

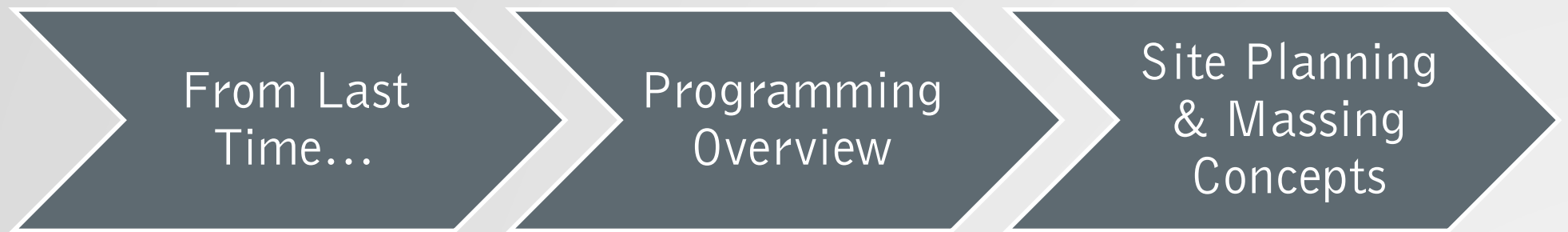
PROGRAMMING RECOMMENDATIONS + MASSING CONCEPTS

Phases 3a-3c & 4a

Center for Excellence in Manufacturing (CEM)

March 05, 2018

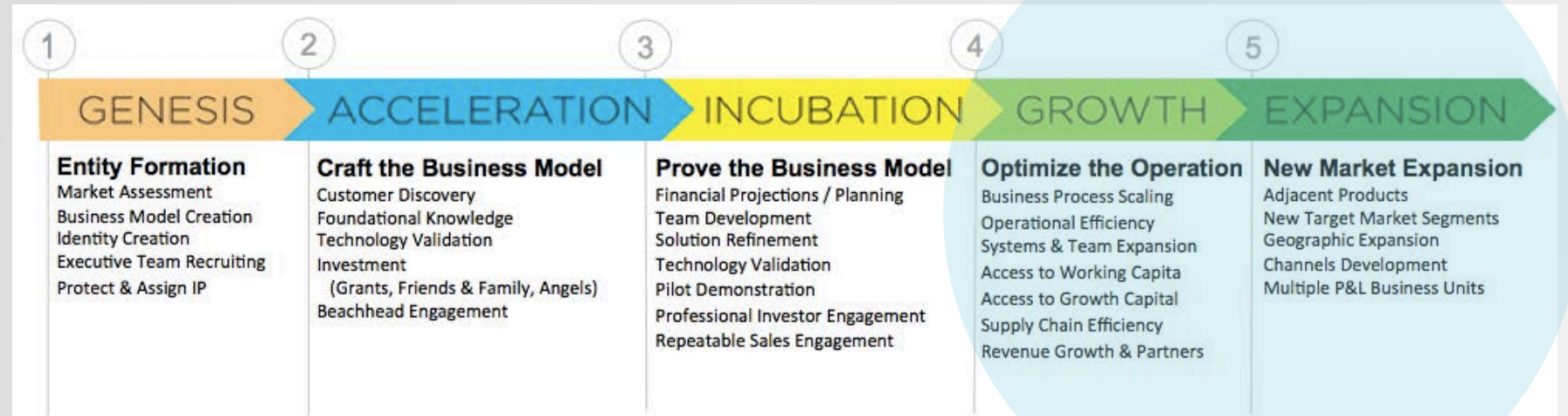
Agenda



This is an **extraordinary** project that requires an **extraordinary** approach.

This proposal does not describe an ordinary real estate feasibility study; rather, it outlines a **roadmap** for an **economic ecosystem**.

EARLY STAGE DEVELOPMENT CONTINUUM



USE CASE OPTIONS

note: working titles for discussion only

1. **Center for Excellence in Manufacturing (CEM):**
Recognized world class center for all aspects of the future of manufacturing
2. **Continuing Education/Workforce Development Center (Edu):** *Recognized as the global center for the development of manufacturing talent*
3. **Advanced Technology Business Center (BusCtr):**
Regional architectural icon attracting a cluster of world class service providers

CEM GOALS

Attract
companies

Support
companies

Accelerate &
manage growth

Attract advisors

Provide a robust
workforce

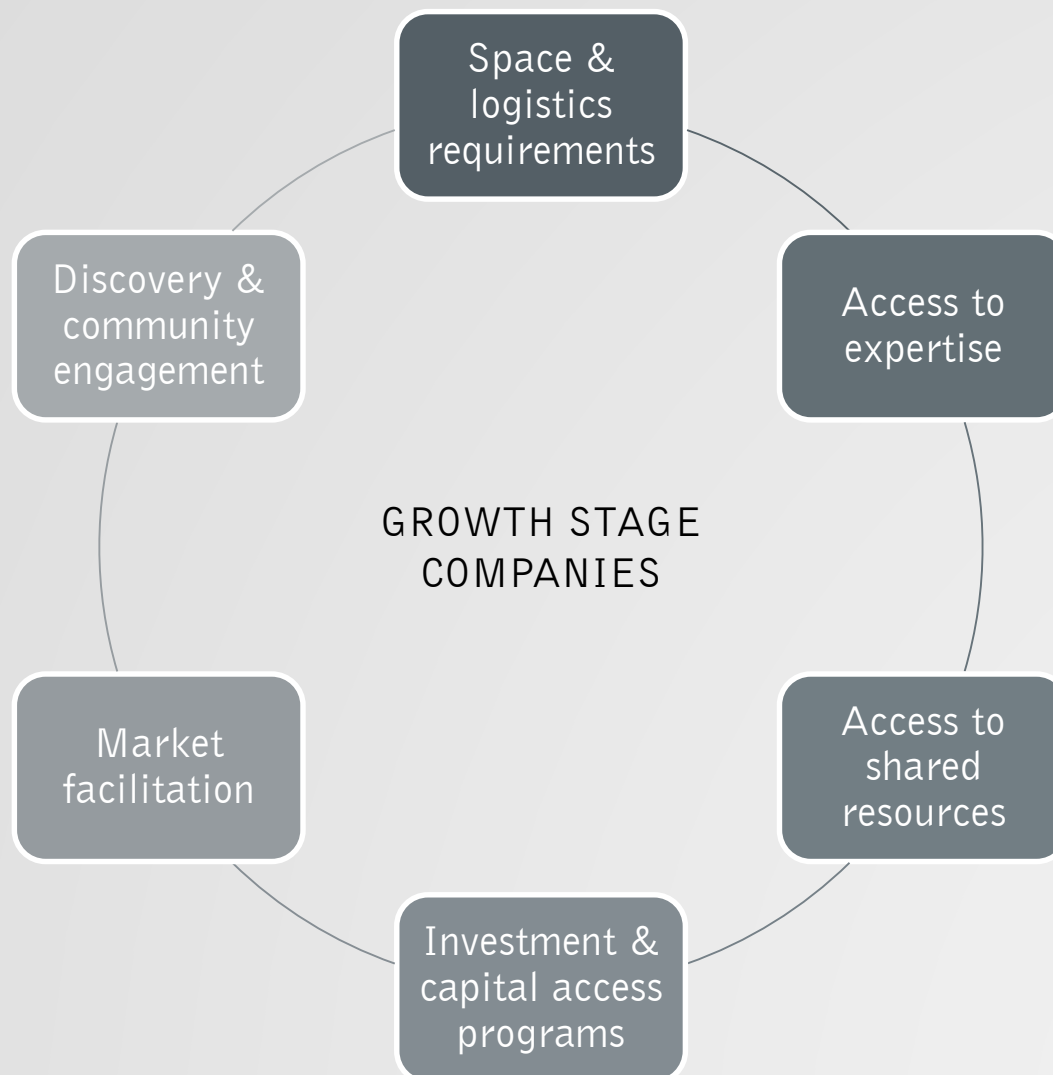
Create market
signals & drive
adoption

Provide access to
capital

Secure funding
for the CEM

Drive community
involvement &
support

COMPREHENSIVE SUPPORT FOR GROWTH STAGE MANUFACTURING COMPANIES



		Required Tasks								
		Attract Companies	Support Companies	Accelerate & Manage Growth	Attract Advisors	Workforce Development	Drive Market Adoption	Provide Access to Capital	CEM Funding	Drive Community Support
Programmatic & Space Elements	Physical / Logistics	✓	✓							
	Flex Office Space	✓	✓						✓	
	Advanced Prototyping Center	✓	✓			✓	4		✓	
	Manufacturing / Assembly Area	✓	✓	✓						
	Warehousing	✓	✓	✓						
	Shipping / Receiving		✓	✓						
	Expertise									
	Knowledge Transfer	✓	✓		✓	✓	2			
	Company Advisors	✓	✓		✓					
	Sector Engagement Groups	✓	✓		✓					
	Accessible Workforce	✓	✓	✓		✓			✓	✓
	Access to Services & Resources									
	Shared Equipment Networks	✓	✓	✓			3		✓	✓
	Software Partner Network	✓	✓							
	Shared Services Network	✓	✓	✓	✓				✓	✓
	Service Provider Zones				✓					
	Investment & Capital									
	Investor Pitch Days		✓	✓	✓			✓		
	Working Capital Programs	✓	✓	✓				✓		
	Export Programs		✓	✓			✓	✓		
	Market Facilitation									
	Test & Demonstration Programs	✓	✓							✓
	Group Purchase Programs		✓	✓			✓			✓
	Grants Development	✓	✓	✓			✓	✓	✓	
	Local & State Government Relations		✓	✓			✓	✓	✓	✓
	Discovery & Community Events									
	Speaker Series	✓			✓				✓	✓
	Innovators Happy Hour	✓			✓					
	Thought Leadership Events	✓			✓				✓	✓
	Industry Summits	✓			✓		✓		✓	✓
	Hackathons	✓			✓					
	Immersive Discovery Center	✓			✓				✓	✓

DISCOVERY & COMMUNITY ENGAGEMENT

- Tech showcases
- Speaker series
- Thought leadership / industry events
- Immersive experience showcase
- Impact reporting
- Community open houses

ACCESS TO EXPERTISE

- Manufacturing specific
 - DfM, Lean Mfg, Outsourcing, MRP/ERP, Regulatory
- Enterprise scale
 - Supply Chain, Cybersecurity, Sales & Channels, Perf Management
- Maturing business
 - Perf Mgmt, Org Design, Staffing, Employment, Accounting, Cashflow Management
- Investment sourcing & prep

ACCESS TO SHARED RESOURCES

- Contract services
 - Accounting, HR, IT, Legal, PR, Sales, etc
- Design & manufacturing
 - Web Development, Industrial Design, Regulatory Testing, Contract Manufacturing
- Equipment
 - Prototyping, Mfg Lines, etc
- Space
 - Warehousing, Assembly, Storage

PHYSICAL SPACE & LOGISTICS

- Flexible office space
- Convening areas
- Shared prototyping
- R&D / manufacturing / assembly
- Warehousing & storage
- Shipping & receiving

INVESTMENT & CAPITAL ACCESS PROGRAMS

- Venture Capital
 - Support, intros & engagement on Series A and beyond
- Working Capital
 - Venture Debt, Factoring, Creditworthiness & higher risk debt programs
- Export / Import
 - Loans & Loan Guarantee programs
 - Currency Hedging

MARKET FACILITATION

- Test & demonstration programs
- Demand creation partnerships
- MUSH deployment programs
- Community deployment grants
- Policy engagement

STAFFING IMPLICATIONS

- Kickoff
 - Director
 - EIR
 - Development Director
 - Marketing / Events Management
- At Scale
 - Sector Leads
 - Community Managers
 - Grants Management & Support
 - Investor Relations
 - Back Office

RECOMMENDATIONS

- Pre-commitment efforts
 - Halo marketing campaign strategy & execution
 - Strategic partner alignment
- Pre-building efforts
 - Temporary space
 - Community & awareness elements
 - Recruit companies & advisors

CENTER FOR EXCELLENCE IN MANUFACTURING

*Recognized world class center for all
aspects of the future of
manufacturing*

5 March 2018

CENTER FOR EXCELLENCE IN MANUFACTURING

Mission

Provides learning, advisory services, thought leadership, events, ecosystem activation around advanced, smart, intelligent manufacturing

Users

RESIDENT USERS: Supply Chain Service Providers (services to help companies scale), Business Service Providers (marketing, sales, bus dev, legal, regulatory, tax, finance, etc.), International Entities (city states, global wealth funds, academic, global, corporate investment departments), Expo Users/Gallery Display Providers, Early Stage, Trade Schools

CENTER USERS: Existing MFG'ers in Fremont Area, Academic Institutions (Professors, Students, Leadership), Business Associations, Thought Leadership Attendees (Prospective Employees, Policy Makers, Visionaries), Government Policy Staff, Corporate Employees (Strategic Planning, R&D, Engineering Execs, MFG Management)

CENTER FOR EXCELLENCE IN MANUFACTURING (CONT.)

- *Make Fremont & the WSID the center of gravity for smart manufacturing by convening best practices, leading practitioners, resources, funding sources and market facilitation programs*
- Emphasis on manufacturing oriented cleantech & medical devices companies
- Target is growth oriented companies hitting their “scale-up” stride & connecting them to resources to help them succeed and grow.

CENTER FOR EXCELLENCE IN MANUFACTURING (CONT.)

PROGRAMMING BUILT AROUND SIX KEY AREAS:

- 
- Knowledge Training and Advisory Engagement
 - Shared Services & Affiliate Engagement
 - Market Facilitation
 - Access to Capital: Venture, Debt, Loan Guarantees, etc
 - Workforce Development
 - Community Involvement

CENTER FOR EXCELLENCE IN MANUFACTURING (CONT.)

ADVANCED

- The insertion of new technology, improved processes, and management methods to improve the manufacturing of products.

SMART

- The ability to solve existing and future problems via an open infrastructure that allows solutions to be implemented at the speed of business while creating advantaged value.

