The Cambridge Cool Factor introduces performance-driven standards which contribute to public realm cooling, the mitigation of heat island effects and a greener Cambridge.

Origins of Cool Factor

Brown, et al. Zoning Petition

CRZTF Goals and Objectives

Existing City standards and requirements

Brown, et al. Zoning Petition

- Advocated to amend the Zoning Ordinance to require the calculation of a **"Green Factor Score"** for all development subject to the **Project Review Special Permit** requirements

- Proposed an **accounting system** that would evaluate green space (of varying soil depth), plantings, trees, green roofs, vegetated walls, native species, pervious paving, harvested rainwater irrigation, rain gardens and bioretention areas, and urban agriculture

- **Performance-based approach** of the Green Factor positively received by staff, Planning Board, and City Council with suggestions for further study and testing

The Cool Factor builds on CRZTF Goals

- **Effectiveness**
  value strategies that have demonstrated temperature reduction

- **Differentiation and Choice**
  favor performance driven criteria over prescriptive codes

- **People, Communities and Equity**
  encourage public realm enhancements

- **Flexibility**
  shape an easily implementable and adjustable tool

- **Quality**
  encourage greener open space and site design

The Cool Factor responds to CRZTF Objectives

1. Elevate and Floodproof
2. Design to Protect/Recover
3. Promote Passive Resilience

RESILIENT BUILDINGS

4. Green Infrastructure
5. Preserve Vegetation
6. Create Vegetation
7. Limit Paved Areas
8. Provide Shading
9. Use Reflective Surfaces

SITE/COOL FACTOR

10. Shelter in Emergencies
11. Create Emergency Plans
12. Implement Area-Wide Strategies (Social Resilience)

EMERGENCY RESPONSE PLANNING

13. Implement Area-Wide Strategies (Hazards)

Existing City standards and requirements

Flooding

- **Existing City stormwater requirements** include the Massachusetts Stormwater Management Policy and Standards, Cambridge's Concord-Alewife Stormwater Management Guidelines, Land Disturbance Regulations, Wastewater and Stormwater Drainage Regulations, and Stormwater Quality Best Management Practices

- Conservation Commission administers the **Massachusetts Wetlands Protection Act**

- **Green Building Review** zoning requirements tied to development review

Heat

- Requirements for **green area and/or permeable open space** through the base or overlay zoning district requirements

- Requirement for a Tree Study and compliance with the **Tree Protection Ordinance** for development subject to certain reviews
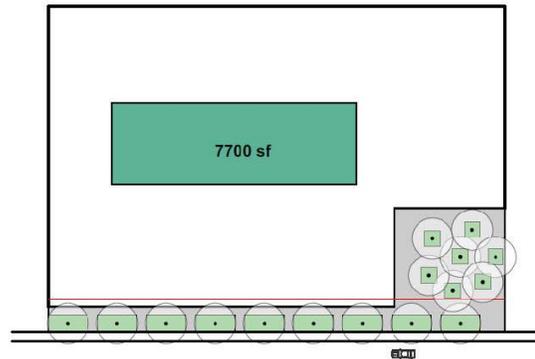
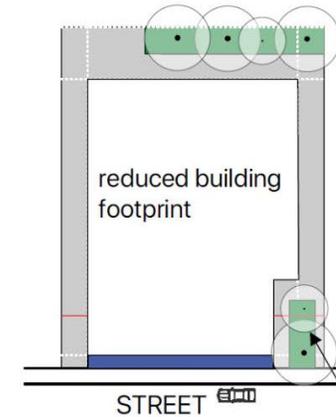# How We Arrived Here
Testing + Fine Tuning

FLEXIBLE + SCALABLE

Added more options, including green walls and shade structures
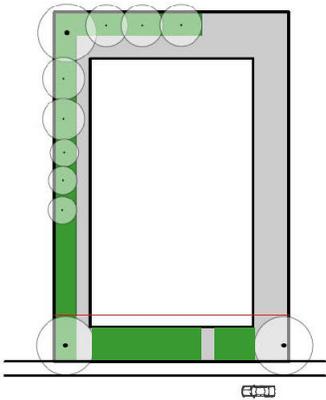
RESIDENTIAL C-3
OS Requirement 10%,
Cool Factor uses 20%

