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456-2024

Report

Accept Lloyd Center Keller Auditorium Renovation Design Concept report

Accepted

To: City Council
Mike Jordan, Chief Administrative Officer

From: Karl Lisle, Spectator Venues Program Manager
Lauren Broudy, Spectator Venues Program Coordinator

Subject: Accept Lloyd Center’s Design Concept for a New Performing Arts Facility Report (Report; Grant Agreement No. 32003355)

This Council Item accepts the report from Lloyd Center for their new performing arts facility proposal.

The current Keller Auditorium has structural and operational issues and solutions are being explored as to how to move forward with the aging facility.

The City is exploring whether to renovate on-site or build anew on a different site.

In September 2023, the Halprin Landscape Conservancy presented their renovation concept for the Keller. They have since updated their concept and submitted their updated report for this Council meeting.

In addition to the renovation concept, Council has also received two conceptual designs from Lloyd Center and Portland State University for a new performing arts facility on their respective sites. In January 2024 ([see Ordinance 191606](https://www.portland.gov/council/documents/ordinance/passed/191606) (<https://www.portland.gov/council/documents/ordinance/passed/191606>)), two grants were awarded: one to Lloyd Center and one to Portland State University, to develop their design concept reports Council is also accepting today.

Now that three design concepts are in hand, the City will embark on a month-long engagement journey to gather feedback on all three designs,

Introduced by
[Mayor Ted Wheeler](#)

Bureau
[Management and Finance](#)

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Requested Agenda Type

Time Certain

Date and Time Information

| |
|-------------------------------|
| Requested Council Date |
| May 29, 2024 |
| Requested Start Time |
| 2:00 pm |
| Time Requested |
| 3 hours (2 of 3) |

including the renovation on site and two new build scenarios on new sites. Engagement will include targeted stakeholder outreach as well as the collection of public input. Up to date projection information is available on the project webpage: www.portland.gov/keller (<http://www.portland.gov/keller>).

Results of the June engagement efforts are targeted to be shared with Council at the July 31, 2024 City Council meeting.

Documents and Exhibits

 [Lloyd Center Design Concept Report](https://www.portland.gov/sites/default/files/council-documents/2024/lloyd-study_24.05.08_01_report_-final-low-res.pdf) 10.43 MB
(https://www.portland.gov/sites/default/files/council-documents/2024/lloyd-study_24.05.08_01_report_-final-low-res.pdf)

 [Lloyd Center Design Concept Report - Appendix](https://www.portland.gov/sites/default/files/council-documents/2024/lloyd-study_24.05.08_02_appendix_hi-res-final.pdf) 8.06 MB
(https://www.portland.gov/sites/default/files/council-documents/2024/lloyd-study_24.05.08_02_appendix_hi-res-final.pdf)

Impact Statement

Purpose of Proposed Legislation and Background Information

This report from Lloyd Center captures their work with ZGF Architects and a larger consultant team for a new performing arts facility proposal.

The Keller Auditorium is known as the workhorse of the Portland's Centers for the Arts venues, hosting nearly 400,000 guests each year and providing the only stage in the region capable of hosting large-scale theatrical performances such as Broadway productions, ballet, operas and more.

While the Lloyd Center report details one design concept option for a new performing arts facility, there are two additional options to consider, including another new facility on a different site and a renovation on site. The biggest hurdle that a Keller renovation faces is figuring out how to generate revenue and preserve jobs and economic benefits if the Keller were to close for 19+ months during renovation.

Background Information

After the Keller Auditorium was added to the City's list of unreinforced masonry (URM) buildings in 2016, work began to investigate the seismic stability of the facility.

In March 2020, the Keller Seismic Analysis Summary Report was completed, which outlined the structural deficiencies of the Keller and laid out potential options to consider moving forward:

- Limited building renovation addressing seismic upgrades;
- Major building renovation including new additions;

- Building a new facility on the existing site or an alternative site.

In 2017, a private design competition was held to explore what a large-scale renovation might look like. In 2022, neighboring property owners and design professionals joined the Halprin Landscape Conservancy to further develop a design concept for the space. HLC's private funding was matched by \$200,000 of public funding from each the City and Metro.

In 2023, HLC came up with a large-scale renovation design for the existing facility. During this period, the City began a tangential effort to explore what building a new facility might look like on an alternate site.

Eight sites were submitted by proposers to accommodate a new performing arts facility across Portland. After an evaluation process that included staff from Mayor Wheeler's Office, Commissioner Ryan's Office, the Office of Management and Finance, the Bureau of Planning and Sustainability, Prosper Portland and Metro, two sites were selected to explore design concepts: Lloyd Center and Portland State University.

Over the span of five months, with \$50,000 grant agreements from the City and the help of a cost consultant retained by Metro, Lloyd Center and Portland State University worked with their own architects and theater designers to develop more detailed designs that test the feasibility of their sites.

All three options would address the deficiencies of the current Keller Auditorium and give the City and region a greatly improved performance venue capable of serving the City for another one-hundred years.

The City worked with Metro and the proposers to produce a cost analysis from Venue Consultants, a firm that specializes in analyzing costs specific to renovating and constructing performing arts venues. The results of Venue Consultants' analysis will be shared during the staff introduction to today's presentations and be made available to the public as soon as feasible.

In addition to the cost analysis, the City also worked with Crossroads Consulting, a firm that specializes in economic impact analysis of major venues, to understand the economic impacts of the Keller and of a potential closure of the facility. The results of this analysis will be shared during the staff introduction to today's presentations and be made available to the public as soon as feasible.

The goal of today's presentations and reports is to introduce the City Council and community to the three alternative visions for Keller's next act. No decisions are requested.

The draft timeline and engagement schedule includes:

MAY - Multimedia Engagement

- Media interviews with Greg Phillips, CSTAR Development, an experienced performing arts advisor/consultant on behalf of the City of

Portland and Robyn Williams, Executive Director of Portland's Centers for the Arts, Metro

- All available web and social media channels
- Partnership with Metro to co-promote engagement

JUNE - Online Public Input Form and Targeted Stakeholder Engagement Focus Groups

- Labor Unions
- Arts Organizations (all P'5 users)
- P'5 Staff
- MERC
- Non-profit Area Theaters
- Travel Portland and Metro Chamber
- P'5 Adult Council
- P'5 Youth Council
- Independent Venues Coalition

JULY - Results and Data Analyzed

- Analysis and Summary Report targeted for July 31, 2024 City Council Meeting

Financial and Budgetary Impacts

The City Spectator Venues and Visitor Activities Fund provided one grant of \$200,000 to the Halprin Landscape Conservancy to further develop the Keller Auditorium renovation concept.

The City Spectator Venues and Visitor Activities Fund provided two grant agreements each totaling \$50,000: one to Lloyd Center and one to Portland State University for their design work for their sites.

The City Spectator Venues and Visitor Activities Fund paid for a facilitator to oversee conversations between Lloyd Center and Portland State University and the current users of the Keller Auditorium.

Metro paid for a universal cost analysis, that examines both HLC's renovation design of the existing Keller, Lloyd Center's new design for a facility on their site and Portland State University's new design for a facility on their site.

The City Spectator Venues and Visitor Activities Fund paid for an economic impact analysis that targeted the Keller's impact in the metro region as well as how a closure of the Keller would impact the economy.

Both the City and Metro will contribute efforts toward the public outreach campaign following the Council presentations on May 29.

Community Impacts and Community Involvement

In March, the City hired a communications consultant, In Common Agency, to support and expand communication efforts regarding the project. The City's website has been up to date: www.portland.gov/keller (<http://www.portland.gov/keller>), reader boards at theaters have been publicizing the website and posters and business cards have been distributed at Portland's venues, directing interested parties to visit the project website for the most up to date information.

The monthly City Arts Newsletter has also been featuring project updates and as part of design concept development, current users of the Keller (e.g., Broadway Across America, Oregon Ballet Theatre and Oregon Symphony) were briefed and interviewed to inform site designs and project needs.

The City will post the three reports to the Council agenda for public consumption.

Once a broader engagement platform launches in June (see draft engagement table), more expansive community engagement will take place through targeted stakeholder engagement and public input solicitation.

The City will continue to post project updates to the Spectator Venues Program website as well as to social media.

100% Renewable Goal

Both the renovation design and the new facility designs will center on green and sustainable design. All three options will improve outputs when compared with the current, outdated facility.

In any scenario, the City's Green Building Policy and Metro's Sustainable Building & Sites policy will be incorporated into any future design.

Budget Office Financial Impact Analysis

This ordinance and two others below (Portland State University and Halprin Landscape Conservancy Design Concept reports) pertain to the City's exploration of whether to renovate Keller Auditorium on-site or build anew on a different site. The City Spectator Venues and Visitor Activities Fund provided one grant of \$200,000 to the Halprin Landscape Conservancy to further develop the Keller Auditorium renovation concept. The fund also provided two grant agreements each totaling \$50,000: one to Lloyd Center and one to Portland State University for their design work for their sites. In addition, the fund paid for a facilitator to oversee conversations between Lloyd Center and Portland State University and the current users of the Keller Auditorium. Metro paid for a universal cost analysis, that examines both HLC's renovation design of the existing Keller, Lloyd Center's new design for a facility on their site and Portland State University's new design for a facility on their site. The City Spectator Venues and Visitor Activities Fund paid for an economic impact analysis that targeted the Keller's impact in the metro region as well as how a closure of the Keller would impact the

economy. Both the City and Metro will contribute efforts toward the public outreach campaign following the Council presentations on May 29.

Document History

Item 456 Time Certain in [May 29-30, 2024 Council Agenda](https://www.portland.gov/council/agenda/2024/5/29)
(<https://www.portland.gov/council/agenda/2024/5/29>)

City Council

Accepted

Motion to accept the report: Moved by Ryan and seconded by Gonzalez.

Commissioner Dan Ryan Yea

Commissioner Rene Gonzalez Yea

Commissioner Mingus Mapps Yea

Commissioner Carmen Rubio Yea

Mayor Ted Wheeler Absent

A THEATER FOR ANYONE

LLOYD DISTRICT

CONCEPTUAL SITE STUDY FOR PERFORMING ARTS CENTER

MAY 8, 2024



TABLE OF CONTENTS

1 INTRODUCTION

- Listening: A Beginning
- What the Performing Arts Center Provides
- What Makes the Lloyd Center Site Unique

Addresses Program Scope of Work from Grant Agreement

Item 1: Site & Program Evaluation

A: Review Preexisting Work

B: Meet with Long-standing Users/Operators

2 DISTRICT SCALE: FULFILLING THE PROMISE

- Central & Connected
- History
- Mixed Uses
- Civic Investments

Addresses Program Scope of Work from Grant Agreement

Item 2: Site/Facility Vision & Test Fit Design

A: Relationship of Place, Values, & Community Enhancement

3 NEIGHBORHOOD SCALE: DELIVERING THE DREAM

- Master Plan Goals
- Blank Canvas
- Room to Grow

Addresses Program Scope of Work from Grant Agreement

Item 2: Site/Facility Vision & Test Fit Design

A: Relationship of Place, Values, & Community Enhancement

B: Test Fit

C: Infrastructure, Site, & Functional Relationships

4 SITE SCALE: SEEDING HOPE

- Activate the Facility & District
- Complementary Programming

Addresses Program Scope of Work from Grant Agreement

Item 2: Site/Facility Vision & Test Fit Design

C: Spatial & Functional Relationships

5 A THEATER FOR ANYONE

- Exploring Possibilities: A Series of “What Ifs?”

Addresses Program Scope of Work from Grant Agreement

Item 2: Site/Facility Vision & Test Fit Design

A: Relationship of Place, Values, & Community Enhancement

C: Parking, Spatial & Functional Relationships

6 AN OPPORTUNITY FOR THE CITY

- Potential Partnership Scenarios
- Development Costs & Dependencies
- Funding Opportunities
- Conceptual Project & Development Schedule

Addresses Program Scope of Work from Grant Agreement

Item 3: Cost & Partnership Structure

Item 4: Schedule

1

INTRODUCTION

Listening: A Beginning

Listening to our community is the through-line of this performing arts facility story.

As fresh eyes to the project, the Lloyd Center site team realizes this is only the start of that listening process. We are launching possibilities with the messages we have heard from P5, Portland Opera, Oregon Ballet Theater, and Broadway Across America, yet there are so many more voices to be heard. Our region has a rich heritage of small companies and independent practitioners of the arts. We are not tied to one entity or viewpoint but want to open the door for input from all, especially those who may be venturing into a theater for the first time.

What we have heard so far is simply the beginning:



HONOR PLACE & PEOPLE

“should feel local”

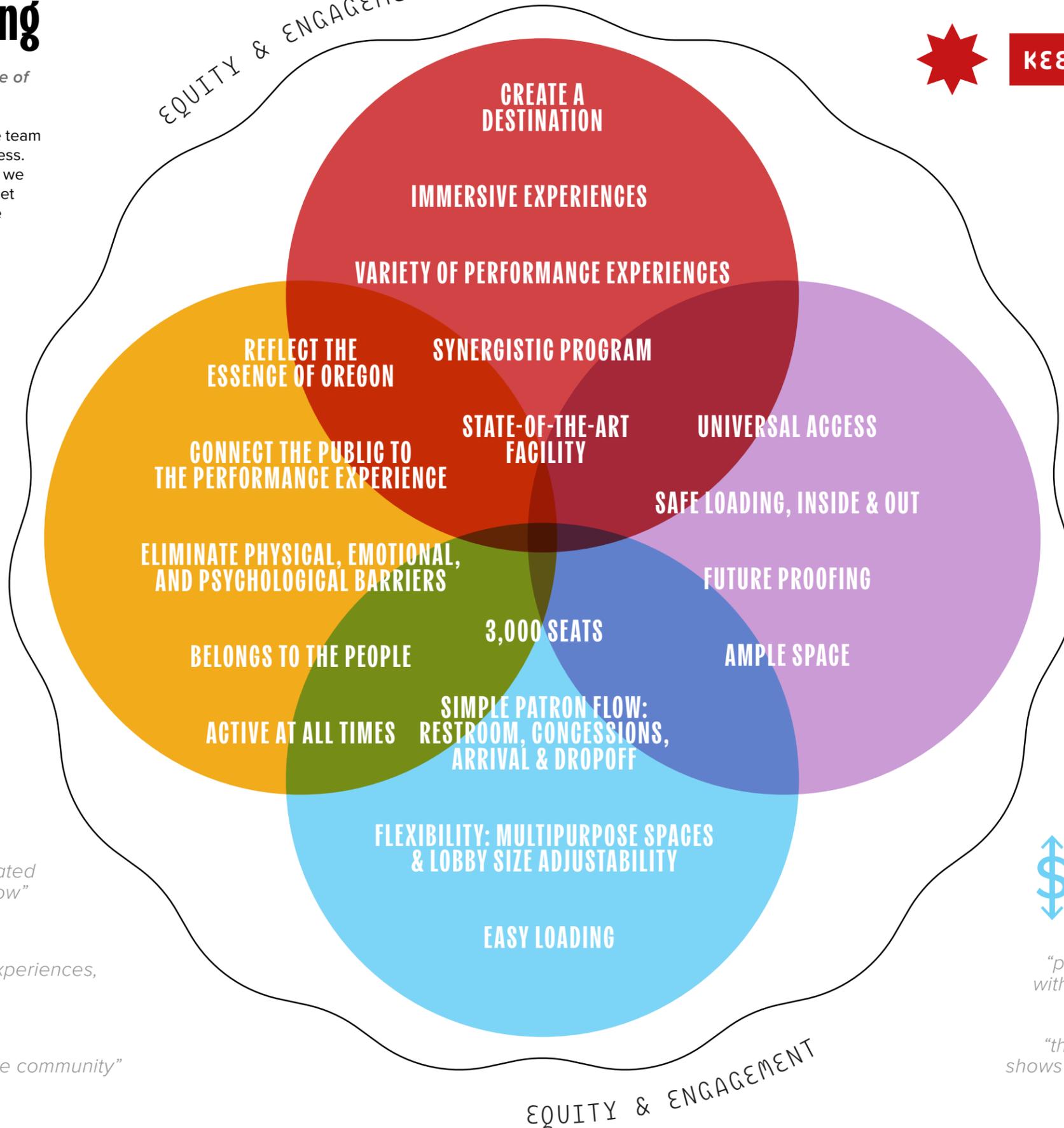
“grounded in the PNW”

“public areas are accessible and activated at all times, not just when there is a show”

“younger audiences want immersive experiences, they want to be a part of the building”

“accessible and welcoming to the entire community”

EQUITY & ENGAGEMENT



KEEP PNW ART & CULTURE THRIVING

“the number of seats allows us to support other arts programs gives us greater flexibility in affordable ticket pricing”

“flexibility to accommodate a greater range of shows”

“patrons want a night out”

“adjacent to green space”



SAFETY & FUNCTIONALITY

“a journey through the space that’s more valued than just walking in and going to your seat”

“our audiences need more accessible seating than what the code requires”

“need space to bring in other art forms”



FISCAL SUSTAINABILITY

“people want to use the restroom and get a drink without waiting in long lines and missing the show”

“the easier we can load in and load out, the more shows we can have and the more our costs go down”

EQUITY & ENGAGEMENT

Introduction

WHAT THE PERFORMING ARTS FACILITY PROVIDES

NO MATTER WHERE THE PERFORMING ARTS FACILITY TAKES ROOT FOR ITS FUTURE, IT WILL PROVIDE A WELCOMING SPACE WITH UNIVERSAL DESIGN THAT CREATES AN IMMERSIVE EXPERIENCE AND ACTIVATES ITS NEIGHBORHOOD.

ACTIVATION

The facility can be a community center with energy that animates the neighborhood from 6:00 am to midnight. Public amenities, an active lobby during non-performance times, classes for school children, rehearsal space for performers and staff, and of course the performances will make the building an exciting destination.

WELCOMING SPACE

The facility will be a place that represents accessibility to the arts for all. It must belong to the people of Portland, with materials, colors, and textures grounded in this locale and where patrons can find community and human connection. It will provide a pleasant arrival experience that is comfortable and secure and spaces that engage the community across all demographics—master classes, touch tours of costumes and props, talkbacks, meet-and-greets, lobby displays, and gallery space. The seating must allow easy access to each seat with all patrons close enough to the stage without layers of vertical balconies.

UNIVERSAL DESIGN

The performing arts facility will accommodate visitors, staff, and cast with varied physical abilities, body types, and neurodivergencies. It will provide: adequate capacity for diverse seating options beyond ADA standards at every price point and with maximal sightlines; spaces of respite for neurodiverse patrons; comfortable accommodation for staff who provide sign language interpretation, closed captioning, and audio descriptions; gender neutral facilities for performers and patrons; and easy access to ticketing for all. We anticipate listening sessions with people representing all these groups to incorporate their feedback into the design.

IMMERSIVE EXPERIENCE

Our team anticipates the need to accommodate technologies that haven't yet been applied to the performing arts. We plan to provide flexibility to modify performance, seating, and support areas for future technologies and will create a forward-thinking design that allows for increasingly immersive performance experiences.



Director Park, ZGF

Introduction

WHAT MAKES THE LLOYD CENTER SITE UNIQUE

The Lloyd Center site is a blank canvas for community engagement. We are not defining what can be drawn on this canvas, but instead desire to highlight how the performing arts center in this location can 1) fulfill the promise of what this district can be, 2) deliver the dream of a facility that enriches our city, and 3) plant seeds of hope for how the arts can truly serve all in our community.

The master plan that is underway for Lloyd Center site restores the neighborhood grid with a vision for open spaces and pedestrian-level activation. A performing arts center as an icon at the heart of this plan adds exciting community-focused possibilities and connections for the district and the city.

COMMUNITY

At the center of this project is its community impact.

- The Lloyd Center location expands P'5's reach to the near eastside, bridging downtown activities with eastside communities.
- The proximity to existing entertainment and visitor facilities, including the Oregon Convention Center, Moda Center, Veterans Memorial Coliseum, expands the audience for synergistic businesses such as restaurants and hotels.
- This project can enhance the civic investments already made in this district.

DIVERSE PARTNERSHIPS

The Lloyd District provides space for cooperative and adjacent programming.

- Room for other organizations who have shared and complementary passions to locate within the district.
- Opportunity to nurture partnerships with related organizations and increase access for a broad audience.

FLEXIBILITY

The flexibility that is built into the Lloyd Center Master Plan allows for diverse uses.

- Adjacent spaces within the plan area are available for related uses: restaurants, housing, offices, and a myriad options for synergistic programming to make this district a destination.
- Flexibility of the block size can accommodate a variety of performance and supporting spaces, including the 3,000-seat venue and a smaller venue, if desired. This provides opportunity for cross-promotion with a variety of producers.
- Ample room for loading and unloading accommodates a range of uses.

OPEN SPACE

With room and appropriate adjacencies to develop the notion of a "Theater in the Garden," the Lloyd Center site is an optimal setting for an indoor/outdoor experience that can be an intentional destination or a draw for the casual passerby.

- Orientation of the performing arts center to the existing Holladay Park can create a strong physical relationship with this civic space.
- Designated open spaces within the Lloyd Center Master Plan are interconnected to create a permeable pedestrian network.
- On this site, the center can be a uniquely four-sided venue with numerous options for indoor/outdoor performances that appeal to a variety of visitors.

ACCESS

The Lloyd Center site is well served by Portland's transit network allowing visitors to arrive through a variety of modes of transportation. The site has existing and ready access to:

- MAX light rail
- Streetcar
- Bus
- Green Loop (linear park with access on foot, mobility device, or bike)
- Freeway access
- Parking

EXPERTISE TO SHEPHERD THE PROCESS

Urban Renaissance Group (URG) has engaged a small team of expert listeners who pair local sensibilities with international theater design expertise. This is just the beginning. If the city moves forward with the Lloyd Center site, a diverse team with COBID partners in a variety of disciplines will provide additional expertise to expand on the vision and bring it to fruition.

ZGF

Architecture & Urban Design

Fisher Dachs Associates

Theater Planning & Design

ARUP

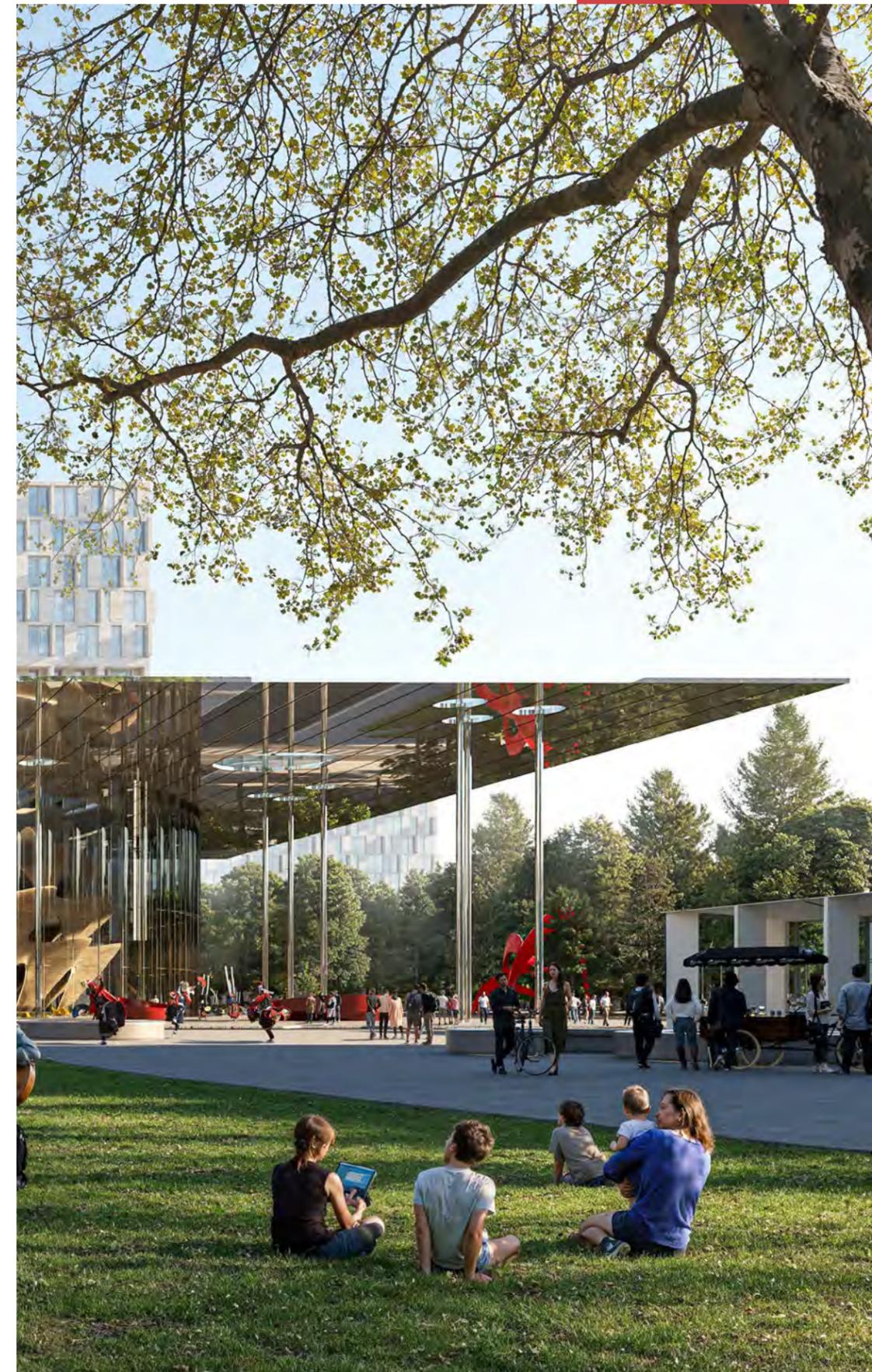
Acoustics & Mechanical / Electrical / Plumbing Engineering

DOWL

Civil Engineering

KPFF

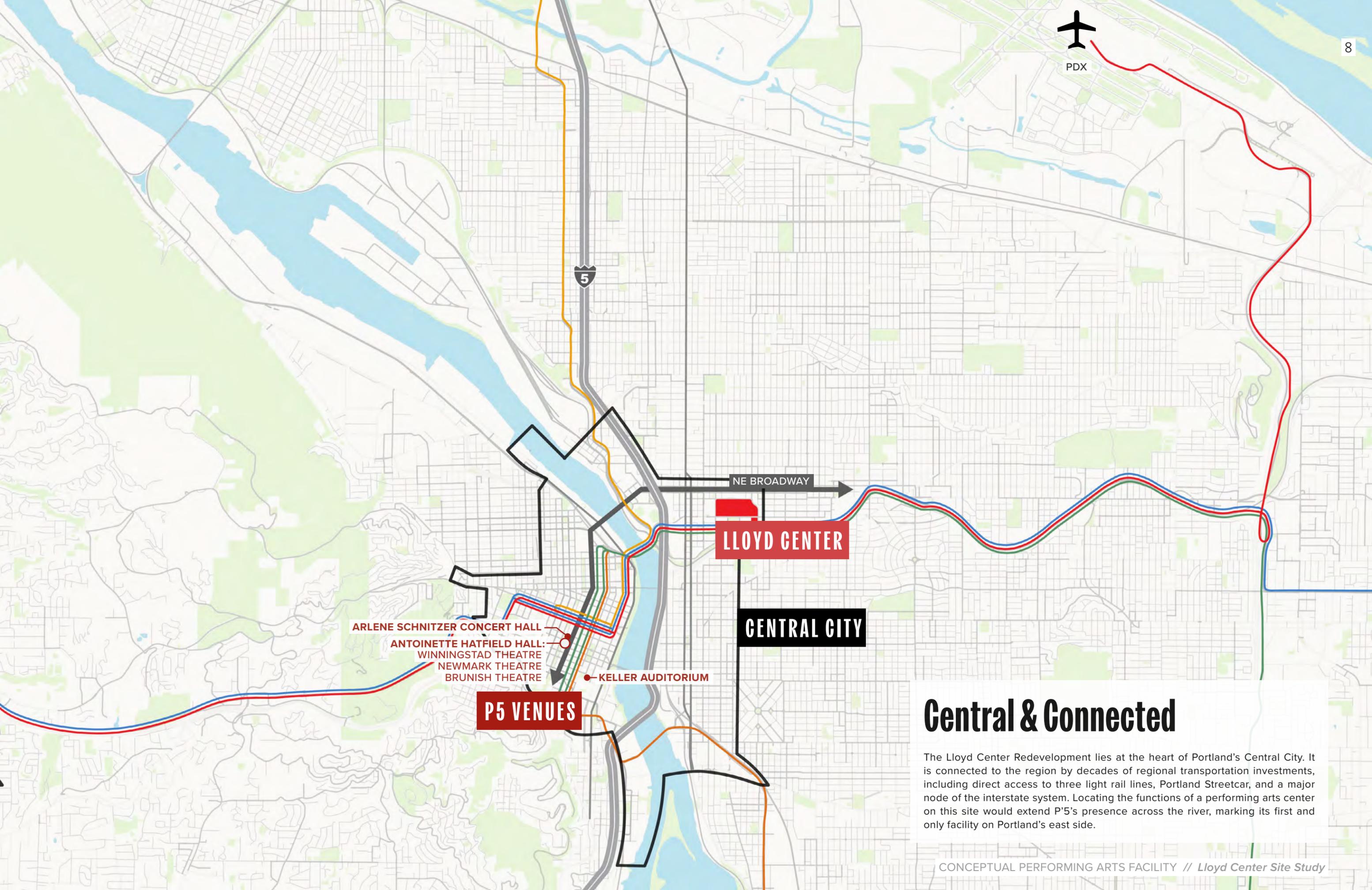
Structural Engineering



2

FULFILLING THE PROMISE

*DISTRICT SCALE



LLOYD CENTER

CENTRAL CITY

P5 VENUES

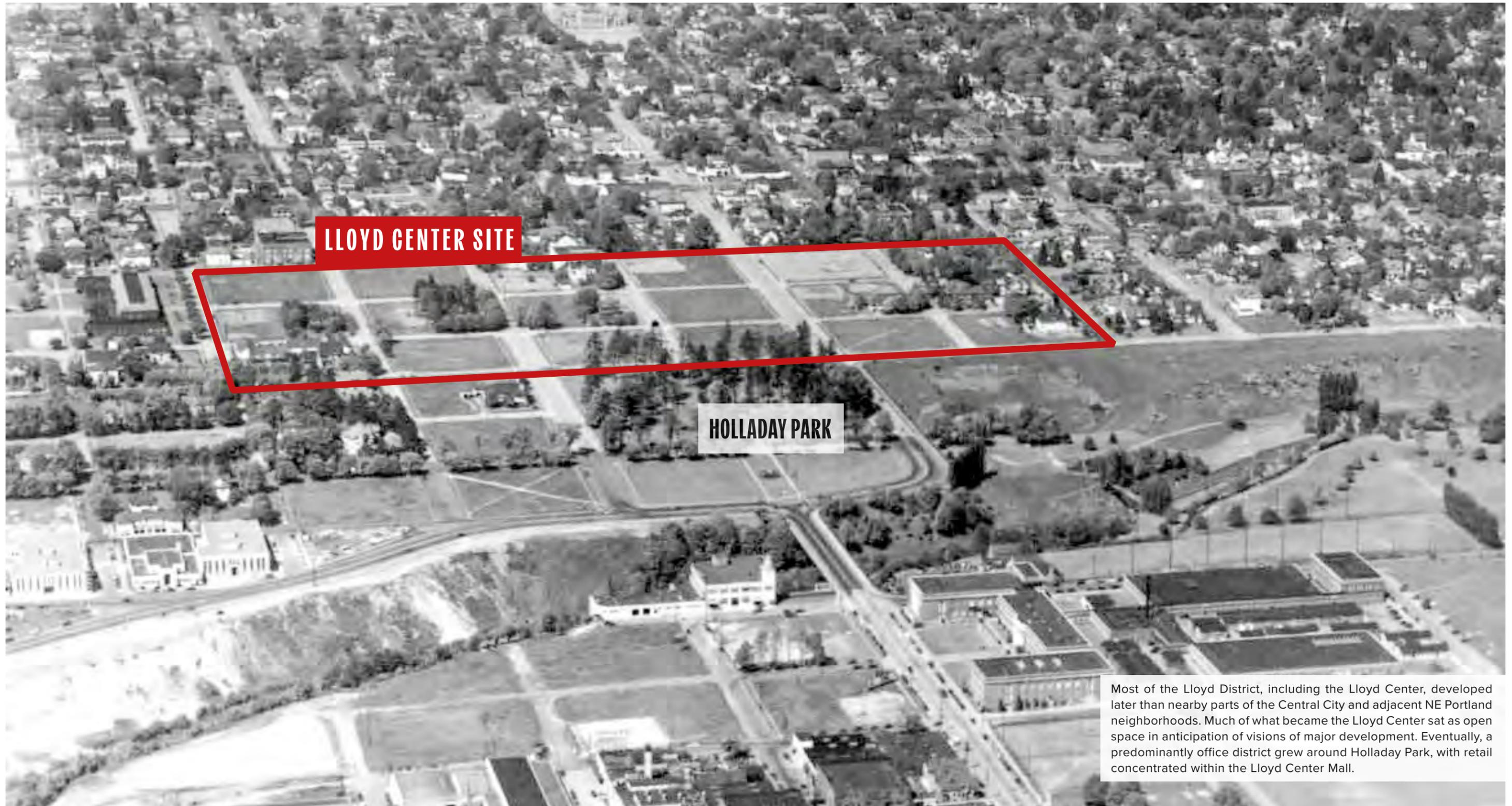
- ARLENE SCHNITZER CONCERT HALL
- ANTOINETTE HATFIELD HALL:
 - WINNINGSTAD THEATRE
 - NEWMARK THEATRE
 - BRUNISH THEATRE
- KELLER AUDITORIUM

