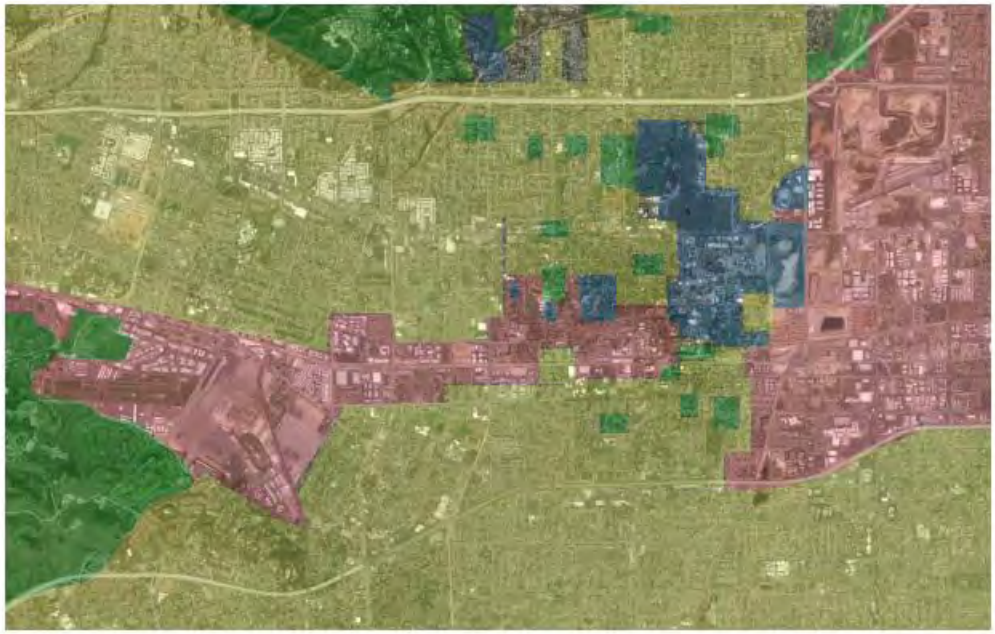
Claremont is located in southern California where the Weather stays above 50° for most of the year. There is a need for passive cooling and heating in buildings designed in this area. We can accomplish passive weather design by observing sun angles and wind patterns



Psychrometric Chart



Site Topology



RESIDENTIAL

COMMERCIAL

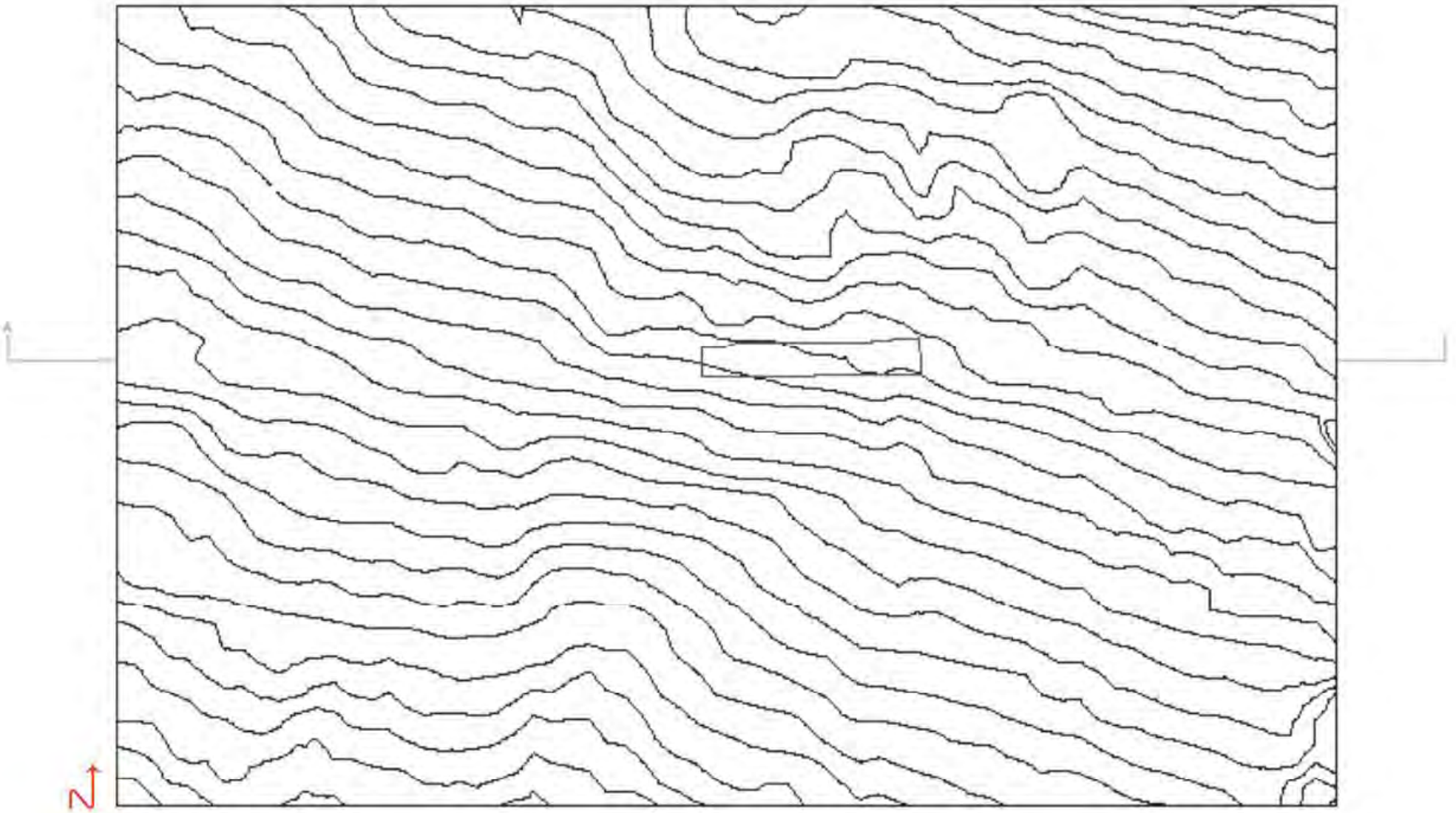
PUBLIC PARKS AND RECREATION

EDUCATIONAL FACILITIES

Site Neighbors

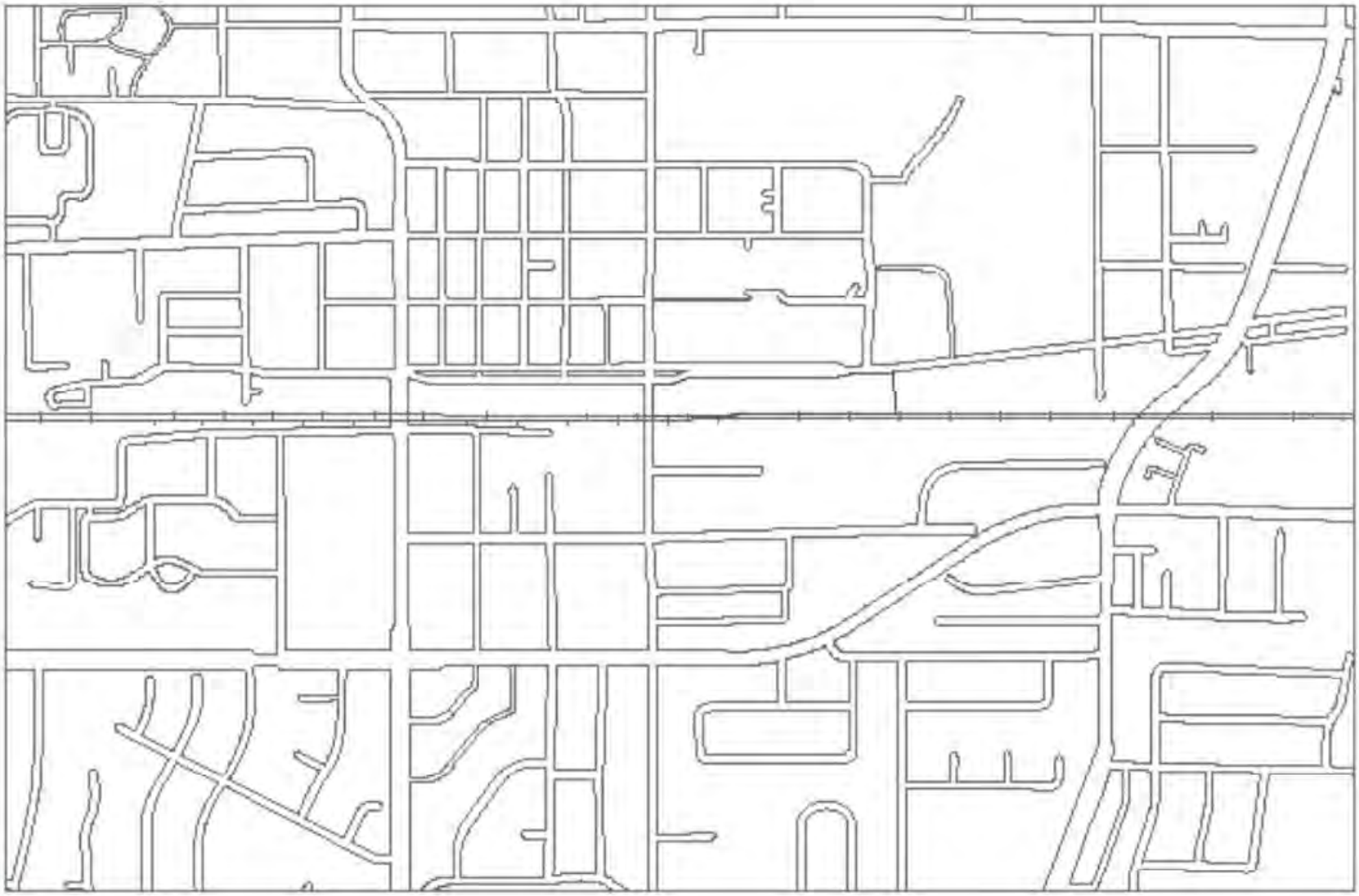
Site Topography

Scale: 1/768" - 1'0"



Site Roads

Scale: 1/768" - 1'0"



SITE PLAN

SCALE: 1/768" - 1'0"

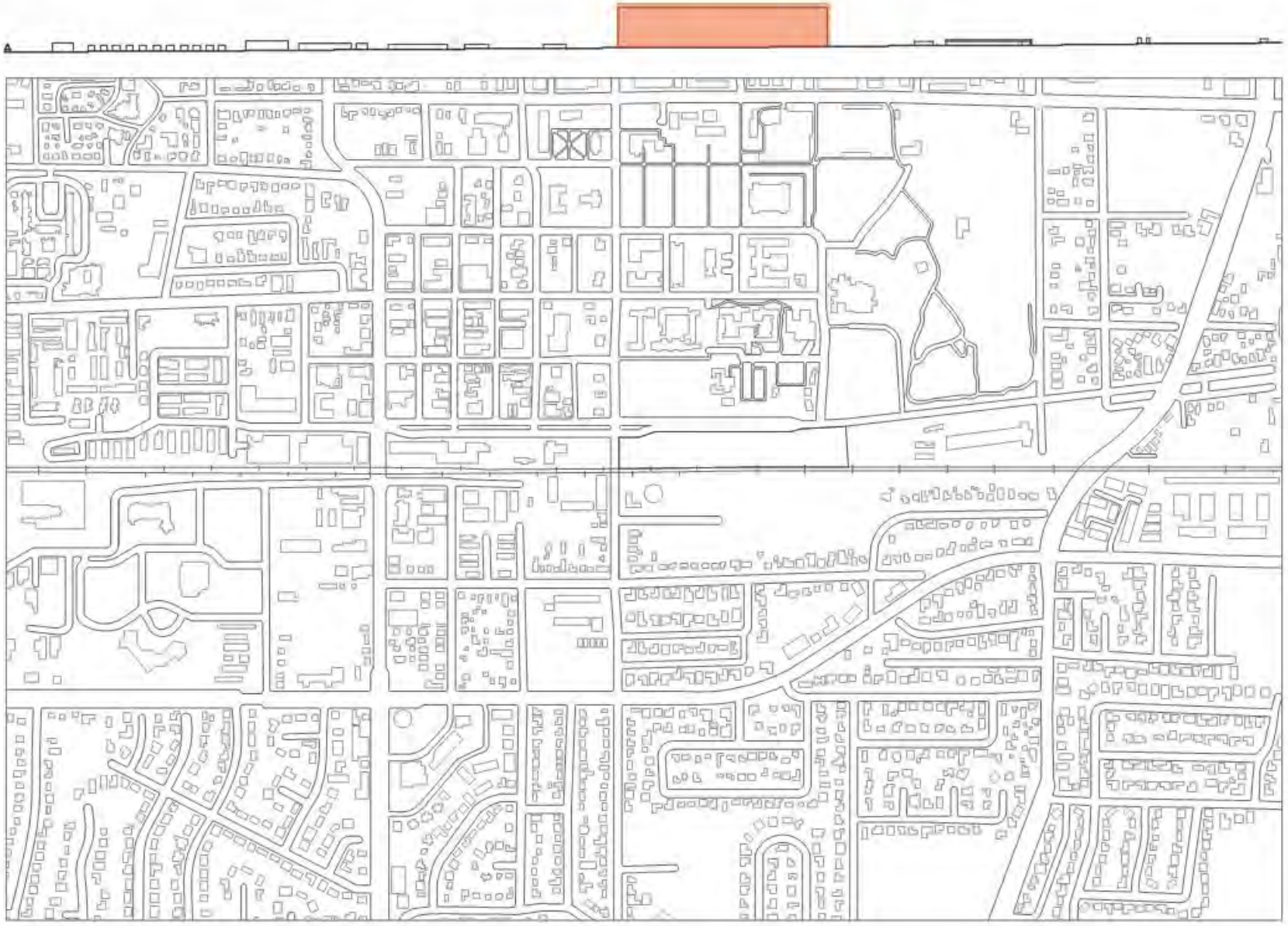


FIGURE GROUND PLAN

SCALE: 1/768" - 1'0"

CODES AND ZONING

Claremont Codes and Zoning

A. Section 1505.1.3 and R902.1.3 is hereby amended to read as follows:

Roof coverings within all other areas. All new structures, and every existing structure within the City shall have at least a Class B fire retardant roof covering unless otherwise specified in Section 1505.1.1 of the California Building Code/Section 902.1.1 of the California Residential Code.

15.04.030 Chapter 7A amended – Materials and Construction Methods for Exterior Wildfire Exposure.

The following portions and sections of Chapter 7A of the California Building Code and Chapter 3 of the California Residential Code are hereby amended to read as follows:

A. Section 705A.2 and R327.5.2 are amended to read as follows:

Roof coverings. Where the roof profile allows a space between the roof covering and roof decking, the spaces shall be constructed to prevent the intrusion of flames and embers, be firestopped with approved materials or have one layer of No. 72 ASTM cap sheet installed over the combustible decking. Wood-shingle and wood shake roofs are prohibited in Very High Fire Hazard Severity Zones (VHFHSZ) regardless of classification. (13-10)

http://www.ci.claremont.ca.us/municipalcode.cfm

15.06.050 Window security.

A. All sliding glass windows shall have a vertical hookbolt deadlock, or if a vertical hookbolt is not used as a primary lock, a secondary bolt lock will be required.

1. If a vertical hookbolt deadlock is used, it shall be of hardened steel and shall have a minimum thickness of one-eighth inch. The strike used for the vertical hookbolt deadlock shall be made of hardened steel. When the vertical hookbolt deadlock is in the closed position, it shall be at least one hundred eighty degrees around the strike.

2. If a secondary lock is used, along with a lock other than a vertical hookbolt deadlock, the secondary lock shall be mounted on the bottom of the window. The secondary lock shall be a bolt lock and shall be no less than one-eighth inch in thickness, and shall have a minimum throw of one-half inch.

B. All sliding glass windows shall have the movable section of the window on the inside of the fixed portion of the window.

C. Sliding glass windows shall not have more than one-sixteenth inch play between the top of the window and the pane when the window is in the closed position. Windows meeting ANSI A134.1 or 134.2 may be used.

15.06.064 Glass windows. Louvered windows shall not be used. (79-10)

http://www.ci.claremont.ca.us/municipalcode.cfm

15.06.080 Prohibited areas.

The following listed commercial facilities shall be prohibited from using these security regulations:
A. Buildings or portions of buildings used or intended to be used for the gathering together of more persons for such purpose as amusement, entertainment, instruction, deliberation, worship, drinking or dining, awaiting transportation, or education;

15.30.010 Purpose and Intent

The purpose of this section is to provide for and make feasible the reuse of commercial and industrial buildings on the Register of Structures of Historic or Architectural Merit in Claremont by adopting building code standards for work/live units as contemplated by Section 17958.11 of the California Health and Safety Code. (05-03)

B. MU2 (College Avenue/South Village Transit-Oriented Mixed Use District). The MU2 District is located south and east of the Claremont Transit Center. Development in this district should be a positive addition to the Claremont Village environment and be designed to encourage use of alternative modes of transportation. A mix of uses are encouraged with an emphasis on residential uses with limited 16-67 office/commercial possible along College Avenue and First Street, and other ground floor areas. Development on individual lots need not include both commercial and residential uses, but shall complement uses on surrounding properties. Commercial development has a maximum floor area ratio (FAR) of 1.5. Residential development has a maximum density of 22 units to the acre.

http://www.ci.claremont.ca.us/municipalcode.cfm

Number of stories and building height: MU1 and MU2: maximum 3 stories or 42 feet
Building Placement:
Developers are encouraged to place buildings forward on properties towards the public street(s), and structures may occupy the entire width of a property, excepting that a minimum building setback of 10 feet is required along a street frontage and any residential district. Any third story facing an interior lot line that is a boundary of a single-family residential district shall have an additional 10-foot setback. There are no other required setbacks from lot lines.

Useable Open Space:
150 sq. ft. per residential unit for 5 or fewer units, 120 sq. ft. per unit for more than 5 units. Usable open space may be any combination of private and common open space, and may include, but is not limited to, private patios and balconies, shared use plazas and courtyards, and/or shared recreation areas. Usable open space shall have a minimum dimension of 6 feet for private open space, and a minimum dimension of 15 feet for common open space. Internal walkways and pathways connecting such open areas and amenities shall not be included in calculations of open space for purposes of meeting the minimum usable open requirement.

Residential Parking:
One covered parking space is required for dwelling units 600 gross square feet or less. Dwelling units greater than 600 gross square feet require 2 covered parking spaces. In addition, 0.5 uncovered or covered parking spaces per dwelling unit are required for visitor parking. In mixed-use development, visitor parking may share the required parking provided for nonresidential uses.

http://www.ci.claremont.ca.us/municipalcode.cfm

In the MU1, MU3, and MU4 Districts: Required parking shall be the combined total of the following:

- One covered parking space per unit if the area designed or used for residential living is 600 square feet or less, or 2 covered parking spaces per unit if the area designed or used for residential living is greater than 600 square feet; plus

- One covered or uncovered visitor space per 350 square feet of building area designed or used as work/office space.

In the MU 2 District: Required parking shall be combined total of the following:

- One covered parking space per unit if the area designed or used for residential living is 600 square feet or less, or 1 covered space plus .5 uncovered parking space per unit if the area designed or used for residential living is greater than 600 square feet; plus

- One covered or uncovered visitor space per 500 square feet of building area designed or used as work/office space.

http://www.ci.claremont.ca.us/municipalcode.cfm

In MU1, MU3, and MU4 Districts: Retail, service and office uses require 1 parking space per 250 square feet of net floor area. Restaurant uses require 1 parking space per 100 square feet of net floor area of interior area of restaurant, and 1 parking space per 175 square feet of net floor area designated for outdoor dining in connection with a specific restaurant. For other uses, the parking requirements shall be as required for such uses in the CH District.

In MU2 District: Retail and service uses require 1 parking space per 500 square feet of net floor area. Office uses require 1 parking space per 350 square feet of net floor area. Restaurant uses require 1 parking space per 150 square feet of interior area of restaurant, and 1 space per 200 square feet of net floor area designated for outdoor dining in connection with a specific restaurant. For other uses, the parking requirements shall be as required for such uses in the CV District.

Signs

In MU1 District, signs are subject to the sign regulations applicable to the CL (Commercial Limited) District.

In MU2 District, signs are subject to the sign regulations applicable to the CV (Claremont Village) District.

In MU3 and MU4 Districts, signs are subject to the sign regulations applicable to the CH (Commercial Highway) District.

http://www.ci.claremont.ca.us/municipalcode.cfm

Legend

Freeway Edge of Pavement

ZONING OVERLAY

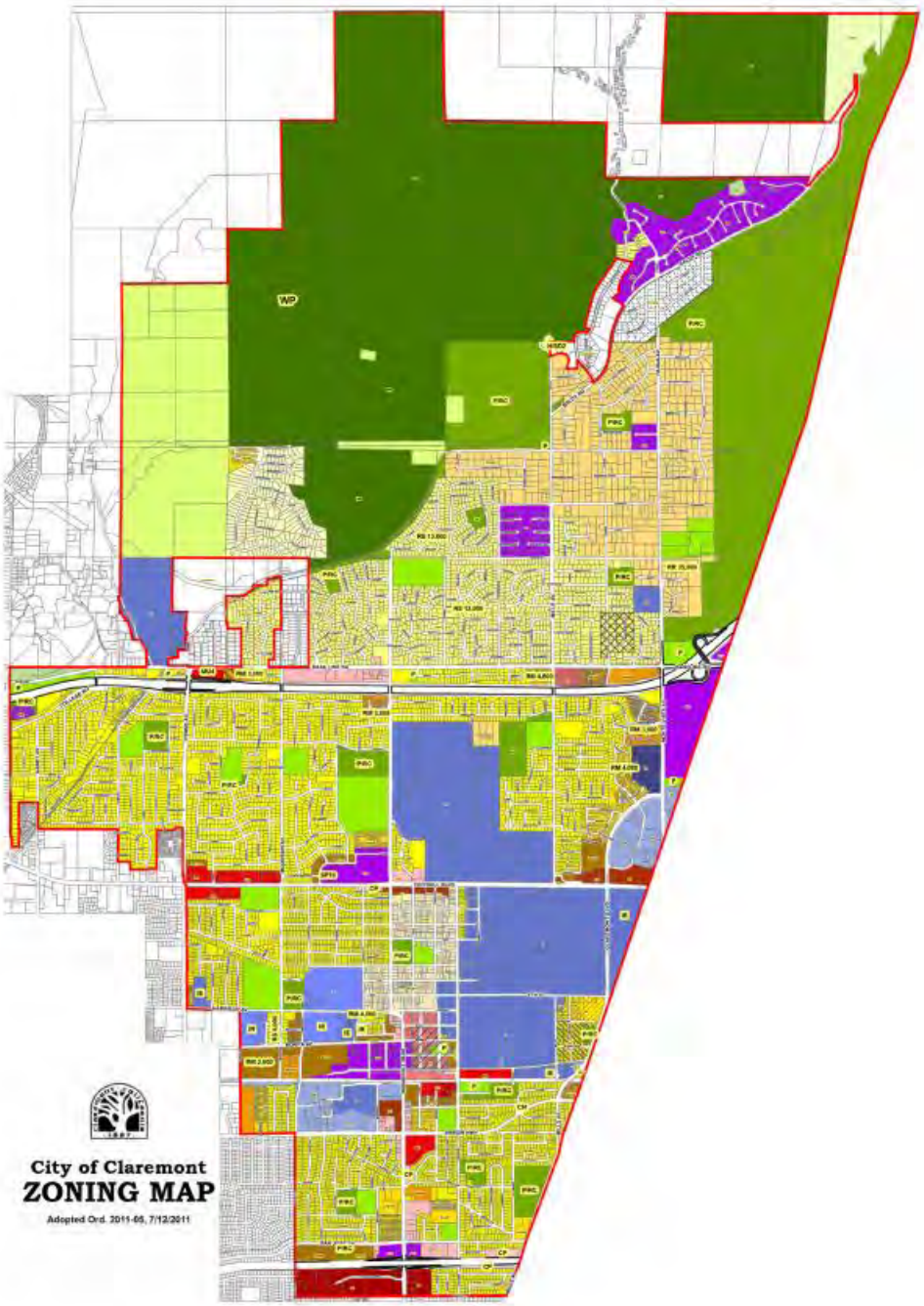
OVERLAY

- BALDY VISTA ESTATES
- CLAREMONT VILLAGE
- EQUESTRIAN
- HIGH DENSITY RESIDENTIAL

ZONING

Zoning Designation

- B/IP - BUSINESS/ INDUSTRIAL PARK
- CP - COMMERCIAL PROFESSIONAL
- CN - COMMERCIAL NEIGHBORHOOD
- CV - CLAREMONT VILLAGE
- CL - COMMERCIAL LIMITED
- CH - COMMERCIAL HIGHWAY
- CF - COMMERCIAL FREEWAY
- MU1 - MIXED USE 1
- MU2 - MIXED USE 2
- MU3 - MIXED USE 3
- MU4 - MIXED USE 4
- CR - COMMERCIAL RECREATION
- IE - INSTITUTION EDUCATIONAL
- IR - INSTITUTION RESIDENTIAL
- H/SD1 - HILLSIDE SLOPE DENSITY 1
- H/SD2 - HILLSIDE SLOPE DENSITY 2
- H/SD3 - HILLSIDE SLOPE DENSITY 3
- WP - WILDERNESS PARK
- P/RC - PARK / RESOURCE CONSERVATION
- P - PUBLIC
- AV1 - ARBOL VERDE 1
- AV2 - ARBOL VERDE 2
- RM 2,000 - MIN. LOT AREA/UNIT: 2,000 SQ FT
- RM 3,000 - MIN. LOT AREA/UNIT: 3,000 SQ FT
- RM 4,000 - MIN. LOT AREA/UNIT: 4,000 SQ FT
- RS 8,000 - MIN. LOT SIZE: 8,000 SQ FT
- RS 10,000 - MIN. LOT SIZE: 10,000 SQ FT
- RS 13,000 - MIN. LOT SIZE: 13,000 SQ FT
- RS 20,000 - MIN. LOT SIZE: 20,000 SQ FT
- RR 1 ACRE - RESIDENTIAL: 1.25 GROSS ACRES/UNIT
- RR 35,000 - RESIDENTIAL: 1 GROSS ACRE/UNIT
- HC 7,500 - HISTORIC CLAREMONT 7,500 SQ FT MIN.
- SP2 - SPECIFIC PLAN AREA 2 - MEADOWOOD
- SP5 - SPECIFIC PLAN AREA 5 - WILLIAMS AVENUE
- SP6 - SPECIFIC PLAN AREA 6 - CLAREMONT HILLS
- SP7 - SPECIFIC PLAN AREA 7 - GROVE
- SP8 - SPECIFIC PLAN AREA 8 - VILLAGE EXPANSION
- SP9 - SPECIFIC PLAN AREA 9 - OLD SCHOOL HOUSE/CLAREMONT INN
- SP10 - SPECIFIC PLAN AREA 10
- SP11, SPECIFIC PLAN AREA 11
- SP12, SPECIFIC PLAN AREA 12
- SP13, SPECIFIC PLAN AREA 13
- SP14, SPECIFIC PLAN AREA 14
- LA COUNTY


