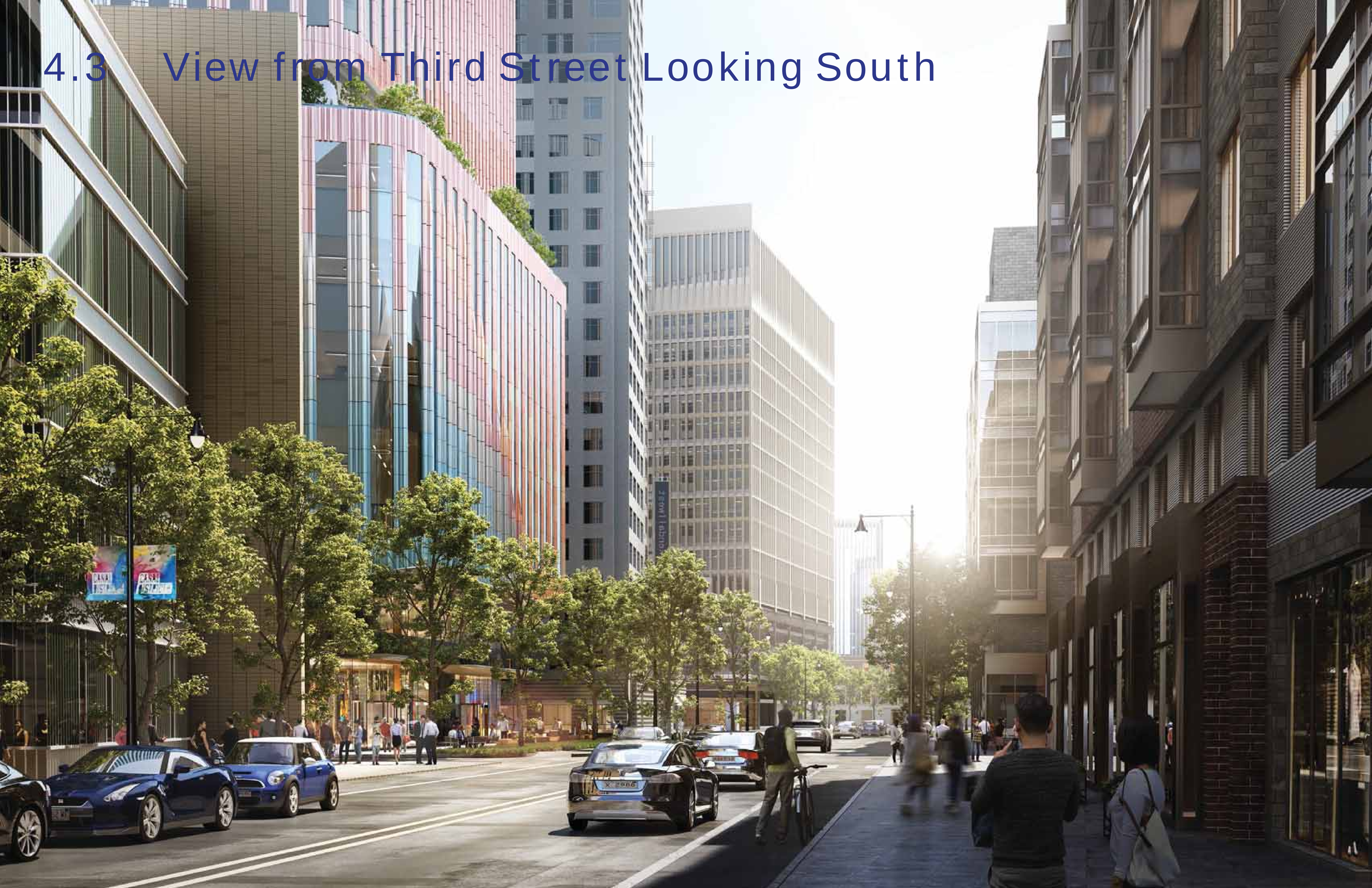
4.1 View from Termeer Square

4.2 View from Third Street Looking North

4.3 View from Third Street Looking South

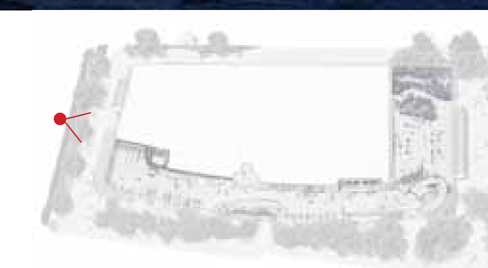


4.4 View from Kendall Street

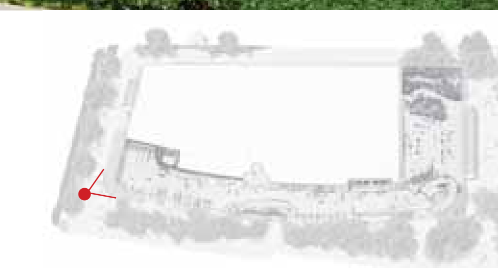
4.5 Night View from Kendall Street

4.6 View from Point A - Longfellow Bridge

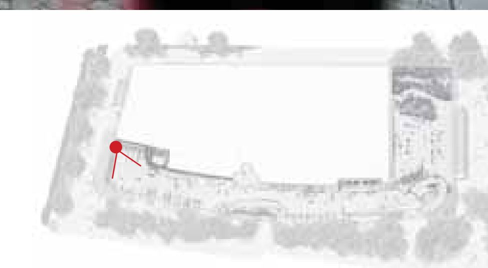
4.7 View from Across Third Street



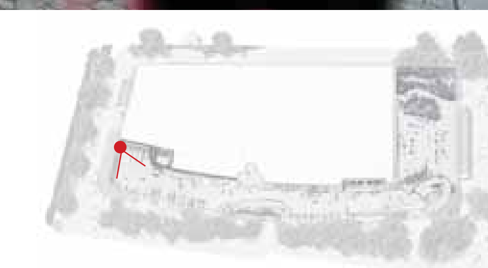
4.8 View from Third and Kendall Street Corner



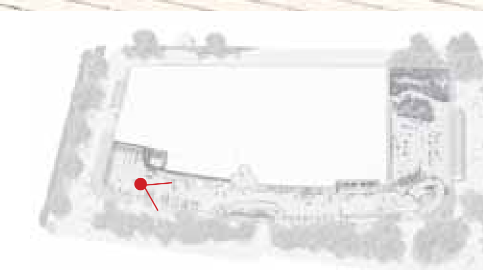
4.9 Perspective of Community Flexible Space - Gallery



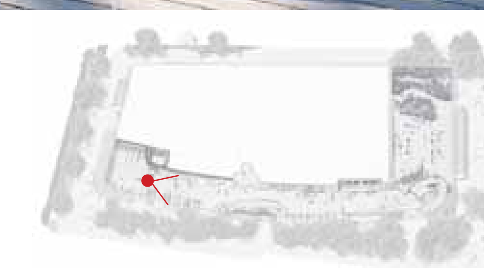
4.10 Perspective of Community Flexible Space - Performance



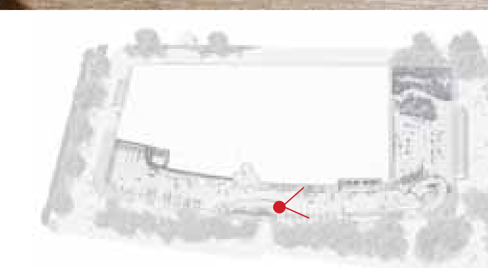
4.11 Perspective of the Gallery & Living Room



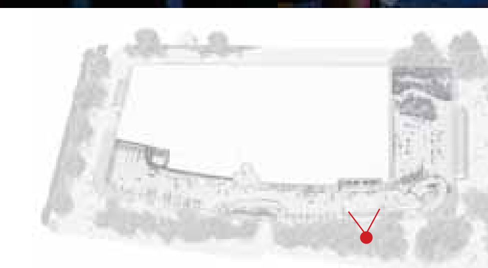
4.12 Perspective of Winter Market



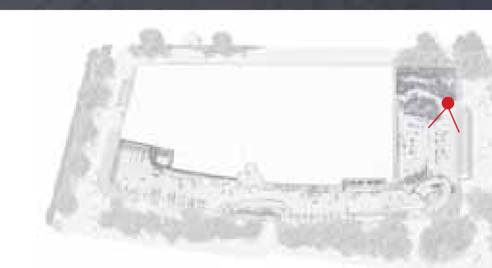
4.13 Perspective of Urban Lounge



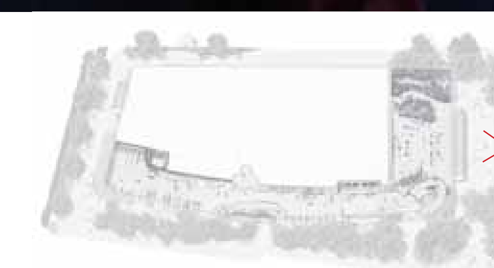
4.14 View from Kendall Street(South) Entrance



4.15 Perspective of Winter Garden



4.16 Perspective from Across Kendall Street(East)

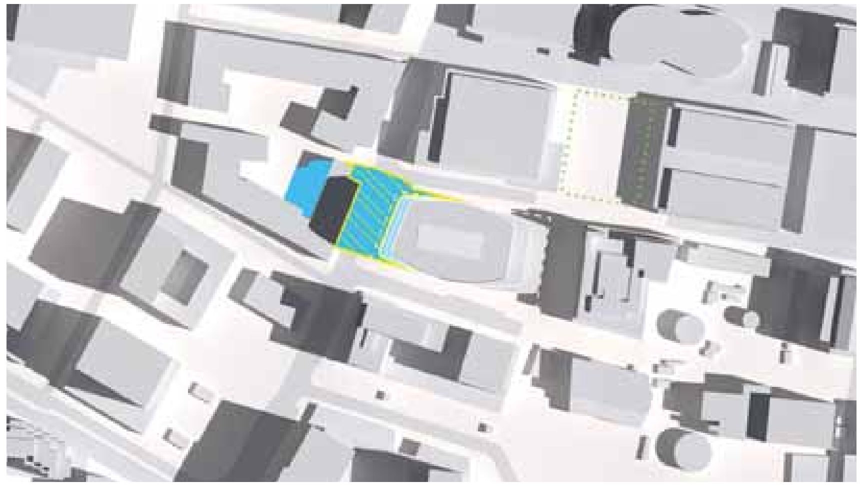


APPENDIX A

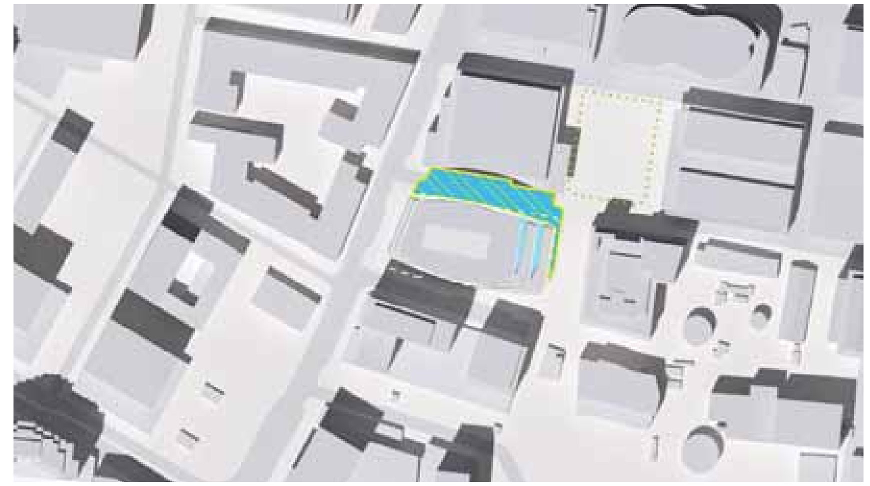
A.1 Shadow Study

PROJECT SHADOW

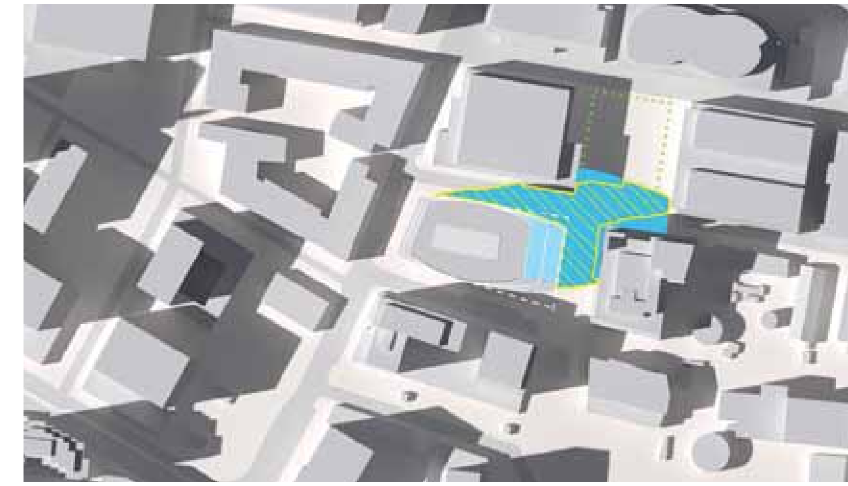
NET NEW SHADOW



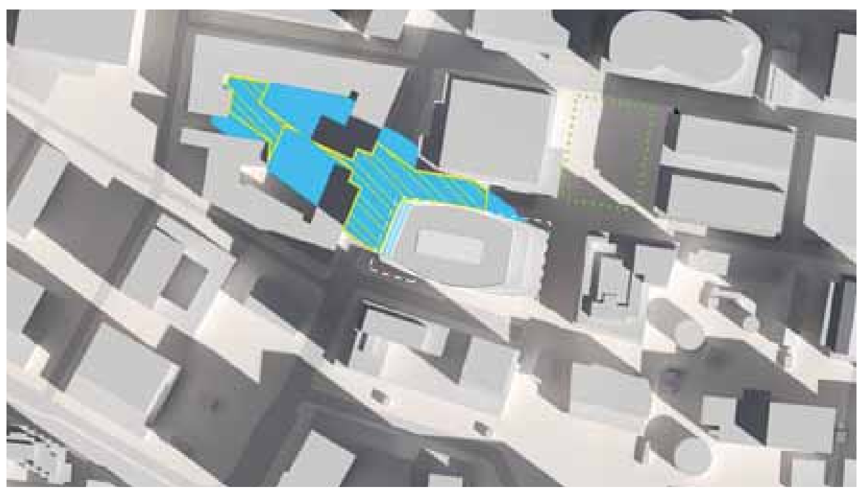
Summer 9:00 am



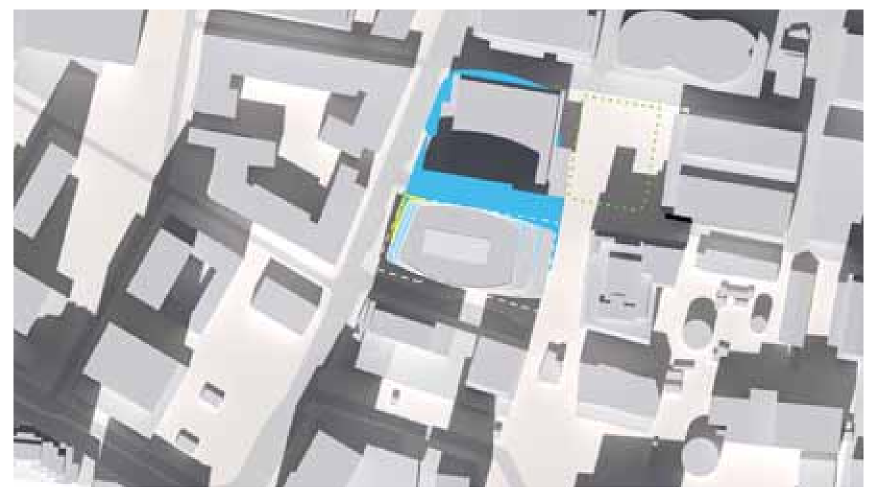
Summer 12:30 pm



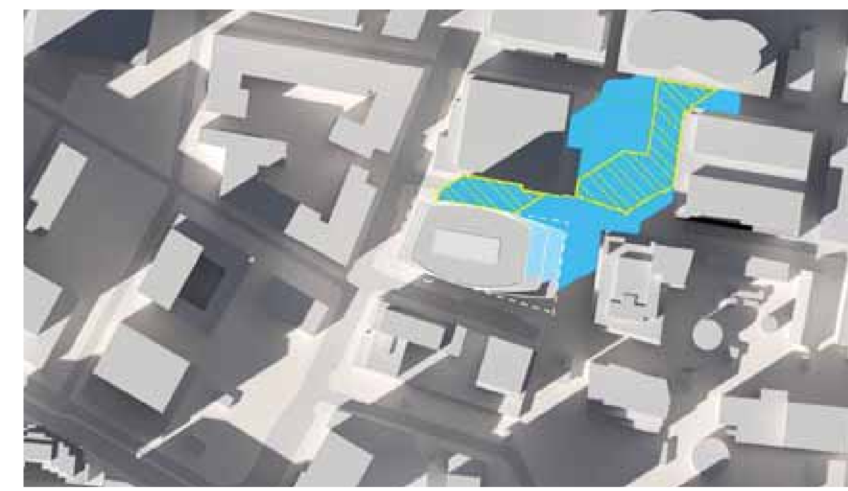
Summer 3:00 pm



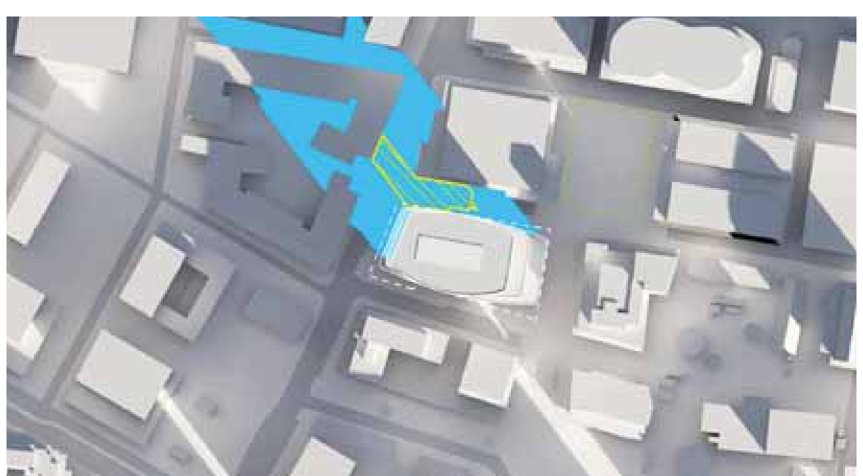
Spring/Fall 9:00 am



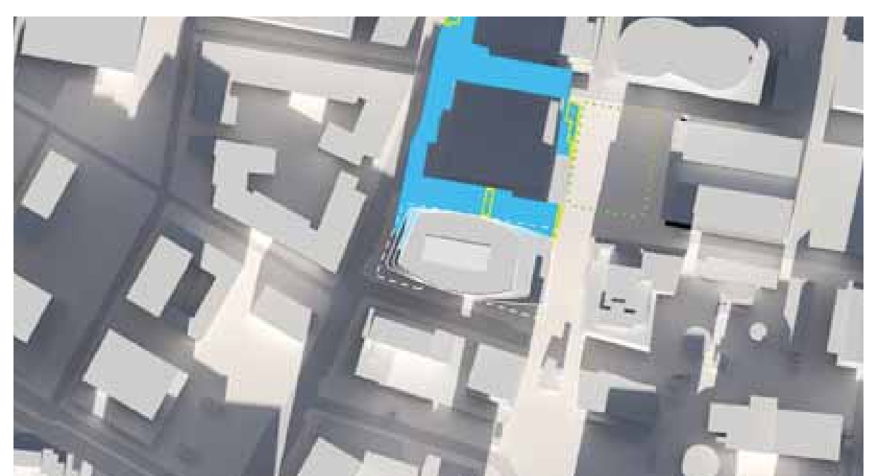
Spring/Fall 12:30 pm



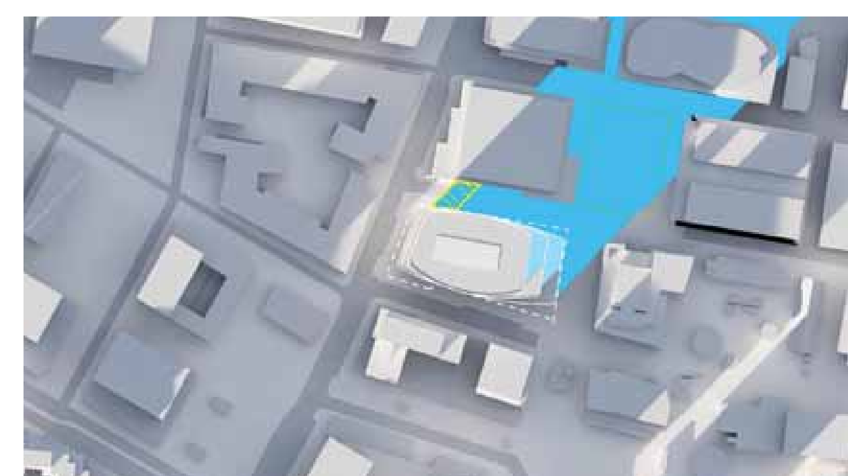
Spring/Fall 3:00 pm



Winter 9:00 am



Winter 12:30 pm



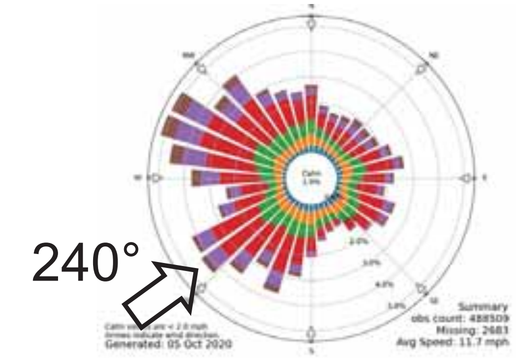
Winter 3:00 pm

N

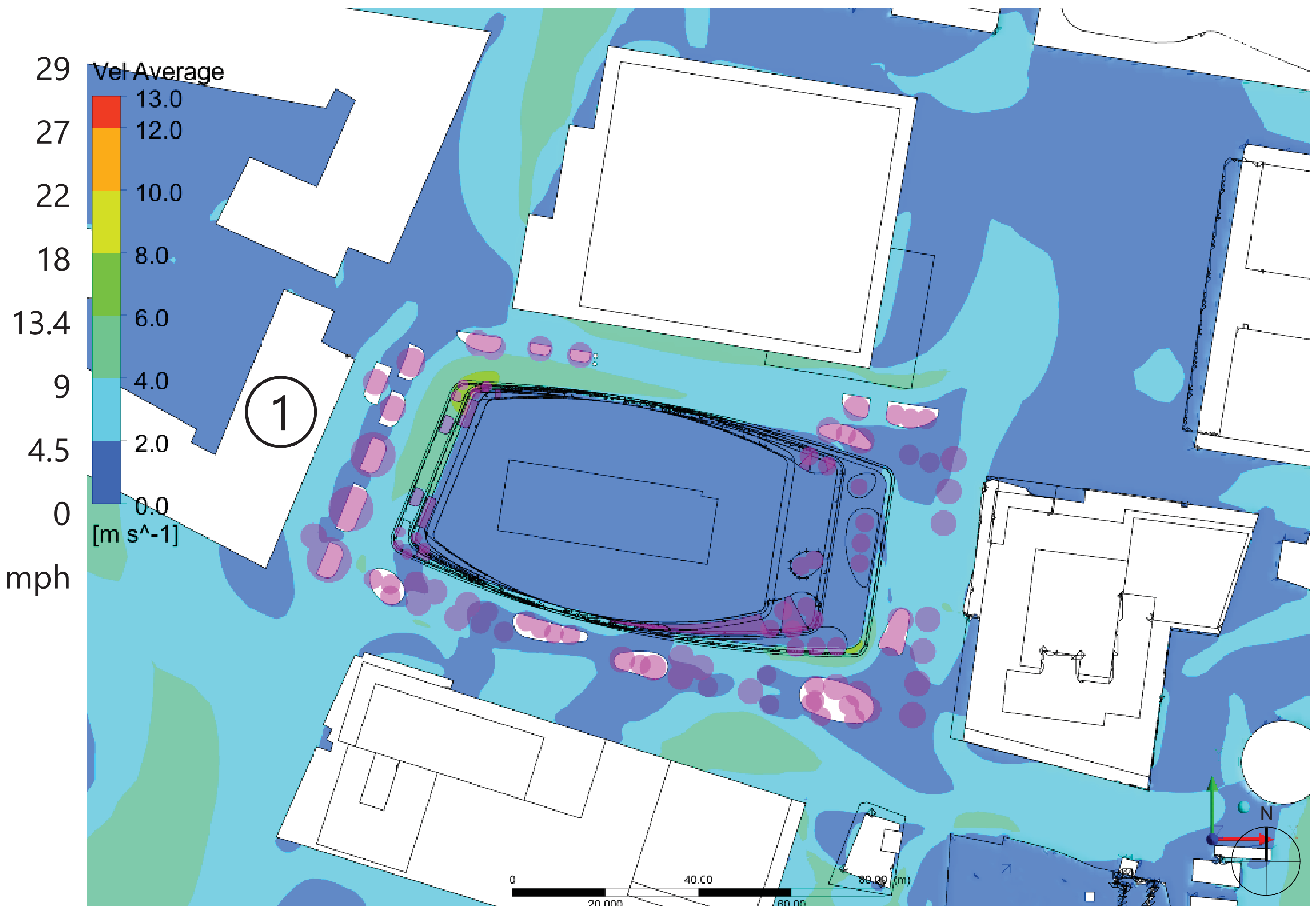
A.2 SW Wind Direction

1. At average wind conditions (12.1mph) under SW wind direction calm wind conditions are observed, below 13 mph at the ground level (1.5m offset from floor).