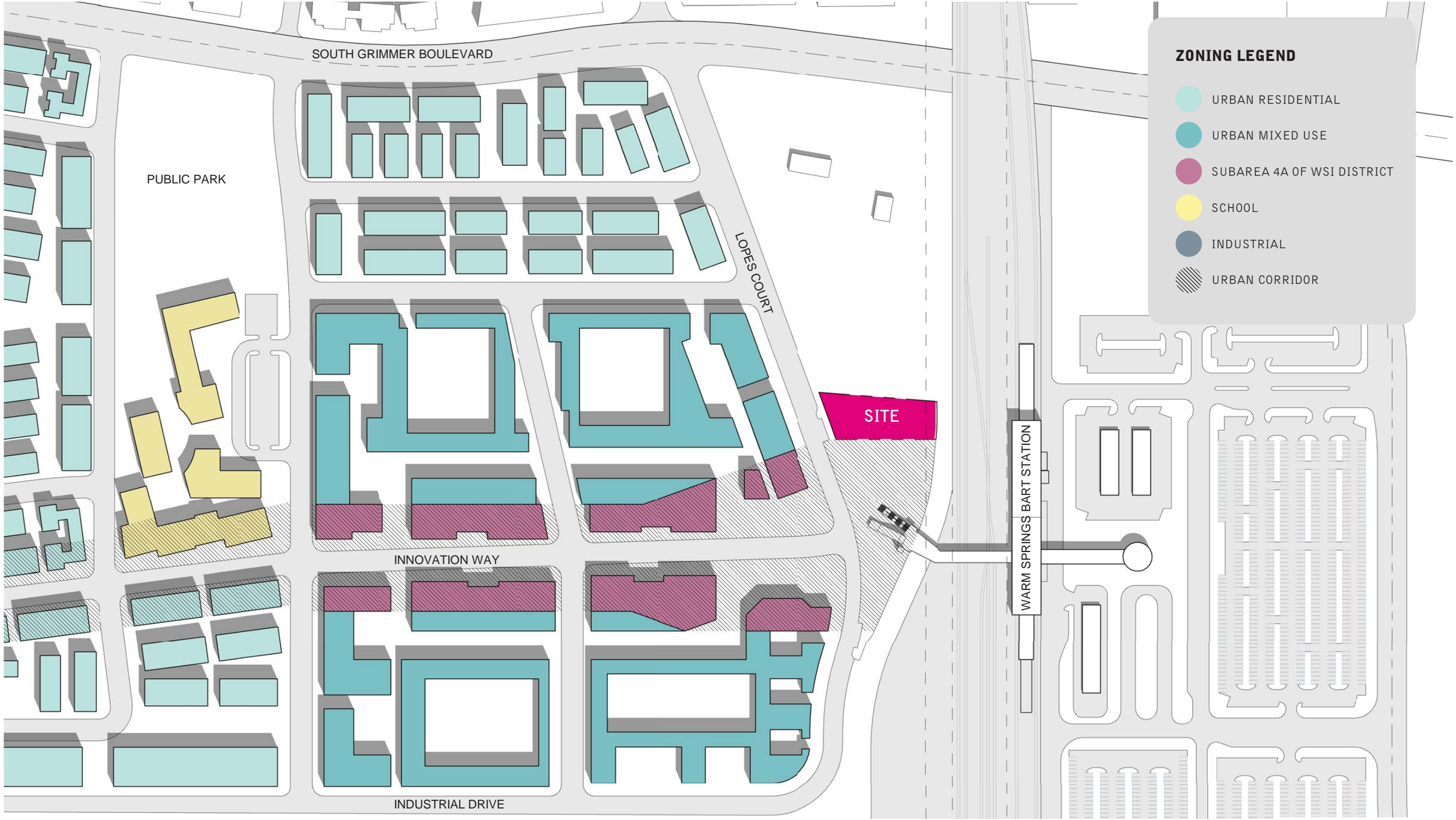
INTELLIGENT

- The use of production process technology that can automatically adapt to changing environments and varying process requirements, with the capability of manufacturing various products with minimal supervision and assistance from operators.

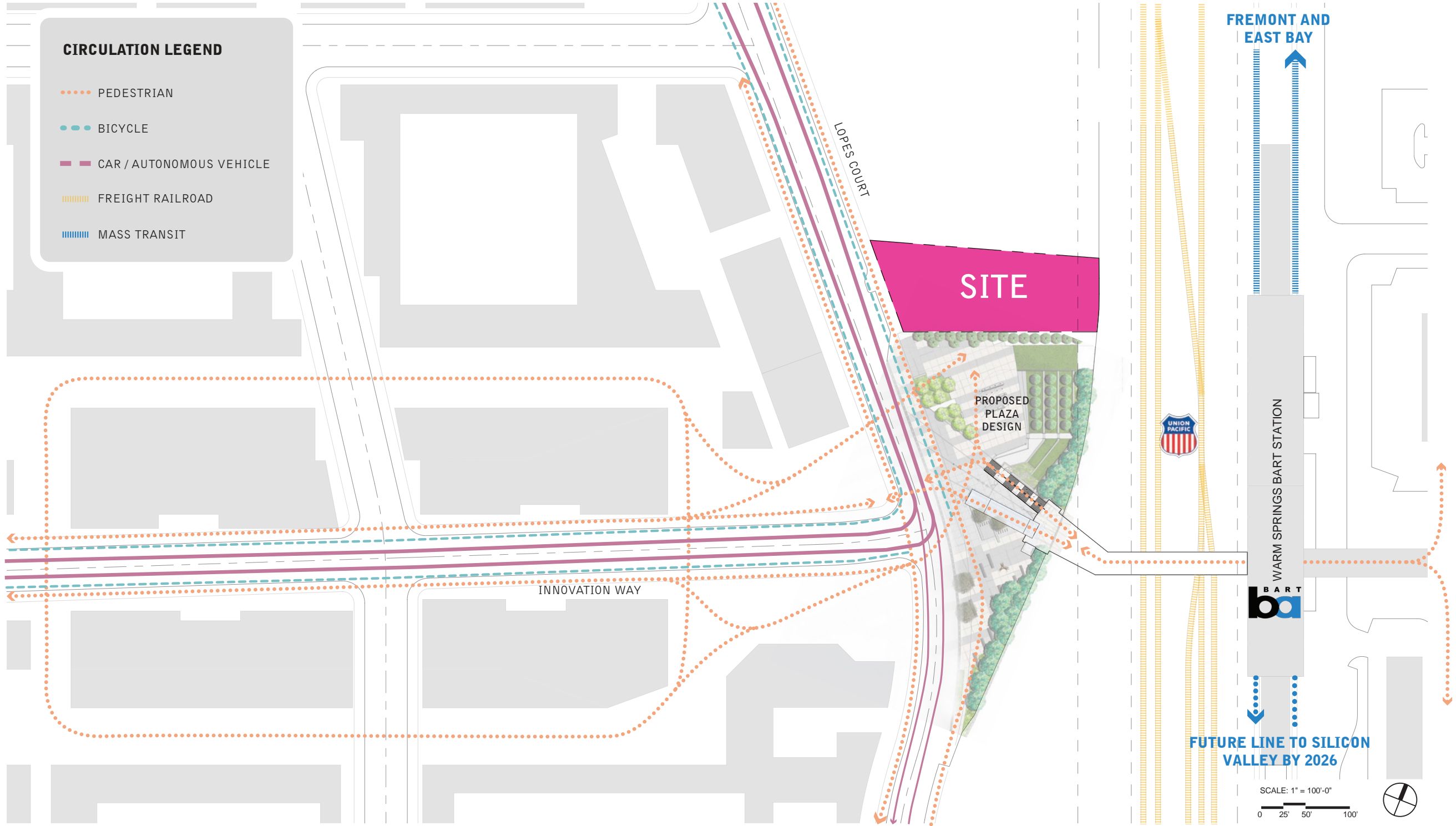
CENTER FOR EXCELLENCE IN MANUFACTURING (CONT.)

- Greater emphasis on convening space of all kinds
- Requires dedicated office space
- Requires flexible office space
- Limited co-working
- Prototyping and Flex Manufacturing (small scale) located outside the building. Do not want to compete with contract manufacturers
- Demonstration and Expo space required

masterplan + zoning

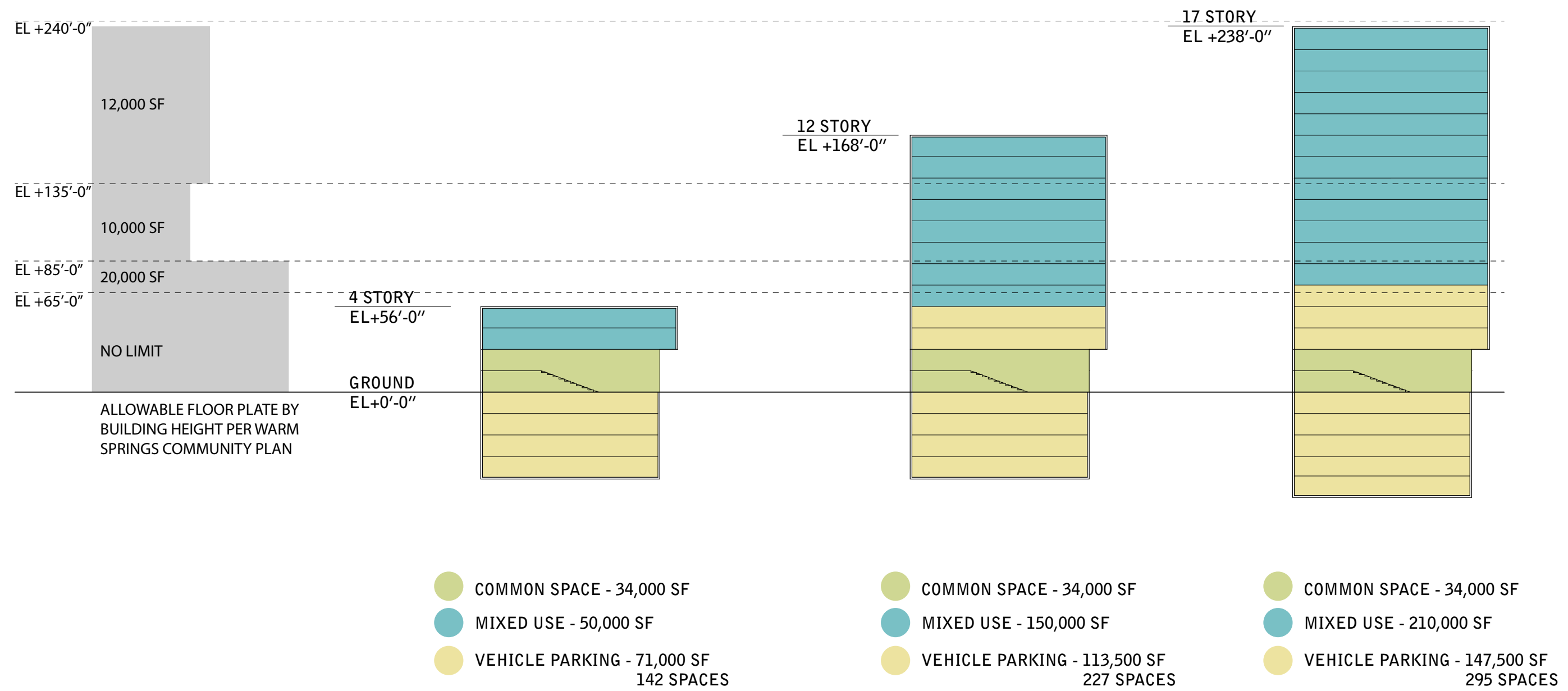


site circulation: close up



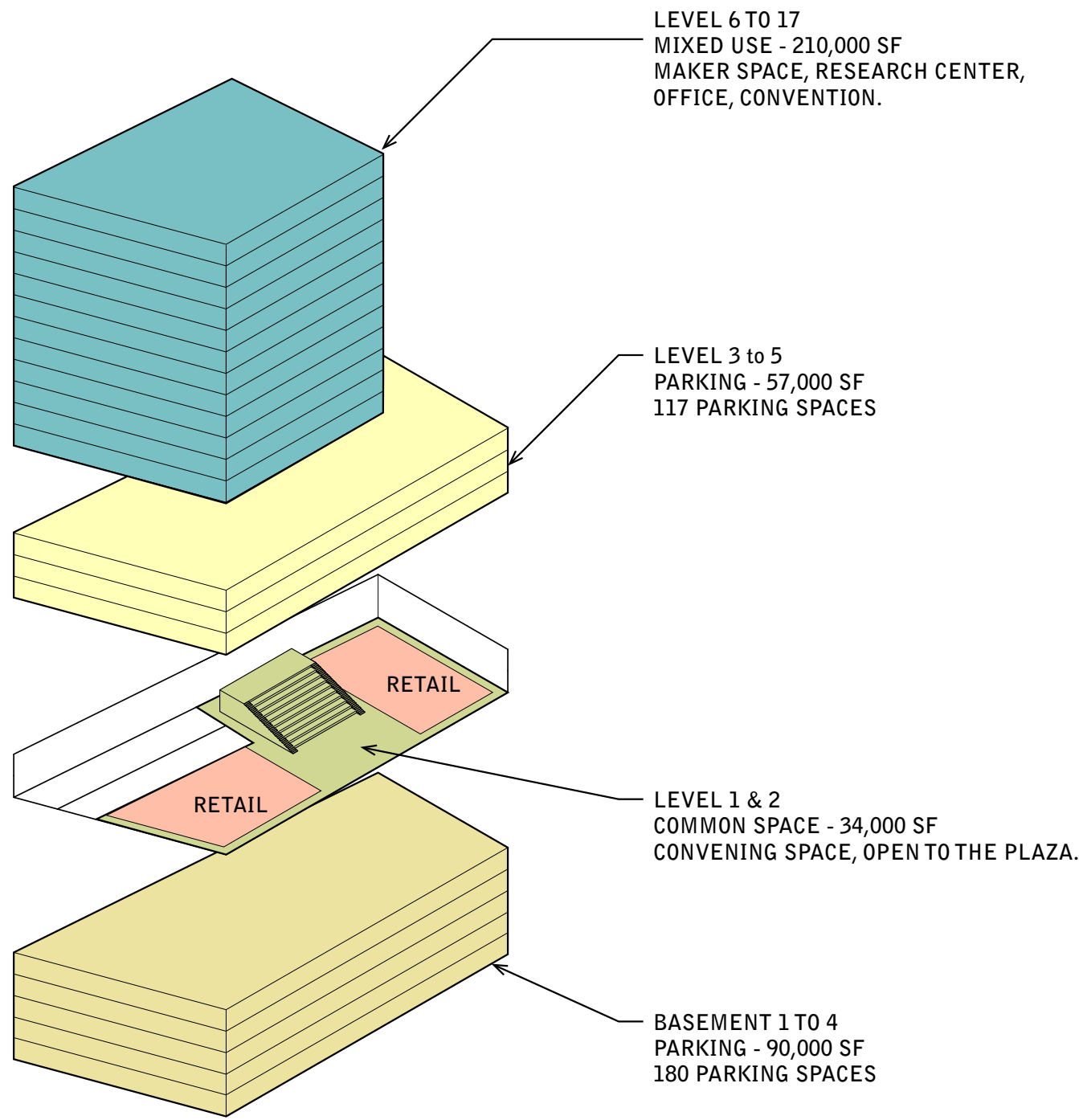
massing + zoning

NOTE: PREVIOUS MASSING FROM 1/29/18 MEETING



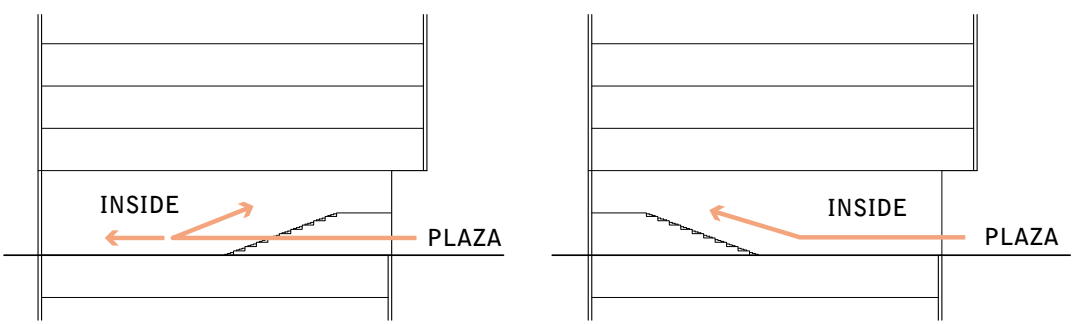
* PARKING RATIO:
ASSEMBLY SPACE: 1 SPACE / 5 SEATS
RETAIL/F&B: 5/1000SF
CREATIVE OFFICE: 2/1000SF
ONSITE PARKING: 500SF/STALL