City of Claremont
ZONING MAP
Adopted Ord. 2011-05, 7/12/2011

ARCHITECTURAL DESIGN REGULATIONS

Design Guidelines for Mixed Use Development |

Architectural Character and massing:

- Design development to complement the public streetscape
- Utilize front facades of buildings to create streetwalls that define the public realm of the street, support a strong relationship between the building, the sidewalk, and the street, and create a comfortable and welcoming pedestrian environment
- Design buildings that have size and scale compatible with the community setting
- Provide a quality of architecture that contributes positively to the community's character and sense of place with architectural elements that are an integral part of the design to avoid the appearance of being "tacked on"
- Use articulated building facades that minimize massing, and break down the scale of the buildings, and offer variety as experienced at the street level
- Incorporate appropriately scaled windows, doors, and other building details consistent with the style of architecture to achieve stylistic coherence of development
- Use good quality building materials
- Provide design treatment on all facades
- Use materials and colors to unify building appearance
- Design entries to be pedestrian-oriented
- Provide design features as appropriate to the architectural style of the buildings to provide sun protection and give buildings a distinct identity

http://www.ci.claremont.ca.us/municipalcode.cfm

Conservation

- Use energy efficient designs including appropriate site orientation, passive solar and ventilation techniques, and energy efficient materials
- Use fuel-efficient heating and cooling equipment and other appliances
- Provide drought tolerant landscaping where landscaping is appropriate
- Reuse and recycle construction and demolition materials
- Demonstrate compliance with the National Pollutant Discharge and Elimination System (NPDES) objectives

Historic Preservation

- Protect and enhance historic and cultural resources that contribute to the City's image, unique character, and sense of place
- Design new construction that is compatible with surroundings historic and cultural resources
- Respect the site's context within the larger community

Screening equiptment and service access

- Screen mechanical, ventilating, and security equipment
- Design service areas to avoid conflicts with pedestrians and other vehicles, and to minimize potential impacts on neighboring development

Compatability with surrounding

- Provide adequate parking to minimize parking overflow to other sites and surrounding neighborhoods

http://www.ci.claremont.ca.us/municipalcode.cfm

Outdoor open space

- Create network of open spaces with pedestrian connections to/through buildings and to adjacent development
- Design open space and pedestrian connections to be attractive and functional site features that are compatible with the desired function, size of project, and surrounding development
- Include trees and landscaping as appropriate for the function of the open space
- Provide special features such as public art and water elements
- Provide outdoor light to enhance pedestrian environment that is also appropriately designed so as to minimize impacts to adjacent residential neighborhoods

development and between different uses on site:

- Address potential impacts on surrounding development such as trash, noise, and glare
- Provide for passageways of light and air

Treatment of adjacent single family districts

- Provide for privacy of adjacent detached single-family residential development
- Minimize traffic intrusion into residential neighborhoods
- Provide a transition in the massing and scale of new development to that of surrounding residential development

http://www.ci.claremont.ca.us/municipalcode.cfm

Parking

- Locate parking away from street frontage behind structures, underground, or in parking structures that provide retail, office or residential uses on ground floor if adjacent to street frontage
- Provide for interconnected parking areas and directional signs as needed to direct residents and visitors to designated parking areas

Access

- Incorporate shared driveway access
- Provide directional signs to parking areas and uses
- Utilize access from side streets and alleys where present
- Provide for decorative crosswalks at driveways

Parkway improvements:

- Provide ample sidewalks for pedestrians with curb bump-outs at intersections
- Enhance streetscape with landscaping
- Provide street trees that will provide shade to pedestrians

Signs

- Provide signs that meet the objectives of the City's sign ordinance
- Develop sign program as appropriate to achieve aesthetic compatibility of signs within a development project

Alternative Transportation

- Provide facilities for bicycle and carpool parking
- Provide bus stop improvements where services are available

http://www.ci.claremont.ca.us/municipalcode.cfm

Materials

Concrete

Wood Interventions

Clay Tiles

Glass Surfaces

These materials are used within Claremont. The town is occupied by Spanish revival buildings. There is a modern twist in "The Village," or downtown area. Large Glass windows and wood interventions make their way into the architecture in the commercial districts.

White Concrete _ Historically the concrete is poured and painted. In this case The concrete will be mixed with certain aggregates to alter its colors.

Clay Tile Roof _ Traditionally red clay tiles are used however with technology tradition can be altered.

Glass _ Glass will be integrated in order to create a transparency between spaces.

Wood _ Incorporated in small contemporary ways

PRECEDENT ANALYSIS

Arnhem Station | Transparency

Architect: UN Studios

Location: Arnhem Station, The Netherlands

Client: Municipality of Arnhem

Building area: Transfer hall 6.000 m²/ underground parking 44.000 m²/ bus terminal 7.500 m²/ two office towers 22.000 m²

Program: Master plan, transfer hall, underground parking, bus terminal, two office towers, bicycle storage, railway platforms

Services 55,000 passengers daily

Platforms 8

Tracks: 10

6 modes of transportation

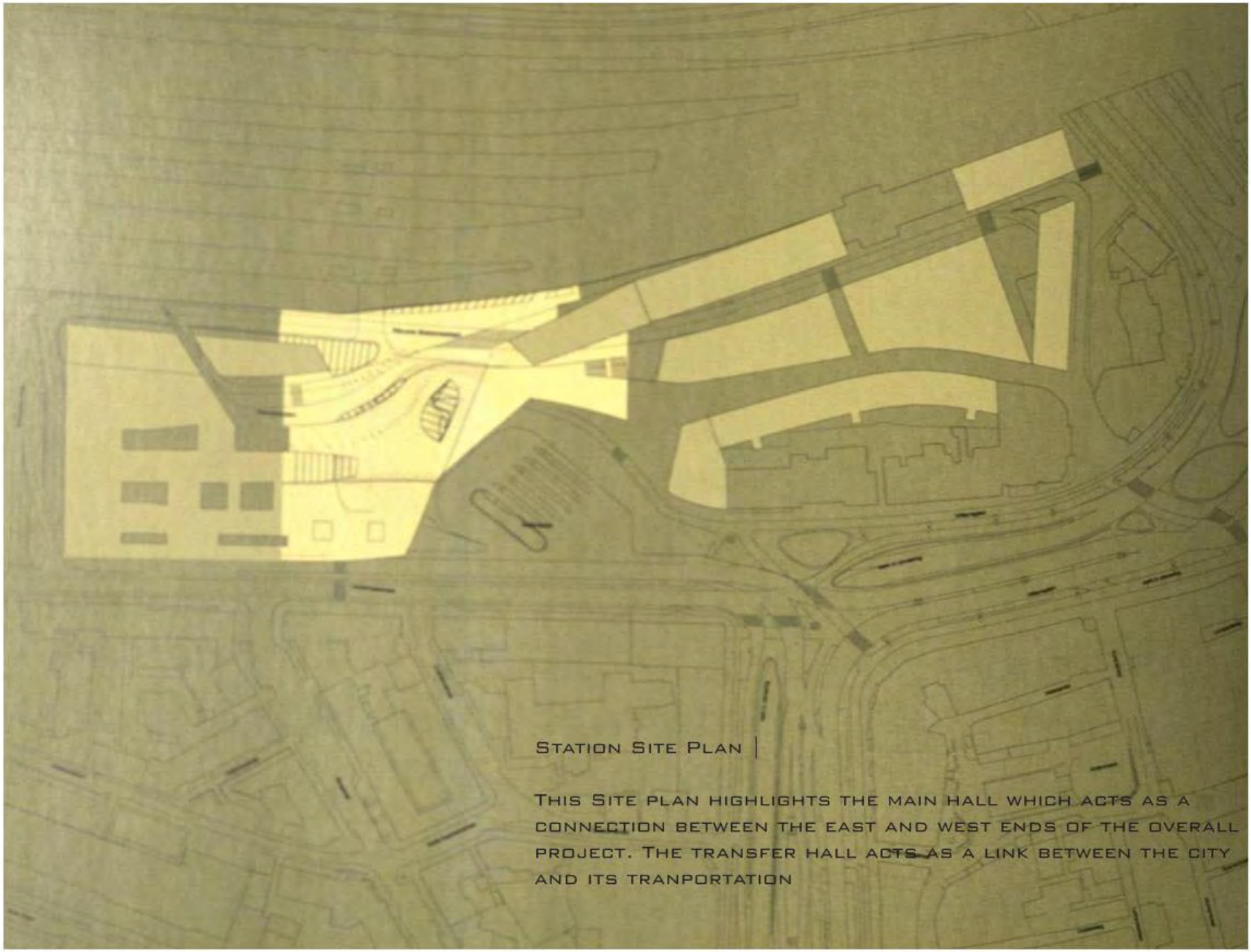
http://www.unstudio.com/projects/arnhem-central-masterplan
http://www.arup.com/Projects/Arnhem_Central_Station.aspx#!lb:/News/2011_07_July/27_July_2011_Arnhem_Station_open_to_the_public/Arnhem_Central_Station_gallery1.aspx
http://sustainablepublictransport.blogspot.com/

A unique, column-free structural design

A project with such an intricate set of requirements necessitates a methodological approach that can accommodate the hybrid nature of the development. The dynamic nature of the Deep Planning process allows the locus to fuse elements of time, occupant trajectories and program into an efficient and integral system. Housed under a continuous roof element these programs constitute one of the main thresholds into Arnhem, its architecture adding to the iconography of the city.

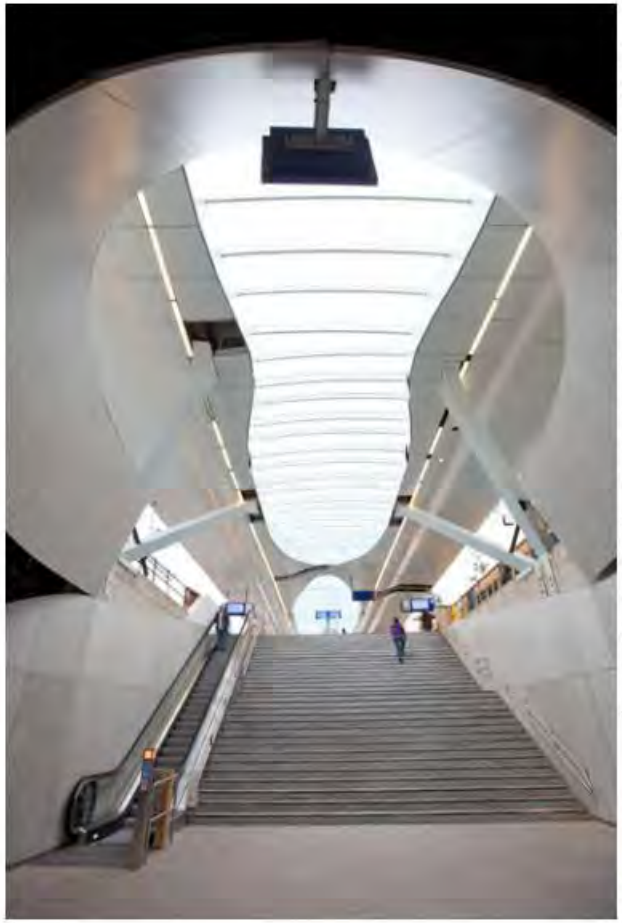
Arnhem Station is a dynamic Mixed Use building. The Primary structure holds the station work/ office spaces. In front of this area there are 8 bus platforms along with Vehicular Traffic Routes. There are two adjacent residential towers that are connected to the Main building through an enclosed Bridge. Behind these Structures are the 10 tracks with covered Platforms to keep travelers out of the elements.

The architectural form, the gently inclined surfaces and the lighting design through out the project intuitively guide the traveler through the building.



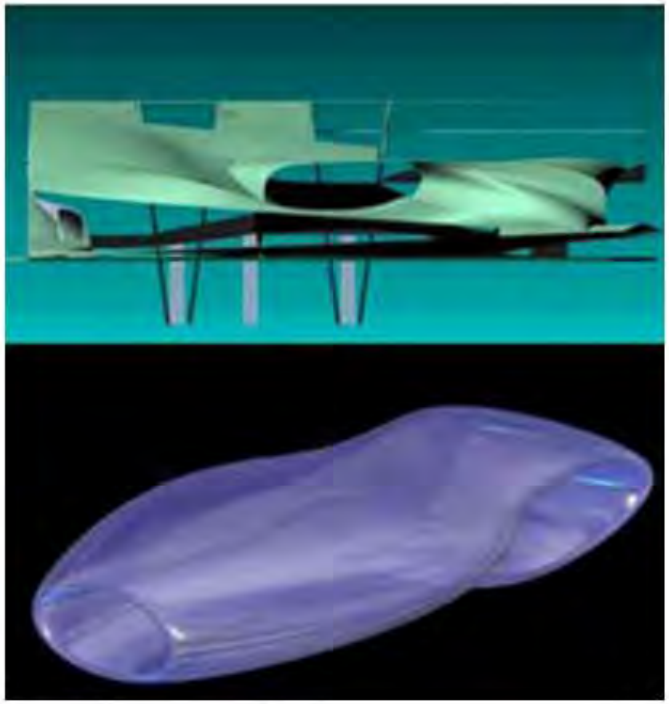
Station Site Plan |

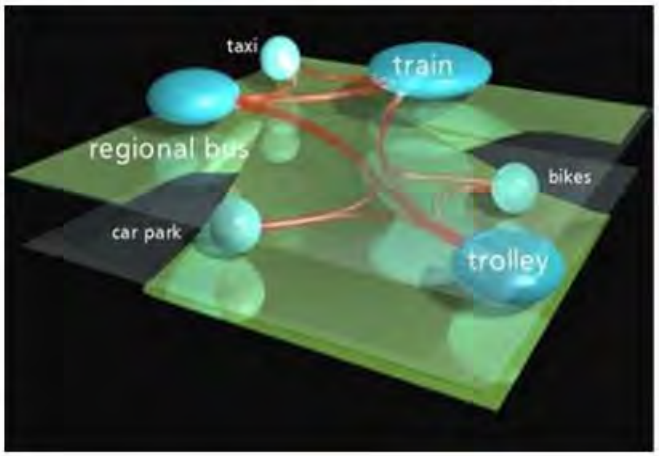
This Site plan highlights the main hall which acts as a connection between the east and west ends of the overall project. The transfer hall acts as a link between the city and its tranportation



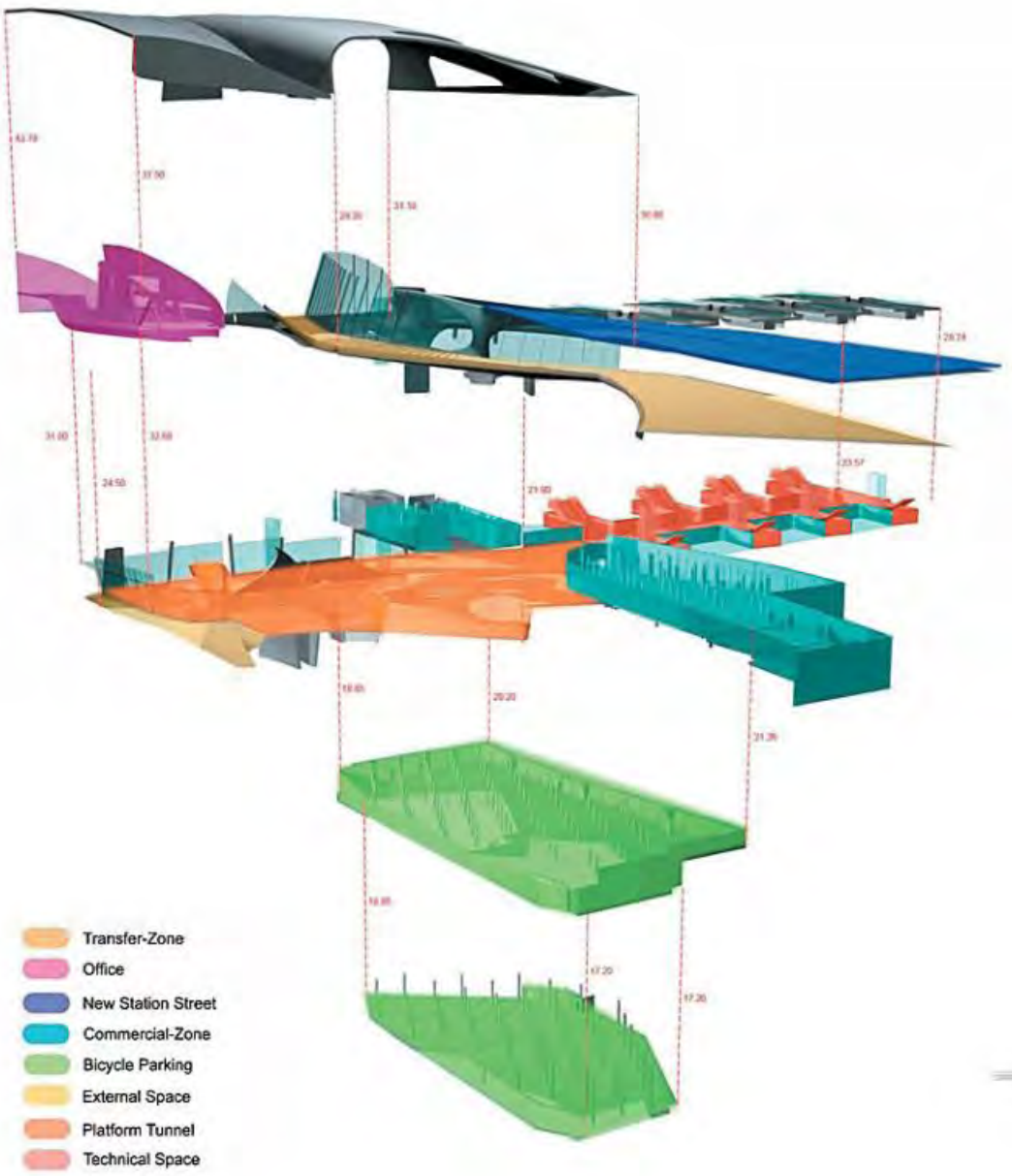
THE TECHNICAL AND SPATIAL ORGANIZATION IS THE CONCEPT OF A KLEIN BOTTLE.

CONCEPT:
PEDESTRIAN MOVEMENT STUDIES ARE THE CORNERSTONE OF THE PROPOSAL: THE ANALYSIS OF THE TYPES OF MOVEMENT ON LOCATION INCLUDES THE DIRECTIONS OF THE VARIOUS TRAJECTORIES, THE PROMINENCE IN RELATION TO THE OTHER FORMS OF TRANSPORTATION ON THE SITE, DURATION LINKS TO DIFFERENT PROGRAMS AND INTERCONNECTIONS.

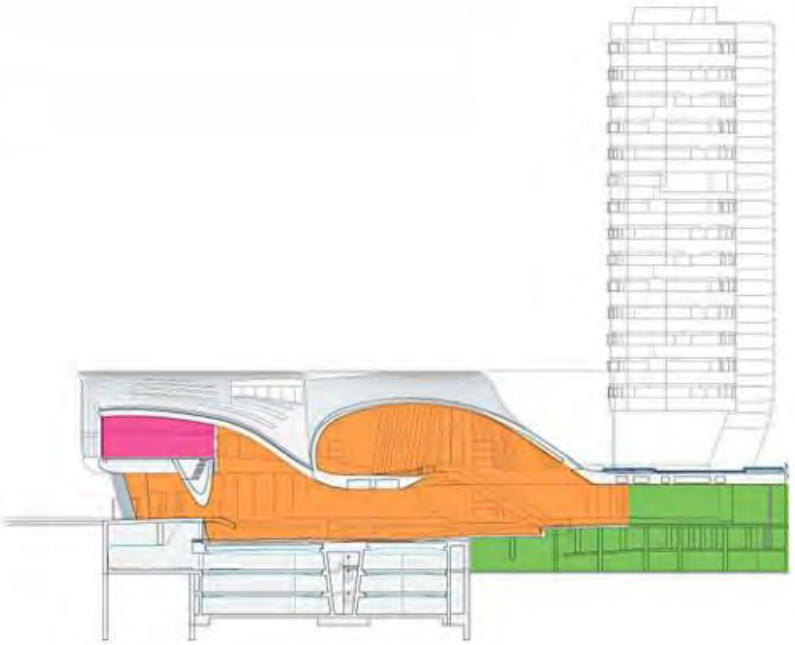




THE PUBLIC TRANSPORTATION TERMINAL FACILITATES A DYNAMIC FLOW OF PASSENGERS IN ORDER TO MINIMIZE CROSSING TRAFFIC.

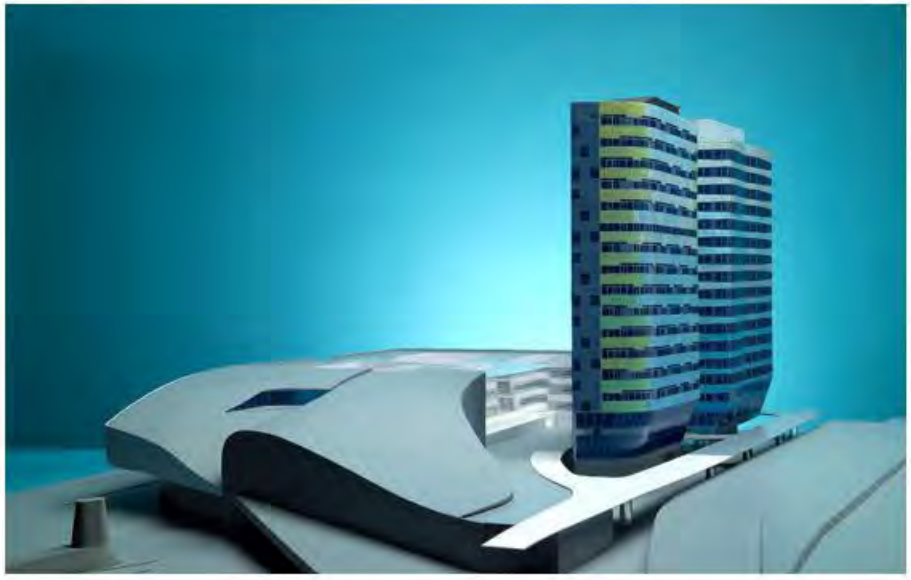


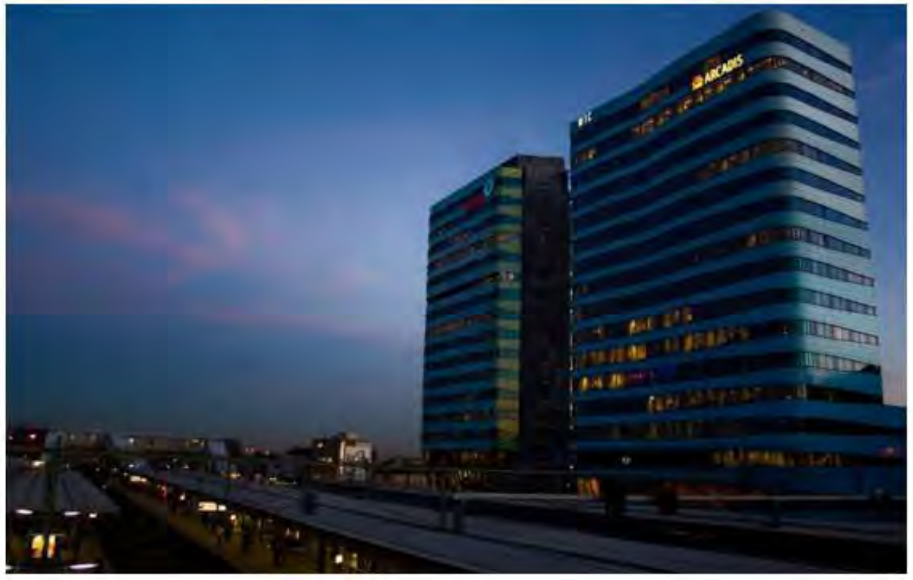
By building above and below ground, room was created for offices, shops, homes, a new station hall, a railway platform and underpass, a car tunnel, bicycle storage and a large parking garage.



