

BIKE CHICAGO

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A COMPREHENSIVE PLAN FOR A BIKE FRIENDLY CHICAGO



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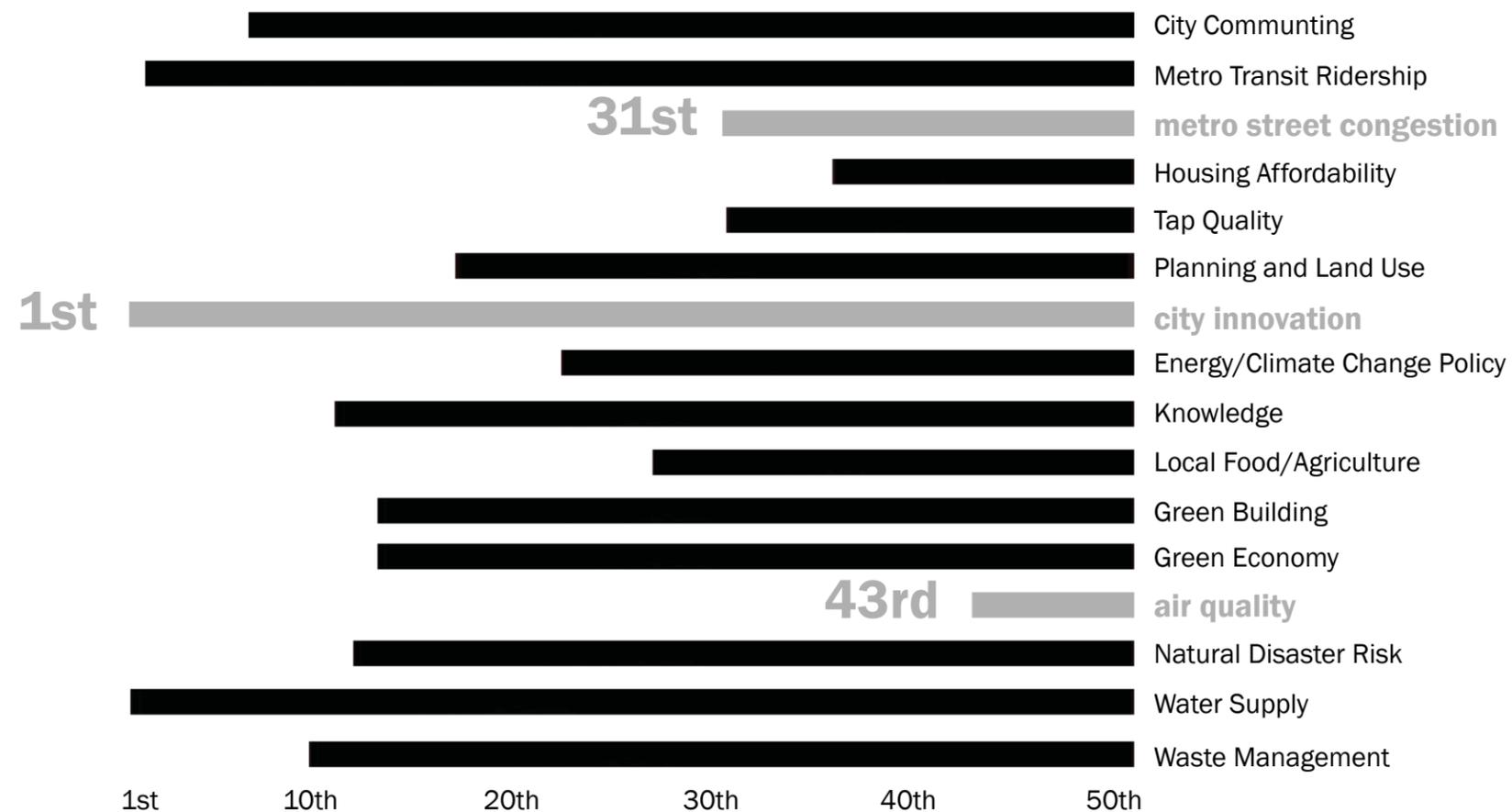
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PROJECT INTRODUCTION

IDENTIFYING THE PROBLEM

In the USA, there are 752 motor vehicles for every 1,000 people.



Emissions from cars cause lung cancer, respiratory problems, urban smog, acid rain and, maybe most importantly, contribute to global warming.

Alternative forms of transportation, especially walking and bicycling, help reduce the tremendous impact automobiles have on the environment and also reduce congestion and strain on infrastructure. Chicago claims to be one of the “greenest” cities in the world, yet of the 65 biggest cities in the country, Chicago ranks 32nd in percentage of population that use bicycles as a form of commuting.

The chart to the left from *Sustainlane* represents Chicago’s rankings amongst the 50 biggest cities in the country in various categories relating to environment and infrastructure.

Chicago is the leader in innovation yet the city trails greatly in air quality and street congestion. Implementing measures to increase bicycle ridership and pedestrian transit would go a long way to improving these inadequacies.

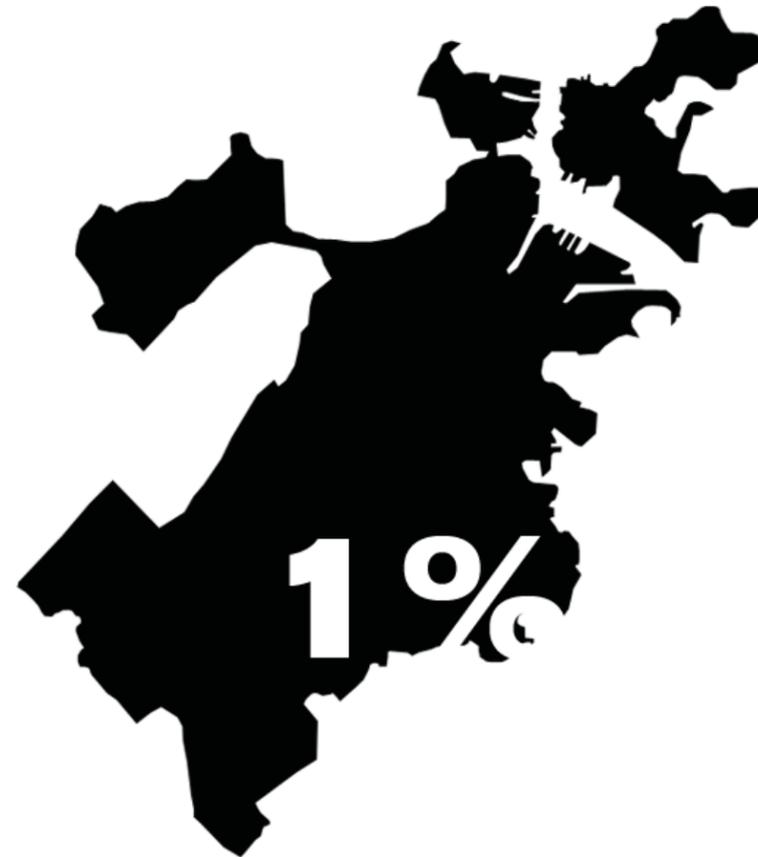
The chart at the right represents Chicago’s rank among the 50 biggest cities in the country in terms of how many commuters rely on the bicycle as a means of transportation. Compared to the cities which rank ahead of it, Chicago has a much higher population, meaning there is a great opportunity to make a difference if more Chicagoans gain access to bicycles, bicycle friendly routes and become educated on why it is important to reduce their reliance on automobiles.



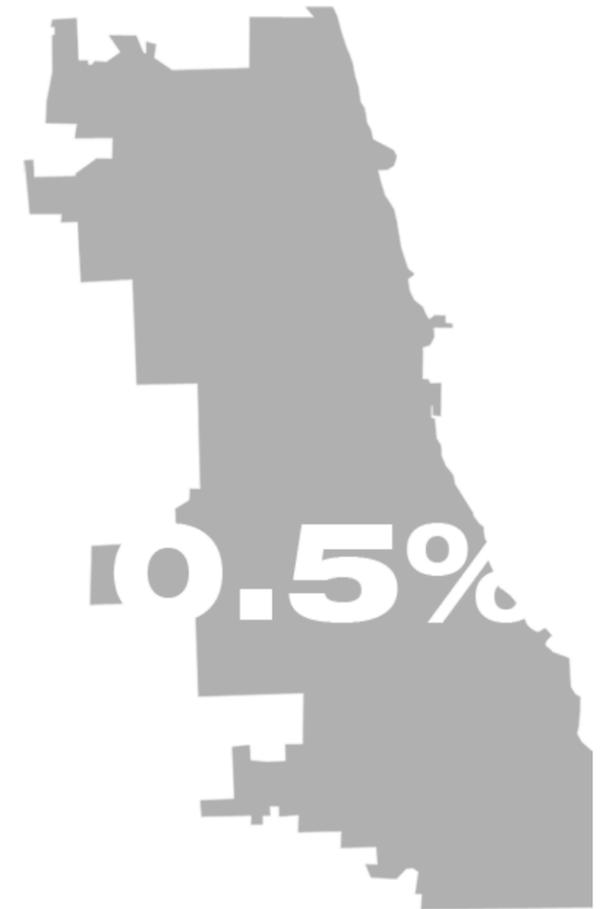
1st seattle, WA
Population: 563,375



Portland, OR
Population: 529,025



Boston, MA
Population: 589,141



32nd Chicago, IL
Population: 2,895,964

02

CHICAGO BIKE 2015 PLAN

CHICAGO'S BIKE 2015 PLAN

The Chicago Bike 2015 plan is designed to make Chicago the world's most bike friendly city

Streets for Cycling (Chapters 1 and 2)

Encouraging bicycling begins with convenient and safe places to ride. The plan proposes a 500-mile bikeway network, establishing a bikeway within a half-mile of every Chicago resident. Bikeways to priority destinations, including schools, universities and transit stations, are proposed. Bicyclists' needs should be considered in the planning, design, construction and maintenance of all streets.

Special attention should be given to bicycling whenever bridges, underpasses and expressways are constructed or improved so these facilities do not become significant barriers to bicycling.

Parking (Chapter 3)

A key advantage to bicycling is free, convenient parking. Key strategies to emphasizing this advantage include installing an additional 5,000 bike racks and 1,000 long-term bike parking spaces, encouraging bike parking inside commercial and office buildings, and ensuring that the bike parking requirements of Chicago's new zoning ordinance are met.

Transit Connections (Chapter 4)

Access to public transit significantly increases the range and flexibility of bicycle trips. Strategies to improve bike-transit connections include considering bicyclists' needs in the planning, design and operation of trains and stations; establishing bikeways to popular train stations; and providing bike parking inside and outside stations. The goal is to increase the number of bike-transit trips by 10 percent per year.

Education and Marketing/Health Promotion

(Chapters 5–6)

Developing safe bicycling skills in adults and children, and teaching motorists to share the road with bicyclists are key education efforts. Education is also the most effective way to prevent bicycle theft. Marketing bicycling as a healthy, fun and convenient way to travel will encourage use. Partnerships with the Chicago Public Schools, Chicago Park District, Chicago Transit Authority, Chicagoland Bicycle Federation, not-for-profit groups, health agencies, media outlets and the private sector would increase the number of people reached and reduce costs.

Law Enforcement and Crash Analysis (Chapter 7)

Enforcement of traffic laws helps reduce the number of injuries suffered by cyclists and establishes a more inviting environment for bicycling. Key strategies include training police officers to enforce laws that support a safe bicycling environment, designating a person at the Chicago Police Department to coordinate bicycle enforcement efforts, and analyzing the circumstances of serious bicycle crashes to help prevent them from recurring.

Bike Messengers (Chapter 8)

Bicycle messengers deliver material quickly and inexpensively, providing an important service to Chicago's business community. Key strategies include reducing significant barriers to their use, identifying and promoting opportunities for broadening bicycle messenger service, and streamlining the delivery process to make them more efficient.



2000

Chicago has not been and is currently not a safe place to ride a bike. Shared lanes are poorly maintained and often overlooked by drivers, and bicyclist and motorists are widely unaware of each others presence, though they share many of the same routes.

At its completion, the Chicago Bike 2015 plan is scheduled to sucessfully add over 500 miles of new bike friendly routes in order to alleviate the city's safety issues. Unfortunately, most of the routes that are proposed under the Bike 2015 plan are simple shared lanes, which are considered the least safe of the bicycle friendly street options.

Facility Type Miles in 2000

Bike Lane: 104

Bus/Bike Lane: 1

Raised Bike Lane: 0

Rush Hour Bikeway 1

Shared Lanes: 4

Signed Route: 155

Bike Boulevard: 0

Off-Street Trail: 50

Total: 315



Facility Type Miles in 2015

Bike Lane: 150

Bus/Bike Lane: 3

Raised Bike Lane: 5

Rush Hour Bikeway: 5

Shared Lanes: 22

Signed Route: 240

Bike Boulevard: 10

Off-Street Trail: 65

Total: 500

2015



03

PROJECT OUTLINE

THE PROJECT

A 3 part approach to expand and intensify the Chicago Bike 2015 Plan

This project is about making Chicago more bicycle friendly, and reducing reliance on automobiles.

We need to reduce our dependency on automobiles in order to clean up our air and reduce the effects of global warming. Creating a city that is more bicycle friendly is one way to do that. The City of Chicago's "Bike 2015" plan seeks to increase bicycle usage throughout the city so that at least 5% of all trips less than 5 miles are done by bicycle. The new bike sharing program and streets created in this project will enhance the success of the Chicago Bike 2015 program, and will aggressively seek to increase bicycle usage beyond the goals of the Bike 2015 plan by ensuring that all Chicagoans have easy access to this convenient, sustainable mode of transportation. The new ActiveTrans headquarters will broaden the organizations image and increase their impact on transforming Chicago into a safer, more walk-able, bike-able city.

1. The design of bike friendly street typologies which will encourage increased bicycle usage and pedestrian transit in Chicago.

2. The creation of a bike sharing program and kiosks that will ensure all Chicagoans have access to a bicycle.

3. The design of a new headquarters for ActiveTrans which will reinforce their commitment to a Chicago that is safe for bicyclists and pedestrians and where cars are no longer the primary mode of transportation.

Guiding Principles:

a. Safety-

all decisions relating to the design of bike friendly streets will be focused on increasing bicyclist and pedestrian safety. It has been shown that an increased sense of safety will most likely lead to an increase in bicycle usage. Whenever possible, priority should be given to bicycles and pedestrians, as opposed to automobiles.

b. Access-

to ensure the success of these programs, it is important to ensure wide coverage of the network of bike and pedestrian friendly streets and also of the bike sharing program.

c. Identity-

a synergy needs to be developed between the bike friendly streets, the bike sharing program and the ActiveTrans headquarters. This will make the project and its efforts visible amongst the community and create a strong identity.

d. Sustainability-

sustainability and energy conservation is the driving force behind the project and should be integrated and displayed whenever possible to educate the public of the efforts.

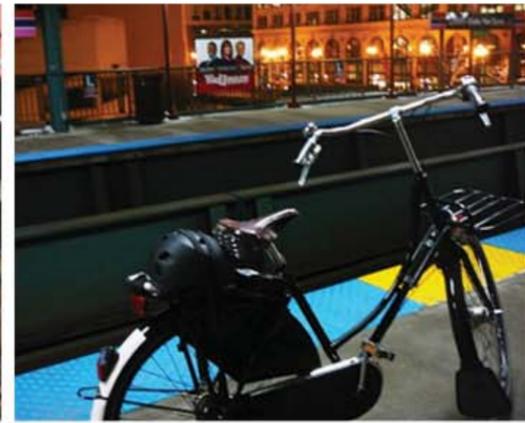
e. Economic Viability-

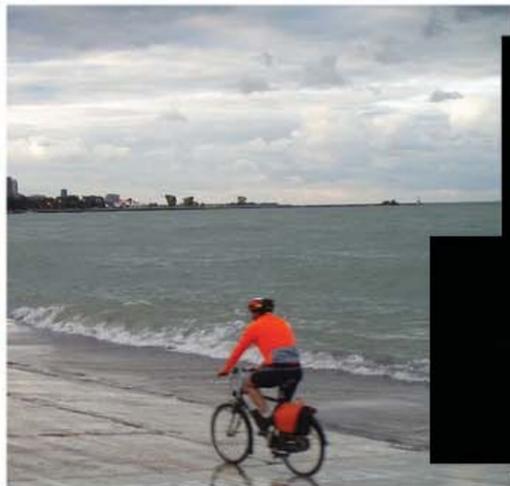
make the programs as inexpensive to taxpayers and the City as possible. Identify sources of funding for the project which can defer all or most of the costs.







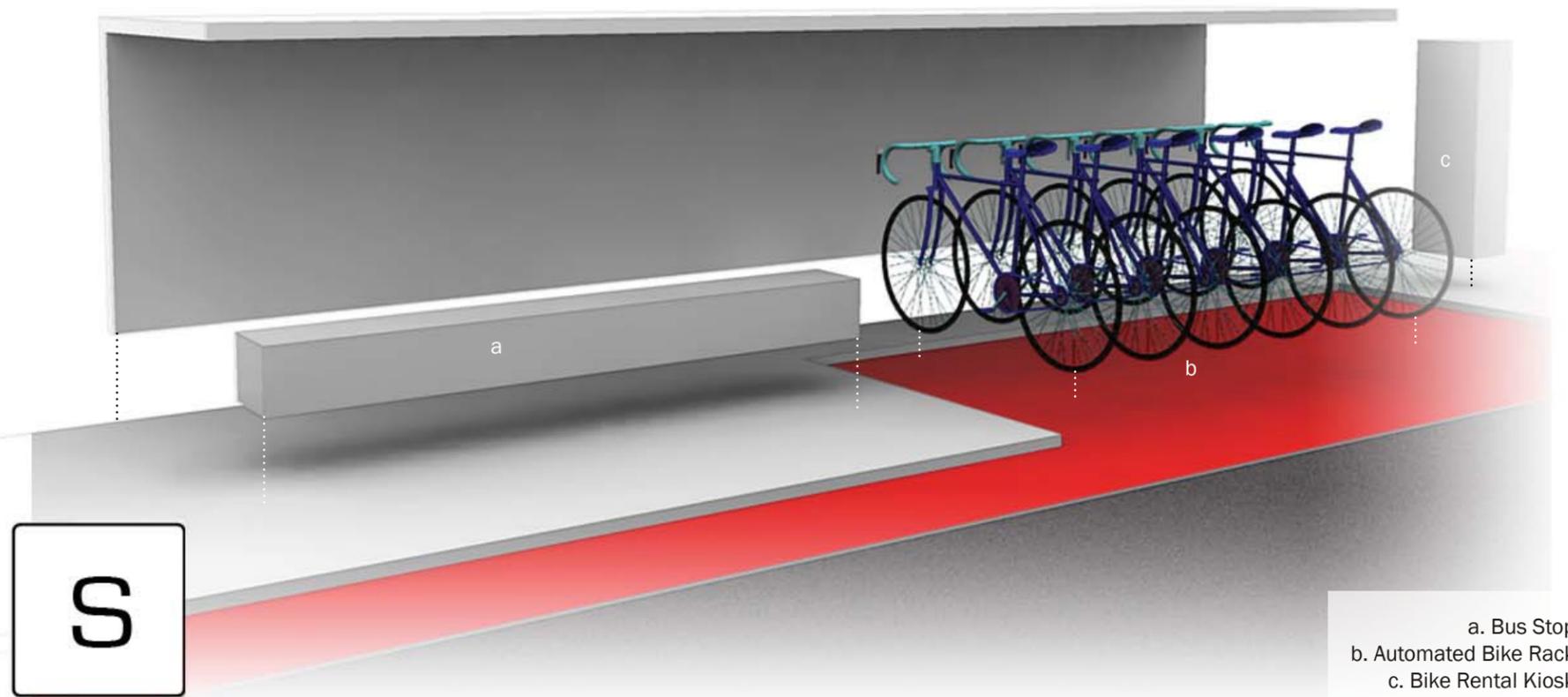




SMALL BIKE SHARING KIOSK

A network of bike sharing kiosks and bike friendly infrastructure

The small bike sharing kiosk will replace busstops throughout the city offering a sheltered place to wait for the bus and a place to check out a bike.