NE BROADWAY

Central & Connected

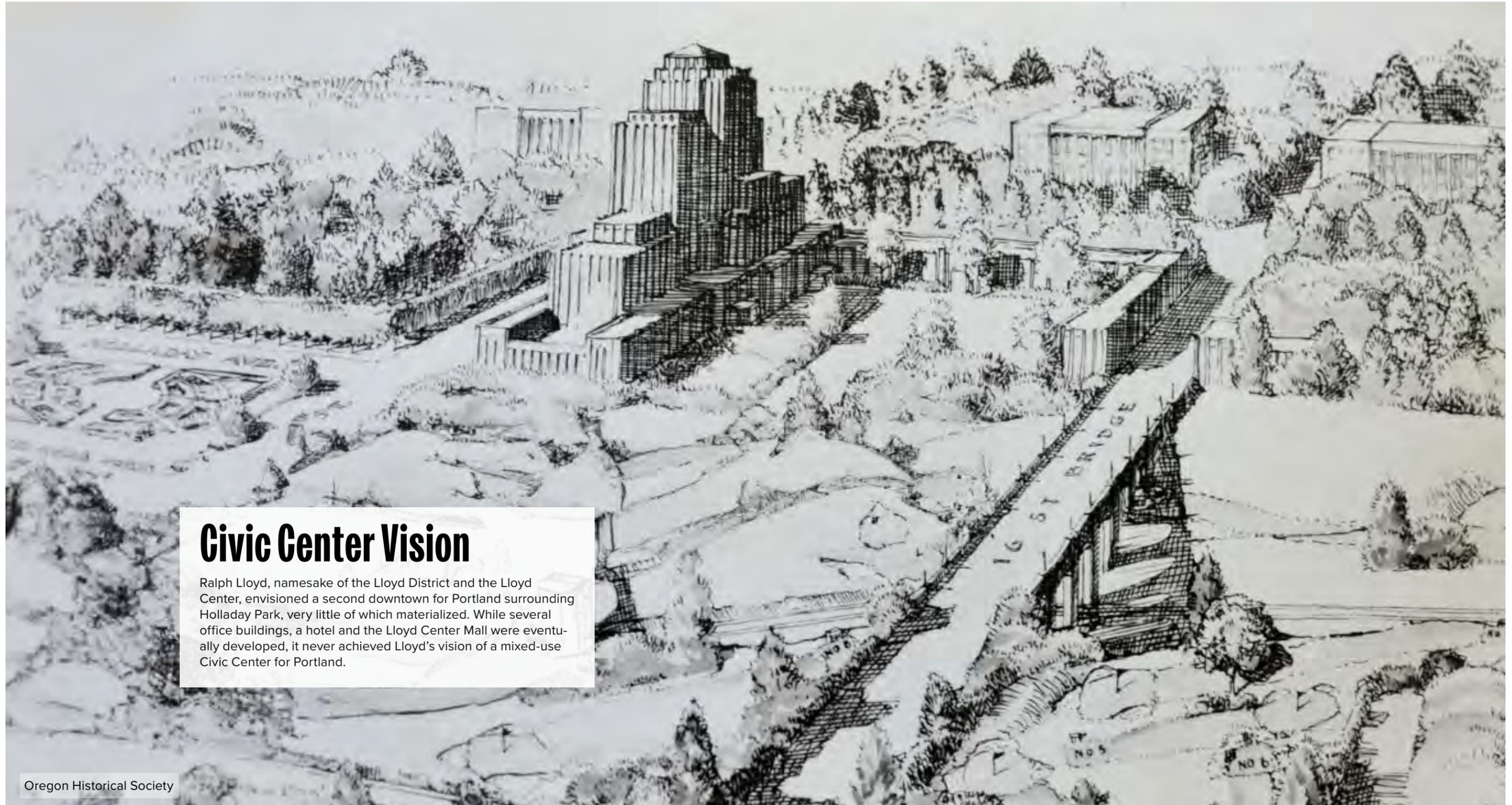
The Lloyd Center Redevelopment lies at the heart of Portland's Central City. It is connected to the region by decades of regional transportation investments, including direct access to three light rail lines, Portland Streetcar, and a major node of the interstate system. Locating the functions of a performing arts center on this site would extend P'5's presence across the river, marking its first and only facility on Portland's east side.

The Beginning



Most of the Lloyd District, including the Lloyd Center, developed later than nearby parts of the Central City and adjacent NE Portland neighborhoods. Much of what became the Lloyd Center sat as open space in anticipation of visions of major development. Eventually, a predominantly office district grew around Holladay Park, with retail concentrated within the Lloyd Center Mall.

A Vision, Unrealized



Civic Center Vision

Ralph Lloyd, namesake of the Lloyd District and the Lloyd Center, envisioned a second downtown for Portland surrounding Holladay Park, very little of which materialized. While several office buildings, a hotel and the Lloyd Center Mall were eventually developed, it never achieved Lloyd's vision of a mixed-use Civic Center for Portland.

Lloyd Center Mall

The Lloyd Center Mall opened in the 1960's with 100-stores, believed at that time to be the largest in the country. Its open air design was distinguished by fountains, sculptures, grand staircases, and high quality materials.

Despite the slow and incomplete implementation of Lloyd's original vision, the mall did become a significant regional hub of community gathering, celebration, and shopping.

Ralph B. Lloyd's granddaughter was a budding competitive ice skater, so he included a rink in his plans for the shopping center. Now, ice rinks are found in malls across the country. (Ice rink with glass canopy in 1990)



1961 The park bureau's annual children's circus parade assembled at NE 13th Ave. & Multnomah St.

1962 A square dance jamboree at the open air Lloyd Center

1964 A circular fountain donated to the city by Lloyd Corp. and Pacific Power & Light debuted at Holladay Park.

1976 The Lloyd Center approximated the Basque farmlands of Eastern Oregon with its display of live sheep for spring.

2013 Food trucks started to pop up within Lloyd District.



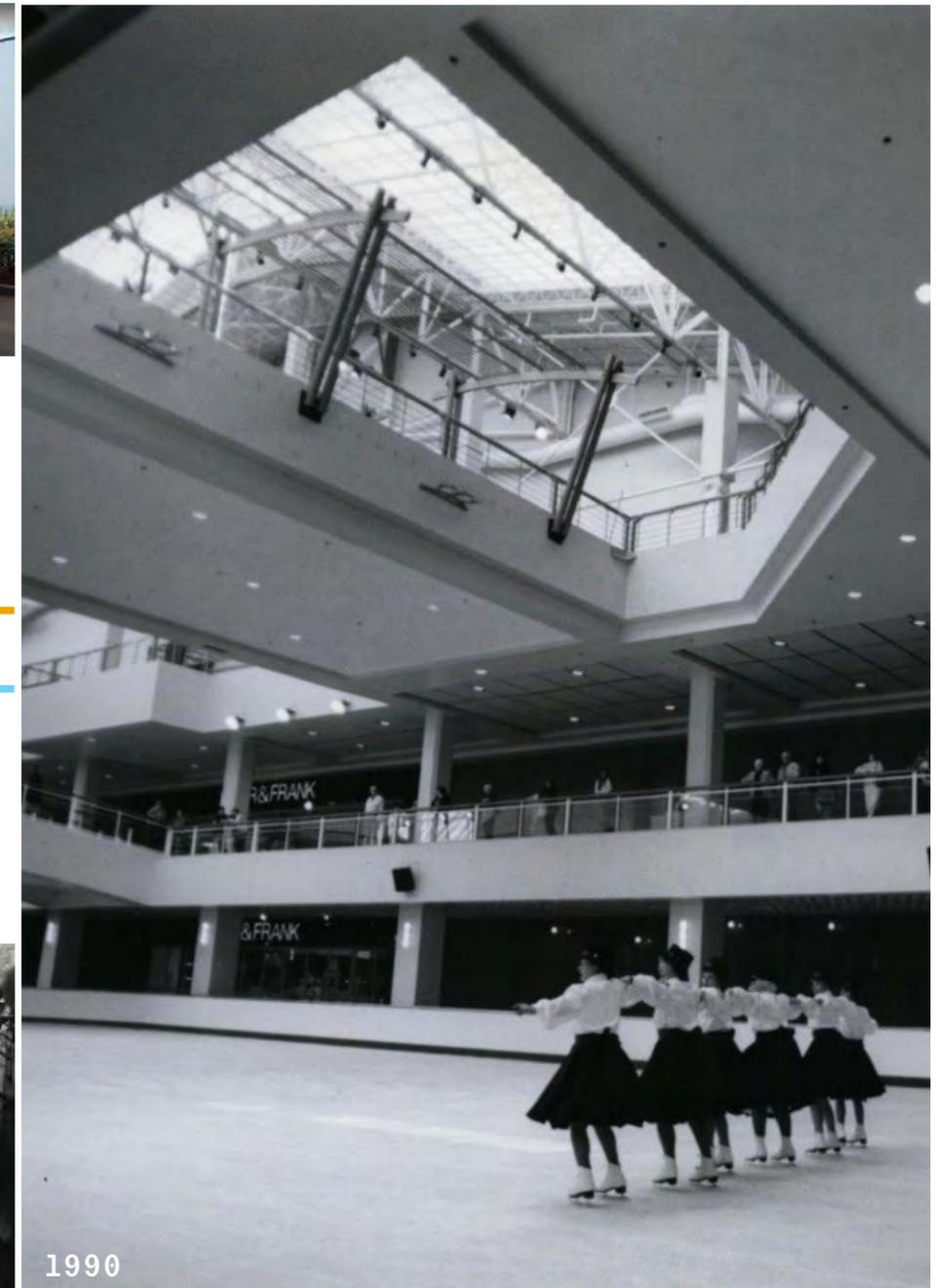
The Portland Ice Skating Club practicing at the Lloyd Center's Ice Pavilion.

Andy Williams appeared at Lloyd Center. The shopping center served as a major concert venue.

A massive chess tournament. Lloyd Center hosted many similar events.

Lloyd Center was the heart of Christmas spirit for many years.

A symphony concert at the Lloyd Center Ice Pavilion.



Past & Present

Renovations in late 1991 and 2015 enclosed the mall and eliminated almost all of the distinctive physical design elements of the original mall. What remains today is a memory of its history as a center of social gathering, which persists today through the ongoing operations of the ice skating rink.



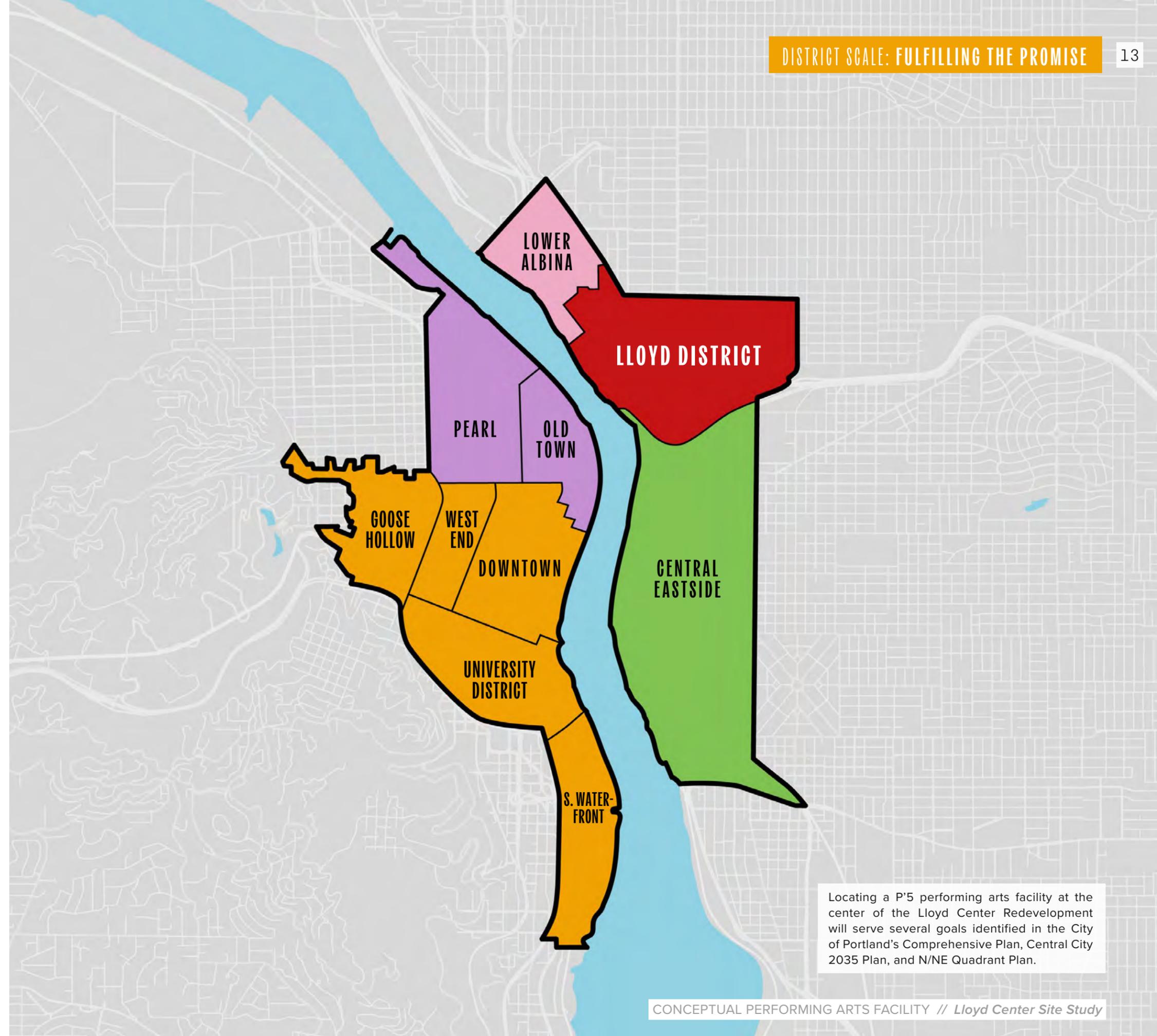
A Piece of the Central City Puzzle

The Lloyd District is an important subarea of Portland's Central City 2035 Plan (CC2035), with specific goals articulated in the N/NE Quadrant Plan.

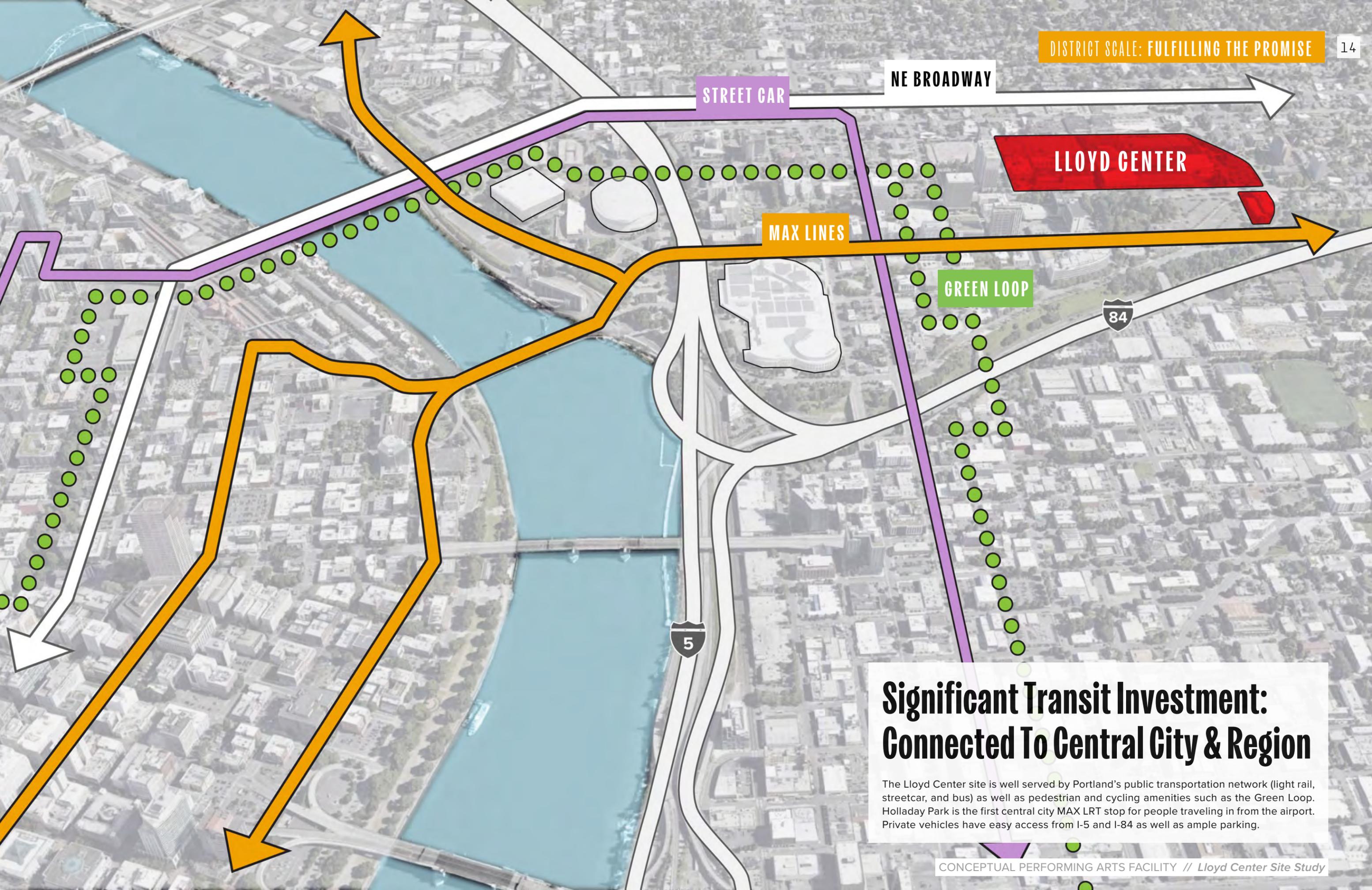
CC2035 aimed to capitalize on "the Lloyd District's development potential, transportation investments and EcoDistrict designation to create a vibrant, sustainable and mixed-use district, that becomes an extension of downtown and strong eastside urban center."

The Lloyd Center Redevelopment Central City Master Plan (CCMP) delivers on the N/NE Quadrant Plan's goal of establishing a "high density, high-amenity urban place that features a mix of residential and commercial/employment uses organized around a new, signature public open space system."

The Quadrant Plan also calls for future projects to capitalize on the unique urban form of the Lloyd District with blocks that vary from the typical 200' by 200' Portland city grid. In response, the Lloyd Center site team proposes a flexible and diverse urban framework for the CCMP and a modification of that framework to accommodate the large footprint needed for the P'5 performing arts center. The flexibility offered by larger blocks provides ample space to configure the performance spaces, service and loading, and potential complementary uses.



Locating a P'5 performing arts facility at the center of the Lloyd Center Redevelopment will serve several goals identified in the City of Portland's Comprehensive Plan, Central City 2035 Plan, and N/NE Quadrant Plan.



STREET CAR

NE BROADWAY

LLOYD CENTER

MAX LINES

GREEN LOOP

84

5

**Significant Transit Investment:
Connected To Central City & Region**

The Lloyd Center site is well served by Portland's public transportation network (light rail, streetcar, and bus) as well as pedestrian and cycling amenities such as the Green Loop. Holladay Park is the first central city MAX LRT stop for people traveling in from the airport. Private vehicles have easy access from I-5 and I-84 as well as ample parking.