PARK AND RIJN TOWERS

BOTH TOWERS ARE EIGHTEEN STORIES TALL AND CHARCTERIZED BY THEIR HORIZONTAL BAND WINDOWS. THE PARK TOWER'S WINDOW FRAMES JUT OUT OVER THE WHOLE SURFACE AND ALTERNATE WINDOW HEIGHTS AND LENGTHS. THE GREEN PANELS MAKE THE TOWER STAND OUT FROM THE RIJN TOWER. THE RIJN TOWER CONTRAST THE PARK TOWER WITH ITS SMOOTH SILVER BODY WORK. THE WINDOWS ARE NARROW ON THE SOUTHERN SIDE FOR SOLAR PROTECTION. THE TWO HIGH RISE TOWERS ARE COMPLETELY DIFFERENT, ONE WITH INDIVIDUAL COMPARTMENTS AND THE OTHER WITH AN OPEN FLOOR PLAN, YET ANYONE CAN SEE THE RELATIONS BETWEEN THEM





Transbay Transit Center | Layering

http://transbaycenter.org/
http://pcparch.com/project/transbay-transit-center-and-tower
http://www.archdaily.com/356982/transbay-transit-center-in-san-francisco-pelli-clarke-pelli/

Architect: Pelli Clarke Pelli

Landscape Architect: PWP Landscape Architecture

Location: San Francisco, United States of America

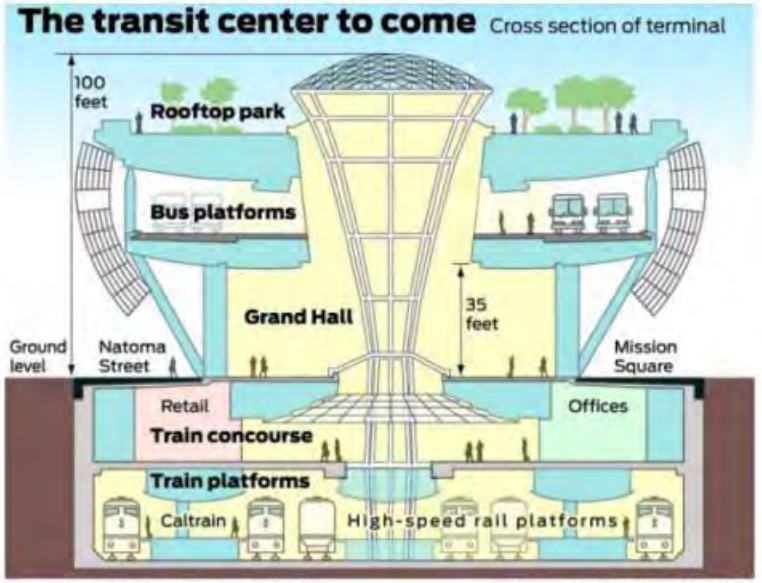
Floor Area: 1,500,000 sq ft

2,500 New Homes

The Transit center stretches five blocks along Mission Street.

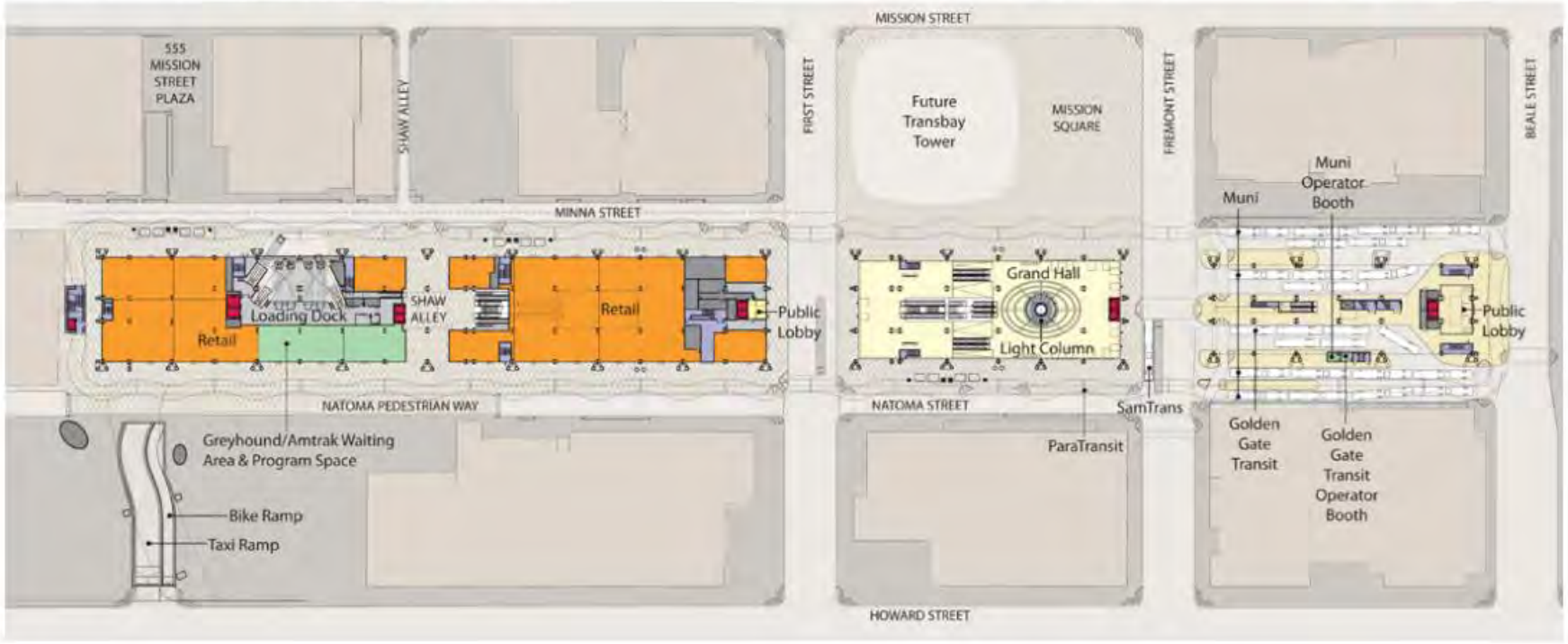
A GENTLY UNDULATED WALL FLOATS ABOVE THE STREET ON ANGLED STEEL COLUMNS, WHICH HAVE CREATED A GRACEFUL, AIRY AND WELCOMING STRUCTURE.

THE TRANSBAY TRANSIT CENTER IS A MULTI LEVEL STATION THAT COMBINES TRANSPORTATION WITH LIVING, WORK AND COMMERCIAL ACTIVITIES. THE STATION PROVIDES A GREEN ROOF FOR A SUSTAINABLE ELEMENT WHILE THE GLASS SIDING IS SLEEK AND FITS RIGHT INTO THE CITY ENVIRONMENT. THIS BUILDING NOT ONLY BECOMES USEFUL BUT ENJOYABLE WITH THE PARK THAT OCCUPIES THE ROOF. THE INTERIORS ARE ILLUMINATED THROUGH SKYLIGHTS AS WELL AS THE WALLS.



Source: *Transbay Joint Powers Authority*

John Blanchard / The Chronicle



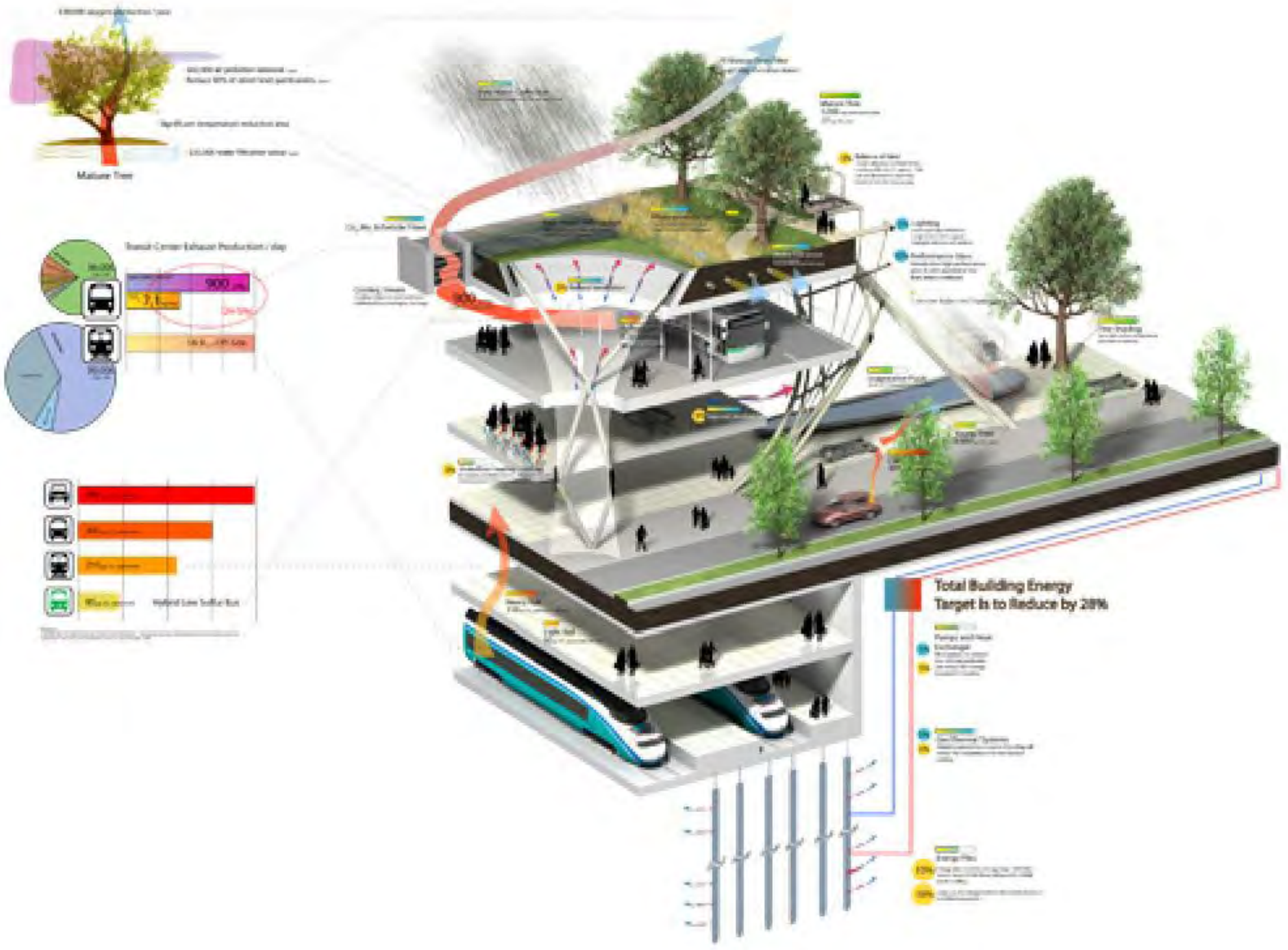
PRECEDENTS FOR THIS BUILDING WERE NEW YORK'S CENTRAL TERMINAL AND LONDON VICTORIA STATION BECAUSE OF THE WAY THE LIGHT FORM THESE STATIONS FILLED THE SPACES. THE TRANSLUCENT FACADE CREATES AIRY LIGHT FILLED SPACES WITHIN THE PLAZAS BELOW

THE PARK SYMBOLIZES THE CITIES COMMITMENT FOR ENVIRONMENTAL QUALITY SUSTAINABLE FUTURE. THE BUILDINGS ANNUAL ENERGY CONSUMPTION IS PROJECTED TO BE UP TO 25 PERCENT LOWER THAN TITLE 24 ENERGY EFFICIENCY STANDARDS. THIS BUILDING WILL BE PART TRANSPORTATION HUB, PART PUBLIC PARK AND URBAN SPACE AND PART OFFICE AND RETAIL ESTABLISHMENT.

The roof top is a innovative, highly sustainable design that includes a 2.2 hectare rooftop park that will anchor the growth of a new mixed use neighborhood. The heart of the Transbay design is the rooftop park, it is dense with nature and activities. There are over a dozen entry points, and has potential to connect to other buildings surrounding it.

There is an 1,000 person amphitheater woven into the landscape. also a children's playground as well as quiet areas to read and picnic. A variety of Bay Area ecologies will be present in this park.

Will bring together 11 systems of local and national transportation.


Mature Tree
Total Building Energy
Target is to Reduce by 28%

San Shui Masterplan | Connectivity

Architect: Urban Hybrid Architecture

Location: Guangzhou, China

Client: San Shui Masterplan

Site Area

This project incoorporates the SMRT (Singapore Mass Rapid Transit). The Project plans to build an ecological city using the principles of Transit Oriented Development. The Transportation hub includes the LTR, bus station and parking spaces. There are pedestrian bridges and roads linking the center with the green corridors and with the other comercial bands

http://www.urbanhybrid.co.uk/work/san-shui-masterplan/

The Station encourages people to walk to and from the LRT station. Shopping,parks, residential, and office buildings are placed close to the transportation hub in order to increase green travel.

there are pedestrian bridges and roads linking the center with the green corridors and with the other commercial bands. it is the entertainment center, cultural center and high end shopping plaza.

Bologna Main Station | Natural Light

Architect: ingenhoven architects

Location: Bologna Italy

International Competition 2008

GFA 100,000sq.ft.

The design for the new main railway station of Bologna calls for a strong, iconic entrance hall. That is clearly visible from the city-side as well as the platforms. It is intended as a new sign for Bologna for passengers who pass through the city and get off in Bologna.

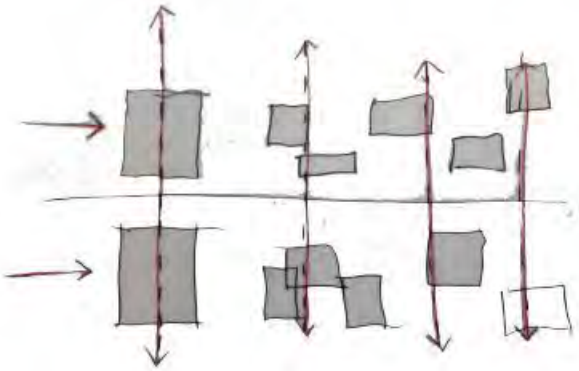
The Plaza in front of the station serves as an interface to the city, the public transportation and taxi cabs.

http://www.ingenhovenarchitects.com/en/projects/main-station-bologna/facts.html#description

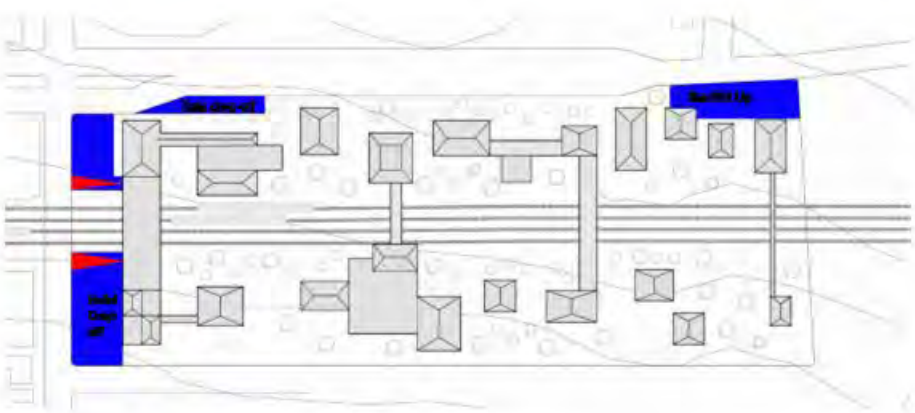
THE FOUNDATIONS OF THE STRONG IMAGE ARE TWO: THE UNIQUE STRIPED ROOF AND THE WIDESPREAD PRESENCE OF THE NATURAL LIGHT. THE LIGHT IS TREATED AS A CONSTANT VALUE; VALUE THAT IS NOT SUSCEPTIBLE FROM THE STYLE OF THE MOMENT. THE CONTROL OF THE NATURAL LIGHT GUARANTEES A LASTING ARCHITECTURE AND ATMOSPHERE. THE NATURAL LIGHT IS ALSO CONSIDERED AS A FUNDAMENTAL ELEMENT THAT UNIFIED THE NEW COMPLEX BUILDING IN ITS ENVIRONMENT, EXPOSING THEM TO THE SAME ATMOSPHERIC CHANGES.

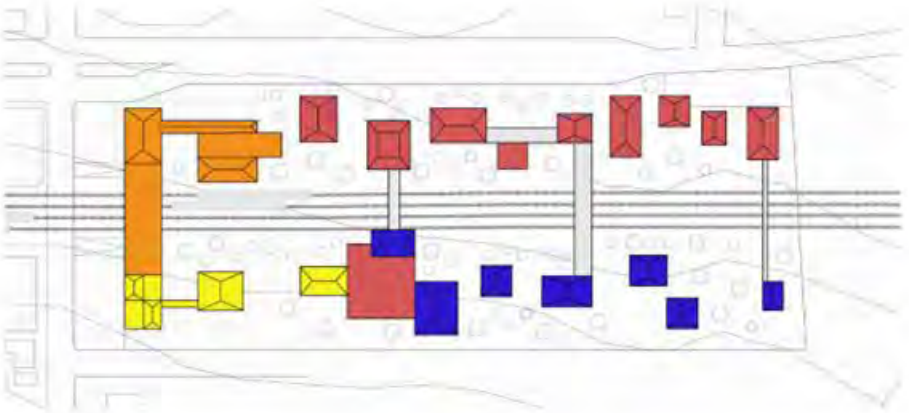
DESIGN CONCEPTS

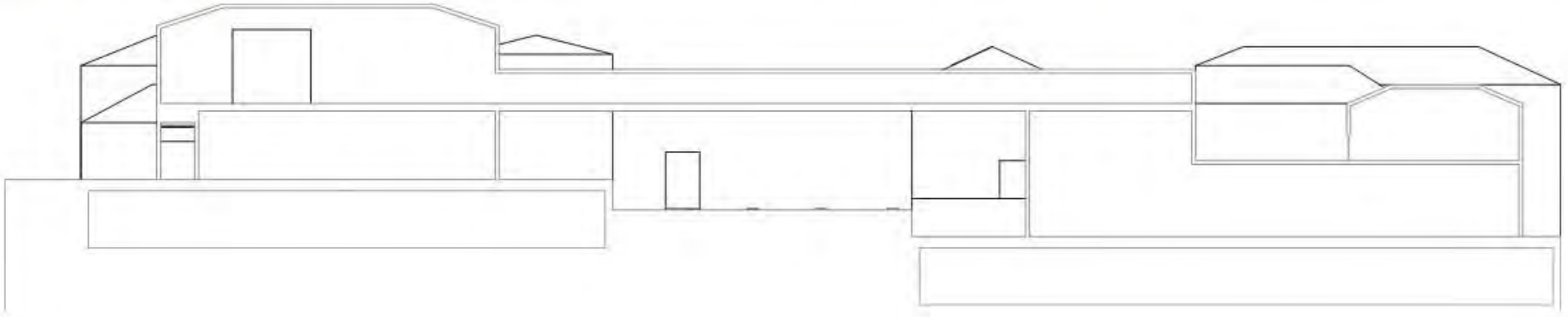
CONCEPT 1 | MULTI BRIDGE

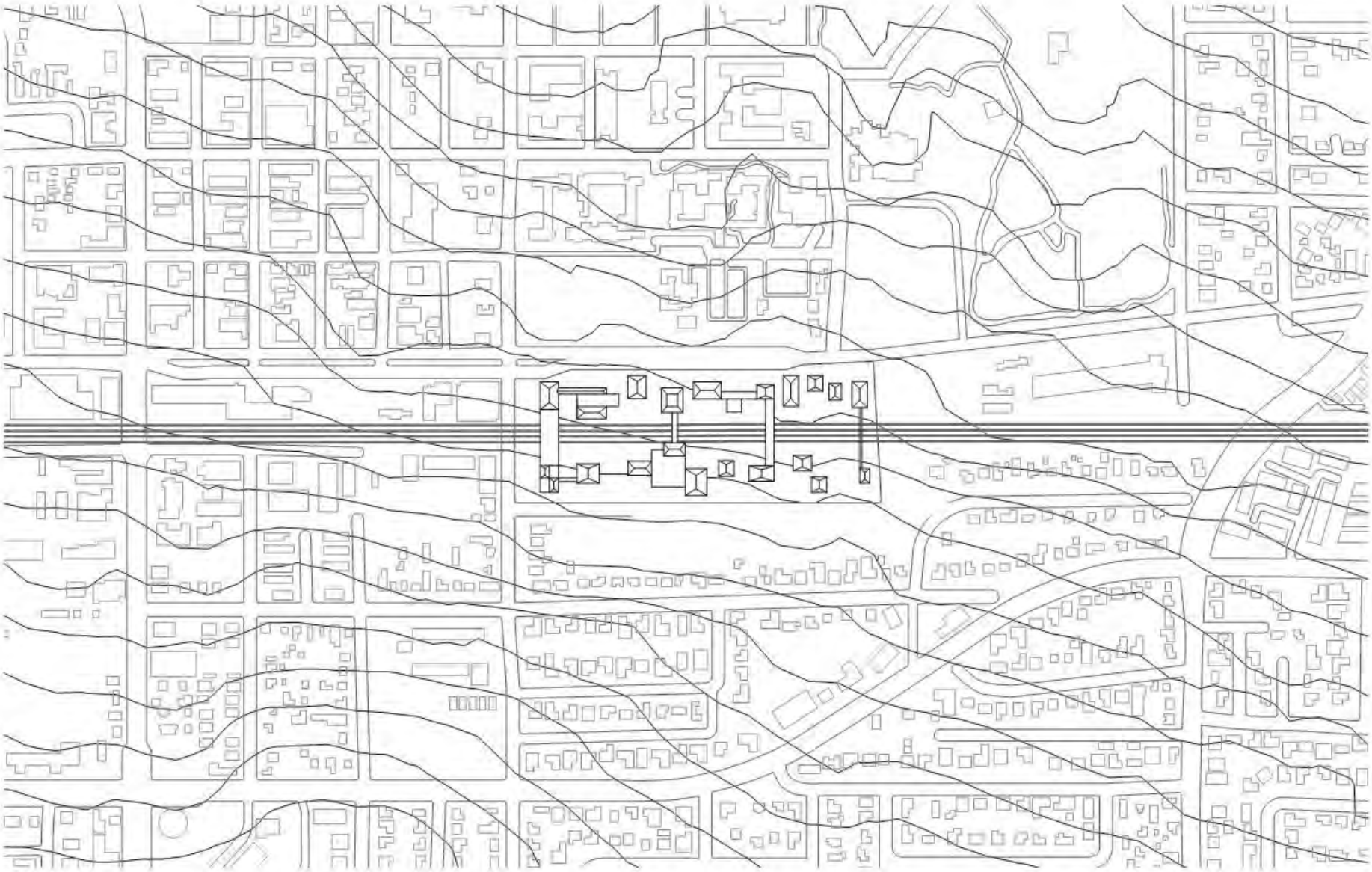


-APPROACH FROM ONE DIRECTION
-CREATE MORE PRIVACY FOR RESIDENTS AND HOTEL
-BRIDGES ARE SMALLER AND MORE DIRECT
-METRO STATION LOCATED ON BOTH SIDES OF TRACKS MAKING ACCESSIBILITY EASY FOR THE LIGHT RAIL AS WELL AS THE METRO

