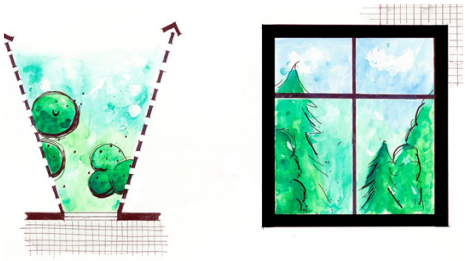
Greening Strategies for Co-benefits

This appendix highlights eight evidence-based strategies for urban green space planning and design that integrate climate resilience and public health co-benefits. A checklist is provided at the end to help you assess whether you have considered the strategies in your design.

Design Strategy	Anticipated Climate and Health Co-benefits
1. View from Within	• Visual biophilic experiences • Wildlife habitat and biodiversity • Stormwater mitigation
2. Plant Entrances	• Social gathering space • Orientation/navigation • Shade provisioning/cooling • Building energy savings (depending on aspect)
3. Bring Nature Nearby	• Social gathering space • Shade provisioning/cooling • Wildlife habitat provision and biodiversity • Stormwater mitigation
4. Retain the Mature	• Air filtration • Shade provisioning/cooling • Building energy savings • Carbon storage and sequestration
5. Generate Diversity	• Visual biophilic experiences • Wildlife habitat provision & biodiversity • Climate Resilience
6. Create Refuge	• Social gathering space for cohesion and enhanced social capital • Shade provisioning/cooling • Air filtration • Wildlife habitat and biodiversity
7. Connect Experiences	• Visual biophilic experiences • Shade provisioning/cooling • Wildlife habitat provision and biodiversity (e.g. ecological corridors) • Stormwater mitigation
8. Optimize Infrastructure	• UHI mitigation • Carbon storage and sequestration • Stormwater mitigation • Wildlife habitat provision and biodiversity

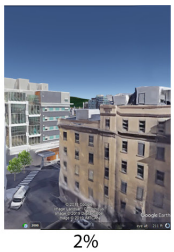
1. View from Within

The **View from Within** strategy refers people's views from within buildings. Views of natural objects, such as trees, plants, water, or distant landforms, from the inside of a building can have an impact on health and productivity.



Metric: % green to grey in view
Goal: all of views with at least 30% green to grey ratio


1%


2%


12%


2%

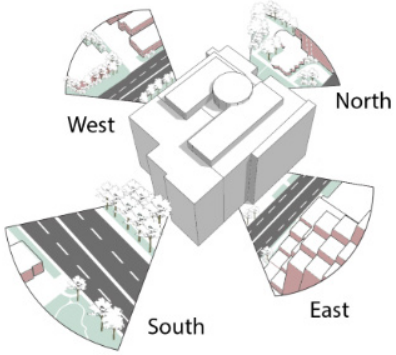

2%


33%


33%

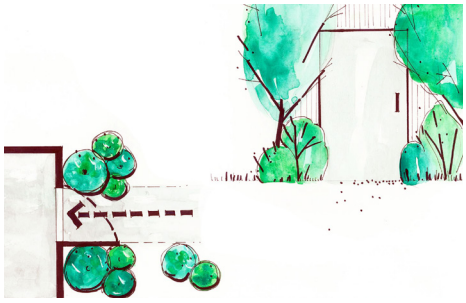

56%

Sample strategy diagrams



2. Plant Entrances

The **Plant Entrances** strategy refers to the presence of green, which may include trees or other vegetation, at building or site entrances or exterior doorways.



Metric:% green vs. grey in immediate surrounding of entrance
Goal: all of entrances 50% green