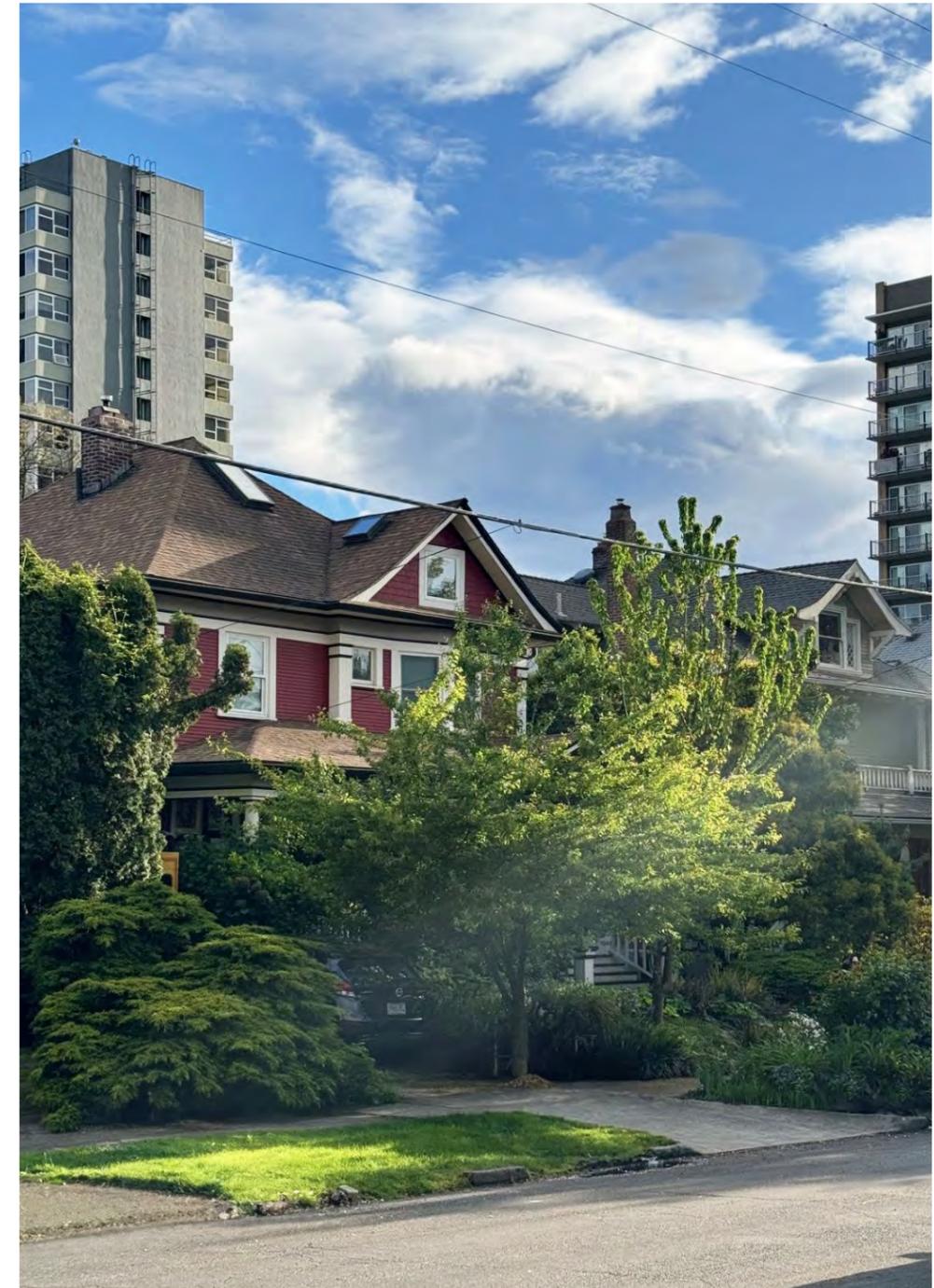
Neighborhood Context



BROADWAY

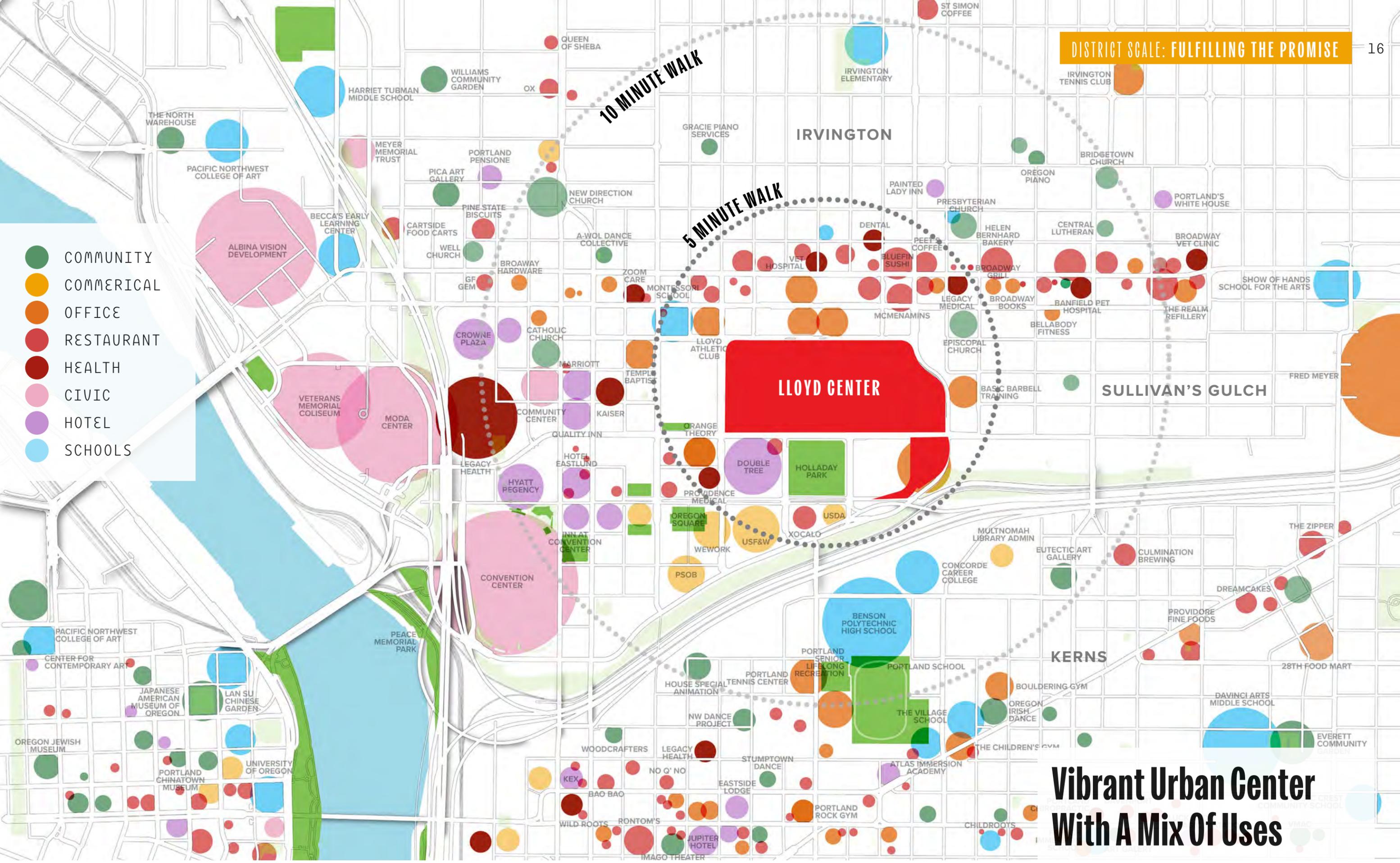


HOLLADAY PARK

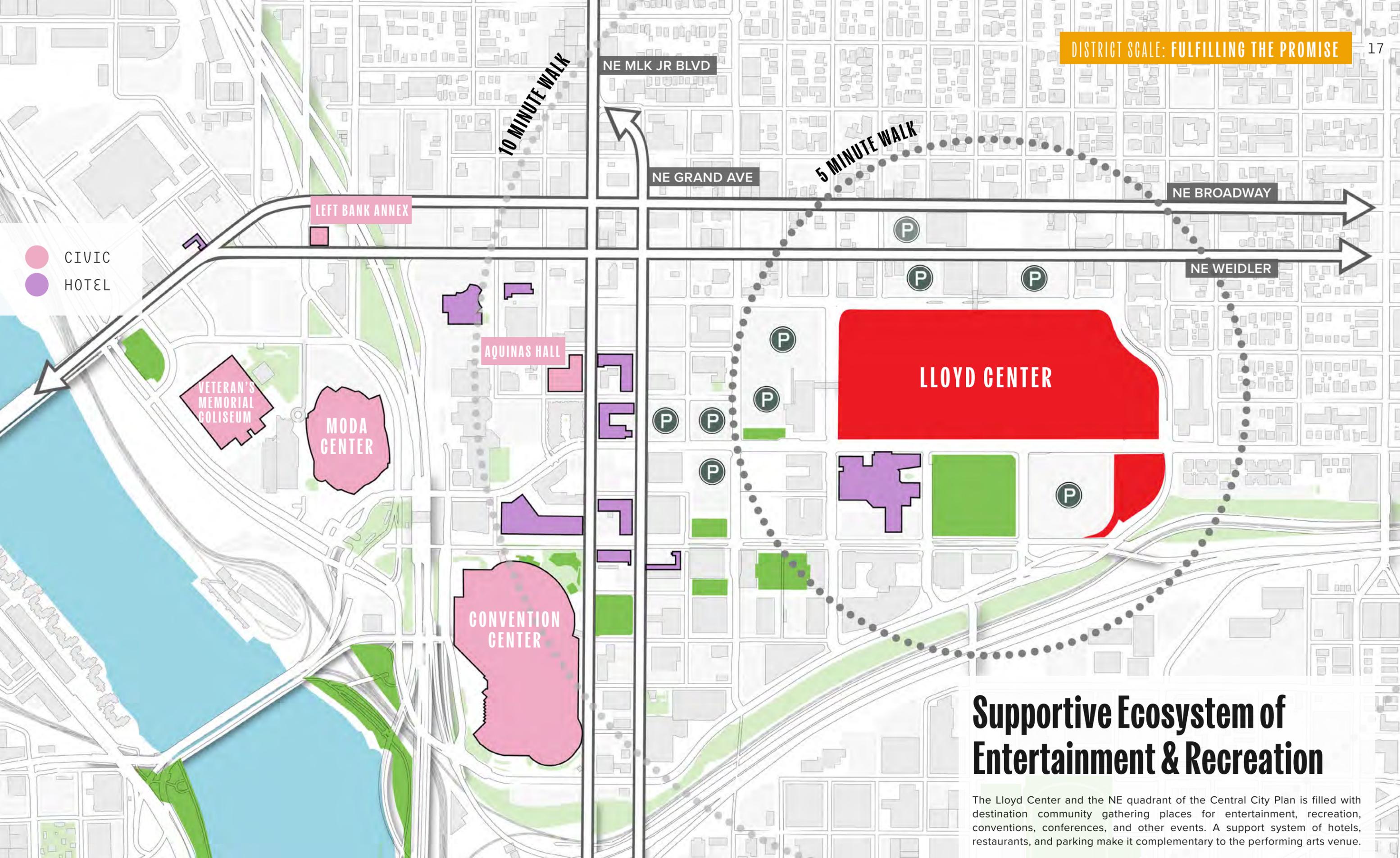


SULLIVAN'S GULCH

- COMMUNITY
- COMMERCIAL
- OFFICE
- RESTAURANT
- HEALTH
- CIVIC
- HOTEL
- SCHOOLS

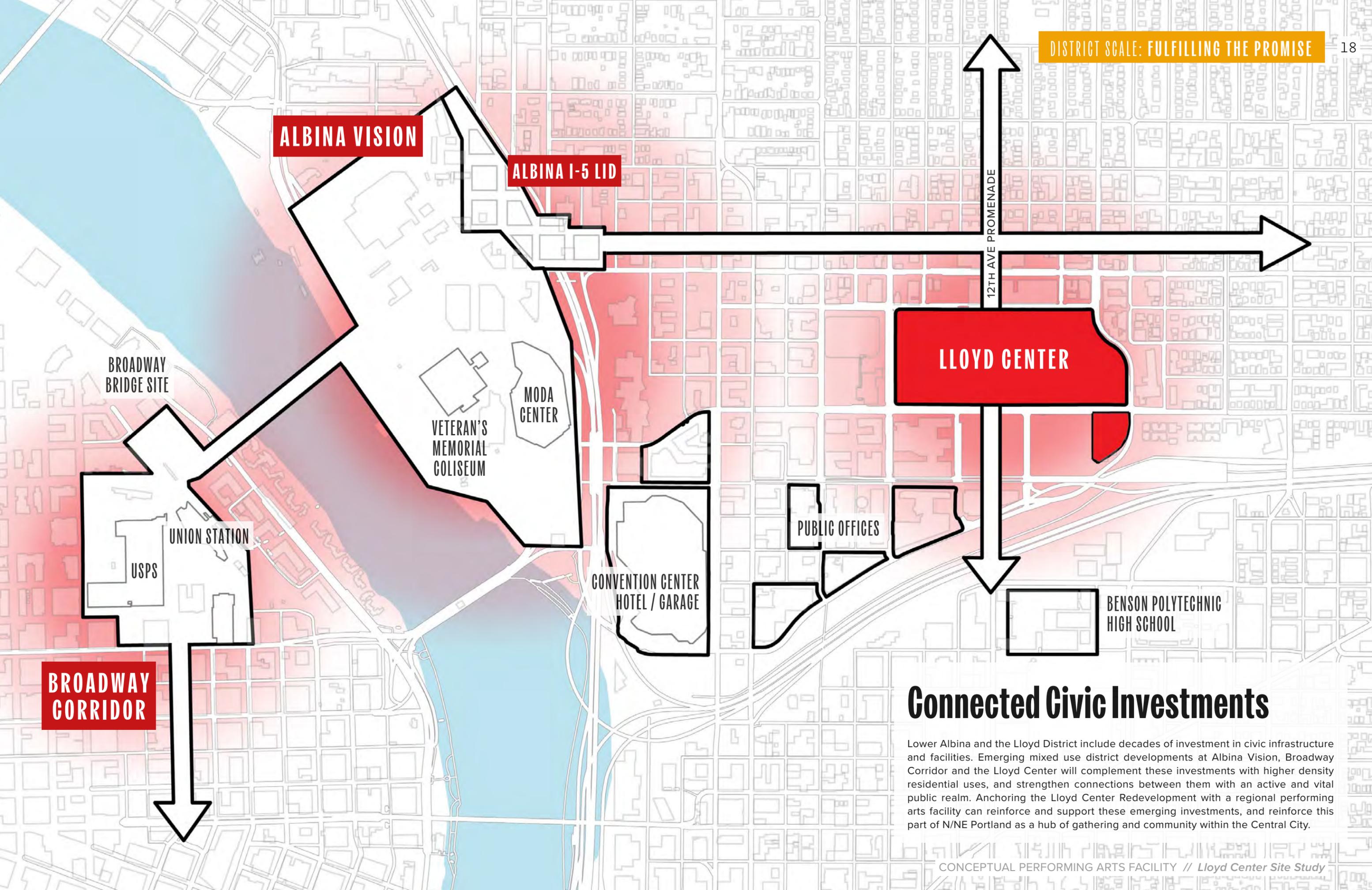


Vibrant Urban Center With A Mix Of Uses



Supportive Ecosystem of Entertainment & Recreation

The Lloyd Center and the NE quadrant of the Central City Plan is filled with destination community gathering places for entertainment, recreation, conventions, conferences, and other events. A support system of hotels, restaurants, and parking make it complementary to the performing arts venue.



ALBINA VISION

ALBINA I-5 LID

LLOYD CENTER

BROADWAY CORRIDOR

BROADWAY BRIDGE SITE

UNION STATION

USPS

VETERAN'S MEMORIAL COLISEUM

MODA CENTER

CONVENTION CENTER HOTEL / GARAGE

PUBLIC OFFICES

BENSON POLYTECHNIC HIGH SCHOOL

12TH AVE PROMENADE

Connected Civic Investments

Lower Albina and the Lloyd District include decades of investment in civic infrastructure and facilities. Emerging mixed use district developments at Albina Vision, Broadway Corridor and the Lloyd Center will complement these investments with higher density residential uses, and strengthen connections between them with an active and vital public realm. Anchoring the Lloyd Center Redevelopment with a regional performing arts facility can reinforce and support these emerging investments, and reinforce this part of N/NE Portland as a hub of gathering and community within the Central City.

3

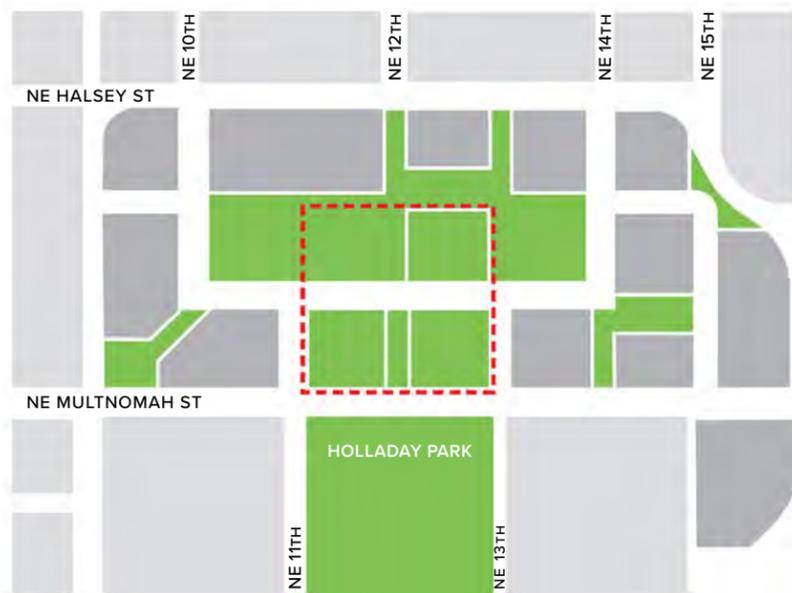
DELIVERING THE DREAM

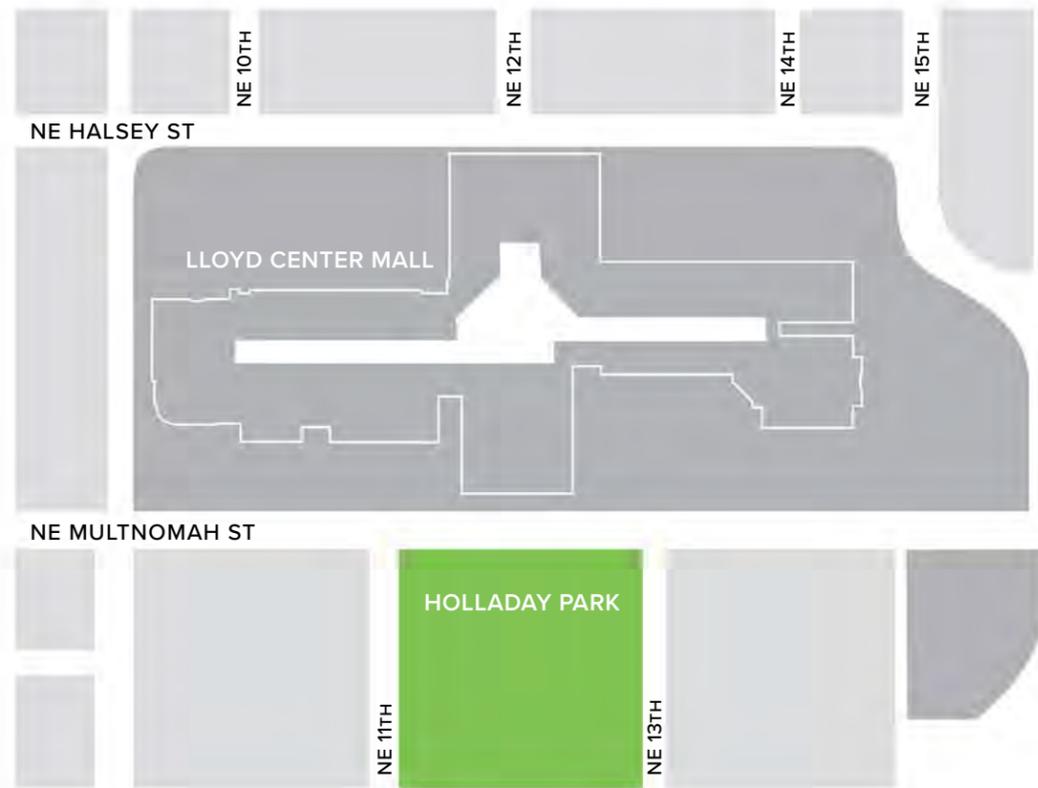
*NEIGHBORHOOD SCALE

Lloyd Center Redevelopment Central City Master Plan

The development team has been working on a master plan with the City that is expected to go before the Design Commission summer 2024. The plan is designed to accomplish the following objectives:

- Break down the scale into Portland-sized blocks
- Provide a framework for diversity and density of development
- Transition from introverted to extroverted
- Focus on the public realm





Lloyd Center today

A development that focuses inward.

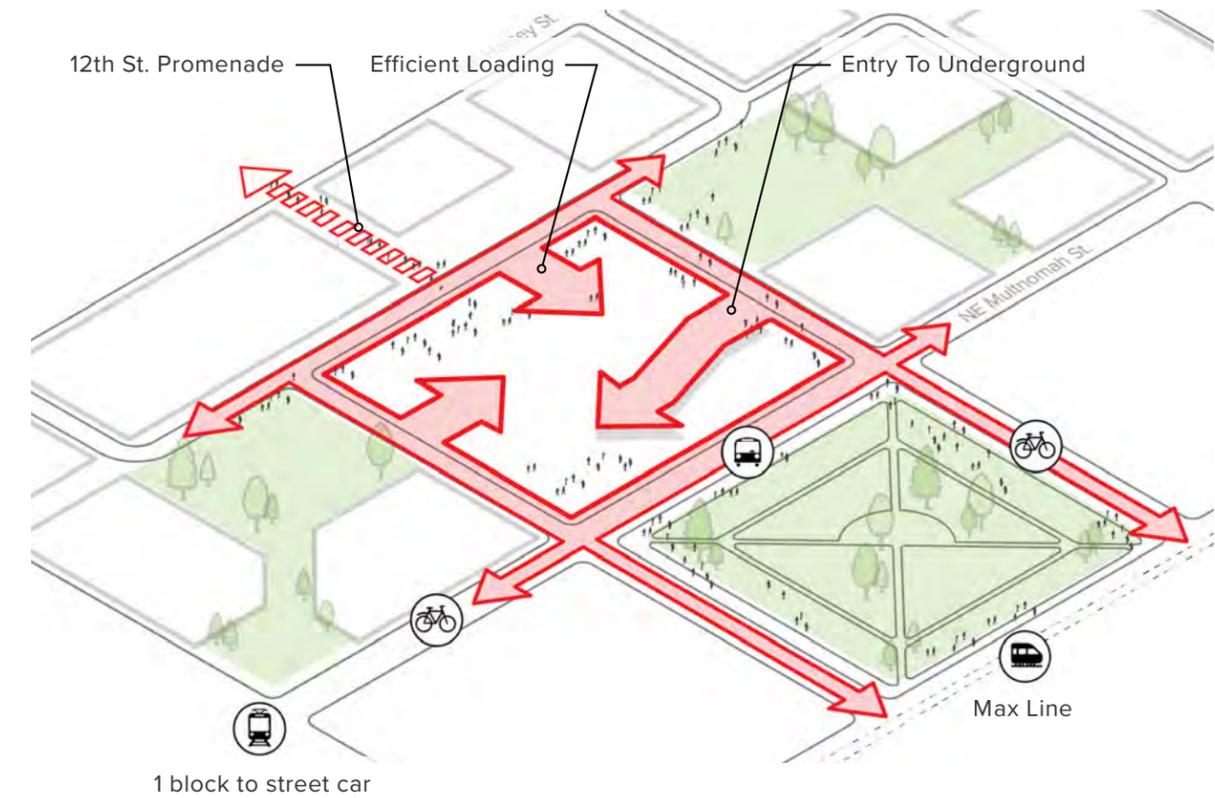
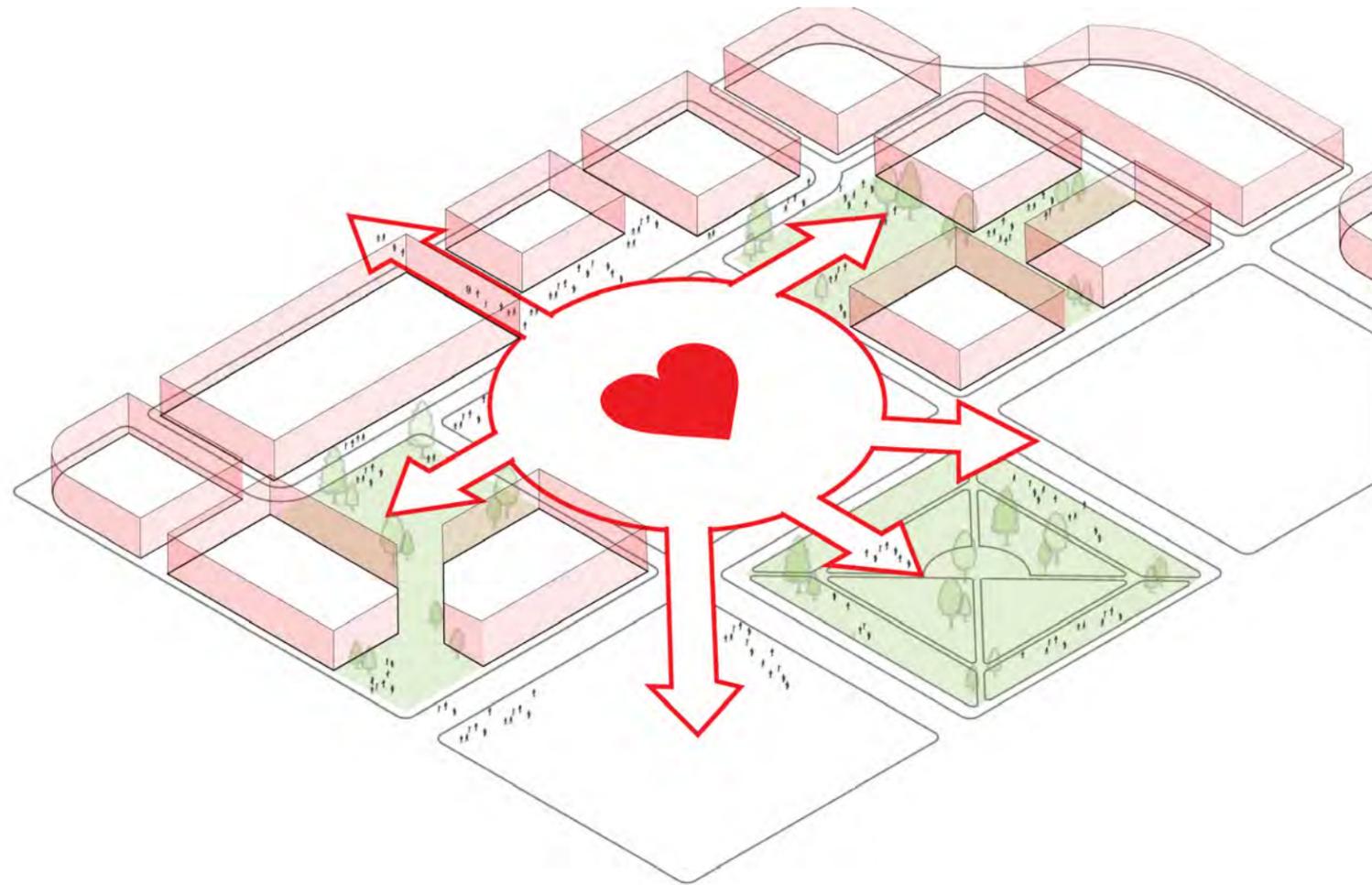


The heart of the neighborhood

If this site is selected, the development team would need to modify the framework to accommodate the footprint of a performing arts center while still accomplishing the goals of the master plan. A performing arts center that would embrace the public realm, invite people in, and anchor the neighborhood amenities.



SAFE LOADING, INSIDE & OUT



Stimulus for redevelopment

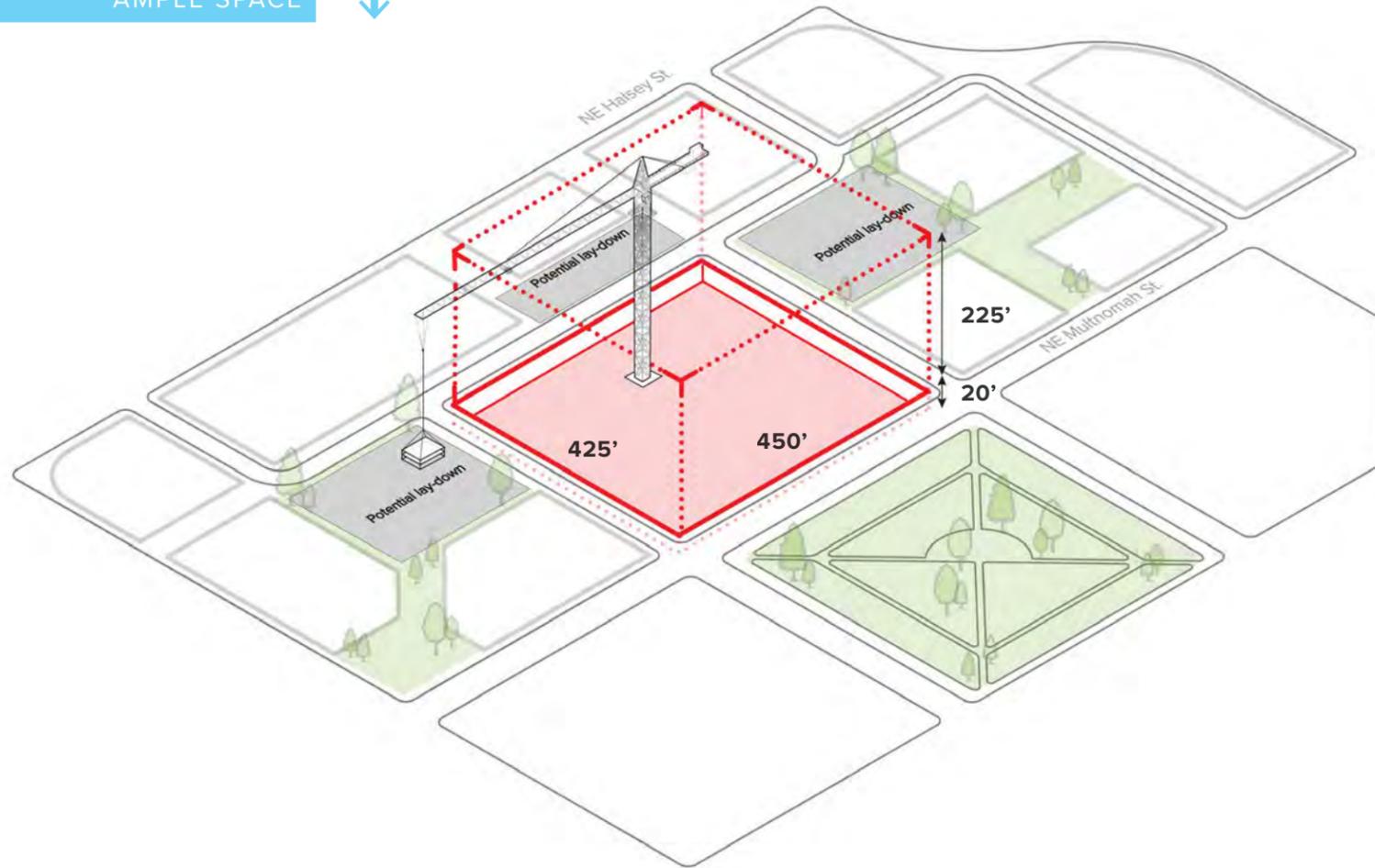
The site is an active center and catalyst for energizing the district.

Open on 4 sides & simple to serve

This site provides unique opportunities for the facility to engage with the public on all four sides. The open-sided site allows for multiple configurations of access for loading, staff, cast, and visitors, including public- and private-designated areas during and outside of performances.

SAFE LOADING,
INSIDE & OUT

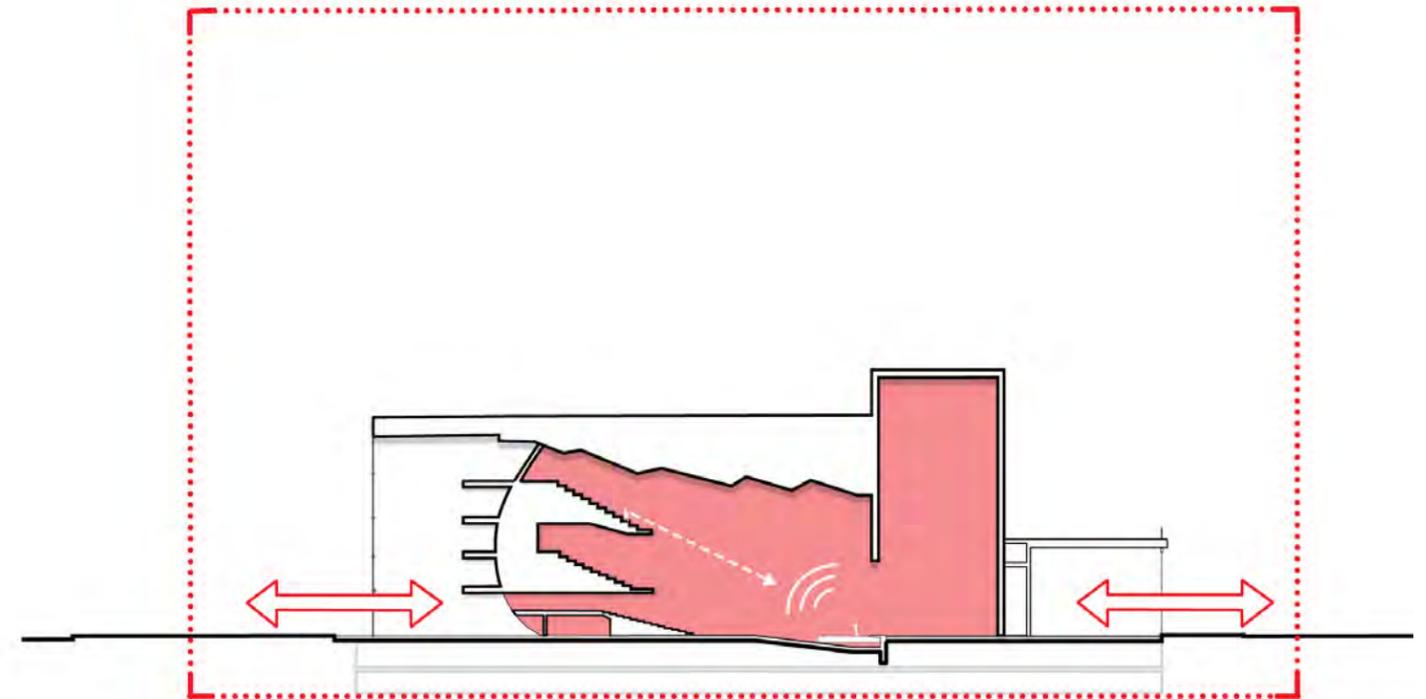
AMPLE SPACE



STATE-OF-THE-ART
FACILITY



UNIVERSAL ACCESS
FUTURE PROOFING



A blank canvas

Generous site dimensions, both horizontally and vertically, and a 20-foot basement that is already excavated, provide nearly unlimited design possibilities that can easily accommodate programmatic needs for theater space, on-site parking, service and support spaces, and high-performance building systems. The surrounding park areas provide flexibility for construction logistics. Existing adjacent laydown space allows multiple projects to be constructed simultaneously.