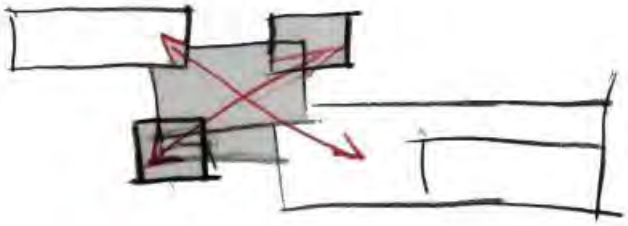




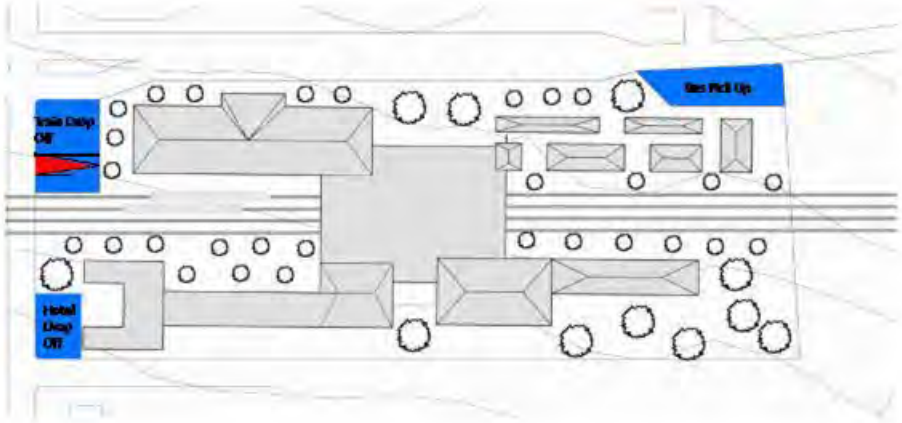


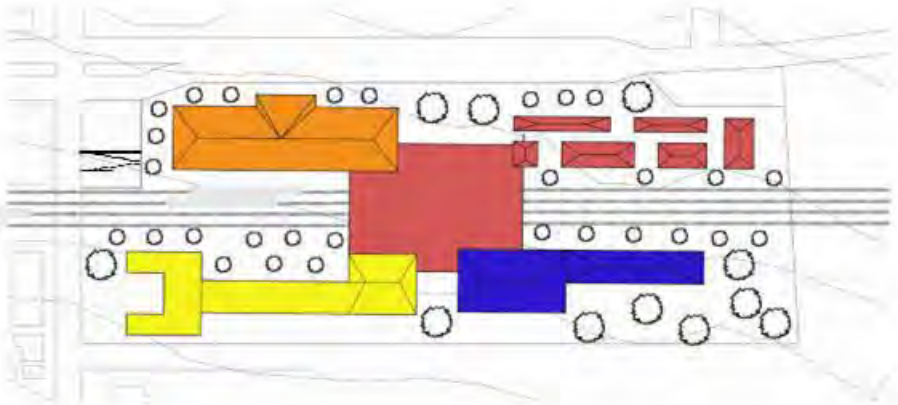


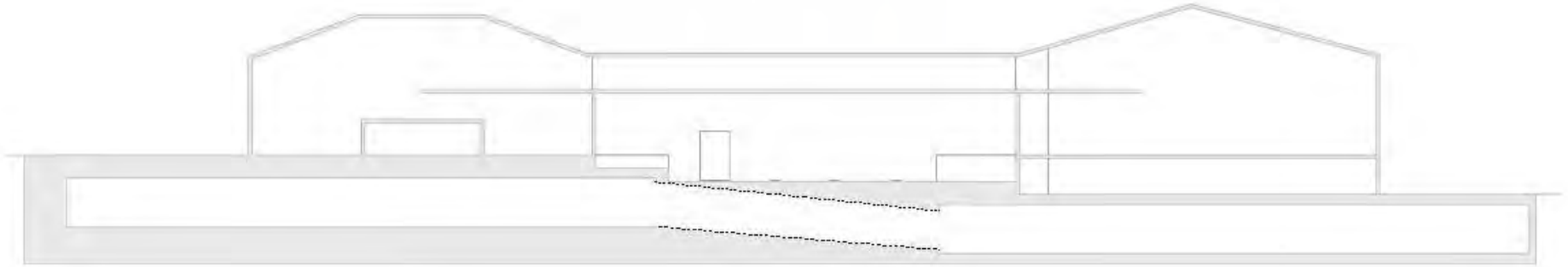
CONCEPT 1 | CENTRAL BRIDGE

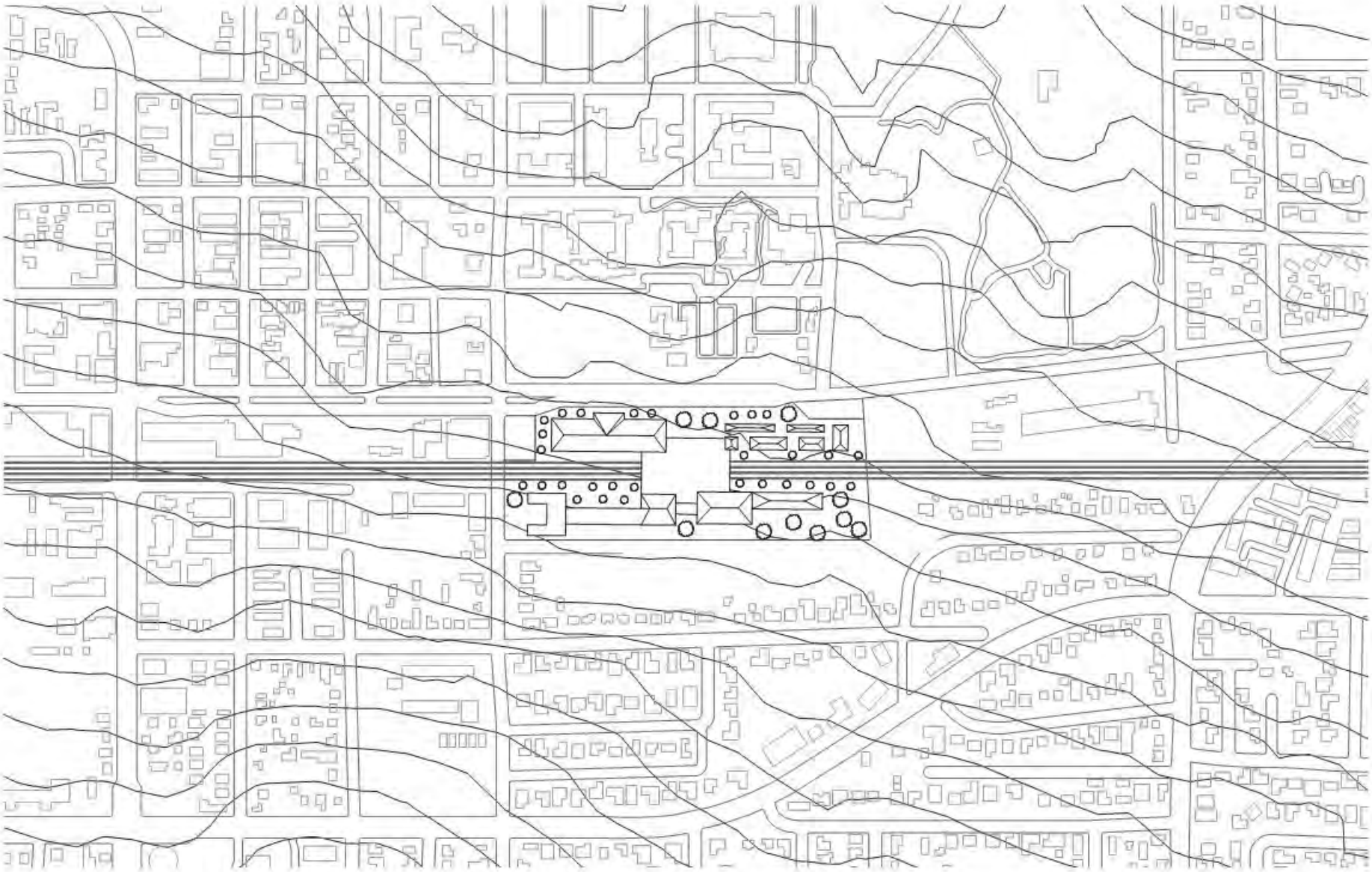


-BRIDGING HAPPENS CENTRALLY OVER HEAD IN ONE SPOT WITH CROSS AXIS TO EACH LOCATION. ADDITIONALLY BRIDGING HAPPENS CENTRALLY OVER HEAD IN ONE SPOT
- METRO STATION ONLY ON ONE SIDE
-COVERED OUTDOOR WAITING UNDER CENTRAL BRIDGE

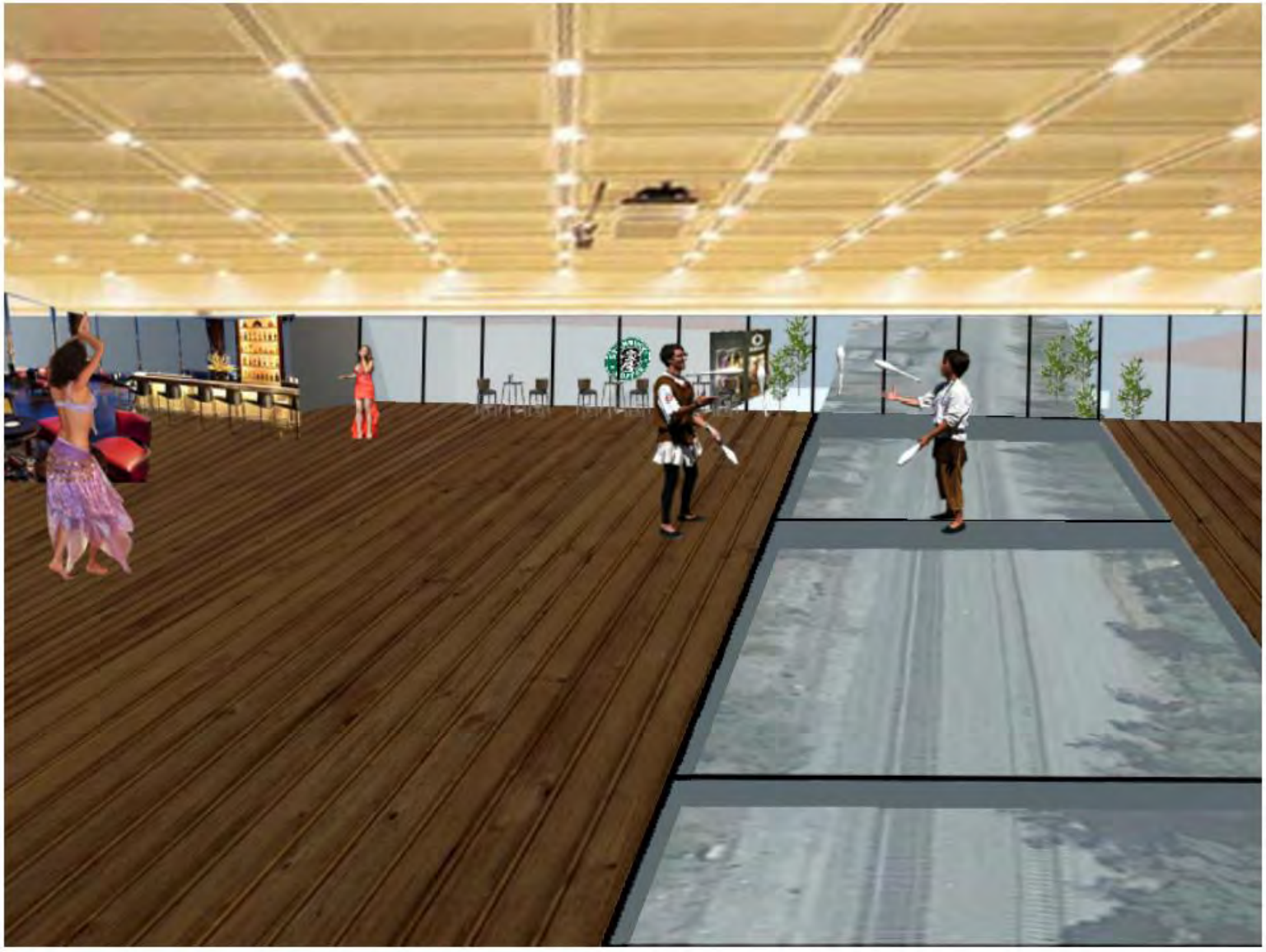








COLLAGE 1 | BRIDGE OVER TRACKS



COLLAGE 2 | OPEN PLAZA SPACE

FINAL DESIGN

SITE | AERIEL VIEW

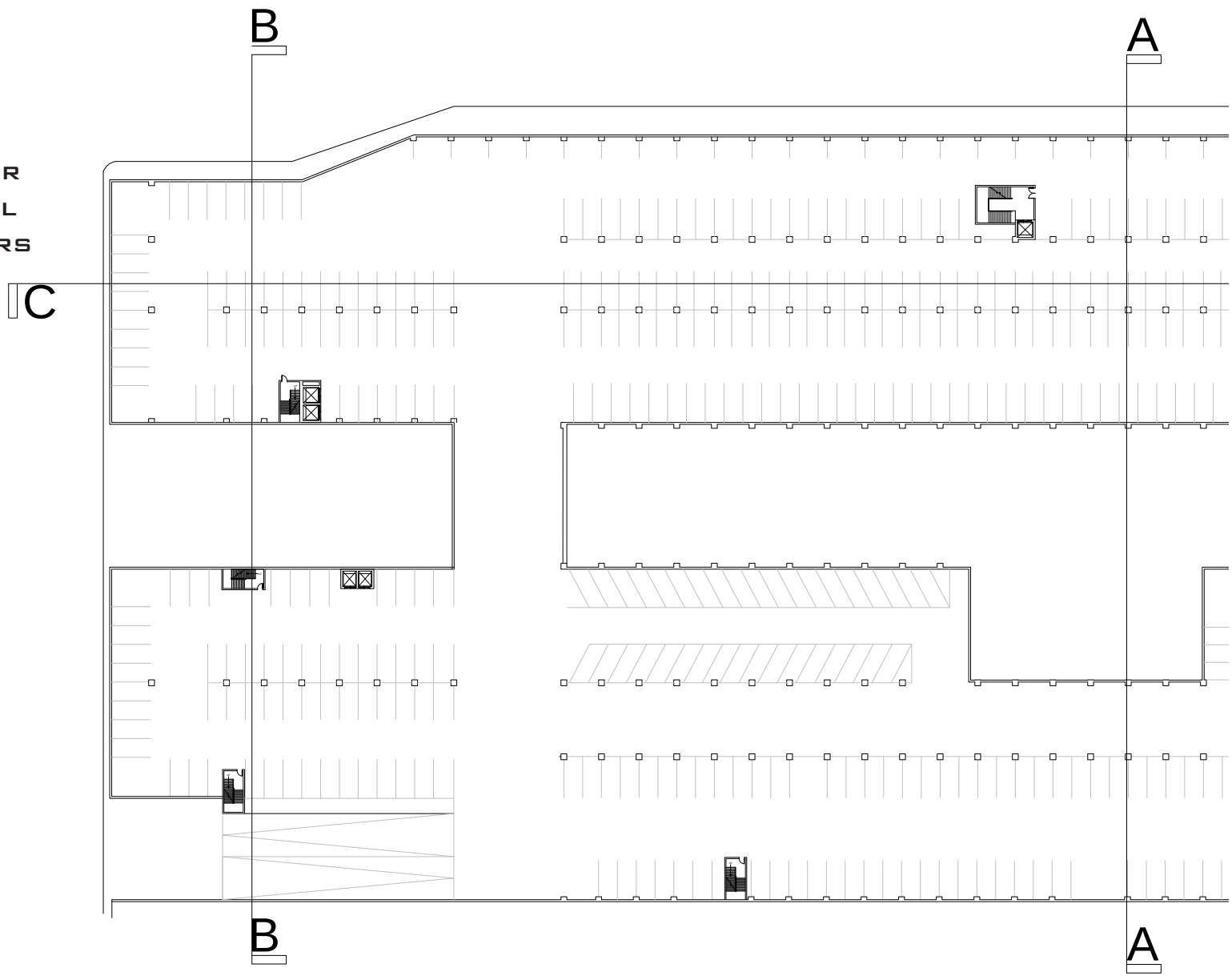
BUILDING CODE MAXIMUM 48'-0" TALL OR 3 FLOORS

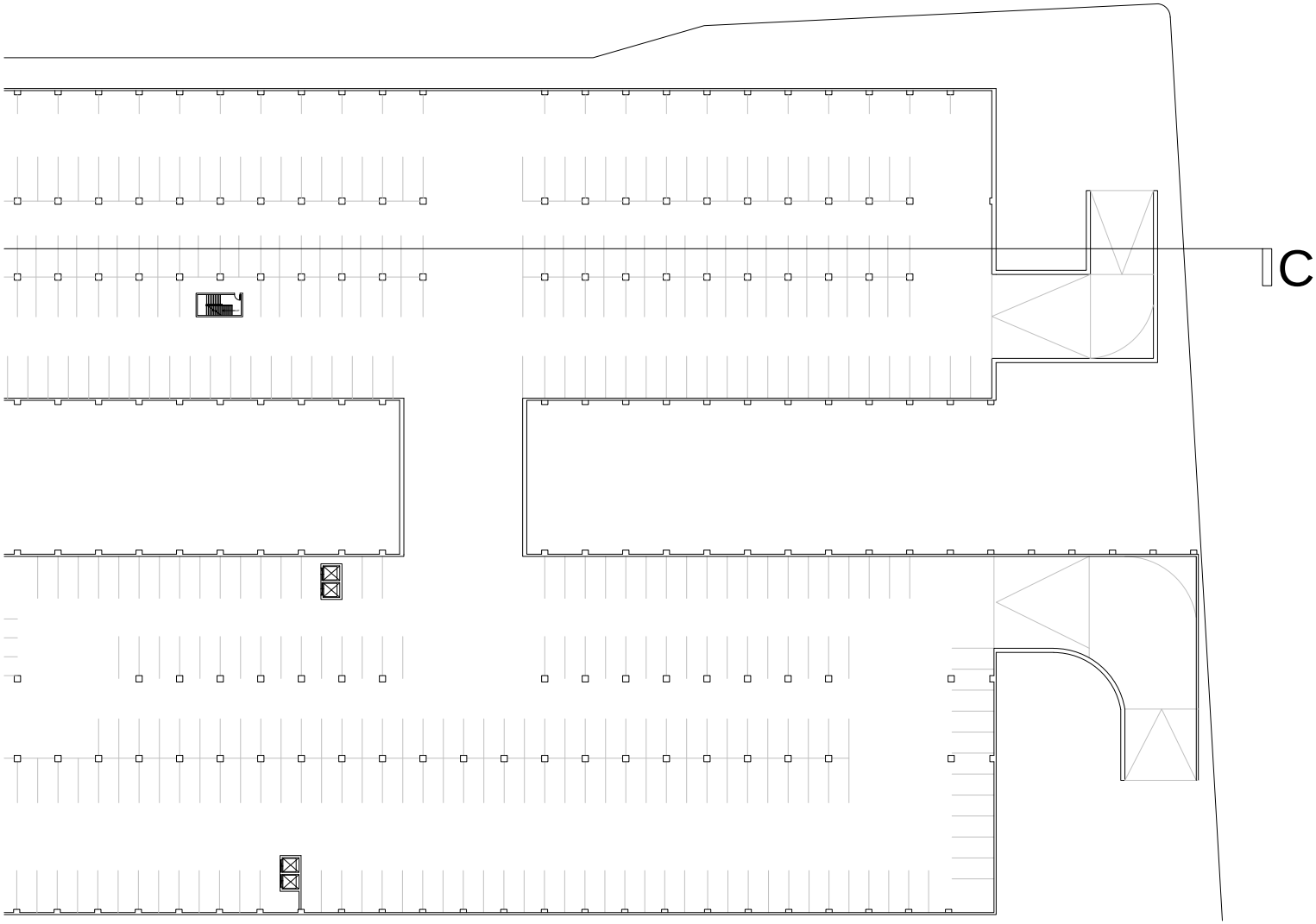
TRAIN HEIGHT 15'-5" - ABSOLUTE MINIMUM VERTICAL CLEARANCE 14'-6" IS BASED UPON A MINIMUM PANTOGRAPH OPERATING HEIGHT OF 13 FEET.

SITE PLAN | CLAREMONT CALIFORNIA

Floor plans

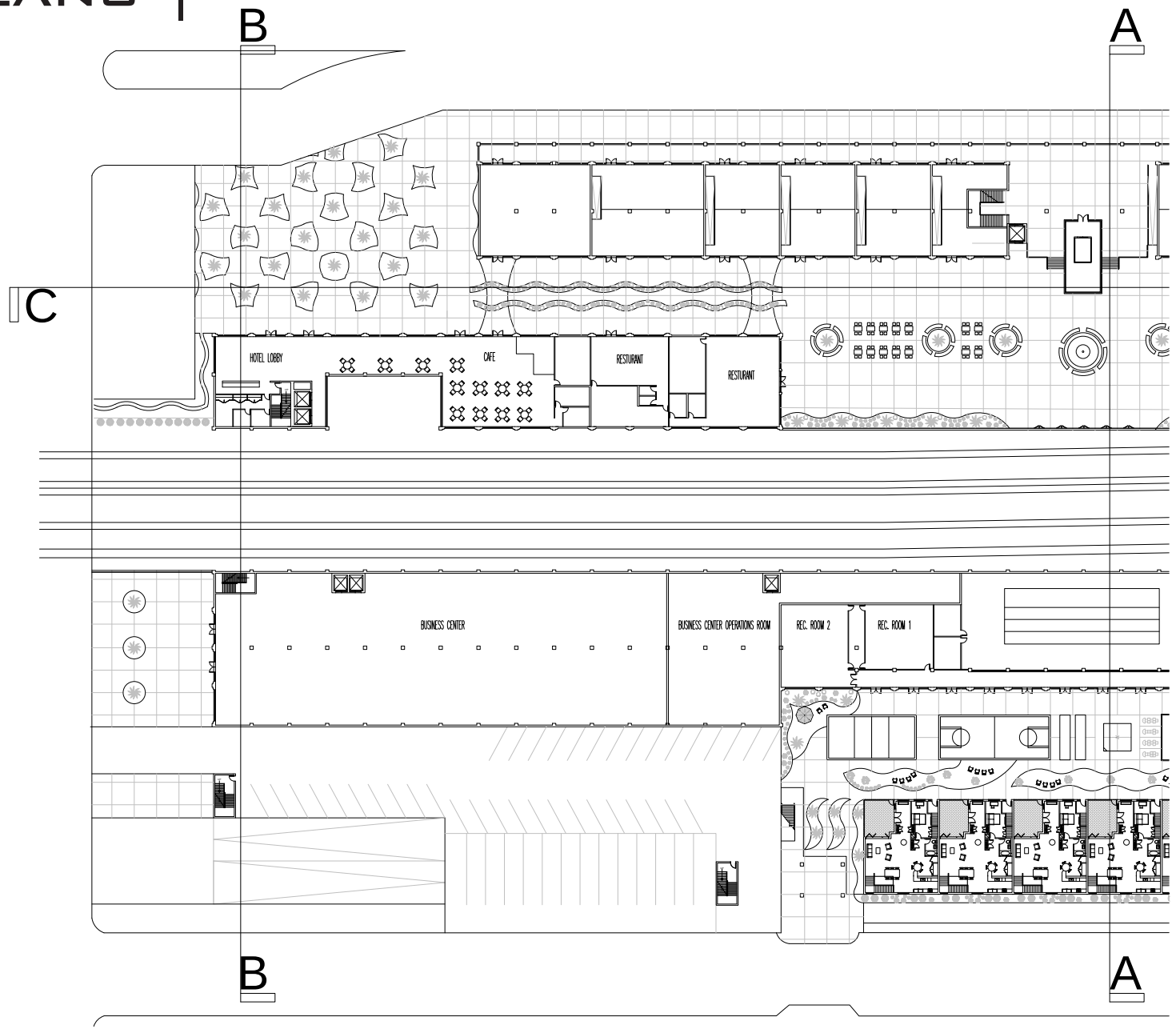
lower level-
over 600
parking spots
are provided for
residents, hotel
guests, shoppers
and commuters.

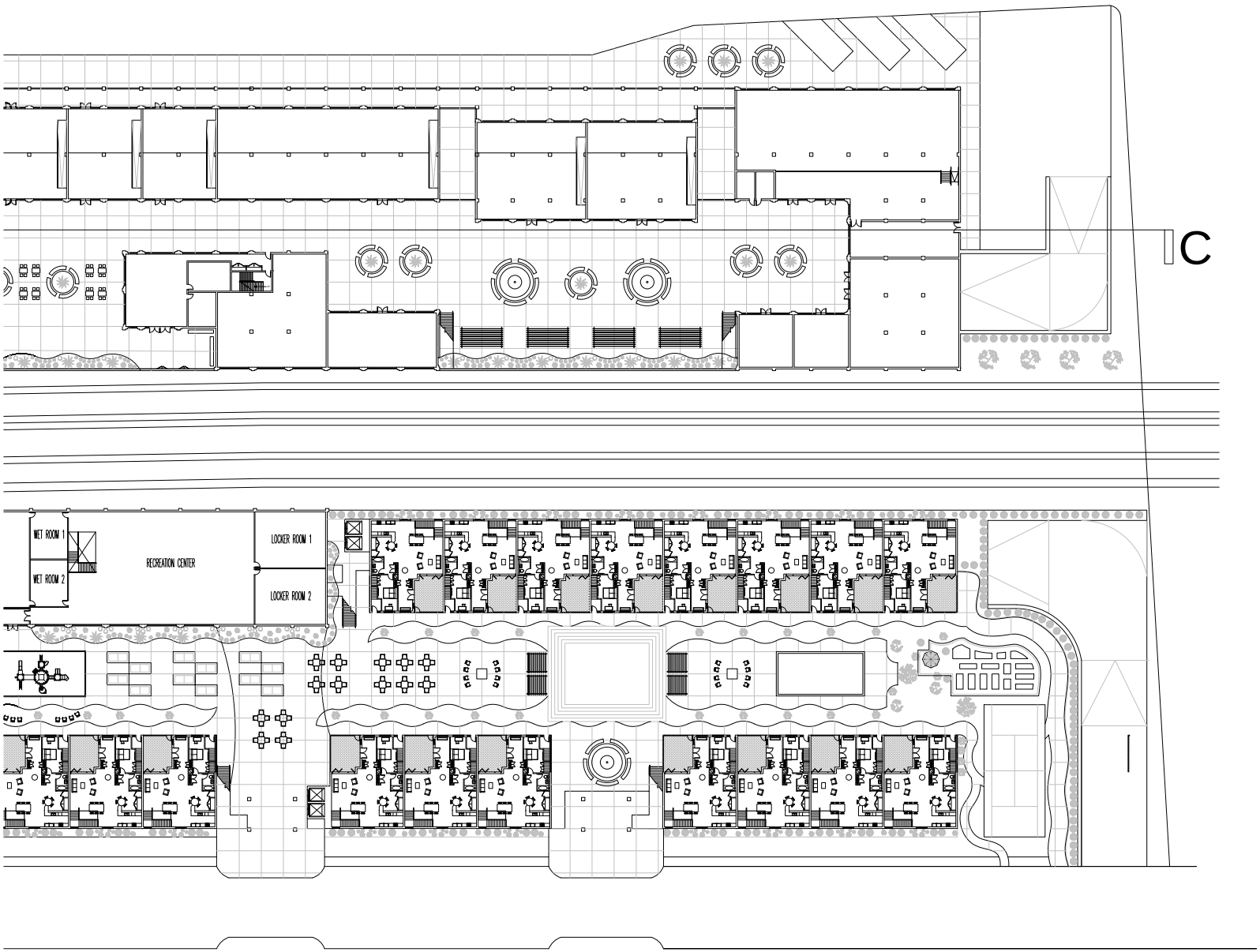



C

Floor plans

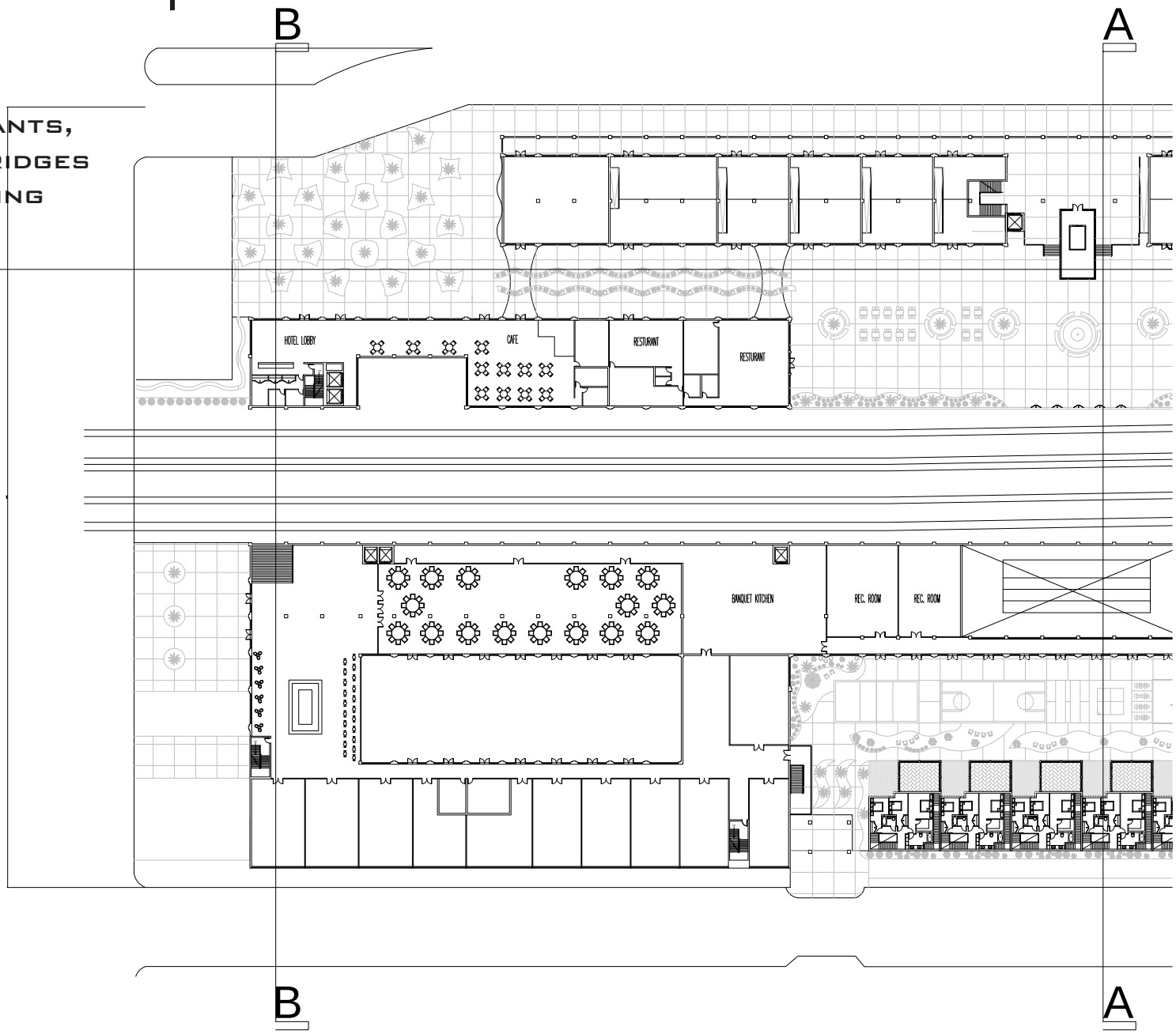
Level 1 - retail, housing, hotel and train station.