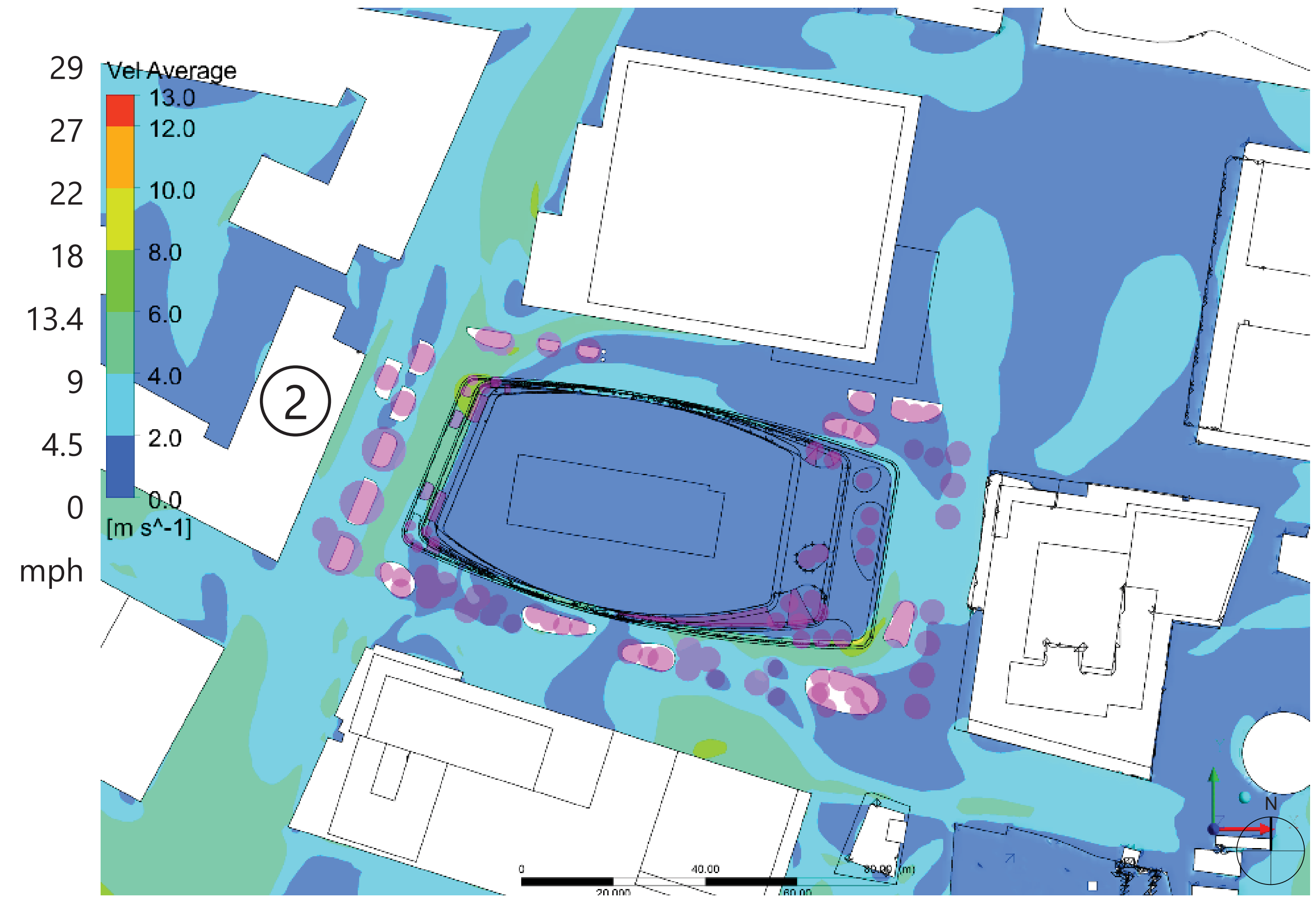
2. The cumulative schemes show similar wind conditions.



PROPOSED IN EXISTING SURROUNDINGS



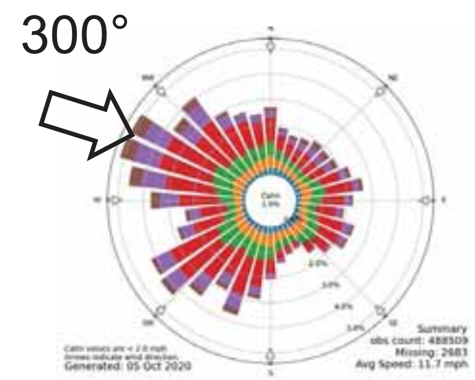
PROPOSED IN FUTURE SURROUNDINGS



Comfort Category	GEM Speed (mph)	Description
Sitting	≤ 6	Calm or light breezes desired for outdoor restaurants and seating areas where one can read a paper without having it blown away
Standing	≤ 8	Gentle breezes suitable for main building entrances, bus stops, and other places where pedestrians may linger
Strolling	≤ 10	Moderate winds that would be appropriate for window shopping and strolling along a downtown street, plaza or park

Comfort Category	GEM Speed (mph)	Description
Walking	≤ 12	Relatively high speeds that can be tolerated if one's objective is to walk, run or cycle without lingering
Uncomfortable	> 12	Strong winds of this magnitude are considered a nuisance for all pedestrian activities, and wind mitigation is typically recommended

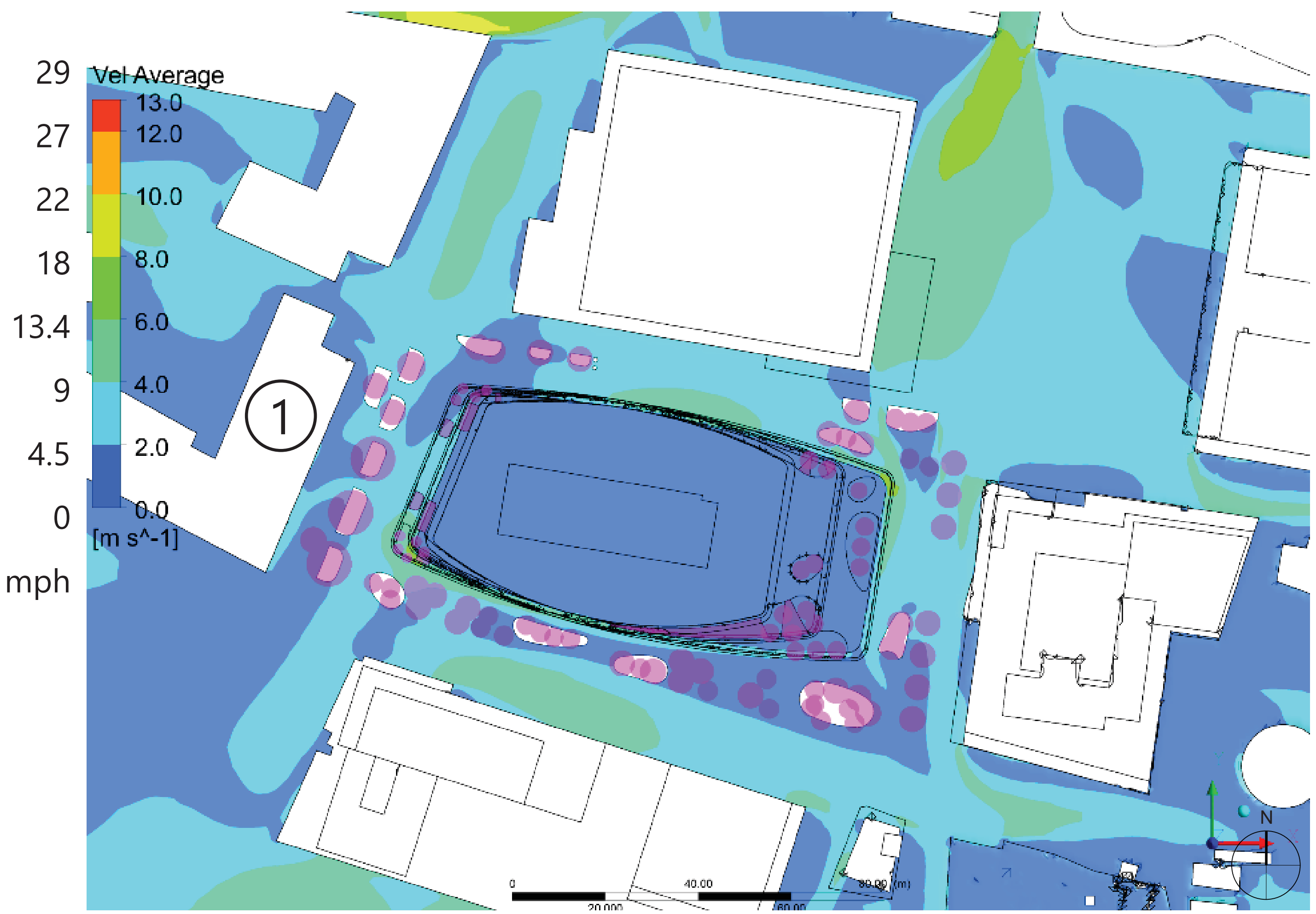
A.3 NW Wind Direction



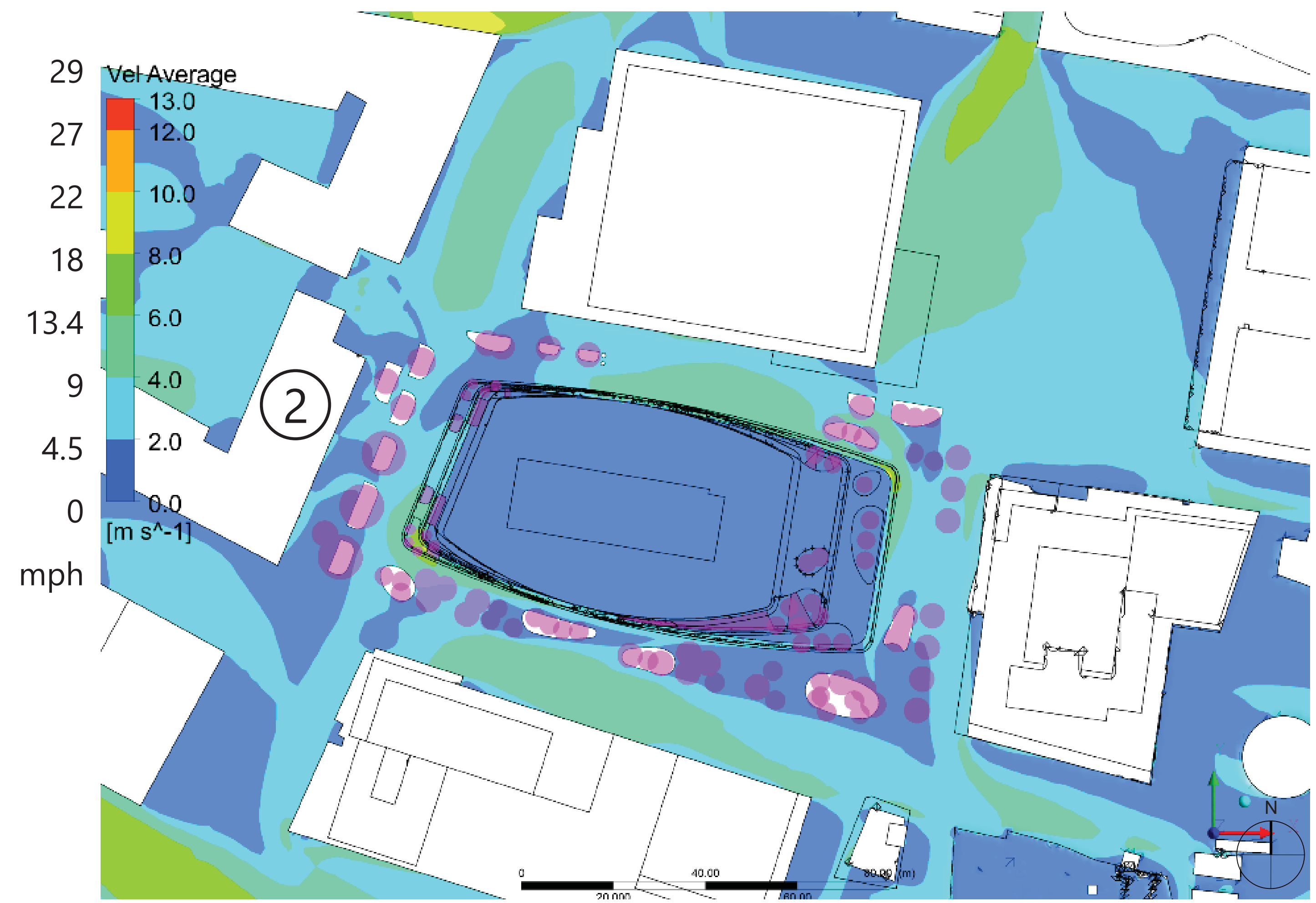
1. At average wind conditions (12.1mph) under NW wind direction calm wind conditions are observed, below 13 mph at the ground level (1.5m offset from floor).

2. The cumulative schemes show similar wind conditions.

PROPOSED IN EXISTING SURROUNDINGS



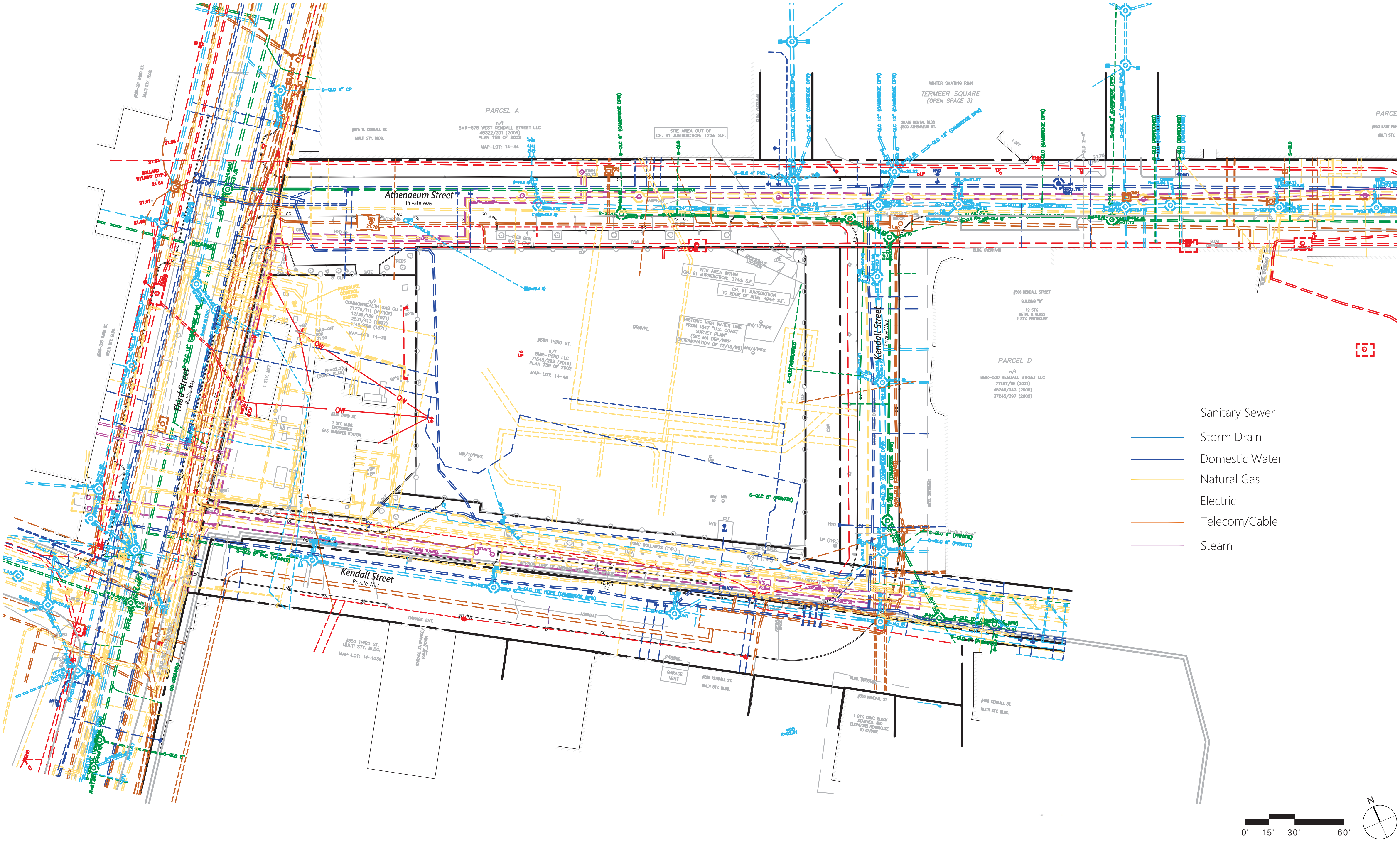
PROPOSED IN FUTURE SURROUNDINGS



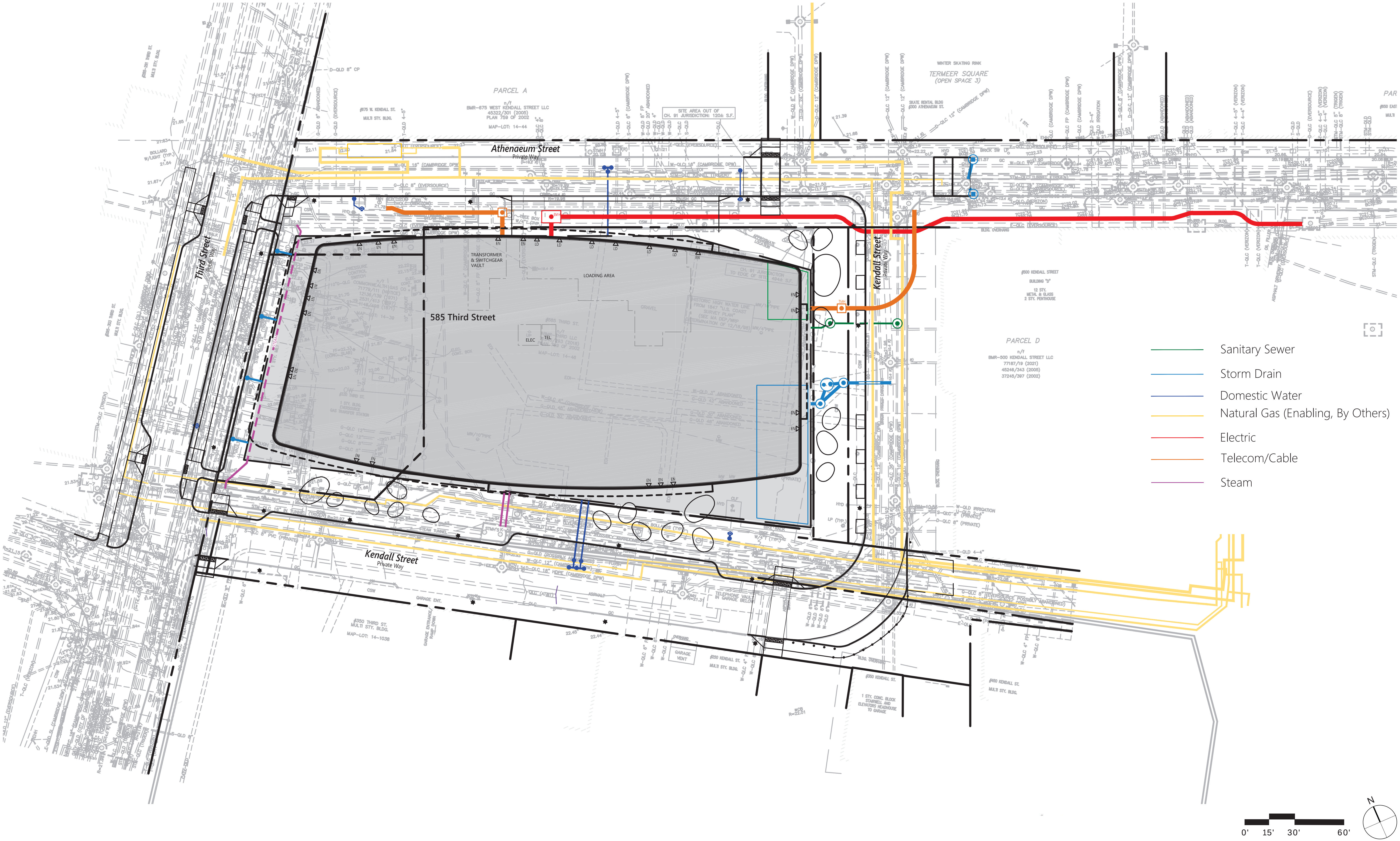
Comfort Category	GEM Speed (mph)	Description
Sitting	≤ 6	Calm or light breezes desired for outdoor restaurants and seating areas where one can read a paper without having it blown away
Standing	≤ 8	Gentle breezes suitable for main building entrances, bus stops, and other places where pedestrians may linger
Strolling	≤ 10	Moderate winds that would be appropriate for window shopping and strolling along a downtown street, plaza or park