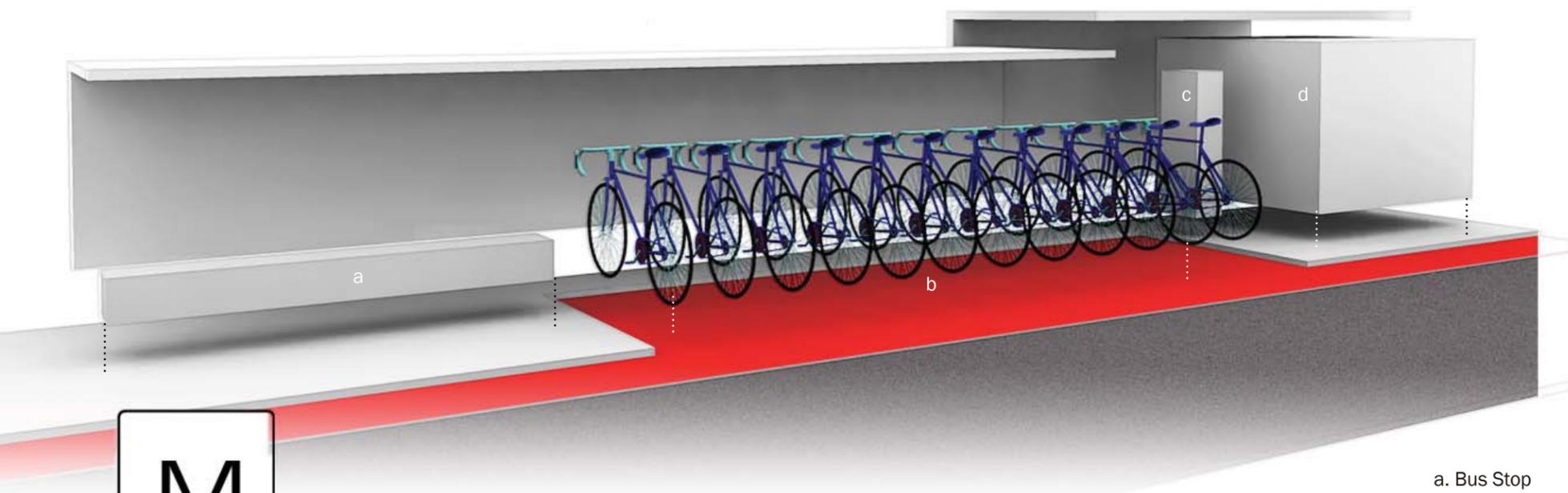
a. Bus Stop
b. Automated Bike Rack
c. Bike Rental Kiosk



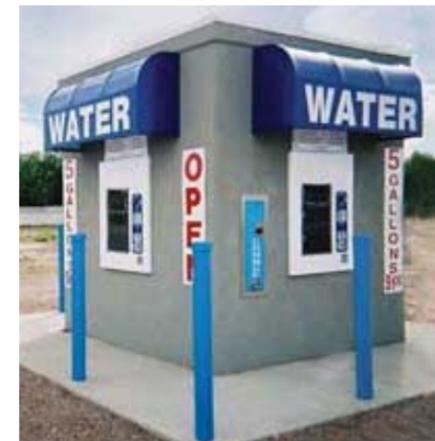
MEDIUM BIKE SHARING KIOSK

A network of bike sharing kiosks and bike friendly infrastructure

The medium kiosks will include a busstop, bike rental and one other type of program, specific to the location of the kiosk



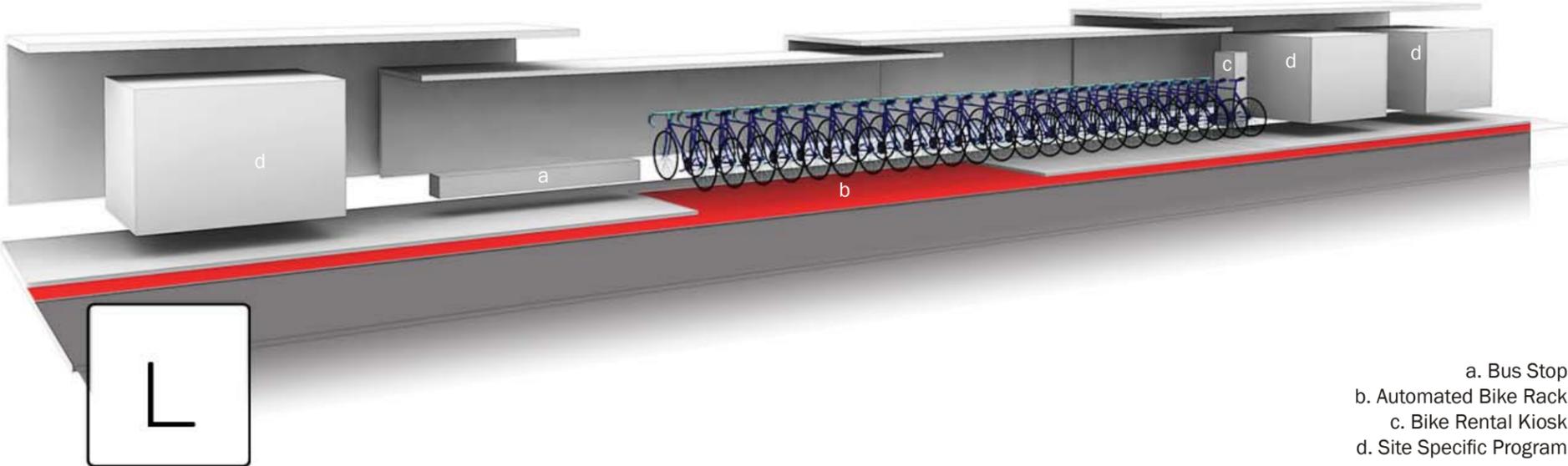
- a. Bus Stop
- b. Automated Bike Rack
- c. Bike Rental Kiosk
- d. Site Specific Program



LARGE BIKE SHARING KIOSK

A network of bike sharing kiosks and bike friendly infrastructure

The medium kiosks will include a busstop, bike rental and one other type of program, specific to the location of the kiosk



a. Bus Stop
 b. Automated Bike Rack
 c. Bike Rental Kiosk
 d. Site Specific Program



EXTRA LARGE BIKE SHARING KIOSK

A network of bike sharing kiosks and bike friendly infrastructure

The medium kiosks will include a busstop, bike rental and one other type of program, specific to the location of the kiosk



XL

a. Bike Parking
b. Site Specific Program



04

THE BIKE NETWORK

THE NETWORK

A network of bike sharing kiosks and bike friendly infrastructure

Bike Sharing Kiosks

The bike sharing kiosks will be combined with various other programmatic elements to ensure exposure to the bike sharing program. The kiosks will replace busstops throughout the city, however, the size and other types of program will be custom designed specific to the location of the kiosk. The placement of the kiosks throughout the city is based on the density of the intended user groups and points of interest.

Bike Friendly Infrastructure

Bike friendly streets will connect the bike sharing kiosks to each other, to points of interest and to other forms of alternate transit, such as CTA train stations. The main goal of these bike streets is to create a scenario where bikes are given priority on the roads. This will create a safer environment for cyclists

The bike network will begin in the Loop and will gradually expand outwards as popularity and membership increases. The extra large bike kiosks will be the catalyst for the expansion and will tie the different bike networks together. This will also create a unity and a brand for the bike program throughout the entire city.

Phasing of the Project and the XL Prototypes :

Location of each building and associated programs:

XL Rogers Park: Public Park:



XL Lakeview: Fitness Center:



XL Loop: ActiveTrans Headquarters:



XL Bridgeport: Cultural Center

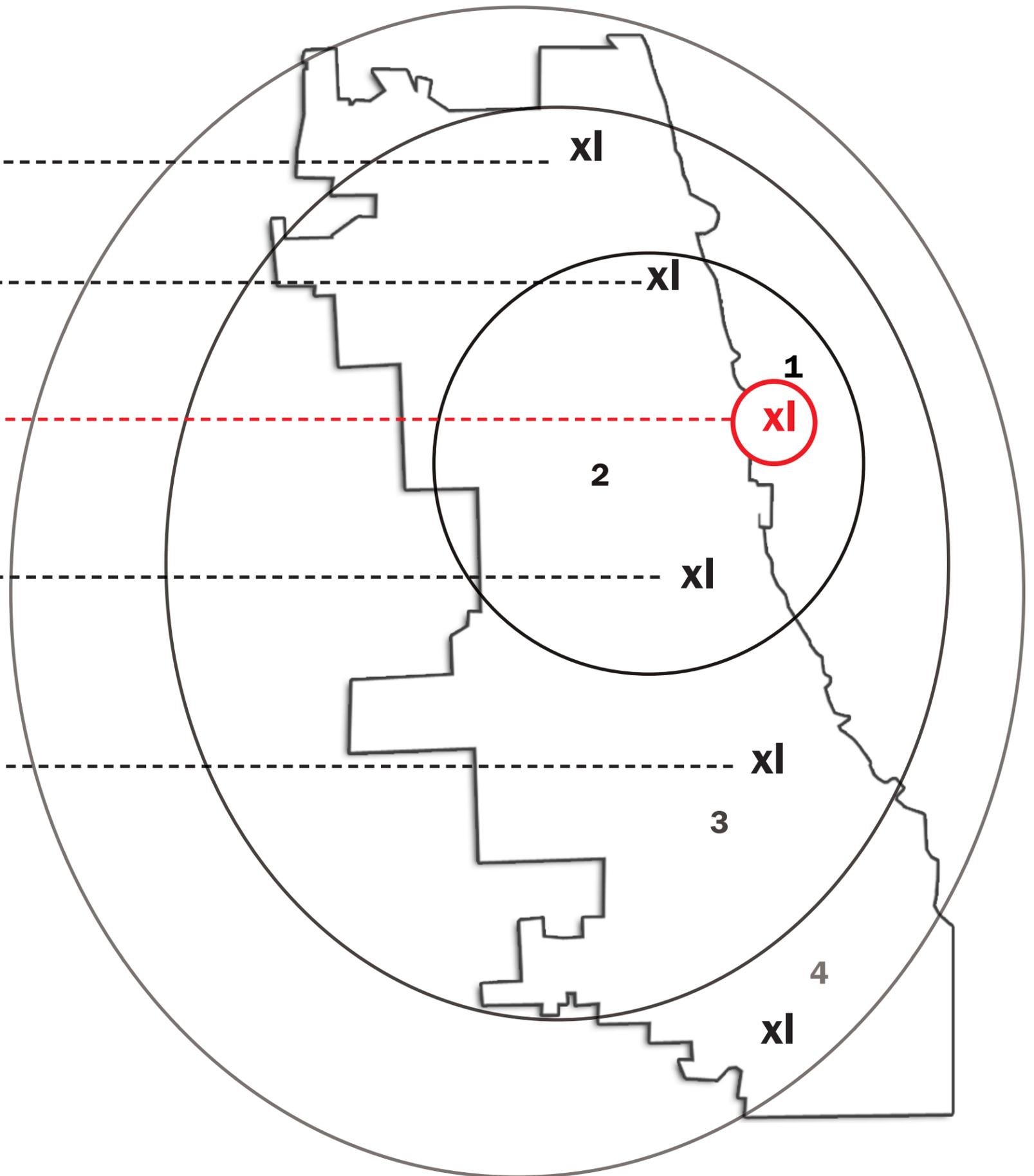


XL Washington Park: Charter School



The extra large kiosk will be a prototype at the center of the bike network, the program of each of these buildings will vary depending on its location. From these buildings the bike friendly streets will radiate out, connecting bike sharing kiosks and the various bike friendly neighborhoods.

The project will start in the loop and will gradually expand out and expand its coverage to the surrounding neighborhoods, while remaining connected through a network of bike friendly streets.



Analysis of the location of current modes of transportation in the loop. The bike sharing kiosks will replace busstops and will be placed in close proximity to CTA train stops.



CTA Train Stops



Bus Stops

Placement of the Bike Sharing Kiosks :

Size of each kiosk and associated programs:

s: thompson center

clark & lake



l: millenium park

randolph & columbus



s: daley plaza

clark & washington



s: art institute

monroe & michigan



s: monroe & lasalle



s: sears tower

jackson & franklin



m: depaul downtown campus

jackson & state



xl: activetrans hq

congress & plymouth



m: grant park



Bike Friendly Streets :

A network of bike friendly streets will connect the bike sharing kiosks and will also link users to the CTA and points of interest, to allow the bike sharing program to function as a form of intermodal transportation.



- Type A 
- Type B 

BIKE FRIENDLY STREET TYPOLOGIES: A

Two Way: Painted, shared lane:
Type III

A simple retrofit for current shared bike lanes.

Currently, shared bike lanes are very dangerous, as many drivers are either unaware of or simply do not observe the rules of sharing the road with bicycles. Painting these lanes a bold color is a cost effective way of drawing awareness to bicyclists in the hopes that motorists will pay more attention to the cyclists.



BIKE FRIENDLY STREET TYPOLOGIES: B

One Way: Dedicated bike path
Type II

A more aggressive way of ensuring bicycles and cars can coexist on the roads. This typology incorporates a separate lane for bikes which is separated from the street by a curb.



05

BIKE SHARING KIOSKS

CASH FOR CLUNKERS = BIKE SHARING FOR CHICAGO

Harvesting materials from clunkers to house a prototypical bike sharing program.



Cash for Clunkers was a 2009 Government program aimed at removing old, smog emitting vehicles from our roads. At the program's conclusion nearly 700,000 vehicles were turned in nationwide. The average rebate given out per car was \$4,100, meaning the Government invested nearly \$3 billion to purchase these old cars to keep them from harming the environment.

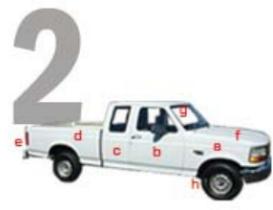
now what?

Now that these clunkers are off the road, this surplus of material which was once contributing to global warming and poor air quality is used to shelter the prototypical bike sharing program aimed at reducing reliance on automobiles and promoting alternate forms of eco-friendly transportation.

The parts from these abandoned clunkers will be stripped and reassembled to create sculptural kiosks which not only house the bike sharing program, but also many other programmatic elements which will activate the kiosks and also expose many people to the bike sharing program. The kiosks themselves can be educational tools to inform the general public about the harmful effects cars can have on the environment and why it is important to use alternate forms of transportation.



Ford Explorer 4WD



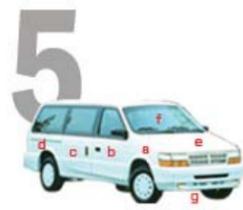
Ford F150 4WD



Jeep Grand Cherokee



Ford Explorer 2WD



Dodge Caravan



Jeep Cherokee



Chevy Blazer



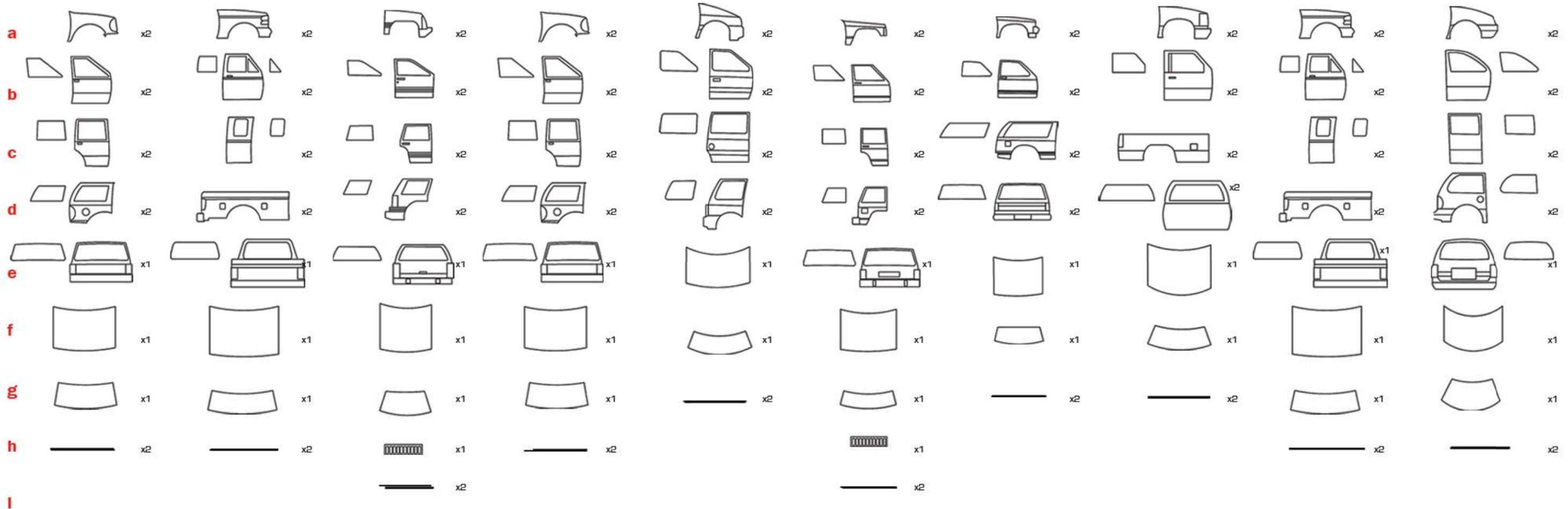
Chevy S1500



Ford F150 2WD



Ford Windstar



BIKE SHARING KIOSK: S

Cash for Clunkers = Bike
Sharing for Chicago

The small version of the bike sharing kiosk functions primarily as a busstop. This type of kiosk will be the most abundant throughout the city, as a simple replacement for current busstops. These kiosks provide a shelter for people waiting for the bus as well as a shelter for up to 12 bikes.

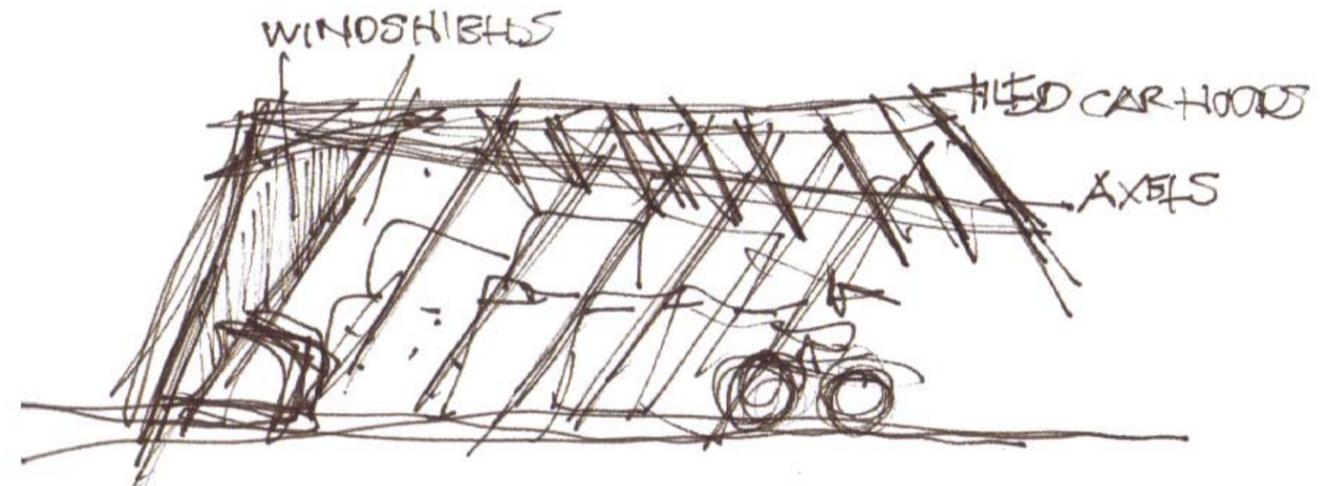
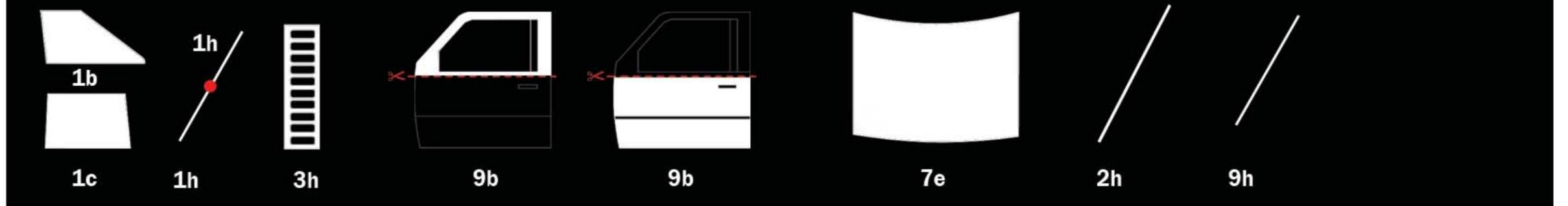
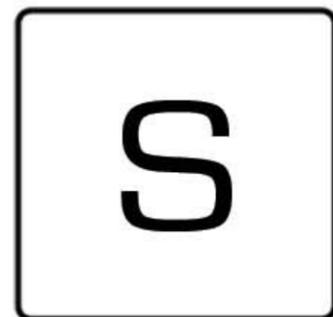




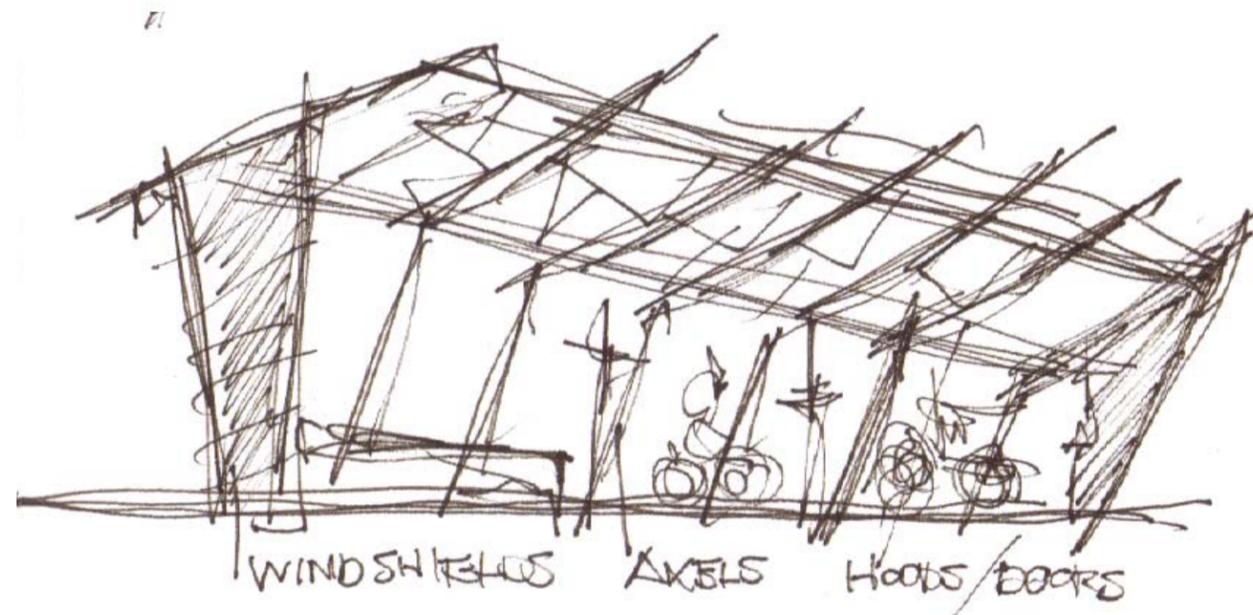
DIAGRAM OF PARTS

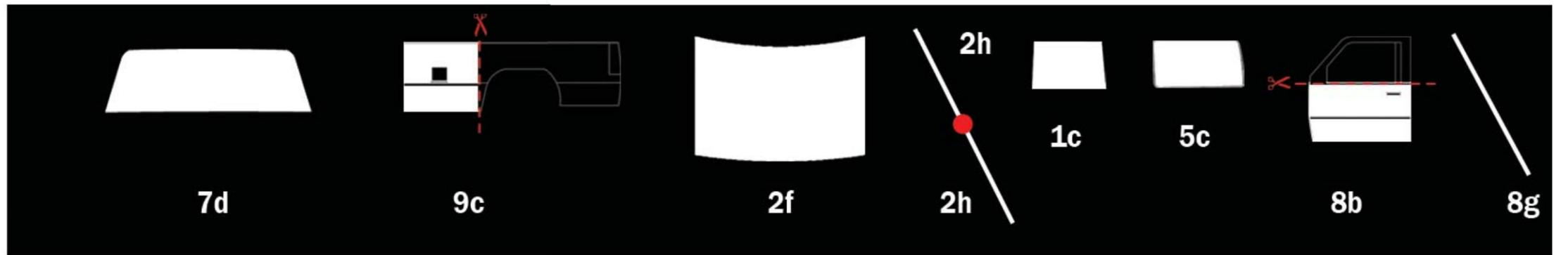
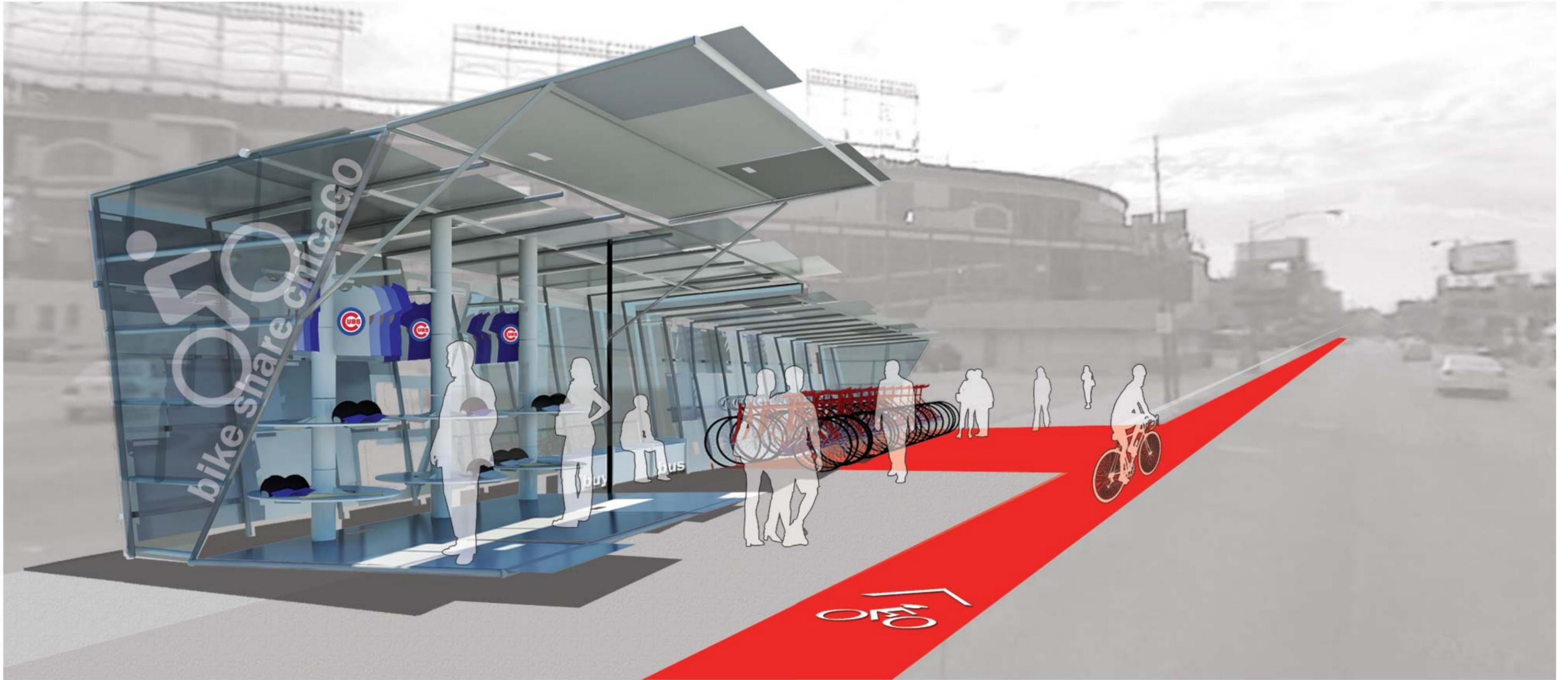