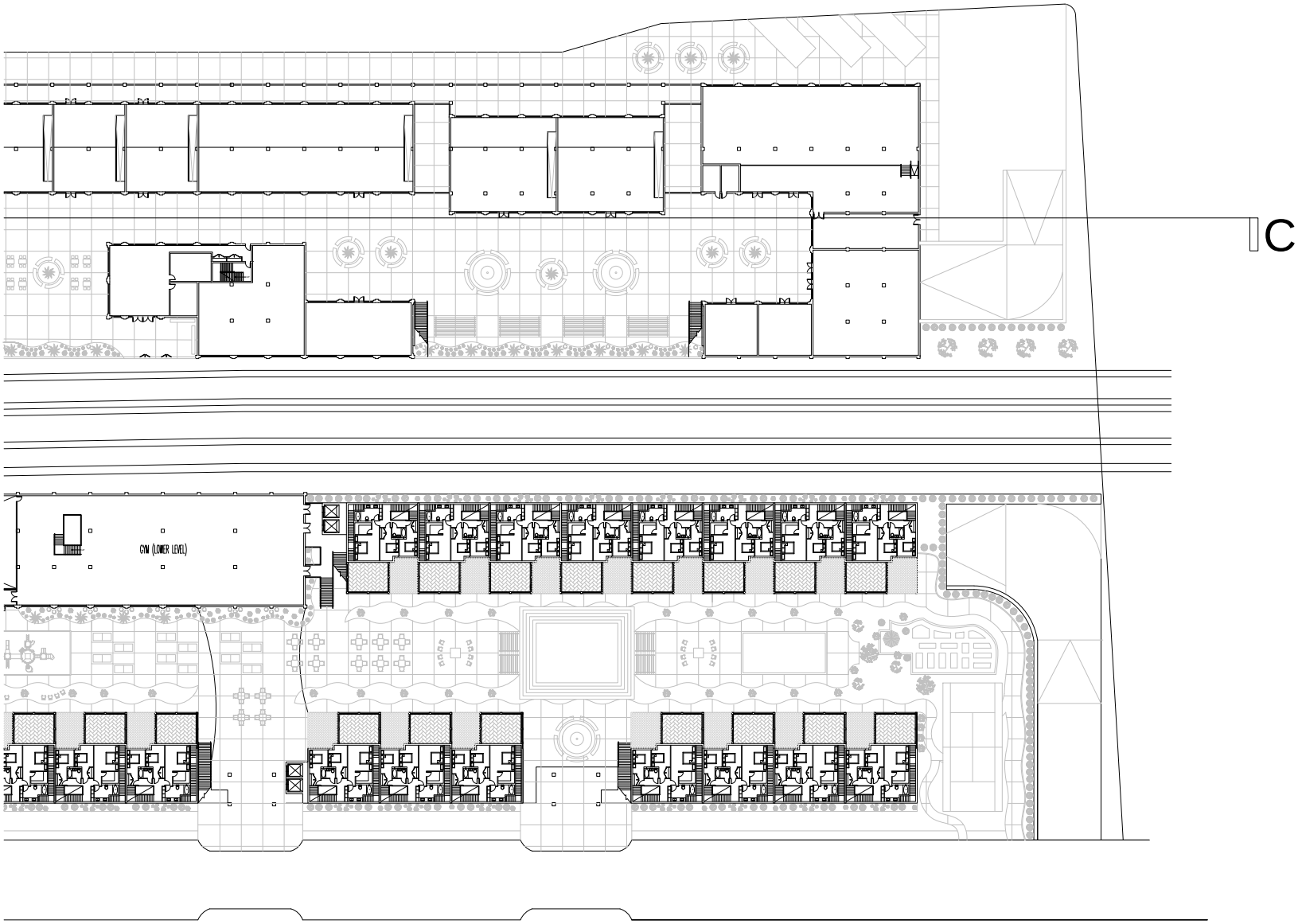



C
WET ROOM 1
WET ROOM 2
RECREATION CENTER
LOCKER ROOM 1
LOCKER ROOM 2

Floor plans

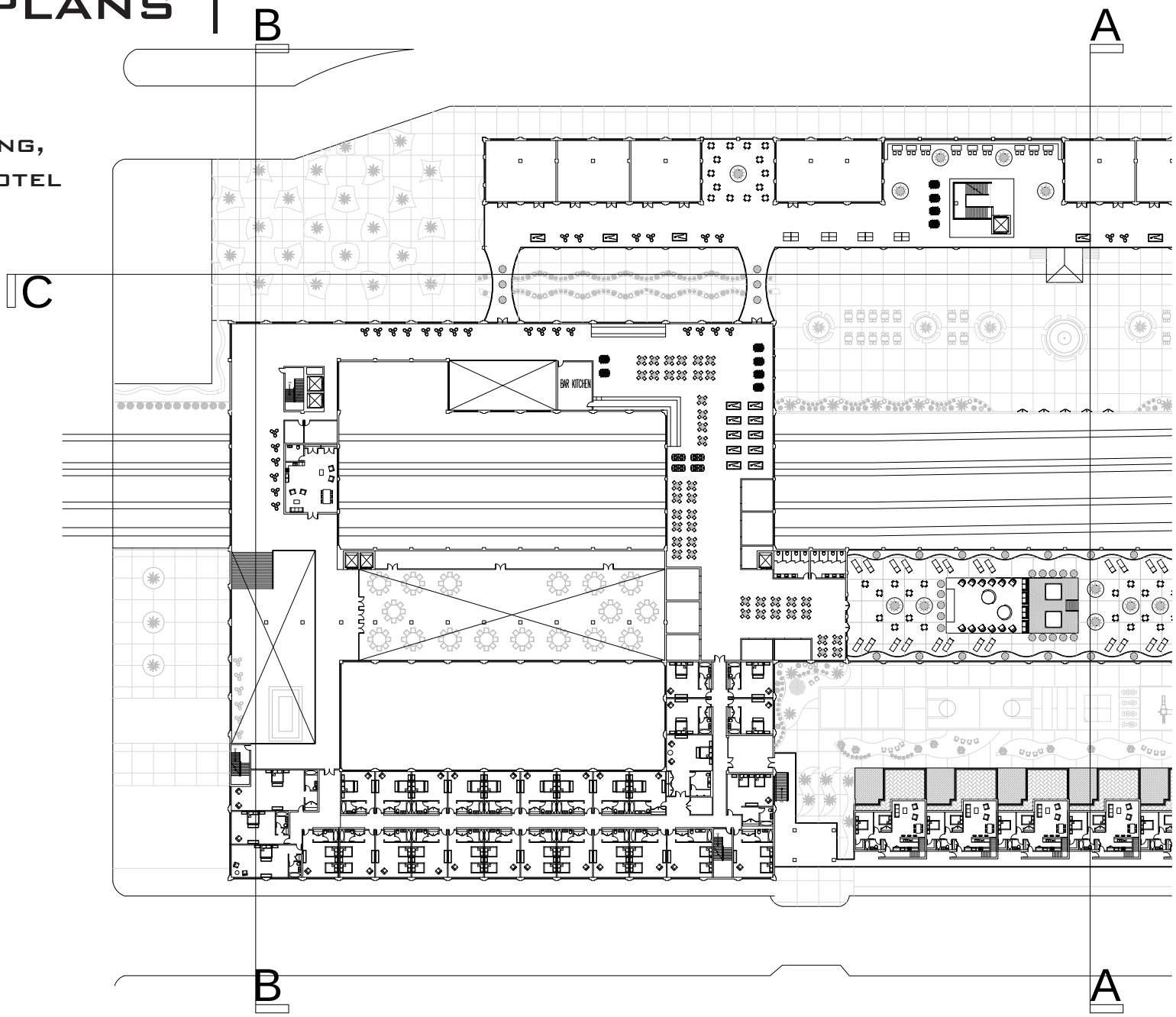
Level 2 - restaurants, housing, hotel, bridges and outdoor seating

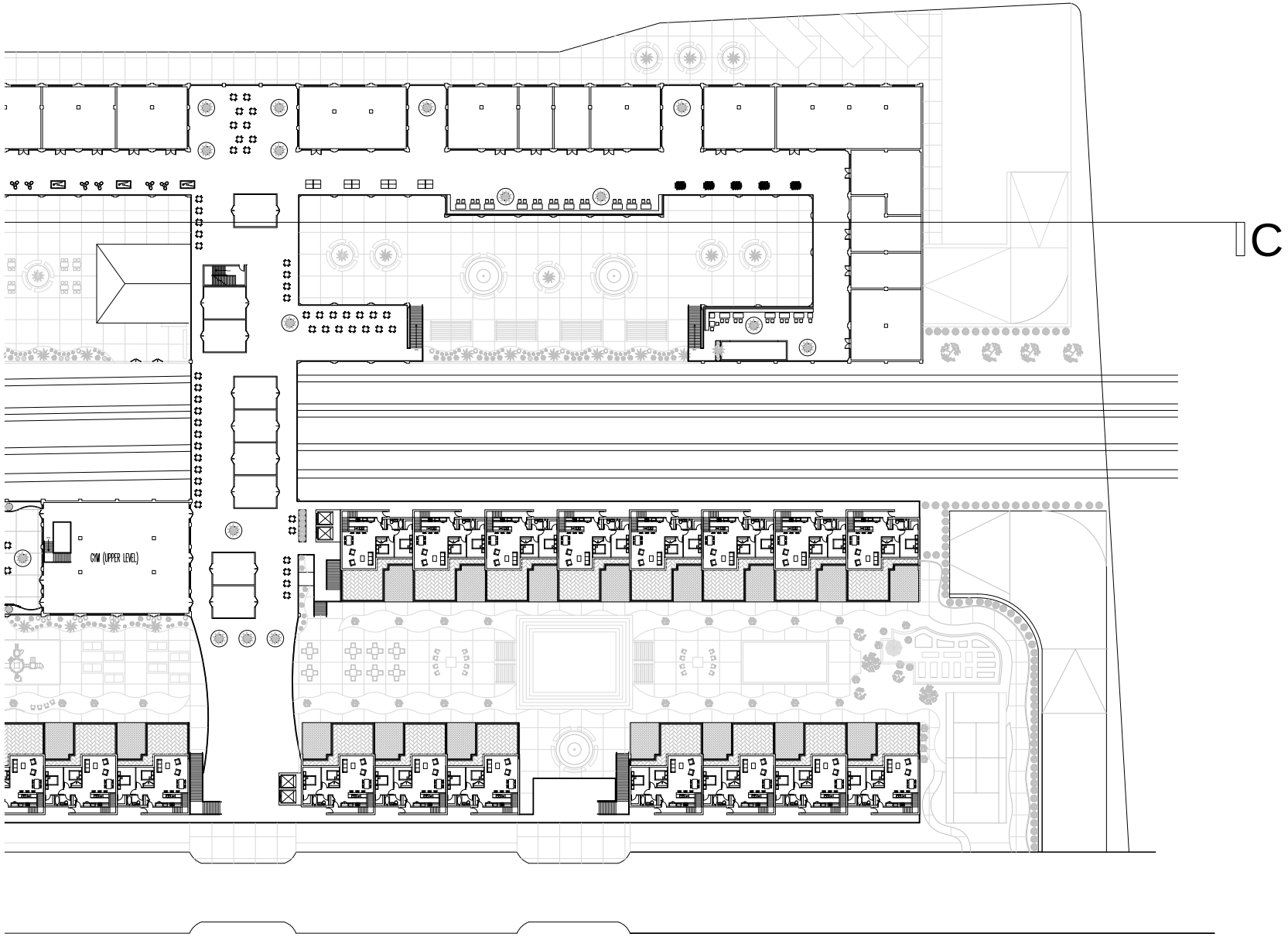



C
GYM (LOWER LEVEL)

Floor plans

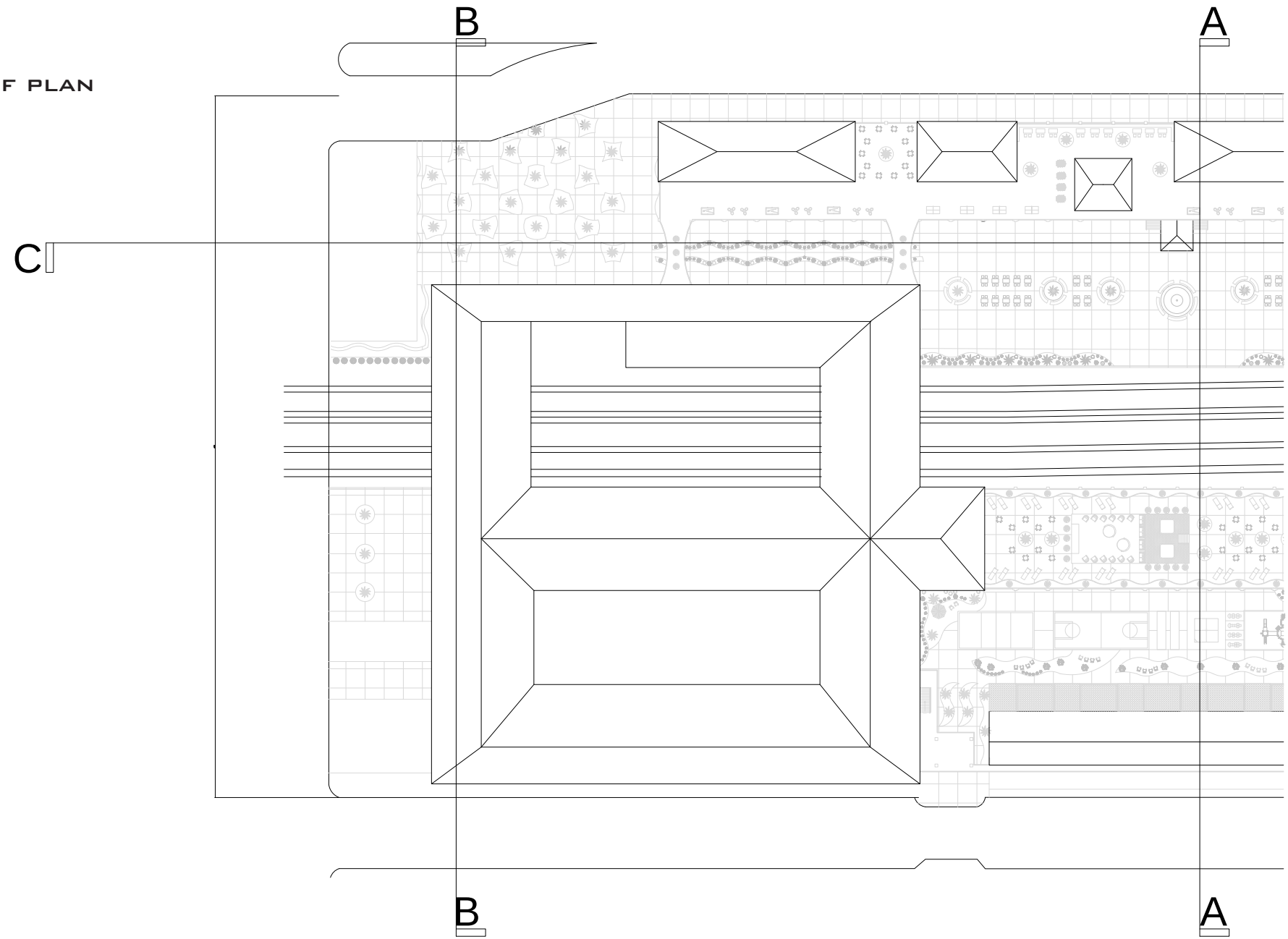
Level 3 - housing, Bridges, and hotel

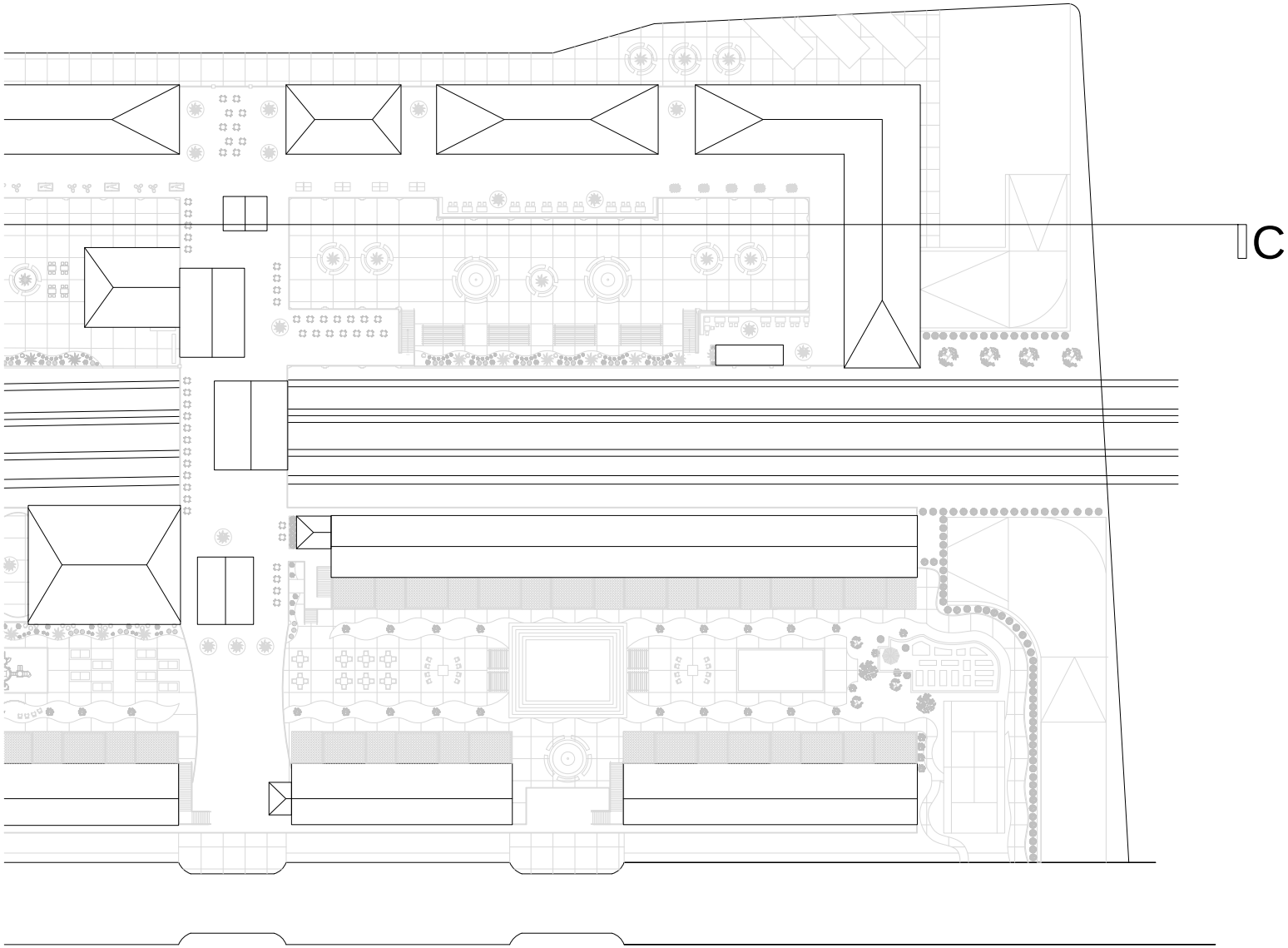



C
GYM (UPPER LEVEL)

