

# **4. RETAIL PLAN**

## **RESPONSE TO COMMENTS**

## **CHAPTER 4 RETAIL PLAN**

### **R4.1 RETAIL PROGRAMMING**

The Applicant received comments encouraging the Applicant to think more broadly about potential retail uses in the district beyond food services. As described in the Commercial Building B Design Review book submitted on 9/6/18, potential uses could include restaurants, including fast casual dining options, entertainment/sporting venues and/or bars, consumer service retail and dry goods, as well as collaboration spaces such as art galleries that double as coffee shops. The MIT COOP will also return at a reduced size. While the exact mix of retailers and uses is yet to be determined, the Applicant is targeting a diverse mix of retailers that will create activation in Kendall Square during both days and evenings as well as weekdays and weekends. The Applicant will meet with the CRA and the City's Economic Development Department regularly to discuss retail opportunities.

*Exhibit Reference: FIG. N/A*

*Comment Reference: CDD Staff Letter, CRA Staff Letter*

### **R4.2 ANNUAL MONITORING**

The Applicant received a request to work with the CRA to establish a schedule for annual retail reporting. The Applicant notes this comment, and will work with the CRA to establish a review schedule. As documented in the Concept Plan Amendment in Section 4.2.5, the Applicant remains committed to initially meeting with the CRA at least twice annually after the issuance of a building permit to discuss the retail market, new retail concepts, emerging local and independent retailers, and general leasing activity.

*Exhibit Reference: N/A*

*Comment Reference: CRA Staff Letter*

# **6. INFRASTRUCTURE**

## **RESPONSE TO COMMENTS**

## CHAPTER 6 INFRASTRUCTURE

### R6.1 RESILIENCY

The Applicant received inquiries about the plans to mitigate flooding associated with the potential 2030 100-year storm and 2070 10-year storm. As shown on page 238 Figure 6.4 of the Concept Plan Amendment submission of September 6, 2018, the Project Site benefits from an existing elevation that projects little to no flooding throughout the Site. For the 10-year storm with impacts of climate change in 2070, minor flooding is expected in Broadway at Galileo Galilei Way, and along Main Street. The Applicant intends to design all Project components to meet or exceed the recommended planning flood elevations. To account for the probability of a concurrent precipitation event with storm surge propagation in stormwater infrastructure, the Applicant will study additional resiliency measures. These measures may include over-sized stormwater conveyance infrastructure, backflow preventers on effluent stormwater pipes, watertight internal gravity piping to the second floor, and the district wide stormwater management strategies.

Additionally, the Applicant may explore the potential for mobile, water filled or other type of temporary dam solutions as a secondary precaution to prevent potential flooding of the garage structure or major entrances. Ultimately, the recovery for any building will be dependent upon the duration and severity of a potential weather event but the combination of the natural elevation benefits and strategies listed above will allow for an efficient recovery.

*Exhibit Reference: (FIG. 6.4 IDCP p 238)*

*Comment Reference: DPW Letter*

### R6.2 MBTA HEADHOUSE RESILIENCY

The Applicant received a comment from the CRA that future submissions should address the resiliency of the MBTA Redline Outbound Headhouse in the Kendall Plaza. When the Single Environmental Impact Report (SEIR) was filed with MEPA in October 2015, the full extent of the potential future sea level rise impacts or the KSURP area and the MBTA Redline Outbound Headhouse were not yet known. As shown on Page 238, Figure 6.4 of the Concept Plan Amendment submission of September 6, 2018, minor flooding is expected along Main Street, but is not anticipated to impact the Kendall Plaza or the MBTA Redline Outbound Headhouse.

The Proponent is committed to working with the MBTA to explore and improve the resiliency of the MBTA Redline Outbound Headhouse to flooding. The Proponent will explore potential measures to assist the MBTA with making its transit facilities in the KSURP area more resilient to inland flooding due to extreme precipitation. Conceptual, potential measures aimed at making the Kendall Square station more resilient to flooding could include trench drains with greater capacity than the existing systems, which could be installed at all entrances to the station to redirect more runoff from the area away from staircases to the station platforms. A more intensive, but effective means of flood protection would be mobile flood barriers. These walls can be stored by the MBTA on-site for use when flooding from extreme storm events are predicted. The flood barriers could be installed at station entrances around ground level utility vaults and adjacent to air intake/exhaust to greatly minimize the potential for flooding to effect operations of the station.

*Exhibit Reference: (FIG. 6.4 IDCP p 238)*

*Comment Reference: CRA Staff Letter*

# **7. ENVIRONMENTAL IMPACTS**

## **RESPONSE TO COMMENTS**

## CHAPTER 7 ENVIRONMENTAL IMPACTS

### R7.1 SHADOW

The Applicant received comments requesting additional information on the shadow impacts to the Kendall Square Rooftop Garden. The Master Plan Shadow studies in Chapter 7, *Environmental Impacts* have been expanded with the supplemental presentation and animation file (2018-1102-IDCP-RTC-SHADOW STUDIES.ppsx) which illustrates shadows for the district for the following full days: Equinox: March 21 & September 21 (EST), Summer Solstice: June 21 (EST), Fall: October 21 (EST) and Winter Solstice: December 21 (EST). R7.1 FIG. 7.13-7.16 summarize the new shadows and the existing shadows with an enlarged area of the Kendall Square Rooftop Garden. The shadow studies are representative of the revised massing for Commercial Building B illustrated in this Response to Comments Chapter 1 (IDCP Oct Massing). Overall, for the specific times represented in R7.1 FIG. 7.13-7.16, the change in shadow on the Kendall Square Rooftop Garden due to the revised IDCP Oct massing is negligible. The East facade reduction allows more light to enter the Kendall Square Rooftop Garden at the new vertical connector location at certain times of the year and allows for improved visual wayfinding to the Kendall Square Rooftop Garden from the Kendall Plaza.

*Exhibit Reference: (R7.1 FIG. 7.13 - 7.16) (IDCP p260 – p267), (2018-1102-IDCP-RTC-SHADOW STUDIES.ppsx)*