massing + zoning

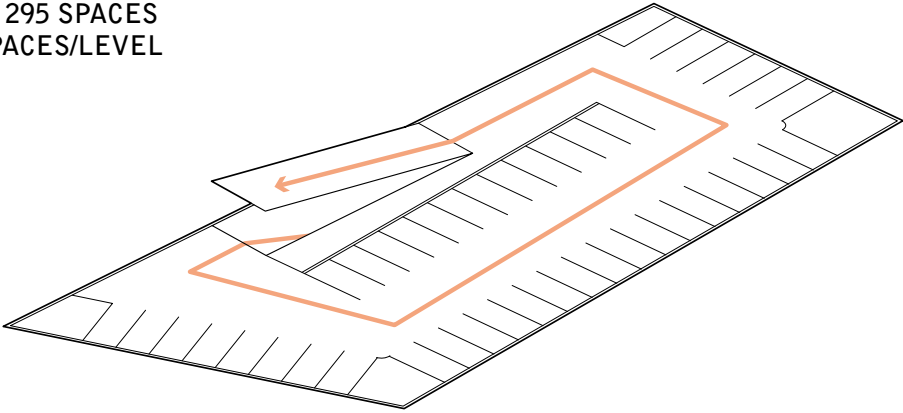


NOTE: PREVIOUS MASSING FROM 1/29/18 MEETING

LEVEL 1 & 2 - CONVENING SPACE STUDY



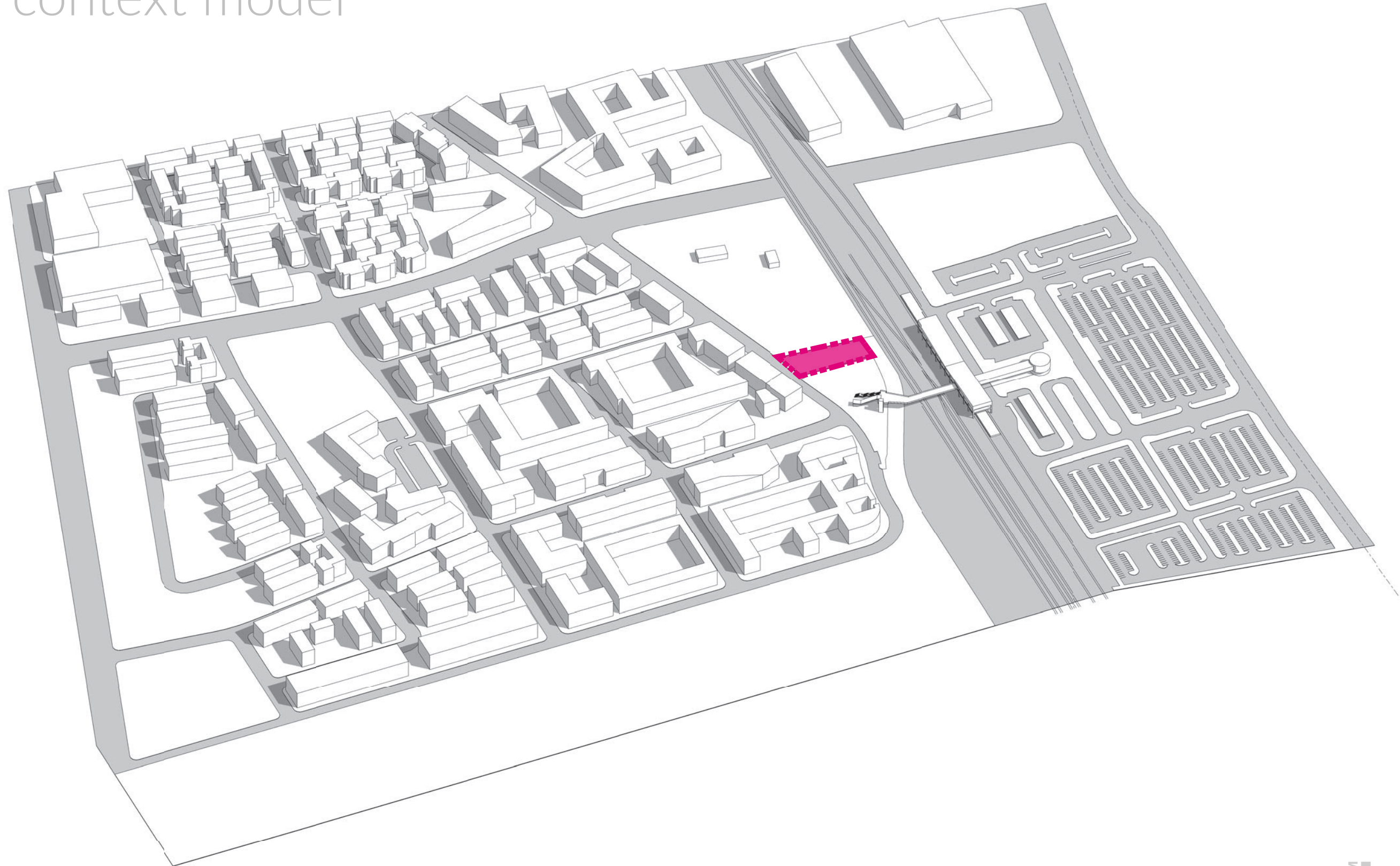
PARKING PROVIDED
TOTAL 295 SPACES
~38 SPACES/LEVEL

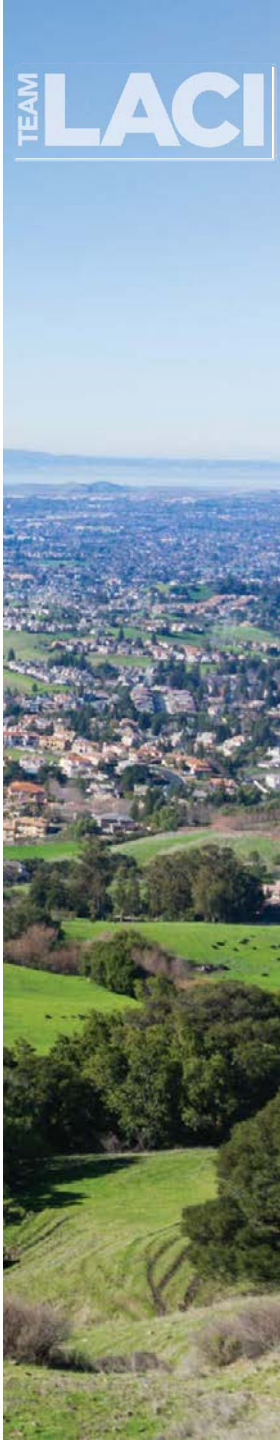


PROGRAM LEGEND

- RETAIL
- COMMON SPACE - 34,000 SF
- MIXED USE - 210,000 SF
- VEHICLE PARKING - 147,000 SF, 295 SPACES

3D context model





PROGRAMMING + MASSING

5 March 2018

INNOVATION HALL

With high ceilings and a dynamic 2 story atrium, the Innovation Hall is the centerpiece of the CEM and a showcase for the latest innovation in Manufacturing.

PROGRAM

- Dynamic Lobby
- Double-high Exhibition Gallery ringed by glass-enclosed Demonstration Galleries
- Atrium with amphitheater seating for 200-300 people
- Holodeck (Multimedia VR/AR room)
- Prototyping Facility and Labs
- Cafe & Limited Retail

CONTRUCTION CRITERIA

- 2 story glass-enclosed space
- Atrium with Mezzanine
- Connected to Plaza with motorized sliding glass walls or roll-up doors and deployable mechanical awning structure
- 16'-20' tall floor to floor
- Reinforced concrete floors for heavy equipment

CEM STAFF + SUPPORT SERVICES

Dedicated to staff to program CEM events and support services for members, this floor has a mixture of spaces for different types of focused and collaborative work.

PROGRAM

- Mixture of Offices and open working areas
- Shared Conference rooms
- Co-working areas
- Phone rooms
- Kitchen and lounge areas

CONTRUCTION CRITERIA

- Built to Class A office standards
- 12-14' floor to floor

CREATIVE OFFICE

Flexible Creative Office for tenants with varying space requirements with capabilities for connecting floors. Mix of public areas for the sharing of ideas and collaboration.

PROGRAM

- Mixture of Offices and open working areas
- Shared Conference rooms
- Co-working areas
- Phone rooms
- Kitchen and lounge areas
- Outdoor balconies/decks
- Collaboration zones

CONTRUCTION CRITERIA

- Built to Class A office standards
- 14' floor to floor

EVENT SPACE

At the top of the building a large Event Space for up to 300 people connects to a roof top deck for events.

PROGRAM

- Bright double-high space with roll-up doors/connection to outdoor rooftop deck
- Catering / Warming Kitchen
- Multimedia capabilities

CONTRUCTION CRITERIA

- 2 story glass-enclosed space
- 16'-20' floor to floor with double-height area

ADAPTABLE MANUFACTURING

With generous clear heights and robust construction, these floors are meant for small-scale advanced manufacturing.

PROGRAM

- Open floor for advanced manufacturing
- Adjacent administrative offices

CONTRUCTION CRITERIA

- 20' floor to floor
- Power and mechanical as required for advanced manufacturing
- Daylighting through skylights/lightwells and light shelves
- Reinforced concrete floors for heavy equipment
- Roll-up door access to outdoor areas
- Ample Freight elevator with large loading zone at ground level

EDUCATION MULTIPLEX

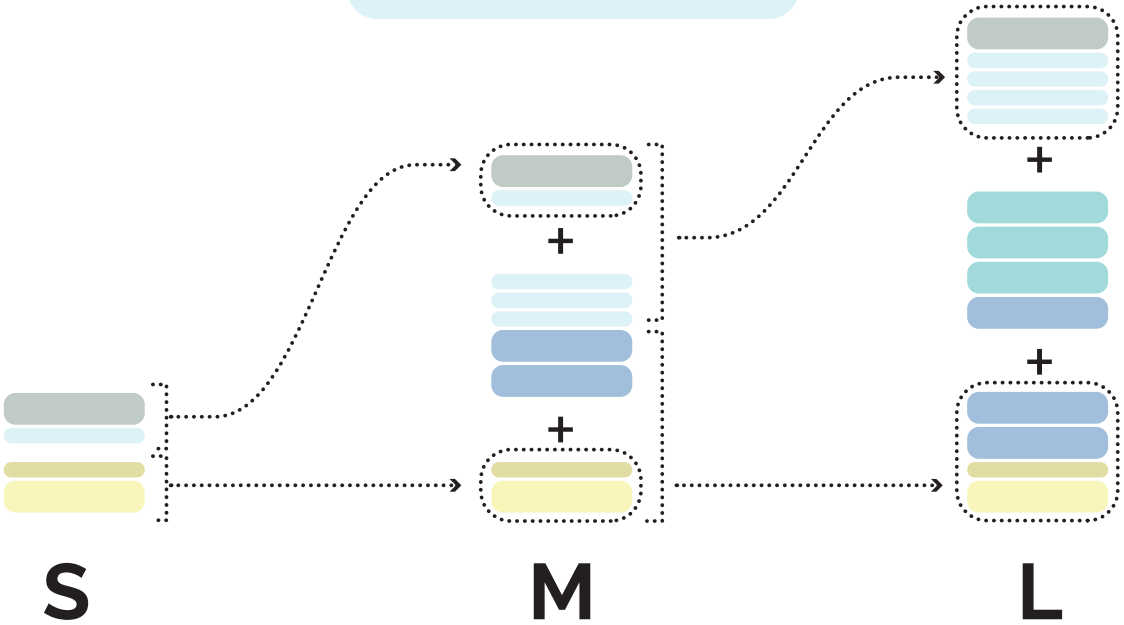
The Education Multiplex is a 3 story center with the latest in multimedia classrooms and training facilities. The classrooms are grouped around a large interactive space.

PROGRAM

- Central atrium interactive space
- Multimedia classrooms
- Training facilities
- Conference rooms
- Group work areas
- Study areas
- Lounge / Salon

CONTRUCTION CRITERIA

- 20' floor to floor
- Power and mechanical as required for advanced manufacturing
- Daylighting through skylights/lightwells and light shelves
- Reinforced concrete floors for heavy equipment



core building program elements

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S, M, + L

core building program elements

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PROGRAM

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- Adjacent administrative offices