Comfort Category	GEM Speed (mph)	Description
Walking	≤ 12	Relatively high speeds that can be tolerated if one's objective is to walk, run or cycle without lingering
Uncomfortable	> 12	Strong winds of this magnitude are considered a nuisance for all pedestrian activities, and wind mitigation is typically recommended

A.4 Existing Utilities Plan



A.5 Proposed Utilities Plan



A.6 Tree Study - Existing Conditions

TREE #	SPECIES	COMMON NAME	DBH	PUBLIC OR PRIVATE	SIGNIFICANT PRIVATE	STATUS	CONDITION NOTE
1	*Sophora Japonica*	Japanese Pagoda Tree	12.5"	Public	N	Protect	Trunk Injury
2	*Sophora Japonica*	Japanese Pagoda Tree	13.5"	Public	N	Protect	
3	*Sophora Japonica*	Japanese Pagoda Tree	12.5"	Public	N	Protect	
4	*Sophora Japonica*	Japanese Pagoda Tree	12"	Public	N	Protect	Trunk Injury
5	*Sophora Japonica*	Japanese Pagoda Tree	10"	Private	Y	Remove	
6	*Sophora Japonica*	Japanese Pagoda Tree	6"	Private	Y	Remove	
7	*Catalpa Speciosa*	Catalpa	6"	Private	Y	Remove	Signs of Aphid Infection
8	*Catalpa Speciosa*	Catalpa	6"	Private	Y	Remove	Signs of Aphid Infection
9	*Catalpa Speciosa*	Catalpa	6"	Private	Y	Remove	Signs of Aphid Infection
10-14	*Zelkova Serrata*	Japanese Zelkova	3"	Private	N	Remove	
15	*Ginkgo Biloba*	Ginkgo	4"	Private	N	Remove	

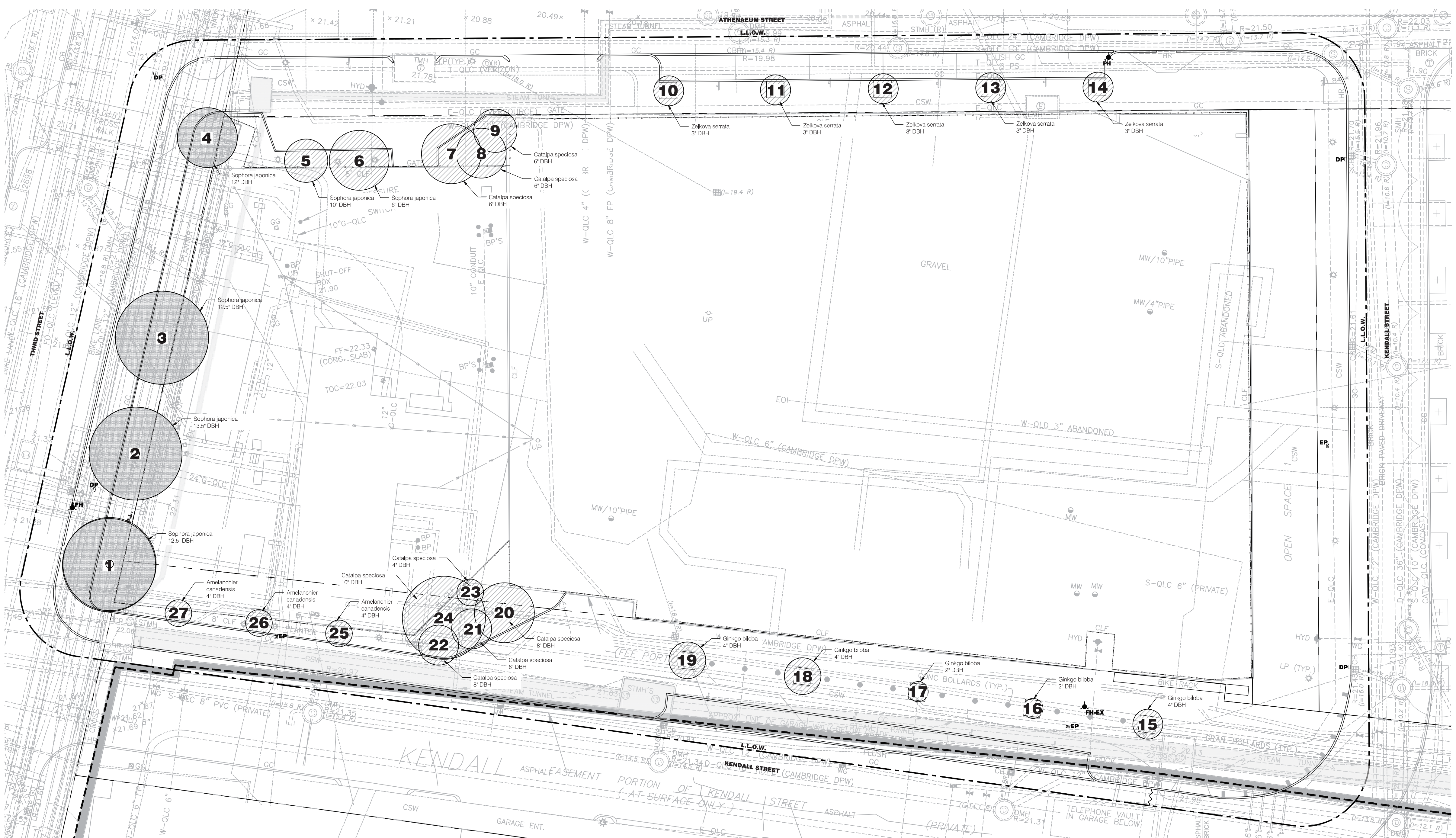
TREE #	SPECIES	COMMON NAME	DBH	PUBLIC OR PRIVATE	SIGNIFCANT PRIVATE	STATUS	CONDITION NOTE
16	*Ginkgo Biloba*	Ginkgo	2"	Private	N	Remove	
17	*Ginkgo Biloba*	Ginkgo	2"	Private	N	Remove	
18	*Ginkgo Biloba*	Ginkgo	4"	Private	N	Remove	
19	*Ginkgo Biloba*	Ginkgo	4"	Private	N	Remove	Trunk Damaged
20	*Catalpa Speciosa*	Catalpa	8"	Private	Y	Remove	Aphids
21	*Catalpa Speciosa*	Catalpa	6"	Private	Y	Remove	Aphids
22	*Catalpa Speciosa*	Catalpa	8"	Private	Y	Remove	Basal Trunk Injury, Aphids
23	*Catalpa Speciosa*	Catalpa	4"	Private	N	Remove	Aphids
24	*Catalpa Speciosa*	Catalpa	10"	Private	Y	Remove	Aphids
25-27	*Amelanchier Canadensis*	Serviceberry	4"/Multi	Private	N	Remove	Aphids
					Total DBH of Significant Private Trees:		66"

LANDSCAPE ARCHITECTURAL LEGEND 585 THIRD ST

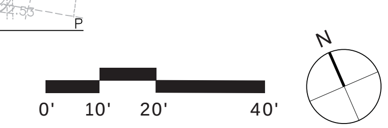
- P.L. — Property Line
- L.L.O.W. — Landscape Limit of Work

TREE PROTECTION AND REMOVAL LEGEND

- Existing Public Tree to Remain and be Protected
- Existing Private Tree



1 Existing Conditions
Scale: 1"=10'-0"



A.7 Tree Study - Tree Protection and Removal Plan

TREE #	SPECIES	COMMON NAME	DBH	PUBLIC OR PRIVATE	SIGNIFICANT PRIVATE	STATUS	CONDITION NOTE
1	*Sophora Japonica*	Japanese Pagoda Tree	12.5"	Public	N	Protect	Trunk Injury
2	*Sophora Japonica*	Japanese Pagoda Tree	13.5"	Public	N	Protect	
3	*Sophora Japonica*	Japanese Pagoda Tree	12.5"	Public	N	Protect	
4	*Sophora Japonica*	Japanese Pagoda Tree	12"	Public	N	Protect	Trunk Injury
5	*Sophora Japonica*	Japanese Pagoda Tree	10"	Private	Y	Remove	
6	*Sophora Japonica*	Japanese Pagoda Tree	6"	Private	Y	Remove	
7	*Catalpa Speciosa*	Catalpa	6"	Private	Y	Remove	Signs of Aphid Infection
8	*Catalpa Speciosa*	Catalpa	6"	Private	Y	Remove	Signs of Aphid Infection
9	*Catalpa Speciosa*	Catalpa	6"	Private	Y	Remove	Signs of Aphid Infection
10-14	*Zelkova Serrata*	Japanese Zelkova	3"	Private	N	Remove	
15	*Ginkgo Biloba*	Ginkgo	4"	Private	N	Remove	

TREE #	SPECIES	COMMON NAME	DBH	PUBLIC OR PRIVATE	SIGNIFCANT PRIVATE	STATUS	CONDITION NOTE
16	*Ginkgo Biloba*	Ginkgo	2"	Private	N	Remove	
17	*Ginkgo Biloba*	Ginkgo	2"	Private	N	Remove	
18	*Ginkgo Biloba*	Ginkgo	4"	Private	N	Remove	
19	*Ginkgo Biloba*	Ginkgo	4"	Private	N	Remove	Trunk Damaged
20	*Catalpa Speciosa*	Catalpa	8"	Private	Y	Remove	Aphids
21	*Catalpa Speciosa*	Catalpa	6"	Private	Y	Remove	Aphids
22	*Catalpa Speciosa*	Catalpa	8"	Private	Y	Remove	Basal Trunk Injury, Aphids
23	*Catalpa Speciosa*	Catalpa	4"	Private	N	Remove	Aphids
24	*Catalpa Speciosa*	Catalpa	10"	Private	Y	Remove	Aphids
25-27	*Amelanchier Canadensis*	Serviceberry	4"/Multi	Private	N	Remove	Aphids

Total DBH of Significant Private Trees: 66"

Total DBH of Significant Private Trees Saved: 0"

DBH to Mitigate: 66"

LANDSCAPE ARCHITECTURAL LEGEND 585 THIRD ST

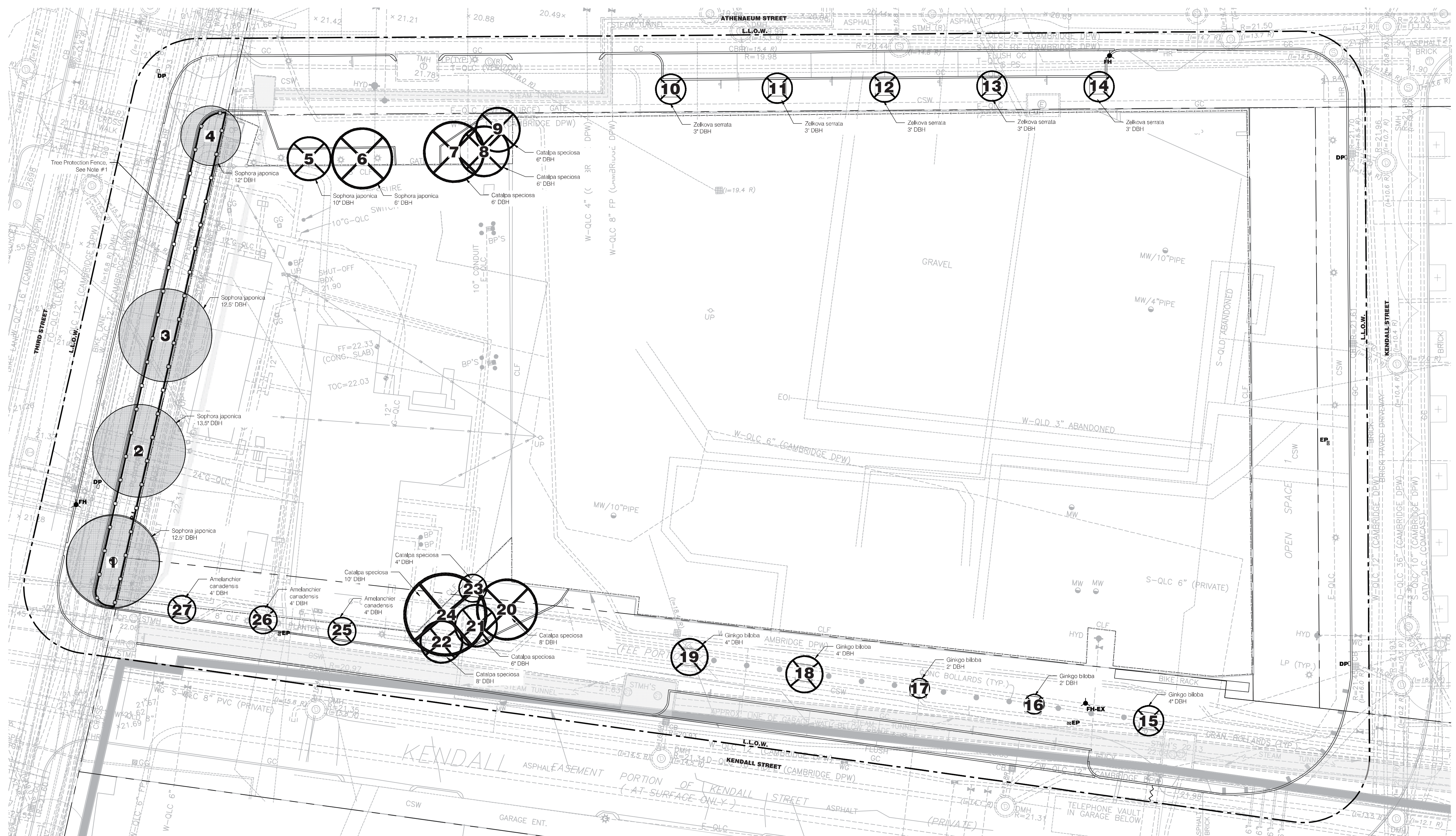
- P.L. — Property Line
- L.L.O.W. — Landscape Limit of Work

TREE PROTECTION AND REMOVAL LEGEND

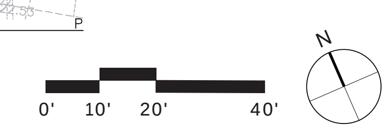
- Existing Public Tree to Remain and be Protected
- Existing Tree to be Removed, City Arborist to confirm if trees are viable for transplant
- Tree Protection Fence

TREE PROTECTION AND REMOVAL NOTES

1. TREE PROTECTION FENCE: Contractor Shall Install Tree Protection Fence Immediately Following Demo/Removals and Prior to Pavement Preparation and Installation. No Work, Equipment, Tools, Materials, or Laborers Shall be Within the Tree Protection Fence. Driven Metal Chainlink to be maintained for the duration of construction. Soil to be protected, erosion waddle at the base of the fence wrapped in silt fence to prevent sediment from entering the protected soil zone. Canopy is to be reduced by a certified arborist prior to the start of construction and the surrounding soils to be air spaded and amended with composted at the end of the construction process.
2. AIR SPADING: Contractor Shall Air Spade Tree Roots on Protected Trees to Identify and Avoid Conflict with Any Major Tree Roots During Construction.



1 Tree Protection and Removal Plan
Scale: 1"=10'-0"



A.8 Tree Study - Proposed Tree Plan

TREE #	SPECIES	COMMON NAME	DBH	PUBLIC OR PRIVATE	SIGNIFICANT PRIVATE	STATUS	CONDITION NOTE
1	*Sophora Japonica*	Japanese Pagoda Tree	12.5"	Public	N	Protect	Trunk Injury
2	*Sophora Japonica*	Japanese Pagoda Tree	13.5"	Public	N	Protect	
3	*Sophora Japonica*	Japanese Pagoda Tree	12.5"	Public	N	Protect	
4	*Sophora Japonica*	Japanese Pagoda Tree	12"	Public	N	Protect	Trunk Injury
5	*Sophora Japonica*	Japanese Pagoda Tree	10"	Private	Y	Remove	
6	*Sophora Japonica*	Japanese Pagoda Tree	6"	Private	Y	Remove	
7	*Catalpa Speciosa*	Catalpa	6"	Private	Y	Remove	Signs of Aphid Infection
8	*Catalpa Speciosa*	Catalpa	6"	Private	Y	Remove	Signs of Aphid Infection
9	*Catalpa Speciosa*	Catalpa	6"	Private	Y	Remove	Signs of Aphid Infection
10-14	*Zelkova Serrata*	Japanese Zelkova	3"	Private	N	Remove	
15	*Ginkgo Biloba*	Ginkgo	4"	Private	N	Remove	
16	*Ginkgo Biloba*	Ginkgo	2"	Private	N	Remove	
17	*Ginkgo Biloba*	Ginkgo	2"	Private	N	Remove	
18	*Ginkgo Biloba*	Ginkgo	4"	Private	N	Remove	
19	*Ginkgo Biloba*	Ginkgo	4"	Private	N	Remove	Trunk Damaged
20	*Catalpa Speciosa*	Catalpa	8"	Private	N	Remove	Aphids
21	*Catalpa Speciosa*	Catalpa	6"	Private	Y	Remove	Aphids
22	*Catalpa Speciosa*	Catalpa	8"	Private	N	Remove	Basal Trunk Injury, Aphids
23	*Catalpa Speciosa*	Catalpa	4"	Private	N	Remove	Aphids
24	*Catalpa Speciosa*	Catalpa	10"	Private	Y	Remove	Aphids
25-27	*Amelanchier Canadensis*	Serviceberry	4"/Multi	Private	N	Remove	Aphids

Total DBH of Significant Private Trees: 66"

Total DBH of Significant Private Trees Saved: 0

DBH to Mitigate: 66"

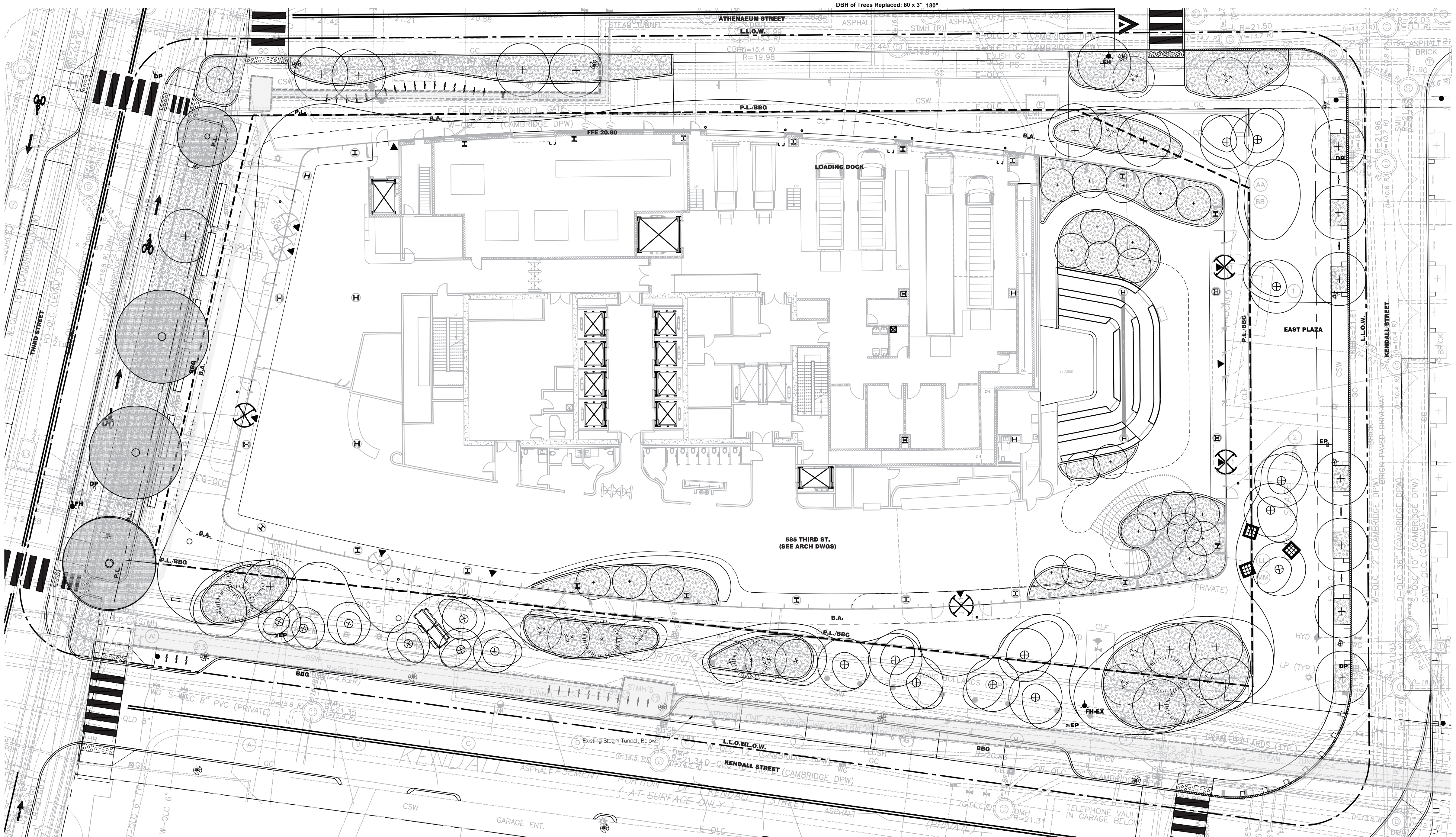
DBH of Trees Replaced: 60 x 3" 180"

LANDSCAPE ARCHITECTURAL LEGEND 585 THIRD ST

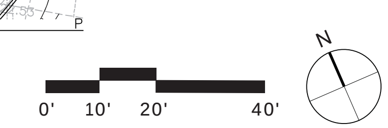
- P.L. — Property Line
- L.L.O.W. — Landscape Limit of Work
- B.A. — Building Above
- BBG — Building Below Grade
- ▲ — Building Entrance
- △ — Parking Lot / Loading Dock Entrance

TREE PROTECTION AND REMOVAL LEGEND

- Existing Public Tree to Remain and be Protected
- Proposed Tree - Deciduous
- Proposed Tree - Deciduous Multi-Stem
- Proposed Tree - Evergreen



1 Proposed Tree Plan
Scale: 1"=10'0"



A.9 Landscape Plan - Daily Setup

SEATING DECK

500
KENDALL
ST

OUTDOOR MUSIC

A.10 Landscape Plan - Theater Event

A.11 Landscape Plan - Large Event

A.12 Ground Floor Public Commons - Daily Setup

Reference for public commons

A.13 Ground Floor Public Commons - Market

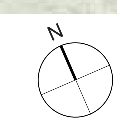
Reference for market

A.14 Ground Floor Corner Flex - Gallery

Reference for gallery space

A.15 Ground Floor Corner Flex - Performance

Reference for performance space



A.16 Case Studies

District Hall, Boston

David Rubenstein Center, New York

Smith Center at Harvard, Cambridge

Ford Foundation , New York

Daniel Spectrum, Toronto

Whychwood Barns, Toronto

A.17A Design Guideline Compliance

December 10, 2021

Reference: **585 Third Street** –
Compliance with Design Guidelines

The below intends to provide an expanded description of how the project has been designed to comply with the Design Guidelines. It is organized to align with the goals and references drawings or graphics in Volume 2: Plans and Illustrations of the 585 Third Street PUD Special Permit Submission. With some items that require explanation and one notable exception for retail frontage along Third Street we have complied with the design guidelines as summarized in the table below.