BIKE SHARING KIOSK: M

Cash for Clunkers = Bike
Sharing for Chicago

The medium version of the bike sharing kiosks will feature more program than the small version. The configuration pictured to the left is designed specifically for Wrigley Field, and would feature Cubs memorabilia as well as a sheltered busstop and space for up to 25 bikes. These kiosks would be tailored for their specific location. For example, a location near the downtown DePaul campus would feature DePaul themed clothing and a newsstand for student usage.

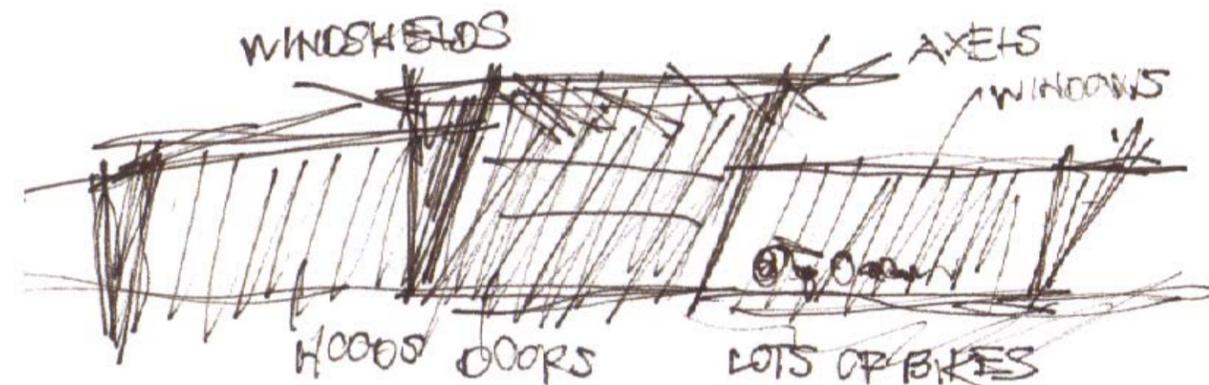


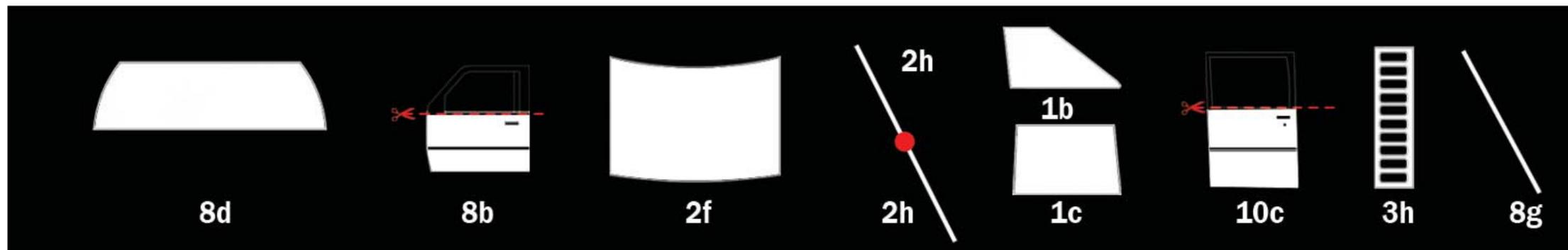
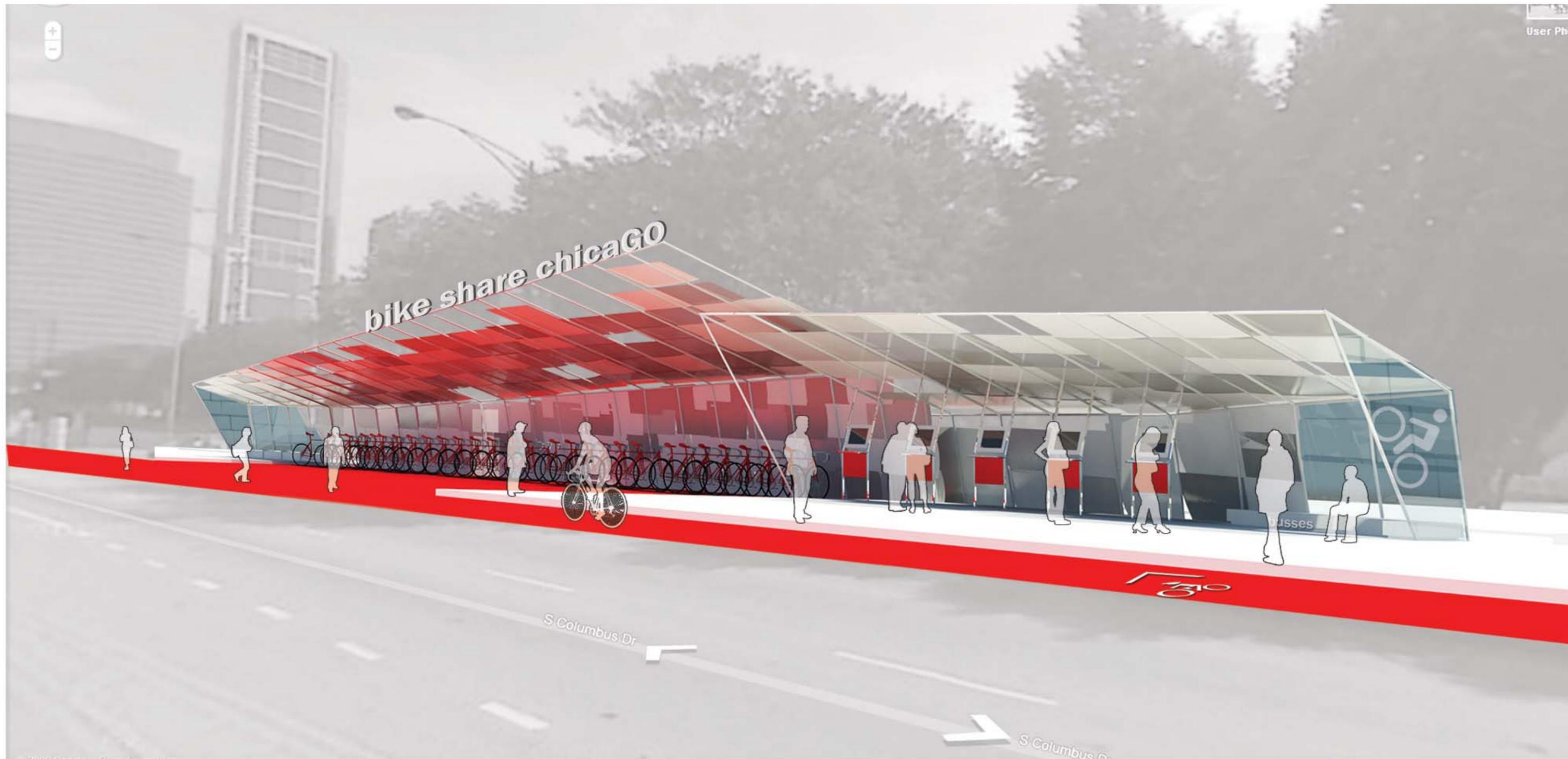


BIKE SHARING KIOSK: L

Cash for Clunkers = Bike
Sharing for Chicago

The large version of the bike sharing kiosks takes place downtown near the tourist hotbeds. Consequently, this configuration caters to tourists and visitors to Chicago by offering wayfinding services and providing information about attractions, show times, sports schedules etc... This kiosk also has a very large capacity of up to 50 bikes due to its prominent location.





06

ACTIVETRANS HEADQUARTERS

ACTIVETRANS HEADQUARTERS

Chicago's voice for better biking, walking and transit

Make it better, no matter how you get around.



Become a member of Active Trans.

Activetrans is a “non-profit advocacy organization that works to improve conditions for bicycling, walking and transit and engage people in healthy and active ways to get around.”

Currently, Activetrans is housed in a mid-rise, unassuming building in the River North neighborhood of Chicago. The organization is considering expansion into a new headquarters building which will combine their office requirements with functions closely related to their mission of making alternate forms of transportation safer and more widely accessible in Chicago.

The new Activetrans headquarters acts as an extra large bike sharing kiosk and will feature extensive bike parking, spaces for education to ensure bikers and pedestrians know their rights and rules of the road, retail, a cafe and other programs which will ensure a vibrant, intense and bike friendly atmosphere in the heart of the Loop.



Secure Bike Parking



- Secure Bike Parking for Members
- Bike and Equipment Rentals
- Bike Valet



Bike Education



- Helmet fittings
- Bicycle safety checks
- Teach how to avoid crashes
- Distribution of safety materials
- Help non-bikers or novice bikers to bicycle more
- Teach how to walk and bike to school or work
- Instruction to motorists, bicyclists and pedestrians on sharing the road
- On-bike trainings
- Pedestrian trainings



Grab N Go Cafe



- Snacks and beverages for members and the public to purchase



Bike Retail



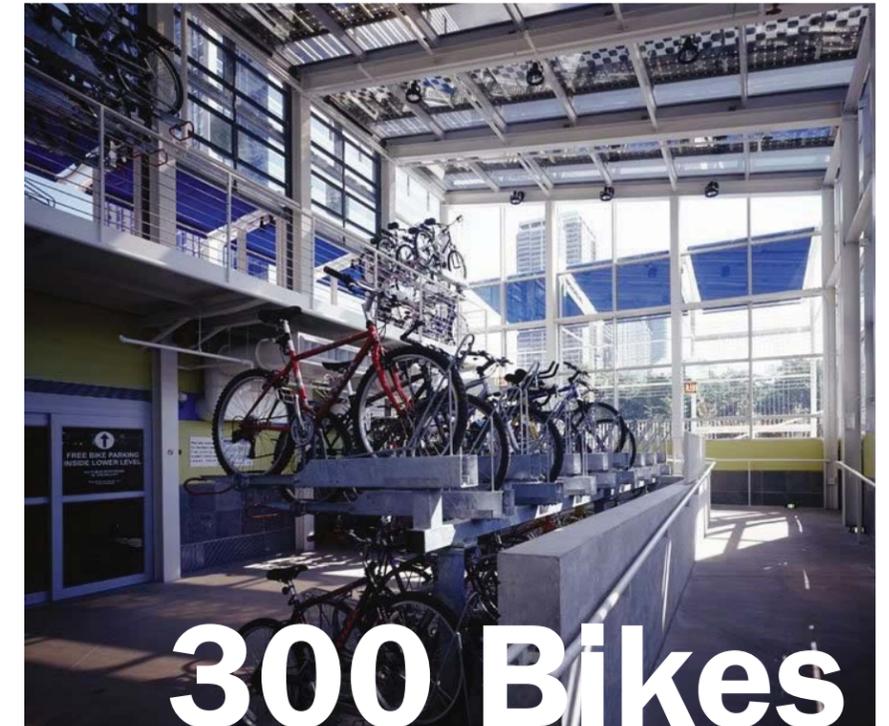
- ActiveTrans equipment/apparel
- Bikes
- Bike equipment
- Tours

ActivTrans Chicago Headquarters + Bike Share ChicaGO

Total Site Area	5,100
Zoning	DX-12
Max FAR	12
Max SF	61,200

	Qty.	Net SF	Total SF	Occupant Load*	Occupants
1. Offices					
1.01 Executive Director	1	225	225	100	3
1.02 Events and Membership Staff	4	100	400	100	4
1.03 Marketing and Promotions Staff	7	100	700	100	7
1.04 Education Staff	8	100	800	100	8
1.05 Planning and Design Staff	7	100	700	100	7
1.06 Community Outreach	4	100	400	100	4
1.07 Administrative Open Office	2	500	1000	100	10
1.08 Reception	1	100	100	100	1
1.09 Conference Rooms	2	300	600	100	6
1.10 Public Training Center/Theatre	1	1000	1000	100	10
1.11 Storage	4	125	500	300	2
<i>Total Admin</i>			6,725		
2. Bikes					
2.01 Bike/ Segway Rental	1	500	500	20	25
2.02 Locker Rooms	2	625	1,250		
2.02.01 Male Lockers	50 lockers	350			
2.02.02 Male Toilets	3 stalls	175			
2.02.03 Male Showers	4 showers	100			
2.02.04 Female Lockers	50 lockers	350			
2.02.05 Female Toilets	3 stalls	175			
2.02.05 Female Showers	4 showers	100			
2.03 Bike Education	4	500	2,000	20	100
2.04 Bike Parking	1	20,000	20,000	100	200
2.05 Bike Maintenance Hub/Storage	1	550	550	100	6
2.06 Retail	1	300	300	30	10
2.07 Tours (Bikes, Walking, Segways)	1	150	150	30	5
2.08 Café/Snacks/Re-Charging	1	450	450	30	15
2.09 Dry Cleaning	1	450	450	100	5
2.10 Members Lounge	1	300	300	30	10
2.11 Storage	3	250	750	300	3
<i>Total Bike</i>			26,250		
3. Mechanical					
3.01 Mechanical Spaces (Estimated at 12.5%)	1	4,122	4,122		
<i>Total Mechanical</i>			4,122		
TOTAL BUILDING			37,097 SF		565

*from Chicago Building Code Chapter 13-56



McDonalds Bike Center
Chicago, IL



Bike Station
Santa Barbara, CA

dearborn st.

chicago public library

congress pkwy

plymouth ave

DX-12
5,100 sf

state st.

0' 32' 96' 128'







14-16

DIRECTOR
PLANNING/DESIGN
MARKETING

ADMIN
CONFERENCE
CONFERENCE

ADMIN

COMMUNITY OUTREACH
STAFF BIKE PARKING
OPEN OFFICE
BREAK ROOM

13

CLASSROOMS
VOLUNTEER TRAINING

EDUCATION

PUBLIC TRAINING

12

BIKE PARKING

PUBLIC TRAINING

2-11

BIKE PARKING

PUBLIC TRAINING

BIKE PARKING

BIKE RENTAL

1

RETAIL BIKE PARKING

CAFE-RECHARGING LOUNGE TOURS BIKE PARKING

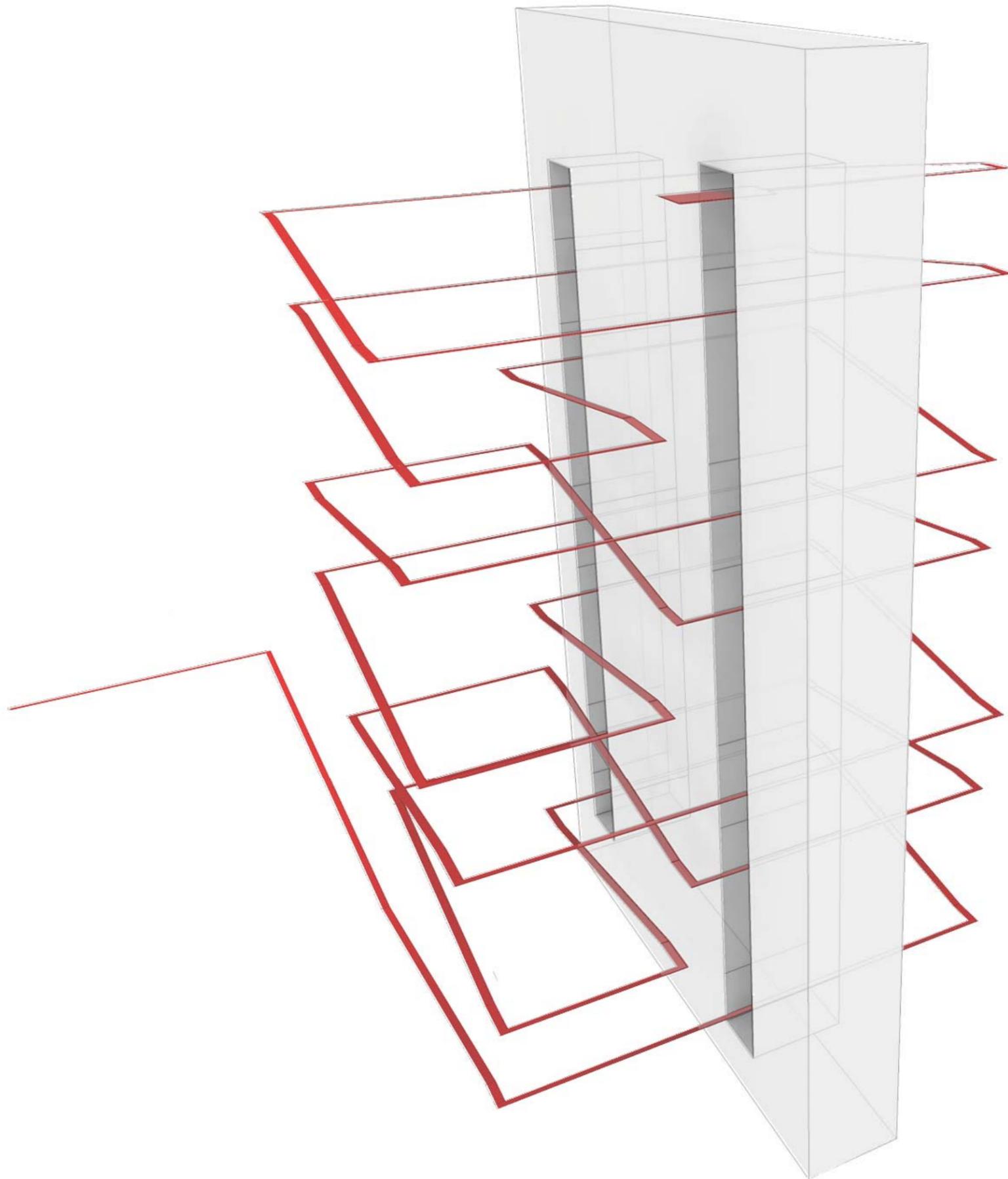
-1

LOCKER ROOMS
DRY CLEANING
BIKE REPAIR

ActiveTrans Goals and Requirements:

per conversation with Rob Sadowski, Executive Director

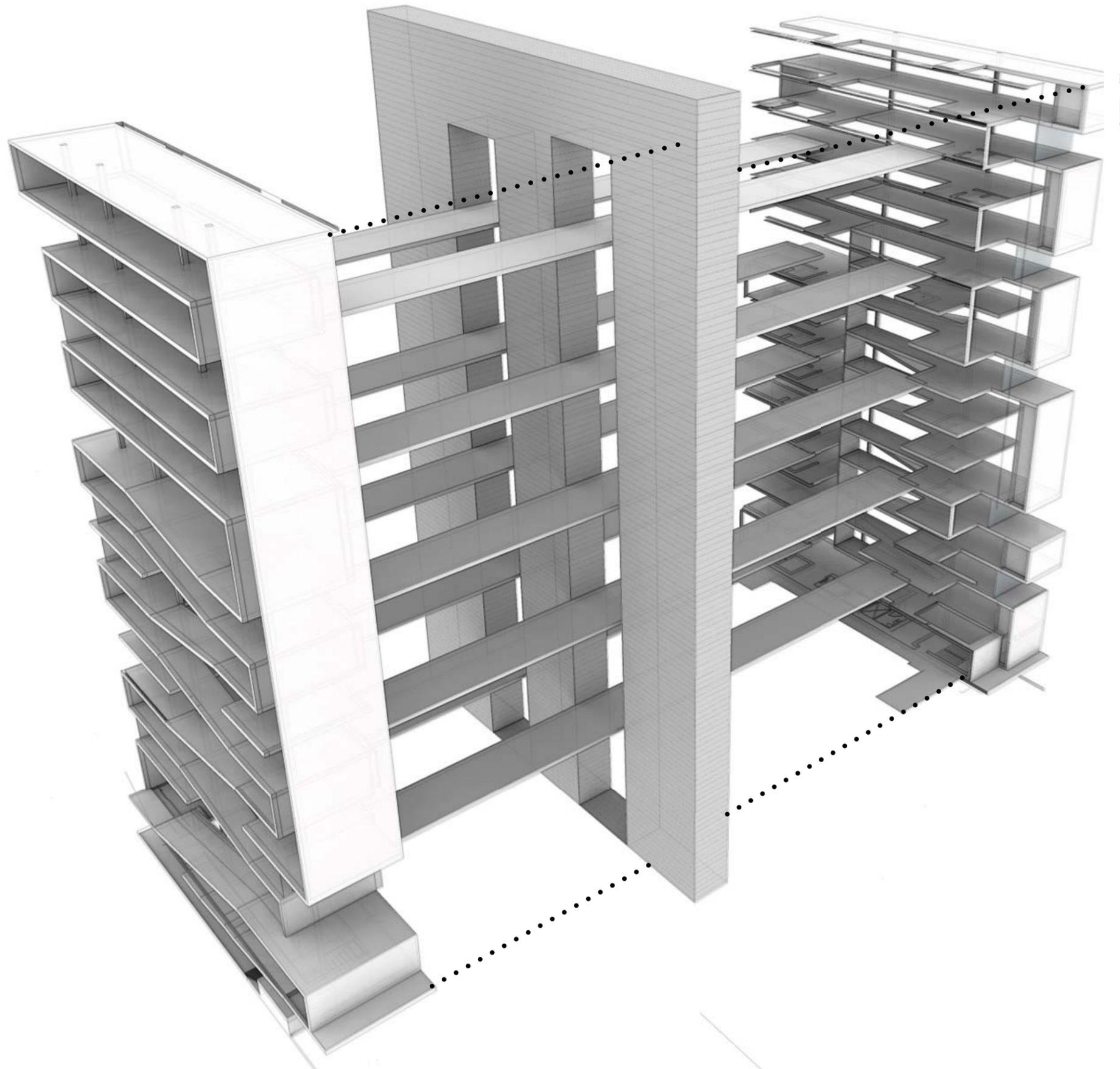
1. The building should feature extensive bike parking facilities.
2. The building should be a beacon for biking and bike tourism
3. The building should be the maintenance hub for the newly created bike sharing program
4. The building should reflect the organization focus on sustainability and alternate transit
5. The building should have a street level presence (Cafe/Retail)
6. The offices should be located above the buildings other functions
7. Ample storage for the offices