M, + L

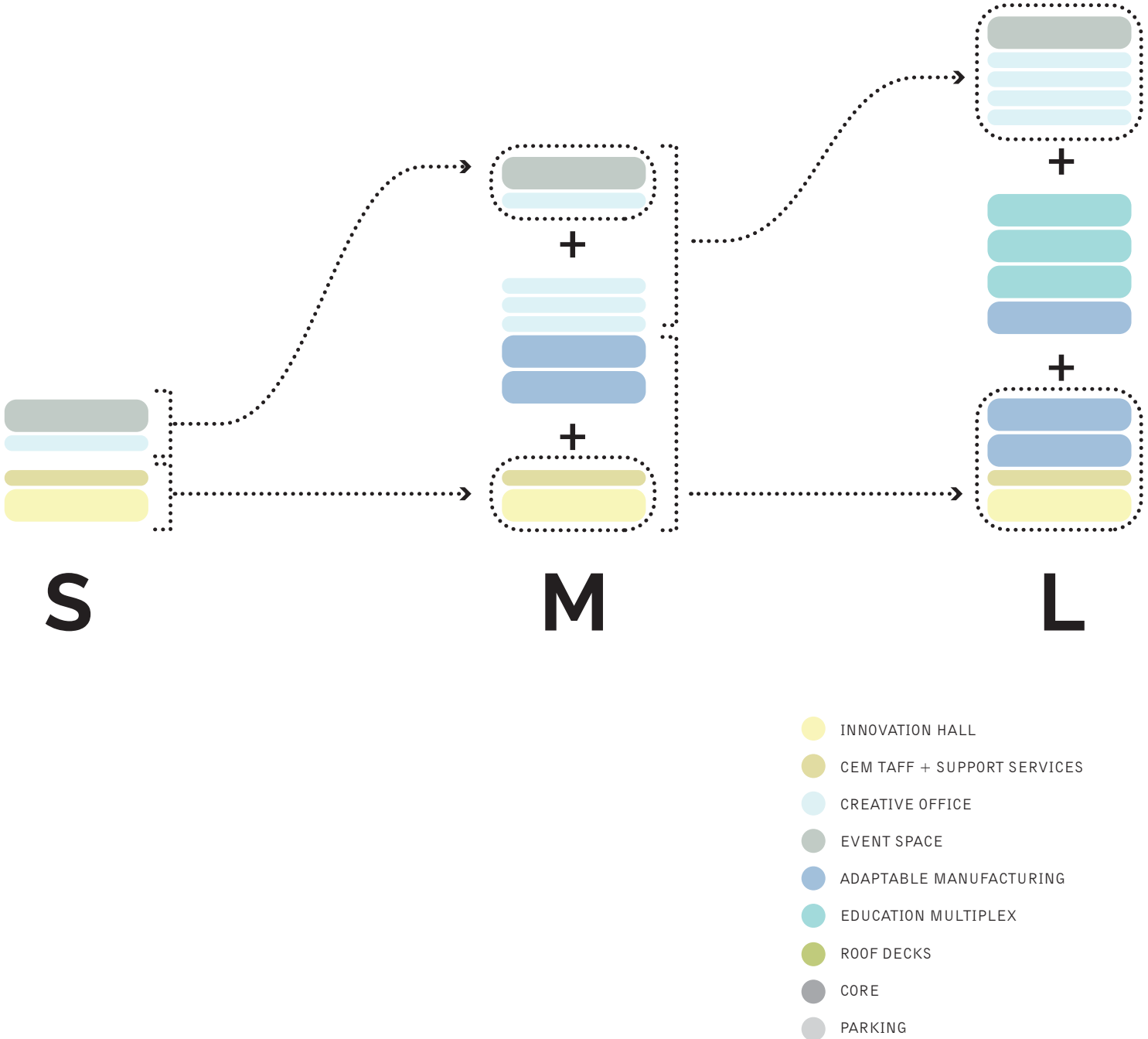
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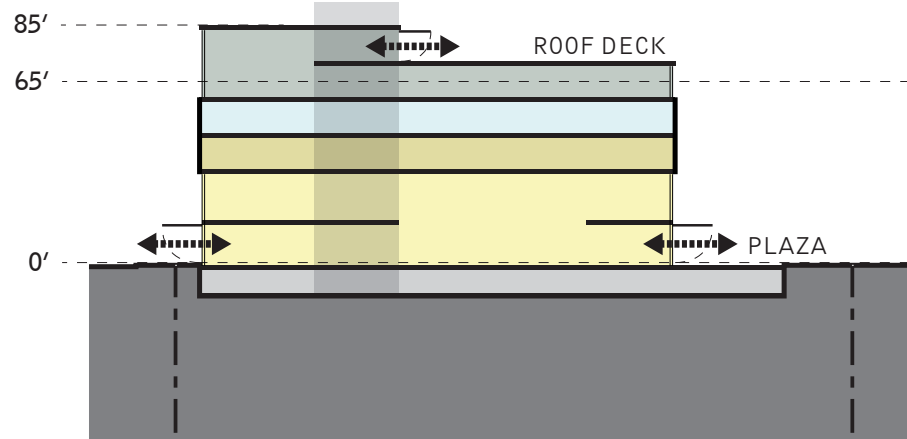
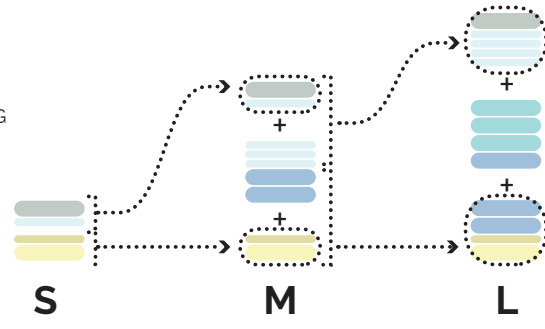
PROGRAM

- Central atrium interactive space
- Multimedia classrooms
- Training facilities
- Conference rooms
- Group work areas
- Study areas
- Lounge / Salon

L



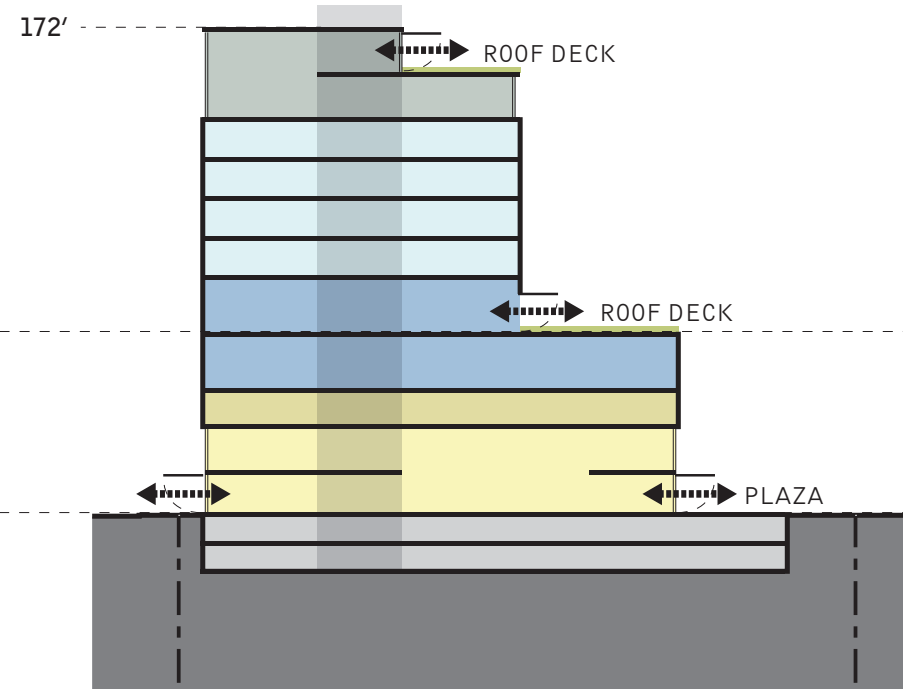
- INNOVATION HALL
- CEM TAFF + SUPPORT SERVICES
- CREATIVE OFFICE
- EVENT SPACE
- ADAPTABLE MANUFACTURING
- EDUCATION MULTIPLEX
- ROOF DECKS
- CORE
- PARKING



TYPE II-A or TYPE IV-HT

- 5 stories, 85' tall
- 75,000sf comprised of 5 x 16,000sf floor plates
- Additional 24,100sf of parking on 1 level below grade.
- 10' cantilever into the park above LVL 2
- LEED Gold target
- No Loading Dock

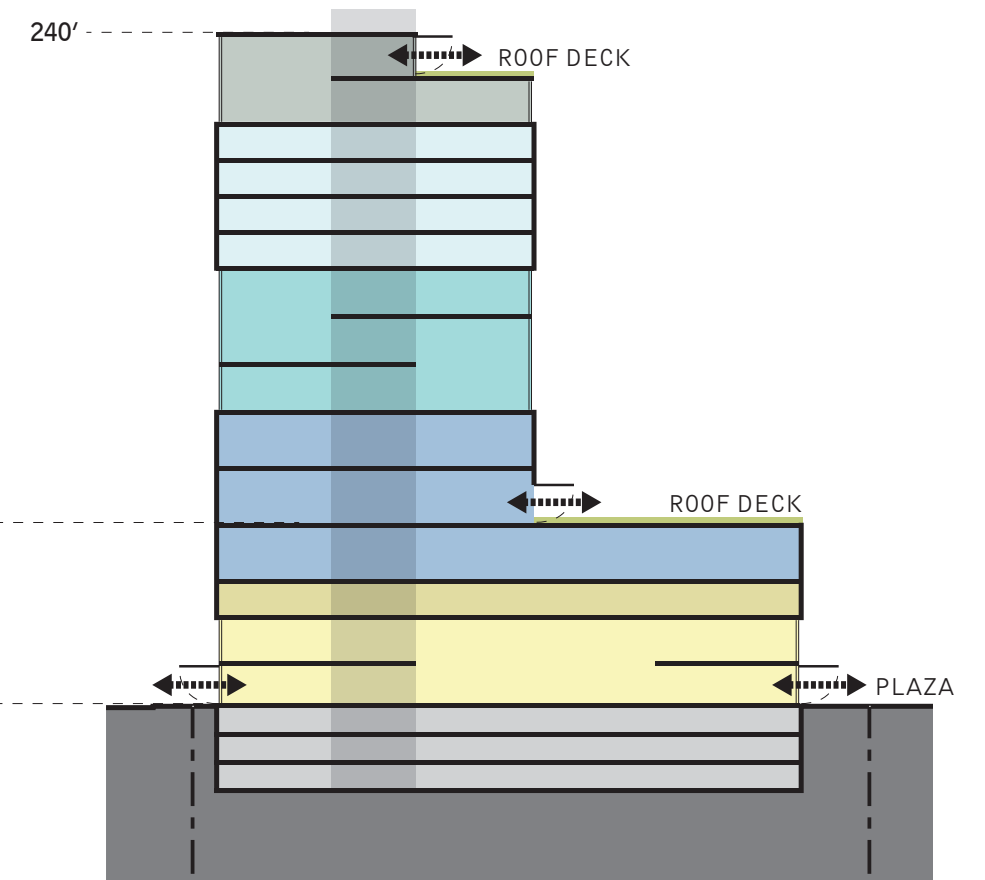
S



TYPE I-B

- 10 Stories, 172' tall
- 124,000sf comprised of 4 story podium at 16,000sf plus 6 stories at 10,000sf.
- Additional 48,200sf of parking on 2 levels below grade.
- 10' cantilever into the park above LVL 2
- LEED Gold target

M

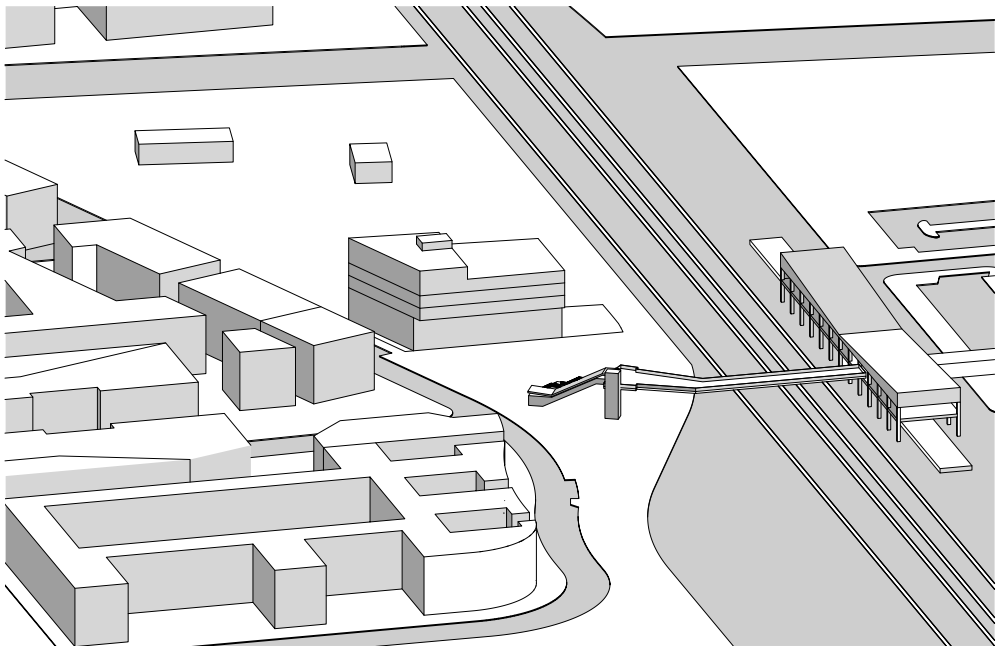


TYPE I-A

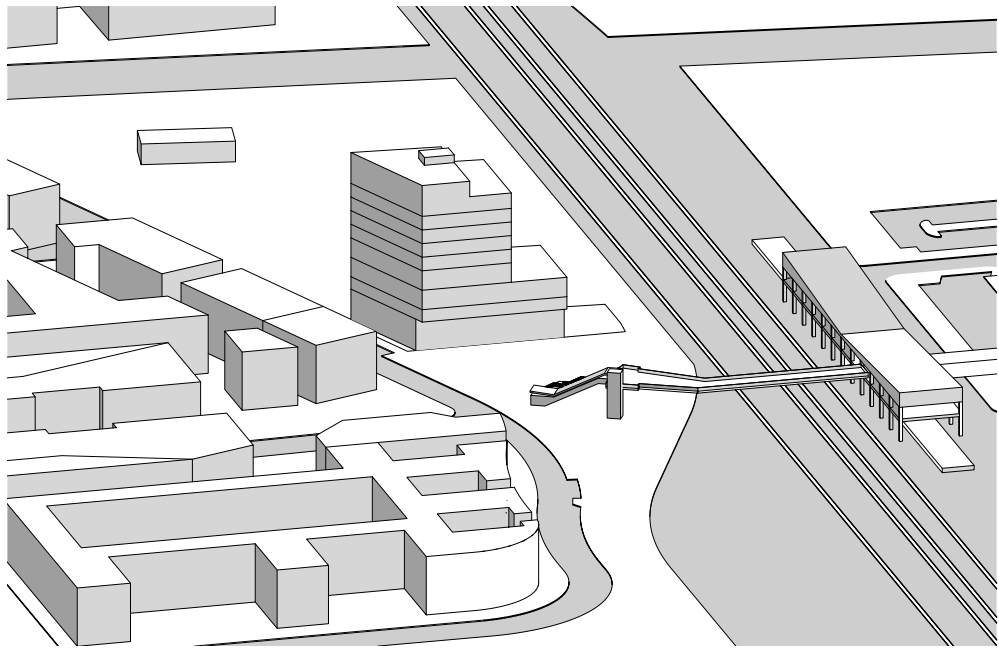
- 15 Stories, 240' tall
- 203,000sf comprised of a 4 story podium at 19,000sf floor plates plus 11 stories at 12,000sf.
- Additional 72,300sf of parking on 3 levels below grade.
- 10' cantilever into the park above LVL 2
- LEED Gold target