Environmental Quality	
Shadow	*Complies*
Wind	*Complies*
Vegetative Cover	*Complies*
Noise	*Complies*
Walkability	
Connections/Block Sizes	*Complies*
Loading & Servicing	*Requires Explanation*
Street Activity	*Complies*
Universal Access	*Complies*
Built Form	
Architectural Identity	*Complies*
Scale & Massing	*Requires Explanation*
Visual Interest	*Requires Explanation*
Tall Buildings	*Complies*
Rooftops	*Complies*
Groundfloors	
Uses	*Non-compliant/Needs Explanation*
Setbacks	*Complies*
Facades	*Complies*
Entraces	*Complies*

architecture
interior design
urban design

cbt

110 canal street
boston, ma 02114
617 262 4354
cbtarchitects.com

Environmental Quality

The project has taken particular care to avoid unnecessary environmental impacts. The project massing includes setbacks to limit shadows on adjoining spaces, including larger setbacks to the East to limit shadow impacts on Termeer Square [see A.1 Shadow Study]. Similarly, for wind the building massing has been shaped to mitigate for the wind impacts of tall buildings, including rounding corners, limiting sheer vertical faces, and providing ample setbacks. At the ground level trees and other vegetation along with canopies at entries have been located to protect from winter winds and encourage air movements in the warmer months [see A.2 & A.3 Wind Impacts]. This planting and tree cover also works to minimize urban heat island effects, improve stormwater capture and has been expanded to the terraces for similar [see 3.6 Overall Landscape Plan]. Rooftop mechanical equipment has been screened by an extension of the exterior wall to minimize its noise impacts reasons [see 2.28 and 2.29A/B].

Walkability

This project builds on the open space network of the Canal District to activate and provide open air and covered pass-through from Third Street to Termeer Square and the Canal Walk. Indoor and outdoor public spaces have been located along the west, south and east faces of the buildings to improve sun exposure, connect existing pedestrian corridors and public spaces, and activate and provide shelter for the colder seasons [See 3.1. 3.2, AND 3.23]. Loading and Servicing have been concentrated to the north along Athenaeum Street away from the major street and the expanded passage and public spaces along Kendall street leading the Winter Garden at the East. Loading docks are designed to provide off-street loading behind closed doors. The project does not separate loading bays with activated ground floor spaces as recommended in the guidelines. This is due to the scale and complexity of a loading operation for a large research facility combined with a performing arts space, however the consolidation will create the most minimal length and scale of loading dock possible for a project of this size and programmatic complexity [See 3.24 Loading Plan].

Universal Access

All elements of the projects will be designed to provide comfortable and universal access for all users, regardless of age or ability.

cbt

A.17B Design Guideline Compliance

Built Form

Architectural Identity of Kendall Square

The combination of innovative research spaces, expansive public realm and performing arts facilities creates a project and building that we think best exemplifies the energy, vitality, creativity and innovation of a mature and ever-changing Kendall Square neighborhood. By filling in the gap created by the Gas Transfer Facility and aligning the height and orientation of that façade with the adjacent streetwalls the project completes the Third Street corridor. The ground floor façade will be over 80% active and transparent with ways for residents and visitors of all ages to see, participate, and feel welcome in the building. [See 2.1, 2.2, 2.3 and 2.4]

Scale and Massing

Project's massing and setbacks have been carefully considered to respect neighbors' views, sun access and shadow with multiple setbacks to ensure appropriate transitions to neighboring buildings and spaces and breakdown the scale of the project. The project does exceed the maximum plan length dimensions for areas above 85' however this was necessary to incorporate the footprint of the theater at the lower levels with the building stepping back above that. The setback along the Major Public Street (Third Street) is 21'-3" from the property line and complies with the guidelines. Along Secondary streets the projects curving façade and multiple setbacks are not anticipated by the orthogonal focus of the guidelines but do provide on average a much greater setback and relief than the minimums in the guidelines. [See 2.2A/B]

Visual Interest

The design guidelines' focus on Orthogonal buildings does not anticipate a project like the one proposed, but the design does through its façade articulation and curving facades and setbacks aim to comply with the spirit of the visual interest goals.

Tall Buildings

The building massing sets back to enable a smaller footprint at the top of the building and extends the curtain wall design and detailing beyond the roof to screen and enclose the mechanical equipment to enhance its architectural character on the skyline. [See 2.28, 2.29A/B, 2.30-33, and 4.6]

Rooftops

By integrating the mechanical screening into the extension of the primary building façade we have tried to avoid the appearance of a large 'mechanical hat' being added to a building or exposing the mechanical equipment to view [See 2.28, 2.29A/B, 2.30-33, and 4.6].

cbt

Ground Floor Design Guidelines

Retail or Mixed-use ground floors

While it is acknowledged that the project does not provide typical storefront retail at the depths and lengths recommended in the guidelines, it does through its retail, and activated public spaces provide for more than 80% active use on the ground floor facades on a project occupying and entire block [See 2.3].

Setbacks

Along Third Street in particular, but along all active edges we have setback the ground floor façade to allow for building overhangs to shelter and increase public interaction with the building [See 2.2, 2.1A/B].

Facades

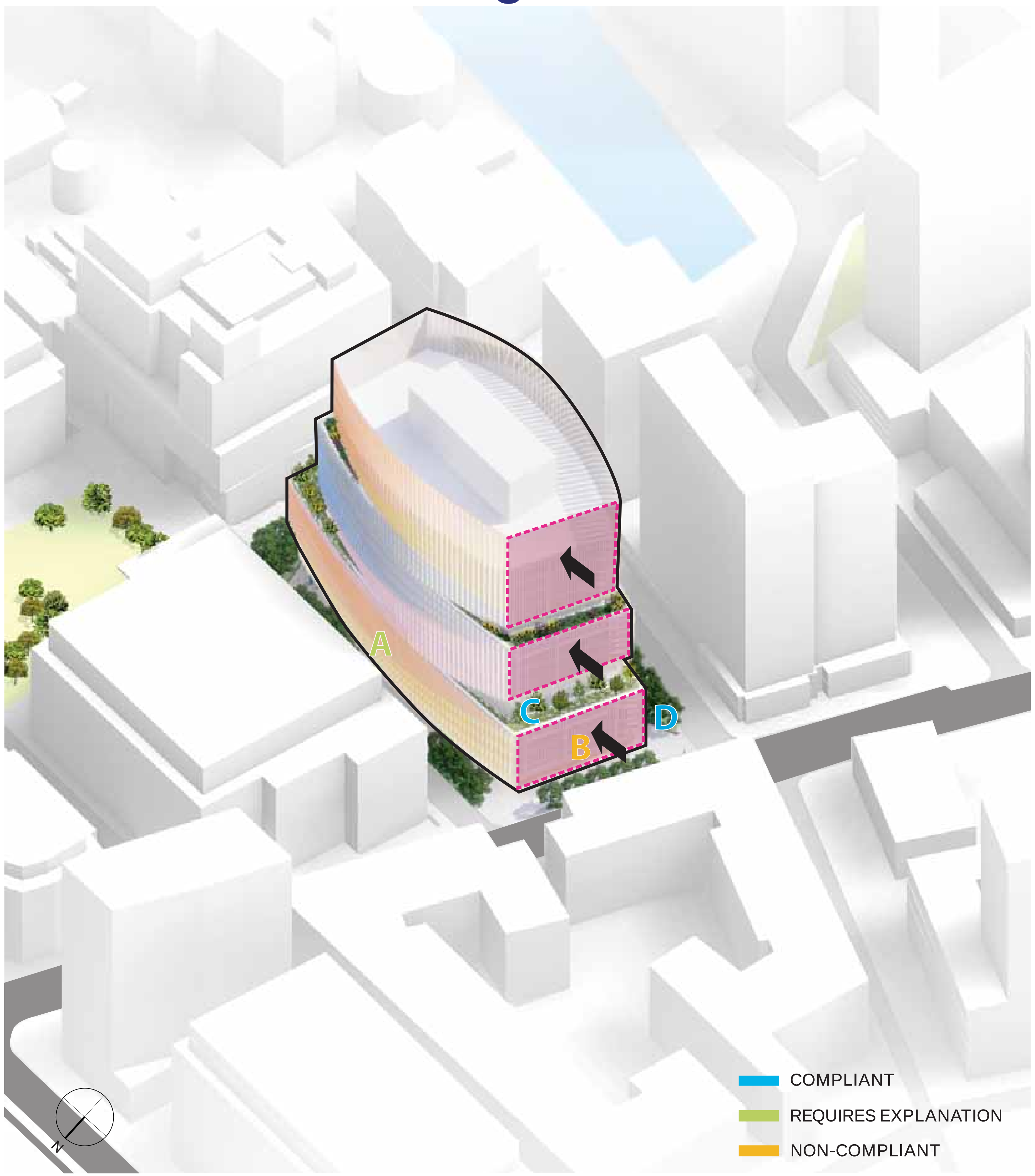
Ground floor façade through its transparency and multiple entry points is designed to actively encourage access and permeability [See 2.3, 3.23, 4.4, 4.5, 4.7, 4.8, and 4.18]

Entrances

Entrances have been designed along Third Street façade at each corner, with particular attention paid to signage, canopy design, planting and visibility to ensure easy and welcoming access for pedestrian from the Kendall T Stop to the south and East Cambridge residents to the north [See 2.3, 3.23, 4.4, 4.5, 4.7, 4.8, and 4.18].

cbt

A.17C Design Guideline Consistency (same as Exhibit 2.2A)



SCALE + MASSING

- CREATE SENSITIVE TRANSITION TO NEIGHBORING USES
- CREATE A STRONG DATUM BY SETTING BACK THE BUILDINGS AT UPPER FLOORS
- MINIMIZE MONOLITHIC MASSING AND BREAK DOWN THE SCALE OF LARGER BUILDINGS
- MAJOR PUBLIC STREETS : SET BACK TWO-THIRDS OF THE BUILDING FACADE ABOVE 85 FEET FROM THE PRINCIPLE FACADE BY ABOUT 15 FEET
- SECONDARY STREETS : SET BACK ANY PORTION OF THE BUILDING ABOVE 45 FEET BY ABOUT 10 FEET FROM PRINCIPLE FACADE OR THROUGH OTHER MEANS IF SUCCESSFULLY EXPRESSES A SCALE MORE INTIMATE THAN MAJOR PUBLIC STREETS

LOADING

- A — AWAY FROM MAJOR PUBLIC ST AND PEDESTRIAN CORRIDORS

MIXED-USE GROUND FLOOR

- ALONG SECONDARY ST : INCORPORATE 40 TO 60 PERCENT TRANSPARENT GLAZING IN THE GROUND LEVEL FACADE
- ALONG MAJOR PUBLIC ST : INCORPORATE 60 TO 75 PERCENT TRANSPARENT GLAZING IN THE GROUND LEVEL FACADE
- ALONG SECONDARY ST : APPROXIMATELY 75 PERCENT OF THE STREET FRONTAGE SHOULD BE OCCUPIED BY ACTIVE USES : RETAIL / EDU / CULTURAL / SERVICES / COMMUNITY / ART
- WHERE RETAIL IS NOT PROVIDED, GROUND FLOOR SPACES SHOULD BE DESIGNED TO ACCOMMODATE RETAIL IN THE FUTURE
- CREATE SPACE AT THE SIDEWALK LEVEL TO ALLOW FOR INTERACTION BETWEEN ACTIVITIES ON THE GROUND FLOOR OF THE BUILDINGS AND THE PUBLIC SIDEWALK
- B — ALONG MAJOR PUBLIC ST : APPROXIMATELY 75 PERCENT OF THE STREET FRONTAGE SHOULD BE OCCUPIED BY RETAIL USES

UNIVERSAL ACCESS

- C — DEMONSTRATE INNOVATIONS IN UNIVERSAL ACCESS / ENHANCE OPPORTUNITY FOR INTERPERSONAL COLLABORATION

ENVIRONMENTAL QUALITY

- PROVIDE VEGETATIVE COVER
- MINIMIZE SHADOWS ON EXISTING PUBLIC PARKS / PLAZA
- MINIMIZE NEGATIVE WIND IMPACTS ON STREETS AND PUBLIC AREA
- MINIMIZE NOISE GENERATED FROM ROOFTOP MECHANICAL EQUIPMENT

STREET ACTIVITY

- ACCESS TO OUTDOOR AND INDOOR PUBLIC SPACES
- D — DESIGNED TO ACCOMMODATE DIVERSE RETAIL AND SERVICE

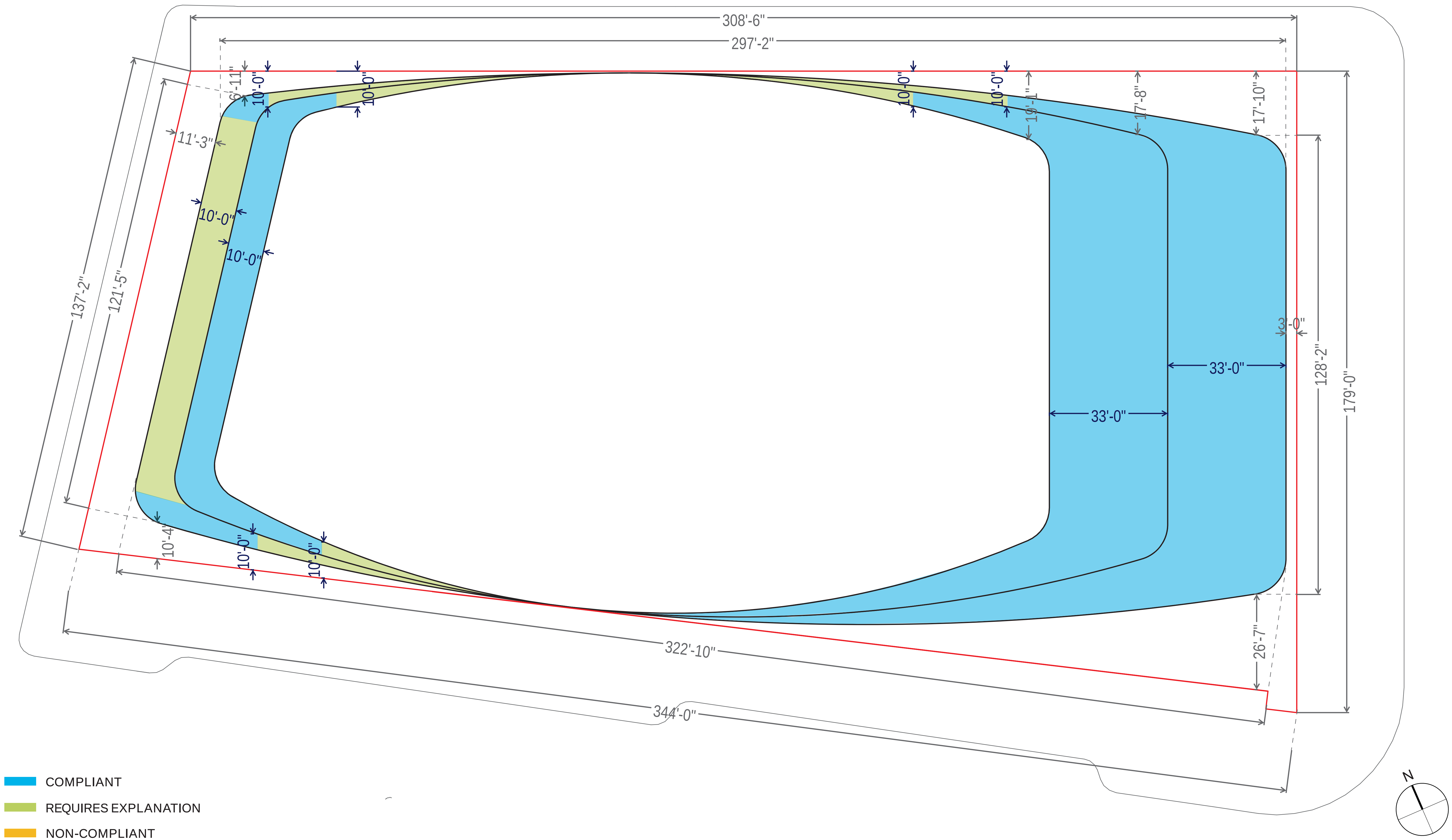
VISUAL INTEREST

- AVOID FLAT FACADE
- USE LOWER ROOFS AS GREEN ROOFS / TERRACES / GARDENS
- REFLECT A RHYTHM AND VARIATION APPROPRIATE TO THE URBAN CONTEXT : VERTICAL BREAKS / EXPRESS BAY WIDTH
- DESIGNED WITH PARTICULAR ATTENTION TO THE ARCHITECTURAL CHARACTER OF THE TOP OF THE BUILDING

BUILT FORM

- ACTIVE GROUND FLOOR USE
- EMPHASIZE A DISTINCT IDENTITY - USE MATERIALS / COLORS/ SHAPES THAT DIFFER FROM THOSE OF ADJACENT BUILDINGS
- CONVEY THE ACT AND SPIRIT OF INNOVATION THROUGH TRANSPARENCY THAT REVEALS ACTIVITY AND DISPLAYS VISUAL MEDIA

A.17D Design Guideline Consistency (same as Exhibit 2.2B)



APPENDIX B: LOADING STUDY

LOADING DOCK DESIGN CONCEPT AND RATIONALE

PART 1 - GENERAL DOCK CONCEPTS

1.1 GENERAL DOCK OVERVIEW

A. The design team was tasked with designing a loading dock with the capacity and flexibility to serve the facility while maintaining access for large vehicles and allow sufficient clearances for vehicles to access Athenaeum Street. The dock design goal was to achieve the highest dock capacity for vehicles to ensure future building occupants have sufficient loading/unloading capabilities. The dock is to be designed with 2 ½ building bays of access from Athenaeum Street.

1.2 IMPORTANT DESIGN CONSIDERATIONS

A. WB50 AS BASIS OF DESIGN VEHICLE

1. Based on road sizes, curb cuts, and location of crosswalks and bike paths, all vehicles are to enter and exit the dock from/in the east. This limitation to truck travel was the deciding factor in the location of the WB50 vehicle into bay five (5). A WB50 vehicle cannot exit the dock to the east from bay six (6) without significant building interference.

2. To ensure clearance when entering the dock, the location of the ramp was shifted to fit behind Column G (as seen in Fig 2).

B. DOCK CLEARANCE BEHIND LEVELERS

1. To ensure sufficient clearance for the staging and movement of materials, industry standard clearance behind levelers is 8' with a situational minimum of 6'. This clearance ensures that no person or material must travel overtop of the leveler as they travel along the dock platform. Figure 2 shows required adjustment to program in order to provide proper clearance.

C. COMPACTOR LOCATION

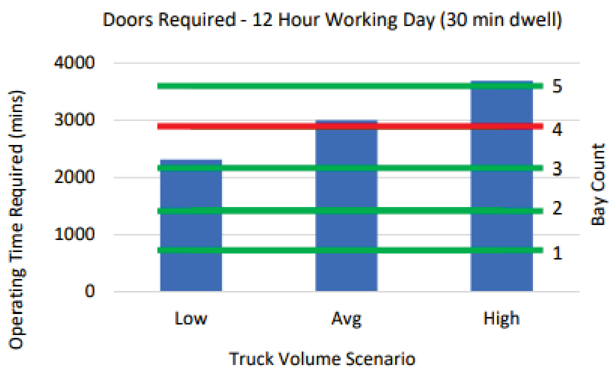
1. Location of compactors on a loading dock is a multifaceted decision. Compactor bays are soiled which encourages compactors to be located near one another to minimize soiled dock space. Additionally, compactors may need to be fitted with cart tippers to ergonomically lift trash into the charge box, as well as a winch on the dock to help transition the compactor from the servicing truck back to the dock.

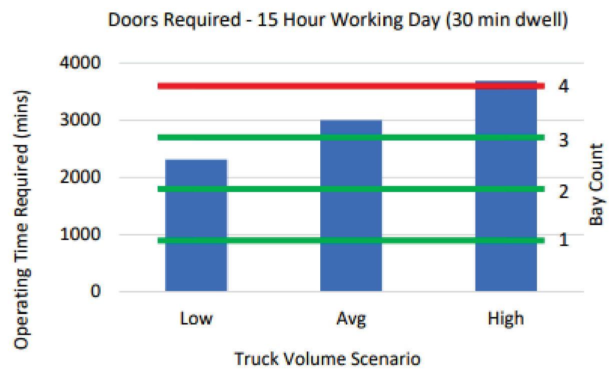
1.3 LOADING BAY REQUIREMENTS

A. Expected truck profiles were created and tested under various scenarios to understand total bay requirements at the loading dock. Considerations were made for theatre program as well as general contractor and vendor parking requirements.

3 Large & 8 Small	Low	Avg	High
Large Lab Truck Volume	45	60	75
Small Lab Truck Volume (50% share)	32	40	48
Effective Hours	12	12	12

3 Large & 8 Small	Low	Avg	High
Large Lab Truck Volume	45	60	75
Small Lab Truck Volume (50% share)	32	40	48
Effective Hours	15	15	15





B. Hovering between 12- and 15-hour working days drove a need for four (4) loading bays at the dock in addition to two (2) waste stream bays – one each for trash and recycling.

(*full study conducted and provided to BioMed Realty team*)

1.4 PREVAILING DOCK DESIGNS

After derivation of overall dock bay requirements, two main design concepts were generated:

A. Compactors in Bays 1 & 3

B. Compactors in Bays 1 & 2

1.5 REVIEW OF DESIGN A: COMPACTORS IN BAYS 1 & 3

A. Design A shows compactor locations in bays 1 & 3 with bays 2,4,5, and 6 reserved for loading vehicles of various sizes. This design allows for theatre program to be loaded/unloaded in close proximity to the freight elevator and provides a buffer in the loading area to separate the lab tenants from the theatre program.