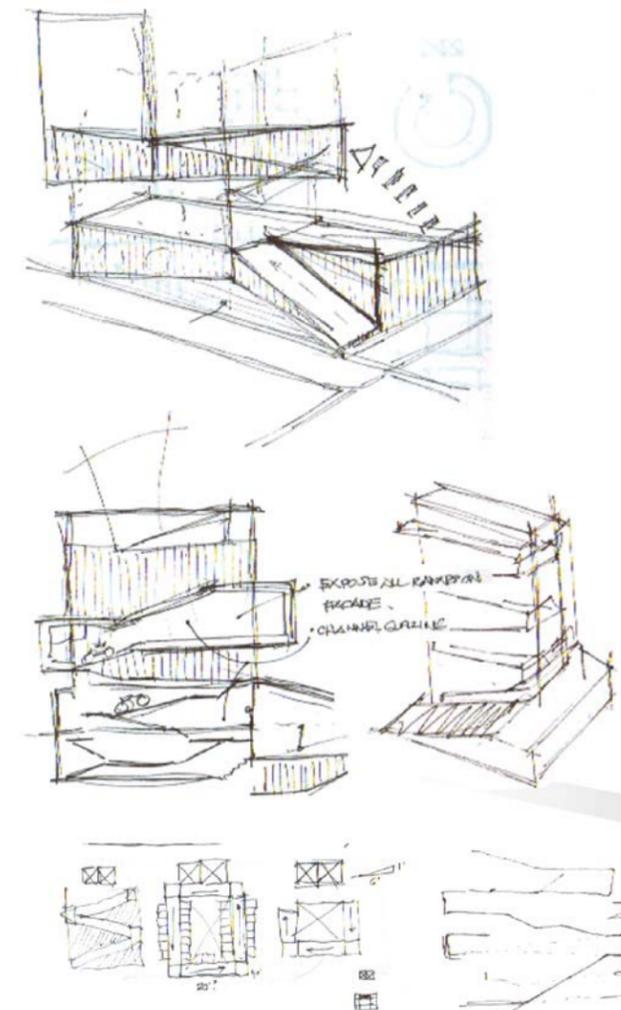
The concept for the ActiveTrans headquarters is focused on the idea of creating a bikeable building which is an extension of the new bike friendly infrastructure. The bike friendly paths being created throughout the city continue into the building becoming ramps which act as the major circulation. These ramps serve multiple functions:

1. Lead members to parking locations for their bike
2. Acts as an exercise trail for times when the weather doesnt permit riding outdoors
3. Prodives spaces for on-bike education by ActiveTrans staff members.





The building is organized by a central core which houses the vertical circulation elements, restrooms and chases for mechanical equipment. The bike ramps fold up both sides of the core and penetrate through it at each floor



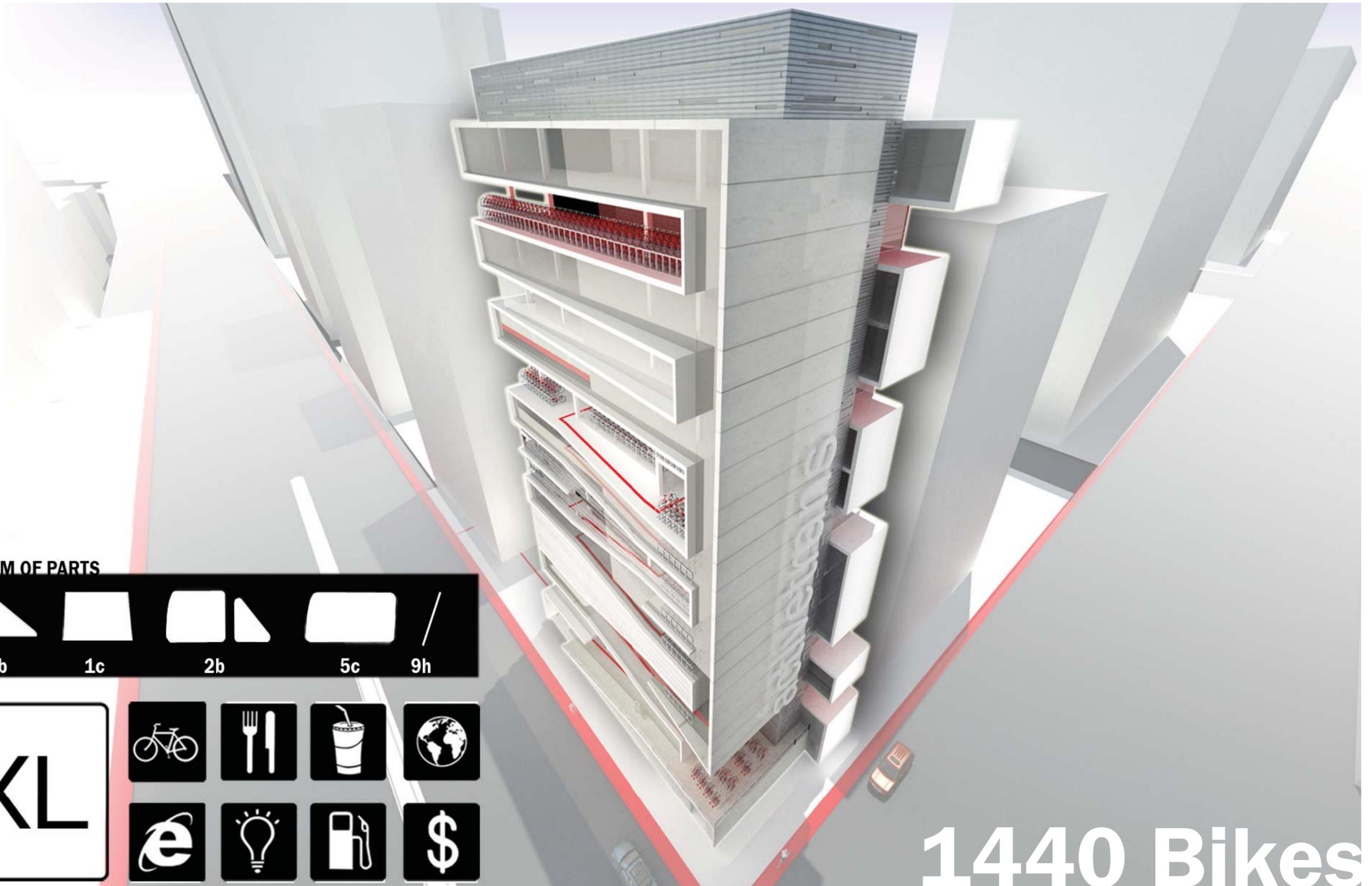
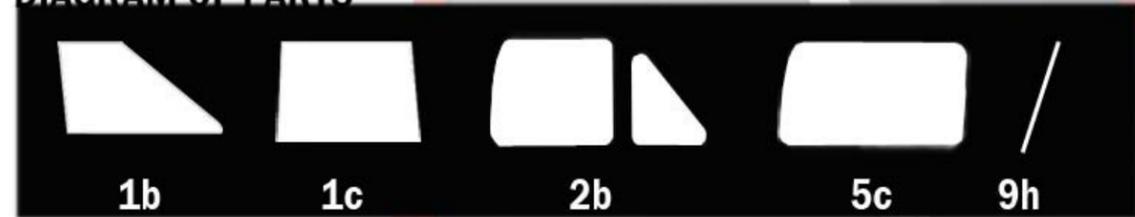
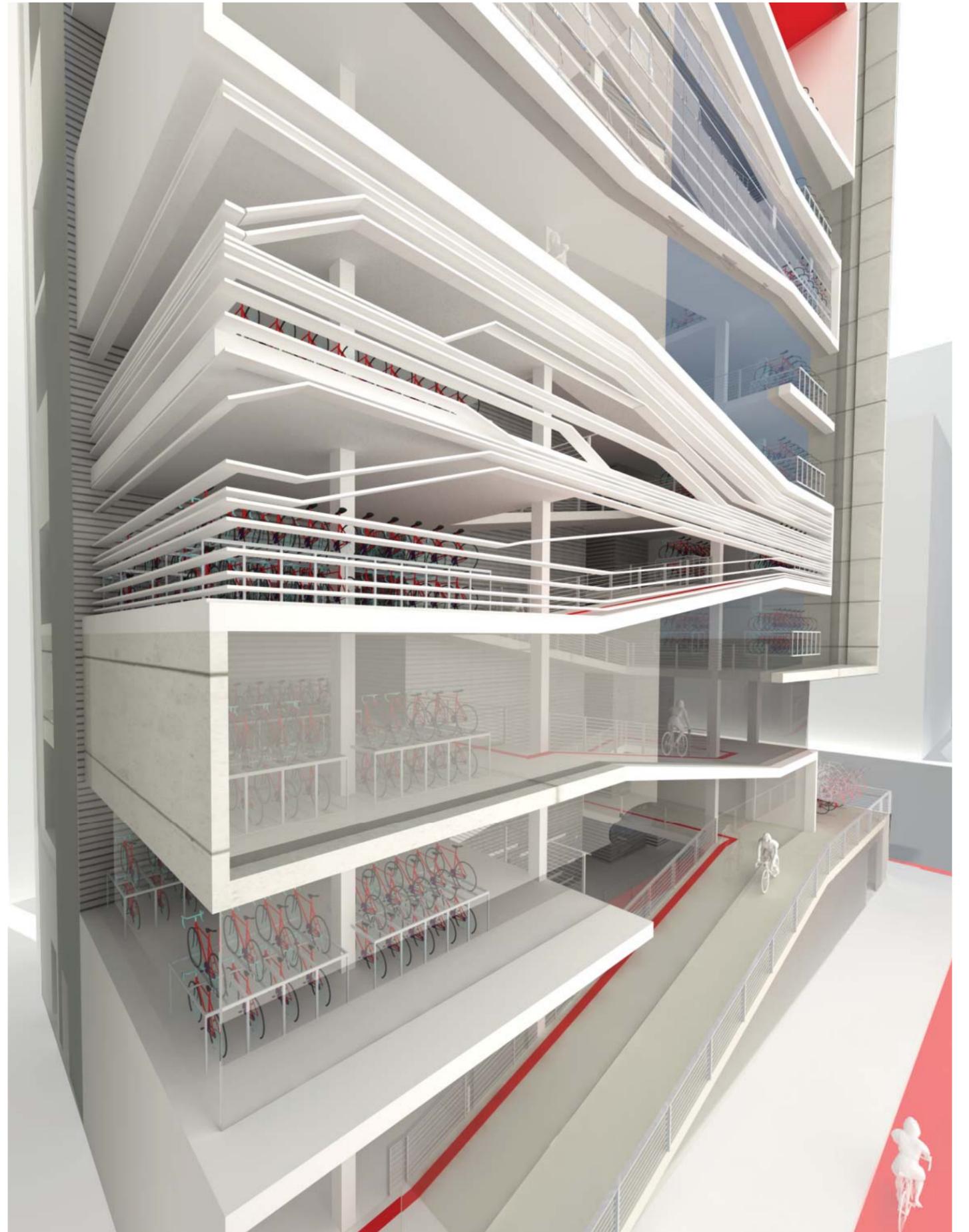


DIAGRAM OF PARTS

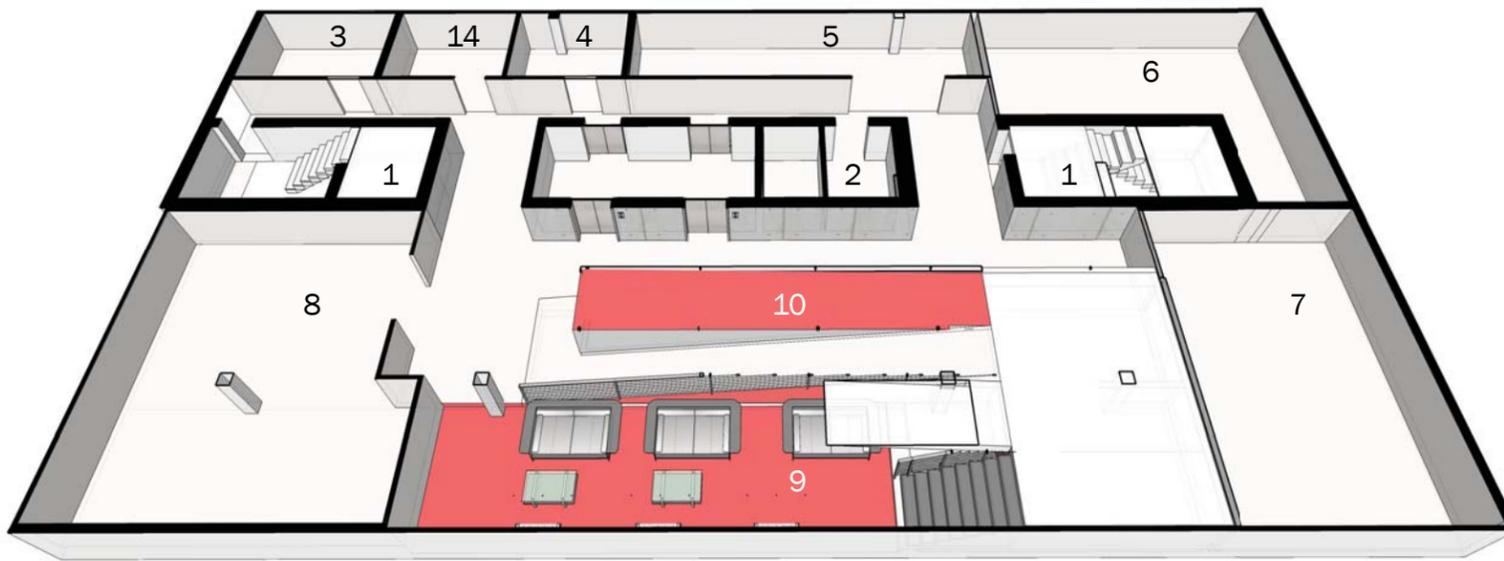


1440 Bikes

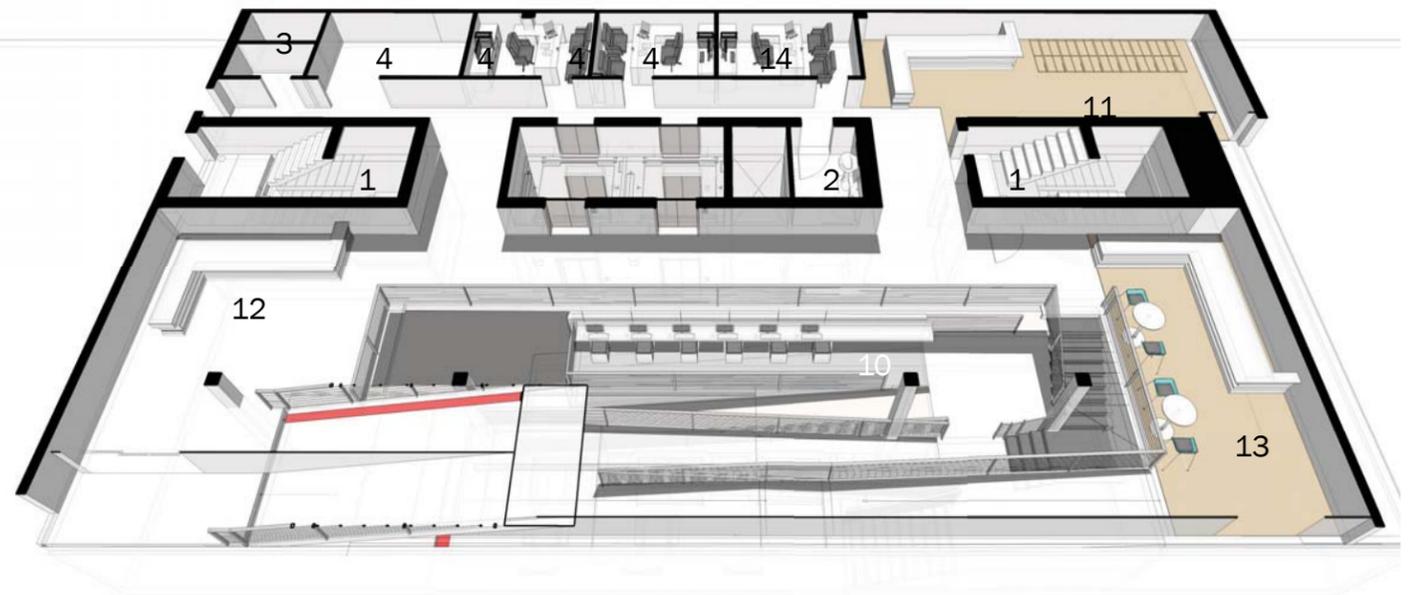




-1



1



- 1.. Exit Stairs
- 2. Public Restroom
- 3. Electrical
- 4. Office
- 5. Dry Cleaning
- 6. Mens Locker Room
- 7. Womens Locker Room
- 8. Bike Repair
- 9. Members Lounge
- 10. Internet
- 11. Retail
- 12. Tours/Bike Valet
- 13. Grab N Go Cafe
- 14. Storage



- 1.. Exit Stairs
- 2. Public Restroom
- 3. Electrical
- 4. Bike Parking
- 5. Bike Rental