L

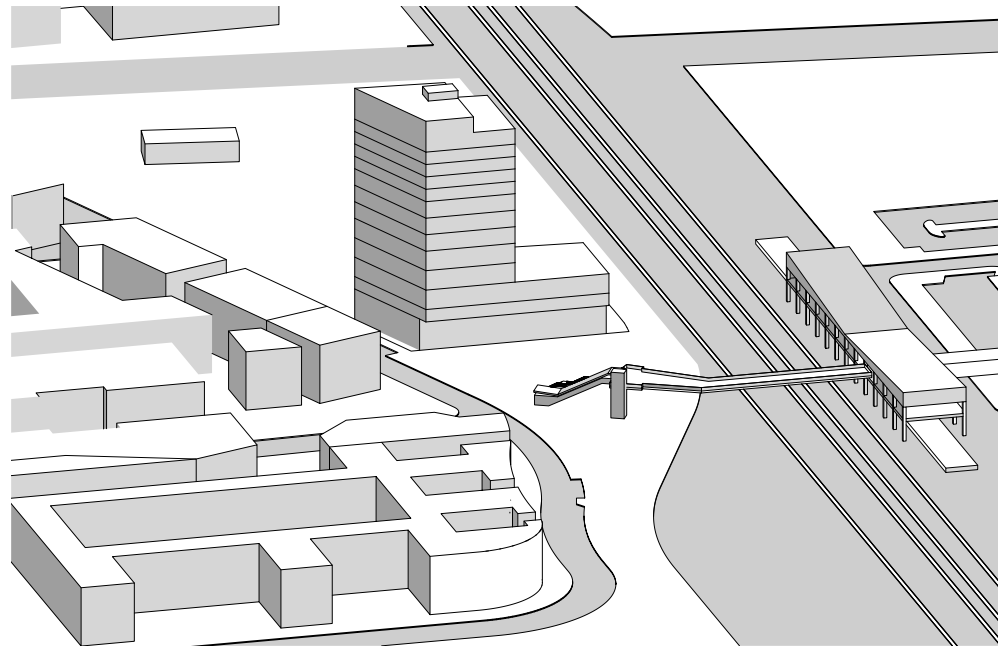
massing diagram with site context



S



M



L

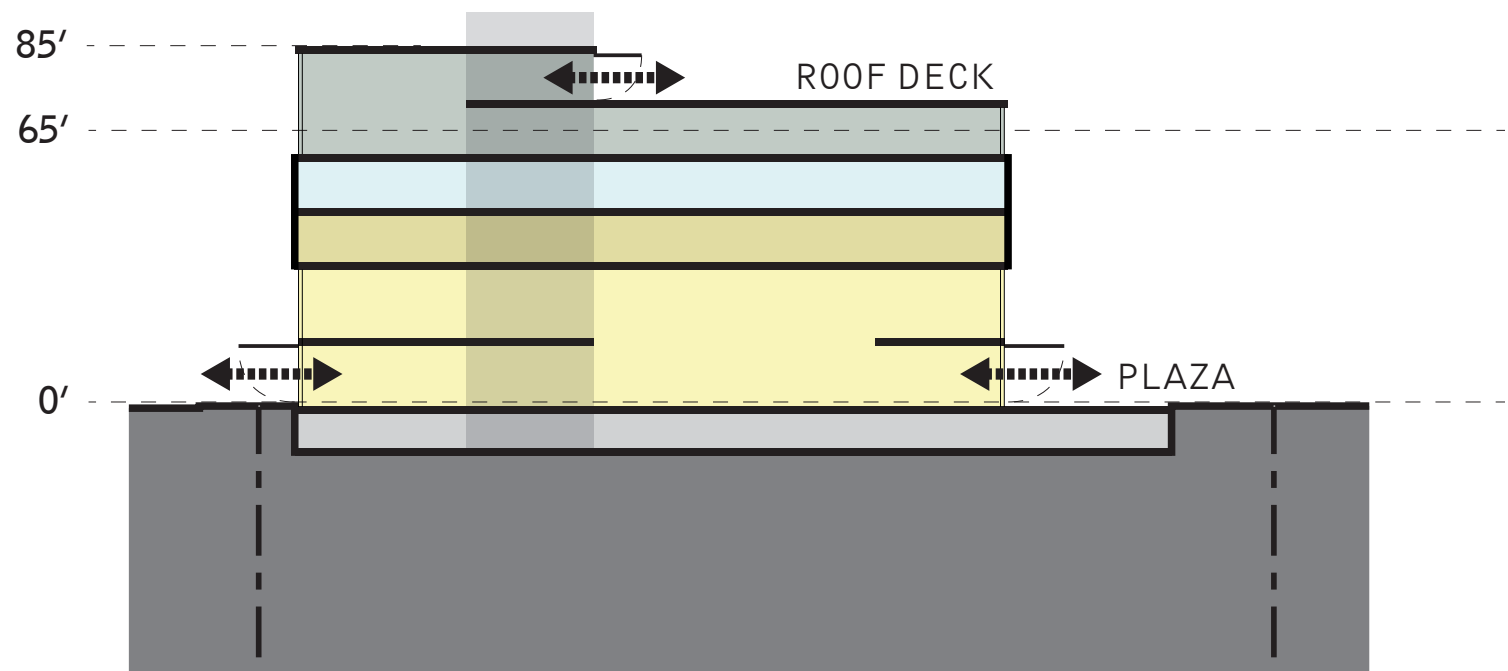
S

PROS

- At under 85' tall, this scheme is exempt from High-Rise construction requirements
- Lowest initial capital investment

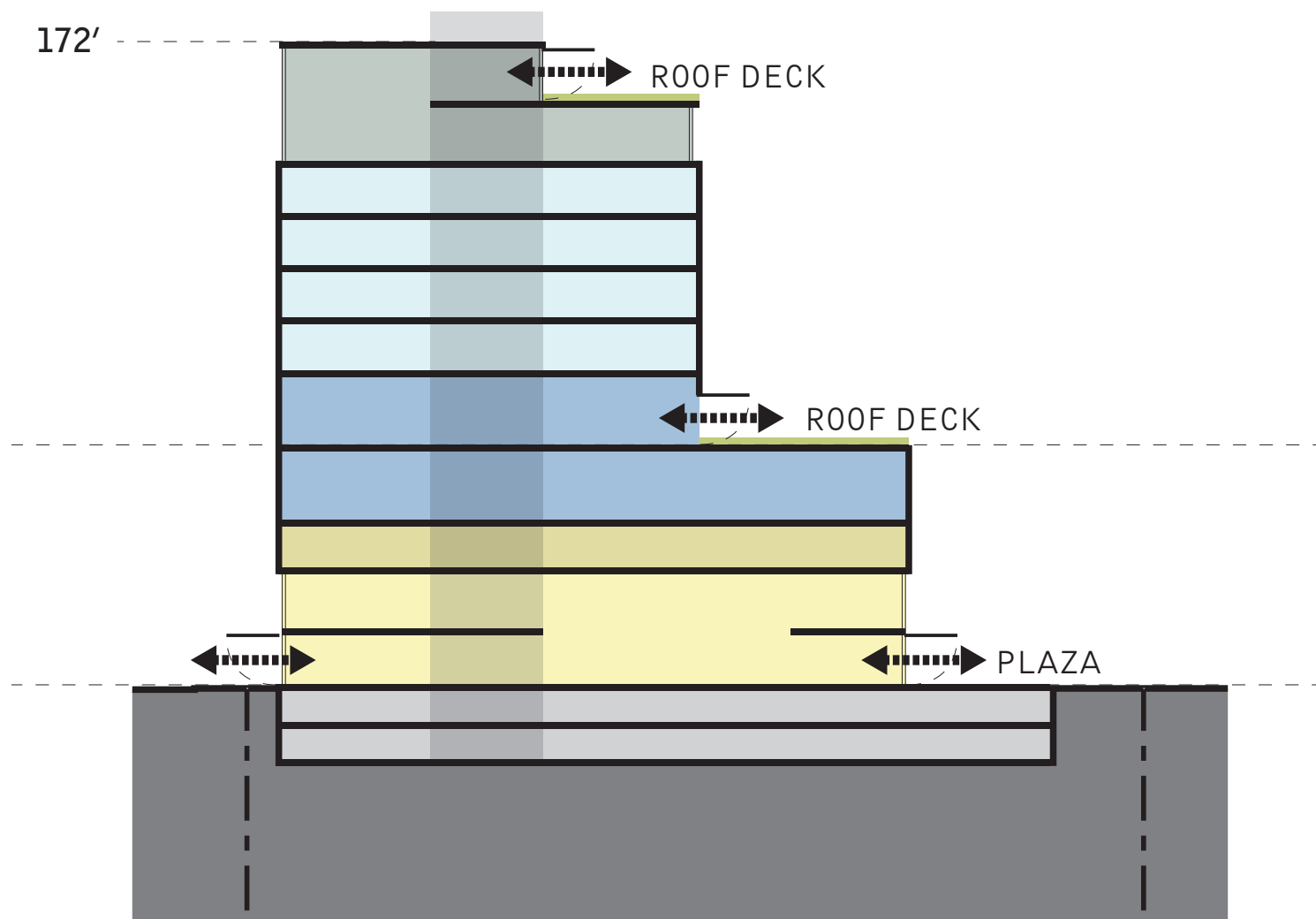
CONS

- The scale of the Small scheme does not stand out in Warm Springs Innovation District, let alone regionally or globally, making it harder to achieve the goal of becoming a center of gravity for manufacturing in Fremont and beyond.
- The CEM needs to be entirely financially self-sustaining as the building lacks other sources of revenue.
- Without the ability to house additional supportive services or target growth companies, this scheme can not take advantage of natural synergies from collocation - a deficit that programming will have to work much harder to make up for.
- The small scheme doesn't take advantage of stellar views.



- INNOVATION HALL
- CEM TAFF + SUPPORT SERVICES
- CREATIVE OFFICE
- EVENT SPACE
- ADAPTABLE MANUFACTURING
- EDUCATION MULTIPLEX
- ROOF DECKS
- CORE
- PARKING

M



PROS

At under 124,000 sf, this scheme exempt from providing an additional Fire Access Road

At this scale, the building stands out from the surrounding buildings and is better equipped to achieve the goal of becoming a center of gravity for manufacturing in Fremont and beyond.

Contains most of the program elements necessary to support a robust Center for Excellence in Manufacturing.

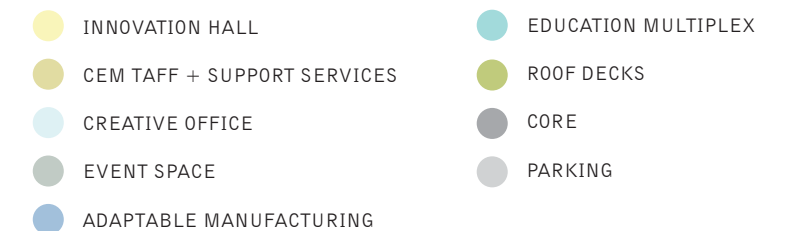
Has multiple roof decks and a variety of common spaces.

Collocation of supportive services, growth companies, and CEM provides organic synergies to programming and company growth.

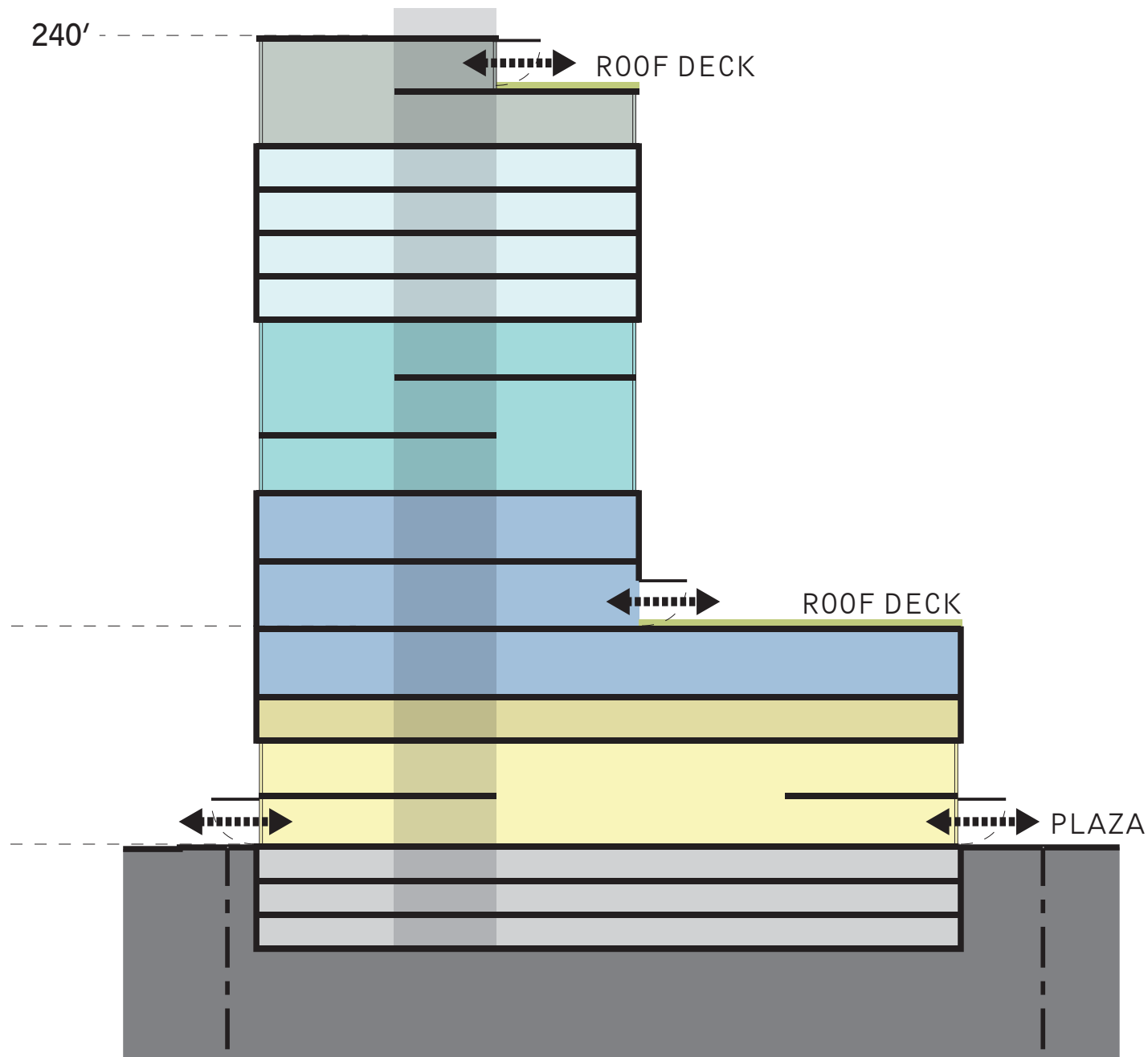
CONS

Lacks program elements dedicated to workforce development / education.

Though it has space for growth companies on site, there is limited space for these companies to adapt and change in size and space requirements.



L



PROS

Contains all desired program elements

Best views for revenue-generating Event Space

Scale will help establish CEM as an architectural landmark in Fremont, the region, and beyond, helping achieve the goal of becoming a global center of gravity for manufacturing.

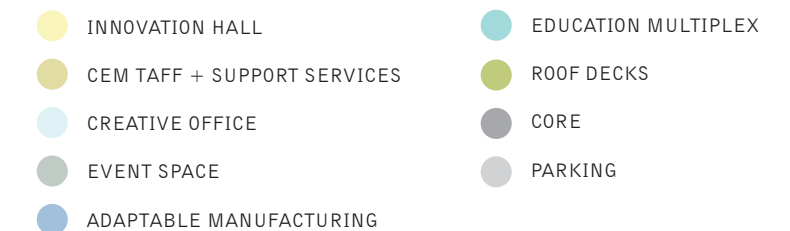
Has multiple roof decks and a variety of common spaces.

Collocation of supportive services, growth companies, and CEM provides organic synergies to programming and company growth.

Scale and higher revenue-generation helps support more unique and inspiring architecture and program spaces.

CONS

Highest initial capital investment.