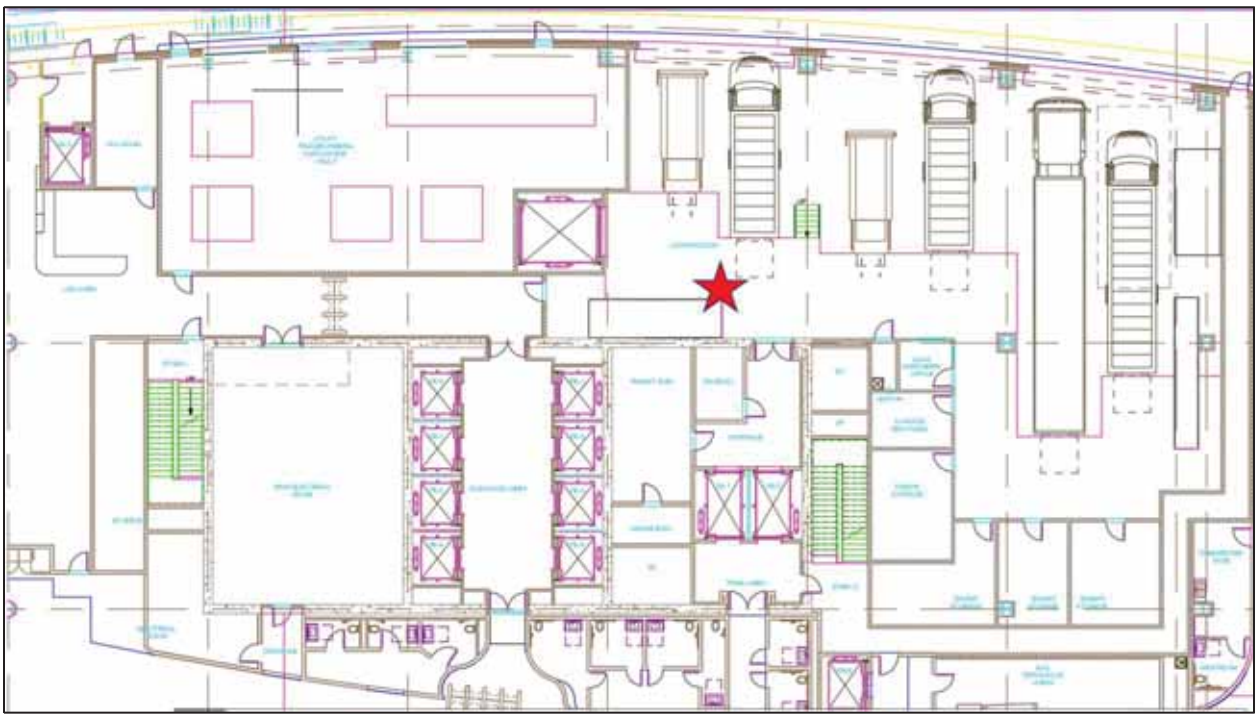


Figure 1: Dock Design A – Compactors at 1 & 3

While the theatre loading having a critical adjacency to the freight elevator is a benefit, the overall flow of the dock is compromised.

The main building is at a lower elevation that the raised dock platform, requiring a ramp to transition from the dock to the main level. **The location of the box truck in bay 2 creates a narrow and unsafe passage between the dock leveler and the ramp (denoted by the RED STAR).**

With less than four feet of clearance, any materials destine for the freight elevator are forced to travel overtop of the dock leveler which is not standard practice and generates a safety concern.

1.6 REVIEW OF DESIGN B: COMPACTORS IN BAYS 1 & 2

A. Design B shows compactor locations in bays 1 & 2 with bays 3 through 6 reserved for loading vehicles of various sizes. This design relegates the compactors to the same bay and allows the remaining dock bays to be utilized for loading.

Figure 2: Dock Design B – Compactors at 1 & 2

While the theatre program must travel slightly further to reach the freight elevator, the safety concern regarding the clearance between the leveler and ramp is mitigated. While slight changes are required to the program on the dock level (hashed red area below bays 3 & 4), the overall flow of the dock is improved.

In addition to flow, keeping compactors in the same building bay is typical. Compactor bays are often soiled, highlighting the importance of keeping them isolated as to not soil additional dock areas.

1.7 DESIGN RECOMMENDATIONS

A. While proximity to the freight elevator and separation of loading for the theatre element are highlighted in Design A, the safety concerns and clearance issues are unable to be mitigated.

St. Onge advises against the separation of the compactors and recommends that Design B become the standard design philosophy moving forward. As adjustments to the design continue, Design B may change, but fundamentally the relegation of the compactors to bays 1 & 2 should carry forward in all designs.

FIXED EQUIPMENT SUMMARY

ITEM	QTY	DESCRIPTION	FUNCTION	BASIS OF DESIGN PRODUCTS
Dock Leveler	2	A mechanical, pneumatic, or hydraulic pit-mounted device that allows for a smooth transition between the dock apron and a trailer parked in a dock bay.	Will be used while loading materials on to or off a vendor's vehicle at dock height.	Kelley HP Series Hydraulic Dock Leveler
Dock Lift/Leveler	2	A mechanical, pneumatic, or hydraulic pit-mounted device that allows for a smooth transition between the dock apron, delivery vehicle, or tarmac.	Will be used while loading materials on to or off a vendor's vehicle at dock height or ground level.	Kelley Hulk Series Kombo Dock Lift/Leveler
Waste Compactor	2	A large container with stand-alone or integrated hydraulic ram used to compact, store, and transport general waste and recycling.	Will be used to compact, store and transport general waste and recycling. Self- contained units preferred. May be rented from waste hauler rather than purchased.	Marathon RJ-250SC 25 Cubic Yard Ultra Self-Contained Compactor
Cart Tipper	2	A stand-alone or integrated cart lift that raises and tips full trash carts and dumps into stationary self-contained trash compactor.	Will be used to automatically lift and tip trash into compactor.	Marathon Ramjet Tilt Cart Dumper
Dock Winch	2	A mechanical winch fixed on the dock capable of pulling the compactor off of the serving truck and back onto its stand	Will be used to move compactor back onto dock after servicing	To be provided as part of compactor installation

***NOTE:** St. Onge is a third-party, independent supply chain engineering firm and does not endorse or partner with equipment vendors. Inclusion in the above table does not constitute endorsement of a specific product or vendor.*

APPENDIX C: ACOUSTIC STUDY REPORT

ACENTECH

33 Moulton Street
Cambridge MA 02138
617 499 8000
acentech.com

June 25, 2021

This BioMed Realty project includes the construction of an 18-story lab building with a performing arts center on the lower floors. As part of our scope of work, we have been contracted to conduct an environmental sound analysis and provide design input to the project with respect to outdoor sound.

This letter serves to address the elements of the Cambridge Massachusetts Zoning Ordinance Article 19, *Project Review*. This letter report is based on the guidance presented in §19.24.7, *Noise Mitigation Narrative*, of that zoning ordinance, and addresses applicable elements of this project design.

This report is based upon the community noise survey we performed earlier this month, and our discussions with you and OPM.

ENVIRONMENTAL SOUND REGULATIONS

The City of Cambridge specifies regulations for environmental sound in the City of Cambridge Municipal Code, Chapter 8.16, *Noise Control*. This ordinance specifies sound level limits by Zone and time of day.

The site of this project is in Kendall Square at 585 Third Street, Cambridge, MA 02142. The project is located in a commercial/office area. Sound limits for relevant zones pertaining to this project are shown in Table 1 below.

**Table 1. Maximum Allowable Sound Pressure Levels
From Cambridge Municipal Code Table 8.16.060E
Table of Zoning District Noise Standards**

Zoning	Time Period	Single Number Equivalent (dB(A))	Octave Band Center Frequency Measurement (Hz)								
			31.5	63	125	250	500	1000	2000	4000	8000
Commercial Area	Anytime	65	79	78	73	68	62	56	51	47	44

The Commonwealth of Massachusetts evaluates noise as a public health concern that falls within the scope of the Massachusetts Department of Environmental Protection (MassDEP). MassDEP has defined their "Noise Policy" for interpretation of Massachusetts Regulation 310 CMR 7.10 in Division of Air Quality Control (DAQC) Policy 90-001, approved on February 1, 1990. In summary, the Noise Policy states that sound from any source must not increase the overall A-weighted L_{90} sound level by more than 10 decibels, and cannot generate a 'pure tone' condition, as defined in the Policy.

MassDEP may enforce the Noise Policy for this project if it responds to complaints from the public about noise generated from this source after construction. Therefore, it is recommend that this project be designed to comply with both the Noise Ordinance of the City of Cambridge and with the MassDEP Noise Policy jointly and simultaneously.

MEASUREMENTS OF EXISTING CONDITIONS

Sound Measurements

Acentech conducted a survey of existing sound levels at three representative locations at the project site, as shown in Figure 1. Measurements were conducted from June 10 to June 17, 2021, throughout which sounds were continuously monitored.

Figure 1: Measurement locations at project site

Acoustic measurements for this project were conducted with Rion NL-52 sound level meters which conform to ANSI S.14-1961 for Type 1 precision sound level meters. All equipment was field-calibrated before and after the measurement period using a Pulsar Model 105 acoustic calibrator. Measurements were conducted at heights of five to eight feet above grade elevation.

Sound level statistics were measured for each five-minute interval throughout the measurement period. The two sound level metrics (also called sound level percentiles) presented herein are the L_{90} and L_{01} levels (see Figures 2 through 4 at the end of this report).

The L_{90} sound level (level exceeded 90% of the time, defined mathematically as the 10th percentile) quantifies the steady-state "background" sounds of an environment. This metric is specified in the MassDEP Noise Policy, and is typically used to evaluate continuous sound sources.

For additional information, we have also presented the L_{01} sound level (level exceeded 1% of the time, defined mathematically as the 99th percentile), and quantifies the loudest short-term events in an environment, while excluding transient and potentially erroneous sounds close to the microphone that are not representative of the site. This level, however, is just for general information and it does not affect compliance per MA-DEP or local ordinance.

Measurement Results

Sounds on the project site were qualitatively determined to be due to intermittent local traffic, mechanical noise from neighboring buildings and other typical community sounds.

Overall, the sound levels at the site comply with the Cambridge Local Noise Ordinance, which requires a maximum sound level of 65 dBA. At nighttime, the noise is significantly quieter, as low as 52 dBA. The primary goal for this project should be not to exceed the 65 dBA local ordinance. Second, in order to comply with the MA-DEP guideline as well, the noise levels at nighttime should not exceed about 62 dBA.

PROJECT IMPACT

The main mechanical equipment will be located inside the building, in the mechanical penthouse and exposed on the roof. Ventilation to the equipment will be provided through large louvers at the exterior of the building. Sound attenuation measures, including duct sound attenuators, acoustical louvers and rooftop sound barriers may be employed, as necessary to minimize the noise impacts on the community and to comply with the local regulations.

At this time, the design is not sufficiently developed to provide more specific information on the planned noise control measures. We will update this report as the project develops.

* * * * * * *

Please contact me at 617-499-8069 or ipieleanu@acentech.com to discuss any questions or comments you may have about this letter or our study.

Sincerely,

ACENTECH INCORPORATED

Ioana N. Pieleanu
Principal Consultant

CC: Alex Roehl, Bob Berens (Acentech)

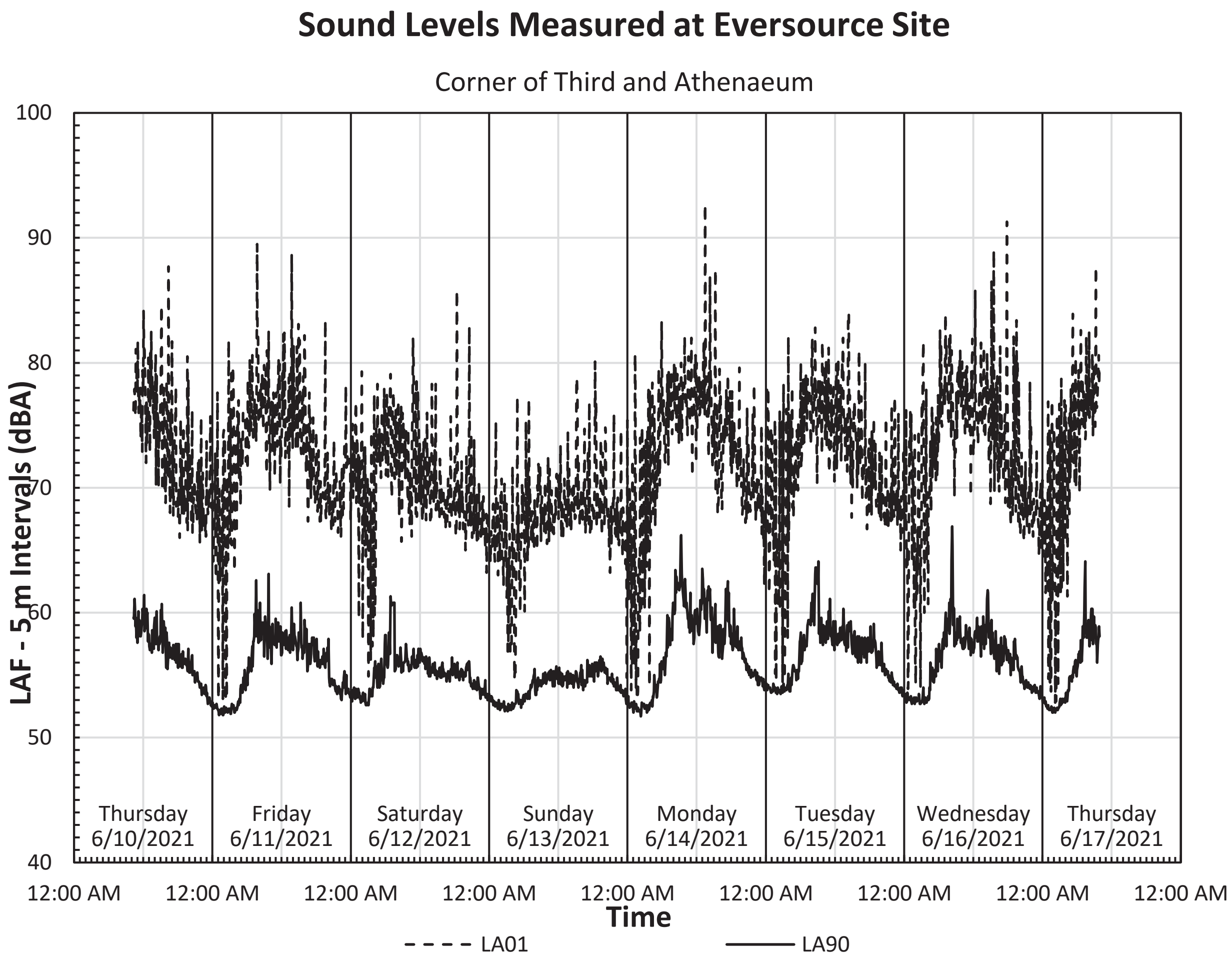


Figure 2: Measurement at Location 1

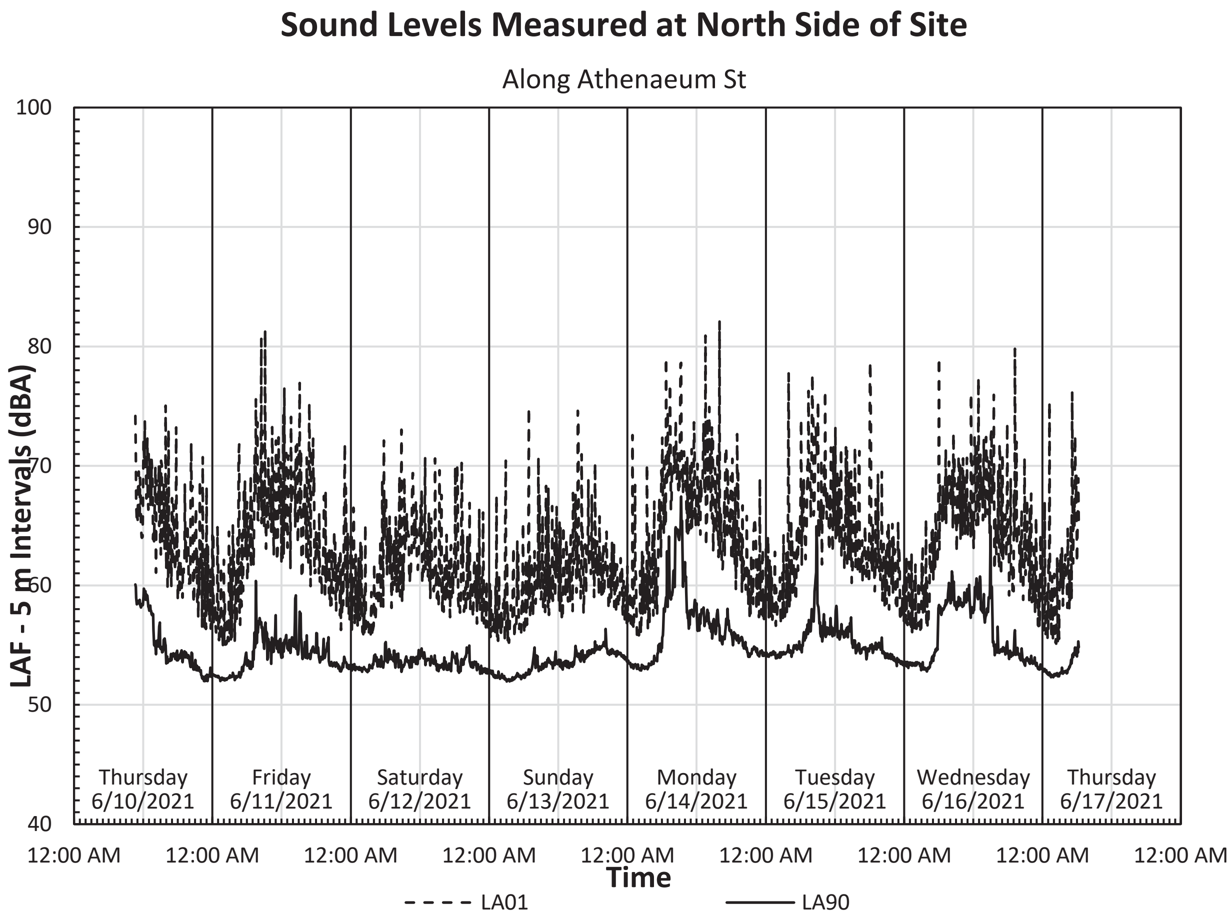


Figure 3: Measurements at Location 2

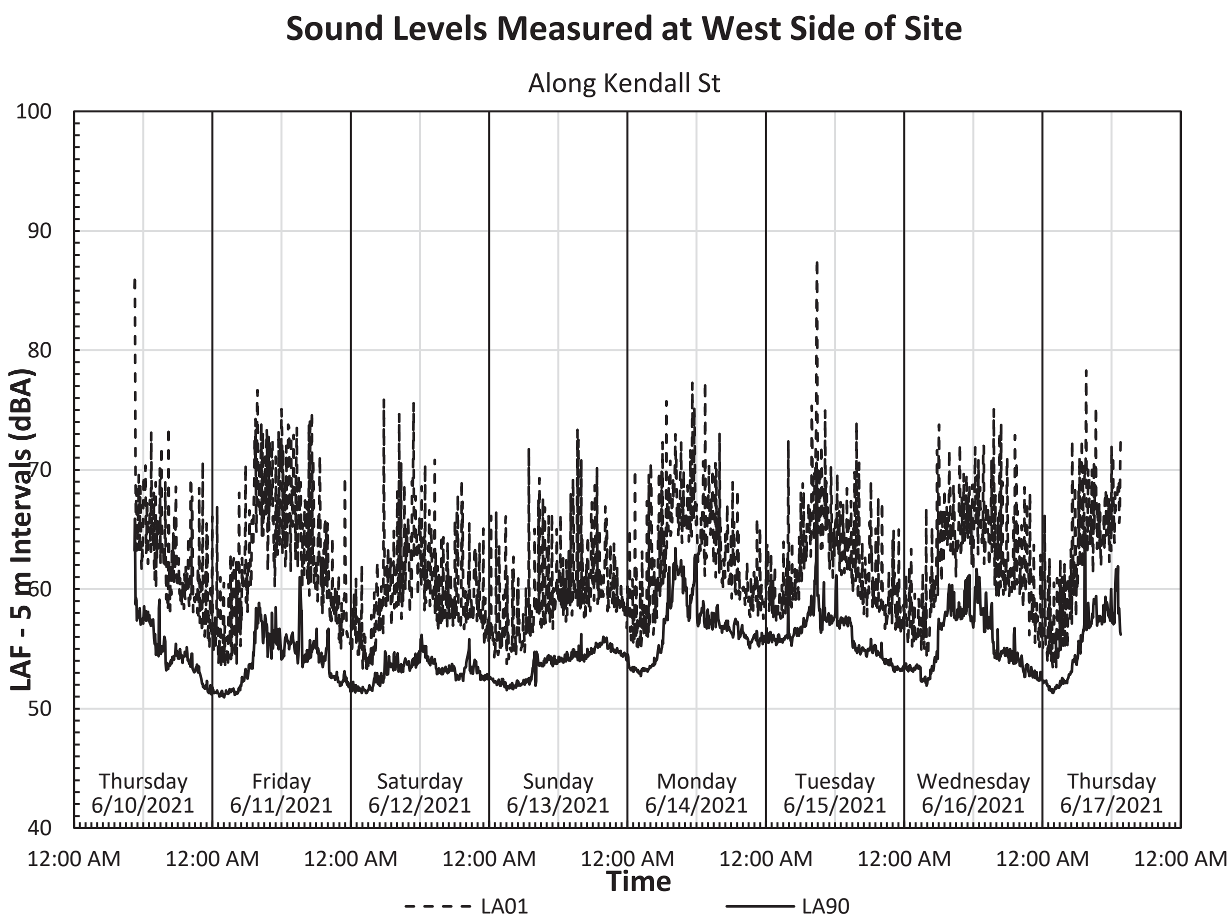


Figure 4: Measurements at Location 3

APPENDIX D: WIND STUDY REPORT

REPORT

585 THIRD STREET

CAMBRIDGE, MA

PEDESTRIAN WIND STUDY
RWDI # 2102562
July 13, 2021

SUBMITTED TO

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EXECUTIVE SUMMARY

RWDI was retained to conduct a pedestrian wind assessment for the proposed 585 Third Street project in Cambridge, MA (Image 1). The potential wind conditions have been assessed based on wind tunnel testing of the project under the No Build, Build and Full Build configurations (Images 2A through 2C) and the local wind records (Image 3), and compared to the Mean Speed and Effective Gust criteria adopted by the Boston Planning and Development Agency (BPDA). The results of the assessment are shown on site plans in Figures 1A through 2C, and the associated wind speeds are listed in Tables 1 and 2. The key findings are summarized as follows:

Effective Gust

- Wind speeds that meet the effective gust criterion of 31 mph are predated at all pedestrian areas assessed for the No Build, Build and Full Build configurations, both annually and seasonally.

Mean Speed

- The annual mean wind speeds on the existing site (No Build configuration) are generally comfortable for the intended pedestrian use. Wind speeds that are uncomfortable for walking occur at the southwest corner of the project site. There are no areas with dangerous wind conditions on either an annual or seasonal basis.

- With the addition of the project to the site in the Build configuration, the annual mean wind speeds in the extended surroundings are expected to remain similar to those in the No Build configuration. Appropriate wind conditions are predicted along the project perimeter and nearby pedestrian areas, including entrances and walkways. Higher-than-desired wind speeds are expected at the two entrances near the southwest corner of the proposed building and the southeast and east seating areas on an annual basis. No dangerous wind conditions are expected on either an annual or seasonal basis.

- The addition of the future developments to the west and north of the project, in the Full Build configuration, is expected to provide sheltering from the predominant local winds and generally reduce wind speeds at most areas on and around the project in comparison to the Build configuration. Suitable wind conditions are predicted for all entrances on an annual basis.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1 INTRODUCTION

RWDI was retained to conduct a pedestrian wind assessment for the proposed 585 Third Street project in Cambridge, MA. This report presents the project objectives, background, RWDI's approach, and discusses of the results. It also provides conceptual wind control measures, where necessary.

1.1 Project Description

The project (site shown in Image 1) is located on the east side of Third Street between Kendall Street to the south and Athenaeum Street to the north. The proposed project consists of an 18-story office/lab building at an approximate height of 290 ft, with stepped façades on the east and west sides.