2



56 bikes

3

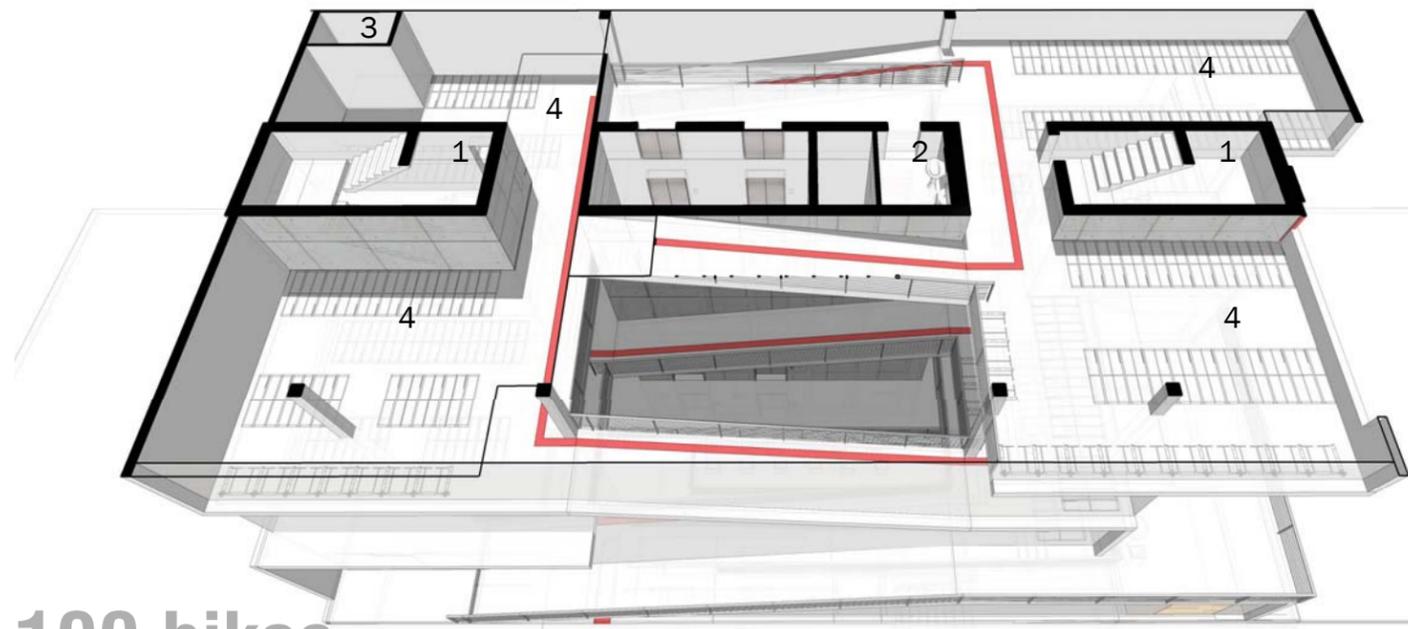


132 bikes



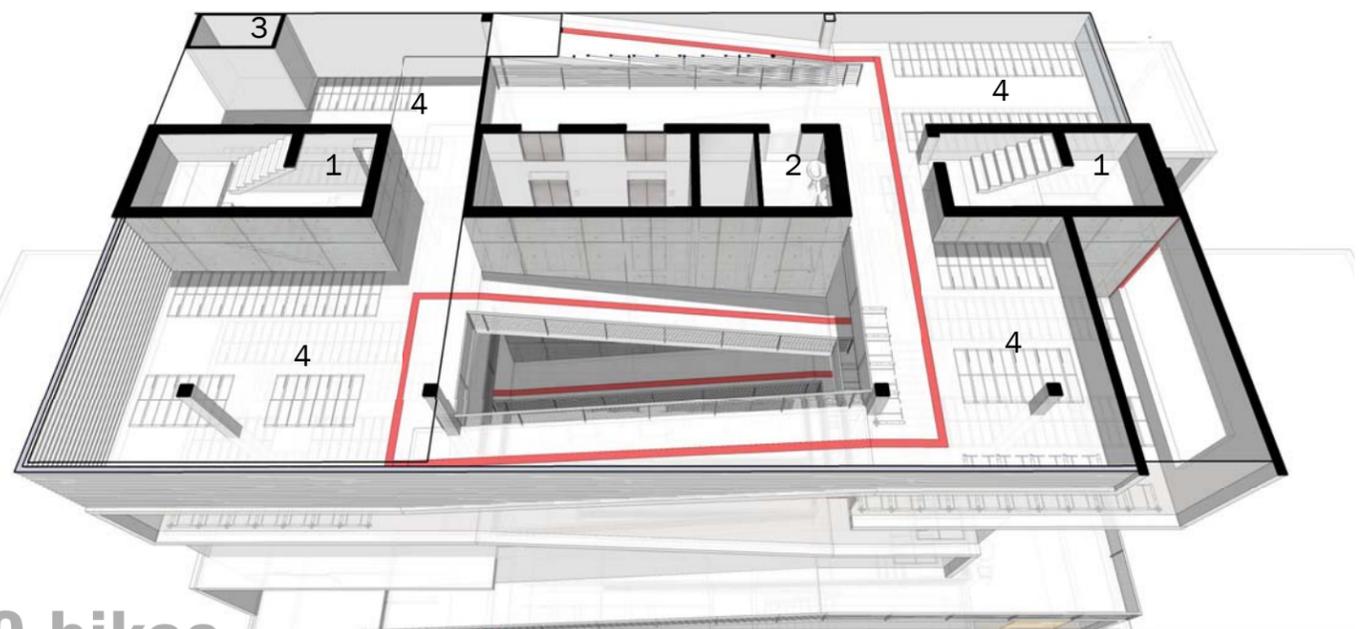


4



190 bikes

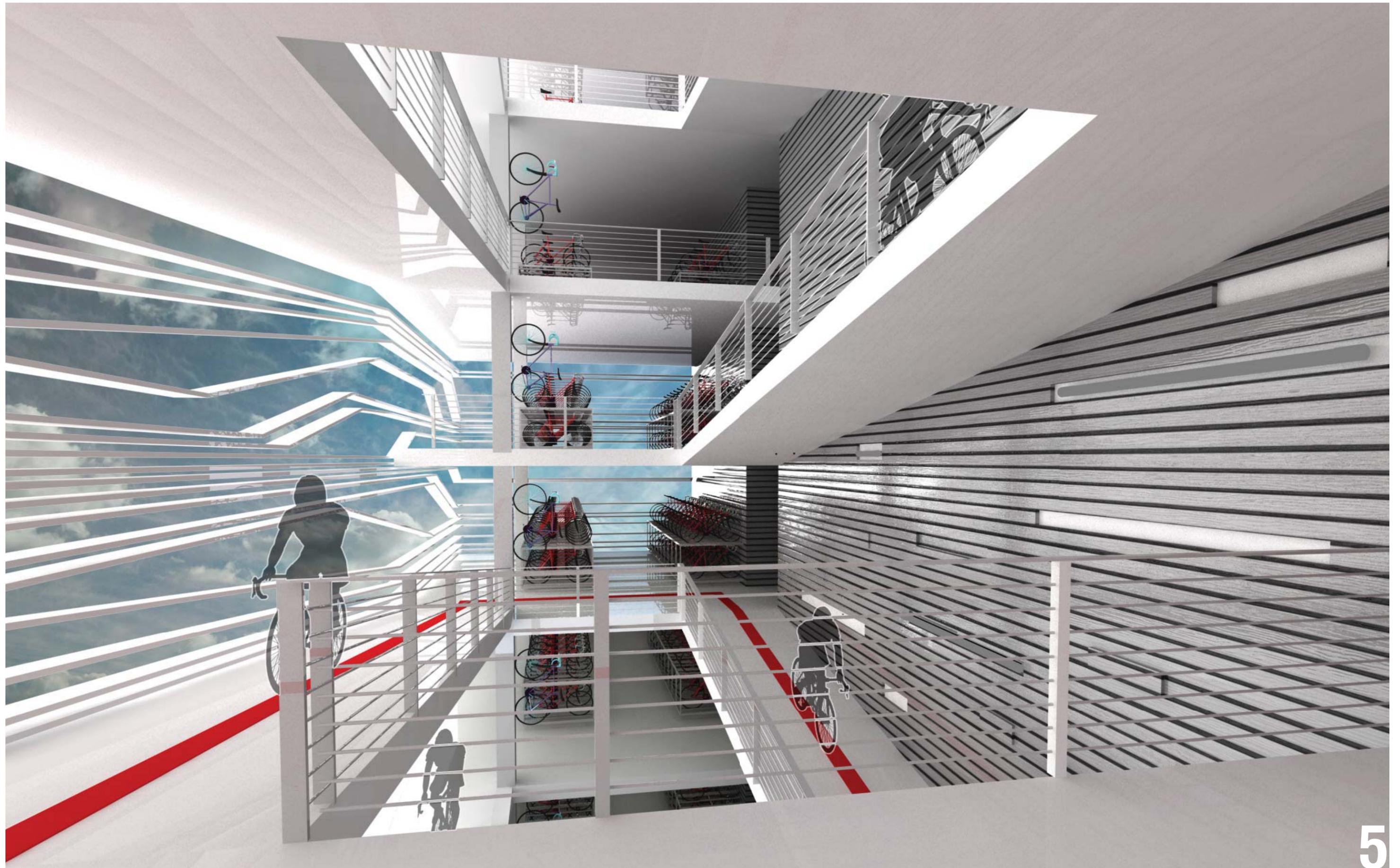
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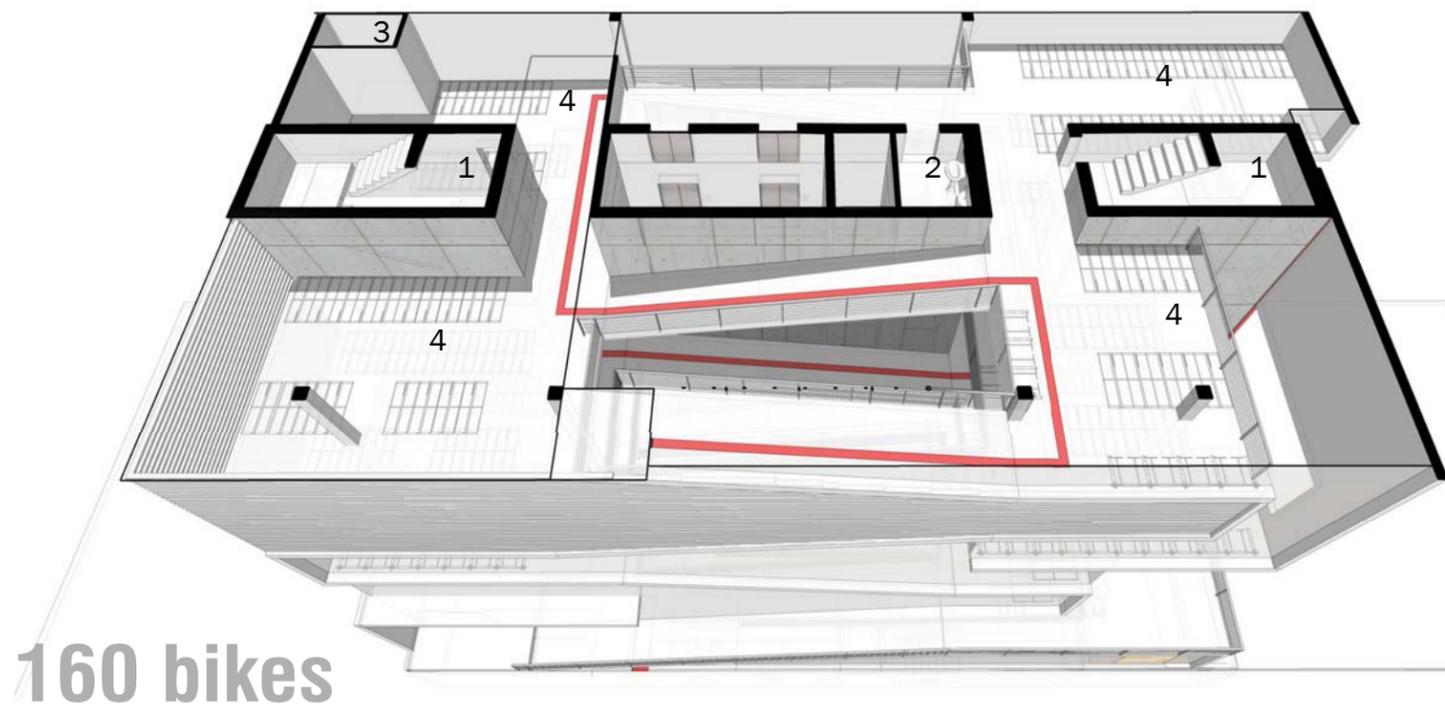
160 bikes

- 1.. Exit Stairs
- 2. Public Restroom
- 3. Electrical
- 4. Bike Parking

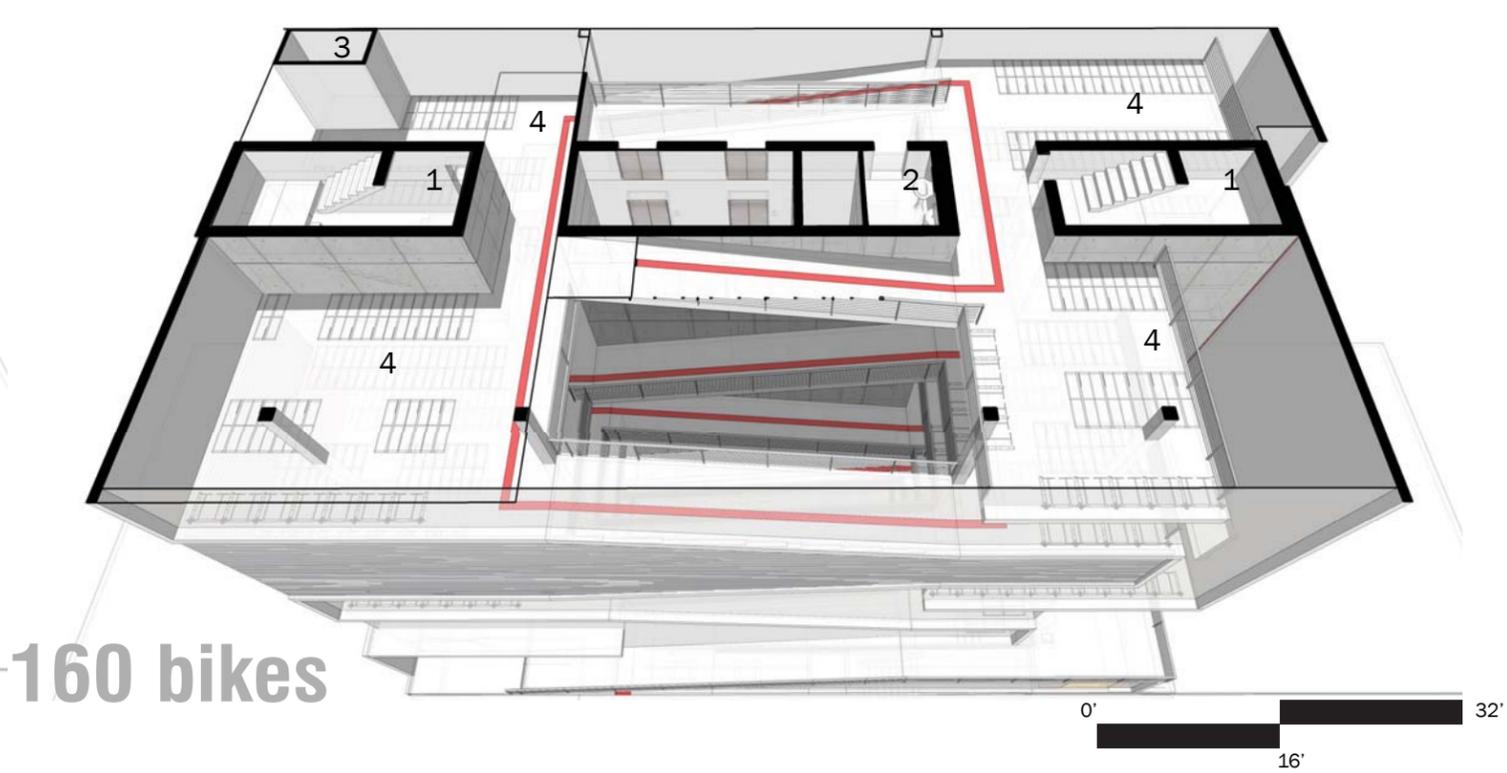




6

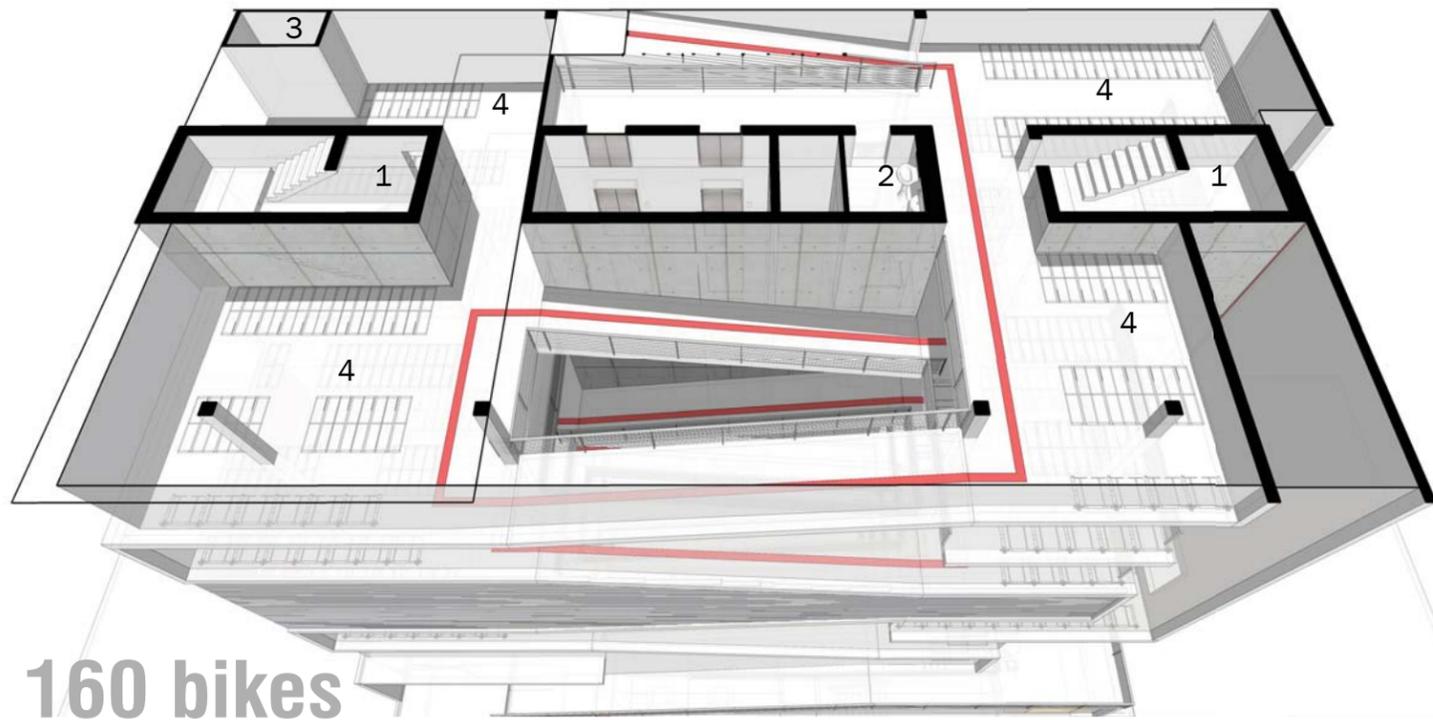


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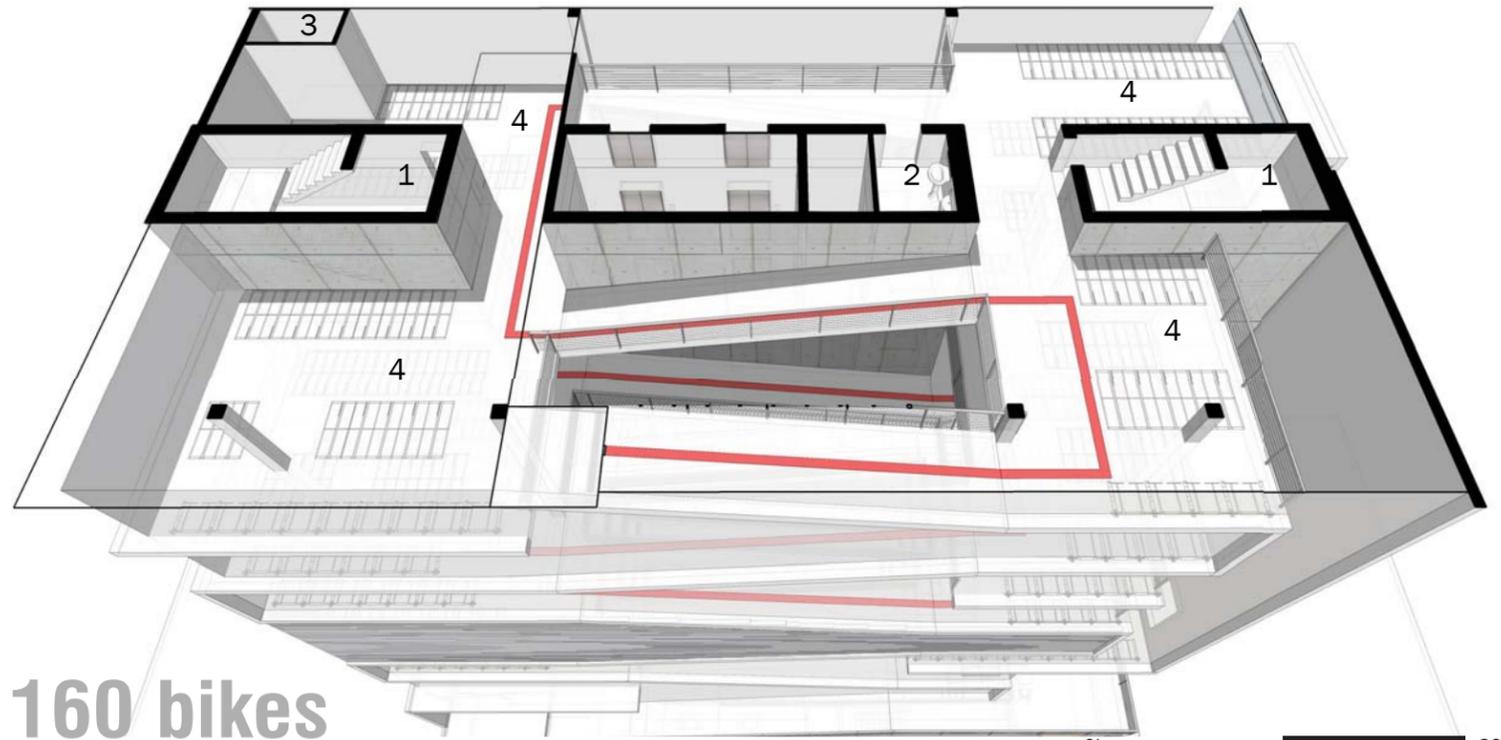
- 1.. Exit Stairs
- 2. Public Restroom
- 3. Electrical
- 4. Bike Parking