*Comment Reference: CDD Staff Letter*

# R7.1 SHADOWS

## EQUINOX MARCH 21 & SEPTEMBER 21 (EST)

R7.1 FIG. 7.13



FIGURE 7.13A - MARCH 21, 9:00 AM

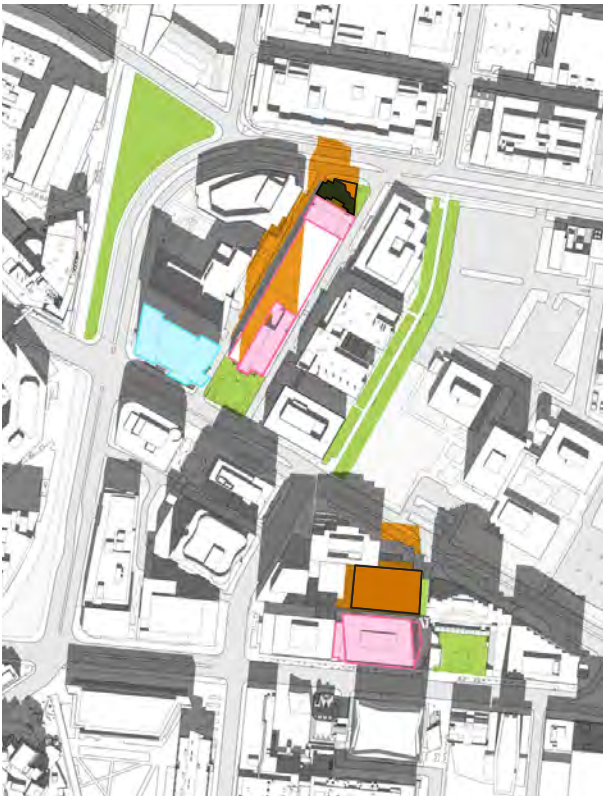


FIGURE 7.13B - MARCH 21, 12:00 PM

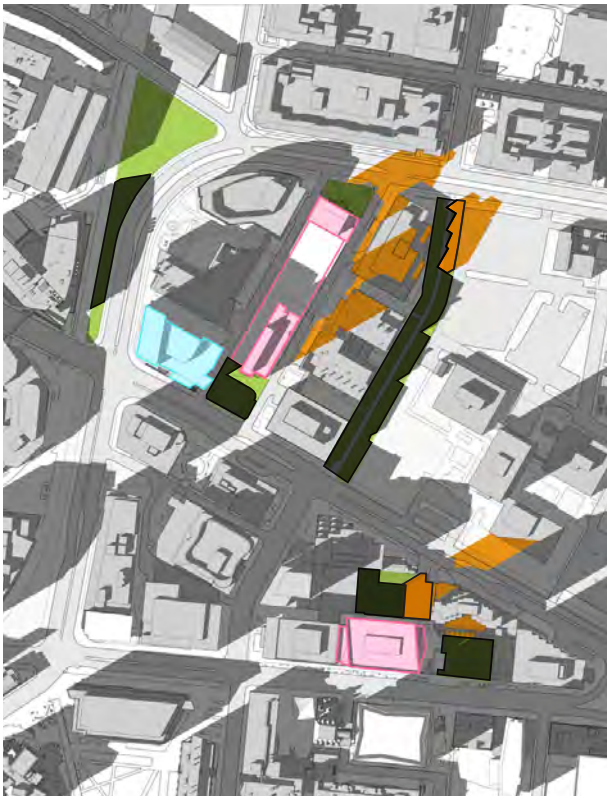
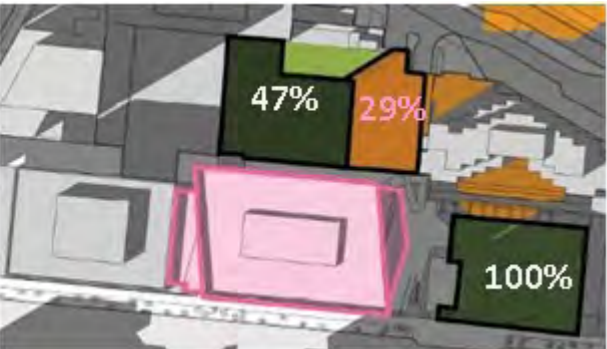
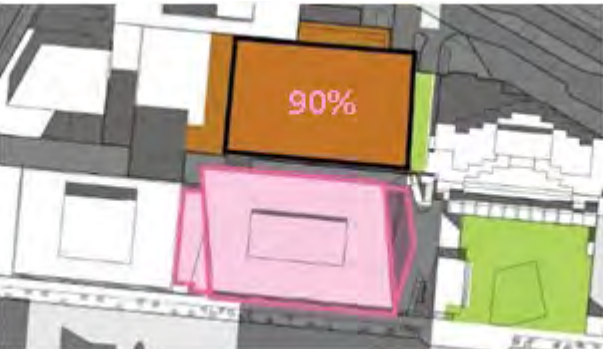
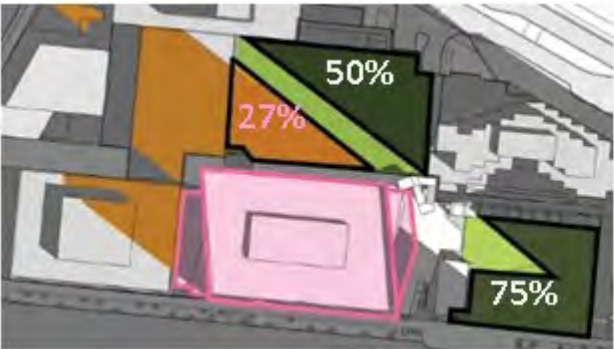


FIGURE 7.13C - MARCH 21, 3:00 PM



- Buildings (Under Construction)
- Proposed Buildings

# R7.1 SHADOWS SUMMER SOLSTICE JUNE 21 (EST)

R7.1 FIG. 7.14



FIGURE 7.14A - JUNE 21, 9:00 AM



FIGURE 7.14B - JUNE 21, 12:00 PM

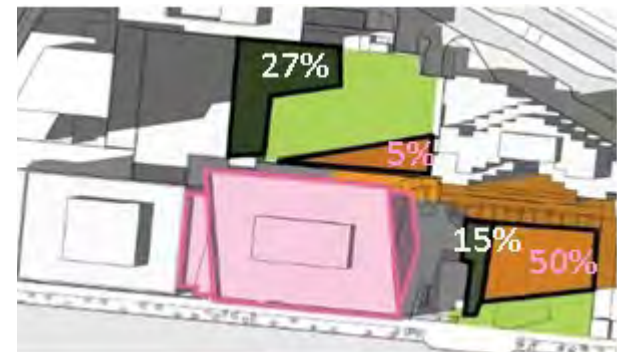


FIGURE 7.14C - JUNE 21, 3:00 PM



Buildings (Under Construction)  
Proposed Buildings

# R7.1 SHADOWS FALL OCT 21 (EST)

R7.1 FIG. 7.15

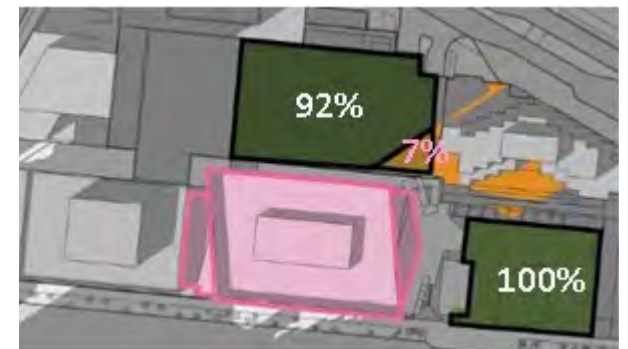
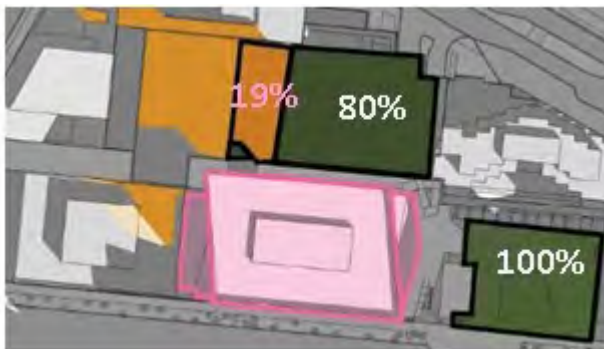
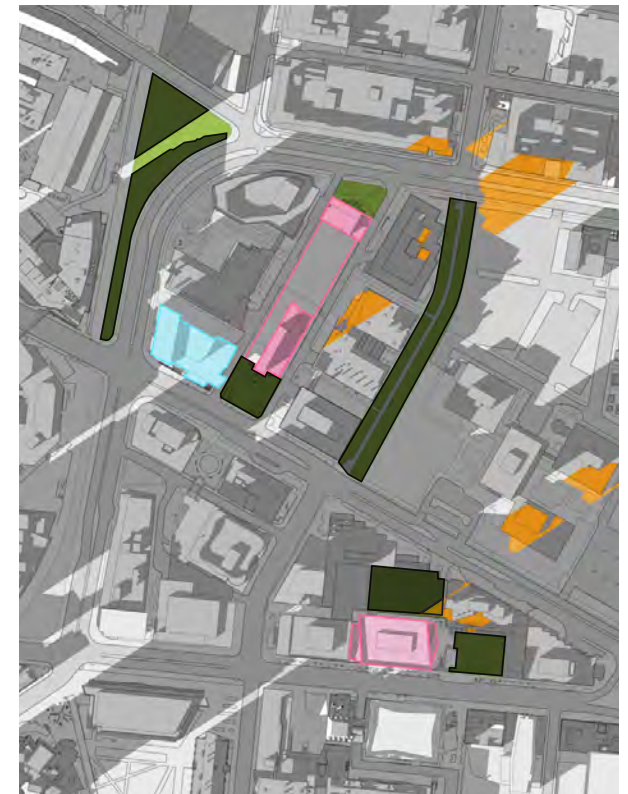