Room to grow

Preliminary studies show that a 3,000-seat theater will easily fit on this site in a way that maintains the permeability and open space of the master plan. Full dimensional flexibility means ease of service now and provision for room to create a facility that evolves over decades.

4

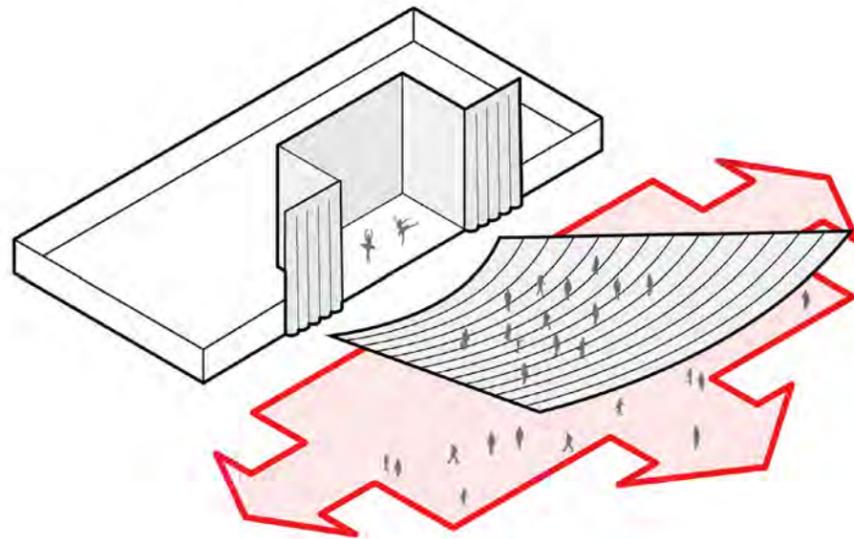
SEEDING HOPE

*SITE SCALE

What if? A Vibrant Community Center

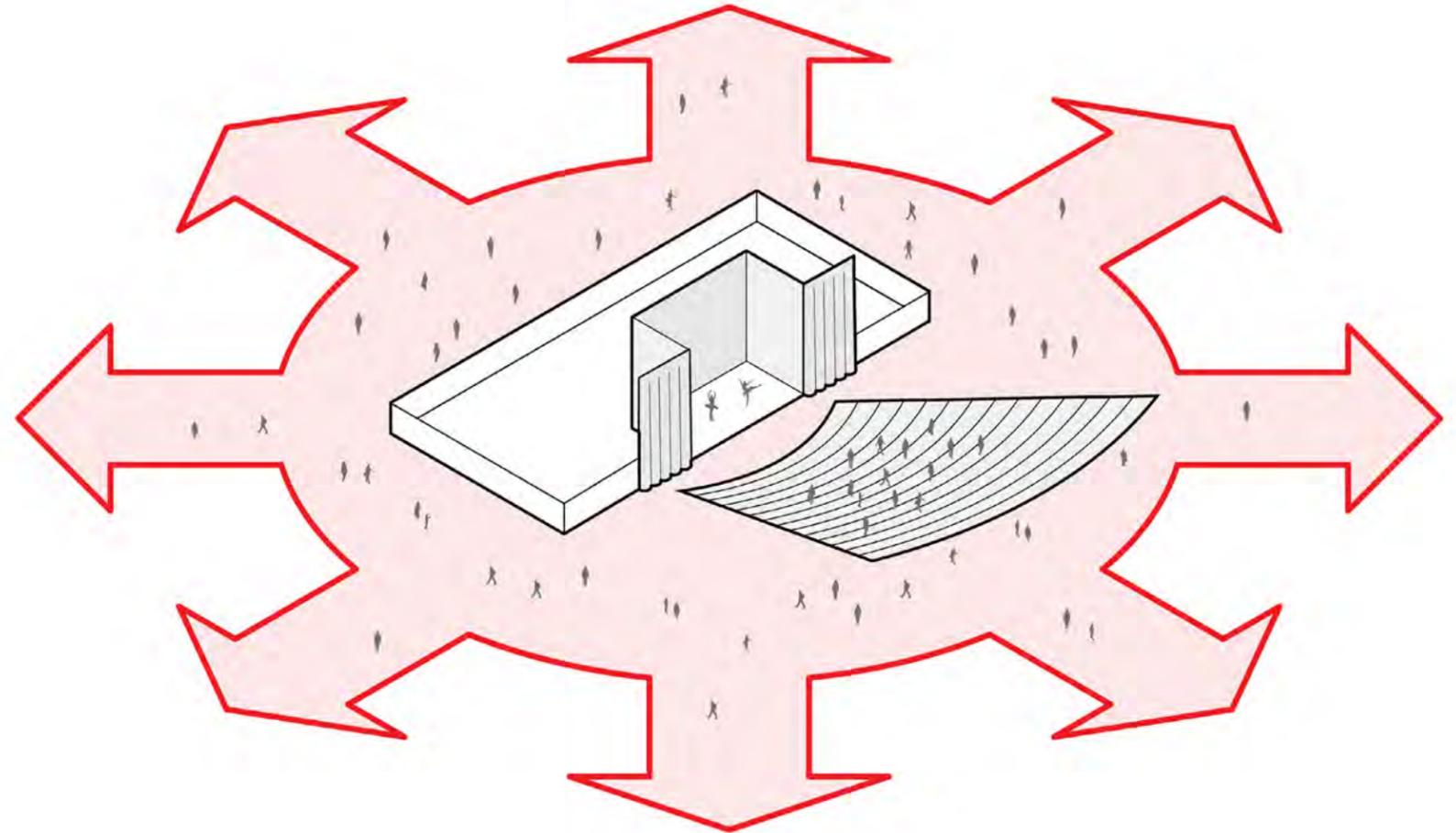


ACTIVE AT ALL TIMES



Lobby activation

Theaters by nature activate the ground plane of a city when they are in use, but this activation typically occurs at the main lobby and entrance while back-of-house spaces that require privacy appear dark and inactive.



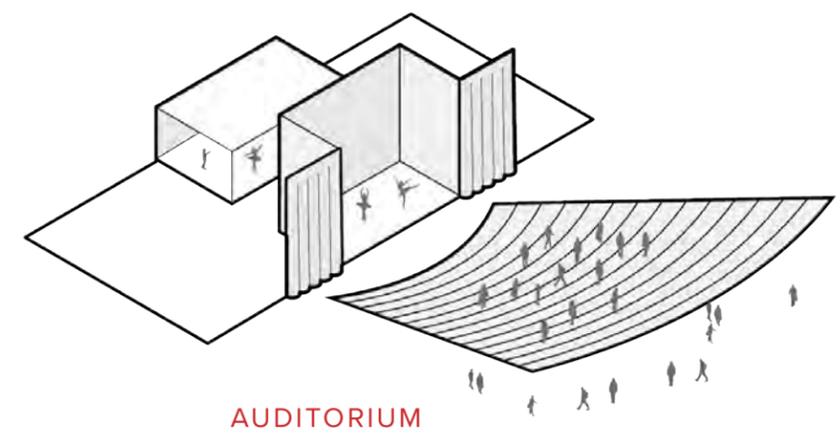
Vs. Activation on all sides

The Lloyd Center site provides space to supplement the theater program with synergistic uses that can transform the performing arts center into a hub of activity even when there is not a performance.

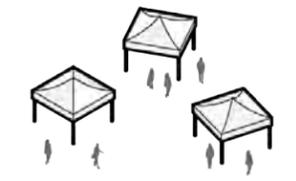
What if? An Energized District



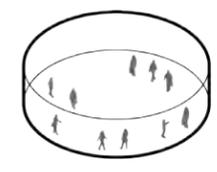
SYNERGISTIC PROGRAM



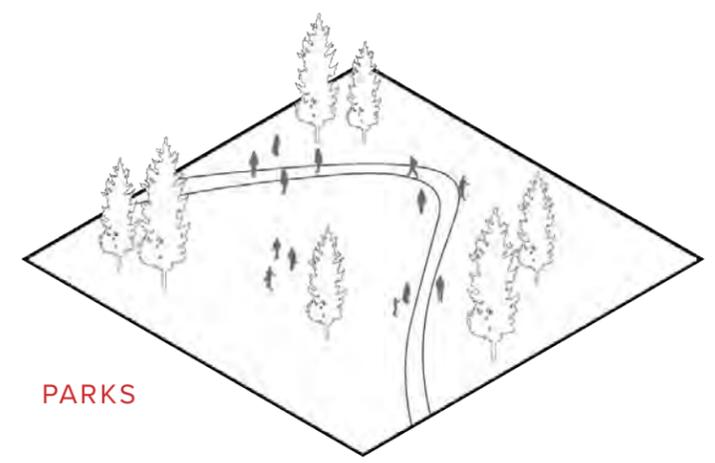
AUDITORIUM



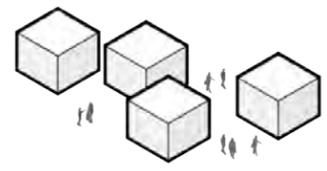
OUTDOOR MARKET



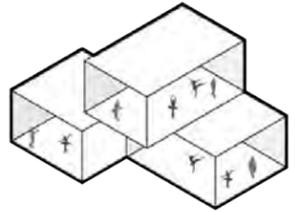
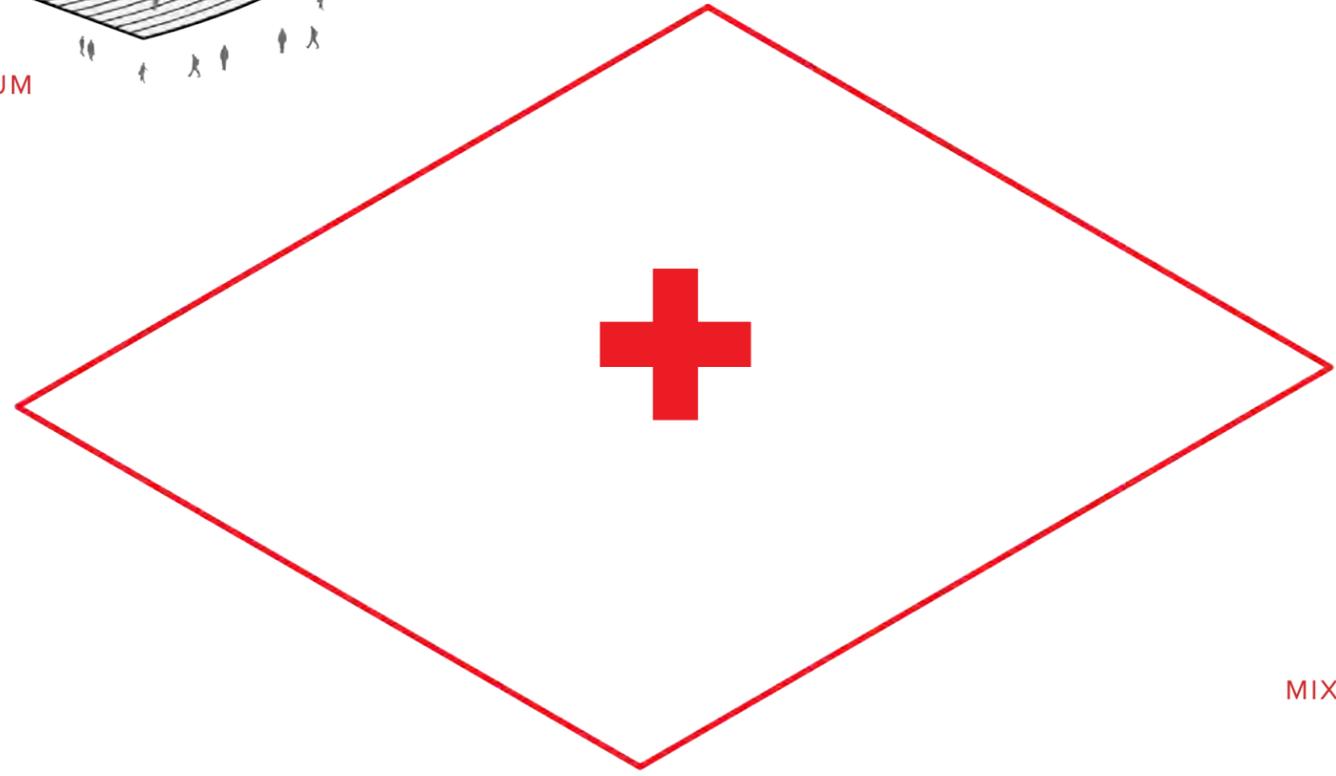
RETAIL



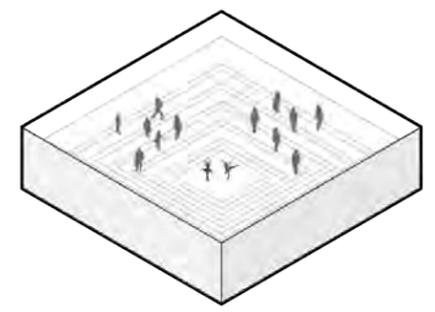
PARKS



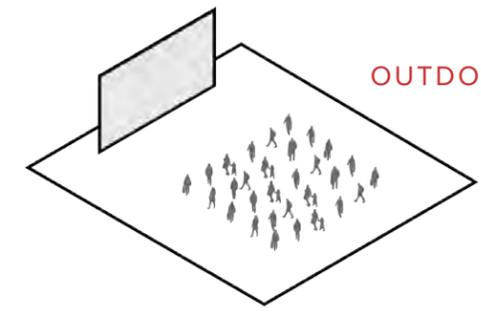
ARTS PROGRAMMING



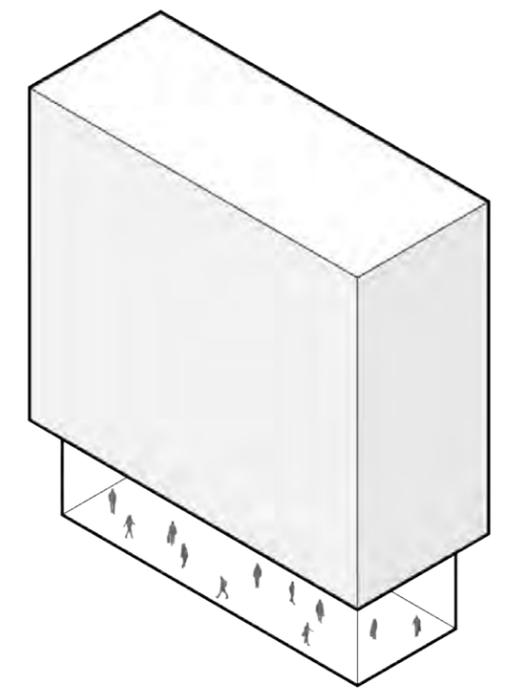
BALLET SCHOOL



OTHER PERFORMANCE VENUES



OUTDOOR



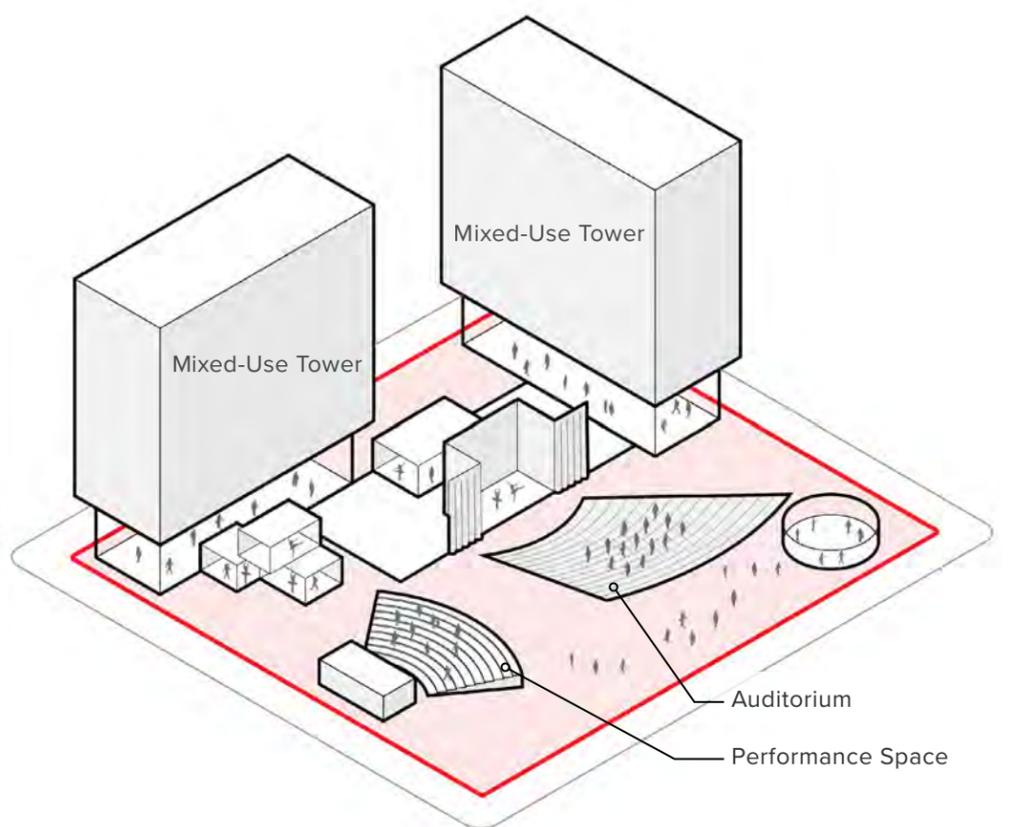
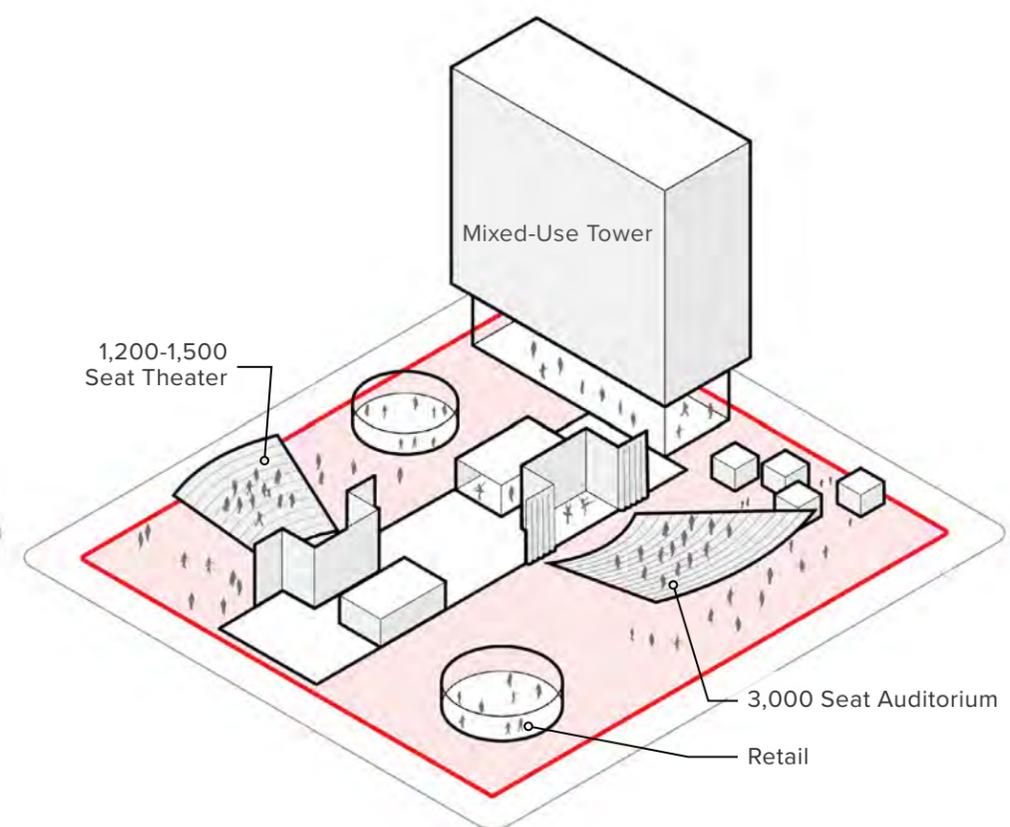
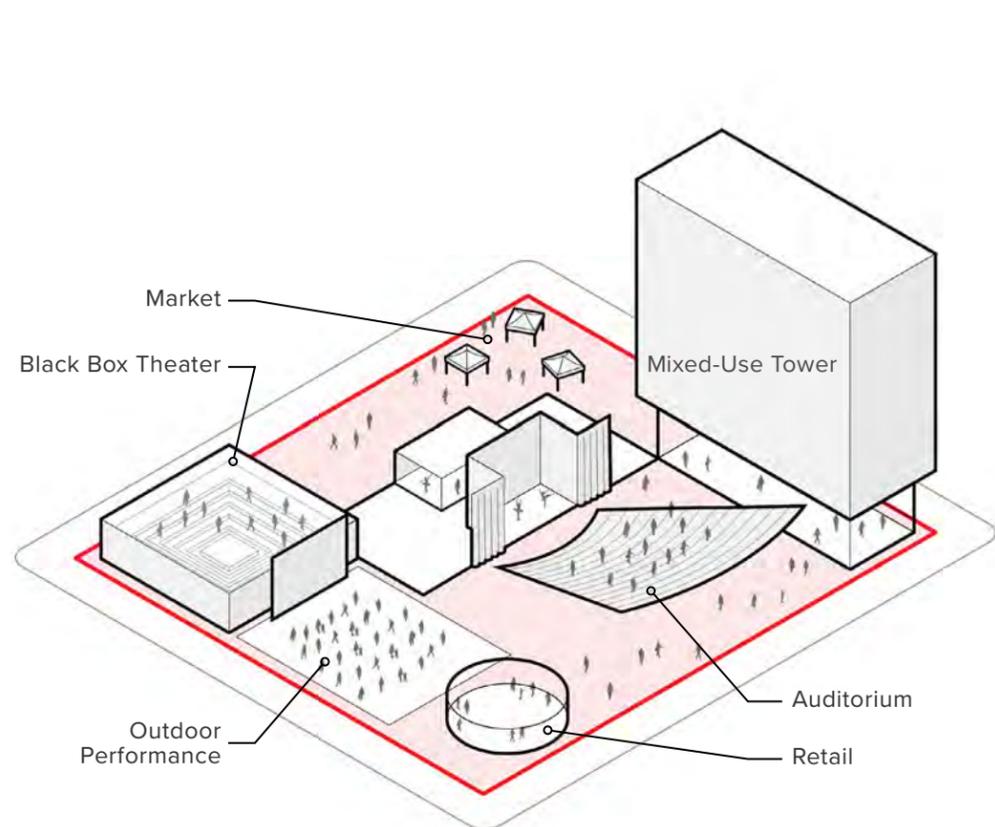
MIXED-USE TOWER

A variety of complementary programmed spaces surrounding the performing arts center can create a 24/7 live-work-play neighborhood.

What if? Unlimited Opportunities



CREATE A DESTINATION



Turn the inside out

The plaza brings performances to the outside and creates a stage for everything from markets to festivals.

Variety of venues

A 1,200 – 1,500-seat theater is not currently available within the P’5 portfolio. Including this second theater can maximize opportunities for appropriately-scaled productions.

A mix of uses

Mixed-use towers could provide housing, hotels, artist studios, or additional retail and commercial space in support of the performing arts.

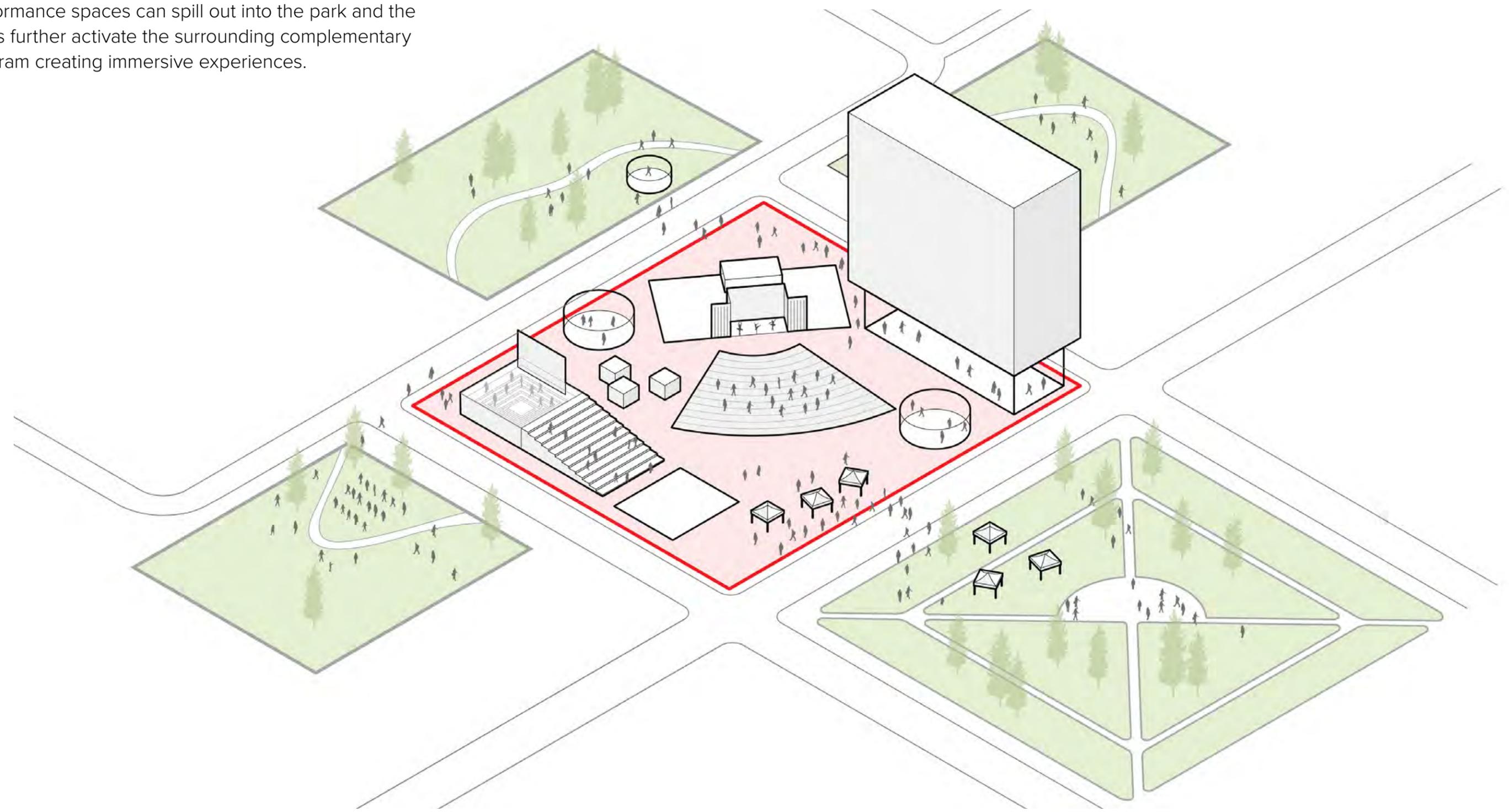
What if? A Mix of Immersive Experiences



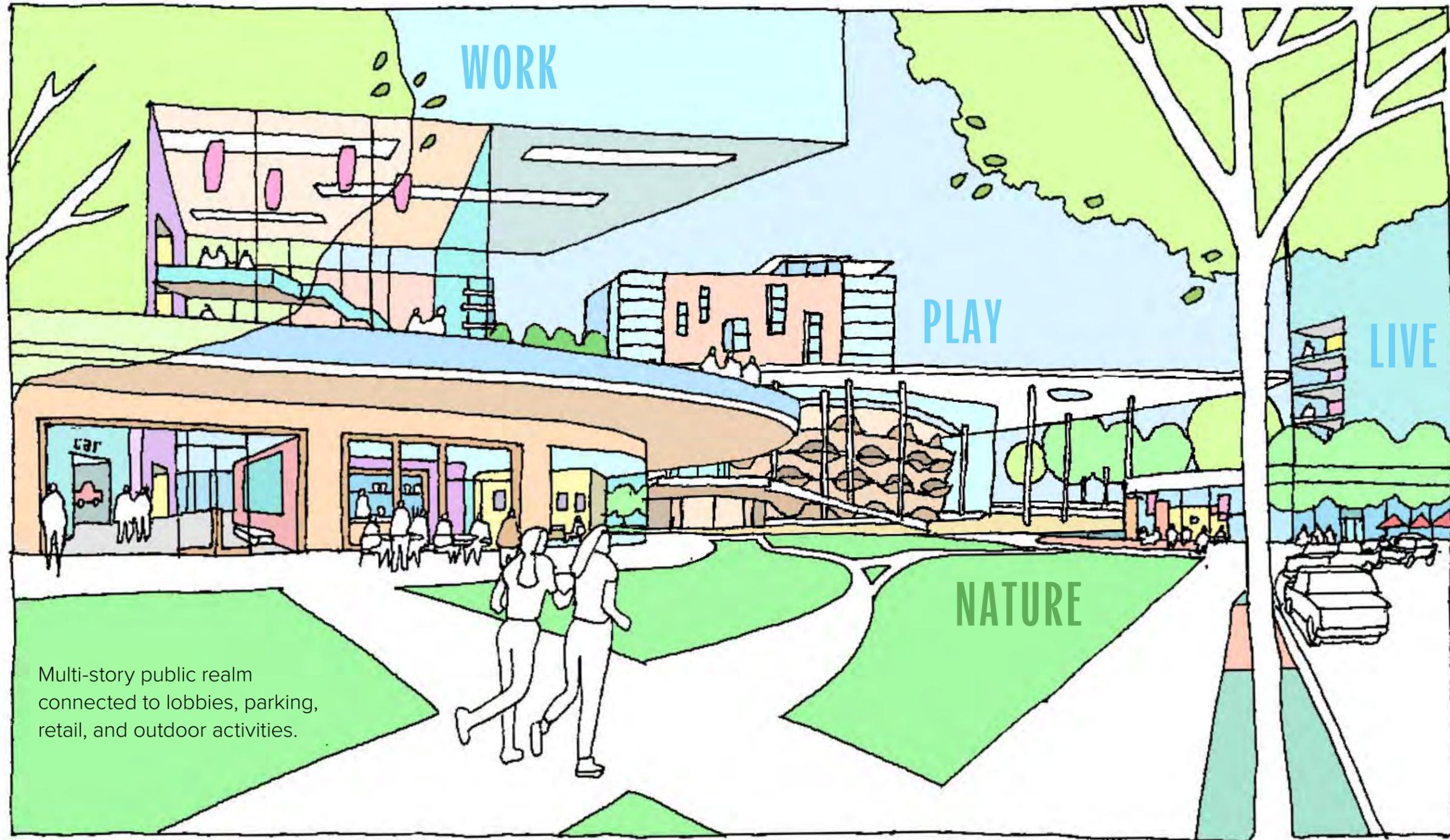
IMMERSIVE EXPERIENCES

PROGRAM VARIETY + SURROUNDING PARKS = SOMETHING MORE THAN THE SUM OF ITS PARTS

Performance spaces can spill out into the park and the parks further activate the surrounding complementary program creating immersive experiences.