1.2 Objectives

The objectives of the study were to assess the effect of the proposed development on local wind conditions in pedestrian areas on and around the study site and provide recommendations for minimizing adverse effects, if needed. This quantitative assessment was based on wind speed measurements on a scale model of the project and its surroundings in one of RWDI's boundary-layer wind tunnels. These measurements were combined with the local wind records and compared to the BPDA criteria for gauging wind comfort and safety in pedestrian areas. The assessment focused on critical pedestrian areas, including building entrances, public sidewalks, and grade-level outdoor seating spaces.

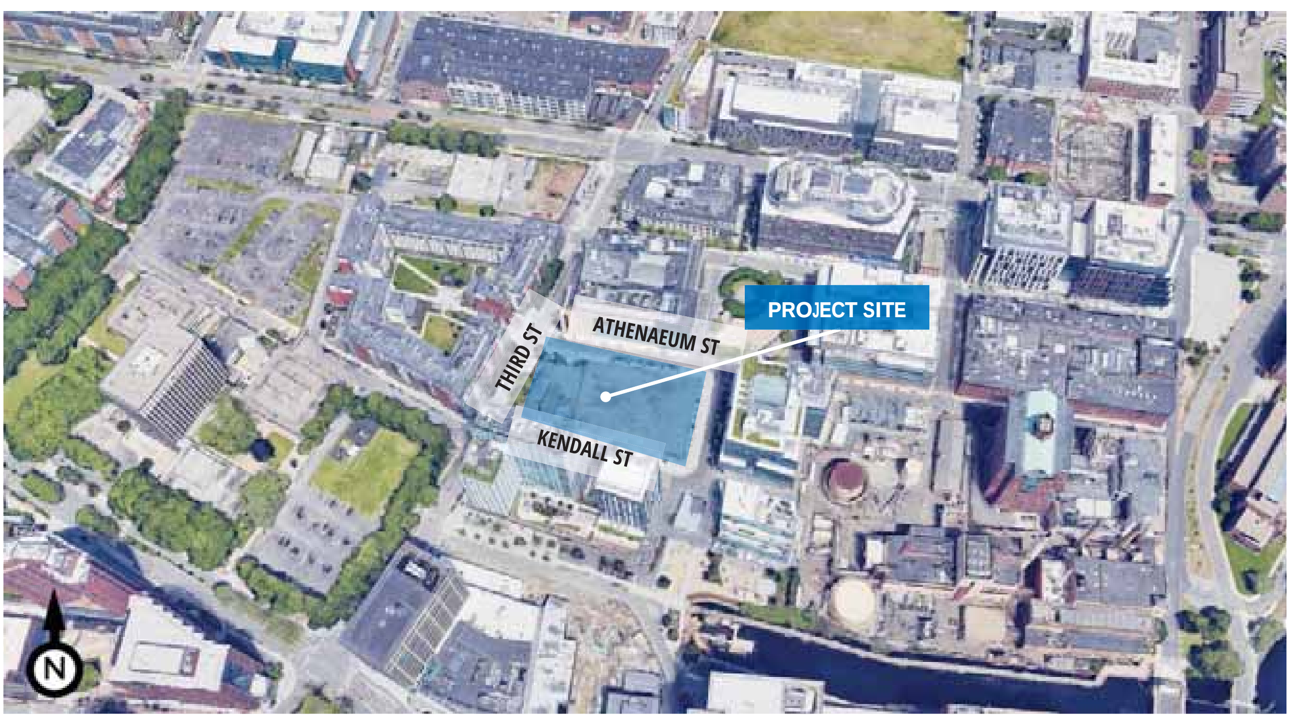


Image 1: Aerial View of the Project Site and Surroundings (Photo Courtesy of Google™ Earth)

2 BACKGROUND AND APPROACH

2.1 Wind Tunnel Study Model

To assess the wind environment around the proposed project, a 1:300 scale model of the project site and its surroundings was constructed for the wind tunnel tests of the following configurations:

A – No Build: Existing site with existing surroundings (Image 2A),

B - Build: Proposed project with existing surroundings (Image 2B), and,

C – Full Build: Proposed project with existing and future surroundings (Image 2C).

The wind tunnel model included all relevant surrounding buildings and topography within an approximately 1200 ft radius of the study site. The wind and turbulence profiles in the atmospheric boundary layer beyond the modeled area were also simulated in RWDI's wind tunnel. The wind tunnel model was instrumented with 84 specially designed wind speed sensors to measure mean and gust speeds at a full-scale height of approximately 5 ft above local grade in pedestrian areas throughout the study site. Wind speeds were measured for 36 directions in a 10-degree increment. The measurements at each sensor location were recorded in the form of ratios of local mean and gust speeds to the mean wind speed at a reference height above the model. The placement of wind measurement locations was based on our experience and understanding of the pedestrian usage for this site and was reviewed by the project team.

Image 2A: Wind Tunnel Study Model – No Build Configuration

Image 2B: Wind Tunnel Study Model – Build Configuration

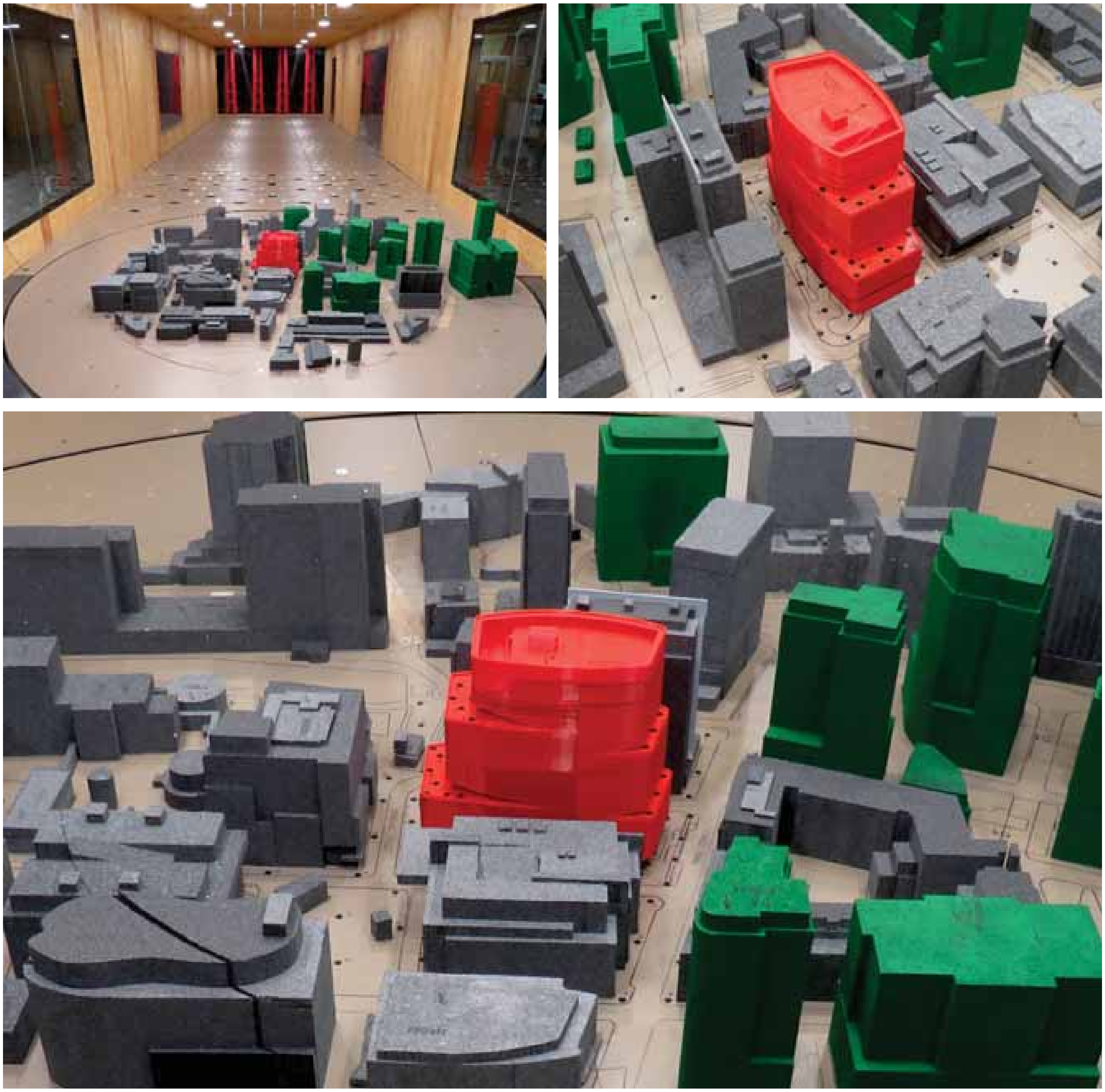
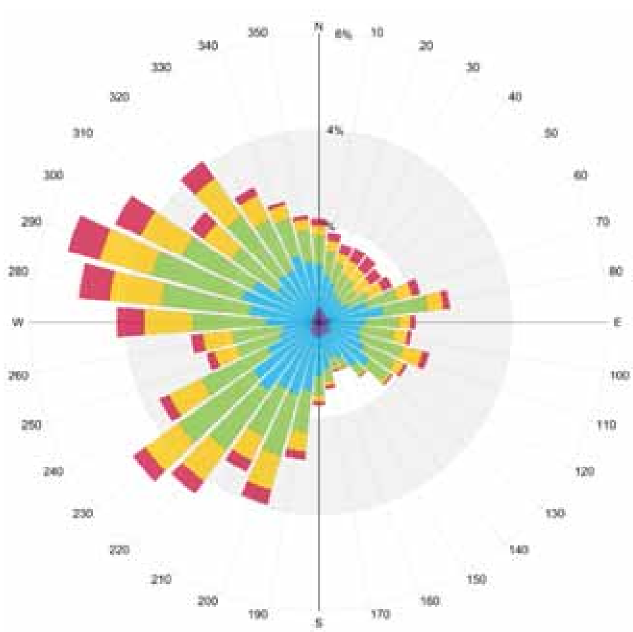


Image 2C: Wind Tunnel Study Model – Full Build Configuration

2.2 Meteorological Data

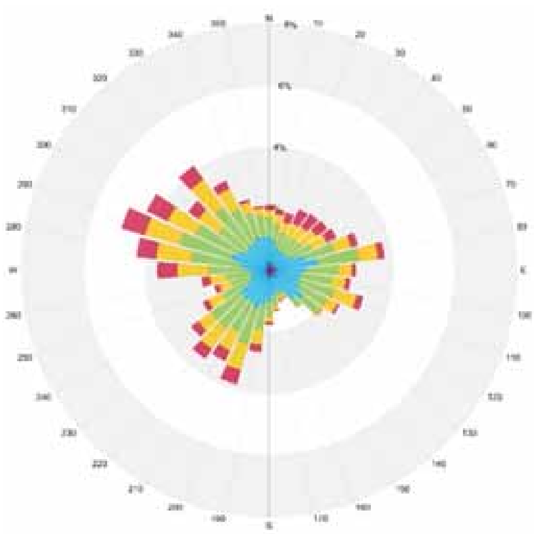
The results from wind tunnel tests were combined with long-term meteorological data, recorded during the years 1995 through 2018 at Boston Logan International Airport, to predict full scale wind conditions for the entire year and for each of the four seasons. Image 3 presents the annual wind rose, summarizing the directional distribution of wind frequencies and speeds. Similarly, seasonal wind climate for spring (March to May), summer (June to August), fall (September to November) and winter (December to February) seasons are summarized in the wind roses of Image 4.

On an annual basis, the most common wind directions are those between south-southwest and northwest. Winds from the east-northeast to the east-southeast are also relatively common. In the case of strong winds, southwest, west through northwest and northeast are the dominant wind directions.

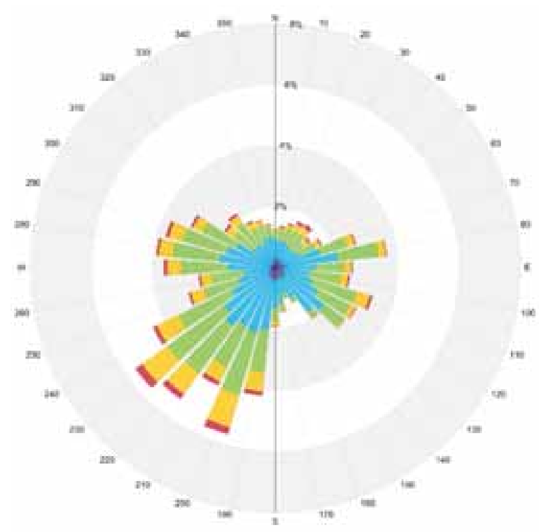


Wind Speed (mph)	Probability (%) Annual
Calm	3.0
1-5	7.9
6-10	32.5
11-15	32.4
16-20	16.3
>20	7.9

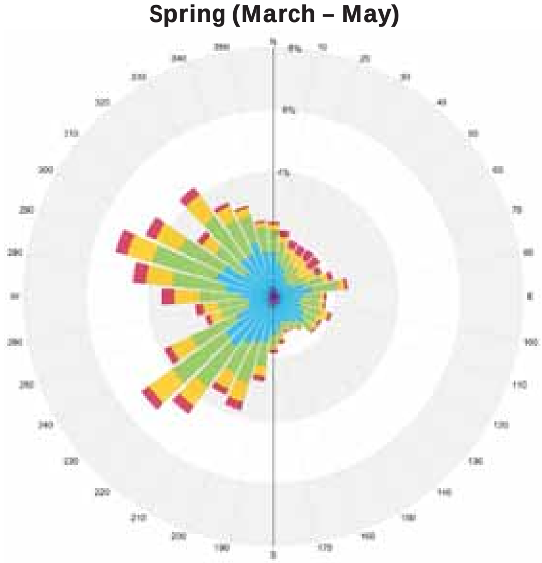
Image 3: Annual Directional distribution of winds approaching Boston Logan International Airport from 1995 through 2018



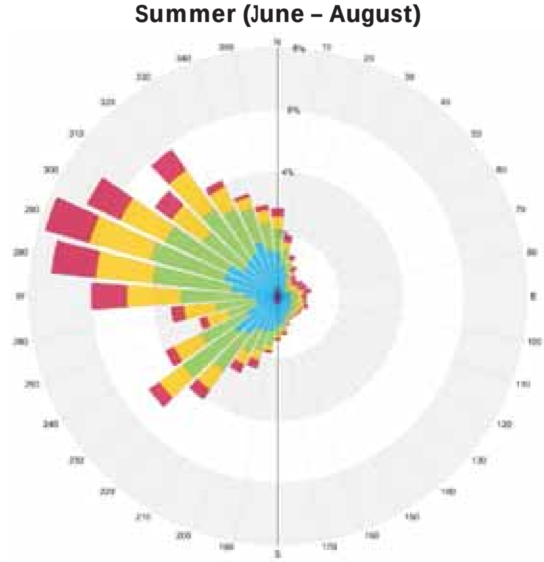
Spring (March – May)



Summer (June – August)



Fall (September – November)



Winter (December – February)

Wind Speed (mph)	Probability (%) Spring	Summer	Fall	Winter
Calm	2.8	3.0	3.4	2.6
1-5	6.8	9.4	8.7	6.5
6-10	28.9	38.8	34.6	27.9
11-15	32.3	34.4	32.0	30.9
16-20	19.2	11.8	14.5	19.7
>20	10.1	2.6	6.8	12.4

Image 4: Seasonal Directional Distribution of Winds Approaching Boston Logan International Airport from 1995 through 2018

2.3 BPDA Wind Criteria

The Boston Planning and Development Agency (BPDA) has adopted two standards for assessing the relative wind comfort of pedestrians. First, the BPDA wind design guidance criterion states that an effective gust velocity (hourly mean wind speed +1.5 times the root-mean-square wind speed) of 31 mph should not be exceeded more than 1% of the time.

The second set of criteria used by the BPDA to determine the acceptability of specific locations is based on the work of Melbourne. This set of criteria is used to determine the relative level of pedestrian wind comfort for activities such as sitting, standing, or walking. The criteria are expressed in terms of benchmarks for the 1-hour mean wind speed exceeded 1% of the time.

Wind Acceptability	Effective Gust Speed (mph)
Acceptable	≤ 31
Unacceptable	> 31
Comfort Category	Mean Wind Speed (mph)
Comfortable for Sitting	≤ 12
Comfortable for Standing	≤ 15
Comfortable for Walking	≤ 19
Uncomfortable for Walking	> 19
Dangerous	> 27

**Effective gust and mean wind speeds are based on a 1% exceedance or 99 percentile wind speeds.

The consideration of wind in planning outdoor activity areas is important since high winds in an area tend to deter pedestrian use. For example, winds should be light or relatively light in areas where people would be sitting, such as outdoor cafes or playgrounds. For bus stops and other locations where people would be standing, somewhat higher winds can be tolerated. For frequently used sidewalks, where people are primarily walking, stronger winds are acceptable. For infrequently used areas, the wind comfort criteria can be relaxed even further. The actual effects of wind can range from pedestrian inconvenience, due to the blowing of dust and other loose material in a moderate breeze to severe difficulty with walking due to the wind forces on the pedestrian.

The wind climate found in a typical downtown location in Boston is generally comfortable for the pedestrian use of sidewalks and thoroughfares and meets the BPDA effective gust velocity criterion of 31 mph. However, without any mitigation measures, this wind climate is likely to be frequently uncomfortable for more passive activities.

This study involved state-of-the-art measurement and analysis techniques to predict wind conditions. Nevertheless, some uncertainty remains in predicting wind comfort, and this must be taken into account. For example, the sensation of comfort among individuals can be quite variable, as variations in age, health, clothing, and other human factors can change a particular response of an individual. The comfort limits used in this report represent an average for the total population. Also, unforeseen changes in the project area, such as the construction or removal of buildings, can affect the conditions experienced at the site. Finally, the prediction of wind speeds is necessarily a statistical procedure, meaning that the wind speeds reported are for the frequency of occurrence stated (1% of the time) and higher wind speeds will occur but on a less frequent basis.

3 RESULTS AND DISCUSSION

The predicted wind conditions in terms of mean and effective gust speeds pertaining to the tested configurations are graphically depicted on site plans in Figures 1A through 2C located in the "Figures" section of this report. These conditions and the associated wind speeds are presented in Tables 1 and 2 in the "Tables" section. The following is a detailed discussion of the suitability of the predicted wind comfort conditions for the anticipated pedestrian use of each area of interest on an annual base. Typically, the summer and fall winds tend to be more comfortable than the annual winds while the winter and spring winds are less comfortable than the annual winds.

In general, wind conditions comfortable for walking are appropriate for sidewalks and walkways as pedestrians will be active and less likely to remain in one area for prolonged periods of time. Lower wind speeds conducive to standing are preferred at main entrances where pedestrians are apt to linger. Wind speeds comfortable for sitting are ideal for areas intended for passive activities, such as plaza spaces or outdoor seating areas, during the warmer months of the year.

Wind speeds that meet the effective gust criterion of 31 mph are predated at all pedestrian areas assessed for the No Build, Build and Full Build configurations, both annually and seasonally (Figures 2A to 2C and Tables 1 and 2).

3.1 No Build Configuration

Mean wind speeds on and around the existing project site and along the sidewalks of the nearby streets are comfortable for walking, standing or sitting (Figure 1A). Wind speeds higher than those comfortable for walking occur at the southwest corner of the project site (Location 6 in Figure 1A). There are no areas with mean wind speeds categorized as dangerous either annually or seasonally (Figure 1A and Tables 1 and 2).

3.2 Build Configuration

The proposed building is of similar height to the existing surroundings on the east and south sides and taller than the surrounding to the north and west. As a result, it is expected to intercept the predominant local winds at higher elevations and redirect them to the ground level, causing increased wind activity, especially near the exposed building corners. The increased wind speeds are considered appropriate for the intended use of various pedestrian areas, including the adjacent sidewalks and main building entrances near Locations 1, 14 and 20 (Figure 1B). Note that the existing uncomfortable conditions at the southwest corner of the site are expected to be alleviated in the Build configuration (Location 6 in Figure 1B). Wind speeds that are higher than those comfortable for standing are expected at the two entrances near the southwest corner of the proposed building (Locations 5 and 8 in Figure 1B). At the southeast and east seating areas, wind speeds are predicted to be higher than those comfortable for sitting (Locations 15, 19, 21 and 22 in Figure 1B).

Mean wind speeds in the extended surrounding areas are predicted to remain generally unchanged, compared to those in the No Build configuration (Figure 1B). These wind conditions are considered suitable for the intended pedestrian use of the tested areas. No areas with mean wind speeds categorized as dangerous are predicted on and around the site either annually or seasonally (Figure 1B and Tables 1 and 2).

To reduce the wind speeds near the main entrances at the southwest corner, it is recommended to relocate the entrance away from the corner, recess the entrances to create sheltered doorways or introduce vertical wind mitigation features in the form of coniferous/marcescent landscaping or porous screens on both sides of the entrances and adjacent to the façade. for these features to be effective, a minimum height of 6-8 ft and 20-30% screen porosity are recommended. For the seating spaces to the southeast and east, we recommend the extensive use of landscaping/hardscaping elements such as screens, planters and trellises to provide sheltered zones for the anticipated passive use of the area. Examples of these wind control measures are shown in Image 5.