8



160 bikes

9

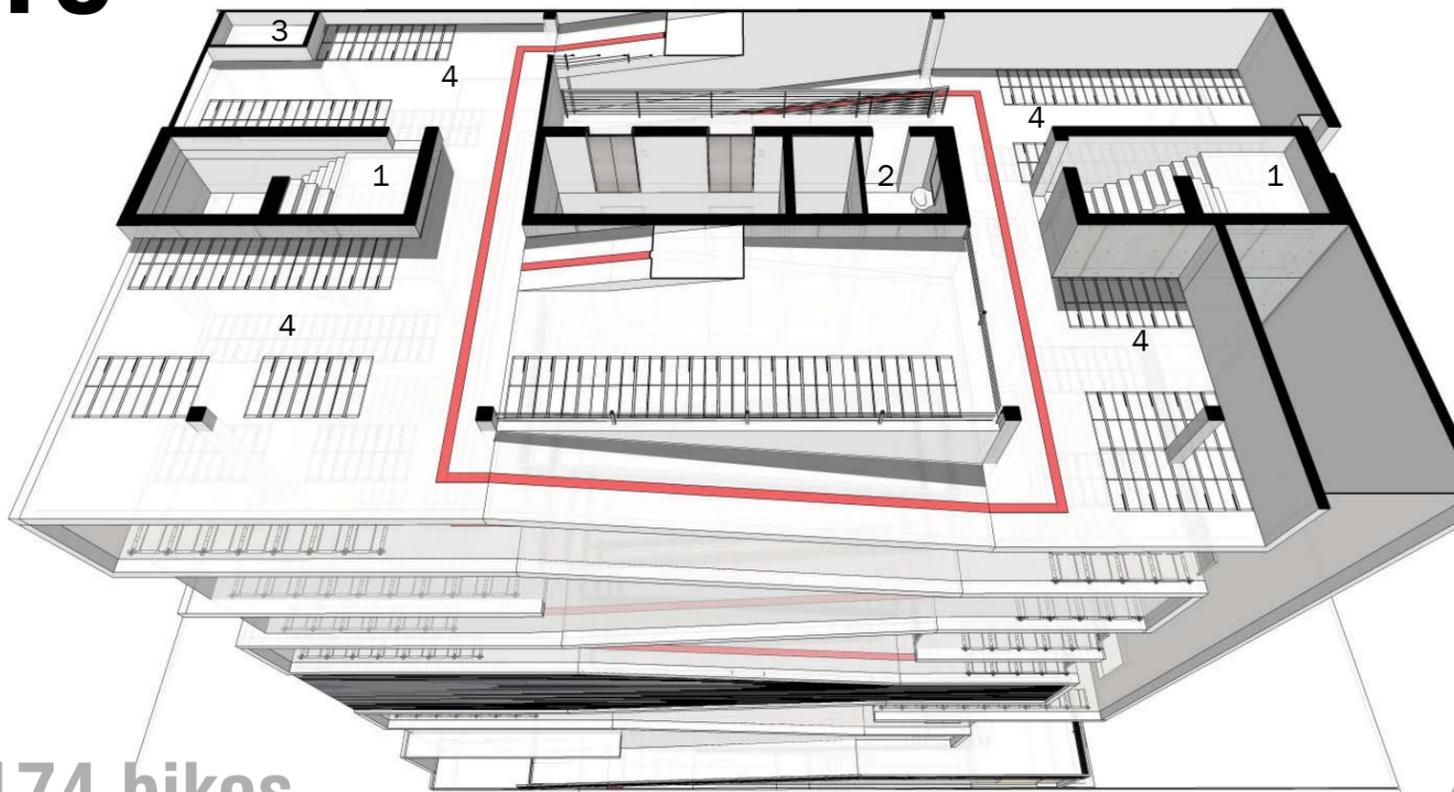


160 bikes

- 1.. Exit Stairs
- 2. Public Restroom
- 3. Electrical
- 4. Bike Parking

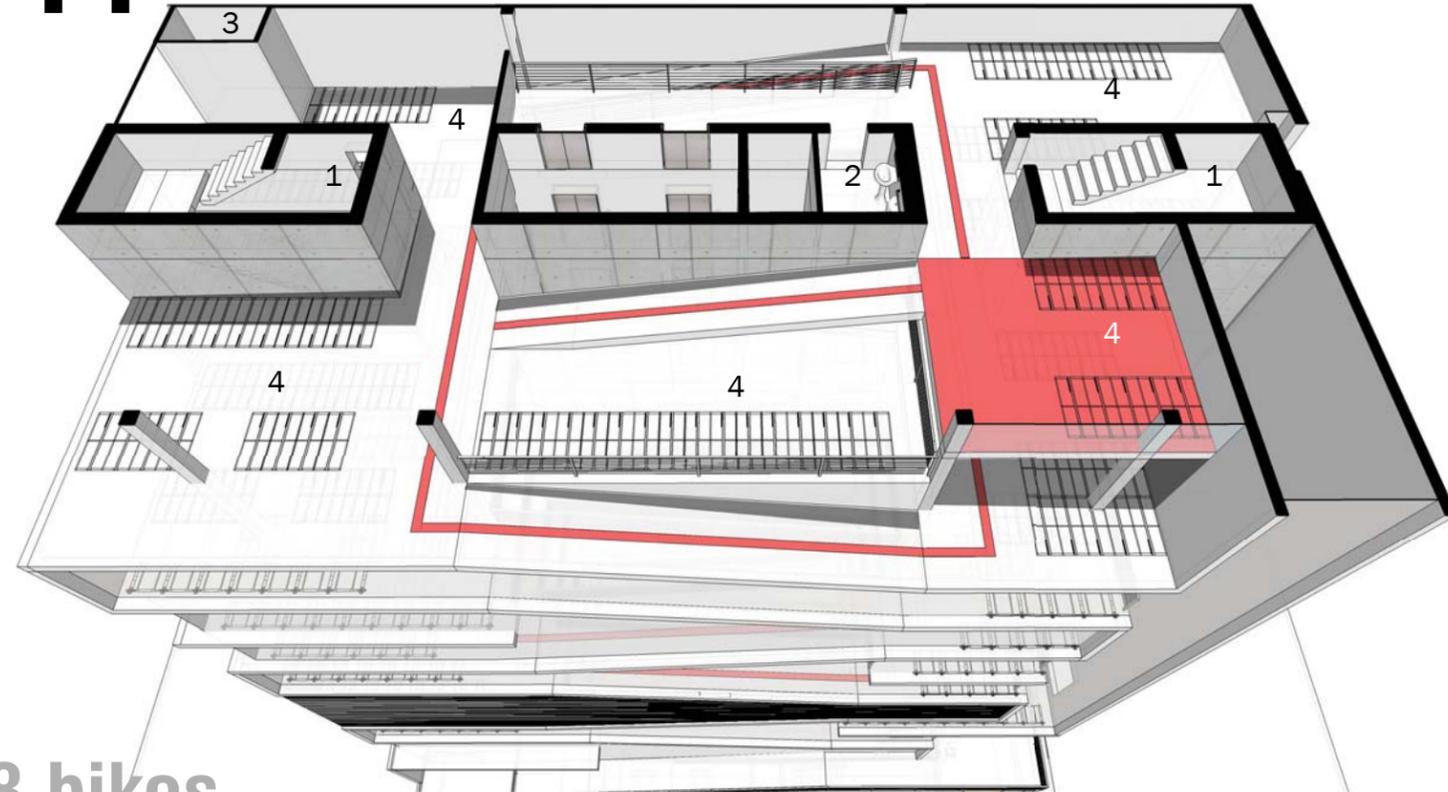


10



174 bikes

11



48 bikes

- 1.. Exit Stairs
- 2. Public Restroom
- 3. Electrical
- 4. Bike Parking



12



13



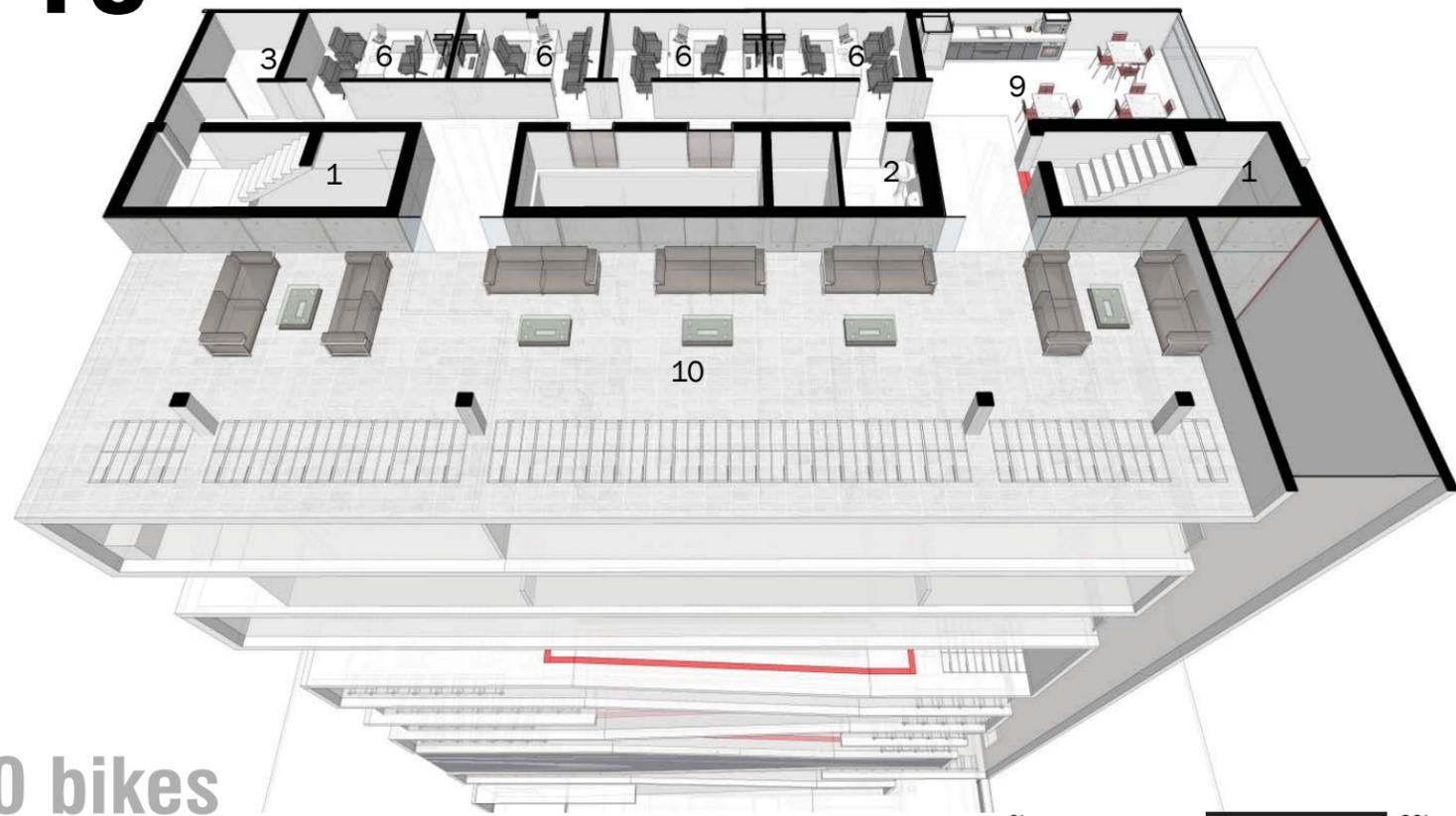
- 1.. Exit Stairs
- 2. Public Restroom
- 3. Electrical
- 4. Public Training
- 5. Education Office
- 6. Volunteer Training
- 7. Classroom
- 8. Storage



14



15



- 1.. Exit Stairs
- 2. Public Restroom
- 3. Electrical
- 4. Storage
- 5. Reception
- 6. Office
- 7. Conference Room
- 8. Open Office
- 9. Break Room
- 10. Employee Lounge

40 bikes



16

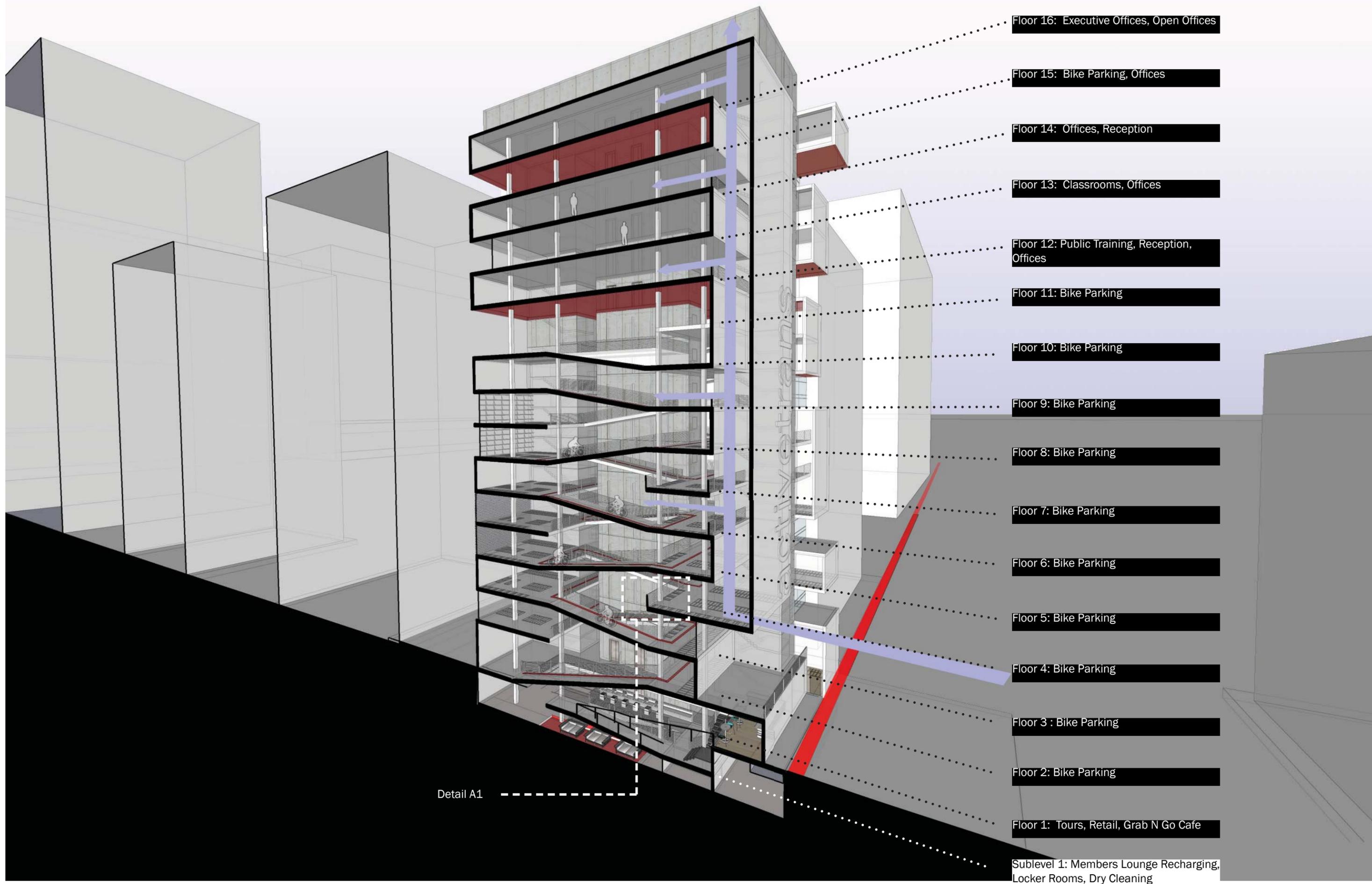


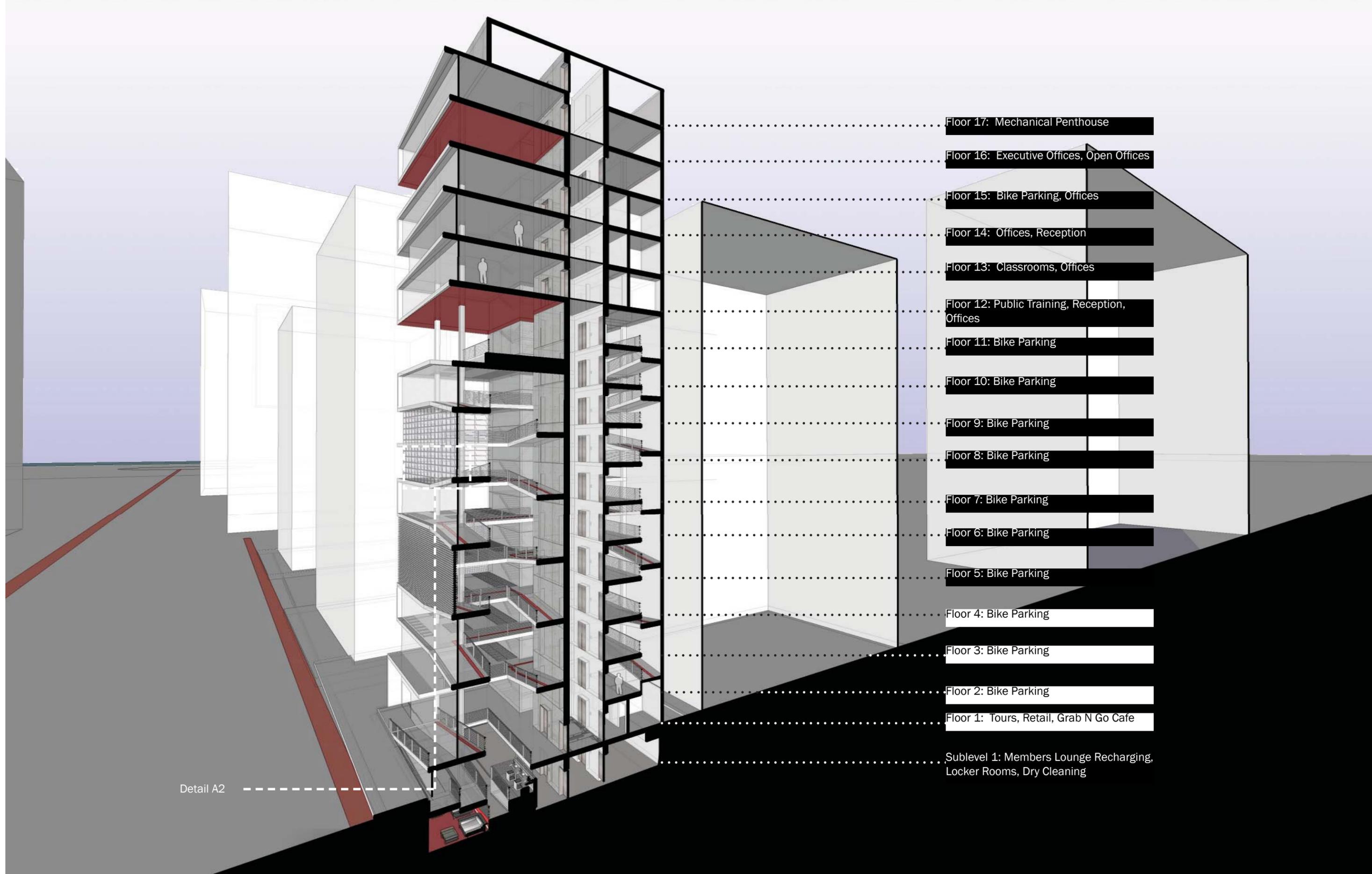
17



- 1.. Exit Stairs
- 2. Public Restroom
- 3. Electrical
- 4. Storage
- 5. Open Office
- 6. Office
- 7. Mechanical







Floor 17: Mechanical Penthouse

Floor 16: Executive Offices, Open Offices

Floor 15: Bike Parking, Offices

Floor 14: Offices, Reception

Floor 13: Classrooms, Offices

Floor 12: Public Training, Reception, Offices

Floor 11: Bike Parking

Floor 10: Bike Parking

Floor 9: Bike Parking

Floor 8: Bike Parking

Floor 7: Bike Parking

Floor 6: Bike Parking

Floor 5: Bike Parking

Floor 4: Bike Parking

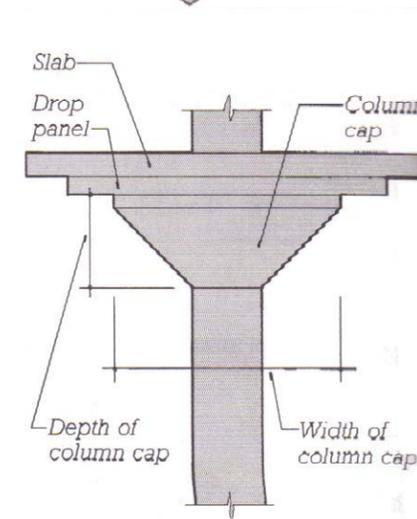
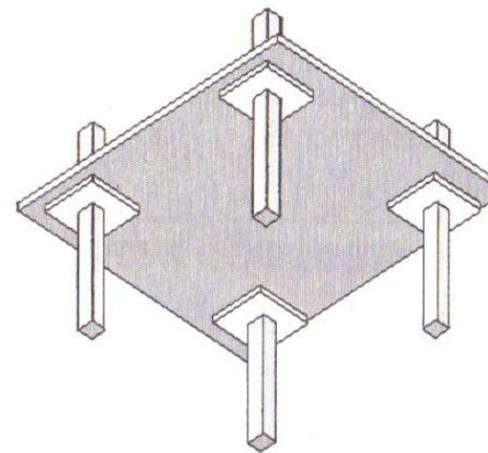
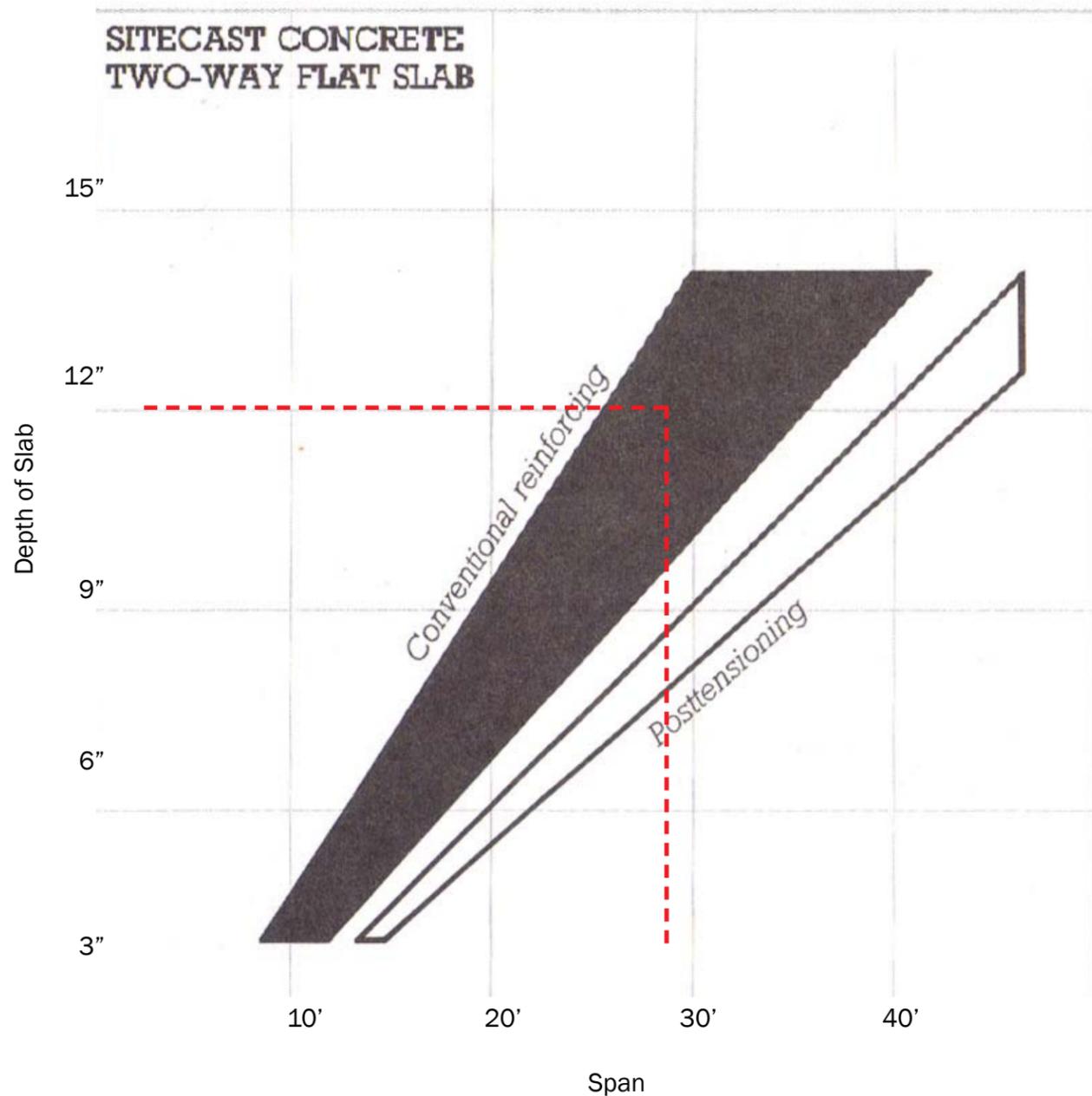
Floor 3: Bike Parking