Sample strategy diagrams

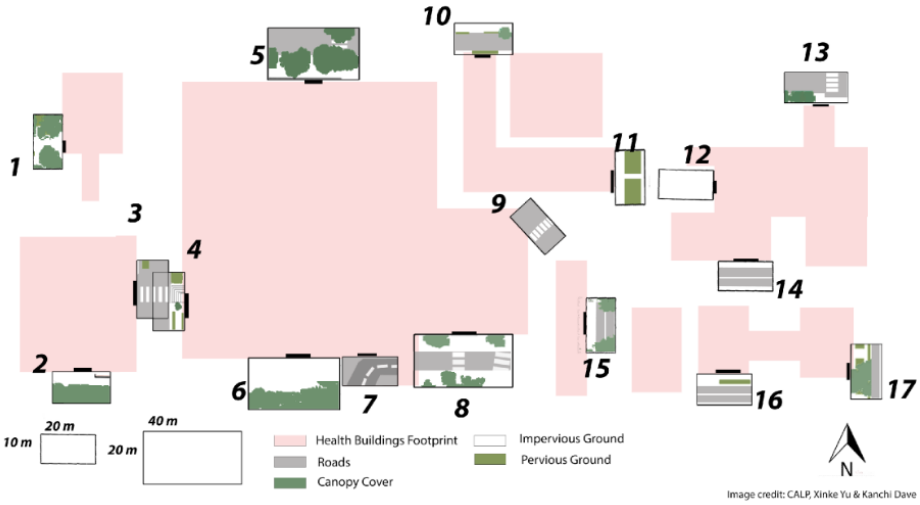


Image credit: CALP, Xinke Yu & Kanchi Dave

3. Bring Nature Nearby

The **Bring Nature Nearby** strategy refers to the presence of green within close proximity of all building occupants, of all types of mobility.

Metric: travel time to reach closest green space
Goal: all of floors <2 mins from nearby green

Sample strategy diagrams

Base Case

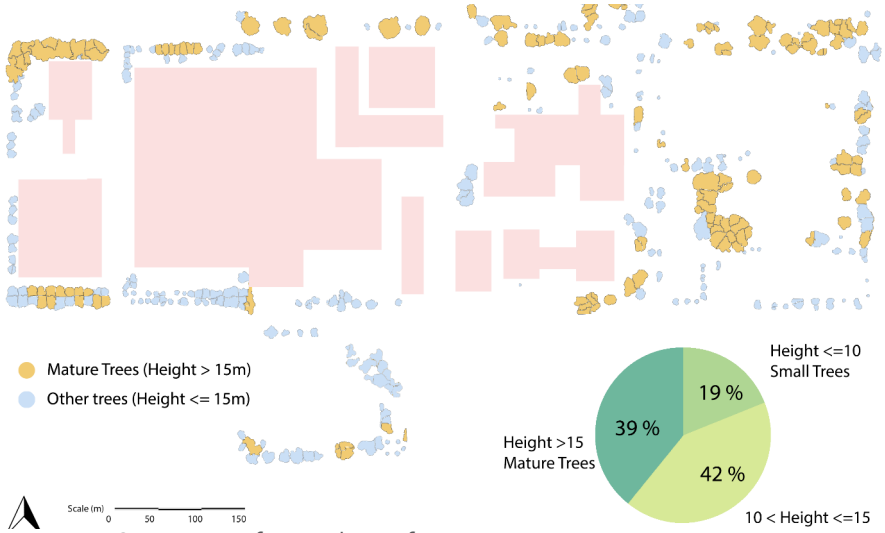
Optimal Greening

4. Retain the Mature

The **Retain the Mature** strategy refers to paying attention to the size and structure of trees comprising a green space. Given the benefits provided by big trees, these spaces could be designed around a “heritage” or “legacy” tree.