60%
20%
20%

7700 sf

INDUSTRY B
OS Requirement 0%,
Cool Factor uses 20%

62%
21%
11%
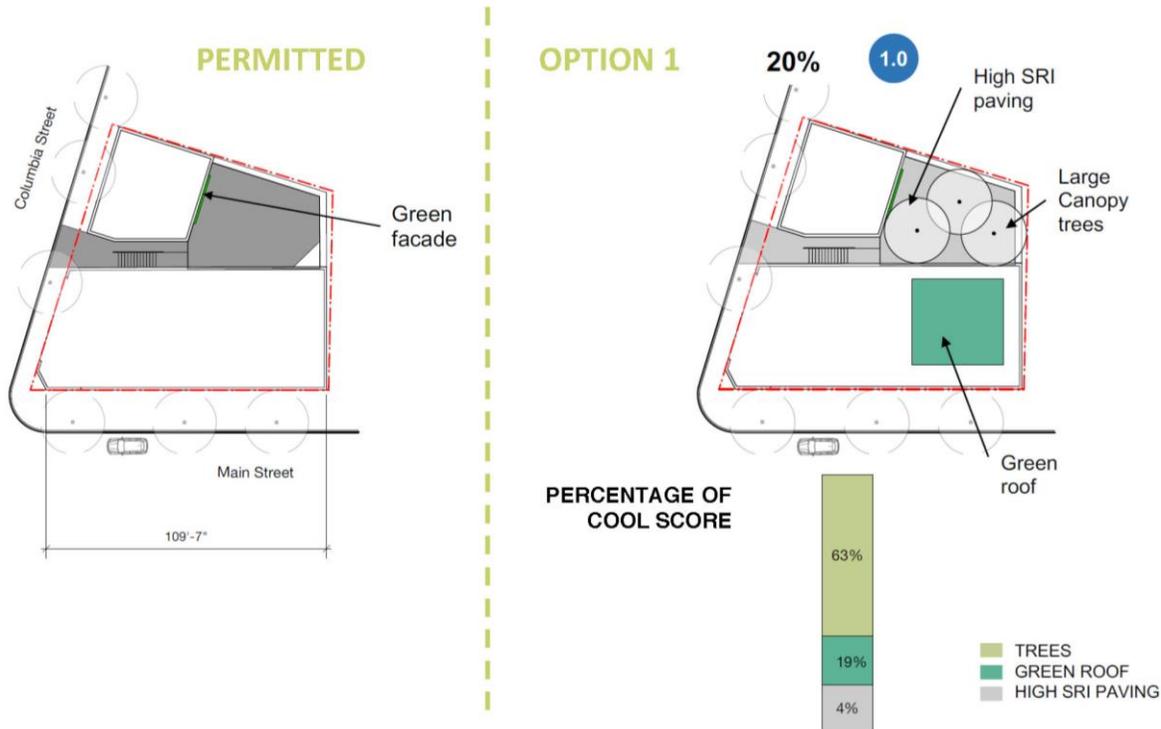6%

reduced building footprint

STREET

BUSINESS A-2
OS Requirement 0%,
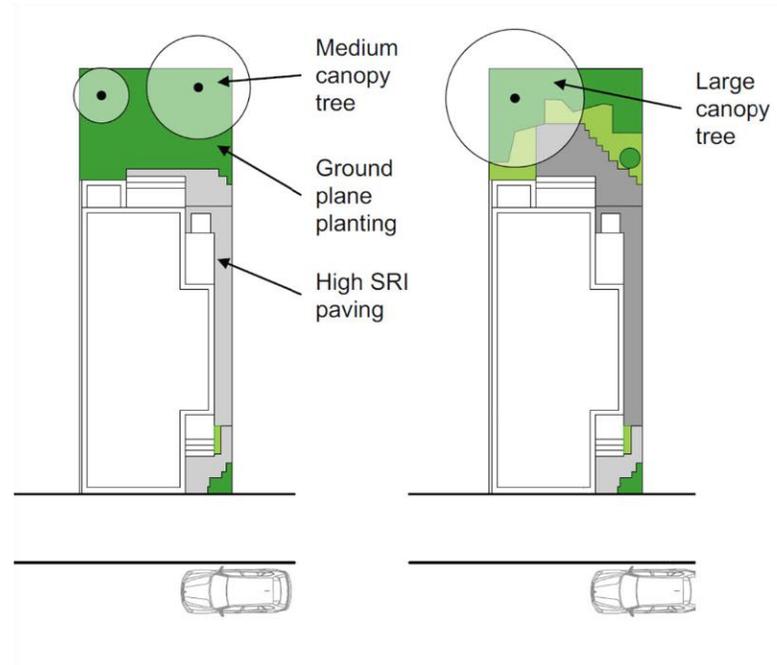Cool Factor uses 20%