Floor 2: Bike Parking

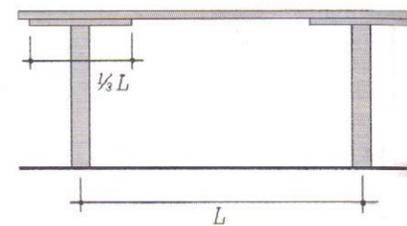
Floor 1: Tours, Retail, Grab N Go Cafe

Sublevel 1: Members Lounge Recharging, Locker Rooms, Dry Cleaning

Detail A2



DROP PANELS AND COLUMN CAPS



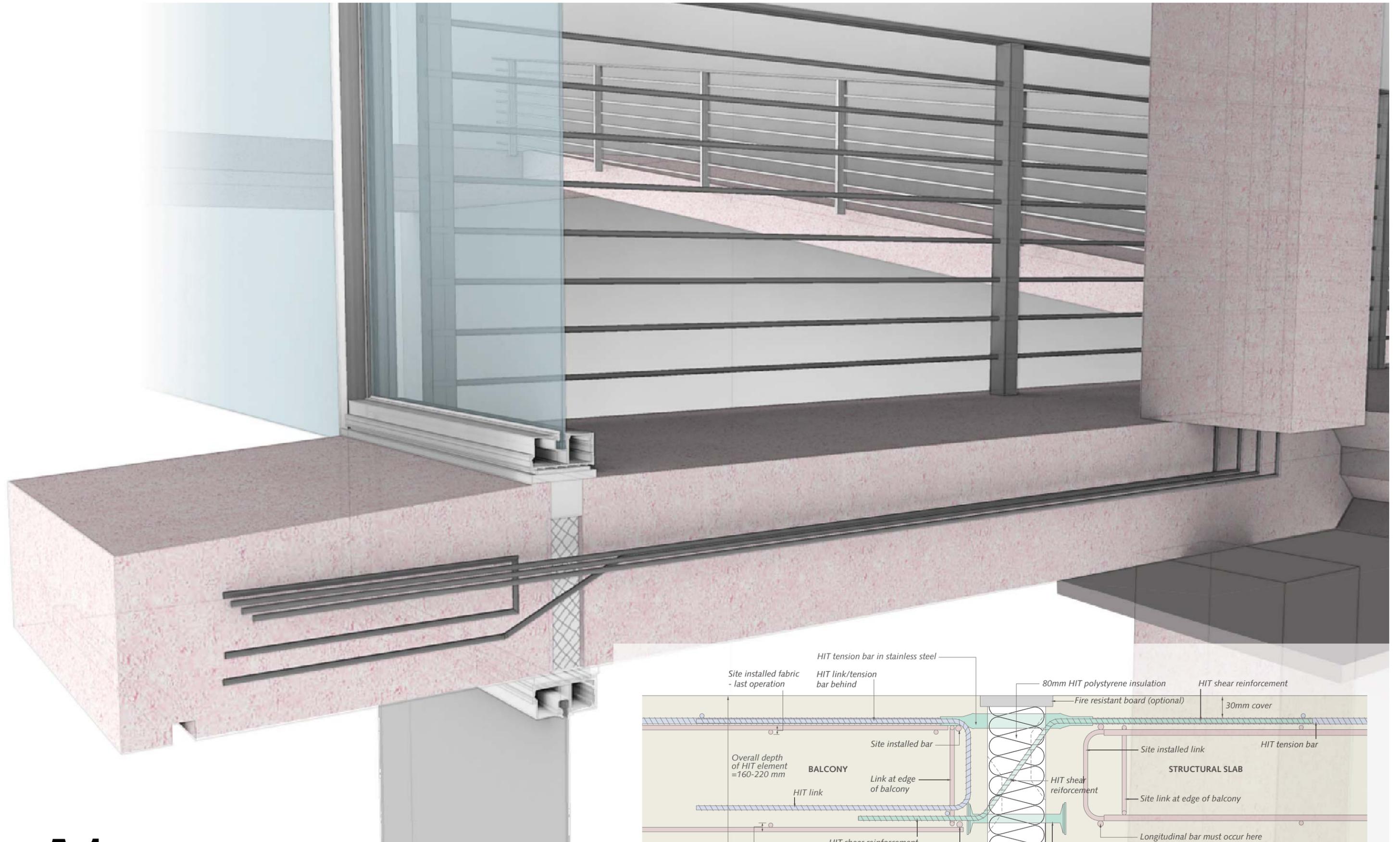
DROP PANEL WIDTH

Two Way Flat Slab Construction:

Two way flat slab construction is nearly as economical as flat plate construction, but features a strengthened junction between the column and floor slab. This allows for heavier loads and longer spans. The chart to the left identifies the maximum spans that can be achieved with a 10" slab, as is proposed for the ActiveTrans Headquarters.

Thermal Bridging:

Thermal bridging is a common problem at balconies or any place where a concrete slab protrudes past the building envelope to the exterior. This allows the transfer of the outdoor temperature through the concrete and into the building. In order to mitigate this problem, the ActiveTrans Headquarters utilizes a system developed by Halfen for apartment balconies, with a layer of rigid insulation sandwiched between the "balcony" and the structural slab. This thermal break prevents flow through the concrete. Using this system will allow the slab to poke out from the glass to emphasize the folding effect created on the facade of the building. See detail A1 for a closer look at this system.



A1

Cash for Clunkers:

The use of harvested car parts from the Cash for Clunkers program on the facade of the ActiveTrans Headquarters is not only a cheap way to skin the building, but it also ties the building into the network of bike sharing kiosks being developed throughout the city.

Tempered glass (recycled car window)

Steel tube structure (car axle)

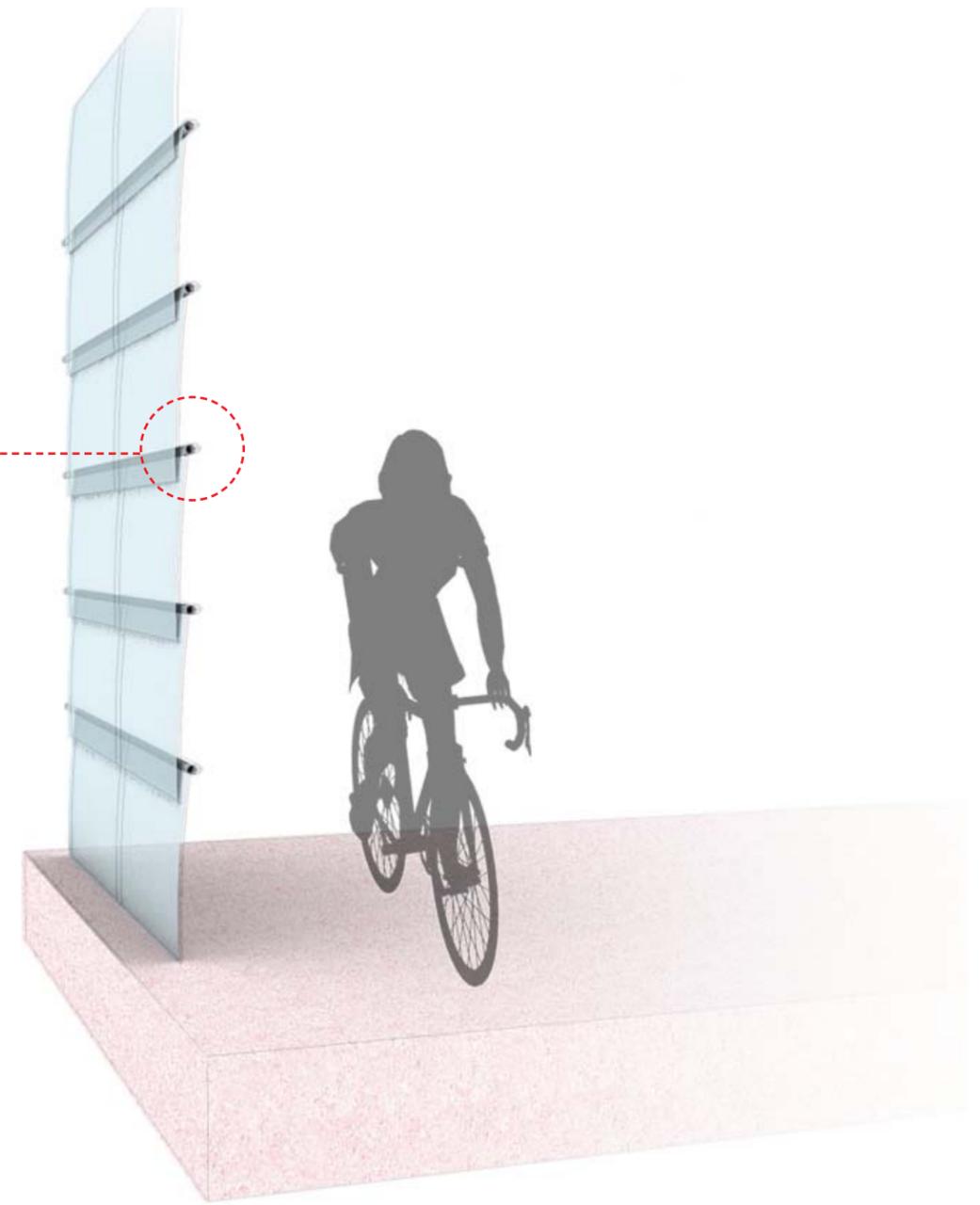
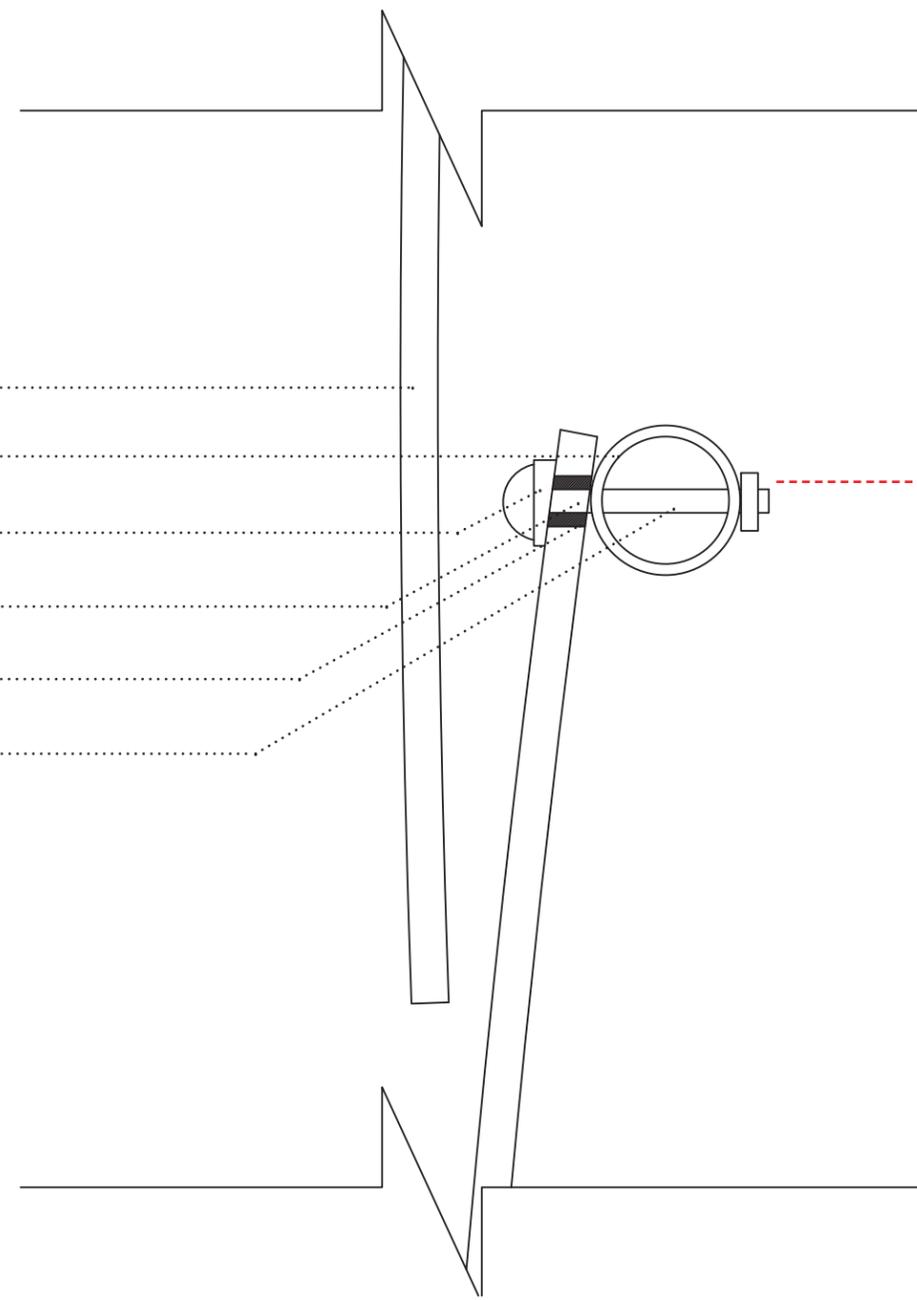
Neoprene Washer

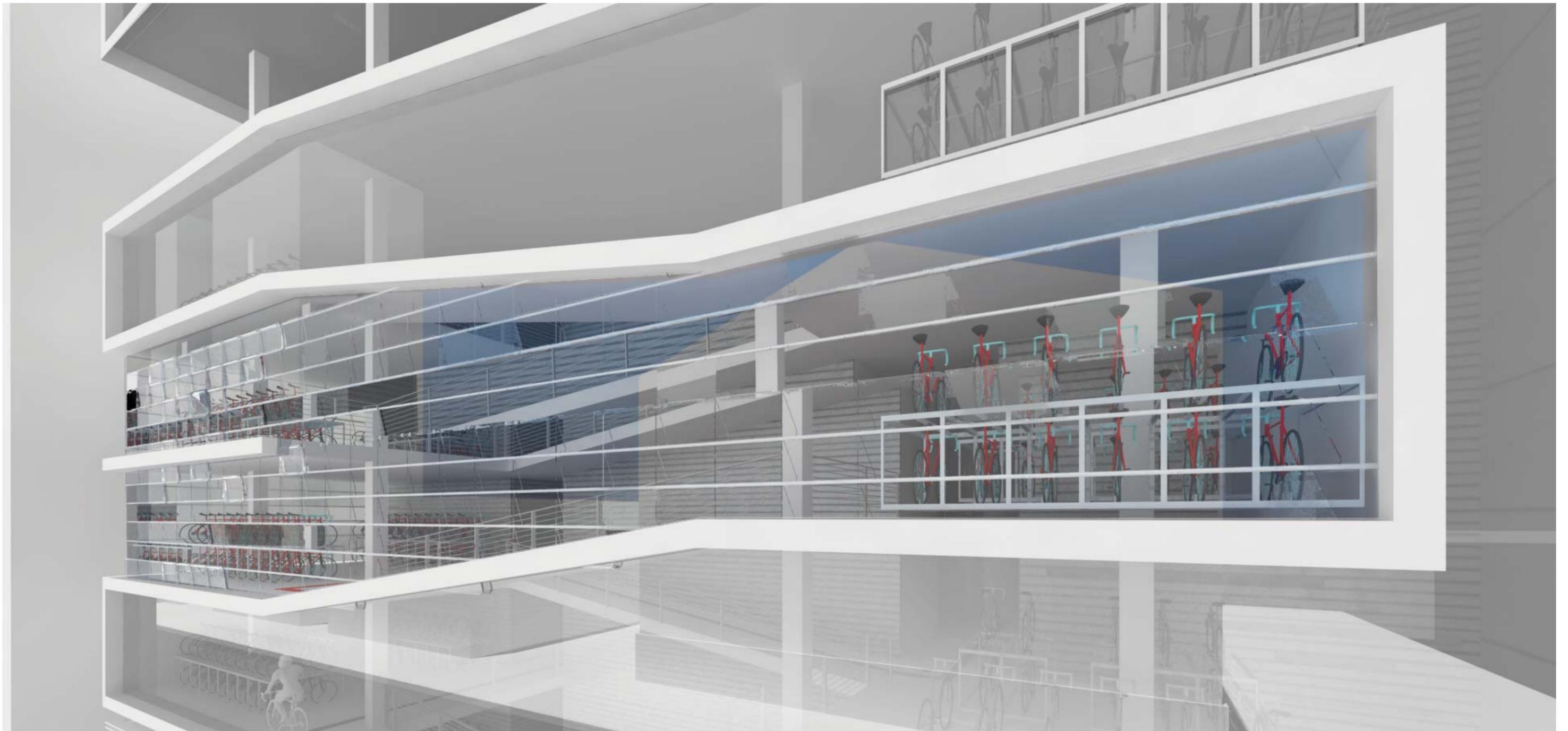
Pre-drilled hole

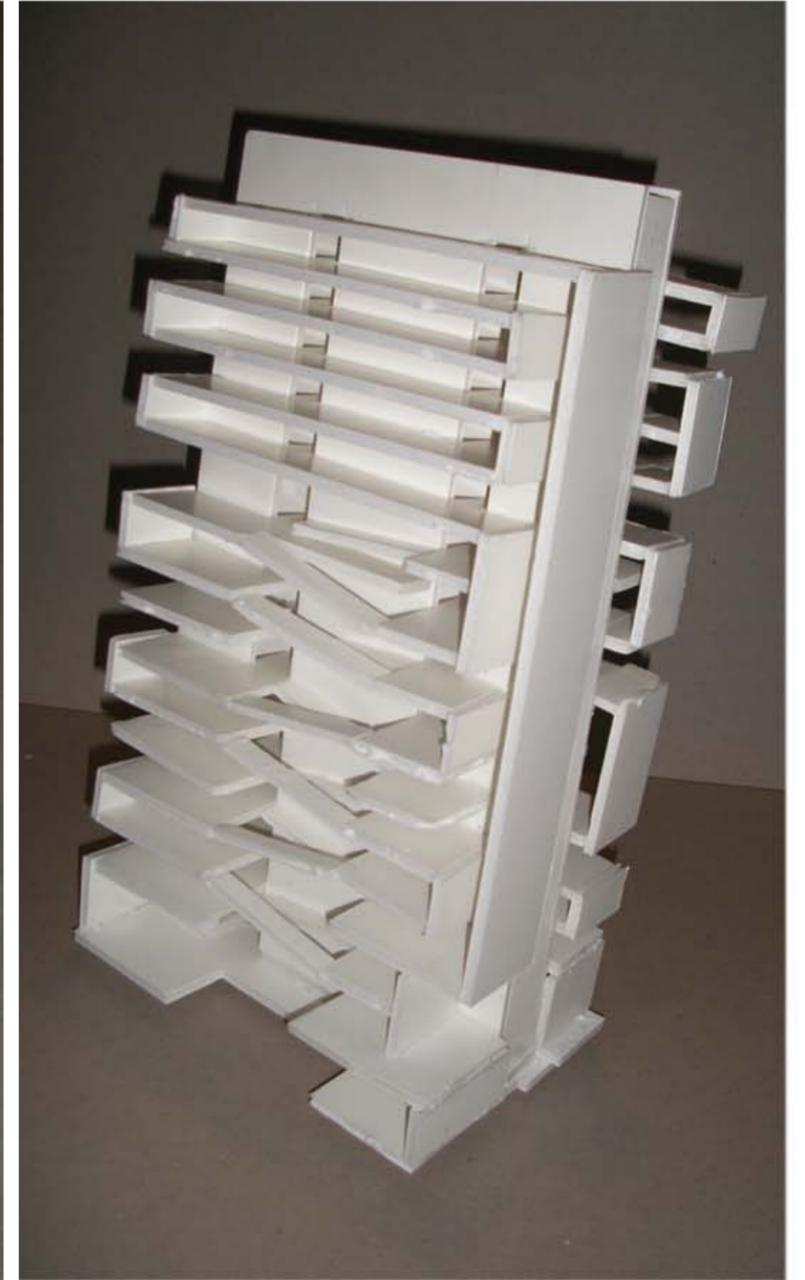
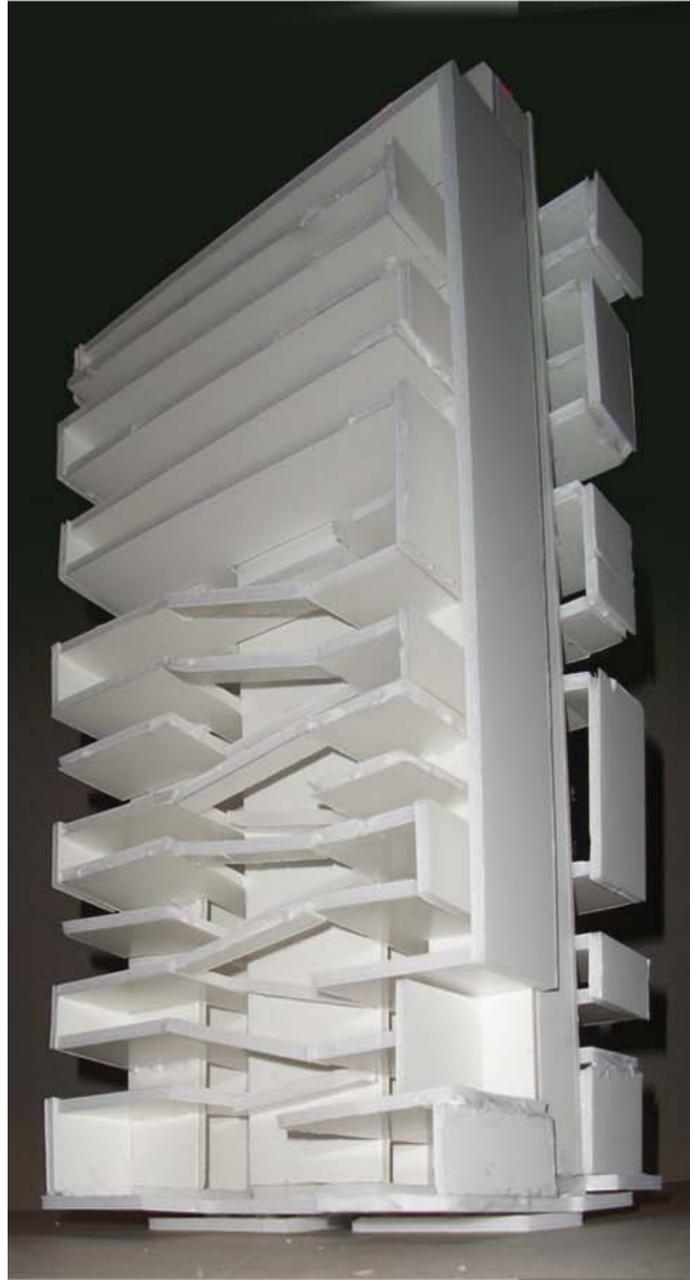
Gasket to allow movement

Bolt

The car windows are made from tempered glass which cannot be drilled into or cut after it is manufactured. The bolts in this assembly will pass through pre-drilled holes in the glass that were used by the mechanism responsible for the raising and lowering of the windows.