FIGURE 7.15A – OCT 21, 9:00 AM

FIGURE 7.15B - OCT 21, 12:00 PM

FIGURE 7.15C - OCT21, 3:00 PM

- New Shadow
- Existing Shadow
- New Shadow over open space
- Existing Shadow over open space

- Buildings (Under Construction)
- Proposed Buildings

# R7.1 SHADOWS

## WINTER SOLSTICE DECEMBER 21 (EST)

R7.1 FIG. 7.16

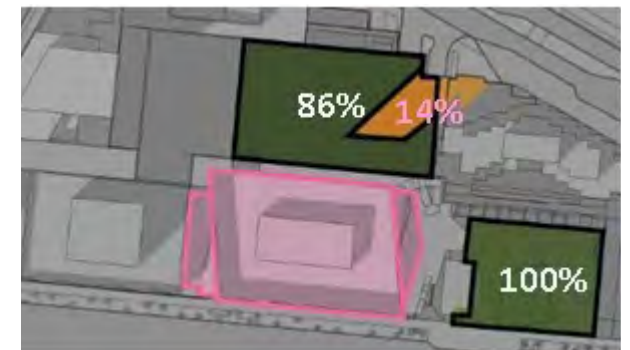
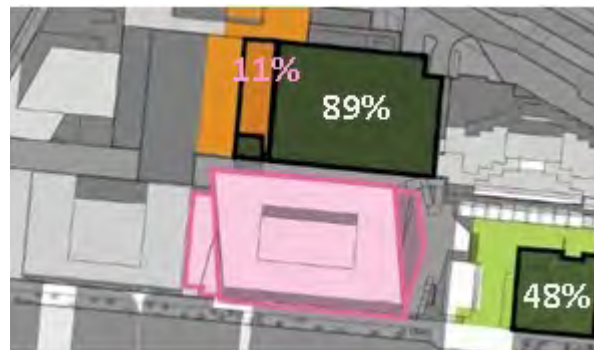


FIGURE 7.16A - DECEMBER 21, 9:00 AM

FIGURE 7.16B - DECEMBER 21, 12:00 PM

FIGURE 7.16C - DECEMBER 21, 3:00 PM

■ New Shadow  
■ Existing Shadow  
■ New Shadow over open space  
■ Existing Shadow over open space

■ Buildings (Under Construction)  
■ Proposed Buildings

## CHAPTER 7 ENVIRONMENTAL IMPACTS

### R7.1 THERMAL COMFORT STUDY

In addition to the Shadow Studies: to provide a more complete picture as it relates to human comfort, the Applicant conducted a Thermal Comfort Study using Energy Plus Weather data (EPW) for Boston and the Universal Thermal Climate Index Method (UTCI). A Thermal Comfort Study is a tool used to help analyze the composite impacts of sun, shadow, humidity and other external climate factors that determine the perception of comfort at a specific time. For example, the combination of bright sun and high humidity are generally uncomfortable as are high shade and low temperatures. The study shows the impact to the range of comfort levels on the Kendall Square Rooftop Garden based on the proposed building massing. The study also provides better informed determinations on impact to planting and programmatic uses on the Kendall Square Rooftop Garden as described in response Chapter R3.1

Figures R7.1 FIG.7.17-7.23 show the comparison of the existing conditions and proposed conditions created by Commercial Building B (Oct 10 Massing). As shown in the following analysis, during the warm summer months, human comfort can be increased through the addition of shade “Tactical Shade”. During the period of greatest use (June-September), human comfort on the Kendall Square Rooftop Garden will increase. See R7.1 FIG. 7.22 On an annual basis, there are approximately 20 additional hours of comfort representing a 4 percent increase.

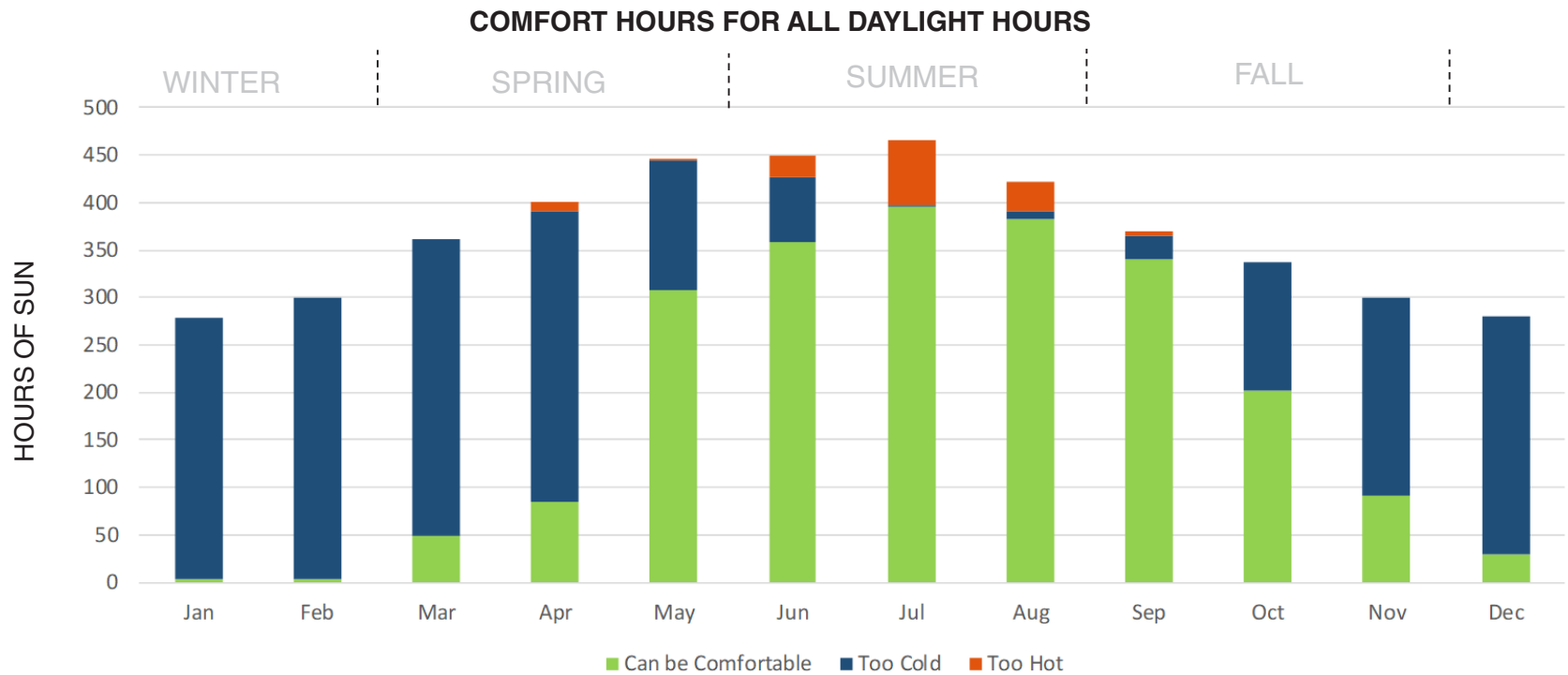
*Exhibit Reference: (R7.1 FIG. 7.17-7.23)*