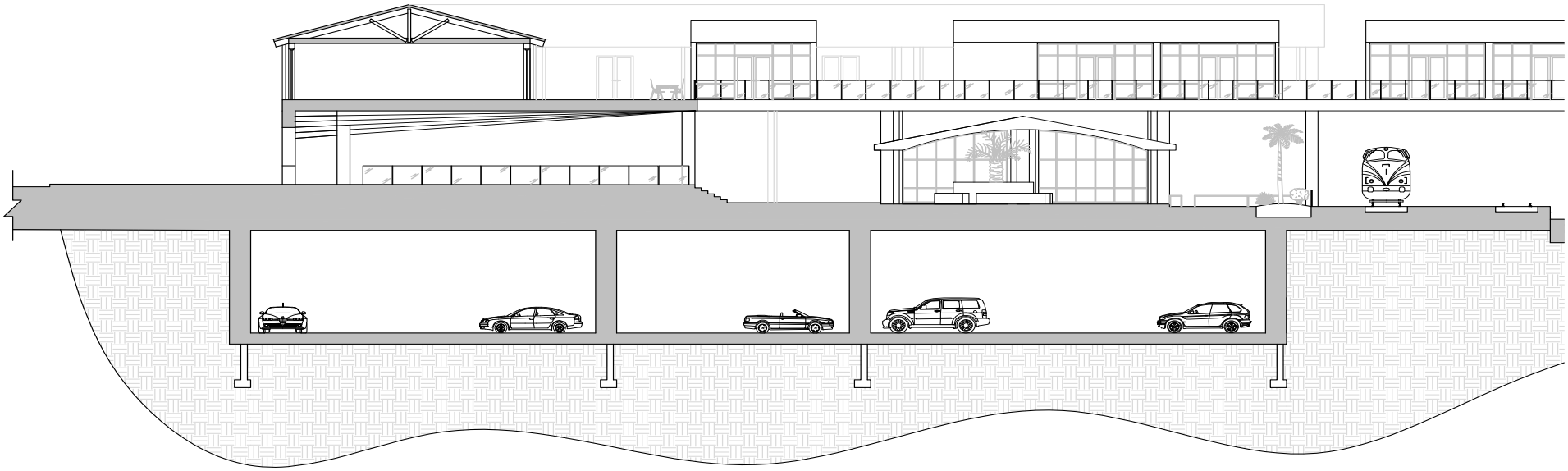
Floor plans

Roof plan

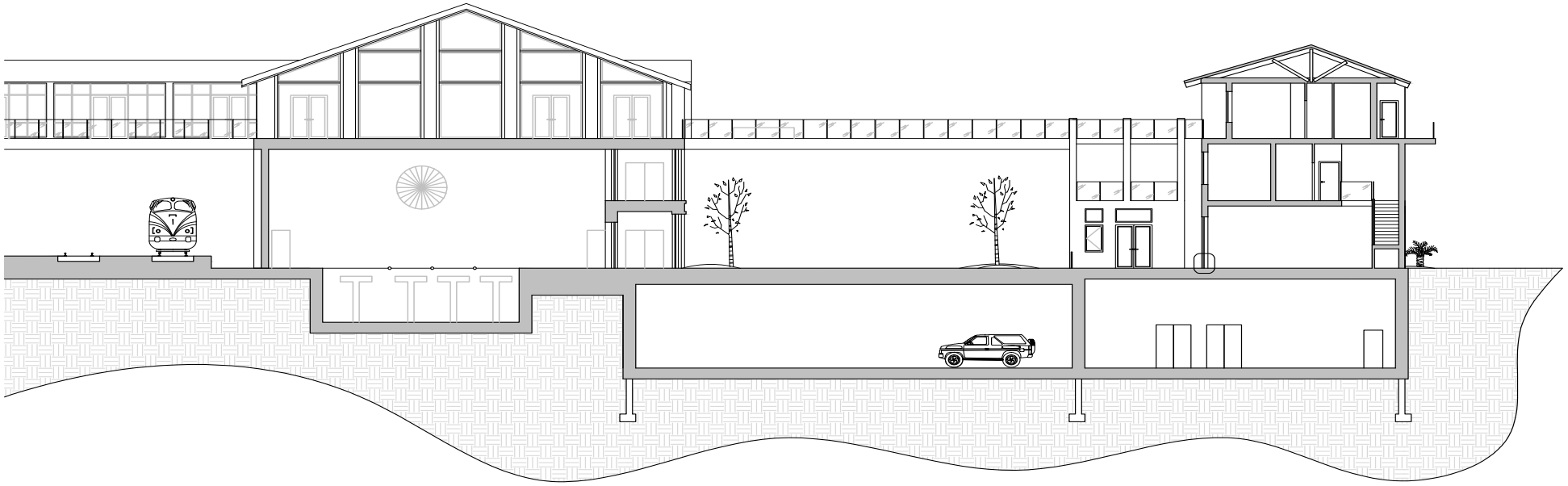



C

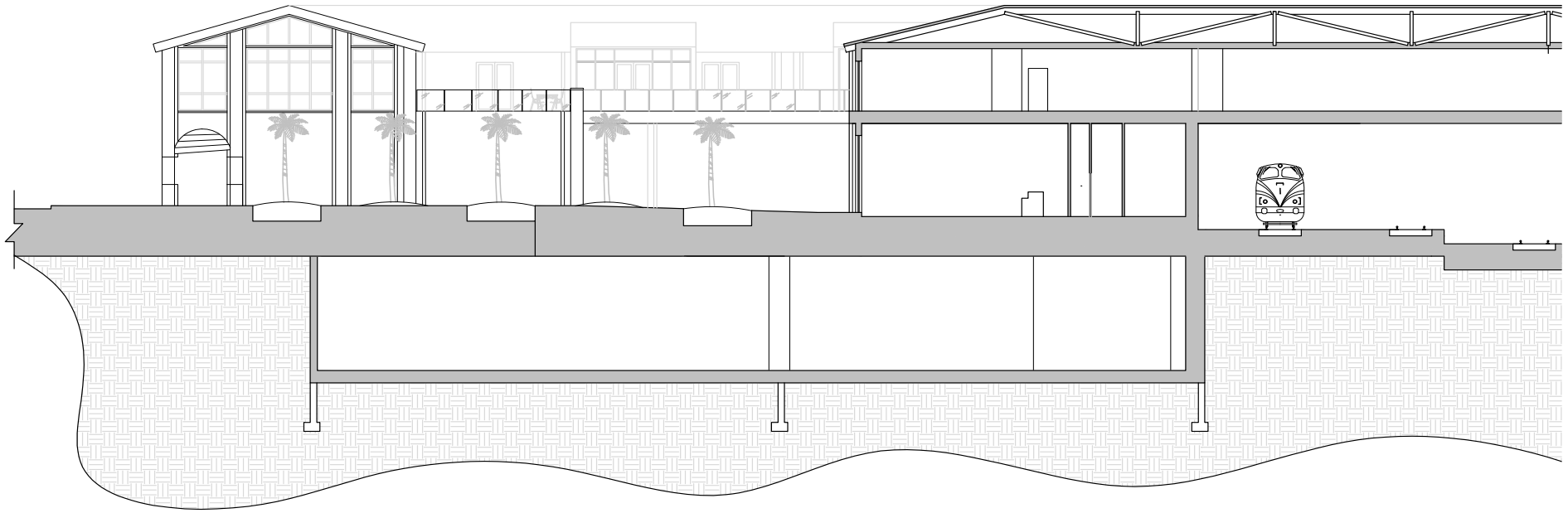
BUILDING SECTIONS



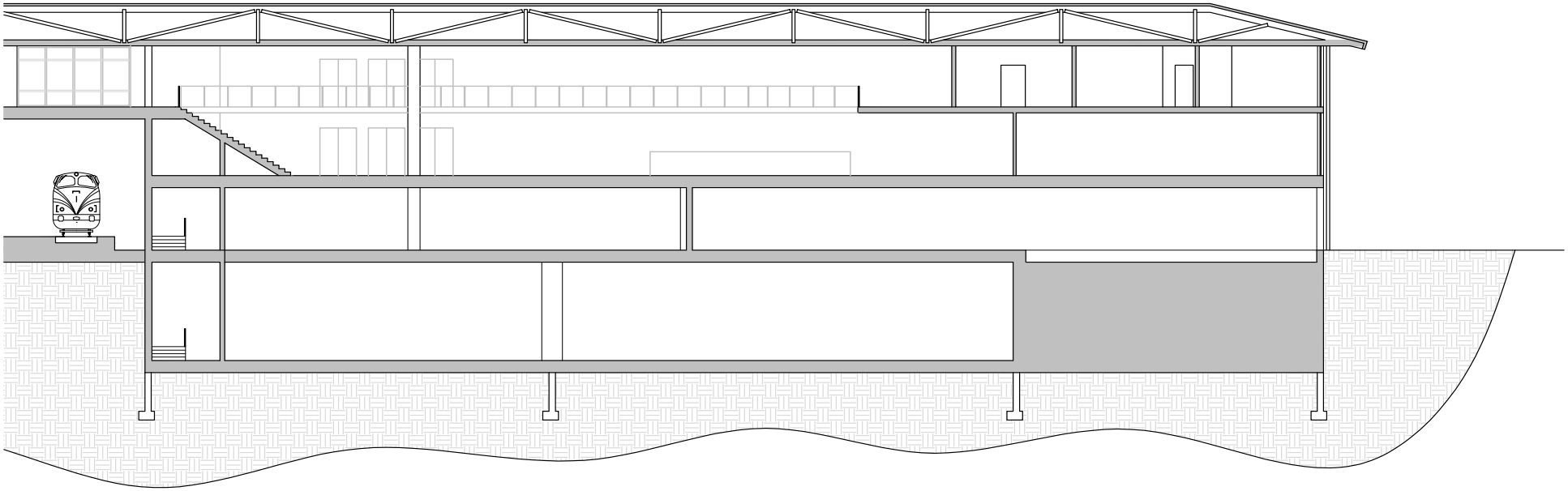
SECTION A



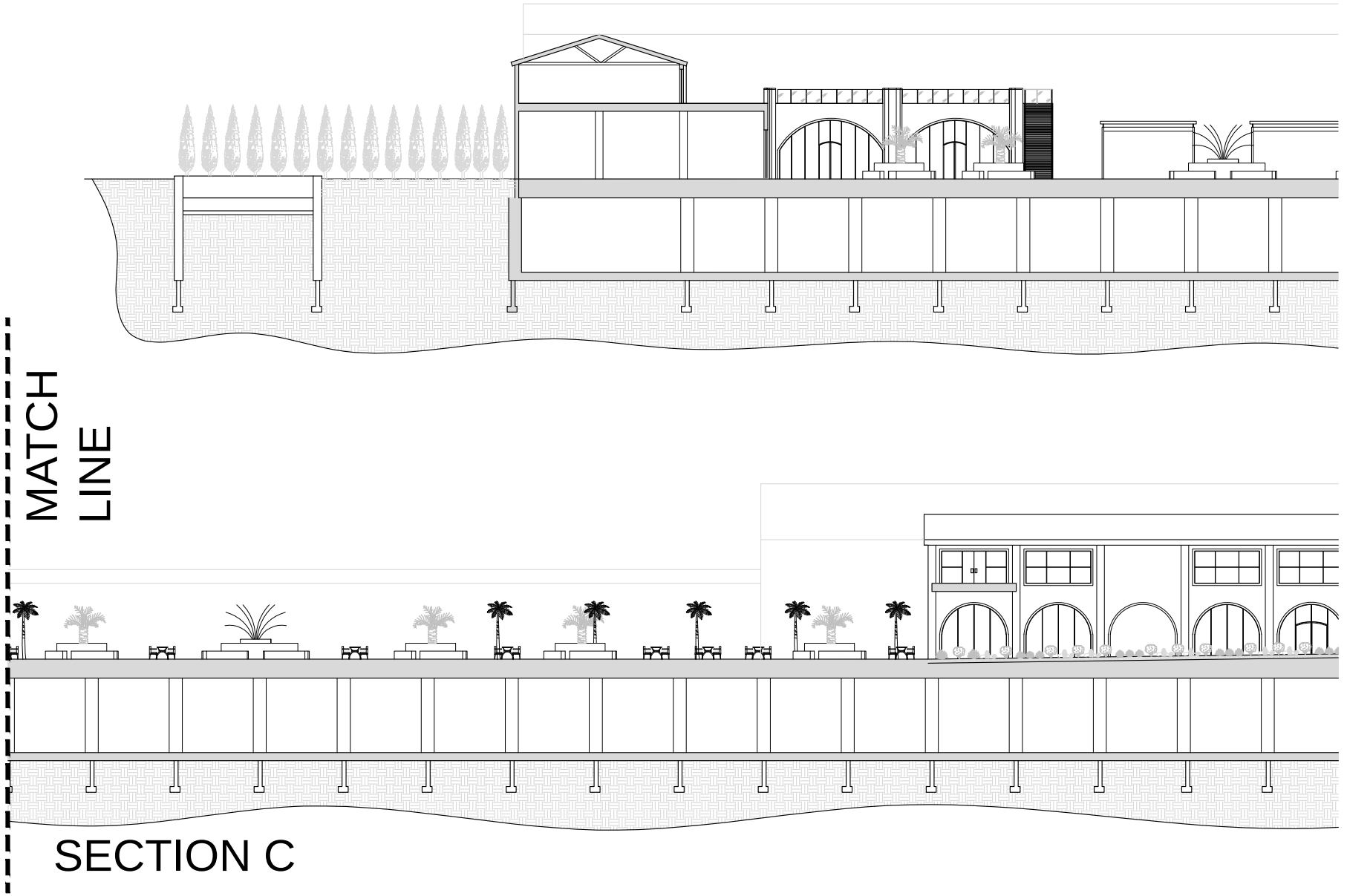
BUILDING SECTIONS

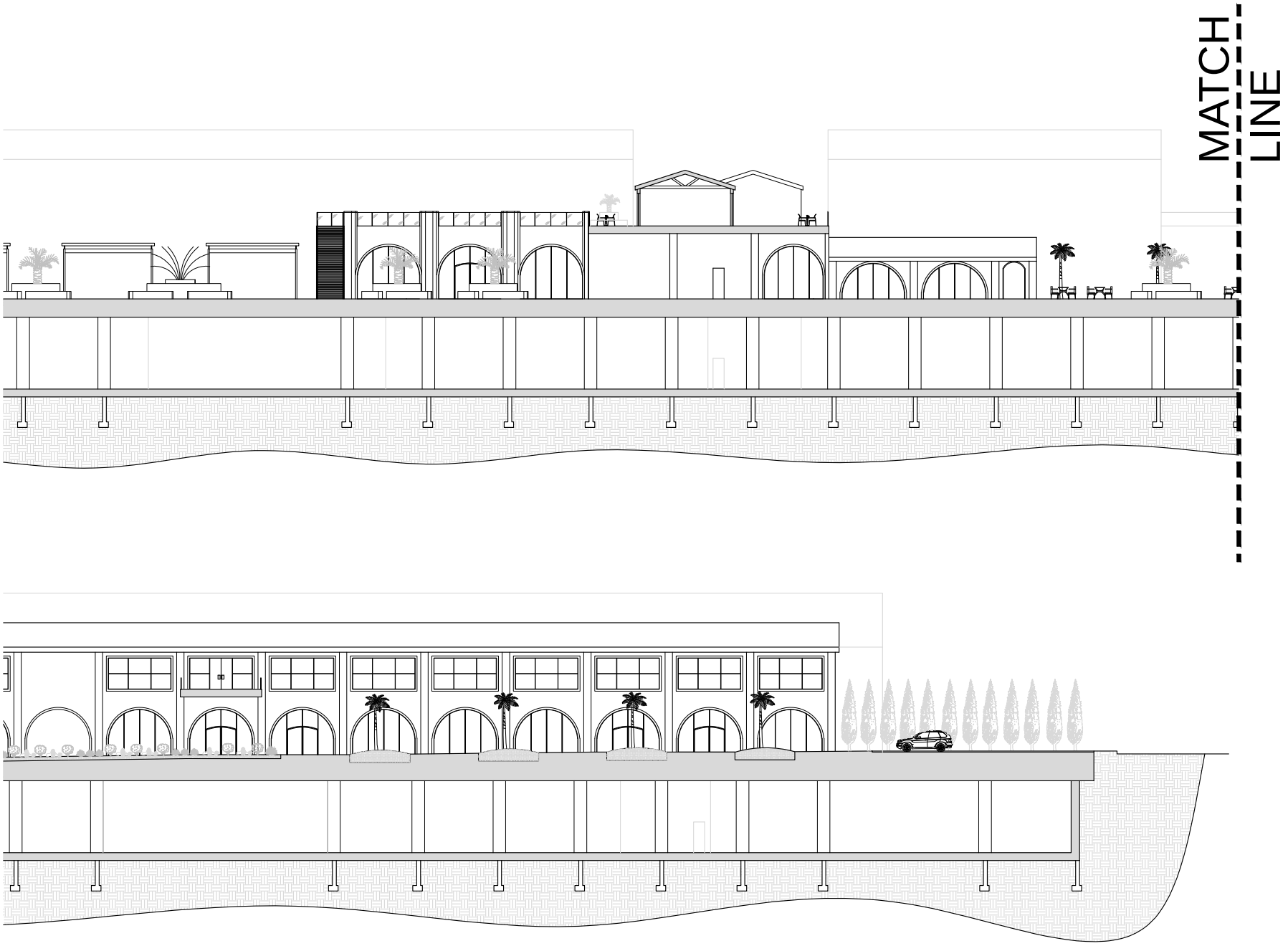


SECTION B

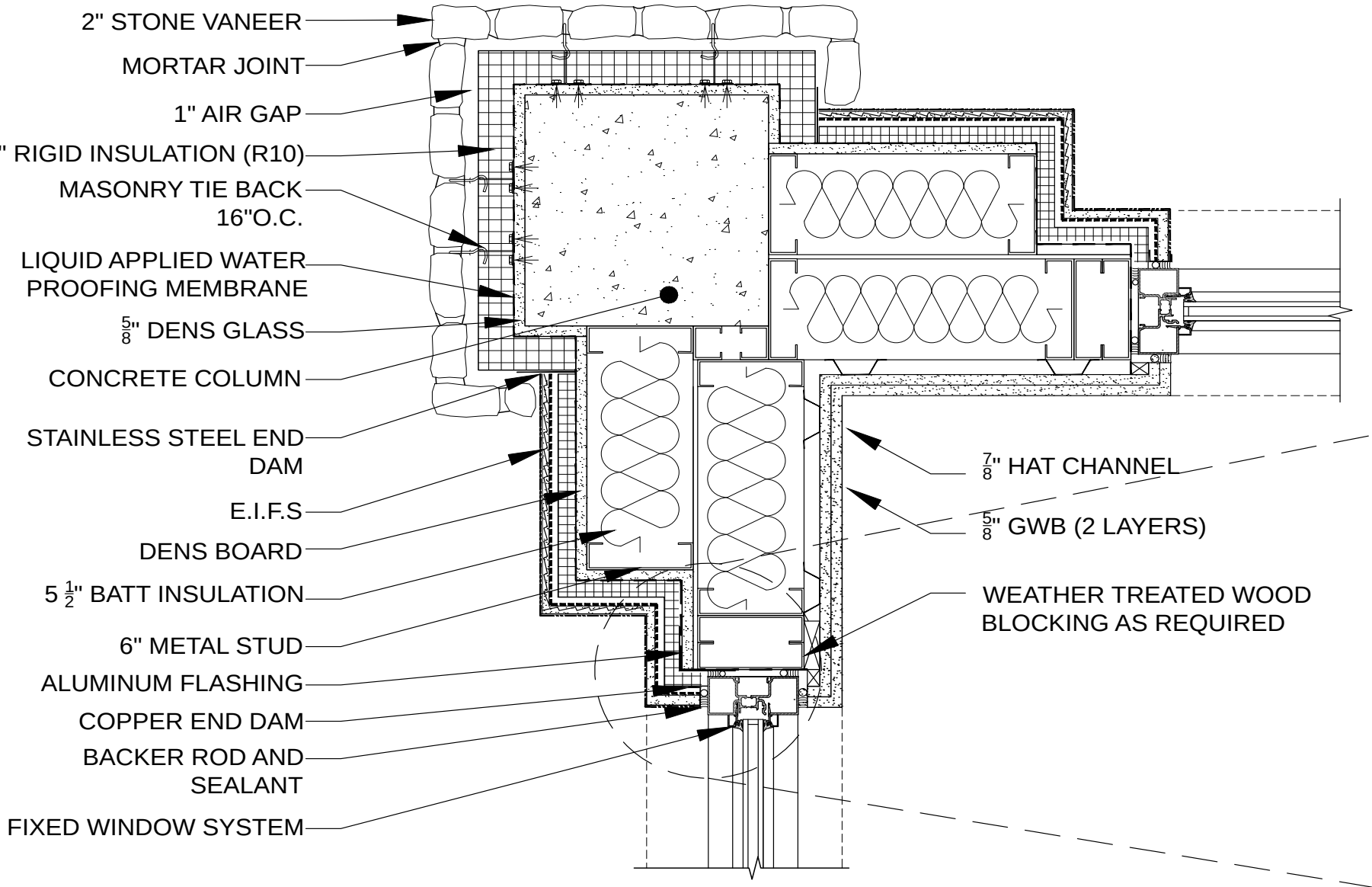


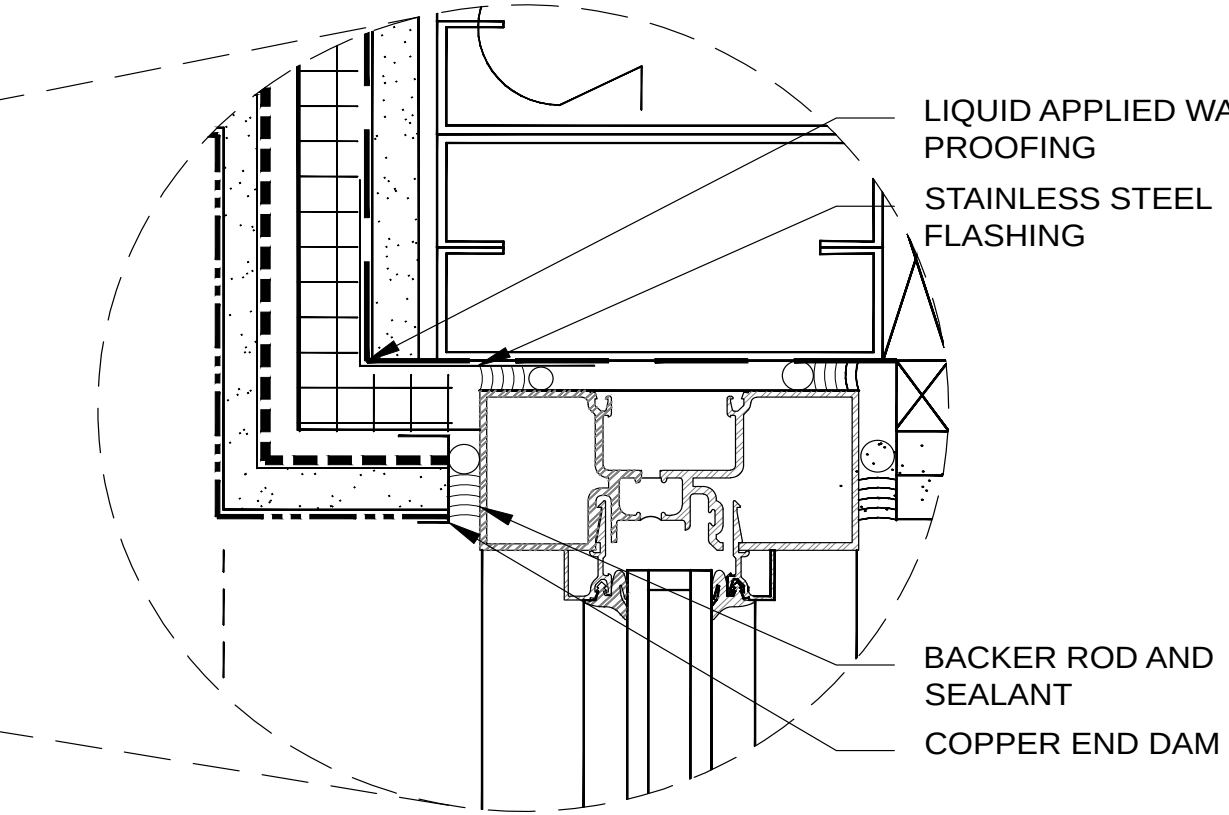
BUILDING SECTIONS

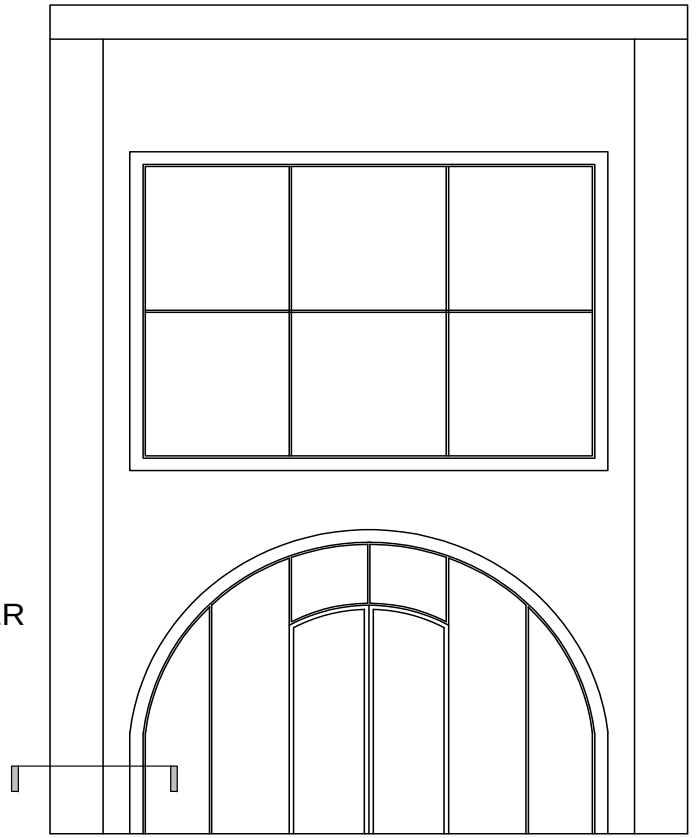



MATCH
LINE

EXTERIOR WALL SECTIONS

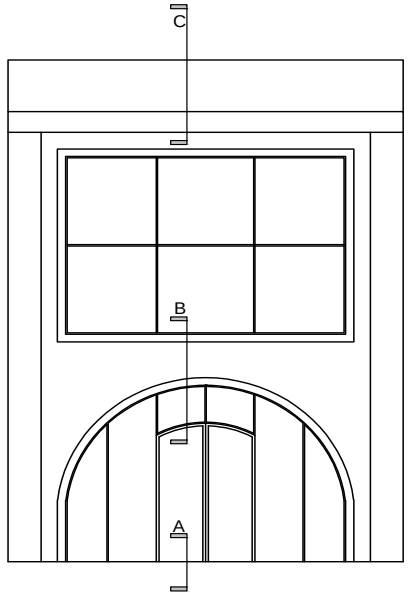


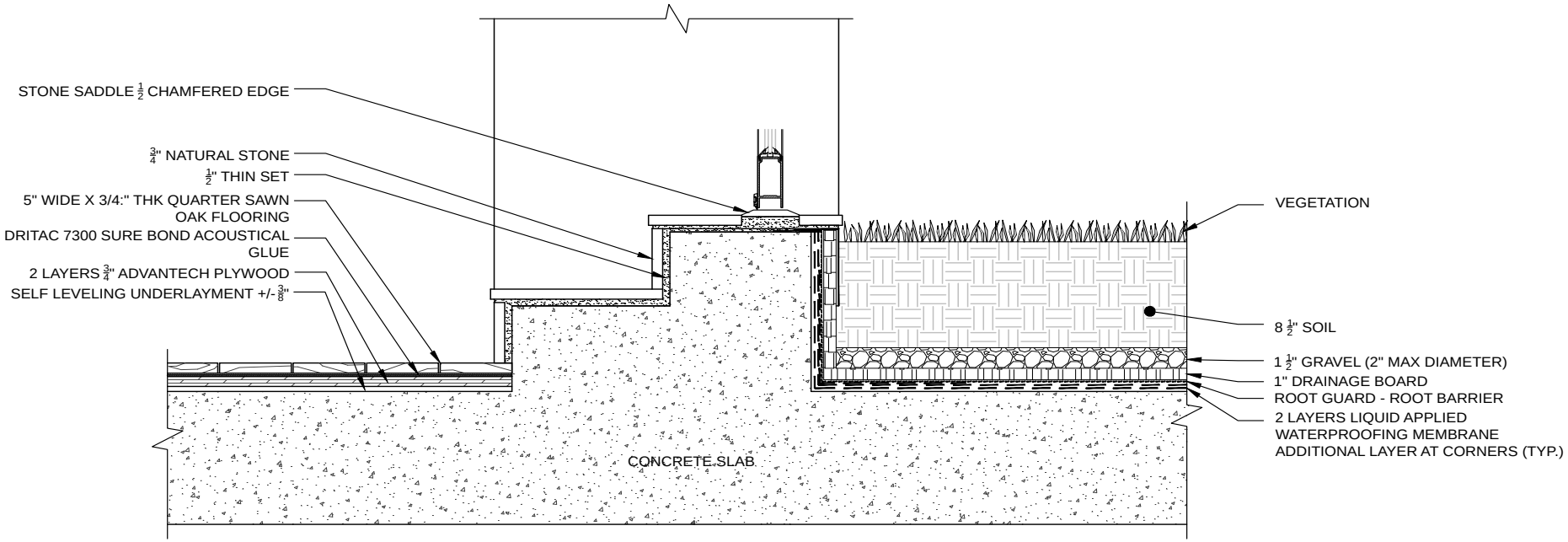

LIQUID APPLIED WATER PROOFING