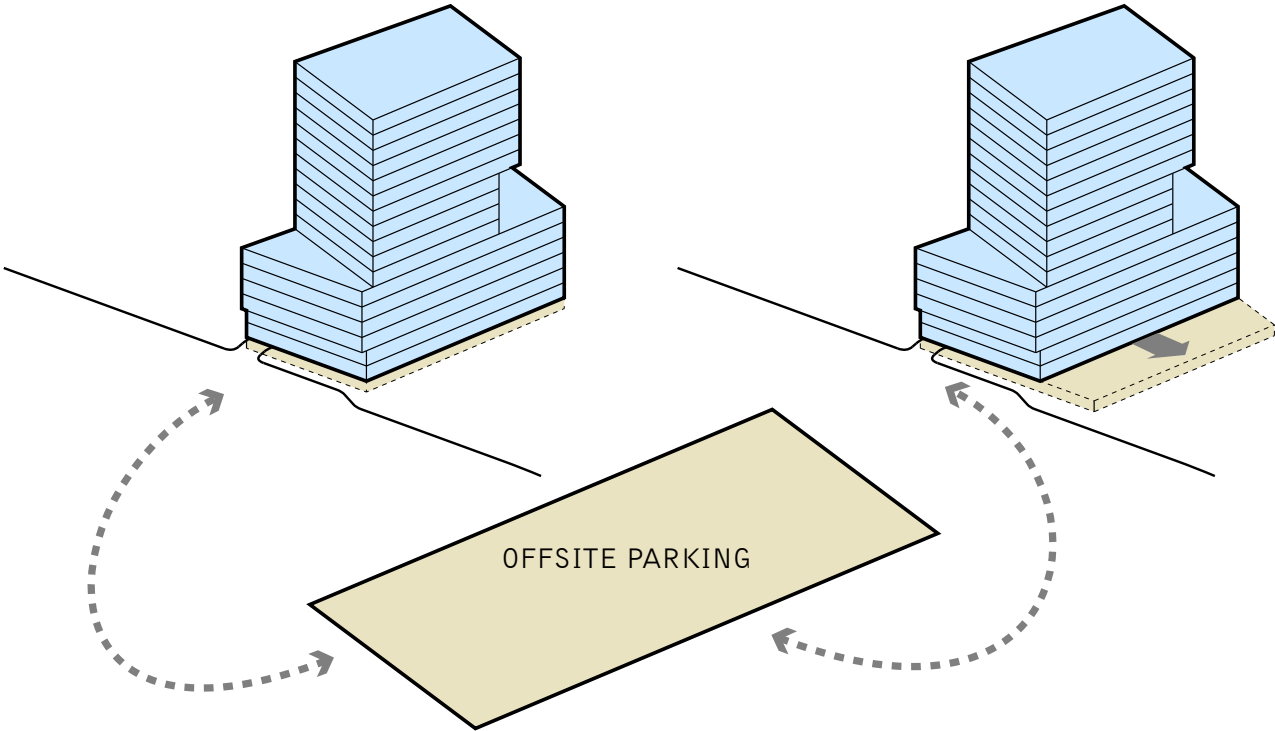


site parking options

NOTE: PREVIOUS MASSING FROM 1/29/18 MEETING

OPTION 1A

OFF-SITE PARKING
+ 1 LEVEL BELOW GRADE PARKING



ONSITE PARKING: 38 STALLS
OFF-SITE PARKING: 257 STALLS
TOTAL PARKING: 295 STALLS

PROS

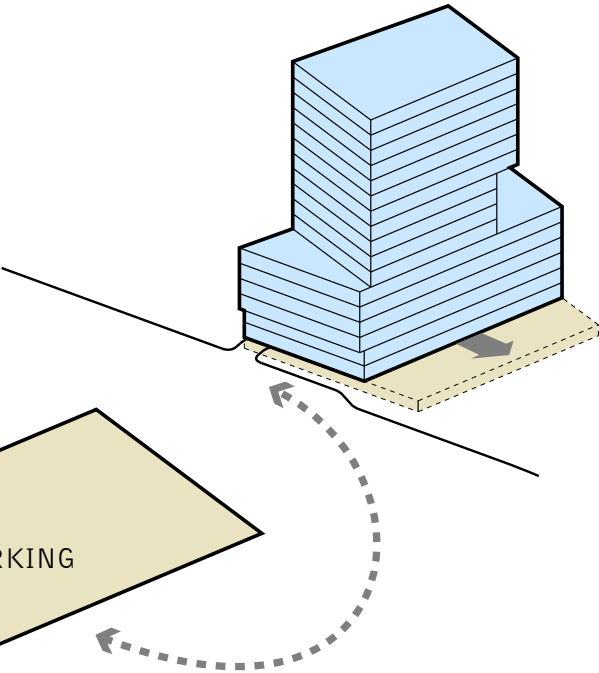
OFF-SITE PARKING CAN BE SCALED TO MEET NEEDS AS THEY CHANGE OVER TIME
FREES UP SPACE FOR GROUND FLOOR PROGRAM
WORKS WITH A COMMUNITY SHUTTLE

CONS

OFF-SITE PARKING
INEFFICIENT LAYOUT (SITE NOT WIDE ENOUGH)

OPTION 1B

OFF-SITE PARKING
+ PARKING EXPANDED BELOW PLAZA



ONSITE PARKING: 76 STALLS
OFF-SITE PARKING: 219 STALLS
TOTAL PARKING: 295 STALLS

PROS

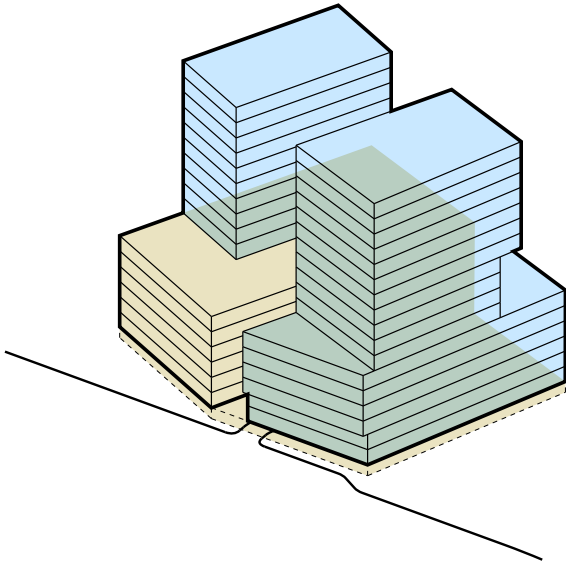
EFFICIENT LAYOUT
OFF-SITE PARKING CAN BE SCALED TO MEET NEEDS AS THEY CHANGE OVER TIME
FREES UP SPACE FOR GROUND FLOOR PROGRAM

CONS

OFF-SITE PARKING

OPTION 2

SHARED PARKING STRUCTURE
+ 1 LEVEL BELOW GRADE PARKING



ONSITE PARKING: 38 STALLS
ADJACENT PARKING: 257 + 240 STALLS
TOTAL PARKING: 535 STALLS

PROS

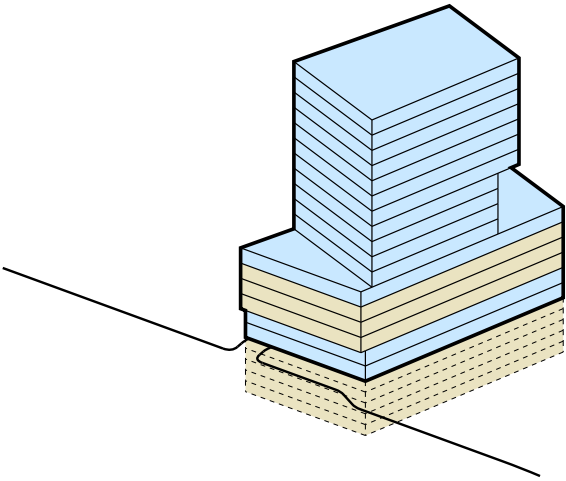
SHARED PARKING
EFFICIENT LAYOUT
FREES UP SPACE FOR GROUND FLOOR PROGRAM

CONS

NEEDS TEMPORARY SOLUTION UNTIL NORTH SITE IS DEVELOPED

OPTION 3

ONSITE PARKING



ONSITE PARKING: 295 STALLS
OFF-SITE PARKING: 0 STALLS
TOTAL PARKING: 295 STALLS

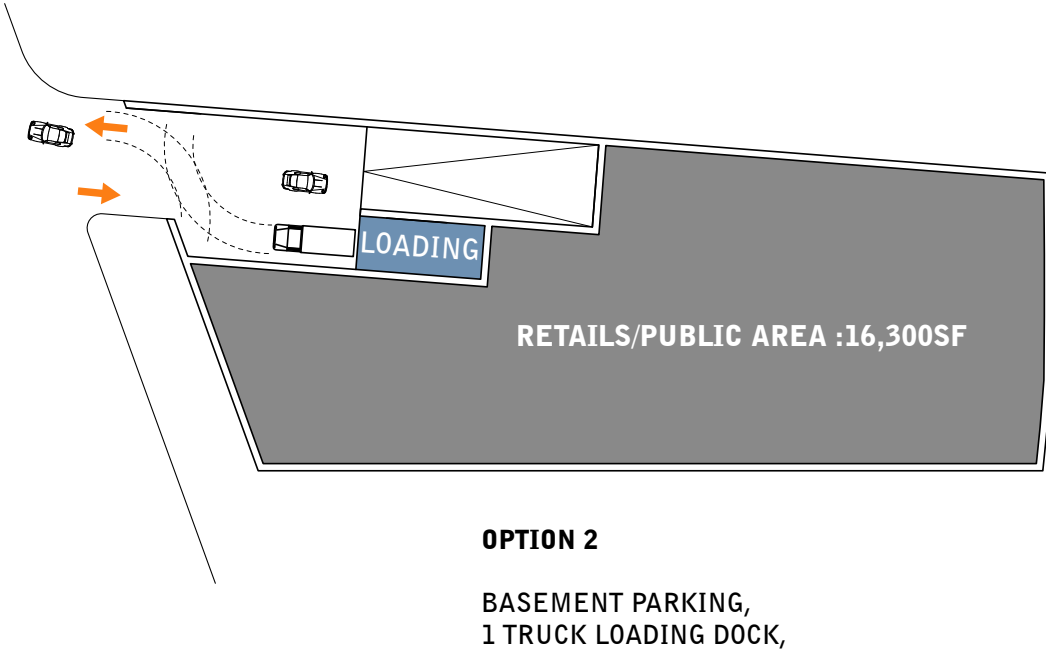
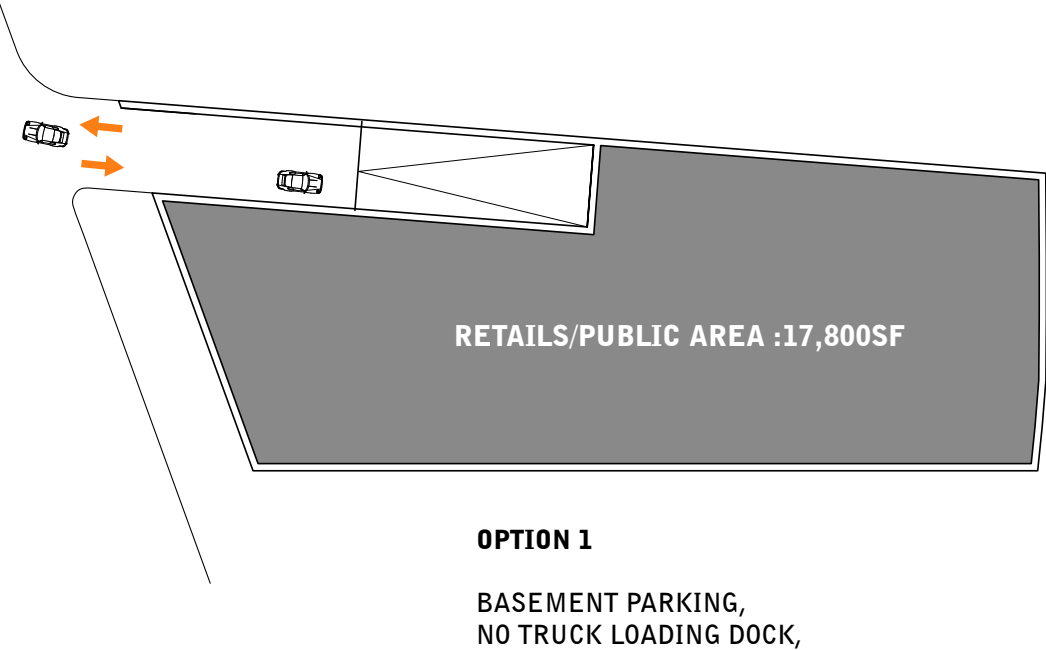
PROS

ONSITE PARKING

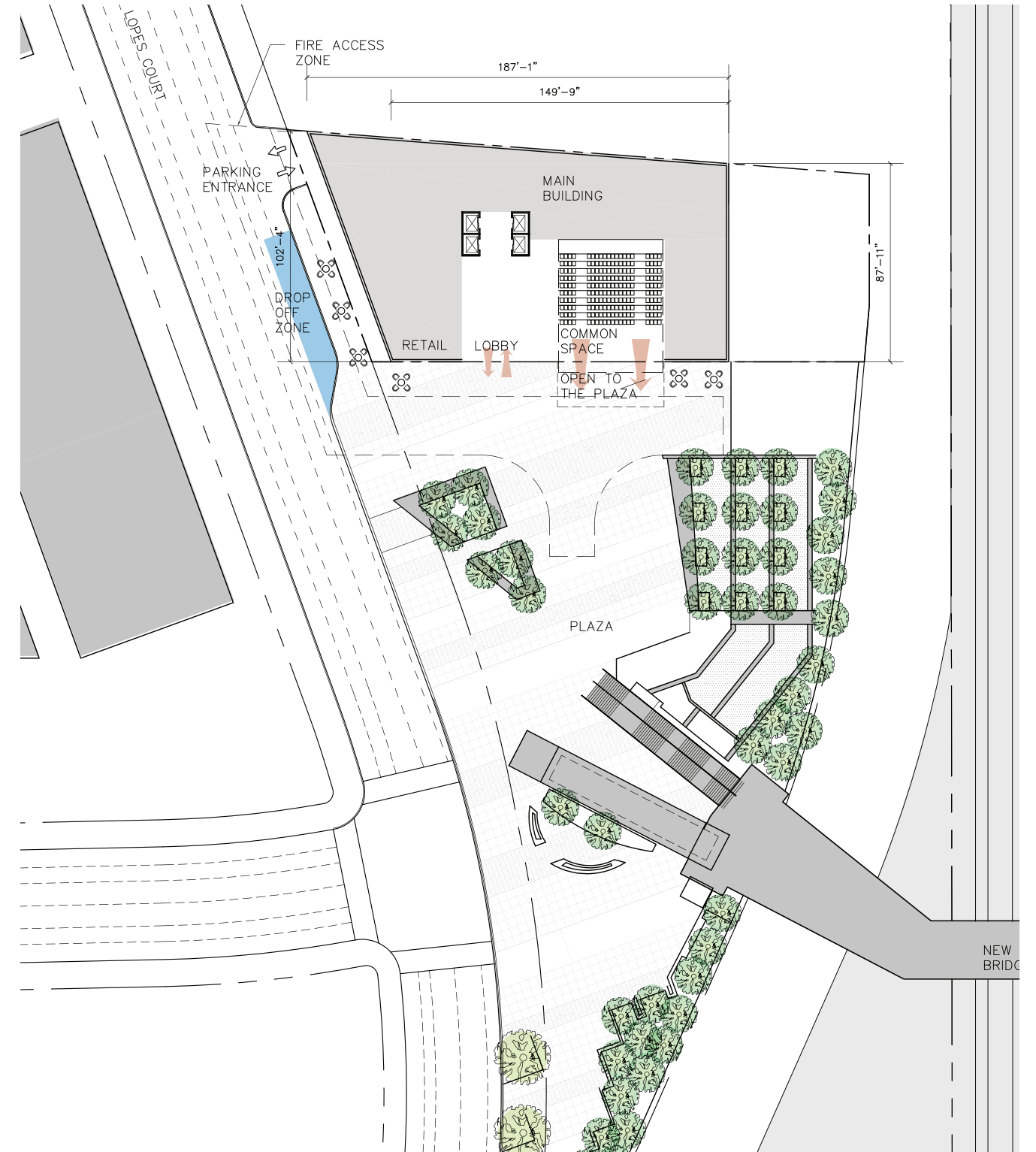
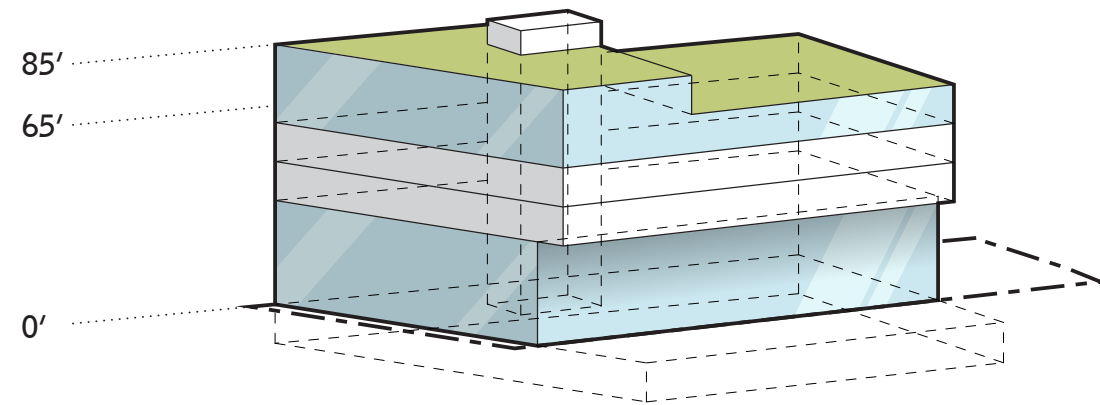
CONS