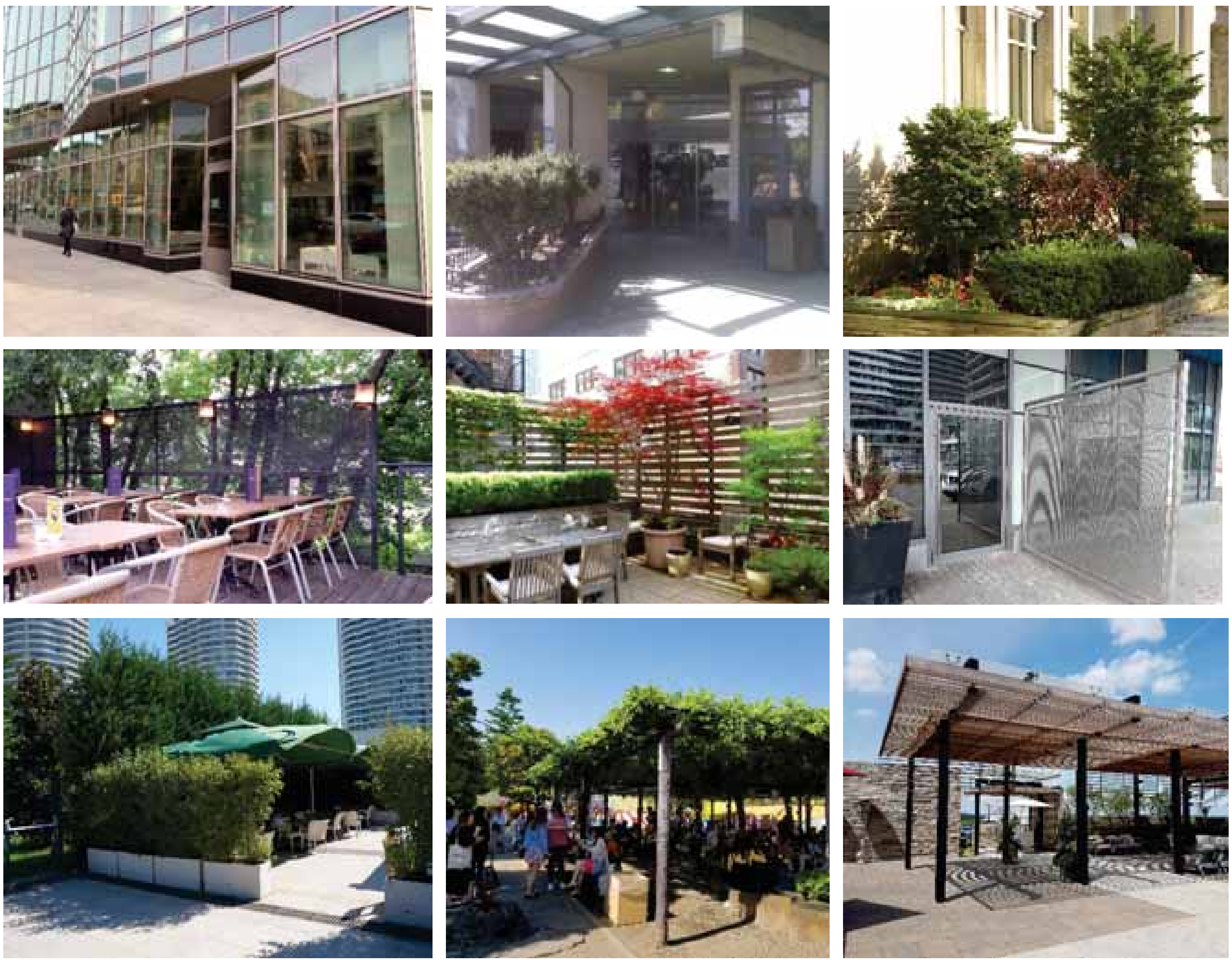


Image 5: Examples of Wind Control Measures for Entrances and Outdoor Seating Areas

3.3 Full Build Configuration

The addition of the future developments to the west and north of the project is expected to provide sheltering from the predominant winds and generally reduce wind speeds at most areas on and around the project in comparison to the Building configuration. The higher-than-desired wind speeds at the two entrances near the southwest corner of the proposed building are predicted to be reduced and become suitable for the intended use (Locations 5 and 8 in Figure 1C). Note that wind speeds at the southeast seating area are expected to slightly increase in the Full Build configuration (Location 15 in in Figure 1C).

4 APPLICABILITY OF RESULTS

The wind conditions presented in this report pertain to the model of the 585 Third Street project constructed using the drawings and information listed below. Should there be any design changes that deviate from this list of drawings, the wind condition predictions presented may be affected. Therefore, for any changes in the design, it is recommended that RWDI be contacted and requested to review their potential impact on wind conditions.

File Name	File Type	Date Received (dd/mm/yyyy)
cbt_207079_585ThirdSt_CENTRAL_2019	Revit	20/05/2021

5 REFERENCES

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FIGURES

Pedestrian Wind Conditions - Mean Speed

No Build

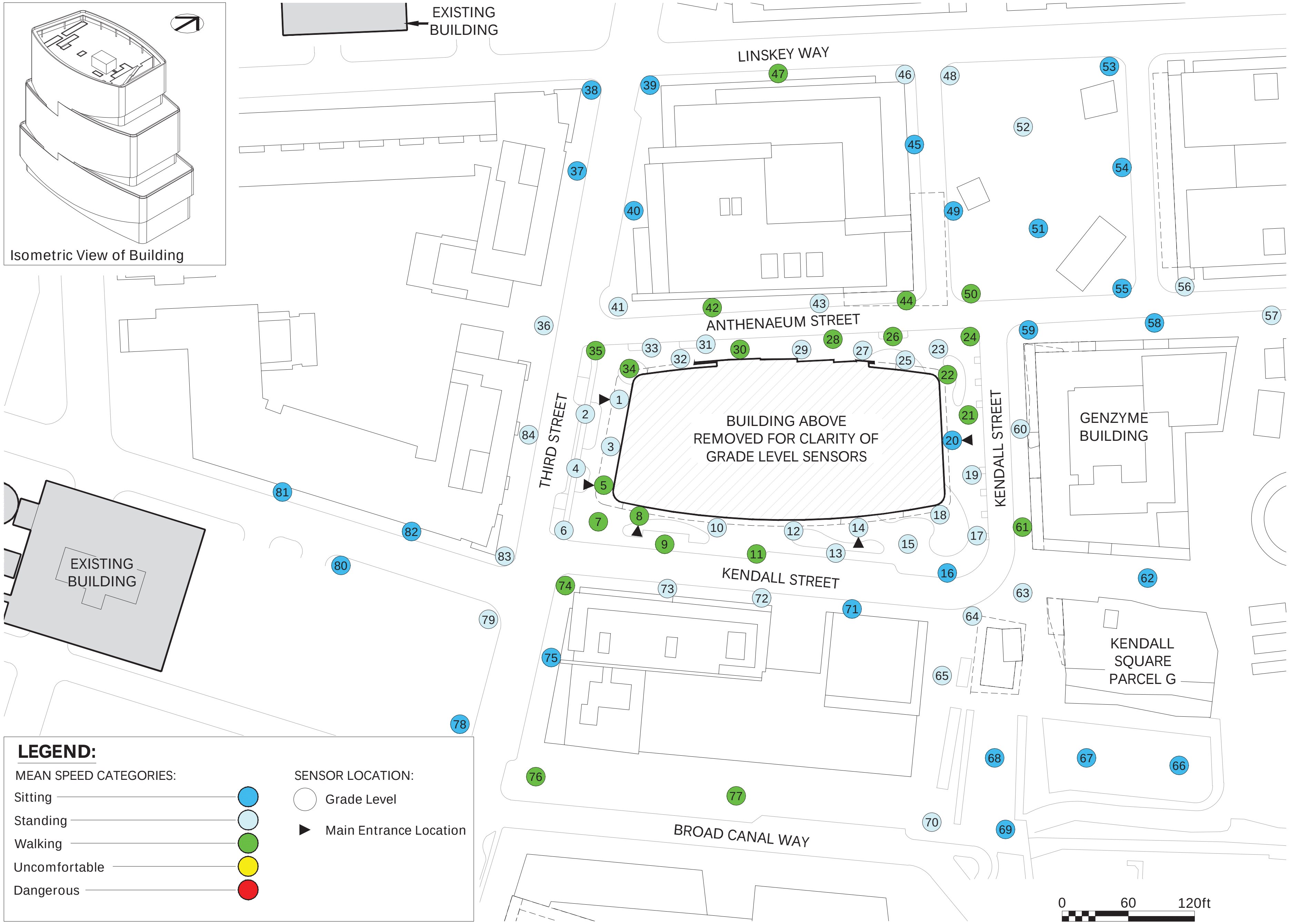
Annual

585 Third Street - Cambridge, MA

True North

Project #2102562

Drawn by: DF	Figure: 1A
Approx. Scale:	1"=120'
Date Revised:	Jul. 6, 2021



Pedestrian Wind Conditions - Mean Speed

Build

Annual

585 Third Street - Cambridge, MA

True North

Project #2102562

Drawn by: DF	Figure: 1B
Approx. Scale:	1"=120'
Date Revised:	Jul. 6, 2021

Pedestrian Wind Conditions - Mean Speed
Full Build
Annual

585 Third Street - Cambridge, MA

True North

Project #2102562

Drawn by: DF	Figure: 1C
Approx. Scale: 1"=120'	
Date Revised: Jul. 6, 2021	

RWDI

Pedestrian Wind Conditions - Effective Gust Speed

No Build

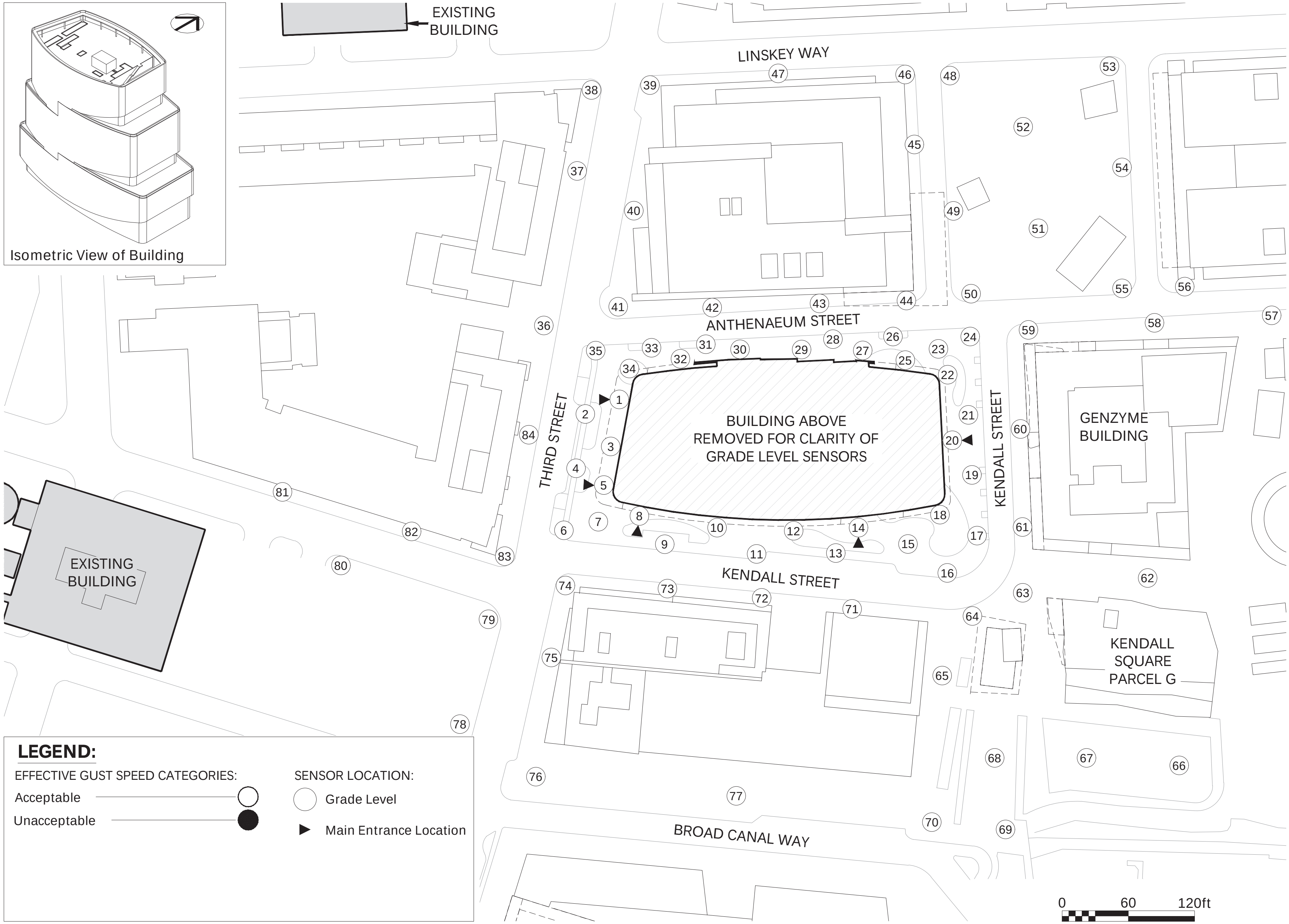
Annual

585 Third Street - Cambridge, MA

True North

Project #2102562

Drawn by: DF	Figure: 2A
Approx. Scale:	1"=120'
Date Revised:	Jul. 6, 2021



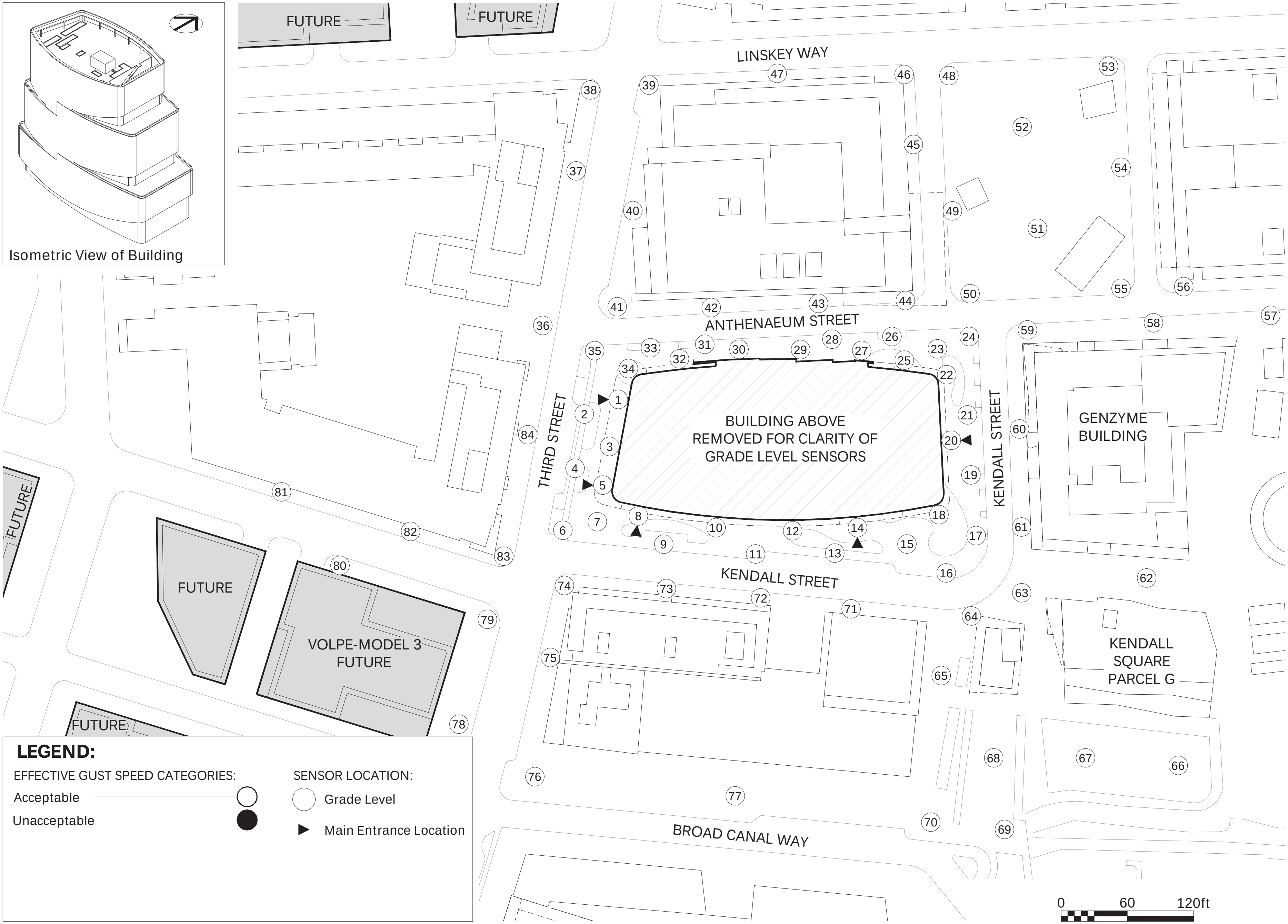
Pedestrian Wind Conditions - Effective Gust Speed
Build
Annual

585 Third Street - Cambridge, MA

True North

Project #2102562

Drawn by: DF	Figure: 2B
Approx. Scale: 1"=120'	
Date Revised: Jul. 6, 2021	



LEGEND:

EFFECTIVE GUST SPEED CATEGORIES:
- Acceptable ○
- Unacceptable ●

SENSOR LOCATION:
- ○ Grade Level
- ▶ Main Entrance Location

Pedestrian Wind Conditions - Effective Gust Speed

Full Build
Annual

585 Third Street - Cambridge, MA

True North

Project #2102562

Drawn by: DF	Figure: 2C
Approx. Scale: 1"=120'	
Date Revised: Jul. 6, 2021	

TABLES

Table 1: Mean Speed and Effective Gust Categories - Annual

Location	Configuration	Season	Mean Wind Speed			Effective Gust Wind Speed		
			Speed (mph)	% Change	Rating	Speed (mph)	% Change	Rating
1	A	Annual	9		Sitting	14		Acceptable
	B	Annual	14	56%	Standing	19	36%	Acceptable
	C	Annual	13	44%	Standing	17	21%	Acceptable
2	A	Annual	12		Sitting	19		Acceptable
	B	Annual	14	17%	Standing	21	11%	Acceptable
	C	Annual	10	-17%	Sitting	16	-16%	Acceptable
3	A	-	-		-	-		-
	B	Annual	13		Standing	20		Acceptable
	C	Annual	14		Standing	18		Acceptable
4	A	Annual	16		Walking	25		Acceptable
	B	Annual	13	-19%	Standing	20	-20%	Acceptable
	C	Annual	10	-38%	Sitting	15	-40%	Acceptable
5	A	Annual	13		Standing	20		Acceptable
	B	Annual	17	31%	Walking	24	20%	Acceptable
	C	Annual	13		Standing	18		Acceptable
6	A	Annual	21		Uncomfortable	29		Acceptable
	B	Annual	15	-29%	Standing	25	-14%	Acceptable
	C	Annual	11	-48%	Sitting	17	-41%	Acceptable
7	A	Annual	19		Walking	27		Acceptable
	B	Annual	16	-16%	Walking	22	-19%	Acceptable
	C	Annual	13	-32%	Standing	19	-30%	Acceptable
8	A	-	-		-	-		-
	B	Annual	16		Walking	23		Acceptable
	C	Annual	11		Sitting	16		Acceptable
9	A	Annual	15		Standing	23		Acceptable
	B	Annual	19	27%	Walking	27	17%	Acceptable
	C	Annual	13	-13%	Standing	21		Acceptable
10	A	Annual	15		Standing	23		Acceptable
	B	Annual	13	-13%	Standing	19	-17%	Acceptable
	C	Annual	12	-20%	Sitting	18	-22%	Acceptable
11	A	Annual	15		Standing	23		Acceptable
	B	Annual	16		Walking	24		Acceptable
	C	Annual	14		Standing	20	-13%	Acceptable
12	A	Annual	15		Standing	23		Acceptable
	B	Annual	13	-13%	Standing	18	-22%	Acceptable
	C	Annual	11	-27%	Sitting	14	-39%	Acceptable
13	A	Annual	13		Standing	21		Acceptable
	B	Annual	13		Standing	19		Acceptable
	C	Annual	11	-15%	Sitting	18	-14%	Acceptable

Table 1: Mean Speed and Effective Gust Categories - Annual

Location	Configuration	Season	Mean Wind Speed			Effective Gust Wind Speed		
			Speed (mph)	% Change	Rating	Speed (mph)	% Change	Rating
14	A	Annual	15		Standing	23		Acceptable
	B	Annual	14		Standing	18	-22%	Acceptable
	C	Annual	13	-13%	Standing	18	-22%	Acceptable
15	A	Annual	15		Standing	22		Acceptable
	B	Annual	14		Standing	22		Acceptable
	C	Annual	17	13%	Walking	23		Acceptable
16	A	Annual	14		Standing	21		Acceptable
	B	Annual	12	-14%	Sitting	20		Acceptable
	C	Annual	11	-21%	Sitting	17	-19%	Acceptable
17	A	Annual	16		Walking	24		Acceptable
	B	Annual	14	-12%	Standing	22		Acceptable
	C	Annual	13	-19%	Standing	21	-12%	Acceptable
18	A	Annual	15		Standing	22		Acceptable
	B	Annual	15		Standing	22		Acceptable
	C	Annual	17	13%	Walking	24		Acceptable
19	A	Annual	13		Standing	21		Acceptable
	B	Annual	14		Standing	21		Acceptable
	C	Annual	12		Sitting	17	-19%	Acceptable
20	A	Annual	13		Standing	21		Acceptable
	B	Annual	10	-23%	Sitting	16	-24%	Acceptable
	C	Annual	10	-23%	Sitting	16	-24%	Acceptable
21	A	Annual	11		Sitting	18		Acceptable
	B	Annual	16	45%	Walking	23	28%	Acceptable
	C	Annual	14	27%	Standing	20	11%	Acceptable
22	A	Annual	12		Sitting	20		Acceptable
	B	Annual	17	42%	Walking	24	20%	Acceptable
	C	Annual	16	33%	Walking	22		Acceptable
23	A	Annual	11		Sitting	19		Acceptable
	B	Annual	15	36%	Standing	22	16%	Acceptable
	C	Annual	13	18%	Standing	18		Acceptable
24	A	Annual	12		Sitting	20		Acceptable
	B	Annual	16	33%	Walking	24	20%	Acceptable
	C	Annual	14	17%	Standing	21		Acceptable
25	A	Annual	11		Sitting	19		Acceptable
	B	Annual	13	18%	Standing	19		Acceptable
	C	Annual	11		Sitting	15	-21%	Acceptable
26	A	Annual	11		Sitting	18		Acceptable
	B	Annual	16	45%	Walking	22	22%	Acceptable
	C	Annual	12		Sitting	17		Acceptable

Table 1: Mean Speed and Effective Gust Categories - Annual

Location	Configuration	Season	Mean Wind Speed			Effective Gust Wind Speed		
			Speed (mph)	% Change	Rating	Speed (mph)	% Change	Rating
27	A	Annual	11		Sitting	18		Acceptable
	B	Annual	15	36%	Standing	21	17%	Acceptable
	C	Annual	10		Sitting	16	-11%	Acceptable
28	A	Annual	11		Sitting	18		Acceptable
	B	Annual	16	45%	Walking	22	22%	Acceptable
	C	Annual	10		Sitting	15	-17%	Acceptable
29	A	Annual	11		Sitting	18		Acceptable
	B	Annual	14	27%	Standing	20	11%	Acceptable
	C	Annual	9	-18%	Sitting	14	-22%	Acceptable
30	A	Annual	11		Sitting	18		Acceptable
	B	Annual	17	55%	Walking	20	11%	Acceptable
	C	Annual	16	45%	Walking	19		Acceptable
31	A	Annual	10		Sitting	16		Acceptable
	B	Annual	14	40%	Standing	18	12%	Acceptable
	C	Annual	10		Sitting	15		Acceptable
32	A	Annual	10		Sitting	16		Acceptable
	B	Annual	14	40%	Standing	18	12%	Acceptable
	C	Annual	13	30%	Standing	16		Acceptable
33	A	Annual	10		Sitting	16		Acceptable
	B	Annual	13	30%	Standing	20	25%	Acceptable
	C	Annual	10		Sitting	16		Acceptable
34	A	Annual	11		Sitting	17		Acceptable
	B	Annual	18	64%	Walking	24	41%	Acceptable
	C	Annual	14	27%	Standing	20	18%	Acceptable
35	A	Annual	12		Sitting	18		Acceptable
	B	Annual	18	50%	Walking	26	44%	Acceptable
	C	Annual	16	33%	Walking	23	28%	Acceptable
36	A	Annual	11		Sitting	17		Acceptable
	B	Annual	13	18%	Standing	19	12%	Acceptable
	C	Annual	11		Sitting	17		Acceptable
37	A	Annual	9		Sitting	15		Acceptable
	B	Annual	8	-11%	Sitting	13	-13%	Acceptable
	C	Annual	7	-22%	Sitting	11	-27%	Acceptable
38	A	Annual	14		Standing	20		Acceptable
	B	Annual	12	-14%	Sitting	17	-15%	Acceptable
	C	Annual	15		Standing	21		Acceptable
39	A	Annual	10		Sitting	16		Acceptable
	B	Annual	10		Sitting	15		Acceptable
	C	Annual	12	20%	Sitting	19	19%	Acceptable