Metric: % of mature trees
Goal: At least 30% of total trees are mature

Sample strategy diagrams

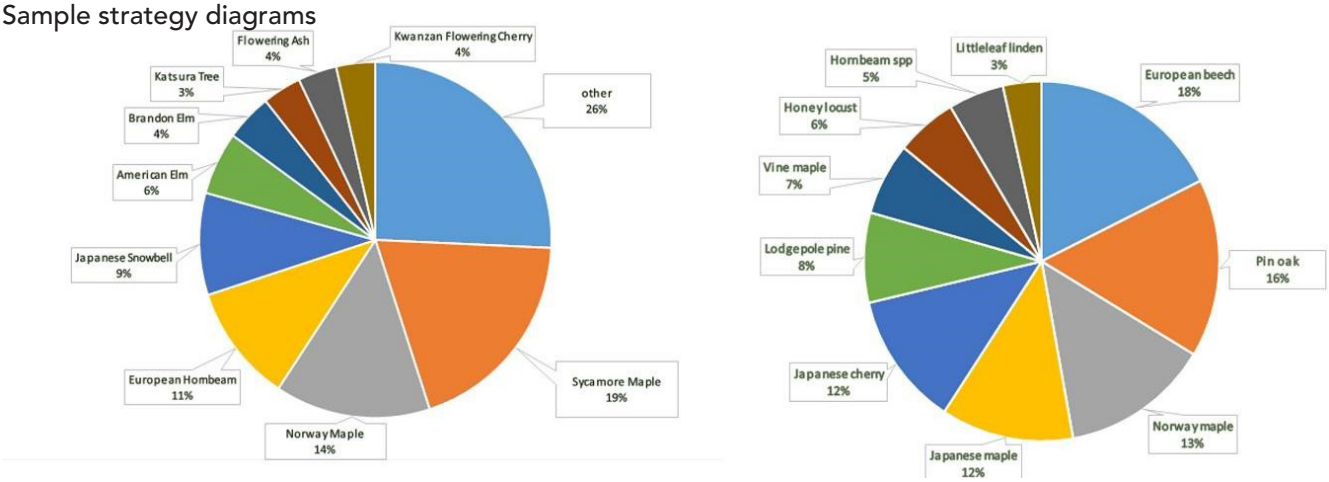


5. Generate Diversity

The **Generate Diversity** strategy refers to ensuring that a diversity in species of trees and plants is provided within a green space.

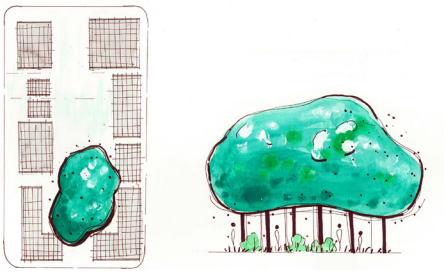
Metric: Diversity of trees
Goal: Trees that are diverse, climate resilient, and avoid eco-system disservices

Sample strategy diagrams



6. Create Refuge

The **Create Refuge** strategy refers to the presence of "cool spots" where a population can find protective temperatures during extreme heat events.



Metric: # of people accommodated under canopy
Goal: Enough refuge for daytime population

Sample strategy diagrams

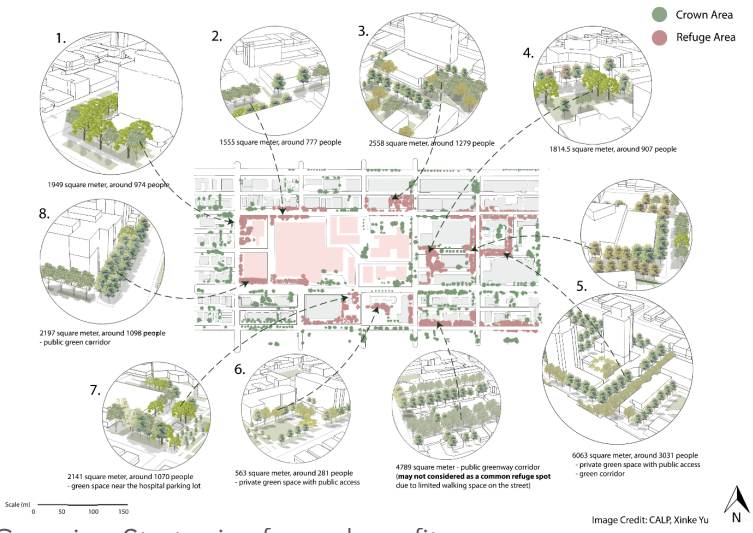
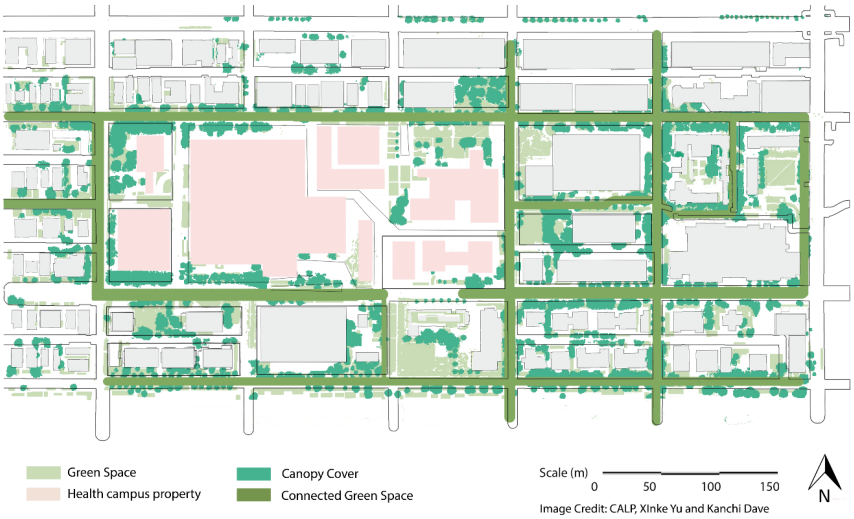