*Comment Reference: CDD Staff Letter*

# R7.1 THERMAL COMFORT STUDY

## MONTHLY COMFORT CONDITIONS (DATA FROM BOSTON LOGAN)

R7.1 FIG. 7.17



**TOO HOT**

CONDITIONS ARE UNCOMFORTABLY HOT-EVEN IN THE SHADE

**138** hours  
**3%**



**TOO COLD**

CONDITIONS ARE UNCOMFORTABLY COLD-EVEN IN DIRECT SUN

**2022** hours  
**46%**



**CAN BE COMFORTABLE**

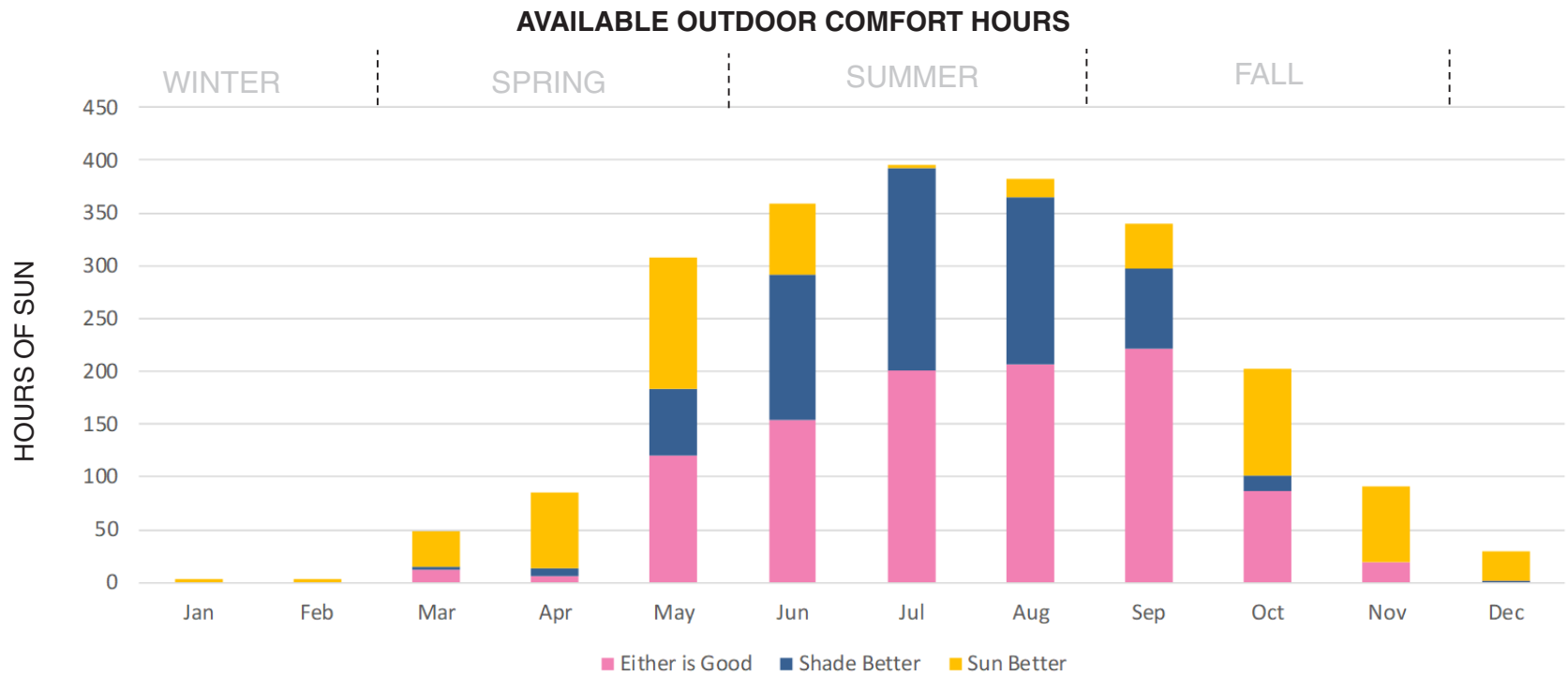
COMFORTABLE CONDITIONS ARE AVAILABLE-IN THE SUN OR THE SHADE OR BOTH

**2246** hours  
**51%**

# R7.1 THERMAL COMFORT STUDY

## MONTHLY HOURS OF OUTDOOR COMFORT (BOSTON LOGAN)

R71 FIG. 7.18



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Either is Good	0	0	12	15	209	322	466	478	430	137	25	3
Shade Better	0	0	4	8	72	148	193	171	106	20	6	1
Sun Better	3	3	34	73	124	68	5	18	43	101	71	27