INEFFICIENT LAYOUT (SITE NOT WIDE ENOUGH)
BELOW GRADE PARKING IS VERY COSTLY
PRIME SPACE USED FOR PARKING

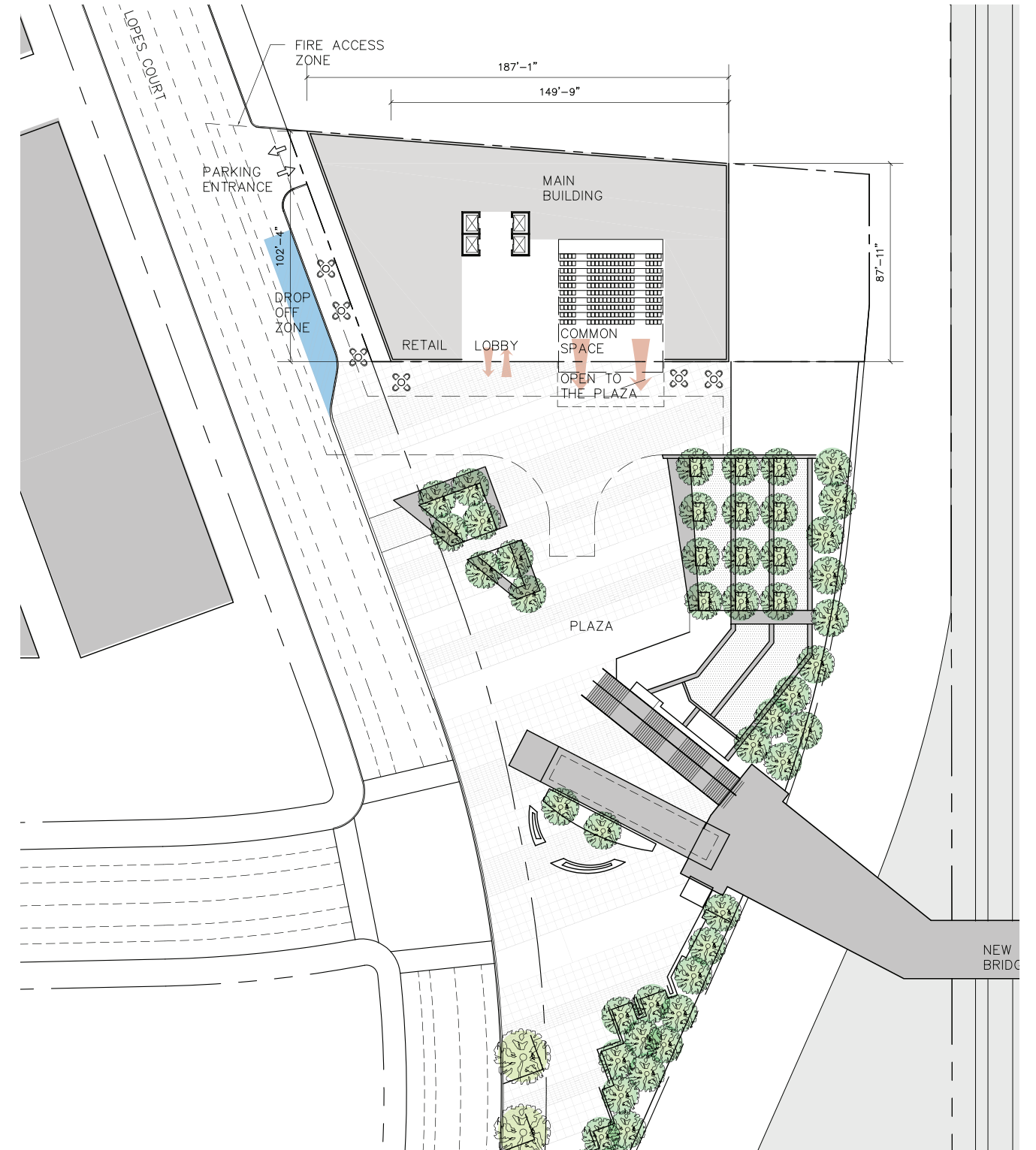
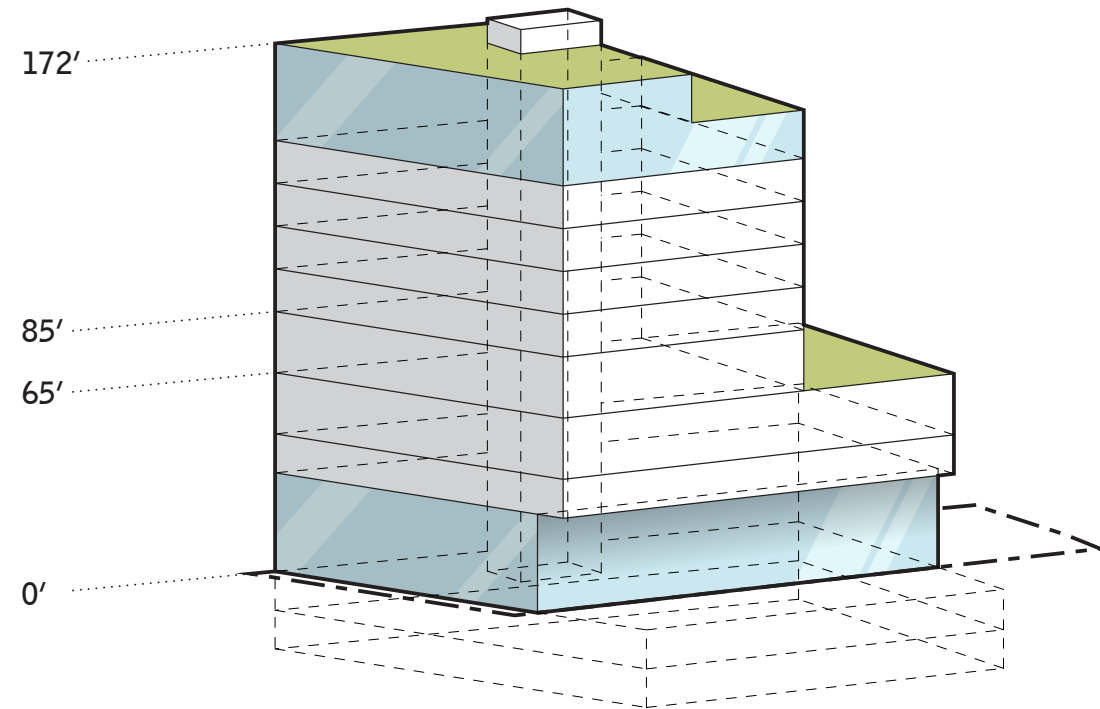
site loading options