62%
16%
4%
18%

How We Arrived Here
Testing + Fine Tuning

IMPACTFUL
Increased minimums to ensure improvement

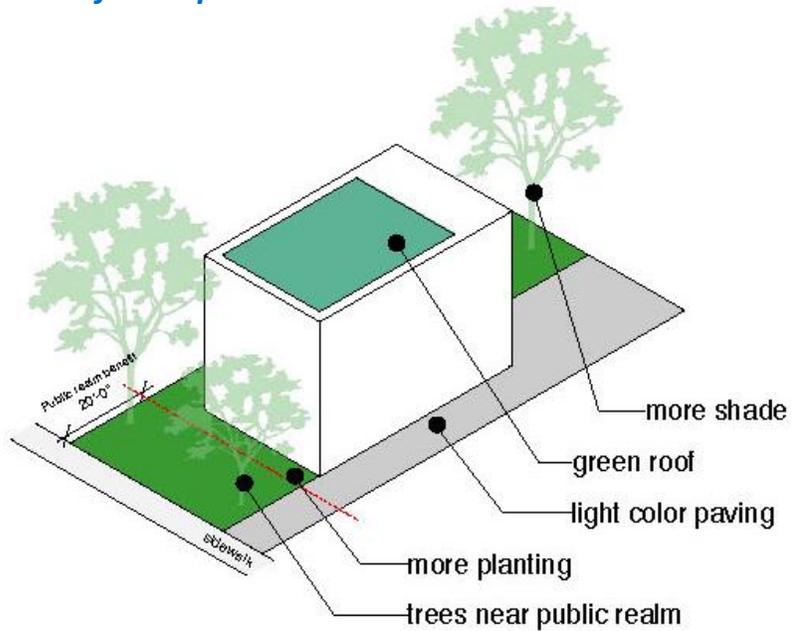## EQUITABLE
Confirmed scores could be achieved on small lots

ENHANCES PUBLIC REALM

Increased value of multiplier

more shade
green roof
light color paving
more planting
trees near public realm

VALUES GREEN OVER GRAY

Reduced value of paving and hard elements

high-SRI paving
0.15

high-SRI paving + turf
0.28

high-SRI paving + turf + planting area + medium tree + large tree
1.02

Cool Factor Score

9
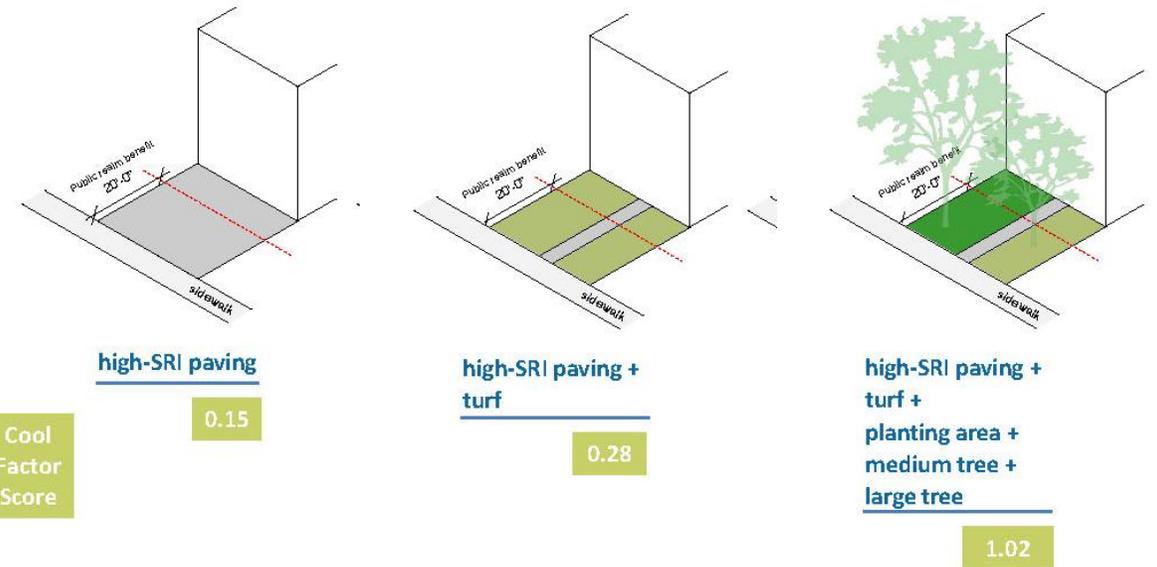
Testing Cool Factor consensus

Calculating Cool Factor

Applying Cool Factor

Calculating Cool Factor

Recent Changes

- Reduced D2 High-SRI Paving multiplier
- Revised D3 High-SRI Shade Structure multiplier

Outstanding Questions

- Weight of green roofs relative to high-SRI shade structures
- Calculating portion of lot area utilizing green strategies
- Cap on percentage of score coming from D2 High SRI-Paving strategy

Applying Cool Factor

	Article 19	OS Base Zoning	Parking Standards
Target %	20%	?	?
Geography	Citywide	?	?
Trigger	25,000+ sf	?	?