**SUN BETTER**

IT IS TOO COLD IN THE SHADE –  
BUT COMFORTABLE  
IN THE SUN

**566 hours**  
**25%**



**SHADE BETTER**

IT IS TOO HOT IN THE SUN –  
BUT COMFORTABLE IN THE  
SHADE

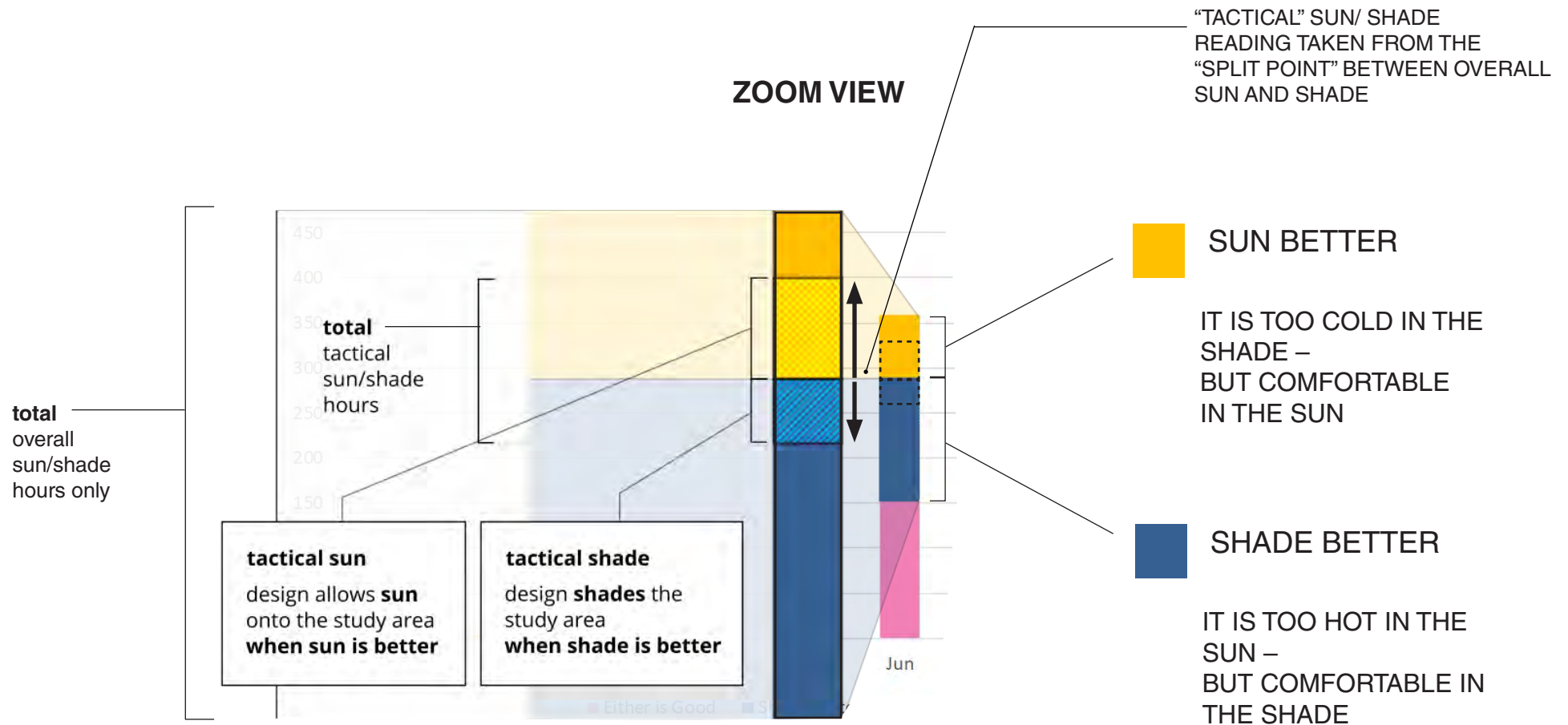
**650 hours**  
**29%**



**EITHER IS GOOD**

IT IS COMFORTABLE IN BOTH THE  
SUN AND THE SHADE

**1030 hours**  
**46%**

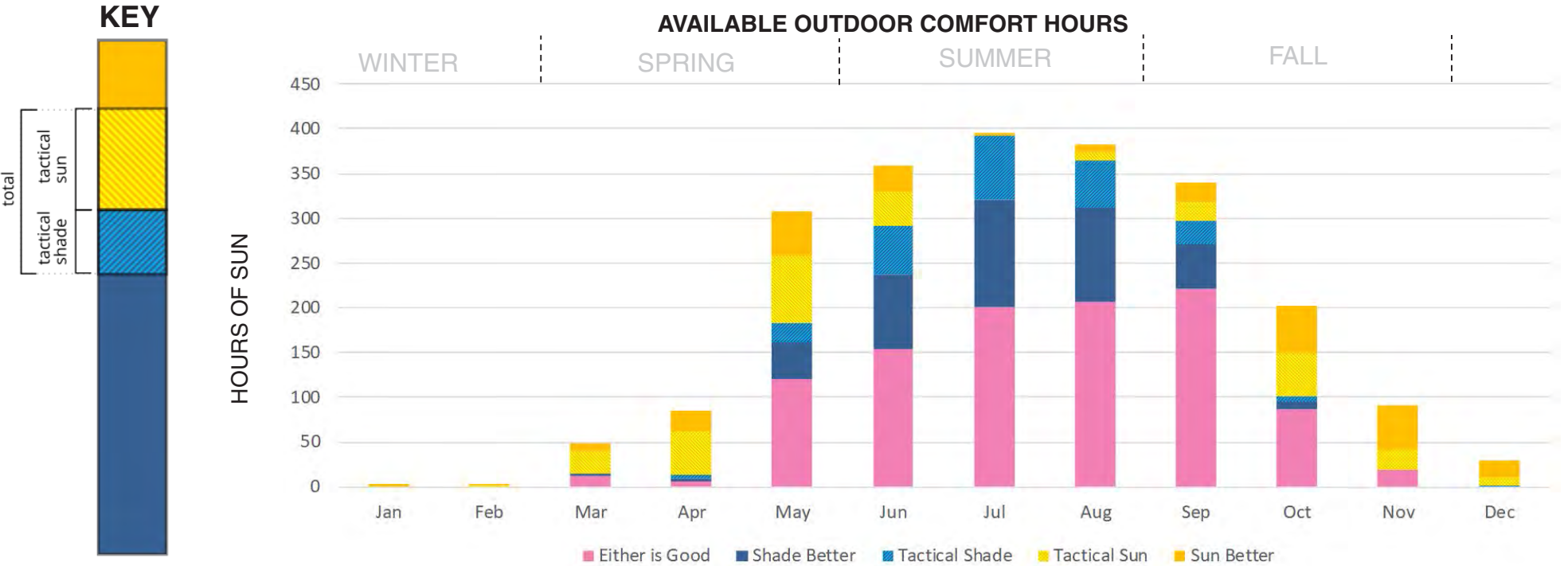


**GRAPHIC KEY SHOWING HOW “TACTICAL SUN” AND “TACTICAL SHADE” ARE DEFINED WITHIN THE TWO CRITERIA OF WHEN SUN OR SHADE IS BETTER DURING A YEAR**

# R7.1 THERMAL COMFORT STUDY

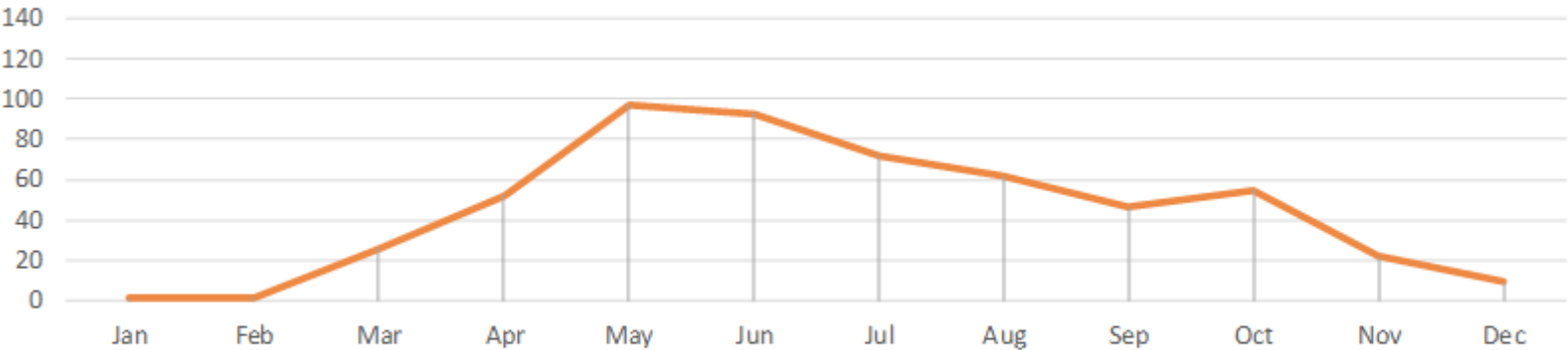
## EXISTING CONDITIONS: COMFORT HOURS ON ROOFTOP GARDEN

R7.1 FIG. 7.20



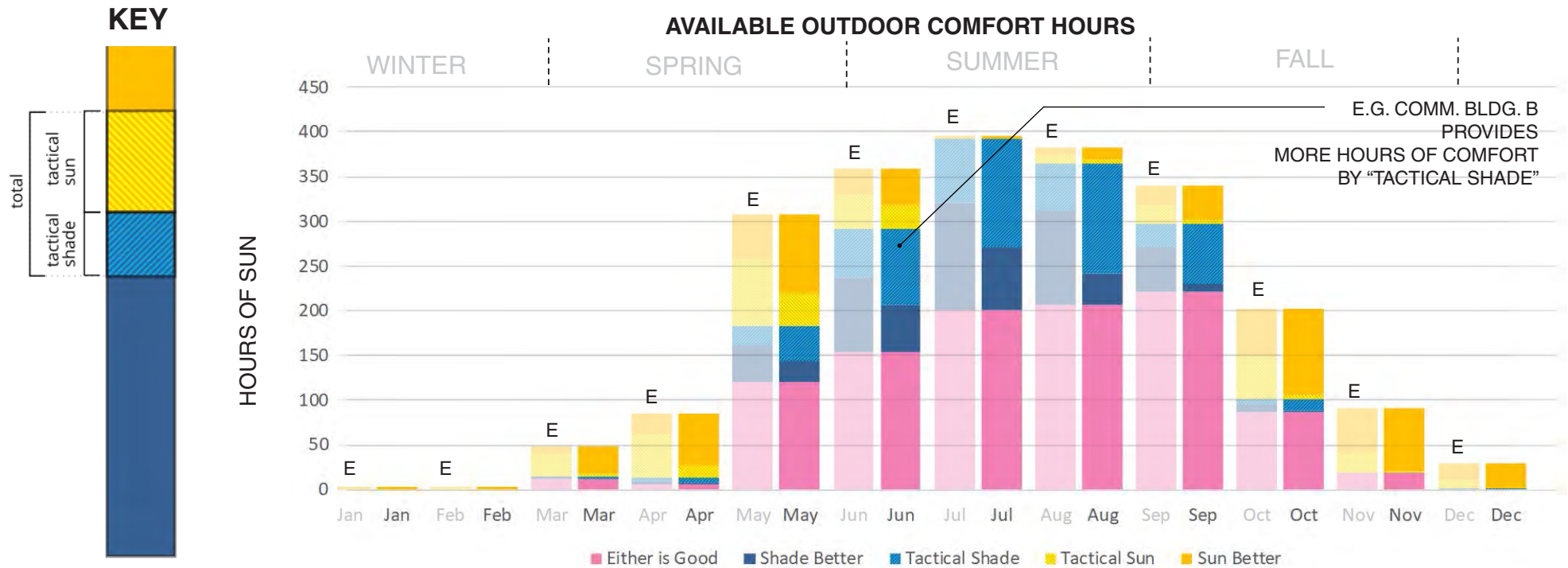
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Tactical Sun	0.8	1.4	25.1	48.3	74.6	39.0	1.2	8.8	20.8	48.7	21.7	4.4
Tactical Shade	-	-	0.5	3.8	22.8	53.2	70.6	52.5	25.0	5.9	-	-
<b>Total</b>	<b>0.8</b>	<b>1.4</b>	<b>25.6</b>	<b>52.1</b>	<b>97.4</b>	<b>92.1</b>	<b>71.8</b>	<b>61.3</b>	<b>45.8</b>	<b>54.6</b>	<b>21.7</b>	<b>4.4</b>