STAINLESS STEEL FLASHING
BACKER ROD AND SEALANT
COPPER END DAM



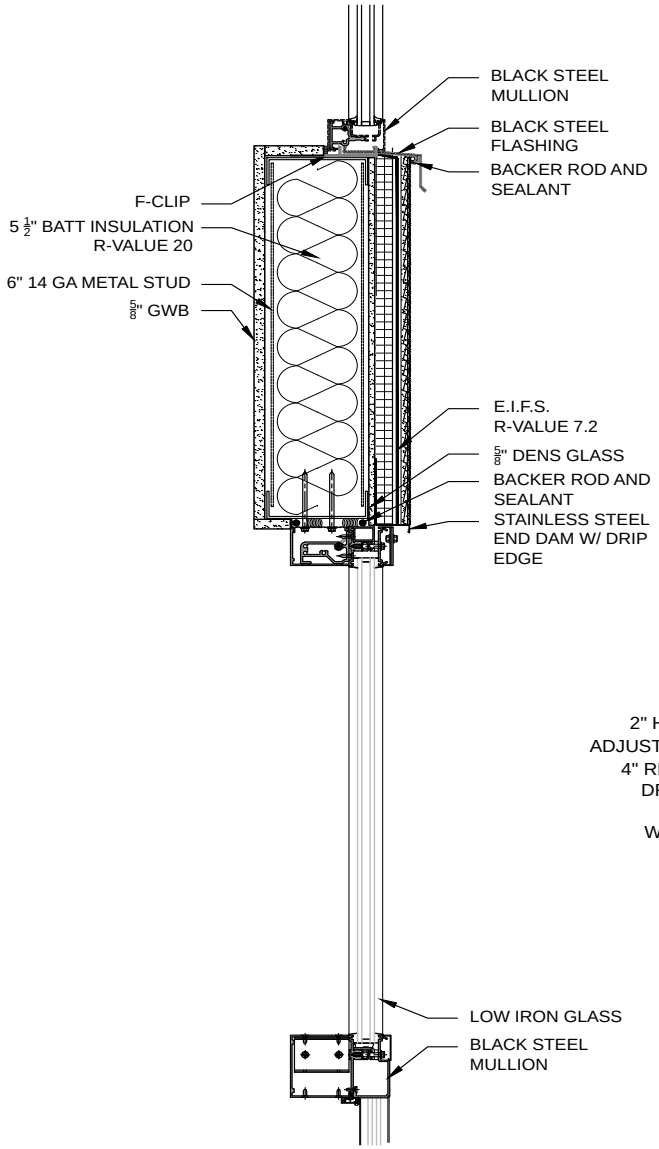
EXTERIOR WALL SECTIONS

KEY PLAN

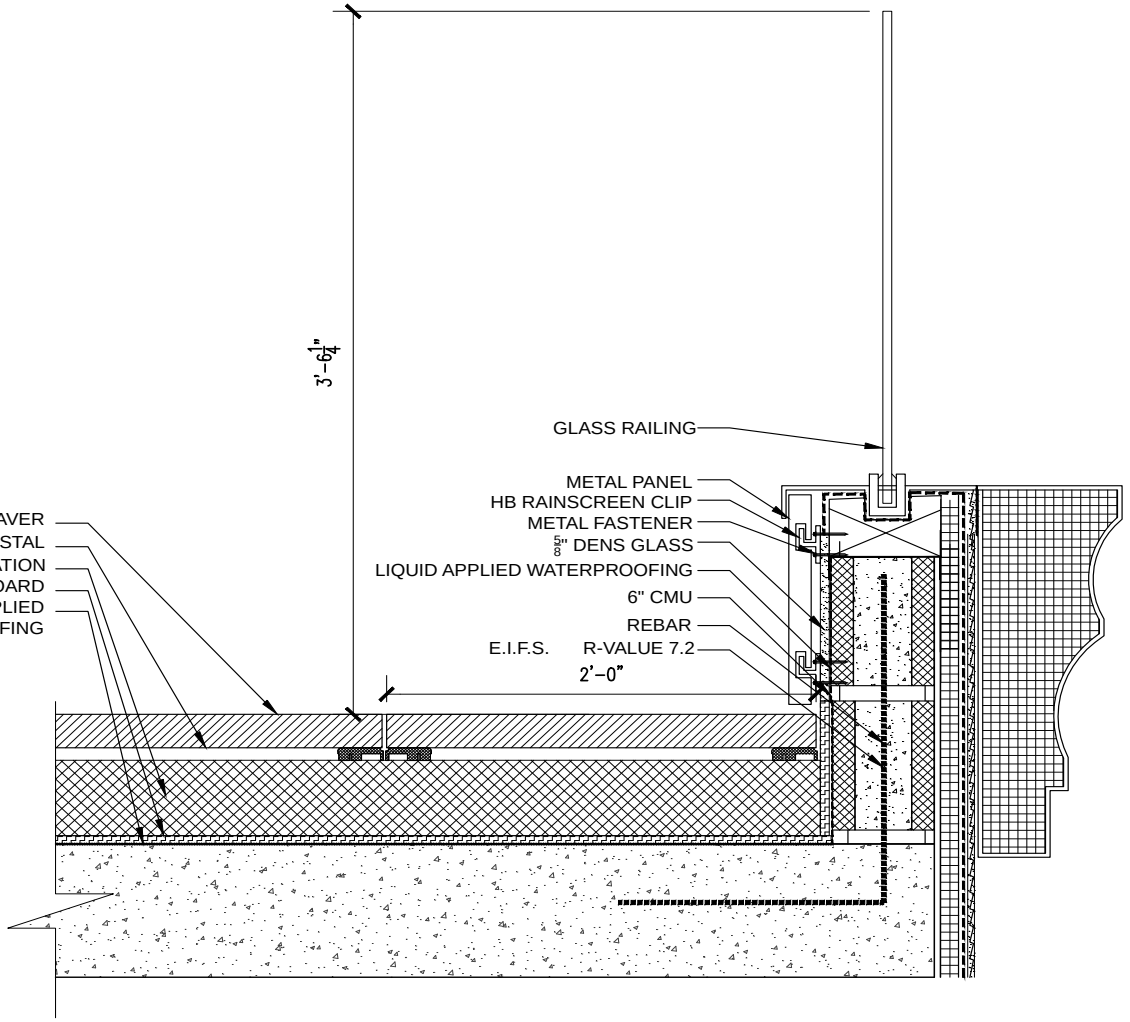




SECTION A

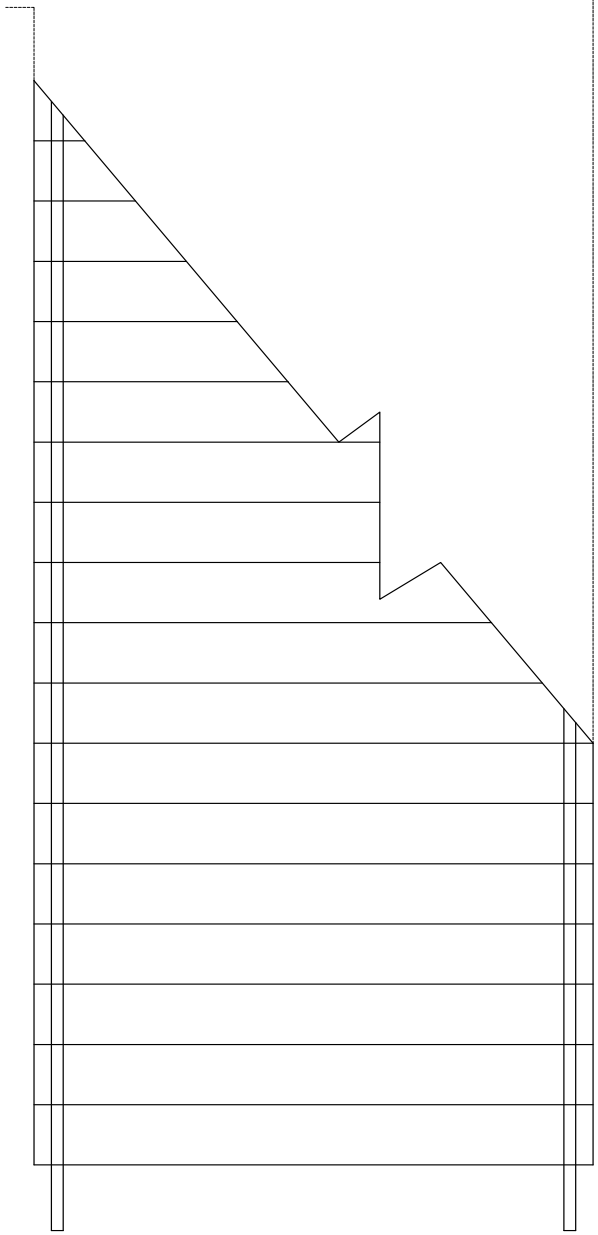


SECTION B

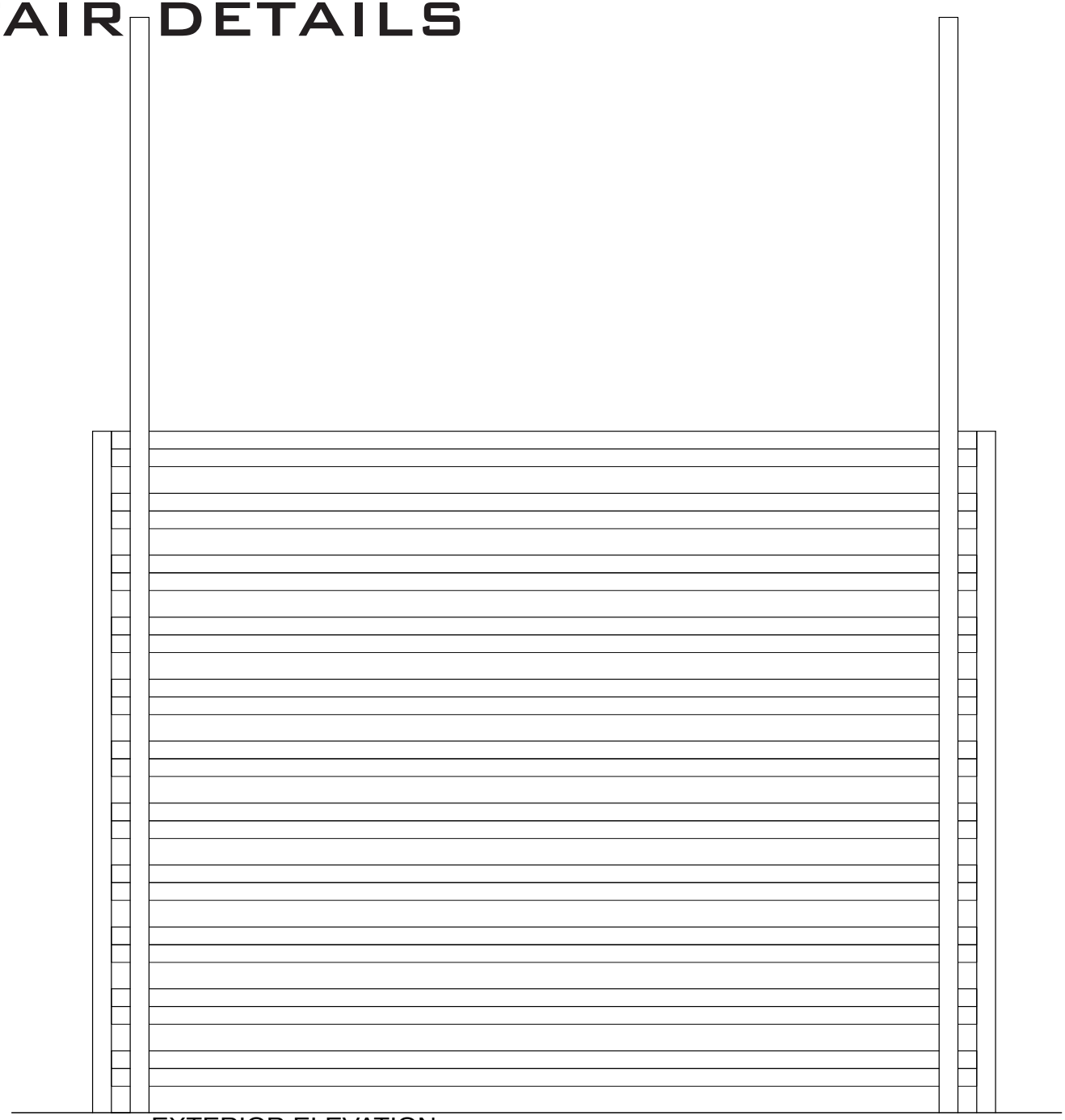


SECTION C

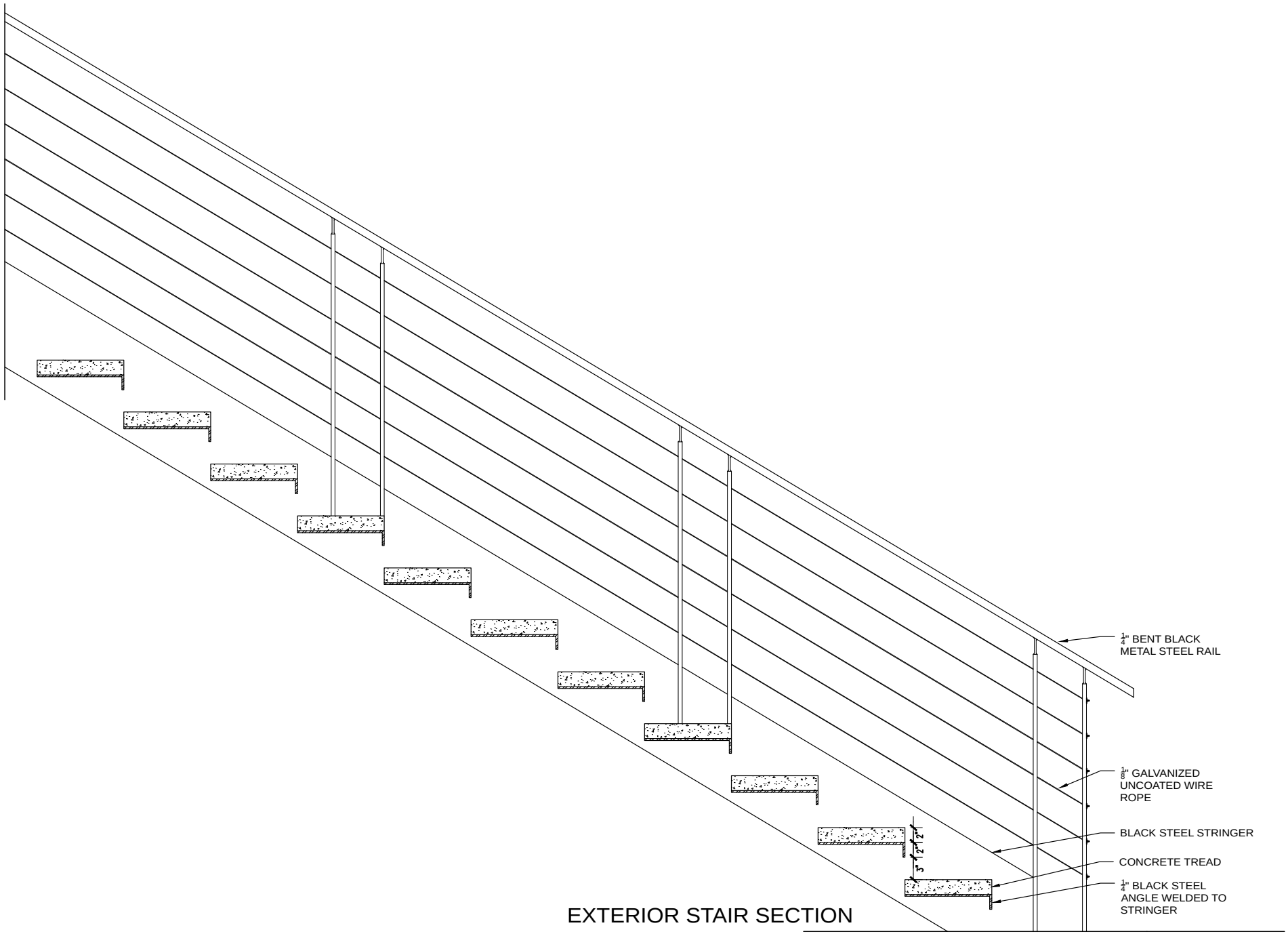
EXTERIOR STAIR DETAILS



EXTERIOR STAIR PLAN



EXTERIOR ELEVATION



EXTERIOR STAIR SECTION

DIAGRAM | HOUSING

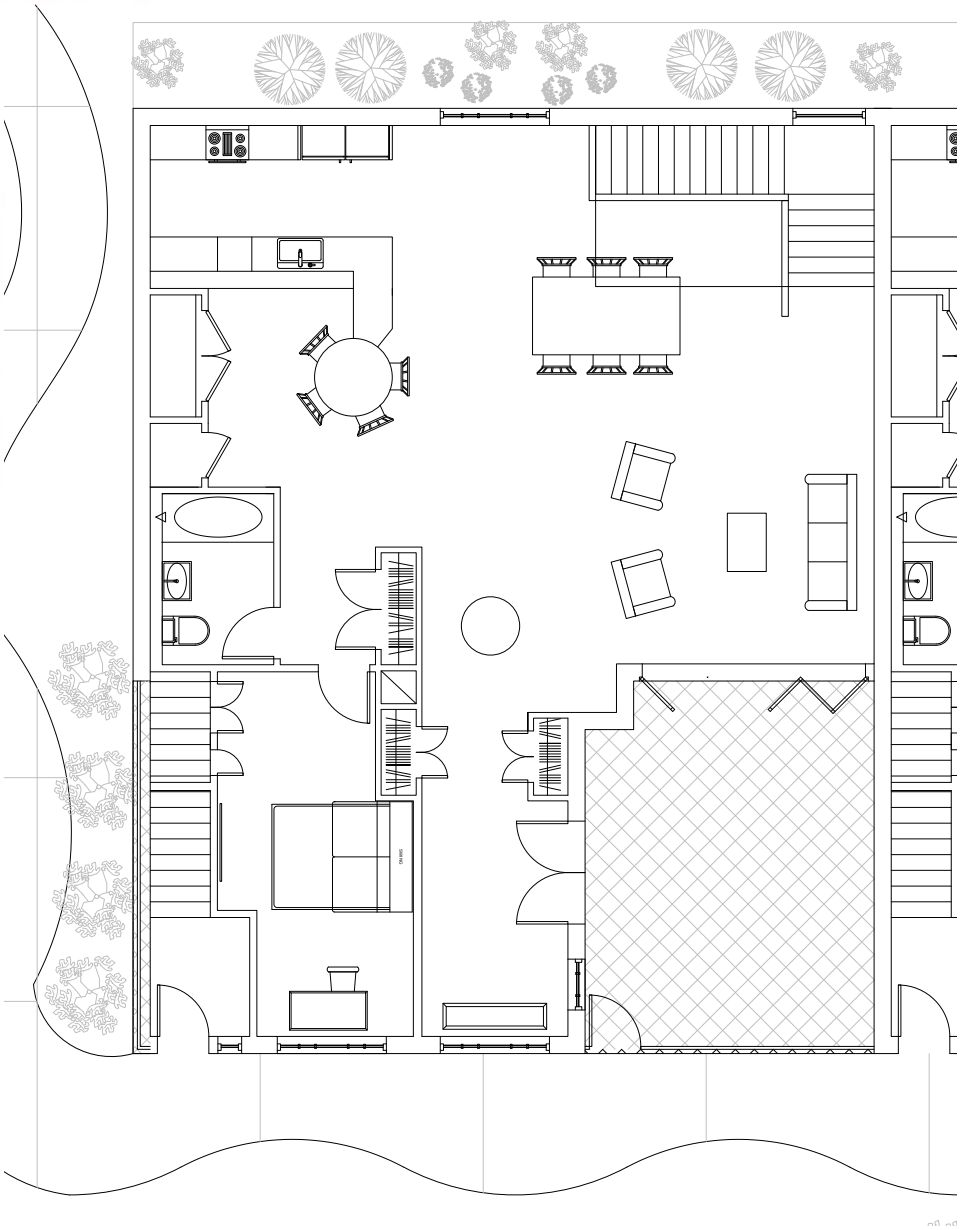


DIAGRAM | HOUSING

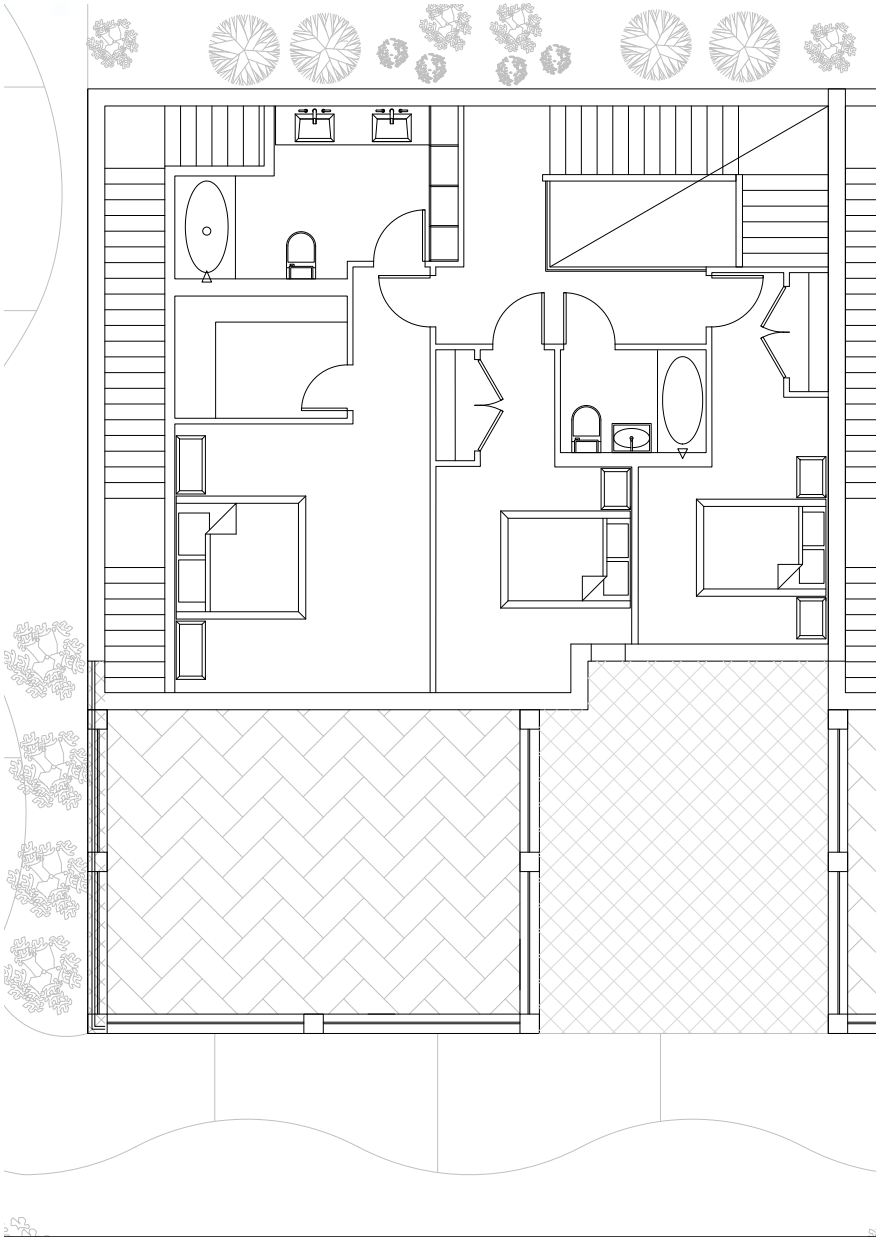
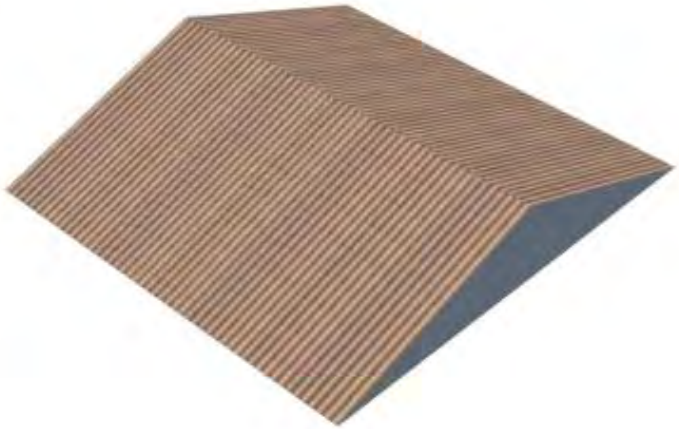
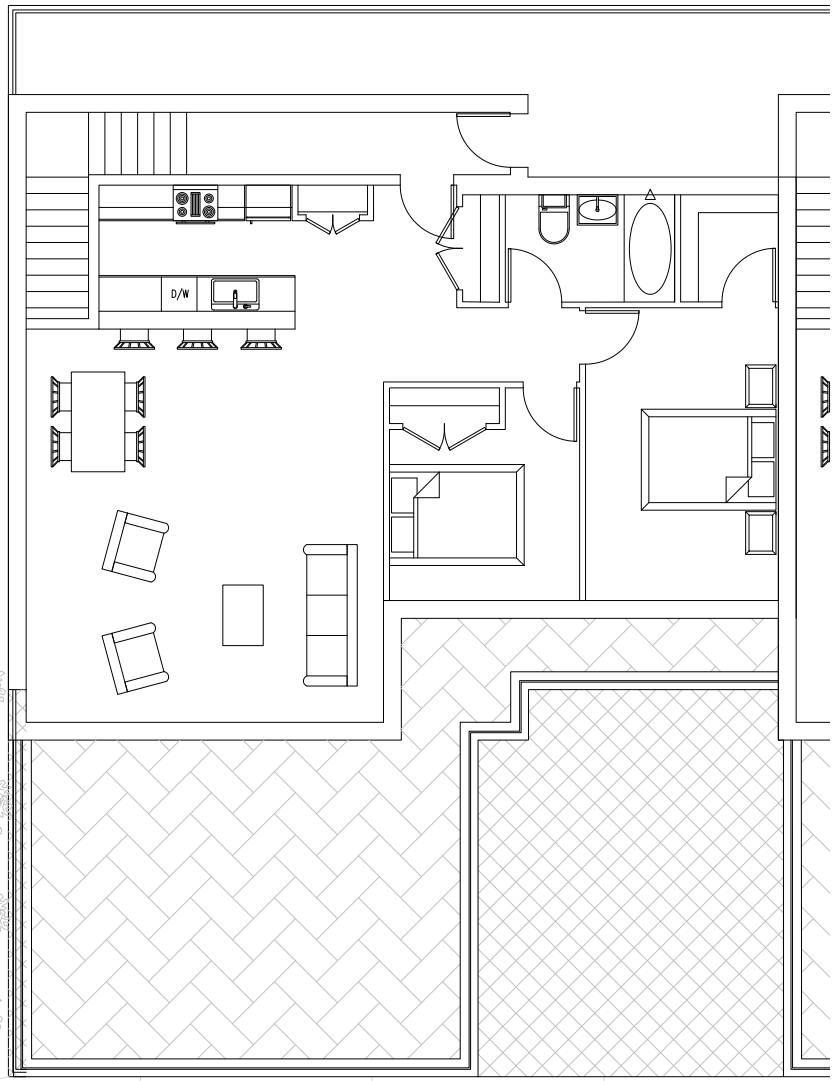