What if? A Neighborhood to Work, Live, and Play



Multi-story public realm connected to lobbies, parking, retail, and outdoor activities.

A SITE WITH THE POTENTIAL TO DEVELOP

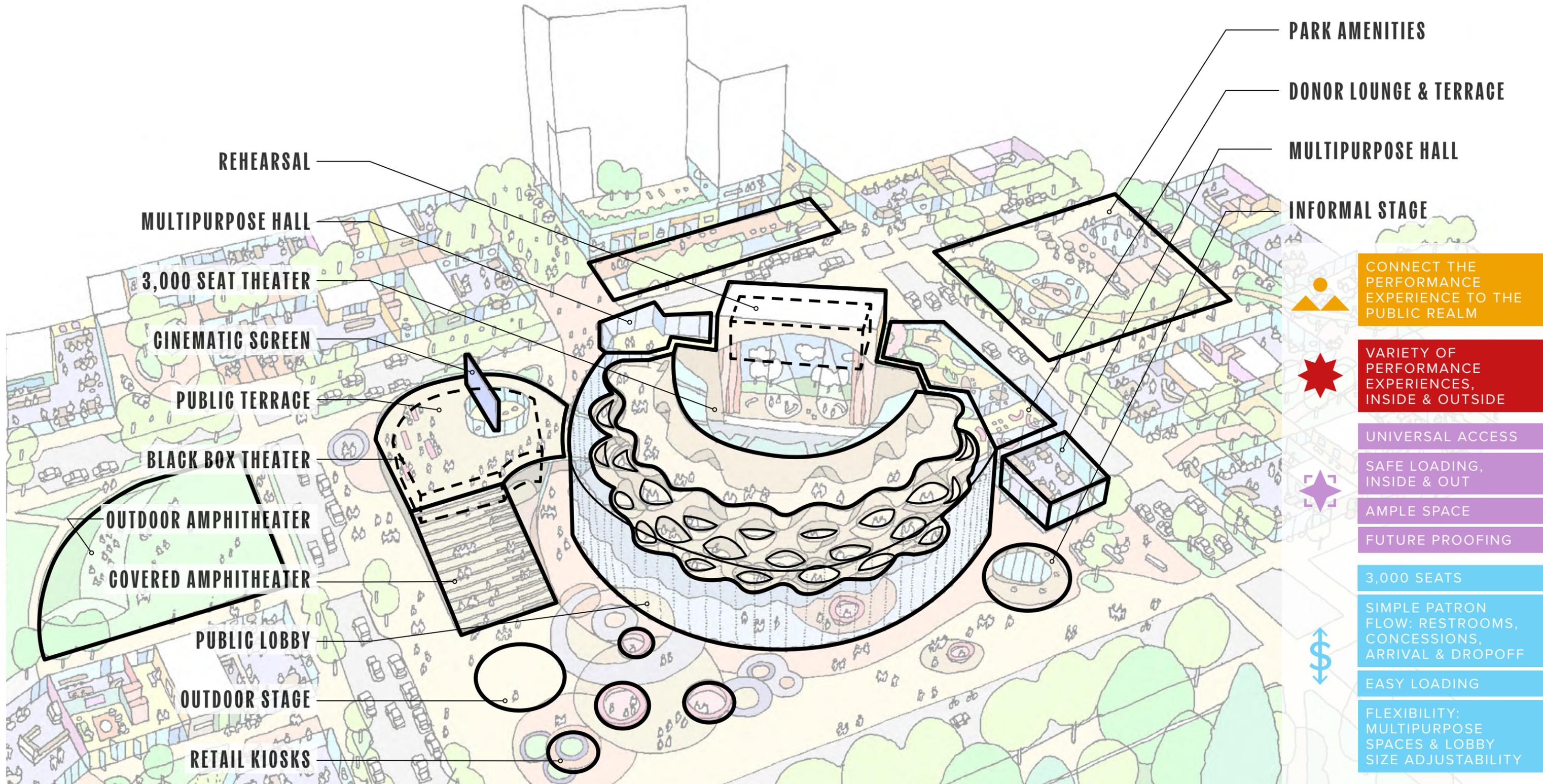
5

A THEATER FOR ANYONE

What if performance is everywhere?



What if performance is inside & outside?



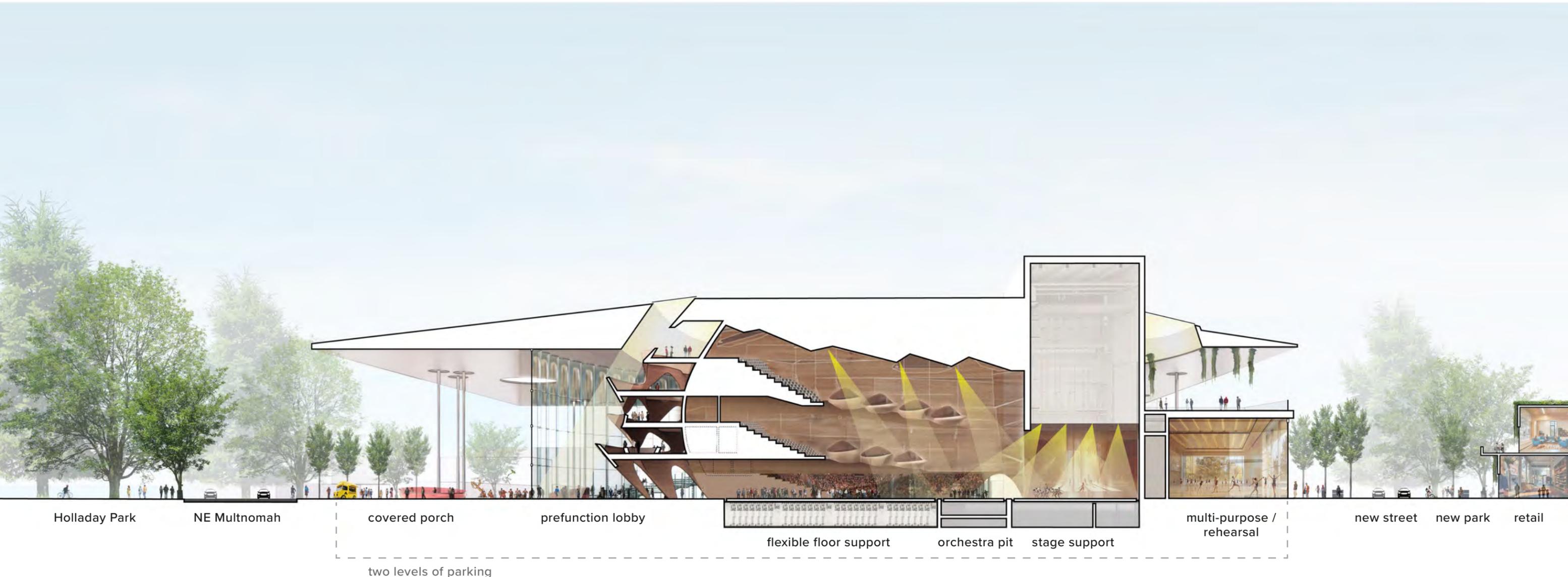
What if the park is part of the performance?



View from a new park looking towards the performing arts center and Holladay Park.

What if the park and the performing arts facility work together to activate the neighborhood?

Parks and the porch work together to extend performance from the inside to the outside and create a civic space that can support everything from food carts to festivals amplifying the experience of both parks and the theater.



SECTION LOOKING WEST

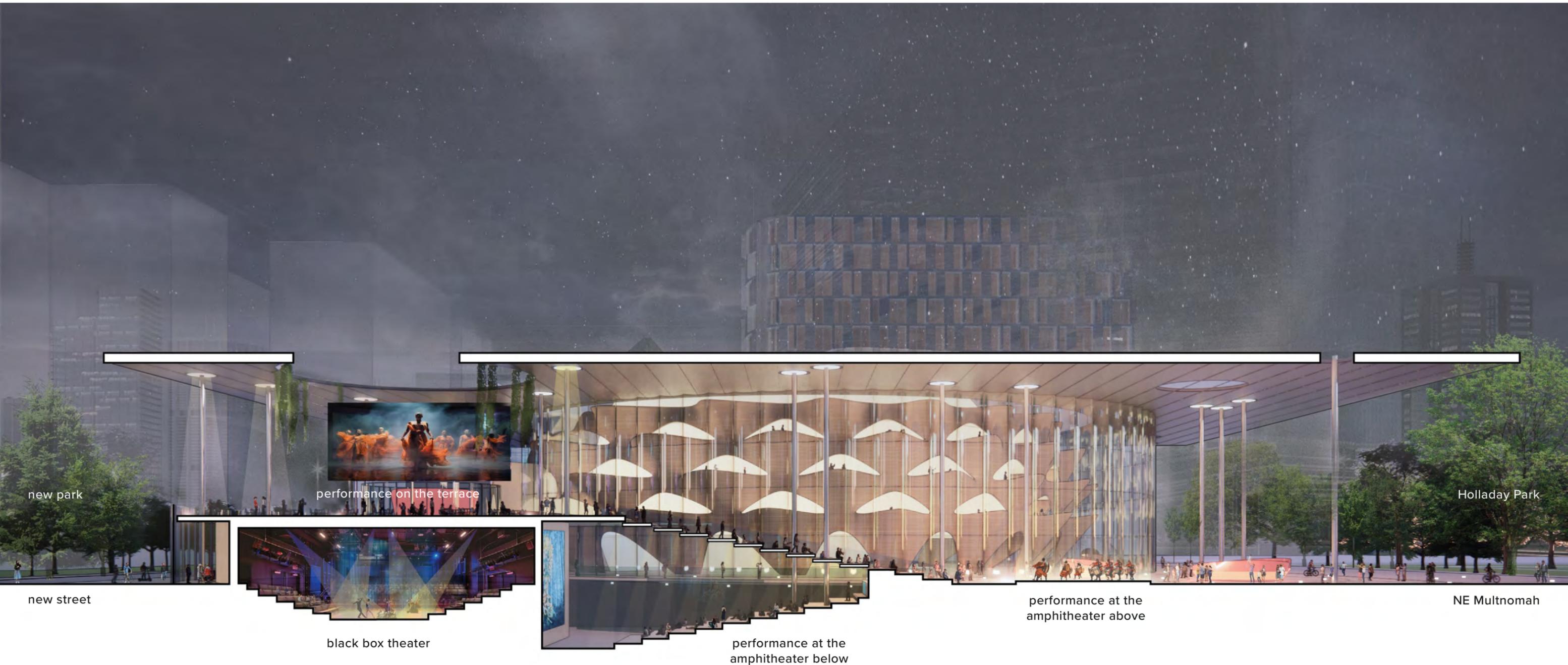
What if immersive experiences invigorate Portland?



Entering the performance plaza from NE Multnomah Street.

What if performance is unbounded by inside & outside?

Performances are open to indoor and outdoor settings with a multitude of venue opportunities layered above, below, and on the plaza level.



SECTION LOOKING EAST

What if the place is formed by the people and climate of the PNW?

EASY LOADING
...from a large dock that can receive 3 or more trucks and serves back-of-house functions.

THE PERCH & PROMENADE
...make an often exclusive entry procession a shared public experience.

A BLANK CANVAS SITE

...creates an open definition of identity for the performing arts center without barriers inviting local artists and people of the region to shape an iconic place.

ELIMINATE PHYSICAL, EMOTIONAL, AND PSYCHOLOGICAL BARRIERS

AN UMBRELLA

...provides protection from PNW rain and supports many outdoor events and day-to-day activity.

REFLECT THE ESSENCE OF OREGON

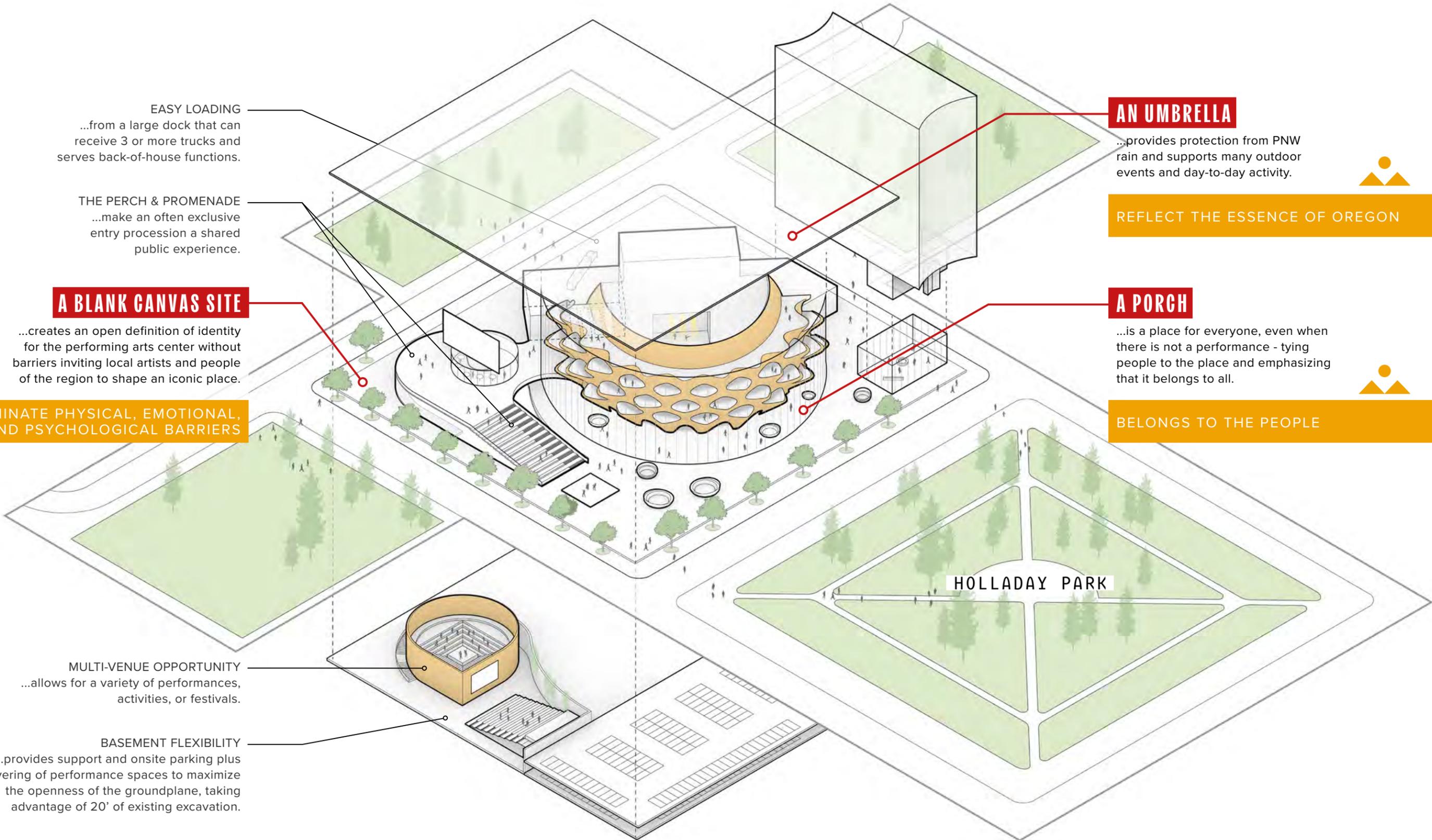
A PORCH

...is a place for everyone, even when there is not a performance - tying people to the place and emphasizing that it belongs to all.

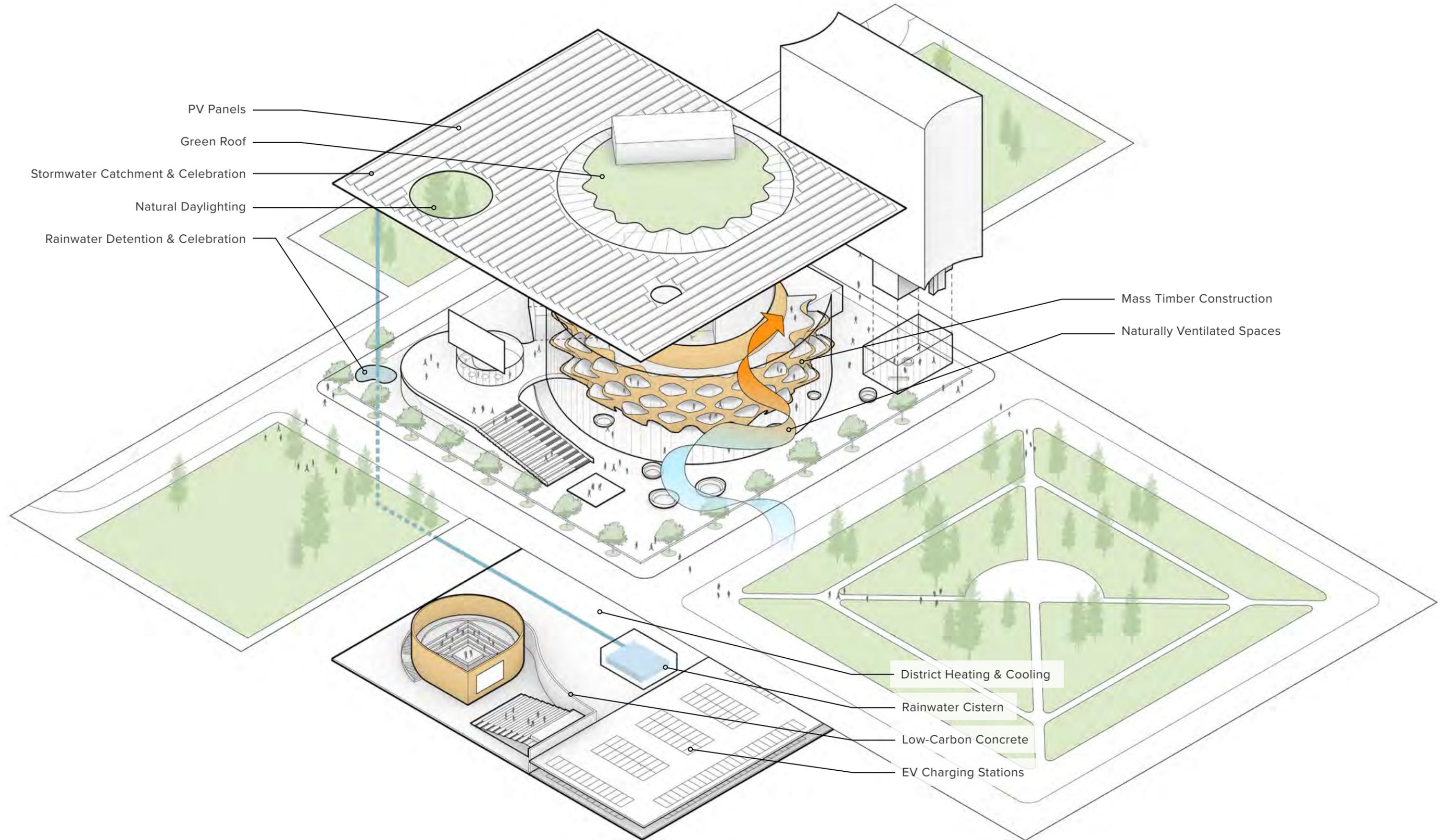
BELONGS TO THE PEOPLE

MULTI-VENUE OPPORTUNITY
...allows for a variety of performances, activities, or festivals.

BASEMENT FLEXIBILITY
...provides support and onsite parking plus layering of performance spaces to maximize the openness of the groundplane, taking advantage of 20' of existing excavation.



What if environmental stewardship is exemplified?



What if the heart of the neighborhood is an expression of Oregon?



View from NE 11th Ave looking toward the NW corner of Holladay Park.

A site full of possibility & optimism...



6

AN OPPORTUNITY FOR THE CITY

Potential Partnership Scenarios

The Lloyd Center site has the advantage of deal structure flexibility for a new Performing Arts Center (PAC). We are open to considering all of the following ownership structures:

LAND PURCHASE

This is the simplest structure. The City would purchase the land at a market price and use the financing tools at its disposal to develop, own and operate the facility.

GROUND LEASE

A long-term ground lease would allow the City to control the property without the cash obligation of purchasing the site. The development could then be financed using traditional methods.

LONG-TERM FACILITY LEASE

With a long-term lease, the Lloyd Center development team would construct the facility to mutually-agreed upon specifications and enter into a long-term lease with the City or the entity operating the facility. The new PAC could be developed as part of a larger project, in which case the venue would become one tenant in a larger multi-tenant project.

There is also the potential for various operating structures to be explored, bringing a venue operator into the project as a partner.

Development Costs & Dependencies

The City of Portland engaged Venue Consulting to prepare cost estimates for the three Performing Arts Center options. Their Lloyd Center cost estimate is a ROM estimate for our concept level design.

While the Lloyd Center site offers an almost blank canvas on which to envision the new Performing Arts Center, a significant investment in site preparation and infrastructure will be required to make it happen.

The construction of a new facility will require the following:

DEMOLITION OF THE EXISTING IMPROVEMENTS

LAND USE REVIEW & PERMITTING

- Amendment to Lloyd Center Central City Master Plan (CCMP)
- Subdivision of the Lloyd Center parcel
- Public Works Permitting

INFRASTRUCTURE IMPLEMENTATION

- Street Grid
- Utilities
- Parking Facilities

The timing and cost of these investments will be dependent on the phasing of the overall site redevelopment and a significant improvement in the capital markets view of Portland as a viable market for new development.

Funding Opportunities

The Lloyd Center site offers the following, and in some cases unique, funding opportunities:

TAX INCREMENT FINANCING

Funds for a new Performing Art Center may available thru a new Lloyd Center TIF District currently being contemplated by Prosper Portland. These funds could be used for site and infrastructure improvements. Capacity of this new TIF District estimated to be in the \$100M range, although a significant portion of this would be dedicated to affordable housing and other infrastructure costs.

SPECTATOR VENUE & VISITOR ACTIVITIES FUND

Ticket tax revenue could be used, similar to the method used for the renovation of Providence Park.

PORTLAND CLEAN ENERGY FUND

This is one of the most robust sources of funds the City has right now; the Lloyd Center site offers an opportunity to execute a fully integrated, sustainable development – achieving Portland's goals for addressing climate-impact and social equity.

SYSTEM DEVELOPMENT CHARGES

SDC's collected by the City could be used to help finance the development.

CITY BONDS

This is a commonly-used and effective financing tool that could be used to help finance the construction of a new facility.

NAMING RIGHTS

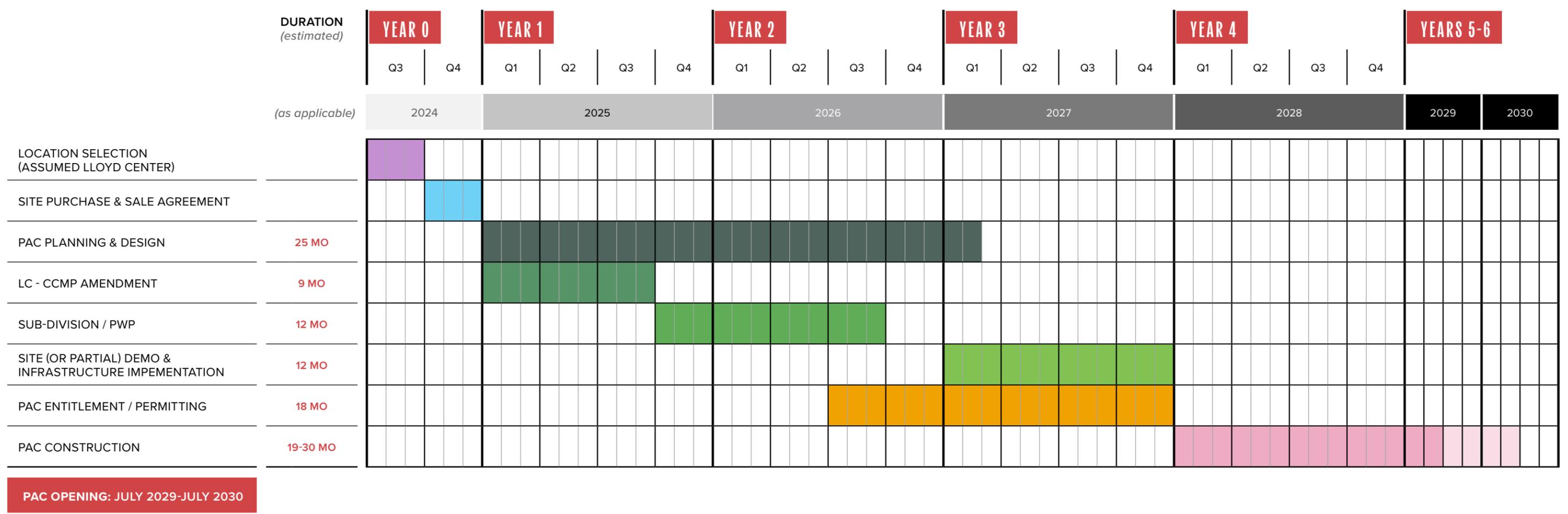
The sale of naming rights for a new Performing Arts Center could support the new development (although these are typically paid out over time).

PRIVATE FUNDRAISING

A private fundraising campaign could raise a meaningful portion of the cost of a new PAC.

Conceptual Project & Development Schedule

LLOYD CENTER (LC) SITE
PERFORMING ARTS CENTER (PAC)



APPENDIX

- Permit, Design, & Construction Schedule
- Submission For Estimate Exercise

Addresses Program Scope of Work from Grant Agreement

Item 1: Site & Program Evaluation

C: Preliminary Summary of Due Diligence

Item 2: Site/Facility Vision & Test Fit Design

C: Local Permitting & Approval Processes

Permit, Design & Construction Schedule

1 PERMIT APPROVAL/PROCESS

- **Lloyd Master Plan approval:** about 3 months.
- **Confirmation of process and schedule with the City:** 2 months.
- **Lloyd Master Plan revisions to accommodate new performing arts center:** 6-9 months.
- **Parcel subdivisions:** 9 months.
- **Final Public Works:** 3 months.
- **Pre-App meeting:** At the start of Design Development.
- **DAR:** in mid-Design Development phase.
- **Type III Land Review:** 4 months. To start at the beginning of Construction Documents phase.
- **Building Permit:** anticipated 5-9 months, includes up to 3 rounds of plan check review comments.

2 DESIGN PROCESS

- **Notice to Proceed:** It can be provided toward the end of the Lloyd Master Plan revisions, to start the design phase.
- **Mission/Vision/Goals:** 2 months.
- **Project set up:** 1 month.
- **Programming:** 4 months. It includes stakeholders' and Owner's workshops, 1 deliverable for Program.
- **Concept:** 4 months. It includes stakeholders' and Owner's workshop, equity and sustainability meetings, 1 deliverable for Concept design, Owner's review and comments, cost benchmarking and review/reconciliation.
- **Schematic Design:** 4 months. It includes stakeholders' and Owner's workshop, equity and sustainability meetings, 1 deliverable for Schematic Design, Owner's review and comments, cost estimate and review/reconciliation.
- **Design Development:** 5 months. It includes stakeholders' and Owner's workshop, equity and sustainability meetings, 1 deliverable for Design Development, Owner's review and comments, cost estimate and review/reconciliation.
- **Construction Documents:** 6 months. It includes stakeholders' and Owner's workshop, equity and sustainability meetings, 1 deliverable for Construction Documents/Bid Documents/Permit Set. GMP to follow.

3 CONSTRUCTION PHASE

- **Demolition & Infrastructure:** Up to 12 months. To start after approval of early permit.
- **Construction:** to start once the Building Permit is approved. Duration to be confirmed with General Contractor. It could be between 19-30 months.

DEFINITIONS

THE FOLLOWING
DIAGRAMMATIC AREAS
ARE BEING PROVIDED FOR
THE PURPOSE OF INITIAL
COST ESTIMATING.

BASELINE

Based on 2018 program and 2023 cost exercise.

The 2018 Programming Study has been used as a baseline of cost for both gross square footage assumptions and scope. Diagrams of the baseline scope are provided for reference in the context of the Lloyd Center site block.

Spaces and scope not included in the original 2018 study are labeled **Supplemental** and **Optional**.

If building scope, code, or city requirements listed in this document were not included in the 2018 and 2023 cost exercises, categorize them under Supplemental scope (unless indicated as Optional).

SUPPLEMENTAL

Based on P'5, Ballet, Opera, and Broadway stakeholder meetings.

Areas identified as supplemental program are based on meetings with the Portland'5 group (2-28-24), Ballet (2-28-24), Opera (2-28-24), and Broadway (3-7-24). These areas go beyond the 2018 program and were identified as important to a successful venue that would be in keeping with the mission and values of P'5 and the user groups. These spaces have been represented conceptually to provide an idea of what they could be. We have provided these as high-level concepts only—further meetings with the users to fully assess the needs of each space and how each might function optimally will be a consideration for a future phase.