“TACTICAL” SUN/SHADE (HOURS BY MONTH)  
EXISTING CONDITION



## R7.1 THERMAL COMFORT STUDY

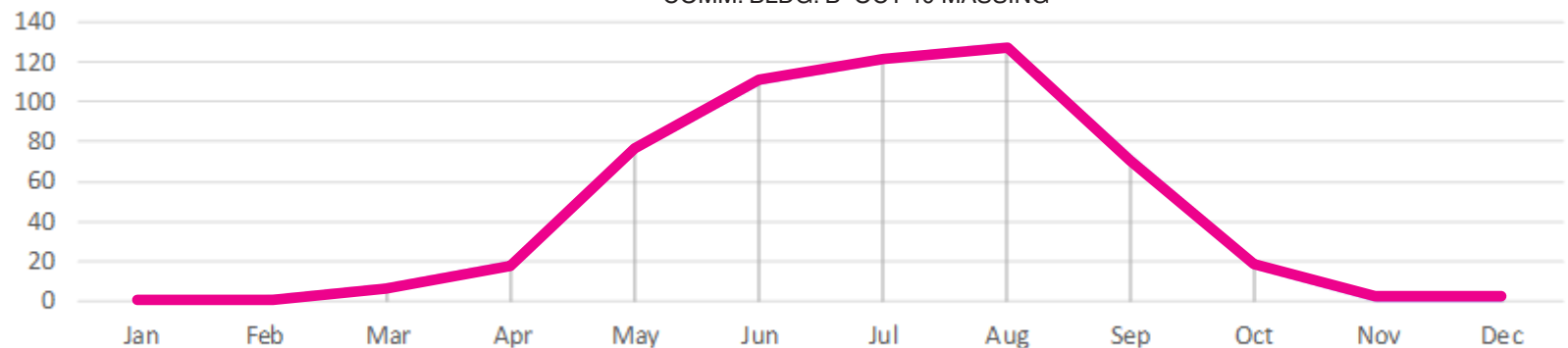
**HOURS THAT COMMERCIAL BUILDING B ALLOWS SUN OR CREATES SHADE ON THE ROOFTOP GARDEN WHEN IT IS BENEFICIAL FOR COMFORT (“E” EXISTING SHOWN FOR COMPARISON)** R7.1 FIG. 7.21



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Tactical Sun	0.1	0.0	3.3	13.2	36.5	27.2	1.0	4.6	5.0	5.4	1.3	0.1
Tactical Shade	-	-	2.8	5.4	40.5	82.6	120.3	123.0	66.2	13.3	-	-
<b>Total</b>	<b>0.1</b>	<b>0.0</b>	<b>6.1</b>	<b>18.6</b>	<b>76.9</b>	<b>109.8</b>	<b>121.3</b>	<b>127.6</b>	<b>71.2</b>	<b>18.7</b>	<b>1.3</b>	<b>0.1</b>

### “TACTICAL” SUN/SHADE (HOURS BY MONTH)

COMM. BLDG. B OCT 10 MASSING



## R7.1 THERMAL COMFORT STUDY

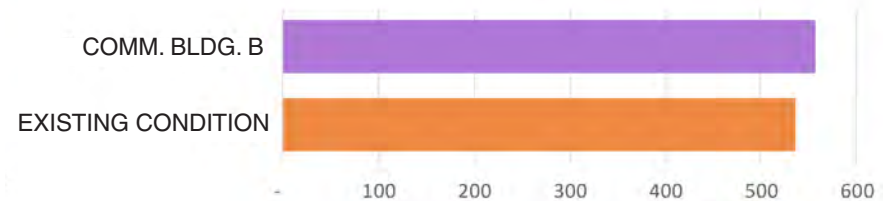
### COMFORT HOURS COMPARISON FOR ROOFTOP GARDEN

#### EXISTING CONDITION VS. COMMERCIAL BUILDING B. (OCT 10 MASSING)

R7.1 FIG. 7.22

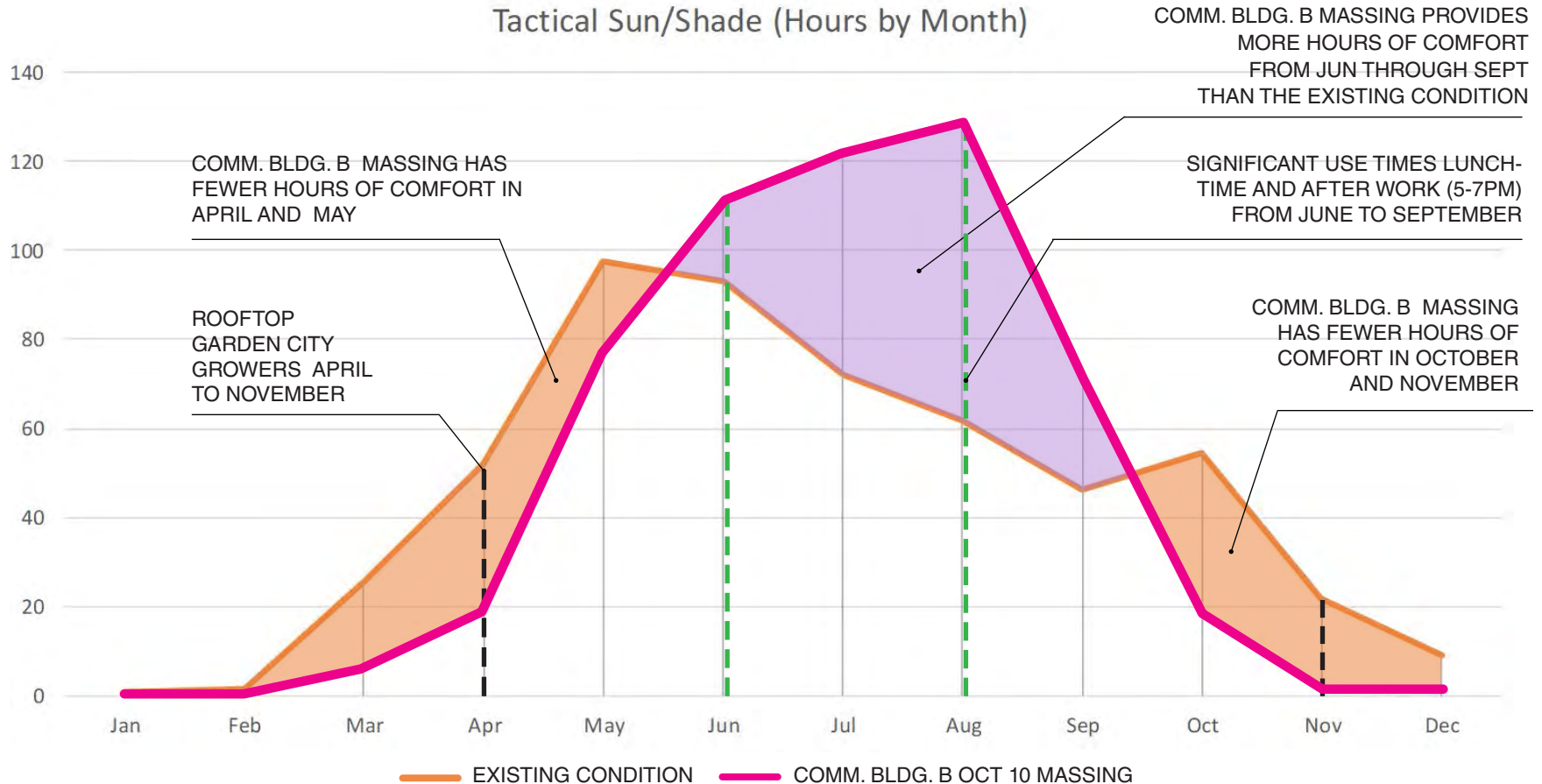
	Tactical Shade	Tactical Sun	Total
EXISTING CONDITION	237	298	536
COMM. BLDG. B	459	98	556