DIAGRAM | HOUSING





DIAGRAMS |

DIAGRAM | TRAFFIC TO SITE

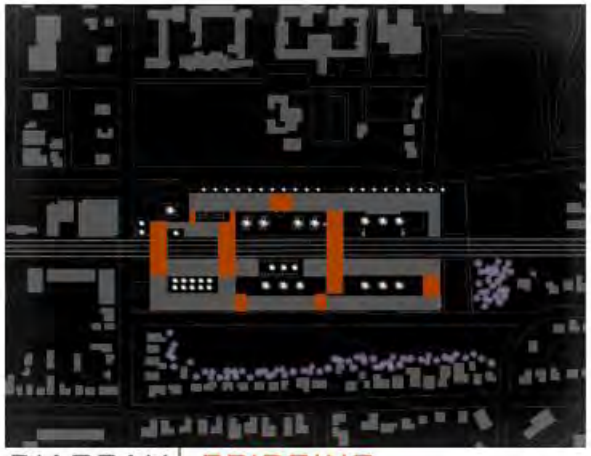


DIAGRAM | BRIDGING

DIAGRAM | GREEN SPACE

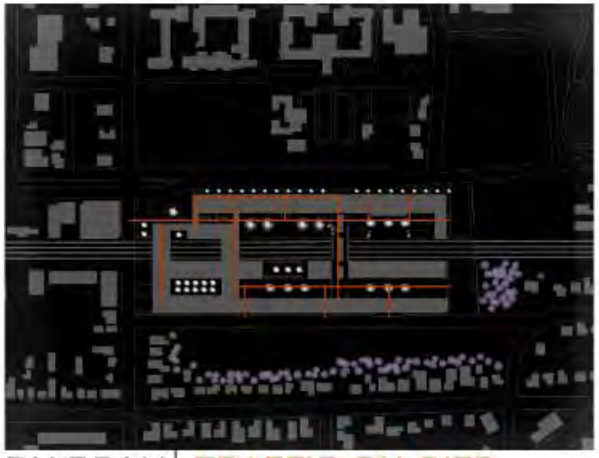


DIAGRAM | TRAFFIC ON SITE

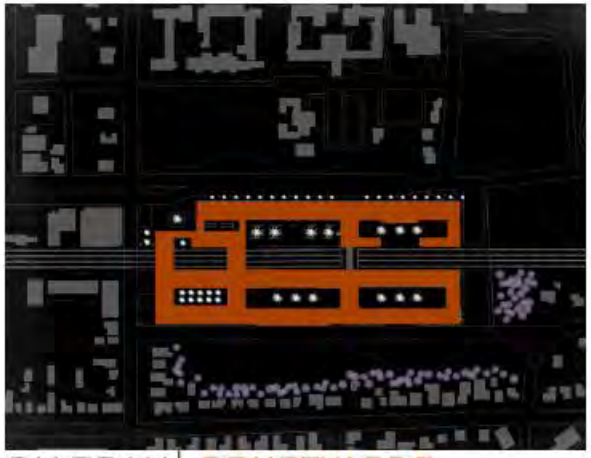


DIAGRAM | COURTYARDS

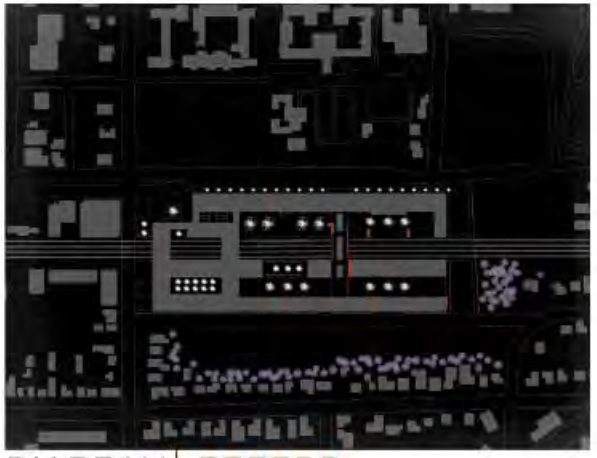


DIAGRAM | EGRESS

DIAGRAMS |

DIAGRAM | SERVICE ON SITE

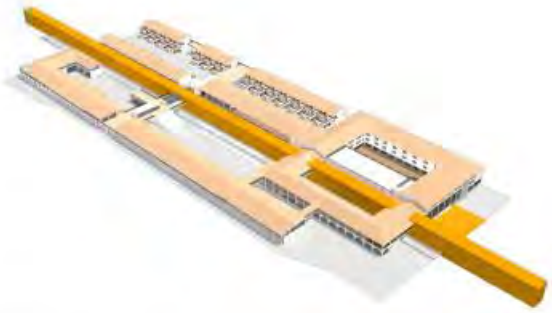


DIAGRAM | TRANSIT AXIS

DIAGRAM | PUBLIC OUTDOOR SPACE ON SITE

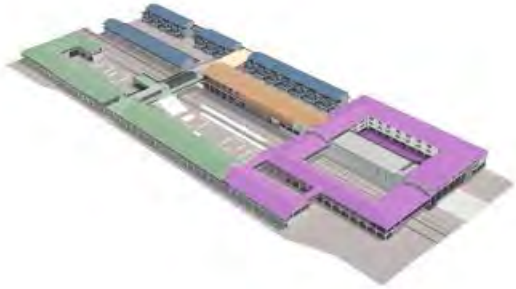


DIAGRAM | PROGRAM

HOTEL
RETAIL
HOUSING
RECREATION

PUBLIC
PRIVATE
SEMI-PRIVATE

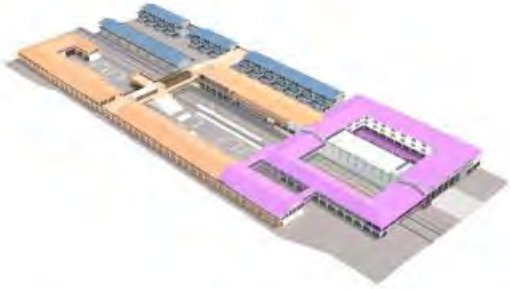


DIAGRAM | PUBLIC VS PRIVATE

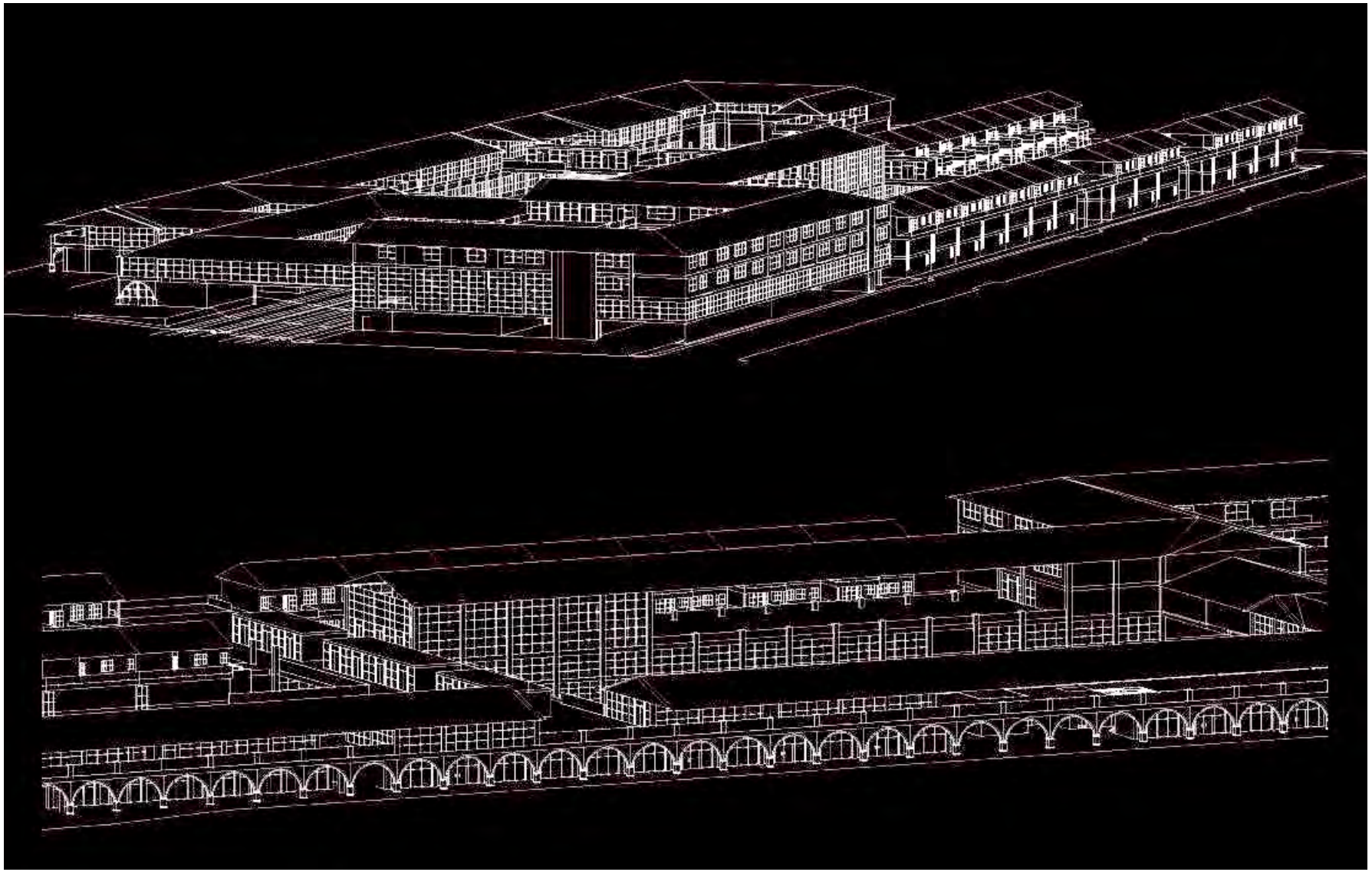
PLAZA ENTRANCE

PLAZA PUBLIC SPACE

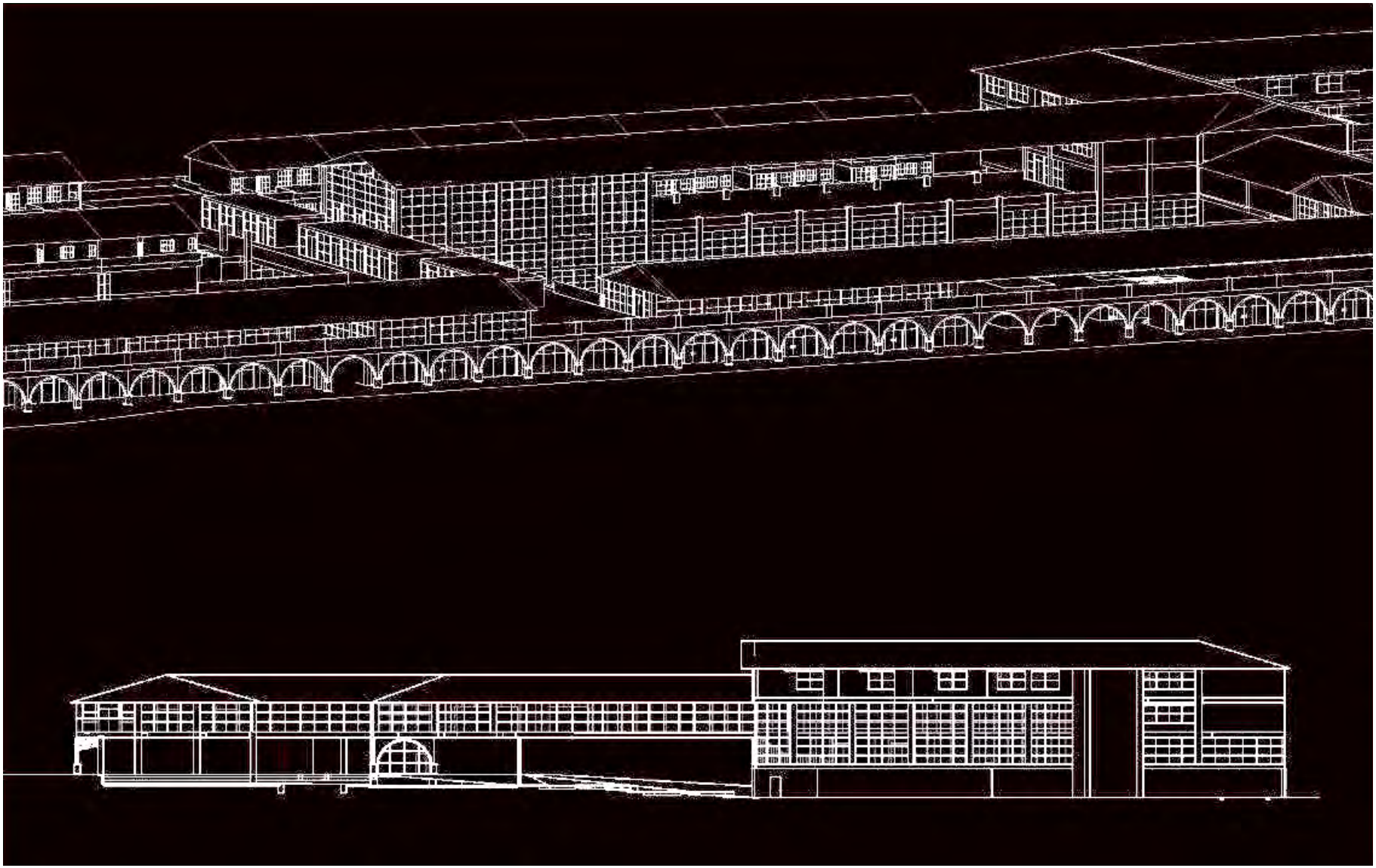
HOTEL COURTYARD

HOTEL BALLROOM

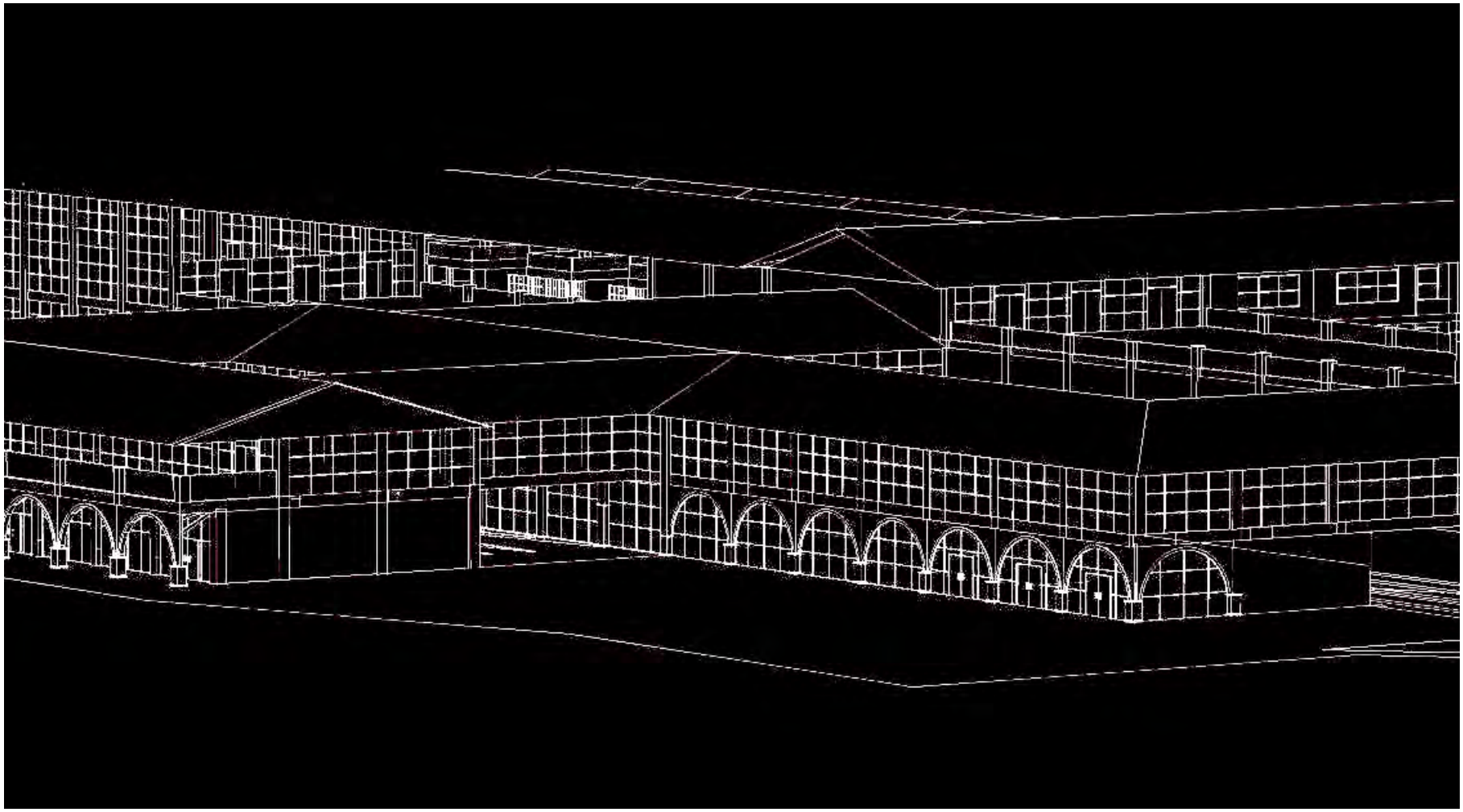
LINE DRAWINGS - DESIGN CONCEPTS



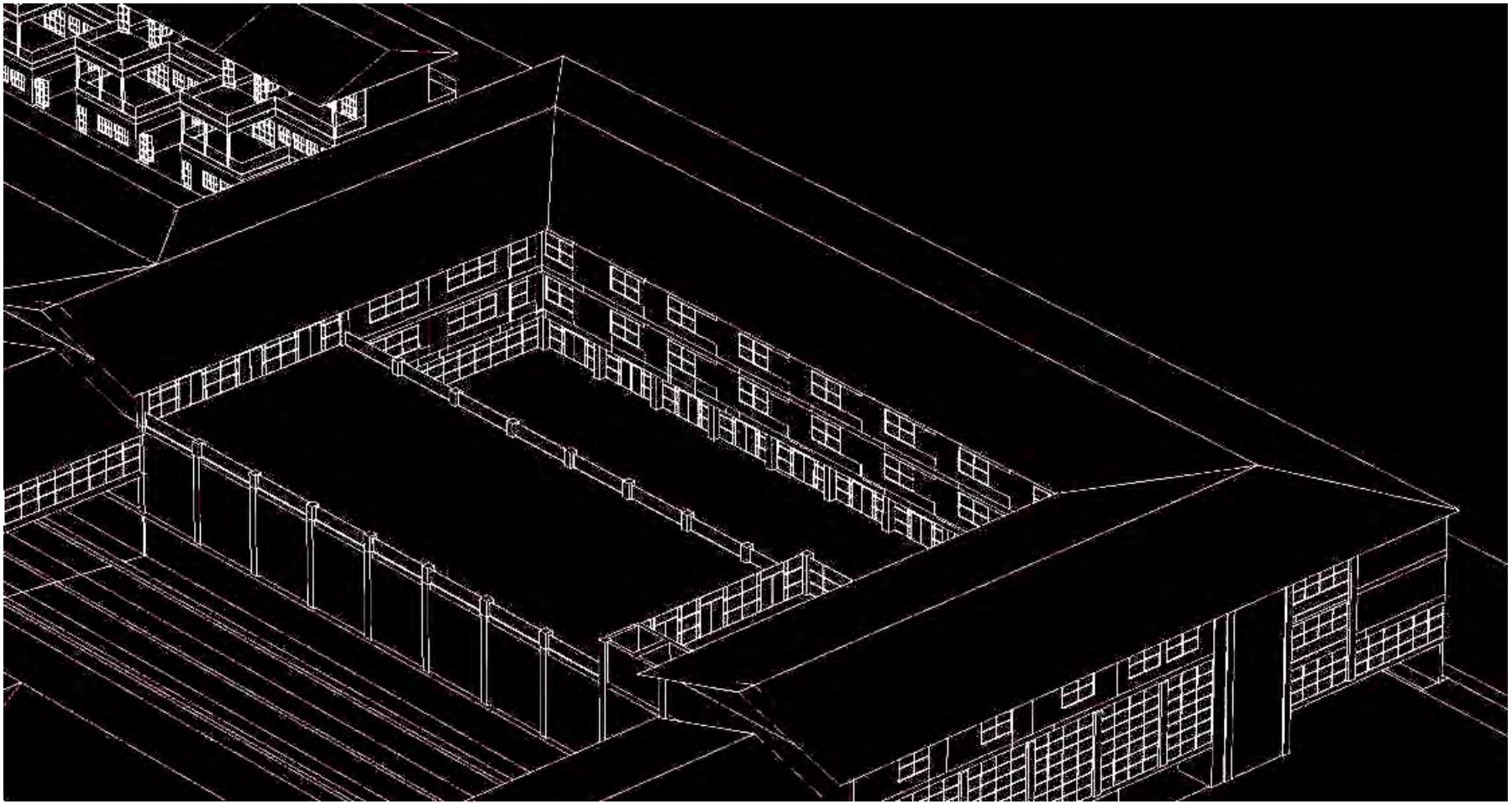
LINE DRAWINGS - DESIGN CONCEPTS



LINE DRAWINGS - DESIGN CONCEPTS



LINE DRAWINGS - DESIGN CONCEPTS



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"Welcome to the Metro Gold Line Foothill Extension Construction Authority." Metro Gold Line. N.p., n.d. Web. 22 Jan. 2014. <http://www.metrogoldline.org/>.

GOOGLE EARTH

GOOGLE MAPS

Primary Refrences

"Welcome to the Metro Gold Line Foothill Extension Construction Authority." Metro Gold Line. N.p., n.d. Web. 22 Jan. 2014. <http://www.metrogoldline.org/>.

The Metro Gold Line web stie provides understanding to the stops along the new extension lines. It provides updates about the construction and new advances about the stops. It provides information what each plot is best for, developments, parking garages, new stations. This site also provides links to articles about the Metro Gold extention plan.

"Search Municipal Code." City of Claremont --. N.p., n.d. Web. 22 Jan. 2014. <http://www.ci.claremont.ca.us/municipalcode.cfm>.

The Claremont website provideds and understanding of the codes that exisit, the zoneing and the motos that exist in Claremont. The website provides knowlege of how the city functions, where the commercial districs for work, shopping and eating are. This website helped me understand how my TOD can best work with in the city.