Image Credit: CALP, Xinke Yu

7. Connect Experiences

The **Connect Experiences** strategy refers to continuous greenery along a street or other transit path, meant to encourage active transit and other forms of physical activity.

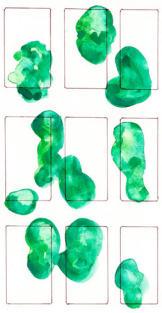
Metric:% of shaded pathways
Goal: all of major pathways shaded by trees

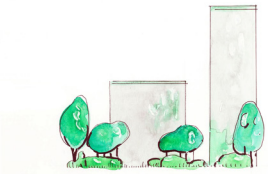


Sample strategy diagrams

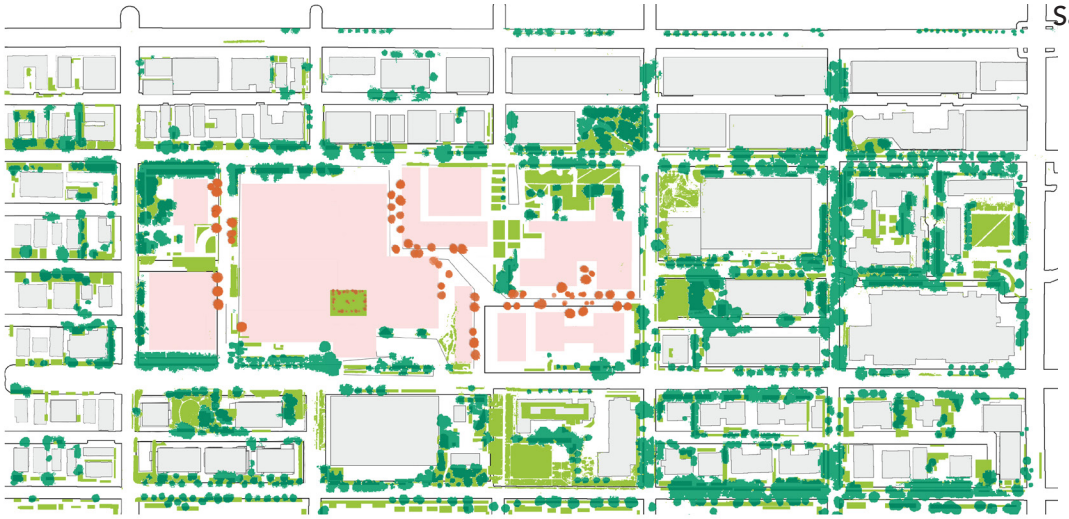
8. Optimize Green Infrastructure

The **Optimize Green Infrastructure** intervention refers to ensuring that you have sufficient canopy cover and other green infrastructure services to support a healthy and resilient living environment.





Metric: % canopy cover and % pervious ground
Goal: 40% canopy cover



Sample strategy diagrams

Greening checklist:

- ☐ Have you considered the view from within when implementing urban greening?
- ☐ Do your entrances have a welcoming green frame?
- ☐ Are there spaces near your building to relax surrounded by plants?
- ☐ When designing a landscape, have you retained mature trees?
- ☐ Have you measured diversity in your greenspaces?
- ☐ Can green shade accommodate the population of an area during an extreme heat event?
- ☐ Can people walk continuously along a shaded pathway?
- ☐ Have you left room for enough green, permeable spaces to manage stormwater and cool the air?

The text is based on: Barron, S., Nitoslawski, S., Wolf, K. L., Woo, A., Desautels, E., & Sheppard, S. R. (2019). Greening Blocks: A Conceptual Typology of Practical Design Interventions to Integrate Health and Climate Resilience Co-Benefits. International Journal of Environmental Research and Public Health, 16(21), 4241.

For the full report, please see: https://calp.forestry.ubc.ca/green-design-project/