#### TOTAL "TACTICAL" SUN/SHADE (HOURS)



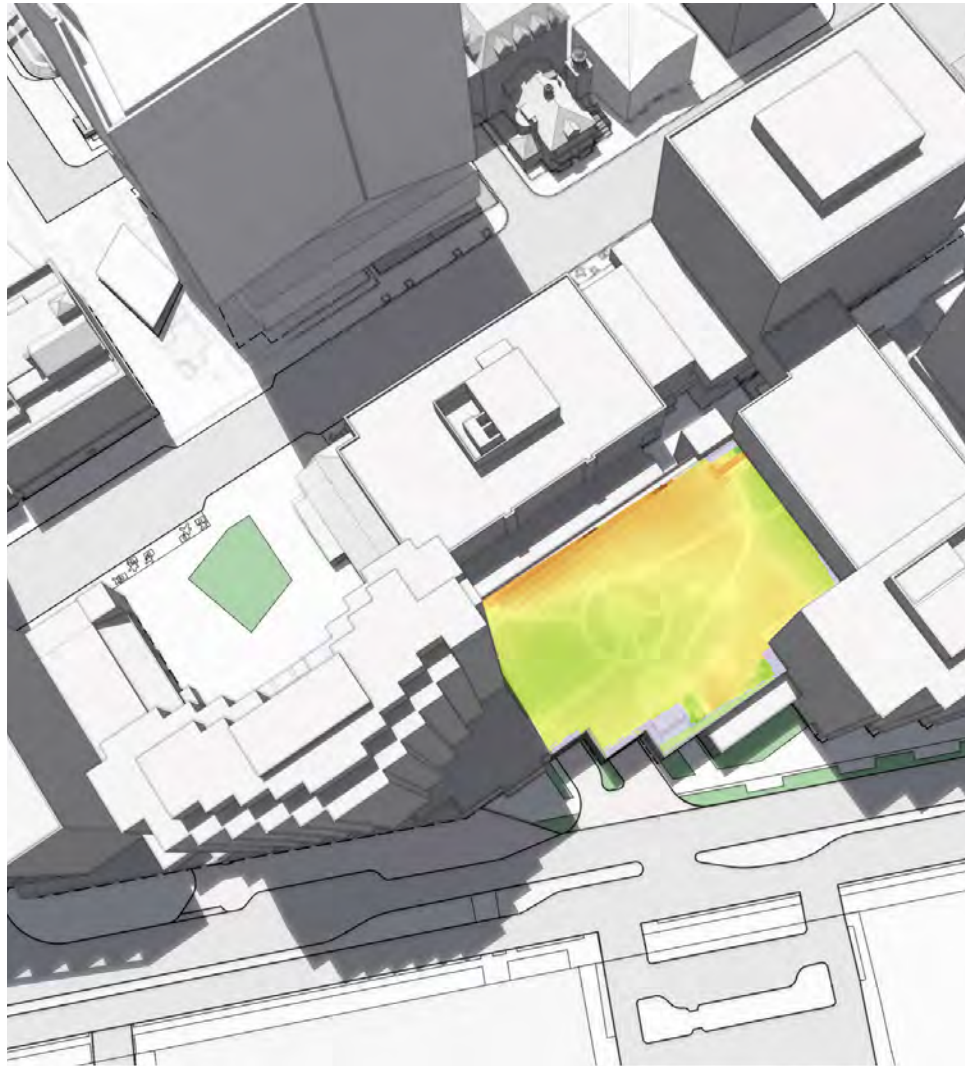
**APPROX 20 HOURS  
(4% INCREASE IN COMFORT HOURS)**

#### Tactical Sun/Shade (Hours by Month)

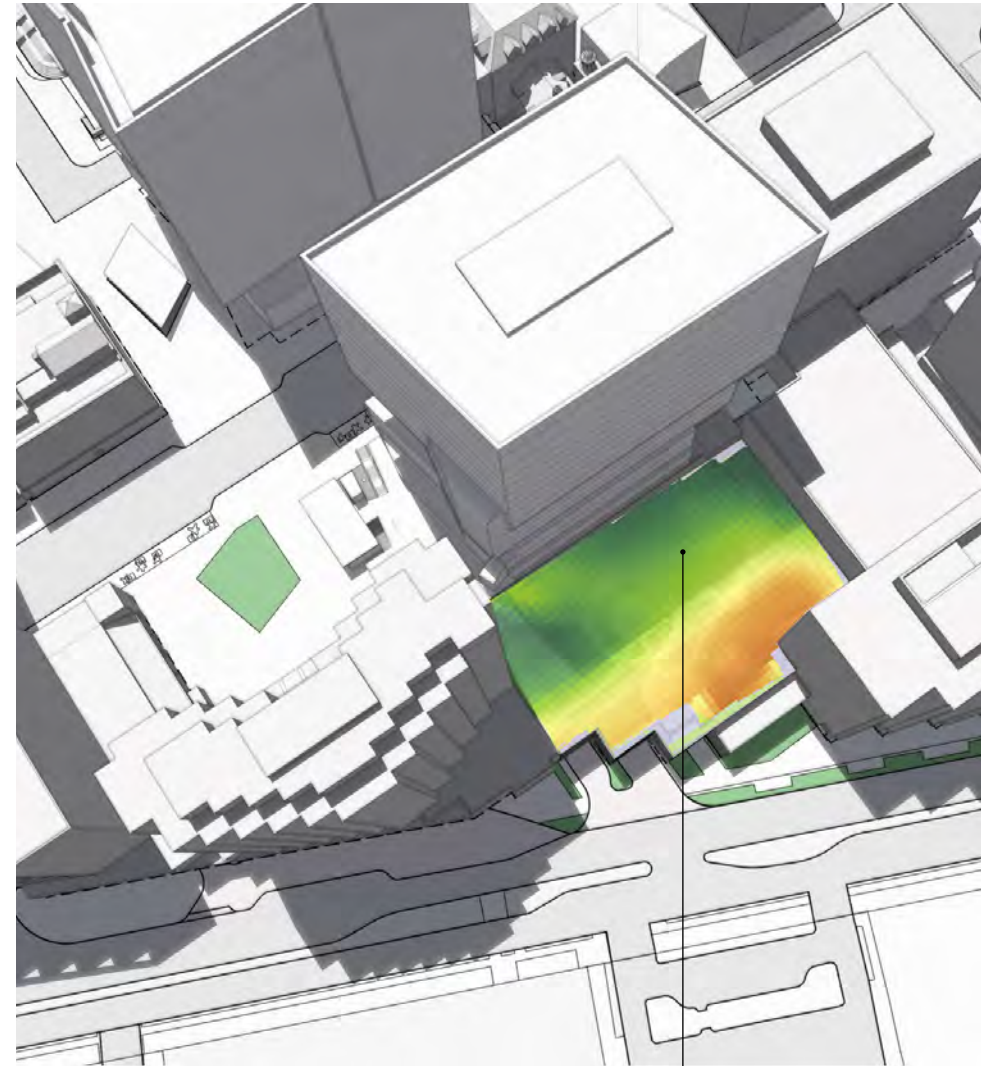


# R7.1 THERMAL COMFORT STUDY COMFORT HOURS ACHIEVED THROUGH “TACTICAL” SUN/SHADE ON THE ROOFTOP GARDEN FOR THE FULL YEAR

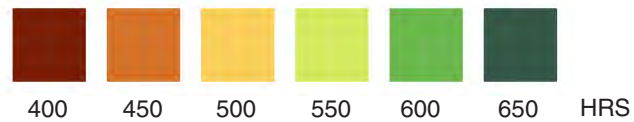
R7.1 FIG. 7.23



**EXISTING CONDITION**



**COMM. BLDG. B (OCT 10 MASSING)**



THIS GREEN AREA REPRESENTS  
INCREASED COMFORT THROUGH  
“TACTICAL” SHADE IN THE SUMMER

## R7.2 WIND

The Applicant received comments expressing concern over proposed wind conditions north of Broadway, in the Kendall Plaza and the Kendall Square Rooftop Garden. The Master Plan wind tunnel study presented in Chapter 7, *Environmental Impacts* of the Concept Plan Amendment, should be considered a baseline with the understanding that each individual building's Design Review submission will include an update to the baseline for comparative purposes. Accordingly, undesirable wind conditions that are presented in the Concept Plan Amendment are not proposed as final but are shown as a starting point with which to better inform the designs of each building and their associated public realm improvements.