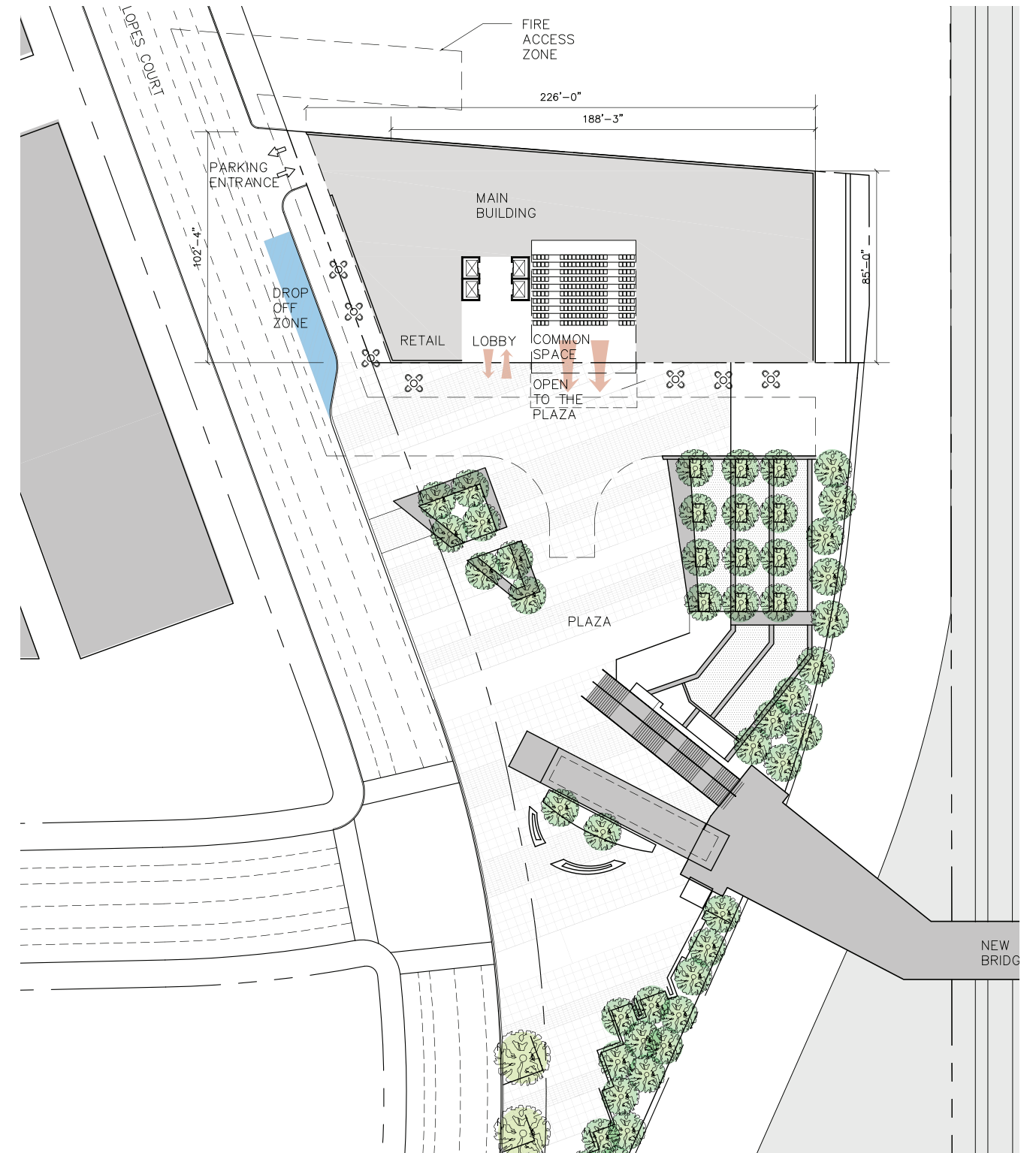
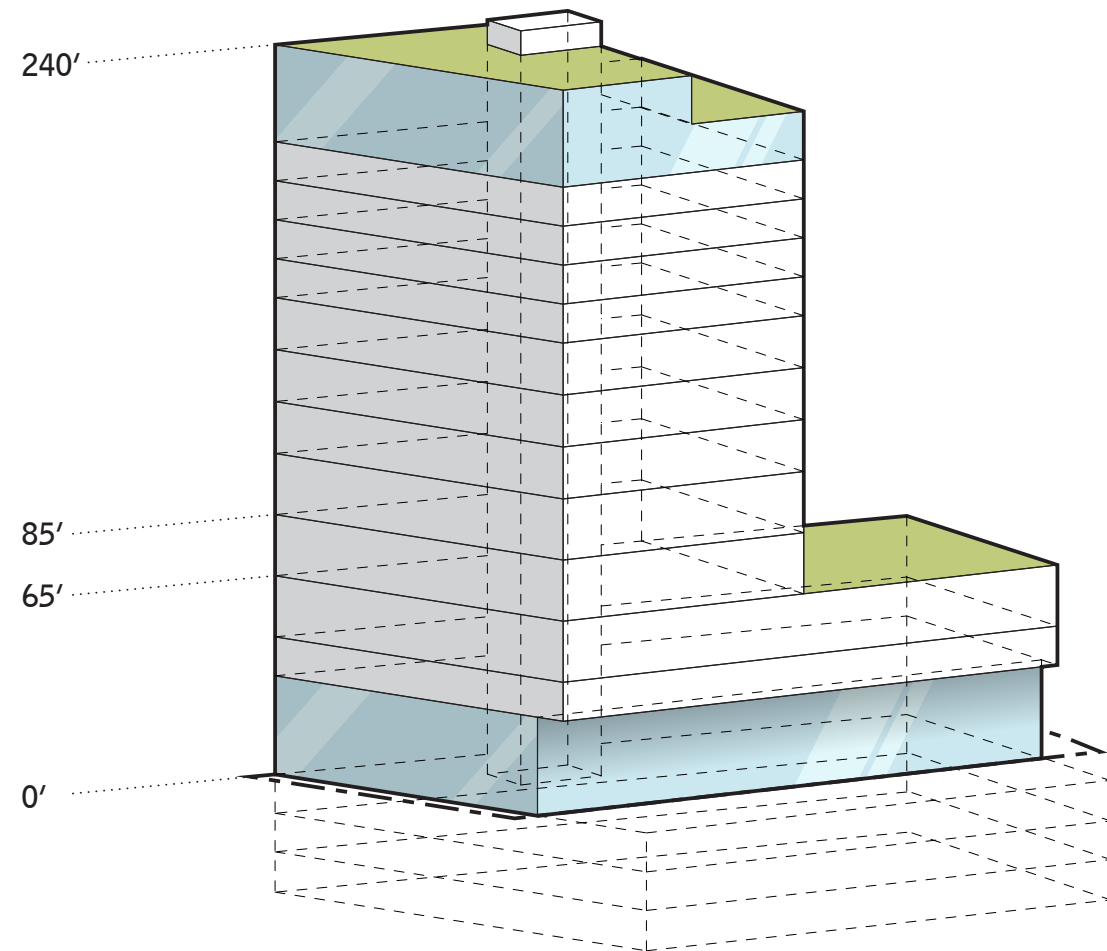
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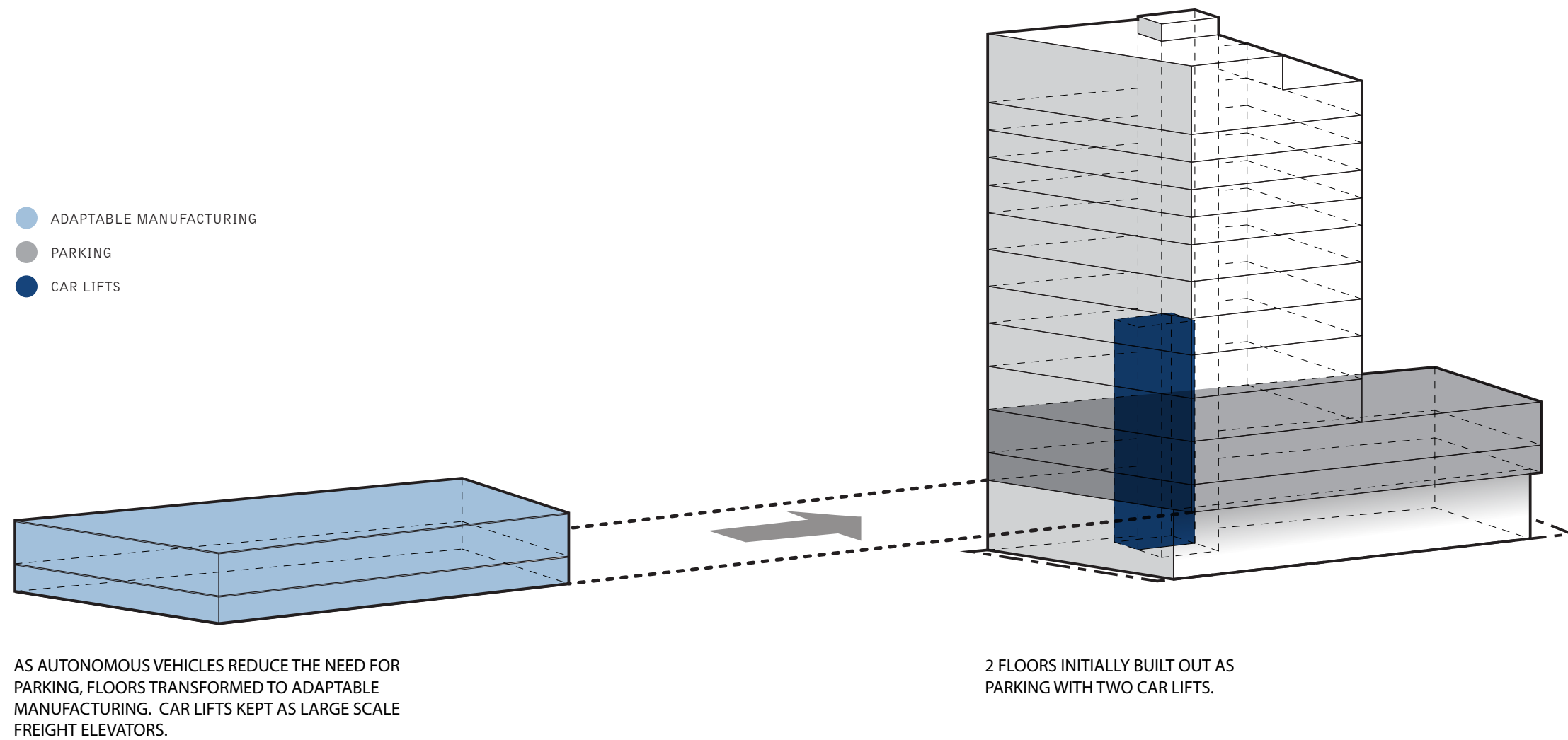
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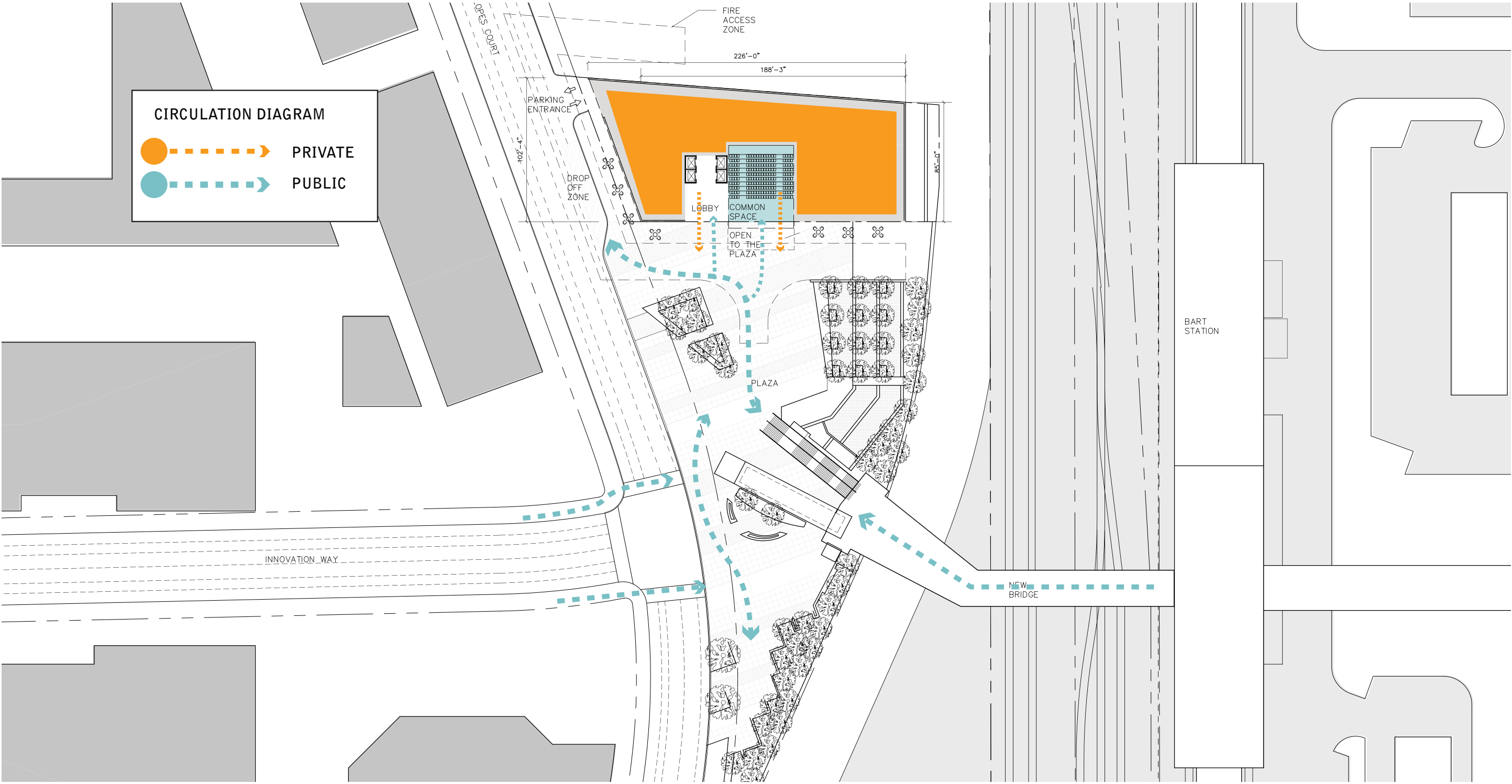
L



M (b) L (b)



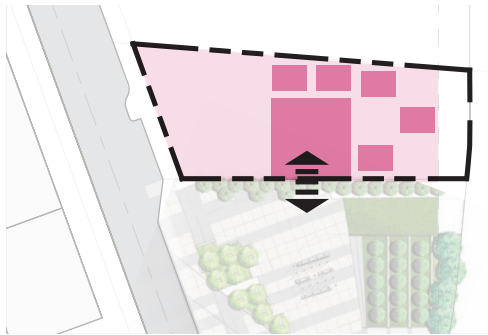
Site Circulation Diagrams



CEM event scenarios

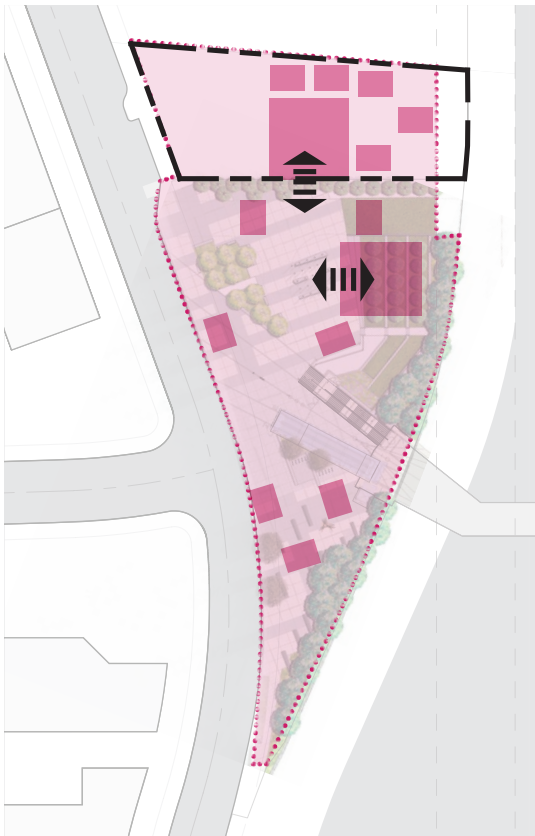
EVENT SCHEME 1

Tech Showcases
Speaker Series
Thought Leadership
Demonstrations
Immersive Experience Showcase
Impact Reporting



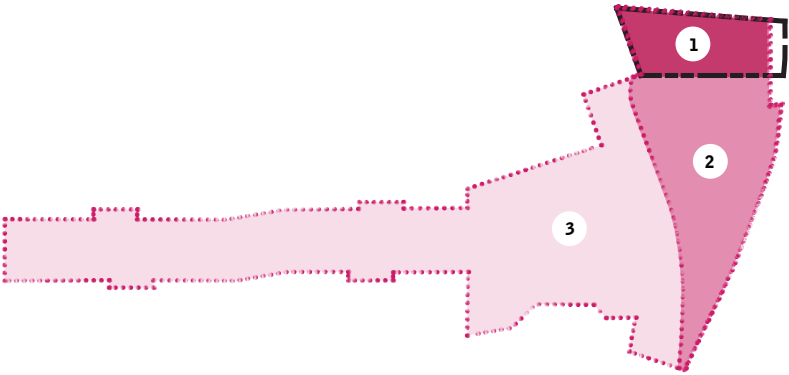
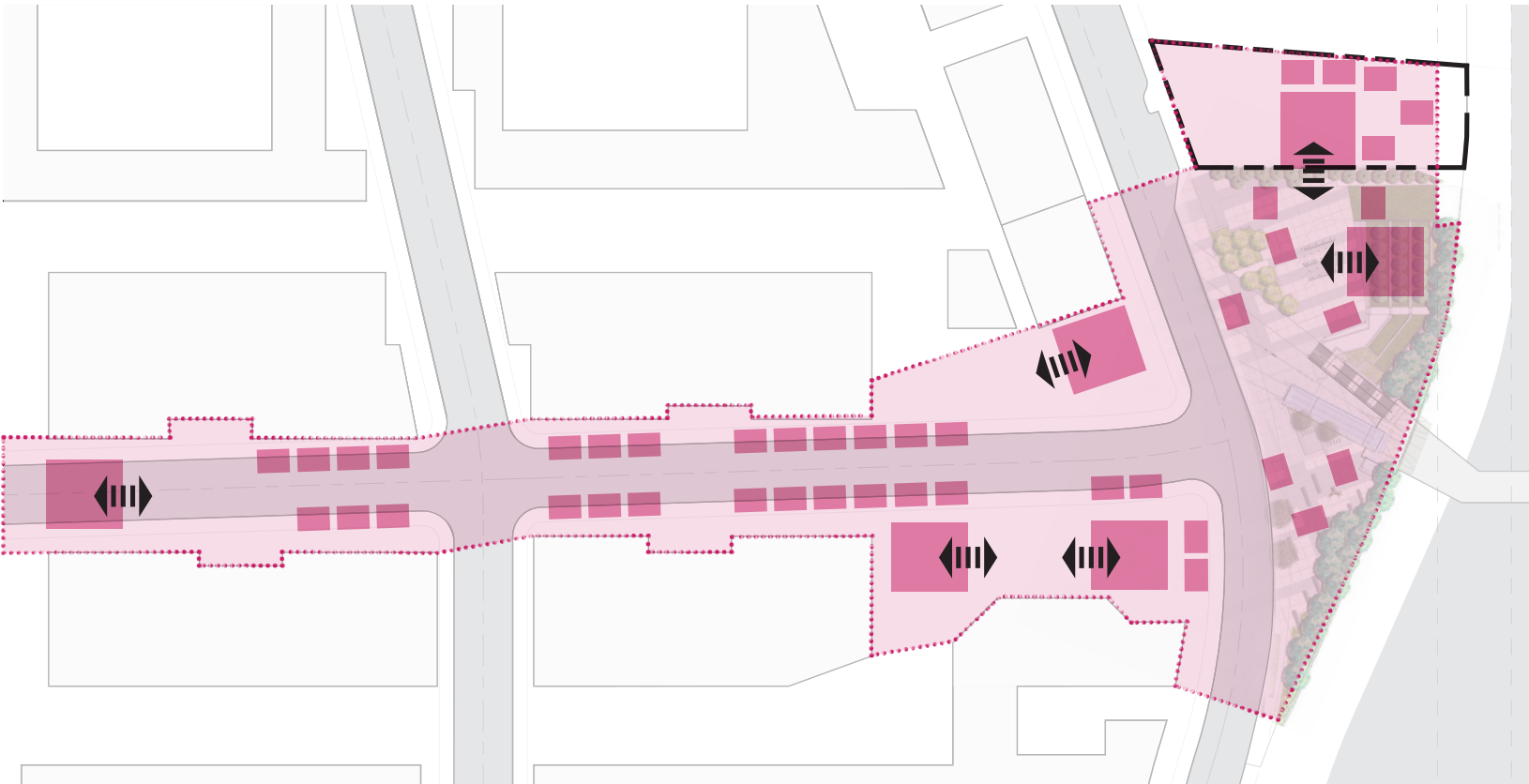
EVENT SCHEME 2

Small Conference
Industry Events
Community Open Houses
Movie Nights
Small Concerts



EVENT SCHEME 3

Street Festivals
Tech & Mobility Conferences
Farmer's Markets
Community Holidays/Parades



This is an **extraordinary** project that requires an **extraordinary** approach.

This proposal does not describe an ordinary real estate feasibility study; rather, it outlines a **roadmap** for an **economic ecosystem**.