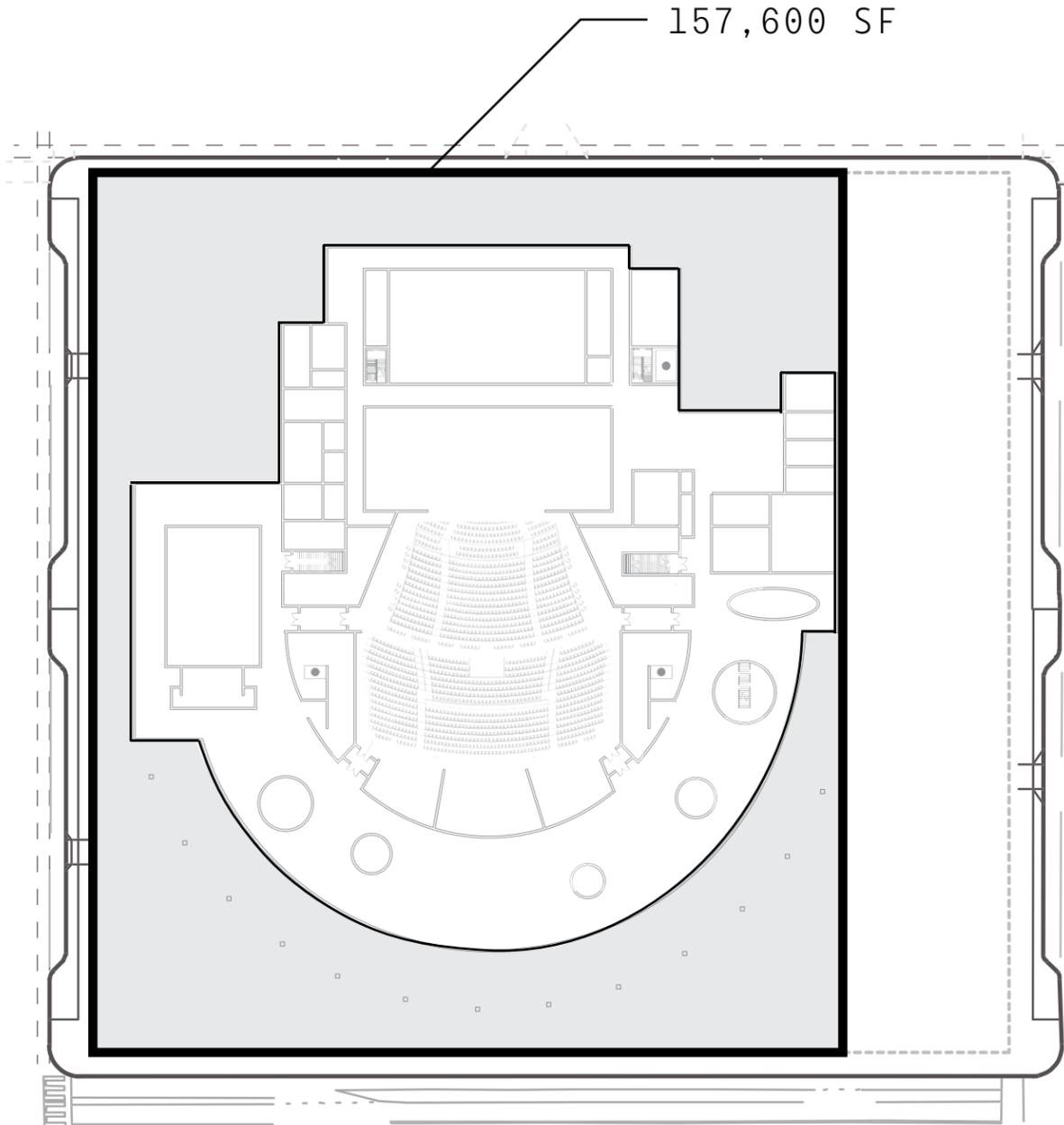
Price these areas separately.

OPTIONAL

Add-ons.

Areas or scope identified as optional are highlighting opportunities of the site for functionality or flexibility and are not part of the base program.

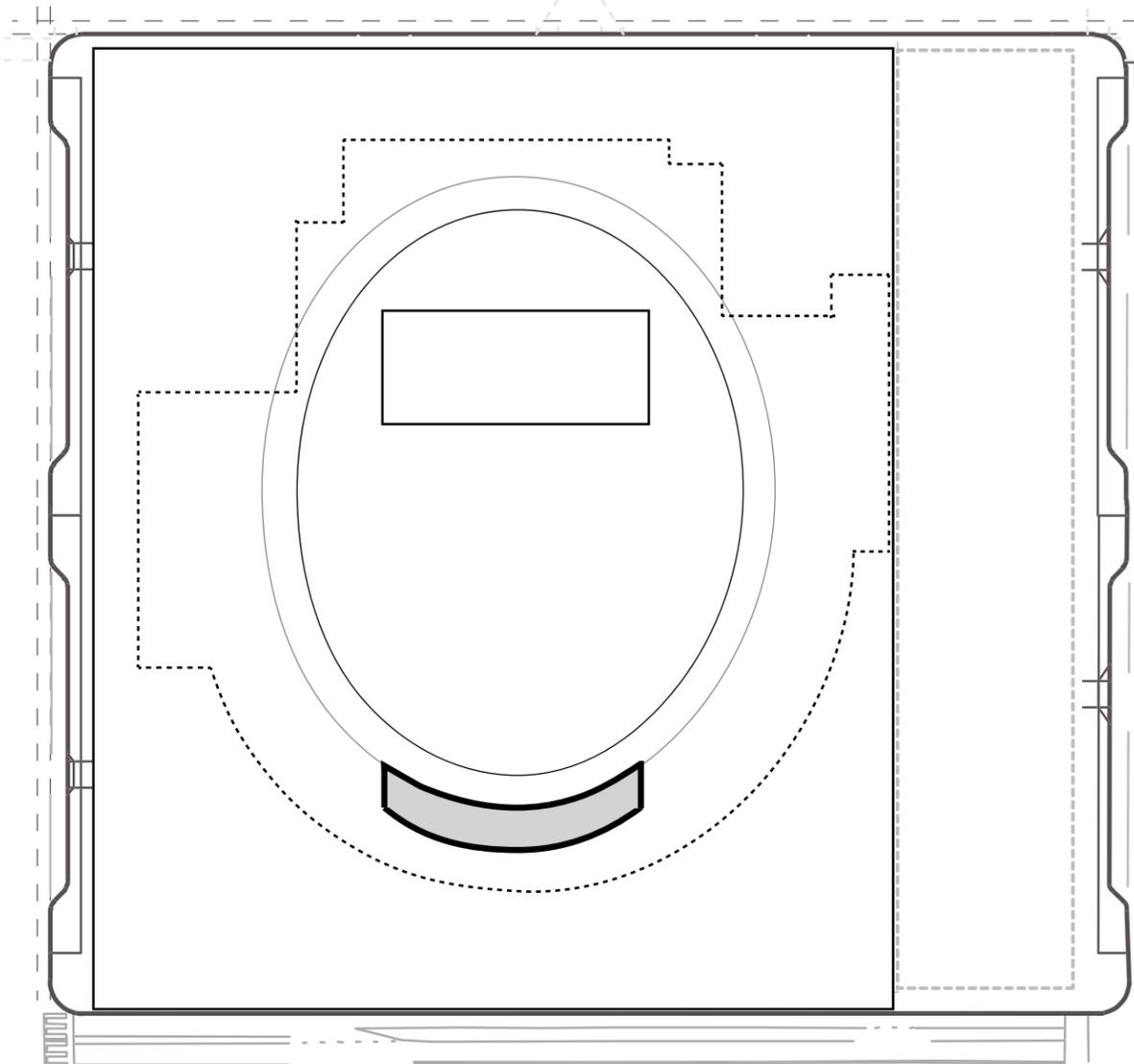
Price these areas separately.



Site Plan 1"=80'

SITE AREA: 157,600 SF

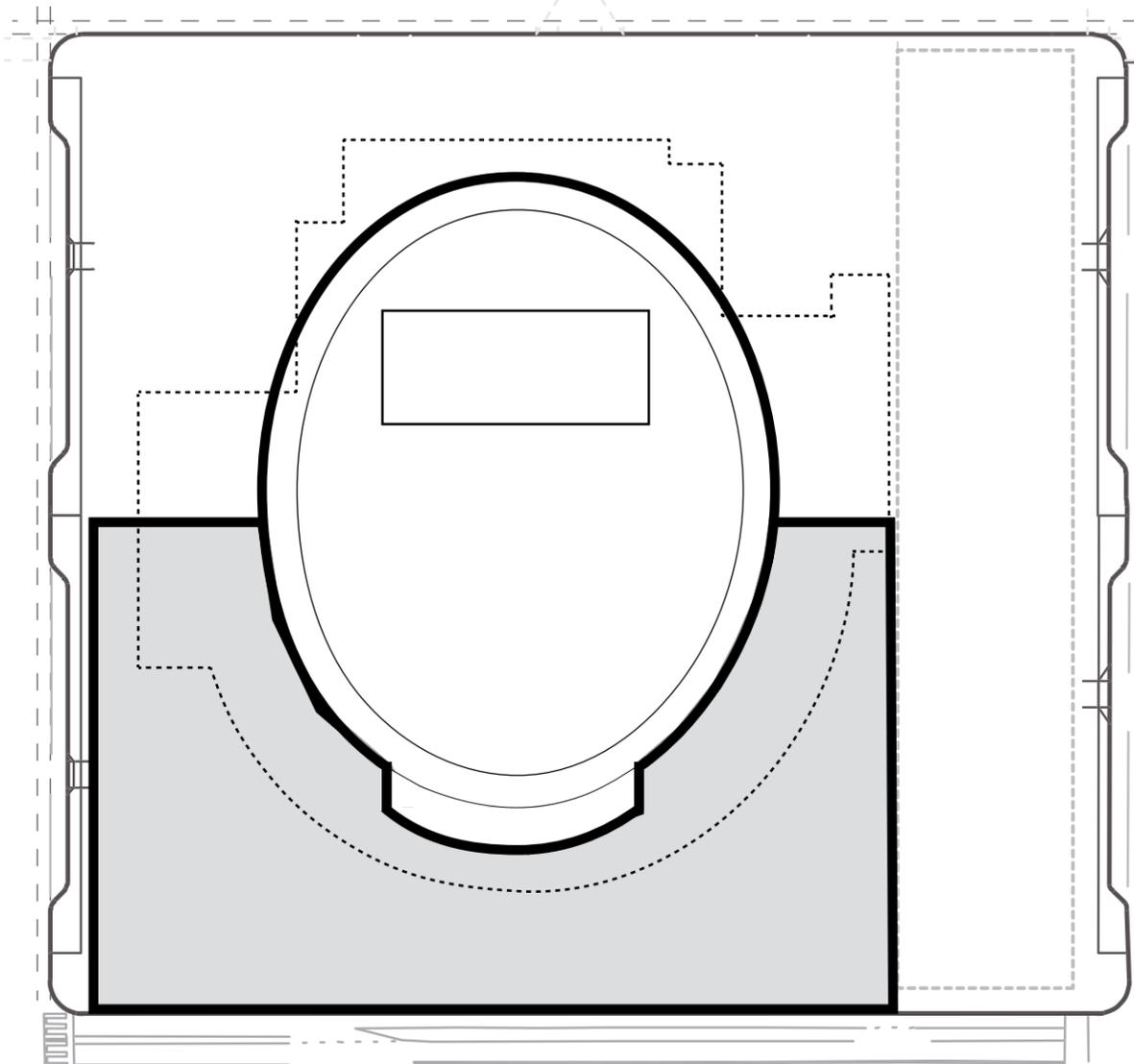
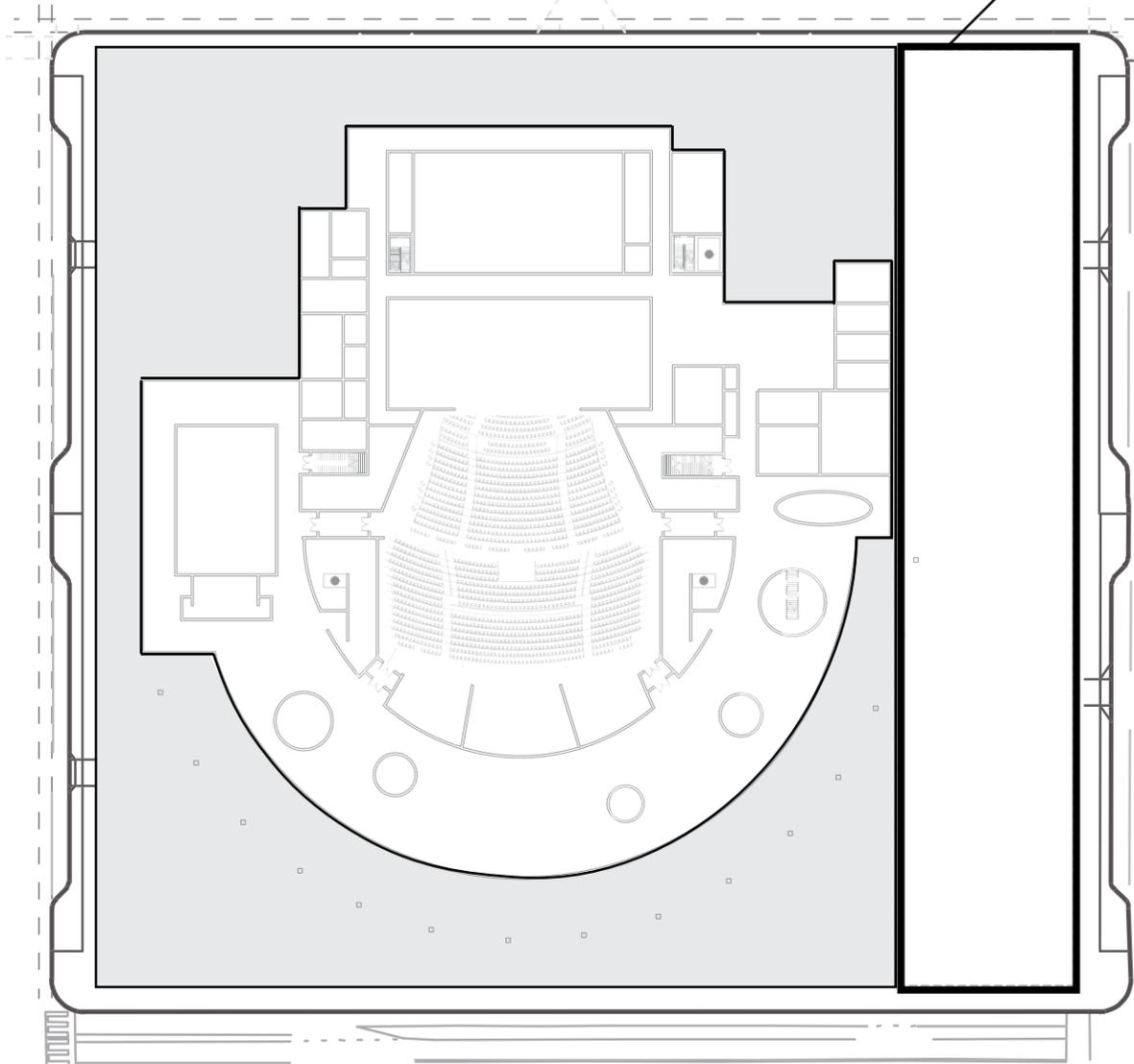
BASELINE



Canopy Plan 1"=80'

CANOPY: 3,100 SF

34,400 SF



Site Plan 1"=80'

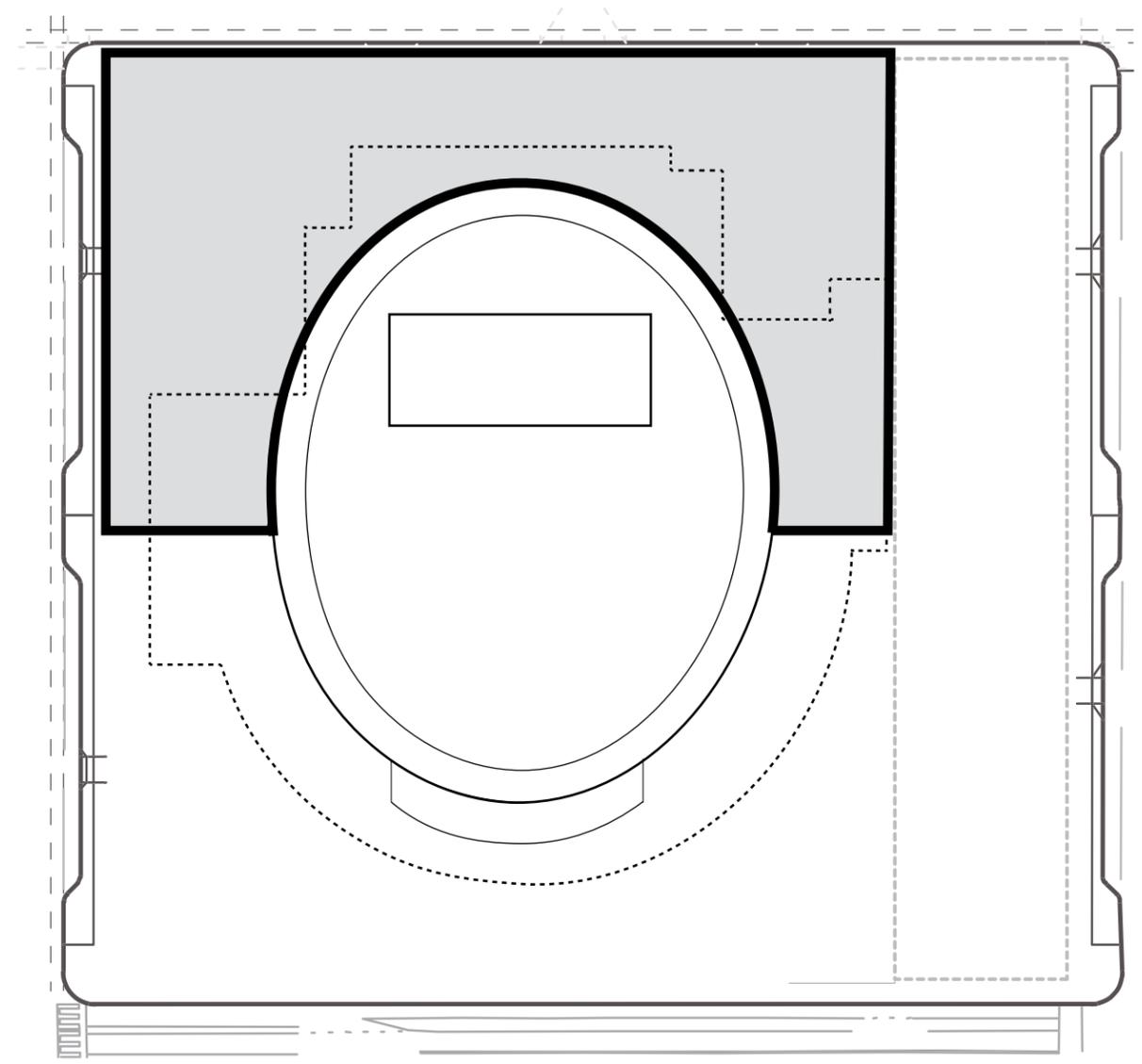
SITE AREA: 157,600 SF

SUPPLEMENTAL

Canopy Plan 1"=80'

SUPPLEMENTAL CANOPY: 59,450 SF

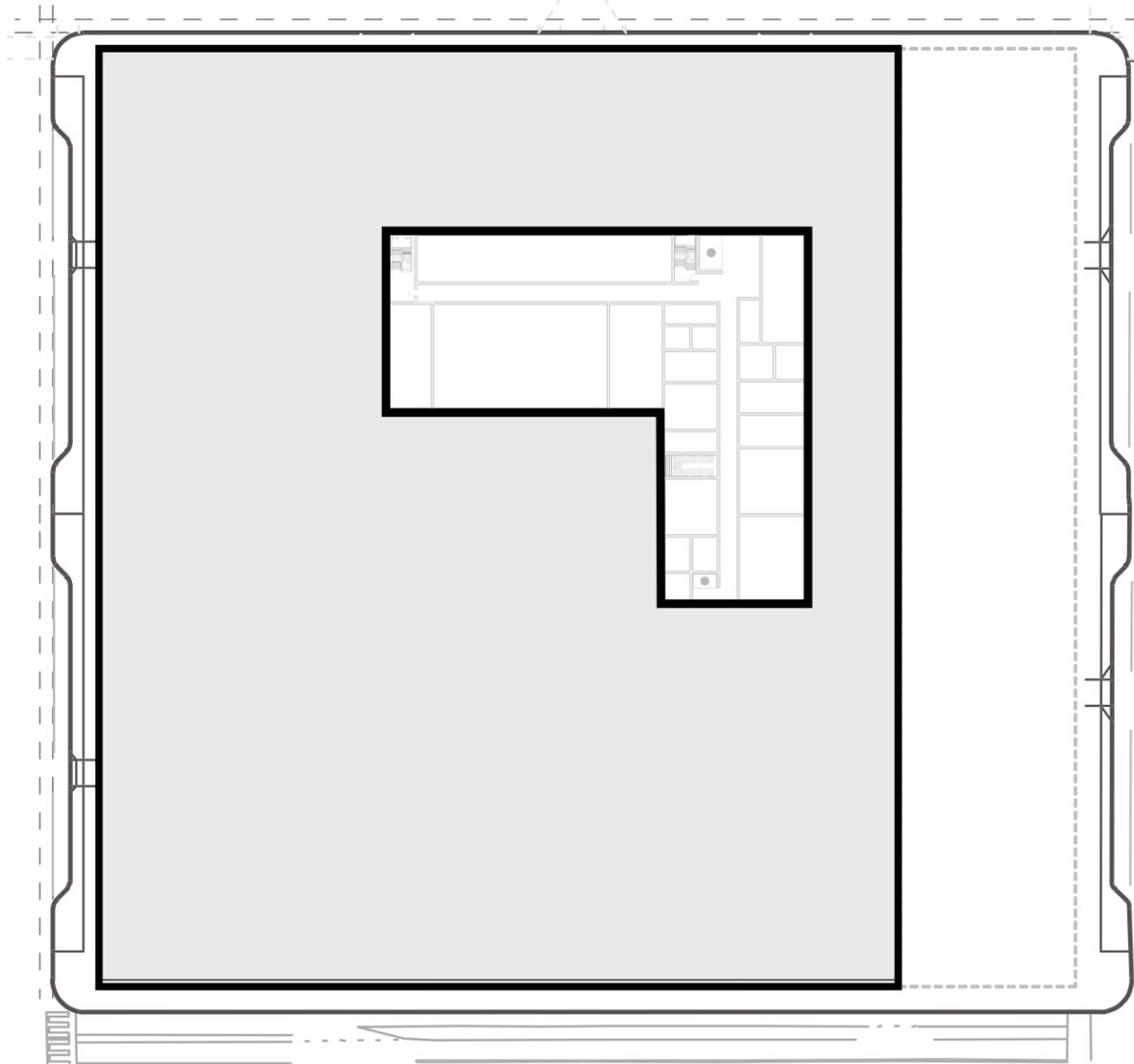
SKYLIGHT: 11,700 SF



Canopy Plan 1"=80'

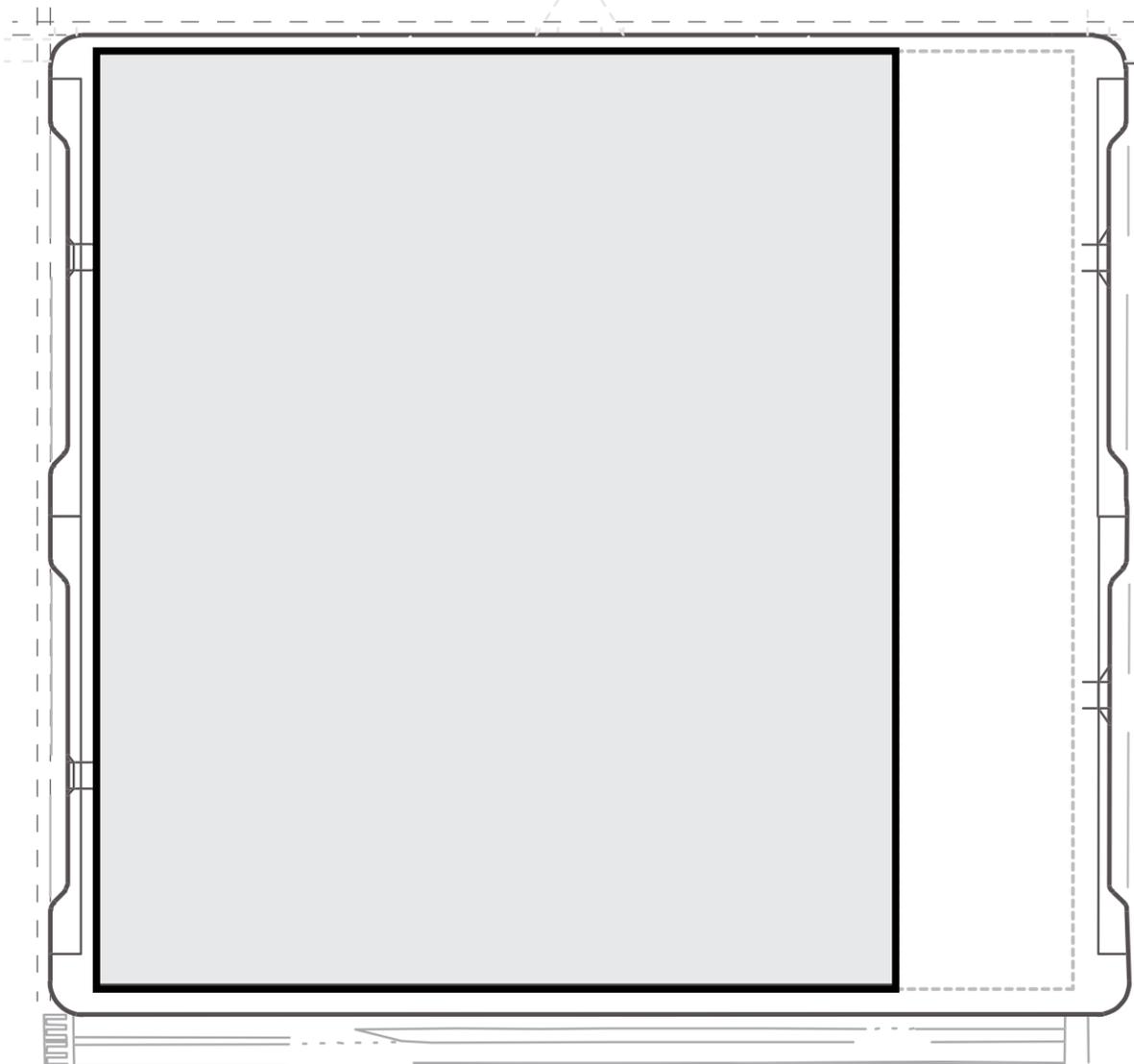
OPTIONAL CANOPY: 55,600 SF

OPTIONAL



Lower Level 1 1"=80'

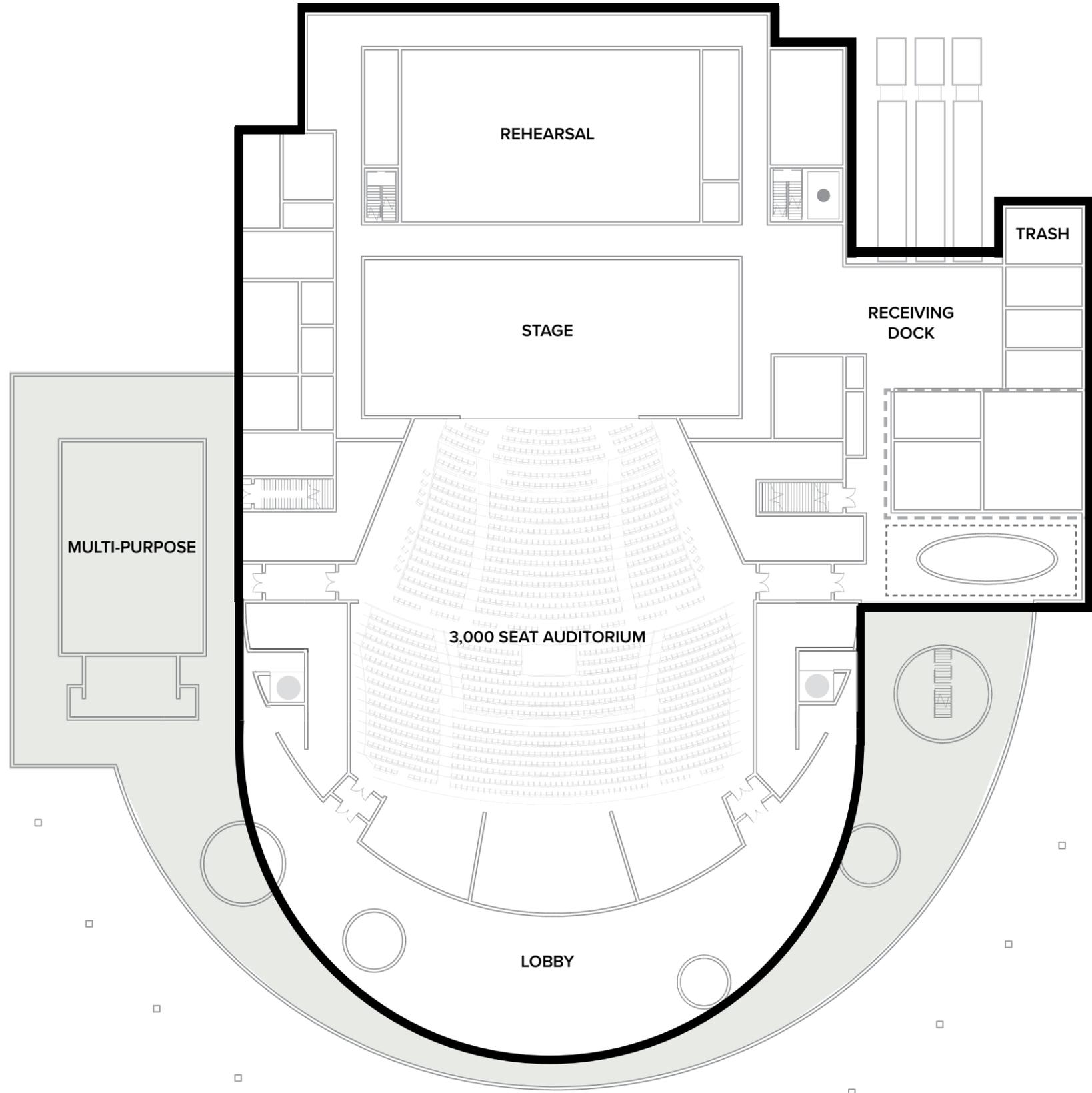
133,350 SF



Lower Level 2 1"=80'