Further, in the case of the North Parcel, the streetscape plantings were not included in the baseline study as the City CRA ALTA cycle Track plans had not been finalized. It is expected that the inclusion of the associated landscape features in the ALTA plans will have a material impact on winter wind mitigation. Future Design Review packages for 135 Broadway will have the benefit of this design information.

In the case of the East Parcel, low wind speeds comfortable for sitting or standing are anticipated during the summer in the Kendall Plaza and in the Kendall Square Rooftop Garden. In the winter, proposed wind comfort conditions in the Kendall Plaza and in the Kendall Square Rooftop Garden are generally comfortable for their intended use, including walking, strolling or better. However, in the winter, wind conditions in these areas may not be of a concern due to limited usage of these spaces and therefore, slightly higher wind activity comfortable for standing and strolling would likely be acceptable and consistent with the anticipated seasonal use of these areas.

*Exhibit Reference: (FIG. 7.6 -7.11 IDCP 252 – 257) (RWDI MEMO-R7.2 FIG. 1A,1B)*

*Comment Reference: CDD Staff Letter*

## R7.3 LIGHT POLLUTION

The CRA requested that a discussion of light pollution reduction be added to Chapter 7, *Environmental Impacts*, or Chapter 8, *Sustainability Plan* of the Concept Plan Amendment. Exterior lighting guidelines, including graphics depicting acceptable and unacceptable lighting fixtures, are provided on page 307 of Chapter 10, *Design Guidelines* of the Concept Plan Amendment.

*Exhibit Reference: N/A*

*Comment Reference: CRA Staff Letter*

## R7.2 WIND

R7.2 FIG. 1A



600 Southgate Drive  
Guelph, ON N1G 4P6  
Canada

Tel: +1.519.823.1311  
Fax: +1.519.823.1316

November 1, 2018

Michael Tilford  
Senior Project Manager  
800 Boylston Street, Suite 1900  
Boston, MA 02199-8103

**Re: Pedestrian Wind Assessment  
145 Broadway Street  
RWDI Project #1603158**

Dear Mike,

RWDI was retained to conduct a Pedestrian Wind assessment for the proposed 325 Main Street development in Cambridge, MA. This was achieved through wind tunnel testing of a 1:300 scale model of the development and surrounding area. RWDI's assessment focused on critical pedestrian areas including main and secondary entrances and sidewalks along adjacent and nearby streets. The results of RWDI's assessment of the pedestrian wind conditions were subsequently summarized and discussed in a report dated August 7, 2018.

Since issuing these results, RWDI understands that the massing of the 325 Main Street development has been updated. The following document provides commentary with regards to the effect of these massing changes on the predicted wind conditions around the project site.

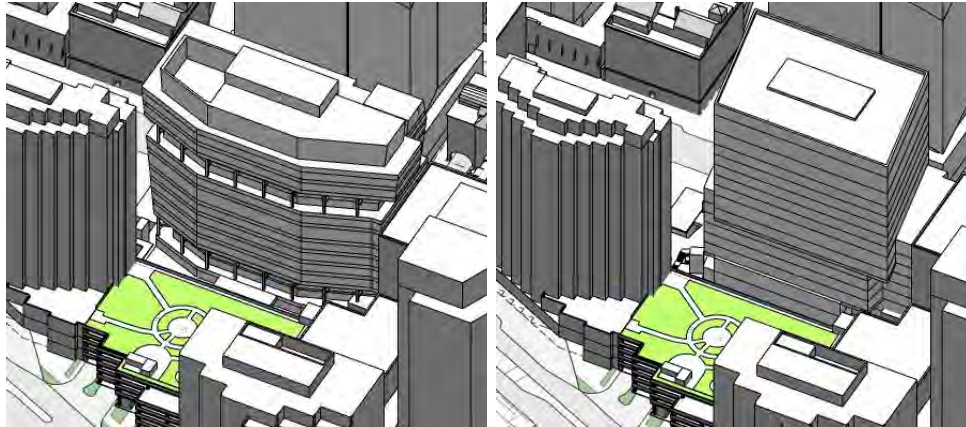
Renderings depicting the massing tested for the wind study and the updated massing are shown in **Images 1 and 2**.



*Image 1: Rendering Showing 325 Main Street Massing Tested for Wind Study (Left) and the Updated 325 Main Street Massing (Right) – Views from South*

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*Image 2: Rendering Showing 325 Main Street Massing Tested for Wind Study (Left) and the Updated 325 Main Street Massing (Right) – Views from North*

As evident in **Images 1 and 2**, the updated massing sits on a similar size footprint as the massing tested for the wind study. Although the updated massing is a story taller, it is also narrower and provides additional massing setbacks which tend to intercept wind flows at higher elevations and may prevent those wind flows from reaching grade level, which is a positive feature from a pedestrian comfort perspective.

It is RWDI's opinion that the updated 325 Main Street massing is likely to result in similar wind conditions around the project site with some relatively localized variations to the predicted wind conditions presented in our report dated August 7, 2018. If the design team wishes to quantify these changes precisely, additional wind tunnel testing can be undertaken.

Our opinion as stated herein is based on the results from our wind tunnel tests and our experience with similar buildings in the Cambridge area. We trust this satisfies your current requirements. Should you have any questions or require additional information, please do not hesitate to contact us.

Yours truly,

Kevin Bauman, B.Eng., EIT.  
Technical Coordinator

Bill Smeaton, P.Eng.  
Principal / Senior Project Manager

## **CHAPTER 8 SUSTAINABILITY**

### **R8.1 SUSTAINABLE DEVELOPMENT**

The Applicant received a comment regarding improved sustainability and district energy opportunities between the 355 and 325 Main Street buildings. Additional sustainability and energy efficiency studies will be developed and presented with the ongoing Design Review of Commercial Building B.

*Exhibit Reference: FIG. N/A*

*Comment Reference: CDD Staff Letter*

### **R8.2 COMPOSTING**

The Applicant received comments requesting that a discussion of composting be added to section 8.4 of the Concept Plan Amendment. In partnership with vendors and tenants, the Applicant has implemented waste best management practices, including single stream recycling, composting, and e-waste programs for tenant solid waste in all of their operating regions. As a result, 59.6 percent of office waste by weight is recycled or composted across our portfolio, which is a 24 percent increase since 2008. The Applicant will work closely with future tenants to promote responsible waste management practices, including haul trip optimization and composting at cafés and restaurants. Additionally, the Applicant will work with future tenants to ensure that they have signage and receptacles, and the building has designated central compost bins with frequently scheduled pickup.

*Exhibit Reference: FIG. N/A*

*Comment Reference: CRA Staff Letter*

## **CHAPTER 9 PHASING**

### **R9.1 RESIDENTIAL BUILDING SOUTH**

The Applicant received comments requesting additional information on the timing of the Residential South building Design Review, and the status of the Blue Garage rooftop study. The Applicant is committed to submitting a Design Review package for the Residential South Building upon conclusion of Design Review for Commercial Building B. The Applicant is currently planning for this to be in Q1 2019.

*Exhibit Reference: FIG. N/A*

*Comment Reference: CDD Staff Letter*

## **CHAPTER 10 DESIGN GUIDELINES**

### **R10.1 325 MAIN STREET**

Applicant received comments about the modification to Design Guidelines to emphasize the importance of the Kendall Square Plaza and the planned connections and circulation. Applicant proposes the following specific addition to Chapter 10 *Design Guidelines*.

**KENDALL SQUARE PLAZA:** As a central congregation and circulation space, Kendall Plaza has an important role in defining the public experience of Kendall Square. Buildings that directly abut the square shall include ground floor uses that contribute to the activation of the Plaza while ensuring continued circulation through the plaza and adjoining public spaces. Where necessary, these enhancements may include circulation pathways that become part of adjoining buildings (E.G. Staircase to the Kendall Square Rooftop Garden or the integration of Pioneer Way with ground floor retail).

*Exhibit Reference: FIG. N/A*

*Comment Reference: CDD Staff Letter*