...Chicaoland's voice for better biking, walking and alternate transit....



07
APPENDICES

CLASS I BIKE PATH

Class I bike paths are generally defined as those which are completely separated from vehicular and pedestrian traffic. These are considered the safest types of paths.

Typically, due their large spatial requirements, Class I Paths occur in large open areas, in highway right of ways, abandoned railroad right of ways, river or canal beds or in new developments where bicycle transit is a high priority.

Types of Class I Paths:

Off Road Trail:

Elevated Path



CLASS II BIKE PATH

Class II bike paths are generally defined as those which are adjacent to, but separated from vehicular passageways.

These paths can be physically separate from traffic by a barrier, or simply by paints or some other means or demarcation. The advantage of these types of paths is that they require less land than a Class I path and can be directly incorporated into the existing infrastructure pattern.



CLASS III BIKE PATH

Class III bike paths are generally defined as shared lanes, where bicycles occupy the same right of way with vehicles and pedestrians.

Class III paths are widely used in Chicago as a means of making a street “bicycle friendly.”

These are inexpensive to add to an existing street, but they are widely considered to be ineffective and the least safe method of creating an infrastructure for bicycles.

It is recommended



SCRAMBLE INTERSECTION

When activated, a scramble signal indicates that all motor vehicle traffic should stop, allowing cyclists to cross the intersection in any direction to access one of several bike ways.

The data was collected through observation before and after the signal was installed in 2004.

The results indicated that the volume of cyclists using the intersection increased and the amount of illegal crossings (defined as crossing against a signal indication) significantly decreased after the scramble signal was installed. Specifically, 78.1% of all cyclists passing the intersection before the signal change did so illegally (against the signal) while after the signal was installed, only 4.2% of cyclists made an illegal crossing. The study also found a small amount of illegal right turns (3.3% in 895 signal counts) made by motor vehicles when the scramble signal was active.



ADVANCE STOP LINE

“The bike box, also known as the advanced stop line, is a treatment that allows bicyclists to move in front of vehicles when stopped at a signalized intersection.”

When the traffic light is red, bicyclists can overtake waiting motor vehicles and cut in front of them. The installation provides a storage area when there is heavy bicycle traffic, and sometimes a way to get closer to the center of the street to wait to make a left turn. Bicyclists may go straight across or turn left when the signal changes to green.

The intent of the Advance Stop Lines is to reduce the risk of conflict between cyclists and drivers, especially when cyclists are attempting to proceed straight through the intersection and drivers are attempting to turn right across the cyclist's path, also known as a right hook conflict. More than anything, these bike boxes make bicyclists more visible on the road, thus increasing safe interactions on the road.

An in-line bike box becomes increasingly impractical on wider streets, because the bicyclist must cross more lanes of traffic to reach the left turn position, and the required warning time becomes longer. A British Web site suggests that a bike box is questionable when the bicyclist must cross into the second travel lane, and undesirable with more lanes. An in-line bike box is therefore not practical at intersections where left turns are most difficult.



STREET RETROFIT GUIDELINES

US Department of
Transportation

The United States Department of Transportation provides guidelines for the retrofitting of streets to accommodate new bikeways

These measures can be taken to ensure a successful integration of a new bikeway. Current infrastructure is maxed out to its full potential, so in order to ass new infrastructure, the existing conditions must be re-thought and retrofitted to truly create a bike friendly city.

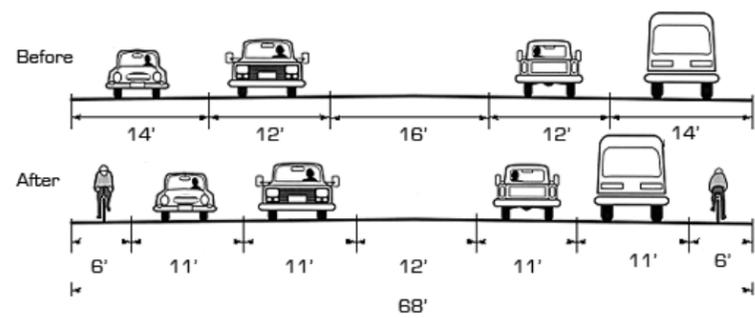


Figure 2.5
Narrowing of Travel Lanes
 The need for full-width travel lanes decreases with speed

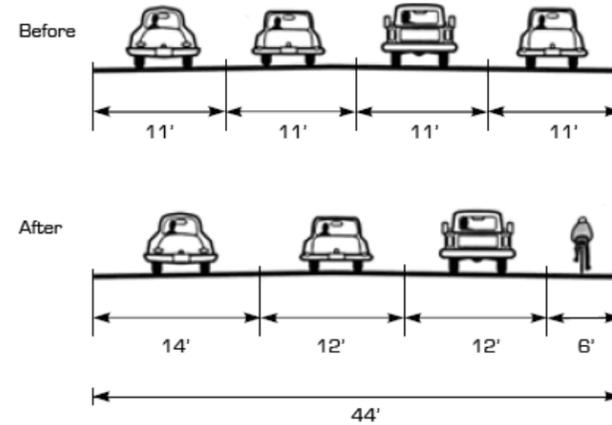


Figure 2.6
Reduction of Number of Travel Lanes
 The need for full-width travel lanes decreases with

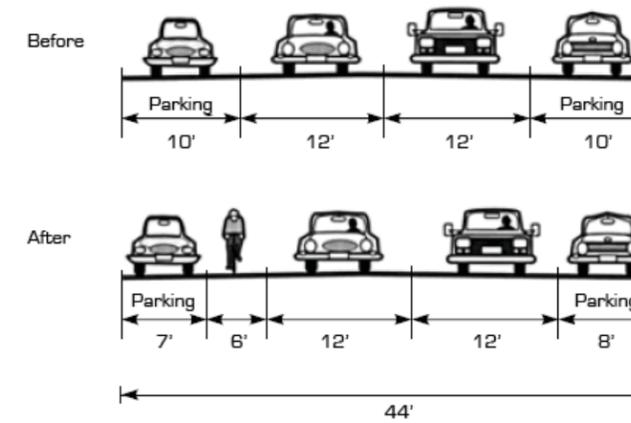


Figure 2.7
Narrowing of On Street Parking
 Bicycle lanes next to on-street parking can be problematic if enough space is not provided to prevent bicyclists from riding into an opened door. The AASHTO Guide recommends a combined width of 13 ft for combined width of parking and bike lanes

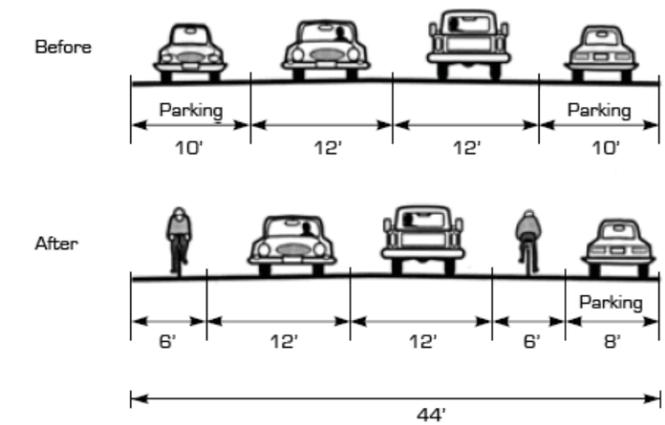


Figure 2.8
Removal of On Street Parking
 The need for full-width travel lanes decreases with speed
 •Up to 40 km/h (25 mi/h), travel lanes may be reduced to 3.0 or 3.2 m (10.0 or 10.5 ft).
 •From 50 to 65 km/h (30 to 40 mi/h), 3.3-m

BIKE SHARING PROGRAMS: BICING

Barcelona, Spain

In order to use the Bicing program, users must purchase a one year membership. Currently the program consists of over 200 rental stations which distribute over 3,000 bicycles. The stations are located approximately 300-400 meters apart in the mostly flat parts of the city. The program is expected to double in size, expanding service to 400 stations and 6,000 bicycles in service.

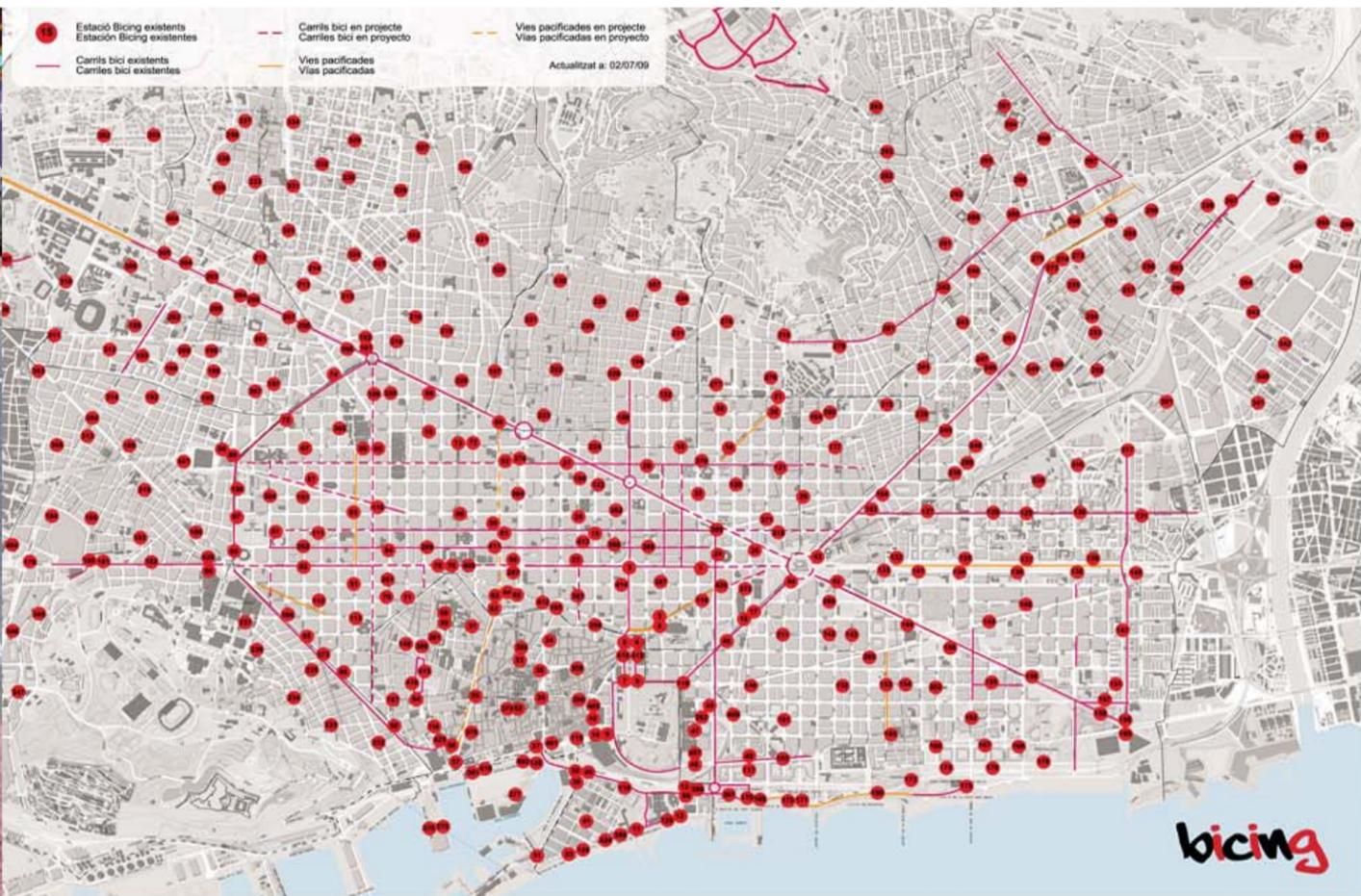
To check out a bike, a subscriber swipes their card at a kiosk, which unlocks the bike for use. The first 30 minutes are free, and after the first half hour, each half hour costs 0.50 Euro for up to 2 hours. Each hour after the first 2 hours costs an additional 3 Euro and after multiple 2 + hour uses, the membership can be cancelled.

This subscription system was specifically designed to prevent tourists from using the system and has been widely scrutinized.

“The system is paid for mostly by local car drivers with an effective on street parking control distributed throughout a large part of the densely populated inner-city. This money is then used to pay 2.23 million Euro annually to the system operator for a period of ten years. The yearly user fee is 30 Euro, which makes it the city’s cheapest public transport service.”

The increased rates after half and hour and 2 hours has been widely successful in ensuring that most trips average 10-15 minutes, meaning each bike is used multiple times each day. Currently there are over 90,000 subscribers to the program.





BIKE SHARING PROGRAMS: BIXI

Montreal, Quebec, Canada

BIXI was launched in 2009 in Montreal's center city core. Currently the program consists of 3,000 bikes available for rental at 300 stations. A second phase is planned which will expand the system to 5,000 bikes and 400 stations. BIXI will also be setting up programs in Boston and London in the coming years.

The BIXI system is remarkably simple and each station can be set up or torn down in about half an hour. The stations and bikes are available for use from May-November and are torn down during the harsh Winter months.

"The location of a BIXI bike station is determined by several parameters, including population density, points of interest and activities (universities, bike paths, other transportation networks, and data on travel patterns of the general public.)

The BIXI system relies heavily on new technology, including an interactive online map system that gives potential users information about each bike station, including how many bikes are available for checkout and also how many docking stations are open for bike return. The map is compatible with mobile phones as well so users can get real time information while they are out.

The system works on two levels, 24 hour check-outs for one time users and year long subscribers:

24-hour access:

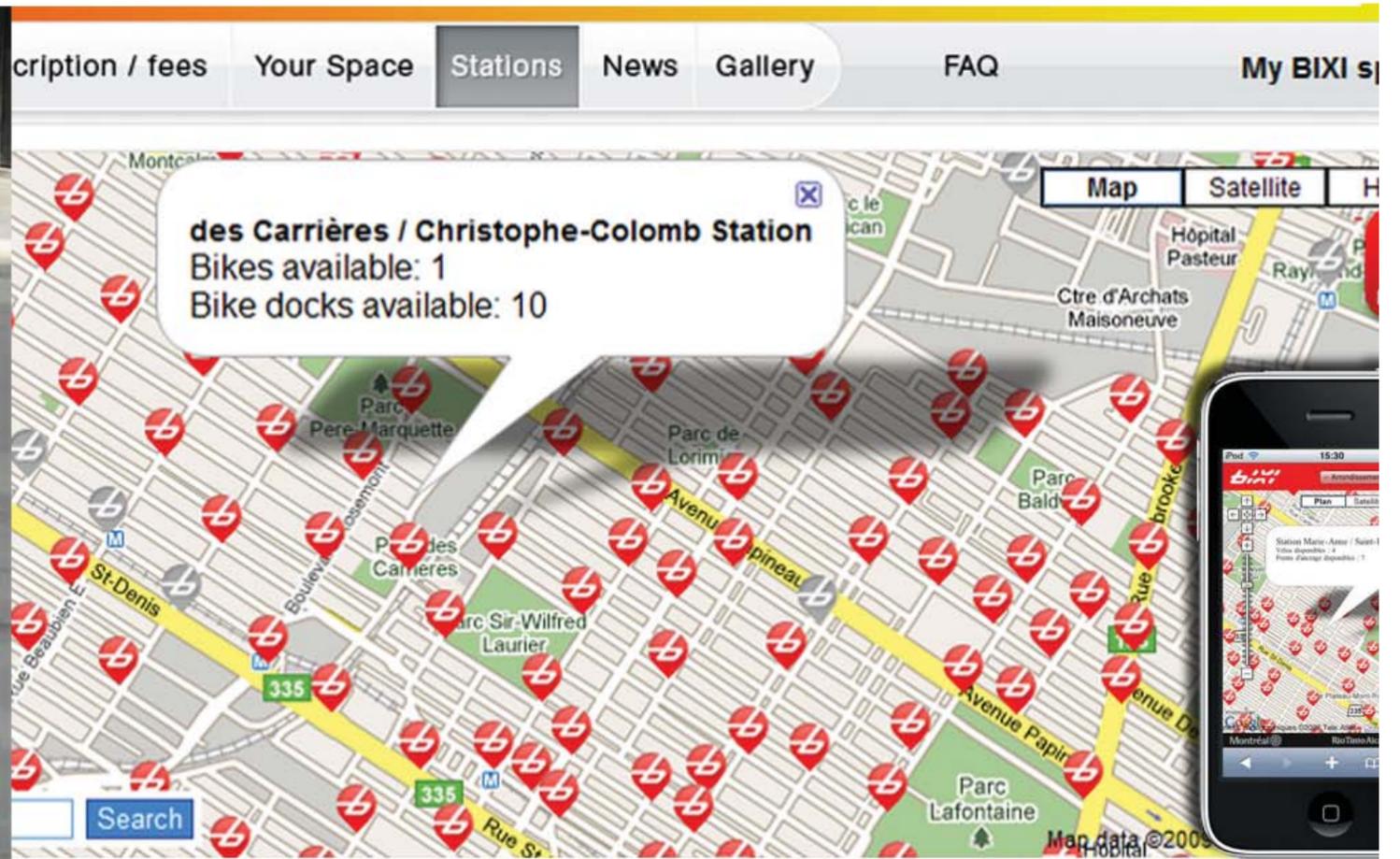
For each trip, the first 30 minutes are free, usage fees are charged for longer trips

1. Go to the pay station and choose the icon representing a bike, then read and accept the usage contract.
2. Pay by inserting your credit card (Visa or MasterCard). A hold of \$250 is placed on your credit card. Your credit card serves to identify you as a user, so only one 24-hour access can be charged to your credit card at any one time.
3. Print or post your unlocking code on the screen. It is valid for 5 minutes. If you take longer than that, go to step 8.
4. Enter your unlocking code on the keypad of the bike dock of your choice.
5. When you see the green light turn on, pull the handlebars firmly toward you to release the bike.
6. Your 30 free minutes start now!
7. Return the bike to any BIXI station. Push the front wheel firmly into any empty bike dock.

Subscription:

1. Insert your BIXI-key directly into the bike dock of your choice. No need to use the pay station.
2. When the green light turns on, pull the handlebars firmly toward you to release the bike.
3. Your 30 free minutes start now!
4. Return the bike to any BIXI station. Push the front wheel firmly into any empty bike dock.
5. At any time, check out information about your trips at your BIXI space.





BIKE SHARING PROGRAMS: VELIB

Paris, France

Velib' is currently the largest bike rental program in the world with over 20,000 bicycles which can be rented from over 1,450 stations throughout the city every 300 meters. Each rental terminal displays information about neighboring stations, including location, number of available bicycles and open stands.

In order to use the system, users need to take out a subscription, which allows for an unlimited number of rentals. Subscriptions can be purchased at 1 Euro per day, 5 Euros per week or 29 Euros per year. The rental is free for the first half hour of every individual trip; an unlimited number of such free trips can be made per day. A trip that lasts longer than 30 minutes incurs a charge of one to four Euros for each subsequent 30-minute period.

“The system is financed by the JCDecaux advertising corporation, in return for the city of Paris signing over the income from a substantial portion of the on-street advertising hoardings. JCDecaux paid start-up costs of about \$115 million and employs the equivalent of about 285 people full-time to operate the system and repair the bikes for 10 years. The city receives all revenue from the program as well as a fee of about \$4.3 million a year. In return JCDecaux receives exclusive control over 1,628 city-owned hoardings; the city receives about half of that advertising space at no charge for public-interest advertising.

As of August 2009, about 16,000 bikes have been replaced due to vandalism, 8,000 stolen, and 100 pulled from the Seine River.



BIKE SHARING PROGRAMS: VELO'V

Lyon, France

The Velo'V program is run in conjunction with the advertising company JCDecaux. In exchange for advertising space on bus stops and benches throughout the city. This allows the program to be provided at a cost neutral basis for the city, and at a very low cost for users. Currently, over 3,000 bicycles are provided at over 350 stations citywide. Bikes can be checked out with a subscription card that is purchased online. In 2006 it was reported that over 22,000 rentals were made per day by the users of the program.

“Rentals of up to 30 minutes are free and subsequent hours cost between 0.50 Euro and 1 Euro per hour dependent on subscription type. However the system is in practice virtually free to users as over 90% of journeys last less than 30 minutes. The subscription costing 1 Euro for a week or 5 Euro for a year includes a credit card based deposit mechanism to encourage bicycles to be looked after and returned.”

“Vélo'v bicycles, along with a lock and basket, contain electronic components which allow the bicycle to be identified by the stations, allow tracking of kilometers traveled, tracking of the condition of the bicycles, (lights, brakes, dynamo), and collection of detailed statistics about the usage of the bicycles.”





GREEN STREETS

Portland, Oregon

The Chicago Bike 2015 Plan seeks new, innovative bicycle friendly options for the City's streets, including colored bike paths and bike only streets. These so called "Bike Boulevards" also create an opportunity to incorporate environmental sustainability into the program by capturing rainwater which would typically become waste as runoff from paved surfaces.

Green streets are an innovative way to divert water from sewers and replenish groundwater supply, all the while beautifying and softening the urban landscape. These green streets also provide a layer of safety for pedestrians and cyclists and create habitats and much sought after green space in the urban environment.



Curb Extension:
Extend out into the street to provide a location for vegetation to capture rainwater. Can also integrate bike paths and pedestrian crossings



Street Planter:
Behind the curb, adjacent to the sidewalk. Ideal for locations with space limitations, as street parking and overall street width is not changed.



Rain Garden:
For locations with ample space. Can also be used to soften or adjust intersections that are unsafe for pedestrians or cyclists.



Simple Green Street:
Excavation behind the curb with curb cuts which allow for inflow and outflow.

INDOOR BIKE PARKING

The ActiveTrans headquarters will function largely as a bicycle parking garage. The average dimensions of an adult bicycle will be considered in the planning and design of the building, and can be used as a rubric for measuring the success of a concept. There are also alternate options for the configuration of bicycle parking, as shown below:



14 SF/Bike Parking Stall:



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