157,600 SF

OPTIONAL: BELOW GRADE PARKING

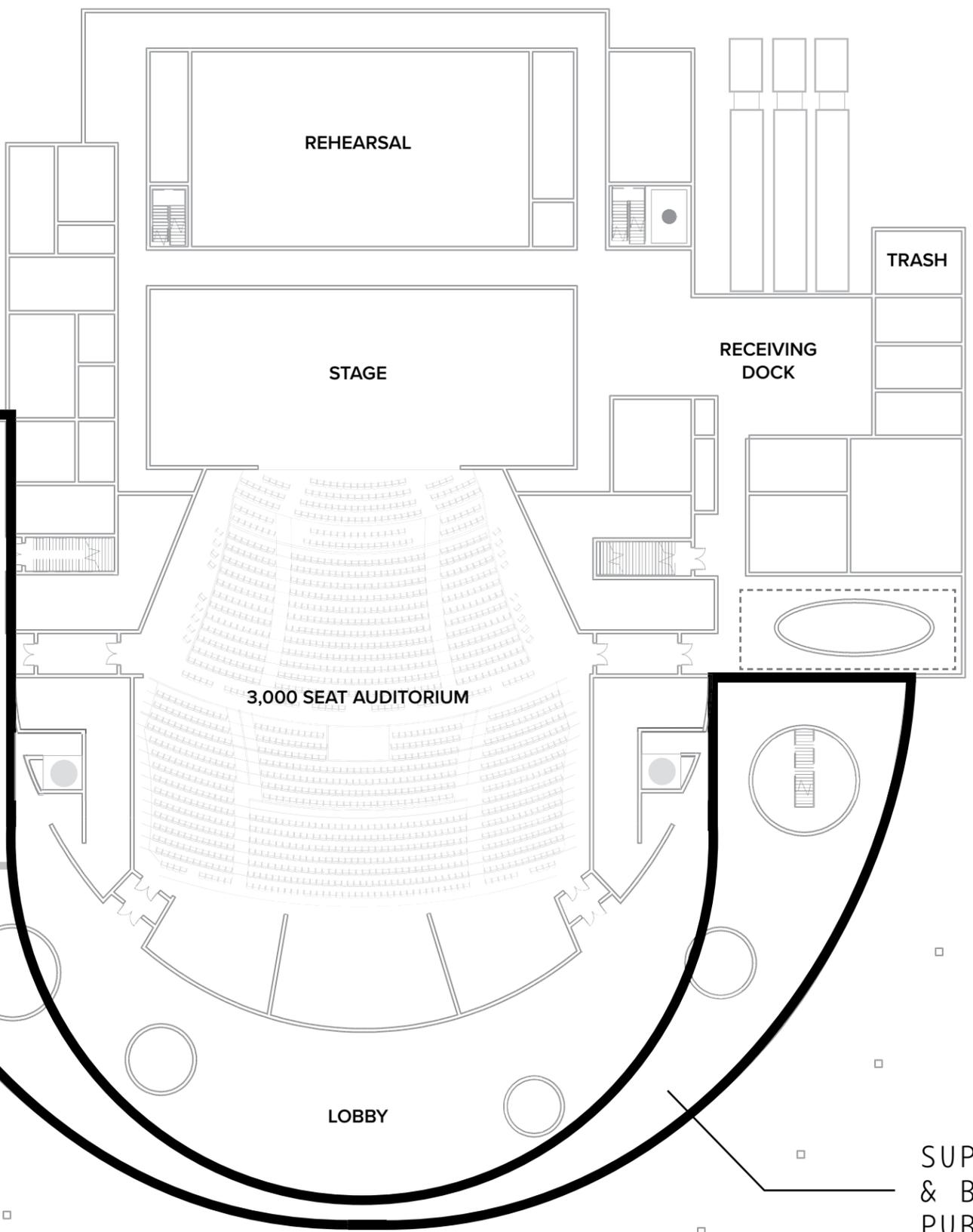
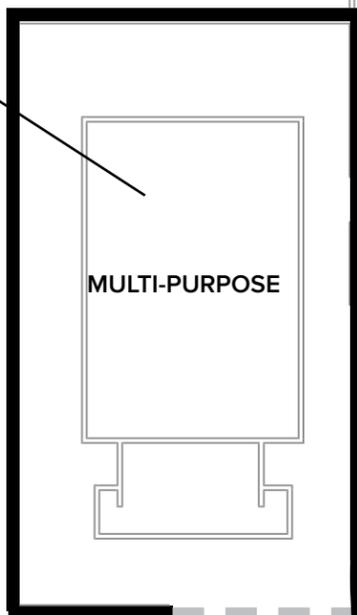


Ground Level Plan 1"=40'

71,200 SF

BASELINE

MULTIPURPOSE, PREFUNCTION,
& ADDITIONAL RESTROOMS
9,650 SF



TRASH

REHEARSAL

STAGE

RECEIVING DOCK

MULTI-PURPOSE

3,000 SEAT AUDITORIUM

LOBBY

SUPPLEMENTAL FOOD
& BEVERAGE /
PUBLIC EVENT SPACE

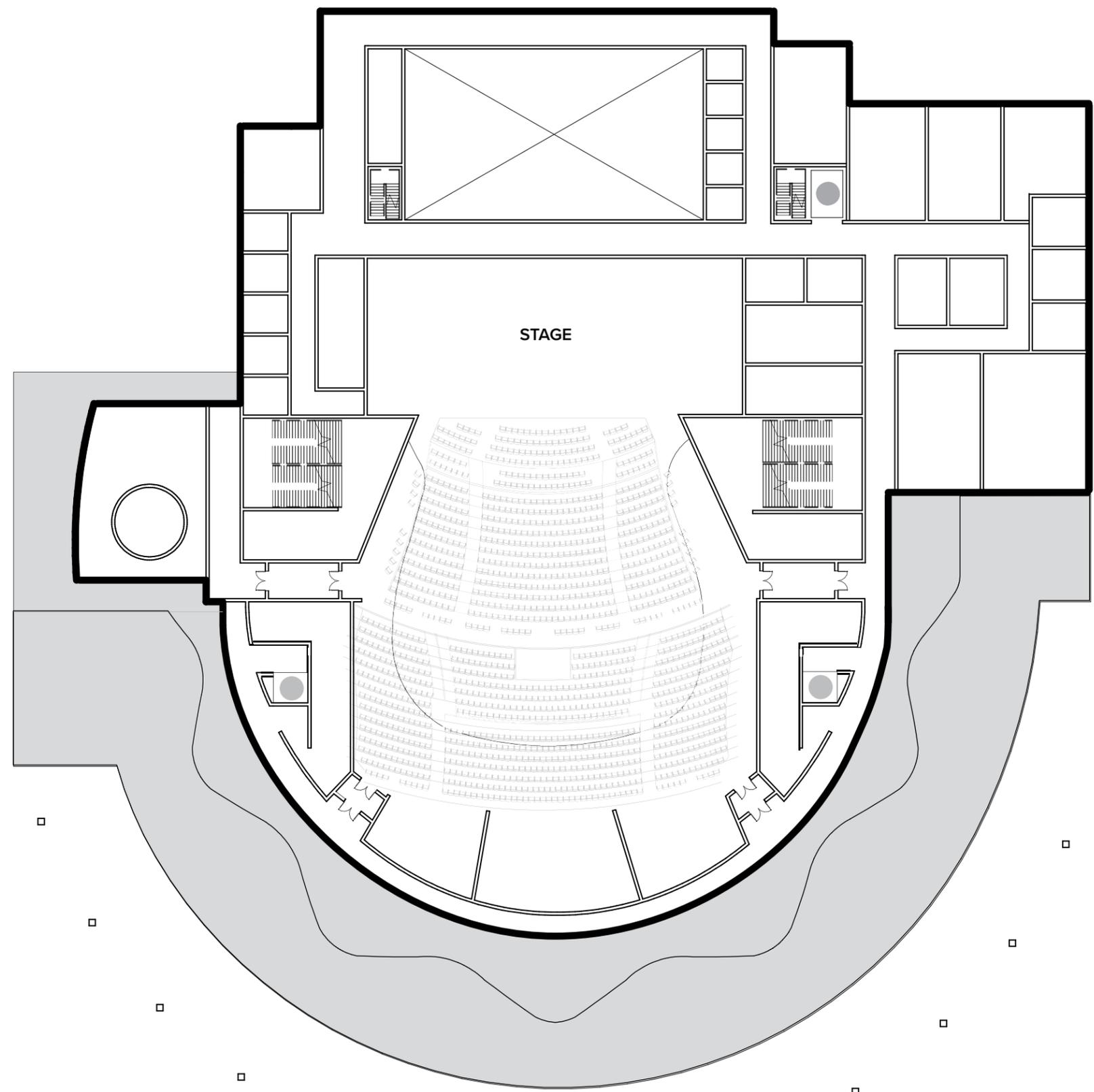
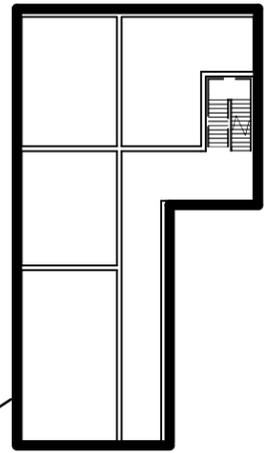
10,350 SF

Ground Level Plan 1"=40'

TOTAL SUPPLEMENTAL 20,000 SF

SUPPLEMENTAL

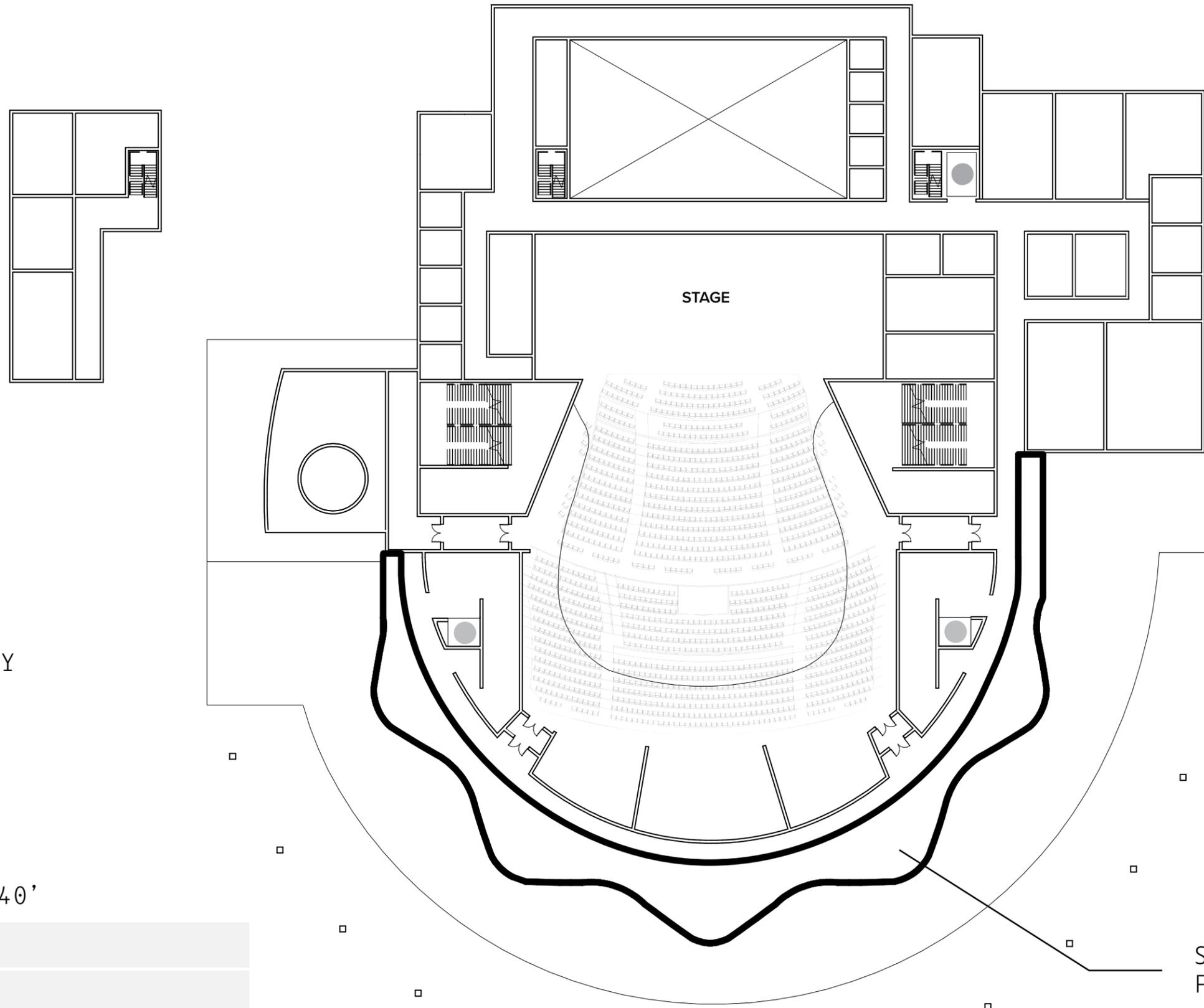
LEVEL 3
3,400 SF



Box Level Plan 1"=40'

45,900 SF

BASELINE



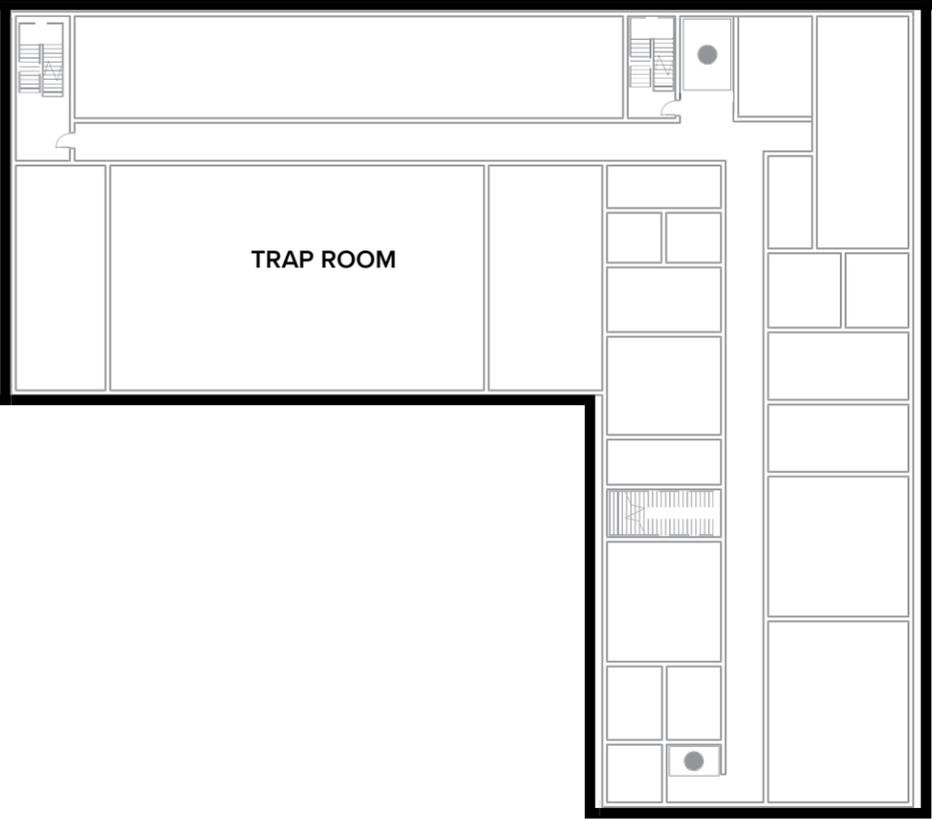
SUPPLEMENTAL BALCONY
TO BE REPEATED ON
BOX LEVEL, FIRST
BALCONY, AND SECOND
BALCONY LEVELS.

Box Level Plan 1"=40'

5,900 SF

SUPPLEMENTAL

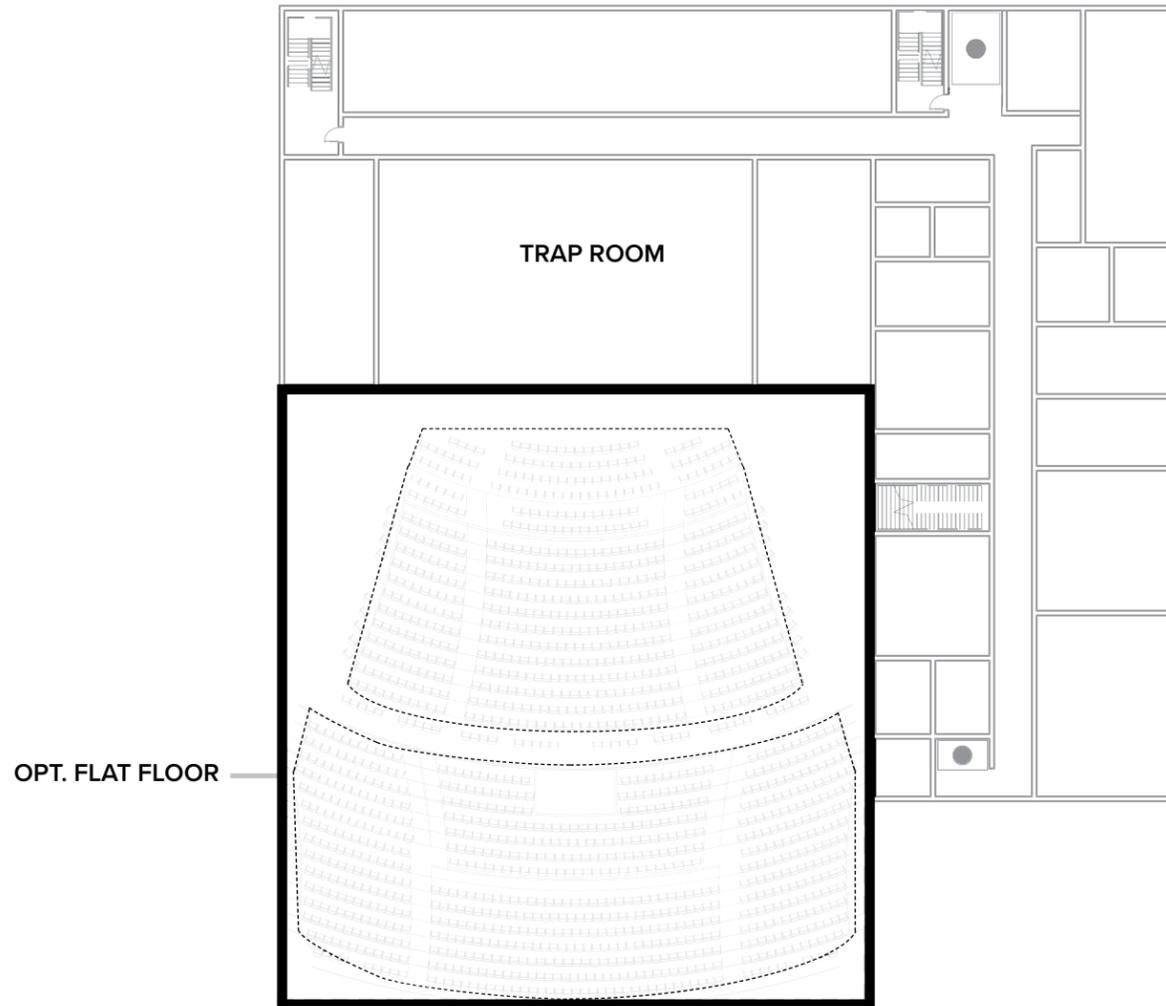
SUPPLEMENTAL
FOOD & BEVERAGE



Basement Level Plan 1"=40'

24,250 SF

BASELINE



Basement Level Plan 1"=40'

OPTIONAL FLAT FLOOR 17,680 SF

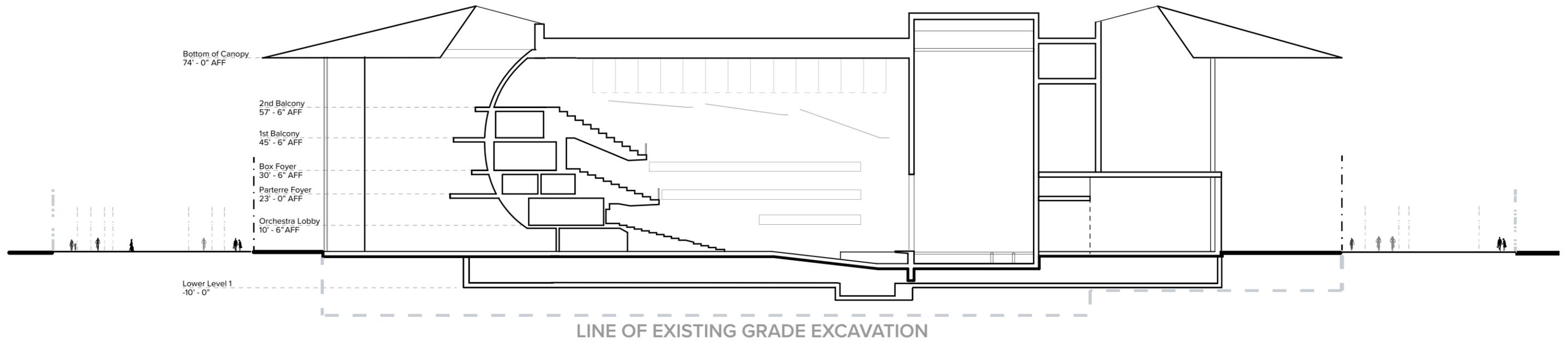
OPTIONAL

| BASELINE | GSF |
|-----------------------|----------------|
| BASEMENT | 24,250 |
| GROUND FLOOR | 71,200 |
| BOX LEVEL | 45,900 |
| FIRST BALCONY | 27,100 |
| SECOND BALCONY | 27,100 |
| INTERMEDIATE BALCONY | 20,000 |
| TOTAL GROSS SF | 215,550 |

| SUPPLEMENTAL | GSF |
|---------------------------------|---------------|
| FOOD & BEVERAGE / PUBLIC EVENTS | 10,350 |
| MULTI-PURPOSE / PRE-FUNCTION | 9,650 |
| BALCONIES | 17,700 |
| TOTAL GROSS SF | 37,700 |

Gross Square Footage

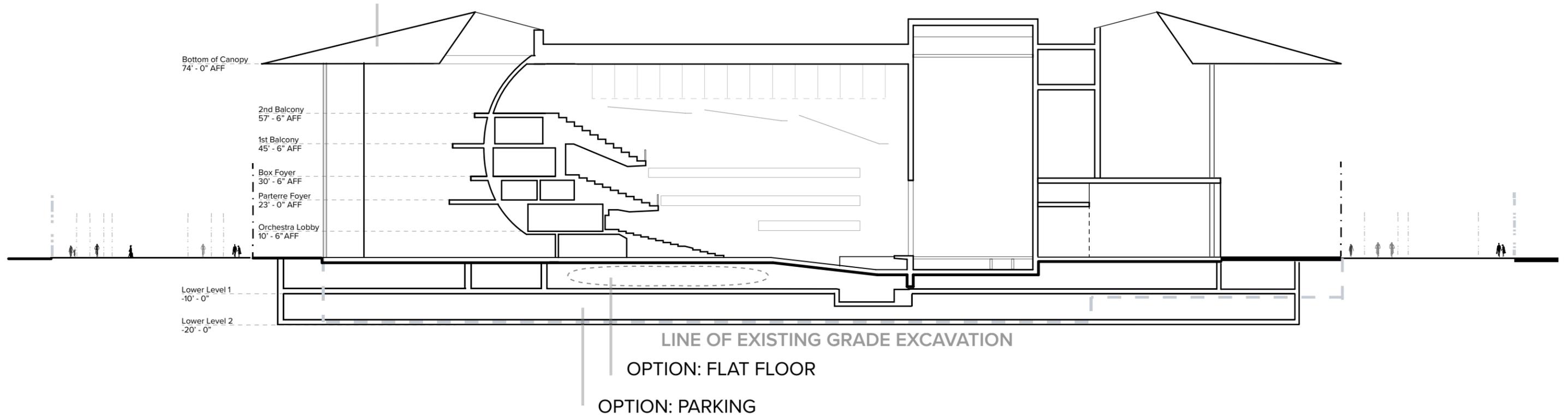
SUMMARY



Section 1" = 40'

BASELINE

SUPPLEMENTAL: EXTENDED CANOPY



Section 1" = 40'

OPTIONAL

Structural Narrative

FOUNDATIONS

Spread footings (with 6,000psf bearing capacity based on Nordstrom building plans)

Slabs on grade: 5" concrete

Basement walls: 12" concrete

STRUCTURAL FRAMES

BASELINE: STRUCTURAL STEEL

Typical floor framing:

- Wide flange beams and columns (10psf average steel weight); slab-on-metal deck, 3 ½" topping on 3" type W deck

Elevated cantilevered seating floor structures:

- Cantilevered plate girder steel framing (20psf average steel weight, sloped floor beams with bracing struts) w/ precast concrete floor units or steel joists with slab-on-metal deck.

Cantilever walkways/balconies:

- steel with slab-on-metal deck (15psf average steel weight)

ALTERNATE: MASS TIMBER

To be included in supplemental costs.

Mass timber floor structures adjacent to auditorium (separated by fire wall to allow for Type IIIA/IIIB structure): CLT3 (4 1/8") floor decks w/ 3" concrete topping w/ 2.5 Board-ft/sf glulam support framing (beams, girders, and columns)

ROOF

BASELINE: STRUCTURAL STEEL

Roof decking:

- 3" Type N 20 GA metal roof deck spanning 10'

Roof purlins:

- W12x16 @ 10' o.c. spanning ~20' (on average in Performance Hall and outside).

Performance hall roof long span trusses:

- 300 plf steel trusses ~12' deep spanning ~130' @ 20' o.c.

Atrium/exterior canopy roof girders:

- Wide flange beams with steel tension rods and king posts @ 20' o.c. on average, radial layout (20 psf average steel weight)

ALTERNATE: MASS TIMBER

To be included in supplemental costs.

Roof Deck:

- 2" Mass Plywood Panel (MPP) spanning 10'
- Roof purlins: DF GL Beams (24F-V4): 3 1/8"x15" avg. @ 10' o.c. spanning ~20' (on average in the performance hall and outside)
- Performance hall roof long span trusses: steel (see above)
- Atrium/exterior canopy roof girders: GL 24F-V8 10.75 x 30 w/ steel tension rods and king posts @ 20' o.c. on average, radial layout (10 psf average steel weight)

Exterior Steel Canopy Support Columns:

- 22" dia. x ½" steel pipe columns at 20' o.c. oriented radially around ~350' diameter perimeter

LATERAL SYSTEM

Steel Buckling Retrained Braced Frames or Concrete Shear Walls located in the Service + Core areas

Civil Engineering Narrative

SITE PREPARATION

Assumptions for the project are that the proposed performing arts center at the Lloyd center site will start from a fully served and buildable site, with little to no onsite conflicts or barriers to site service:

- Existing structures will be demolished and removed to native ground. This includes above ground buildings, basement and floor slabs, footings and underground parking. On average, the entire site will be approximately 10' below existing ground level, facilitating the installation of two levels of underground parking (optional scope).
- Base utilities to serve the Lloyd Center CCMP are assumed to be installed in NE 11th Ave, NE 13th Ave, and NE Clackamas St, including roadway surfaces and stormwater facilities.
 - » Sidewalks and street trees may be deferred to facilitate construction of the site and allow for site needs (driveway locations, water vaults, etc.)

FRONTAGE IMPROVEMENTS

NE Multnomah St has existing street improvements including mature street trees. This development will trigger removal and reconstruction of at least 3' of existing roadway south of the existing curbline, removal and replacement (in the same location) of the existing 1' wide curb, and sidewalks to provide 15' of sidewalk corridor (curb face to property line). Existing street trees are requested to be preserved within a 4' furnishing zone. The pedestrian through zone (sidewalk) will need to be widened to 8' wide, with 2' of frontage zone (paved or landscaped) between the sidewalk and property line.

The NE 11th Ave, NE 13th Ave, and NE Clackamas St sidewalk corridors are expected to be 12' wide (curb face to property line). This will contain a 1' wide curb, 4' wide furnishing zone with street trees, 6' pedestrian through zone and 1' of frontage zone (paved or landscaped).

Construction of the frontage zones are recommended after onsite basement work (optional

scope) and any adjacent underground work is completed (i.e. utility connections). All frontage improvements are noted for reference, but not included in this scope and will be funded by others.