Table 1: Mean Speed and Effective Gust Categories - Annual

Location	Configuration	Season	Mean Wind Speed			Effective Gust Wind Speed		
			Speed (mph)	% Change	Rating	Speed (mph)	% Change	Rating
40	A	Annual	10		Sitting	15		Acceptable
	B	Annual	10		Sitting	16		Acceptable
	C	Annual	7	-30%	Sitting	11	-27%	Acceptable
41	A	Annual	12		Sitting	18		Acceptable
	B	Annual	15	25%	Standing	22	22%	Acceptable
	C	Annual	13		Standing	19		Acceptable
42	A	Annual	8		Sitting	14		Acceptable
	B	Annual	17	112%	Walking	24	71%	Acceptable
	C	Annual	9	12%	Sitting	13		Acceptable
43	A	Annual	9		Sitting	16		Acceptable
	B	Annual	15	67%	Standing	21	31%	Acceptable
	C	Annual	11	22%	Sitting	16		Acceptable
44	A	Annual	10		Sitting	18		Acceptable
	B	Annual	16	60%	Walking	22	22%	Acceptable
	C	Annual	14	40%	Standing	19		Acceptable
45	A	Annual	7		Sitting	12		Acceptable
	B	Annual	8	14%	Sitting	13		Acceptable
	C	Annual	8	14%	Sitting	14	17%	Acceptable
46	A	Annual	14		Standing	20		Acceptable
	B	Annual	15		Standing	21		Acceptable
	C	Annual	10	-29%	Sitting	15	-25%	Acceptable
47	A	Annual	17		Walking	23		Acceptable
	B	Annual	17		Walking	22		Acceptable
	C	Annual	9	-47%	Sitting	14	-39%	Acceptable
48	A	Annual	14		Standing	20		Acceptable
	B	Annual	15		Standing	21		Acceptable
	C	Annual	17	21%	Walking	26	30%	Acceptable
49	A	Annual	9		Sitting	14		Acceptable
	B	Annual	8	-11%	Sitting	12	-14%	Acceptable
	C	Annual	7	-22%	Sitting	11	-21%	Acceptable
50	A	Annual	12		Sitting	19		Acceptable
	B	Annual	17	42%	Walking	25	32%	Acceptable
	C	Annual	15	25%	Standing	21	11%	Acceptable
51	A	Annual	9		Sitting	16		Acceptable
	B	Annual	9		Sitting	15		Acceptable
	C	Annual	8	-11%	Sitting	14	-12%	Acceptable
52	A	Annual	13		Standing	19		Acceptable
	B	Annual	13		Standing	19		Acceptable
	C	Annual	12		Sitting	19		Acceptable

Table 1: Mean Speed and Effective Gust Categories - Annual

Location	Configuration	Season	Mean Wind Speed			Effective Gust Wind Speed		
			Speed (mph)	% Change	Rating	Speed (mph)	% Change	Rating
53	A	Annual	10		Sitting	16		Acceptable
	B	Annual	11		Sitting	17		Acceptable
	C	Annual	12	20%	Sitting	18	12%	Acceptable
54	A	Annual	10		Sitting	16		Acceptable
	B	Annual	11		Sitting	17		Acceptable
	C	Annual	10		Sitting	16		Acceptable
55	A	Annual	10		Sitting	16		Acceptable
	B	Annual	10		Sitting	16		Acceptable
	C	Annual	10		Sitting	16		Acceptable
56	A	Annual	12		Sitting	19		Acceptable
	B	Annual	13		Standing	19		Acceptable
	C	Annual	12		Sitting	18		Acceptable
57	A	Annual	12		Sitting	18		Acceptable
	B	Annual	13		Standing	19		Acceptable
	C	Annual	13		Standing	19		Acceptable
58	A	Annual	10		Sitting	15		Acceptable
	B	Annual	11		Sitting	17	13%	Acceptable
	C	Annual	9		Sitting	14		Acceptable
59	A	Annual	12		Sitting	19		Acceptable
	B	Annual	12		Sitting	20		Acceptable
	C	Annual	10	-17%	Sitting	16	-16%	Acceptable
60	A	Annual	9		Sitting	14		Acceptable
	B	Annual	15	67%	Standing	22	57%	Acceptable
	C	Annual	13	44%	Standing	20	43%	Acceptable
61	A	Annual	13		Standing	20		Acceptable
	B	Annual	18	38%	Walking	24	20%	Acceptable
	C	Annual	12		Sitting	18		Acceptable
62	A	Annual	15		Standing	22		Acceptable
	B	Annual	12	-20%	Sitting	18	-18%	Acceptable
	C	Annual	11	-27%	Sitting	17	-23%	Acceptable
63	A	Annual	16		Walking	23		Acceptable
	B	Annual	14	-12%	Standing	21		Acceptable
	C	Annual	11	-31%	Sitting	16	-30%	Acceptable
64	A	Annual	16		Walking	23		Acceptable
	B	Annual	15		Standing	22		Acceptable
	C	Annual	12	-25%	Sitting	18	-22%	Acceptable
65	A	Annual	12		Sitting	20		Acceptable
	B	Annual	13		Standing	20		Acceptable
	C	Annual	10	-17%	Sitting	17	-15%	Acceptable

Table 1: Mean Speed and Effective Gust Categories - Annual

Location	Configuration	Season	Mean Wind Speed			Effective Gust Wind Speed		
			Speed (mph)	% Change	Rating	Speed (mph)	% Change	Rating
66	A	Annual	12		Sitting	18		Acceptable
	B	Annual	12		Sitting	18		Acceptable
	C	Annual	12		Sitting	18		Acceptable
67	A	Annual	13		Standing	21		Acceptable
	B	Annual	12		Sitting	19		Acceptable
	C	Annual	12		Sitting	18	-14%	Acceptable
68	A	Annual	13		Standing	21		Acceptable
	B	Annual	11	-15%	Sitting	18	-14%	Acceptable
	C	Annual	11	-15%	Sitting	17	-19%	Acceptable
69	A	Annual	12		Sitting	20		Acceptable
	B	Annual	12		Sitting	20		Acceptable
	C	Annual	12		Sitting	18		Acceptable
70	A	Annual	14		Standing	23		Acceptable
	B	Annual	14		Standing	22		Acceptable
	C	Annual	15		Standing	22		Acceptable
71	A	Annual	10		Sitting	17		Acceptable
	B	Annual	11		Sitting	17		Acceptable
	C	Annual	10		Sitting	15	-12%	Acceptable
72	A	Annual	11		Sitting	18		Acceptable
	B	Annual	15	36%	Standing	22	22%	Acceptable
	C	Annual	12		Sitting	18		Acceptable
73	A	Annual	9		Sitting	16		Acceptable
	B	Annual	15	67%	Standing	22	38%	Acceptable
	C	Annual	13	44%	Standing	18	12%	Acceptable
74	A	Annual	18		Walking	27		Acceptable
	B	Annual	17		Walking	25		Acceptable
	C	Annual	11	-39%	Sitting	17	-37%	Acceptable
75	A	Annual	12		Sitting	19		Acceptable
	B	Annual	11		Sitting	18		Acceptable
	C	Annual	11		Sitting	17	-11%	Acceptable
76	A	Annual	18		Walking	27		Acceptable
	B	Annual	18		Walking	27		Acceptable
	C	Annual	13	-28%	Standing	21	-22%	Acceptable
77	A	Annual	19		Walking	27		Acceptable
	B	Annual	19		Walking	27		Acceptable
	C	Annual	12	-37%	Sitting	17	-37%	Acceptable
78	A	Annual	12		Sitting	21		Acceptable
	B	Annual	11		Sitting	19		Acceptable
	C	Annual	12		Sitting	18	-14%	Acceptable

Table 1: Mean Speed and Effective Gust Categories - Annual

Location	Configuration	Season	Mean Wind Speed			Effective Gust Wind Speed		
			Speed (mph)	% Change	Rating	Speed (mph)	% Change	Rating
79	A	Annual	16		Walking	24		Acceptable
	B	Annual	14	-12%	Standing	21	-12%	Acceptable
	C	Annual	15		Standing	20	-17%	Acceptable
80	A	Annual	9		Sitting	15		Acceptable
	B	Annual	9		Sitting	15		Acceptable
	C	Annual	8	-11%	Sitting	14		Acceptable
81	A	Annual	8		Sitting	14		Acceptable
	B	Annual	8		Sitting	13		Acceptable
	C	Annual	10	25%	Sitting	15		Acceptable
82	A	Annual	8		Sitting	14		Acceptable
	B	Annual	7	-12%	Sitting	13		Acceptable
	C	Annual	15	88%	Standing	21	50%	Acceptable
83	A	Annual	17		Walking	25		Acceptable
	B	Annual	14	-18%	Standing	22	-12%	Acceptable
	C	Annual	12	-29%	Sitting	18	-28%	Acceptable
84	A	Annual	10		Sitting	16		Acceptable
	B	Annual	14	40%	Standing	20	25%	Acceptable
	C	Annual	12	20%	Sitting	18	12%	Acceptable

Configurations	Mean Wind Criteria Speed (mph)		Effective Gust Criteria (mph)	
(A) No Build	≤ 12	Comfortable for Sitting	≤ 31	Acceptable
Existing site and surroundings	13 - 15	Comfortable for Standing	> 31	Unacceptable
(B) Build	16 - 19	Comfortable for Walking		
Project with existing surroundings	20 - 27	Uncomfortable for Walking		
(C) Full Build	> 27	Dangerous Conditions		
Project with future surroundings				

Notes

1) Wind Speeds are for a 1% probability of exceedance

2) % Change is based on comparison with Configuration A

3) % changes less than 10% are excluded

Table 2: Mean Speed and Effective Gust Categories - Seasonal

Location	Configuration	Mean Wind Speed (mph)				Effective Gust Wind Speed (mph)			
		Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter
1	A	9	7	9	10	14	11	14	15
	B	14	11	14	15	20	15	19	21
	C	13	10	13	14	17	13	17	18
2	A	12	9	11	13	20	15	18	21
	B	14	11	13	15	21	16	20	22
	C	11	8	10	11	17	12	16	16
3	A	-	-	-	-	-	-	-	-
	B	14	11	13	14	20	16	19	21
	C	14	12	13	15	18	15	17	19
4	A	16	12	15	17	26	19	24	27
	B	13	11	13	14	21	16	20	22
	C	11	8	10	11	16	12	15	16
5	A	13	10	13	14	20	15	19	21
	B	18	13	16	19	25	19	22	27
	C	14	10	13	14	19	14	17	19
6	A	21	16	20	22	30	23	28	31
	B	16	12	15	17	25	20	24	27
	C	11	8	10	12	18	14	16	18
7	A	20	15	18	21	29	21	27	30
	B	16	12	15	17	23	18	21	24
	C	14	11	13	14	19	16	18	20
8	A	-	-	-	-	-	-	-	-
	B	16	12	15	18	24	18	22	26
	C	11	10	11	11	16	15	16	18
9	A	15	11	14	16	24	18	22	26
	B	20	15	19	21	28	22	26	30
	C	14	12	14	14	21	19	21	22
10	A	16	11	15	16	25	18	23	24
	B	14	11	13	15	19	16	18	20
	C	12	11	12	13	18	17	18	19
11	A	16	11	15	15	24	18	23	24
	B	17	13	16	18	24	19	23	26
	C	14	12	14	15	21	19	21	22
12	A	16	12	15	16	25	19	23	25
	B	13	10	12	14	18	14	17	19
	C	11	9	10	12	15	12	14	15
13	A	14	11	13	14	22	17	21	22
	B	13	10	12	13	19	16	19	20
	C	12	10	11	12	18	16	18	19

Table 2: Mean Speed and Effective Gust Categories - Seasonal

Location	Configuration	Mean Wind Speed (mph)				Effective Gust Wind Speed (mph)			
		Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter
14	A	16	12	15	16	24	18	23	24
	B	14	12	14	15	18	15	18	19
	C	14	12	13	15	18	16	18	19
15	A	16	12	16	16	23	17	22	24
	B	14	13	14	15	22	20	22	23
	C	17	16	16	18	24	22	23	25
16	A	14	11	14	15	22	16	21	24
	B	13	10	12	13	21	16	19	21
	C	11	9	10	11	18	14	17	18
17	A	16	12	15	17	24	18	23	26
	B	15	12	14	15	22	18	21	23
	C	14	12	13	14	21	19	20	22
18	A	16	12	15	16	23	17	22	24
	B	15	14	15	16	23	20	22	24
	C	17	16	17	18	25	22	24	26
19	A	14	11	13	15	22	16	20	23
	B	15	11	14	15	21	16	20	22
	C	12	10	12	12	18	14	18	18
20	A	14	10	13	14	21	15	20	22
	B	11	8	10	11	17	13	16	18
	C	10	8	10	11	17	12	16	17
21	A	12	9	11	12	19	14	18	20
	B	17	12	16	17	24	18	22	25
	C	15	11	14	15	22	15	20	22
22	A	13	9	12	13	21	15	19	22
	B	18	14	17	18	25	19	24	26
	C	17	12	16	16	23	16	22	23
23	A	12	9	11	12	20	15	18	21
	B	16	12	15	17	23	17	21	24
	C	14	10	13	14	20	14	19	20
24	A	13	9	12	14	20	15	19	22
	B	17	13	15	17	25	18	23	25
	C	16	11	15	15	23	16	21	22
25	A	12	9	11	12	19	15	18	20
	B	14	10	13	14	20	15	18	20
	C	12	8	11	11	17	12	15	16
26	A	11	9	11	12	18	14	17	19
	B	17	12	15	18	23	17	21	24
	C	12	9	12	12	19	14	17	18

Table 2: Mean Speed and Effective Gust Categories - Seasonal

Location	Configuration	Mean Wind Speed (mph)				Effective Gust Wind Speed (mph)			
		Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter
27	A	12	9	11	12	19	15	18	20
	B	16	12	14	16	22	17	20	23
	C	11	7	10	10	17	12	16	16
28	A	11	9	10	11	18	15	17	19
	B	17	12	15	18	23	17	20	24
	C	10	8	9	11	16	12	15	17
29	A	12	9	11	12	19	14	18	20
	B	15	11	13	16	21	15	19	22
	C	10	7	9	10	15	11	14	15
30	A	12	9	11	12	18	14	18	19
	B	17	13	16	18	20	16	20	22
	C	16	14	16	17	19	16	18	20
31	A	11	8	10	11	17	13	16	17
	B	14	11	13	15	19	14	17	20
	C	11	9	10	11	16	12	15	16
32	A	11	8	11	11	17	13	16	17
	B	15	11	14	16	19	14	17	20
	C	13	10	12	14	16	12	15	17
33	A	11	9	10	11	17	13	16	17
	B	14	10	13	14	21	15	19	21
	C	11	8	10	11	17	12	16	17
34	A	11	9	11	12	17	13	16	18
	B	18	14	17	19	25	18	23	26
	C	16	11	14	15	22	16	20	21
35	A	12	9	11	13	19	15	18	20
	B	19	13	17	19	27	19	25	27
	C	18	13	17	17	26	17	23	23
36	A	12	9	11	12	18	13	16	18
	B	13	9	12	13	20	15	19	21
	C	12	9	12	12	19	13	17	18
37	A	10	8	9	10	16	12	14	16
	B	9	7	8	9	14	11	13	14
	C	7	6	7	7	12	9	11	12
38	A	15	11	14	15	21	16	19	22
	B	12	9	11	13	18	14	17	18
	C	16	12	15	16	23	16	21	22
39	A	10	8	10	10	16	13	15	17
	B	10	8	9	10	16	12	15	17
	C	13	10	12	13	19	15	18	20

Table 2: Mean Speed and Effective Gust Categories - Seasonal

Location	Configuration	Mean Wind Speed (mph)				Effective Gust Wind Speed (mph)			
		Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter
40	A	10	8	9	11	16	12	14	16
	B	10	8	10	11	17	13	15	18
	C	7	5	6	8	12	9	11	12
41	A	12	10	11	13	19	15	17	19
	B	16	11	15	16	23	17	22	24
	C	15	10	13	14	21	15	20	20
42	A	8	7	8	8	14	12	14	15
	B	17	14	17	19	24	19	23	26
	C	9	7	9	9	14	11	14	14
43	A	9	8	9	10	17	13	16	18
	B	15	11	14	16	21	16	20	22
	C	11	9	11	11	16	13	16	16
44	A	10	9	10	11	18	15	17	19
	B	17	12	16	17	23	17	21	23
	C	16	11	14	14	21	15	19	20
45	A	8	6	7	8	13	10	12	13
	B	8	7	8	9	14	11	13	14
	C	9	7	8	9	15	11	14	16
46	A	15	11	14	16	21	16	19	22
	B	16	12	15	17	22	16	20	22
	C	11	9	11	11	16	13	16	16
47	A	17	13	16	18	23	18	21	24
	B	17	13	16	18	23	18	21	24
	C	10	8	8	9	15	11	13	15
48	A	14	11	13	15	20	16	19	21
	B	15	11	14	16	21	16	20	22
	C	18	13	16	20	27	19	24	29
49	A	9	7	8	10	14	10	13	15
	B	8	6	7	8	13	10	12	13
	C	7	6	6	7	11	9	11	12
50	A	12	10	12	13	19	15	18	21
	B	18	13	17	19	26	19	24	26
	C	16	11	15	15	23	16	21	22
51	A	10	7	9	10	16	12	15	17
	B	10	7	9	10	16	12	15	16
	C	9	7	8	9	15	11	14	15
52	A	13	10	12	14	20	15	18	21
	B	13	10	12	14	19	15	18	20
	C	13	10	11	13	20	15	18	21

Table 2: Mean Speed and Effective Gust Categories - Seasonal

Location	Configuration	Mean Wind Speed (mph)				Effective Gust Wind Speed (mph)			
		Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter
53	A	11	8	10	11	17	13	15	17
	B	11	9	10	12	17	14	16	18
	C	12	9	11	13	19	14	17	20
54	A	10	8	9	11	17	13	15	18
	B	11	9	10	12	18	13	16	19
	C	10	8	9	10	16	13	15	17
55	A	10	8	9	11	16	12	15	17
	B	10	8	10	11	17	13	16	18
	C	11	8	10	11	17	13	16	18
56	A	12	9	12	13	19	14	18	21
	B	14	10	13	14	20	15	19	21
	C	12	10	12	13	18	14	17	19
57	A	12	10	11	13	18	15	17	19
	B	14	11	13	14	20	16	19	21
	C	13	11	12	14	19	16	18	20
58	A	10	8	10	11	16	12	15	17
	B	11	8	10	12	17	13	16	19
	C	9	8	9	10	14	12	14	15
59	A	13	10	12	14	20	15	19	21
	B	13	10	12	13	21	15	19	21
	C	10	8	9	10	17	13	16	17
60	A	9	7	9	9	15	11	14	15
	B	16	12	14	17	22	18	21	24
	C	14	12	13	14	21	18	20	21
61	A	13	10	12	14	21	16	19	23
	B	19	13	16	20	26	19	22	27
	C	12	9	11	13	19	14	17	20
62	A	15	11	14	16	23	17	21	23
	B	13	10	12	13	20	15	19	19
	C	12	9	11	12	18	14	17	18
63	A	16	12	15	17	24	17	22	25
	B	15	11	14	16	22	16	20	23
	C	11	8	10	11	17	13	16	18
64	A	16	13	15	17	23	18	22	24
	B	15	13	14	16	22	18	21	23
	C	13	11	12	12	19	15	17	19
65	A	12	9	12	13	21	16	20	22
	B	14	10	13	14	20	16	19	22
	C	11	8	10	11	17	13	17	18

Table 2: Mean Speed and Effective Gust Categories - Seasonal

Location	Configuration	Mean Wind Speed (mph)				Effective Gust Wind Speed (mph)			
		Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter
66	A	12	11	12	13	19	16	18	19
	B	12	11	12	13	19	16	18	19
	C	12	10	11	12	18	15	18	19
67	A	14	11	13	14	22	18	20	23
	B	13	11	12	13	19	17	19	20
	C	13	12	12	13	19	17	18	20
68	A	13	11	13	14	21	17	20	22
	B	12	10	11	12	18	15	18	19
	C	12	10	11	12	17	15	17	18
69	A	13	10	12	13	20	16	19	21
	B	13	11	12	13	20	16	19	21
	C	12	11	12	13	19	16	18	19
70	A	14	12	14	16	23	19	22	25
	B	14	12	14	15	23	19	22	24
	C	15	14	14	15	22	20	21	23
71	A	11	8	10	11	18	13	17	18
	B	11	9	11	12	18	14	17	18
	C	10	8	9	10	16	12	15	16
72	A	12	9	11	12	19	14	18	20
	B	16	12	15	17	22	17	21	23
	C	13	10	13	13	18	14	18	19
73	A	9	7	9	10	16	12	15	17
	B	16	12	15	17	22	17	21	24
	C	14	11	13	14	19	14	18	19
74	A	19	14	18	20	28	20	26	29
	B	17	13	16	19	26	20	24	28
	C	12	9	10	12	18	14	16	18
75	A	12	9	12	13	20	15	19	21
	B	11	8	10	12	18	14	17	20
	C	12	9	11	12	18	14	17	18
76	A	18	14	17	20	27	21	26	29
	B	18	14	17	20	27	21	25	29
	C	14	11	13	14	21	17	20	22
77	A	19	14	17	21	27	20	25	30
	B	20	15	18	22	28	21	26	31
	C	13	9	12	13	18	14	17	19
78	A	13	10	12	13	22	17	21	22
	B	12	10	11	12	20	17	19	21
	C	13	11	12	13	19	16	18	19

Table 2: Mean Speed and Effective Gust Categories - Seasonal

Location	Configuration	Mean Wind Speed (mph)				Effective Gust Wind Speed (mph)			
		Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter
79	A	17	13	15	17	26	19	24	26
	B	14	11	13	15	22	17	21	23
	C	16	12	15	16	21	17	20	22
80	A	9	7	8	9	16	12	15	16
	B	9	7	8	9	15	13	15	16
	C	8	7	8	9	14	11	13	15
81	A	8	6	8	9	14	11	13	15
	B	8	6	7	8	14	11	13	14
	C	10	8	9	10	16	13	15	16
82	A	8	6	8	8	14	11	13	15
	B	7	6	7	8	13	10	13	14
	C	16	14	15	16	22	19	21	23
83	A	18	13	17	19	25	19	24	27
	B	15	12	14	16	22	18	21	24
	C	12	10	12	13	19	15	18	20
84	A	10	8	10	10	17	13	16	17
	B	15	12	13	15	21	16	19	21
	C	13	10	12	13	19	15	18	19

Seasons	Months	Mean Wind Criteria Speed (mph)		Effective Gust Criteria (mph)	
Spring	March - May	≤ 12	Comfortable for Sitting	≤ 31	Acceptable
Summer	June - August	13 - 15	Comfortable for Standing	> 31	Unacceptable
Fall	September - November	16 - 19	Comfortable for Walking		
Winter	December - February	20 - 27	Uncomfortable for Walking		
Annual	January - December	> 27	Dangerous Conditions		

Configurations

(A) No Build Existing site and surroundings
(B) Build Project with existing surroundings
(C) Full Build Project with future surroundings

Notes