TRANSPORTATION MODES

NE Multnomah St has existing TriMet bus service with a sheltered bus stop just east of NE 13th Ave. NE Multnomah St is also a major city bikeway and has existing buffered bicycle lanes. TriMet MAX service is available at the Lloyd Center / NE 11th Ave stop on the south side of Holiday Park (Red, Blue and Green Line service).

Providing public parking is a challenge for any large venue; a crucial feature of the proposed site is sizeable underground parking (optional). This site is well suited for this construction due to its history as a mall. Once existing structures are removed, native soils will be up to 20 feet below surface elevations on NE Multnomah Street. This is expected to significantly reduce costs associated with the earthwork cut and disposal required for underground parking construction. Underground parking options can be accessed via the frontages along NE 11th and NE 13th Ave. Direct driveway access off NE Multnomah St, between NE 11th Ave and NE 13th Ave will be prohibited. Street side parking is also anticipated along the west, north and east perimeters of the site.

The venue space is expected to require site access for large trucks. Initial studies indicate that a WB-67 with forward-shifted rear axles can access the proposed venue site loading dock via surrounding streets using one to two 40ft wide limited-access truck driveways along the NE Clackamas frontage.

UTILITIES

While the site will face its NE Multnomah St frontage, the surrounding frontages are lower service level streets. Therefore site utilities will be pulled from the surrounding public streets, namely NE 11th Ave, NE 13th Ave, and NE Clackamas St.

A 16-inch cast iron (CI) public water main lies in NE Multnomah St, and 10-inch public water mains will surround the site on its west, north and east sides. New 3-inch (or greater) domestic water and 8-inch (or greater) fire water service can be connected on any of these three frontages. Waterline work within the right-of-way, up to the property lines, will be performed by the Portland Water Bureau and paid for by the development. Domestic water connections will require reduced-pressure-principle backflow assembly (RPBA) devices that can be housed in an above ground insulated enclosure at the property line, or within buildings if constructed up to the property lines. Irrigation services can be separate taps under the City irrigation deduct meter program, or tapped off of the domestic water services. Fire water services will require a double-check-detector-assembly (DCDA) backflow device in an underground vault. Location of the fire service will be near the fire riser room(s), and require a fire department connection (FDC) within 75' of a public fire hydrant. Public fire hydrants along the surrounding public streets are expected to provide adequate coverage for the site.

Sanitary sewer service to the site is anticipated to be straightforward. 18-inch public sewer mains in NE Clackamas and NE 13th Ave drain to a 30-inch combination sewer in NE Multnomah. This sewer is more than 20 feet deep, ensuring that virtually any onsite plumbing can be drained to the public sewer. This connection has capacity for a site this large.

Similarly, stormwater service is expected to be uncomplicated. A 24-inch main in NE Clackamas St and NE 13th Ave outfall to the same 30-inch combination sewer in NE Multnomah St. This stormwater main is several feet higher than the sewer main. This simplifies service crossings but provides adequate depth to ensure ease of connection and variability of site designs.

SUPPLEMENTAL: ONSITE STORMWATER

As the site outfall discharges to a combination

sewer, onsite detention of storm events will be required. This can be provided within or adjacent to any optional onsite underground parking structure.

Central City development standards call for 60% green roof coverage of new buildings. Minimum stormwater detention requirements are estimated to be fulfilled utilizing an onsite underground detention vault that is approximately 8' deep by 20' wide by 100' long (2,000 square foot footprint). Detention vault sizing with less than 60% green roof coverage option would increase the size of the detention vault required.

OPTIONAL: STORMWATER SUSTAINABILITY

- **Rainwater Harvesting:** Stormwater can also be collected and harvested for re-use (irrigation or toilet flushing). With an average 36" of rain each year, the site could produce 500,000 cubic feet (3.75 million gallons) of rainwater that could be harvested. Quantities will depend on final square footage of runoff producing impervious area.
- **Deep Infiltration:** The site is underlain by 30' to 50' of poor draining silty soils. Below the silty soils are well-draining flood deposits of sands and gravels, and groundwater is over 100 feet deep. Infiltration of stormwater may not be required per City code, but may be feasible with private onsite deep drywells that can direct stormwater below the site and to the sands and gravels. Proximity of proposed structures should be reviewed with the geotechnical, structural, and civil engineers.

Other utility services, including gas, electric, and telecommunications, can also be connected via the surrounding streets. PacifiCorp's electric network is able to service this site, and consists of three medium voltage circuits that run through the Lloyd district. Points of connection are available at several switch vaults located along NE Clackamas St and NE 13th Ave. Other franchise utilities run in-line with the electric network, and can be readily connected to.

SITE FOOTPRINT / CONTOURS

The proposed site footprint is approximately 450 feet by 425 feet between NE 11th Ave and NE 13th Ave, and NE Multnomah St and NE Clackamas St. The existing site topography slopes northeast to southwest at less than 2%, with its lowest point located along the NE Multnomah frontage. The venue will face Multnomah, and the finish floor of the structure will meet the public sidewalk in Multnomah at-grade (approximately 139.2' in City of Portland vertical datum).

Considering existing topography, the natural high side of the site would be the north side. However, given service requirements for a venue space, trucks will access this site from the north. This necessitates a 4-foot deep loading dock on the north side of the venue – which would then be 4-feet lower than the Multnomah frontage, and contrary to the natural grade of the site. Fortunately, this can be accommodated with off-site grades: a gentle 0.5% slope into the site via NE Halsey St and NE 10th Ave, and a 1.7% slope into the site via Halsey and 14th. A high point mid-length on NE 11th and NE 13th Ave would facilitate drainage in the north-south direction. Stormwater collected at any point in this design would still easily connect to the public system, due to the depth of sewer connections previously noted.

SOIL CONDITIONS

The site is underlain by silty soils 30 to 50 feet in depth. Below these soils is well draining sand and gravel. Groundwater is over 100 feet deep and construction dewatering is not expected. Rock excavation is also not anticipated. With a small setback from the existing NE Multnomah St, up to two levels of optional underground parking structure could be constructed without the need of shoring. If sidewalk corridor construction is deferred, it may be feasible to install underground structures up to the west, north and east property lines. Soil conditions will need to be reviewed by the geotechnical engineer to confirm slope stability.

MEP Narrative

BUILDING SERVICES

This narrative is provided to summarize Mechanical, Electrical and Plumbing (MEP) scope considerations at the project feasibility stage to assist with overall approach and project costing.

The building services systems proposed are robust, tested solutions that achieve the internal environment necessary to ensure user thermal comfort, whilst minimizing operational energy consumption, noise, visual impact, capital cost and space requirements and to meet the overarching goal of developing a high-end, multi-use performing arts center.

MECHANICAL

The central mechanical strategy shall focus on designing around the needs of the main building function – the auditorium. Traditional performance spaces are typically served by displacement systems. These systems can operate on a wider heating and cooling water band, owing to the elevated supply air temperature of the air. This elevated water band can produce tangible savings on the heating and cooling energy. The spaces enveloping the main auditorium shall also be designed with this concept in mind; making use of a wider temperature set band internally, utilizing the temperate central plant temperatures for radiant slab systems and employing mixed mode systems where appropriate. Having flexibility as a core goal will drive the energy savings while the system selection will support the challenging acoustic requirements of world class entertainment venues.

CENTRAL PLANT

Air source heat pumps will provide heating hot water and chilled water which will be distributed in a loop to all air handling units and fan coils throughout the building. The air source heat pumps would be located on the lower roof in a position that allows free discharge of air to outside, with acoustic treatment to limit the

effects of noise to the surroundings.

The Heat Pumps will be arranged so that they can operate both in heating and cooling mode depending on the building demand. All heat pumps will be connected to the same heating hot water/chilled water header, which will act as a so called sliding header. The valve arrangement on the sliding header allows for the suitable number of units to operate in either heating or cooling mode depending of which valves are open. The image below demonstrates four heat pumps with a sliding header where in this instance two are operating in heating mode and two in cooling mode.

Due to the cool winter season in Portland all heat pumps will be installed with a defrost mode to protect the equipment from frost damage. When a heat pump is in defrost mode it is non-operational. As the heat pumps can operate in both heating and cooling mode the system provides redundancy to allow for operation even when one system is in defrost mode.

AIR HANDLING PLANT

Air conditioning systems will be selected to suit the function, geometry and thermal characteristics of the space served. All air conditioning systems will be zoned in order to maximize thermal comfort and minimize energy wastage.

The building will generally be conditioned by ducted central Air Handling Units (AHUs). Back of house and smaller spaces such as green rooms and admin areas will operate independently from larger auditorium as well as the foyer.

MAIN AUDITORIUM

The auditorium will be served by two AHUs; one unit for the stage, and one for the seating area.

Both the seating areas and the stage will be served by constant volume AHUs, modulating the temperature output of the air to maintain comfortable conditions. A constant volume

system reduces the need for moving mechanical parts adjacent to the performance space which assists in providing space conditioning in an acoustically sensitive manner. The return air will be ducted back to the units to allow for air recirculation to reduce energy consumption. Spill air will be exhausted on the roof.

Temperature and humidity will be controlled via temperature and humidity sensors located within the space. It is proposed that outside air to return air ratio is controlled based on CO2 concentrations measured in the occupied space. This method offers energy efficient control of outside air volumes whilst ensuring the quality of the indoor environment for the occupants comfort.

As the ventilation system has the potential to disrupt smoke effects during performances it is suggested that a manual override by the stage manager is provided to the smoke alarm is stop the ventilation for periods of time to prevent unwanted air movements during stage effects. It is important that ventilation is only inhibited for short periods of time and to ensure sufficient ventilation. This strategy will be further considered as the design progresses to find a strategy which allows for the potential smoke effects without adverse effects on the space conditioning.

To ensure supply air ventilation is well integrated with the space design, a mix between side wall supply and displacement ventilation through the floor will be used for the concert hall seating area. Most of the supply air will be provided via low velocity outlets located along the bottom of the balcony. Supply air will need to be ducted underneath the concert hall area to provide supply air flow on either side of the seating.

The balcony seats will be supplied via underfloor displacement either through diffusers in the steps, floor or integrated as part of the pedestals. Displacement ventilation uses the principle that hot air rises in order to maintain conformable temperature in the occupied areas. Slow moving cool air is introduced to the space at low level. As the air comes in contact with the heat sources

in the space (occupants and equipment) it begins to rise. As the air rises it is further heated by other equipment in the space such as lighting and equipment. By the time the air has risen to the top of the theatre it is relatively warm. It will then be extracted at high level to remove the unwanted heat from the space. This strategy achieves cooling and ventilation of the occupied space in an energy efficient and acoustically sensitive manner

The stage area will also be supplied via low velocity diffusers located underneath the balcony, but directed towards the stage. As for the seating, sufficient throw from the diffusers will be required to ensure temperature and humidity conditions are met.

Return air for both the stage and seating area will be exhausted at high level and returned to the plant room or spilled to the roof. The exhaust air path could also be used as a smoke exhaust fan in fire mode operation if required.

Piano Store Room

Should an adjacent piano store room be required a dedicated FCU which can control both temperature and humidity will be provided.

The piano room shall have a dedicated temperature sensor to control the space temperature, and a humidity sensor to control room humidity. The FCU would be activated based on temperature and humidity requirements. At times when temperature and humidity is right and no additional heating or cooling is needed the FCU will turn down to provide ventilation as per minimum requirements.

FOYER

The foyer will be ventilated by a mixed mode solution. This will comprise a variable air volume system providing tempered outside air to all foyer spaces during times of high occupancy or extreme ambient conditions. OPTIONAL: During cool to mild weather or during low occupancy,

the foyer spaces will be naturally ventilated using operable façade openings for fresh air intake, and high level operable louvres at the top of the central light well for exhaust air.

When external conditions do not support natural ventilation, heating and cooling this space will be provided by tempered air at low level and supplemented by an in slab, radiant heating and cooling system.

SURROUNDING AREA

Foyer Food Premises

These spaces will not be separately heated or cooled. Make-up air will be provided to the from the adjacent foyer. The associated kitchens will be fitted with a separate kitchen exhaust fan. A separate kitchen exhaust duct and fire-rated shaft will be provided in line with code requirements.

Server Rooms

All server rooms will be separately cooled and ventilated. Split system DX units will be installed to provide separate cooling in each server room. These units will operate 24 hours per day to maintain the required room temperature.

General Exhaust Systems

A dedicated exhaust system will be installed to provide extraction from the toilets and change room areas located in the building. Relief air for this system will be drawn off the main building areas via high level transfer ducts which are to be acoustically insulated. It is suggested that all toilets and change room areas are stacked within the building to allow for a toilet extract system with minimum disruption.

Supplementary exhaust systems will also be provided for the following areas:

- Store Rooms
- Laundry

MEP Narrative, 2

PLANT RESILIENCY

The heat pumps will be selected with multiple compressors and fans to provide some redundancy in the event of component failure. As generally heating and cooling will not be required simultaneously the heat pumps capacity to provide both heating and cooling provides plant redundancy in an efficient layout.

OPTIONAL MECHANICAL SUSTAINABLE DESIGN

In line with the project goals of achieving LEED Platinum, the following initiatives are proposed as part of the design:

- All electric central plant
- Demand-controlled ventilation (CO2 monitoring)
- Building zoning
- Mixed mode ventilation where applicable
- Good air change effectiveness
- Use of variable speed pumping for chilled water and heating hot water
- Use of variable speed drives for AHU fans
- Use of variable speed drives for fans for part load operation of the large volume spaces
- Heating hot water temperature reset based on the actual demand
- Chilled water temperature reset based on the actual demand
- Heating and cooling plant selection based on the optimum average load with the highest part load efficiency
- Mechanical design input into the thermal performance of the building envelope

ELECTRICAL

Electrical installations in places of entertainment require special consideration, which may not always apply to other buildings, in order to ensure the safety of the public, performers and staff and support an intensive program of varying power uses. Specific issues include the

need for enhanced mechanical protection to cables, especially within stage and other technical areas, the need for parts of the installation to remain operational in the event of fire and the need to minimize interference by unqualified persons and the public. The following section outlines the specifics of the proposed electrical design.

UTILITY SUPPLY

Power to the building will be via a Medium Voltage supply (supply voltage dependent upon utility service design and local network) and has been assessed at approximately 4.9MVA maximum demand load originating from on-site substations. Two 2.5MVA transformers will be required to serve the proposed electrical load for the development. These two transformers will be housed within a dedicated substation within the site boundary, these two transformers will supply power to the main electrical switchroom located at basement level. The feeder connection from the on-site utility substation to the main electrical room will be made in busway/busduct, this busway will drop to basement level from the transformer room and connect to the main electrical switchroom.

ELECTRICAL DISTRIBUTION

The general approach for distribution of electrical power is as follows:

- ½ horsepower and larger mechanical and plumbing loads to be supplied at 480V, 3ph or 208V, 3ph
- Mechanical and plumbing loads smaller than ½ horsepower to be supplied at 208V, 1ph/3ph or 120V, 1ph
- LED Lighting 277V, 1ph, 2 wire, 60Hz
- General purpose receptacle 120V, 1ph, 2wire, 60Hz
- 480V-208/120V transformers will be housed within the main electrical switchroom.

Electrical riser closets will be spaced to provide final circuit coverage to the building. The electrical riser closets will be sized to accommodate electrical distribution equipment only. Other equipment (IT/AV panels/equipment, lighting

control panels, lighting dimmer racks, fire alarm panels, BMS panels) will need to be located in other rooms.

MAIN SWITCHBOARDS

Two new 4,000A, UL1558, 100kAIC main switchboards will be provided within the electrical switchroom at basement level. Main switchboards will be free standing, with copper bus bars, fully rated neutral, and separate copper ground bus. Protective devices will be provided with approved barrier between sections and extended load terminals. All equipment within the main electrical switchroom will be installed on a 4 inch concrete plinth. Overcurrent protection devices will be single and multi-pole circuit breakers. All devices will be fully rated for available fault plus 10%. Series rated devices and equipment will not be used.

LOW VOLTAGE TRANSFORMERS

Two 1,000kVA 480V-208/120V transformers will be installed within electrical switchroom at basement level which will provide 208/120V power throughout the symphony hall.

A 500kVA 480V-208/120V transformer will be installed within the electrical switchroom at basement level for supplying the electric vehicle charging stations.

Transformers will be provided to convert 480V power to 208Y/120V for receptacle and equipment needs. Transformers will be standard high efficiency, NEMA STP TP1 dry-type rated for 115°C rise. Windings will be copper.

Transformer mounting will be as follows:

- Transformers rated 75kVA or smaller will be wall or floor mounted
- Transformers rated greater than 75kVA will be floor mounted

LOW VOLTAGE DISTRIBUTION LOADS

Two 2,500A 208/120V distribution panels will be installed within the electrical switchroom at basement level, these distribution panels will supply 208/120V branch circuit panels throughout the development

STANDBY DIESEL GENERATION

A 500kW, 480VAC, UL2200 containerized standby diesel generator will be provided at the lower roof level, the diesel generator will be complete with SCR exhaust filtration system to reduce emissions to comply with US EPA Tier 4 requirements.

The containerized standby diesel generator will feature a 300-gallon UL142 sub-base fuel tank connected to the building fuel oil system with bulk storage tank located at basement level. The fuel tanks have been sized based upon a maximum generator fuel consumption of 35gph.

GENERATOR ELECTRICAL SWITCHROOM

One 800A, UL1558, 50kAIC switchboard will be provided near lower roof level for connection of the standby diesel generator. The generator switchboard will be constructed with separate vertical switchboard sections to segregate Emergency, Legally Required and Normal loads.

Automatic transfer switches will be provided for loads backed up by generators.

ELECTRICAL LOAD CATEGORIES

The electrical distribution will be separated into load categories based on the equipment type, its branch provides the bulk of the loads such as general lighting, receptacle loads, kitchen, miscellaneous loads and mechanical equipment. The above loads will be split into separate panels based on the type of load.

Electrical Power Condition, Control & Monitoring

The building main electrical service shall be metered in compliance with Title 24 Energy Code requirements. Sub-meters shall be provided on the main switchboard, on the load side of all automatic transfer switches and all circuits serving event power.

In addition to the above, sub-meters shall be provided on all energy end uses that represent 10% or more of the total annual consumption of

the building. Sub-meters shall be provided for the building and at the distribution board level. Sub-meters shall be web-enabled and shall communicate to the Energy Management System (EMS)/Building Management System (BMS), where the data shall be collected and stored.

Loads metered by load type as follows:

- Lighting
- HVAC
- Domestic Water pumps
- Plug Loads
- Elevators/Vertical Transportation
- Renewable Power Sources
- Food and beverage spaces/tenancies
- EV Charging
- Comprehensive power, energy and demand measurement collected shall include:
 - Voltage and current: per phase minimum, maximum and average
 - Power: kVA, Watts, kVAR and Power Factor
 - Demand: Forward, Reverse, net, sum, load profile and export
 - Meter shall be capable of tracking kWh for a user-defined period
- The metering system shall also include the following characteristics:
 - Meters shall be permanently installed, record at 15-minute intervals, and transmit data to a remote location.
 - Electricity meters shall record both consumption and demand. Whole building electricity meters shall record the power factor.
 - The data collection system shall use a local area network, building automation system, wireless network or comparable communication infrastructure.
 - The system shall be capable of storing all meter data for at least 36 months.
 - The data shall be remotely accessible.
 - All meters in the system shall be capable of reporting hourly, daily, monthly, and annual energy use.

MEP Narrative, 3

GROUNDING & LIGHTNING PROTECTION

A new grounding system will be installed within the building in accordance with the requirements of NFPA 70 and the local Code.

Main grounding bars will be provided within each switchroom.

The grounding system shall at a minimum bond the following grounding electrodes:

- Building Steel
- Foundation Rebar
- Cold water piping system
- Driven ground rods

A lightning protection risk assessment will be conducted at the next stage to determine if lightning protection for the building is recommended or not required. The risk assessment and systems design will be in accordance with NFPA 780.

GENERAL LIGHTING & SMALL POWER

General lighting in public and technical areas of most entertainment premises should normally be controlled from central positions to avoid operational problems and to ensure that the inadvertent operation of a locally sited switch does not cause a hazard or nuisance. Switches in public areas should be inaccessible to unauthorized persons. Backstage areas are usually mastered from the control room with local switching in areas such as fly galleries and front of house lighting bridges.

Lighting and sound equipment may be subject to frequent changes as one-night stands and touring shows may bring with them their own equipment. It is often not possible for the licensing authority to inspect such equipment whilst the inspection by the venue may be cursory because of time constraints. It is essential, therefore, that the permanent installation is designed to permit as much flexibility as possible. The provision of a large number of sockets, both for sound and lighting supplies, throughout all performance areas will help to reduce the

number of temporary connections and the length of trailing cables. Means for safe and easy connection of temporary electrical distribution and control equipment shall be provided.

Stages inevitably use large amounts of electrical equipment. There is also likely to be a good deal of exposed metalwork – grids, lighting bars, cat ladders and so forth. Given the likely heavy usage of the premises all structural metallic parts need to be adequately earthed unless it can be assured that metal cannot come into contact with a potentially dangerous source of electricity. It is therefore particularly important that the earthing recommendations are observed. Where technical (clean) earths are provided the need for safety earthing should not be overlooked.

OPTIONAL ELECTRICAL VEHICLE CHARGING SYSTEM

We anticipate a number of vehicle spaces as electric vehicle spaces, and an allowance in the load assessment has been made for these vehicle spaces to each be provided with a 22kW electric vehicle charging station.

The Electric vehicle charging stations shall be pedestal mounted 80A, 208/240V AC charging stations, each charging port shall have a dedicated overcurrent protection device within the EV charging panel board.

Electric vehicle charging stations shall be compliant with UL 2954, UL 2231 and NEC article 625.

OPTIONAL ELECTRICAL SUSTAINABLE DESIGN

It is expected that this project will target LEED Platinum.

Given the approaches described within this section of the report, an all-electric building, provision of electric vehicle charging facilities, sub-metering of different load types achieving LEED Platinum will be possible from an electrical design perspective.

- PV – we need to discuss the breakdown between solar thermal and PV
- Energy & Atmosphere Building-Level and Advanced Energy Metering
 - » Intent: Identify major energy uses within the building and establish metering scheme capable of tracking and trending energy consumption over time.
 - » Opportunity: As part of the design of the electrical system, a full metering scheme shall be incorporated into the design including sub-metering in the interest of tracking energy consumption within the building. As outlined in the electrical metering section, energy end-users over 10% shall be targeted for additional metering.
- Energy & Atmosphere Renewable Energy Production
 - » Intent: Establish on-site renewable energy systems capable of offsetting energy demand for the building.

PLUMBING

This narrative is provided to describe the plumbing considerations at the project feasibility stage to assist with the overall approach and project costing.

The plumbing goals are to provide a cost-effective, sustainable, energy-efficient, and flexible configuration over the lifetime of the building, ensuring ease of operation, maintenance, and replacement.

OPTIONAL PLUMBING SUSTAINABILITY

The plumbing design of the space will consider water and energy usage, as well as demand profiles during the days with performances.

- We target the prescriptive requirements for new plumbing equipment and low flow fixture performance to meet LEED requirements.

- Hot water will be generated by energy efficient heat pumps.
- We will explore further water and sustainability design options such as storm water retention to meet the Portland Storm Water Management Ordinance, and gray water system and potential green roofs
- Submetering, to track water use through the hot water system, irrigation and mechanical make up water

PLUMBING SYSTEMS

The plumbing system will be designed to meet the following criteria:

Pending water pressure results, the building may require a booster to achieve 35 psi at the most remote fixture. Domestic hot water will be provided using an efficient heat pump water heater with two large 750 gallon tanks. This system will consider the demand profile of a typical day, ensuring sufficient hot water availability during peak usage times. Domestic hot water will initially be generated to 140°F in the water heaters and then mixed down to 120°F for distribution throughout the building to restrooms and kitchen appliances.

Sanitation drainage from internal restrooms and plant rooms will terminate 5 feet outside the building perimeter for continuation by the Civil Engineer. If a grease waste drainage system is required, all kitchen appliances and bar areas (depending on the type of appliances) will also terminate 5 feet outside the building perimeter for continuation to an underground bulk storage grease interceptor, as per the Civil Engineer's design.

The storm system will be designed to handle peak rainfall events, incorporating roof drains, terrace drains, leaders, overflows, and connections to civil infrastructure. Additionally, a rainwater retention tank and treatment skid should be considered to offset a portion of the water demand for irrigation, mechanical makeup, or toilet/urinal flushing. The retention tank will be sized based off 85% percentile storm or greater to meet the Portland Storm Management Ordinance. The estimated A review of the

geotechnical report will determine whether a groundwater treatment system is suitable for this application to further offset water demands. Furthermore, the use of green roofs shall be considered to offset the irrigation water demand on site.

OPTIONAL GRAY WATER SYSTEM

The use of a Graywater system shall be considered to collect the drainage from sinks, showers and lavs to be treated for use within the building. The accumulation of storm water collection and day-to-day graywater collection, contribute to offsetting the overall buildings water demands.

OPTIONAL PLUMBING SUSTAINABLE DESIGN

The main energy demands from the plumbing system will be from Domestic Hot Water generation and treatment skids and pumps. In addition to having highly efficient heat pumps, an additional heat exchanger should be considered from the mechanical piping system. This will pre-heat the domestic water, leading to lower energy to get to the target temperature. Additionally a heat exchanger should be considered from the black water waste tank, to further offset the energy required by the domestic hot water heat pumps.

A combination photovoltaic / solar hot thermal system should be considered at the roof. With minimal space available, this could generate the benefits of providing the building with supplementary electricity, while also pre-heating the domestic hot water further offsetting energy.

A full study would need to be conducted to analyze the water and energy offsets of these systems.

Acoustic Narrative

This narrative is provided to summarize acoustic scope considerations at the project feasibility stage to assist with overall approach and project costing.

The acoustic goals are to develop a high-end, multi-use performing arts center. We have identified key acoustic elements to be studied and developed as the project progresses. The preliminary acoustic guidance herein is provided for discussion and validation by project stakeholders.

ROOM ACOUSTICS

The 3,000-seat main performance space is expected to host a wide range of program types (orchestral music, theatre, dance, drama, lectures, comedy, Broadway productions). The auditorium needs to support both unamplified music performance and amplified or reinforced speech and music. The diverse acoustic requirements of these programs shall require a design that can incorporate a variable acoustic system.

Based on the 2018 budget recommendation memo from The Shalleck Collaborative, it seems that an electro-acoustic enhancement system (EAES) or an Active Architecture system (AA) was anticipated. This is an appropriate approach and can be the baseline for assumptions at the feasibility stage. The cost estimate included in that memo should be modified to reflect 2024 pricing and used in the project budget.

In this approach, the venue will be designed with a natural acoustic response that is tailored for amplified speech and music. As an initial target, we recommend a mid-frequency (250-2kHz) reverberation time of 1-1.5 seconds with minimal bass rise. This would require incorporation of sound absorbing materials such as acoustic panels, perforated or slat wood with insulation behind, curtains, or something similar.

In the next project phases, Arup would help advise the client regarding the selection of a preferred EAES system/manufacturer based on the priority use cases defined for the space. Once a system is selected, we would collaborate on the design and documentation of this system.

ALTERNATIVE APPROACH

An alternative approach would be to design the auditorium with a longer reverberation time suitable for symphony performances, and then introduce variable acoustic sound absorption to reduce the reverberation time and make the room suitable for amplified speech and music. In this approach, the baseline room volume would increase and motorized acoustic curtains or banners would be incorporated into architectural pockets and deployed along the side walls and ceiling to reduce the room reverberance as required.

Arup shall facilitate venue visits and/or cost exercise during concept design to help the stakeholders establish a feasible variable acoustic strategy for the project. Once the variable acoustic strategy is confirmed by the Client, Arup shall provide detailed advice on room shape, form geometry and finish materials to achieve the interior acoustic qualities required.

INTERIOR SOUND ISOLATION

Pending an ambient noise survey and confirmation of background noise criteria, Arup does not currently anticipate full box-in-box isolation for the main performance space (see Section 1.4). However, all noise sensitive areas will require reasonable control of noise intrusion and structure borne vibrations from adjacent spaces. Sound and light lock vestibules should be incorporated at all entries to the main event space to provide effective isolation. Program layout will be critical to minimizing the adjacencies between noise generating spaces and noise sensitive spaces. Note that transitional areas around the main performance space are not likely to be noise sensitive to activity noise but will still require reasonable control of equipment noise and reverberation. A structural break between the main performance space and surrounding areas may be required to provide sufficient isolation, pending development of the structural design strategy and program layout.

A matrix of adjacencies and recommended sound isolation criteria for demising partitions between adjacencies will be developed during schematic design. Further recommendations for partition constructions, doors and window build-ups will be provided in design development.

BUILDING SYSTEMS NOISE & VIBRATION CONTROL

The absence of background noise is essential in the main performance space. Arup recommends PNC 15-20 as an initial target.

To minimize disturbance and maximize cost efficiencies, noise generating building systems or spaces such as mechanical rooms, elevators and restrooms should not be located adjacent to noise sensitive spaces.

ENVIRONMENTAL NOISE CONTROL

An ambient noise and vibration survey at the proposed site should be conducted as soon as possible to document the existing conditions and collect data to calibrate future analysis, models and/or auralization studies, and inform the building envelope considerations required.

We anticipate noise control measures will be required on all MEP equipment open to the environment (air exhausts/intakes, central plant, transformers, etc.)

BUILDING ENVELOPE CONSIDERATIONS

When the site environmental noise characteristics are understood, Arup will provide building envelope recommendations, such as exterior roof, façade/wall buildup, and vibration isolation (if required). A double ceiling may be required on the main performance space if the area is subjected to high levels of noise from traffic or aircraft.