cool by design:

the power of shade in public space

the bentway

content

thanks

Sun Safety Partner

David Cornfield Melanoma Fund

Seasonal Supporters

Balsam Foundation
City of Toronto
Government of Ontario
TD Bank

Program Supporters

YZD
Toronto Dance Theatre
Government of Canada
McLean Foundation
Ontario Arts Council
Office for Contemporary Art Norway
Indigenous Cultural Collective / Collectif des commissaires autochtones (ICCA)
Royal Norwegian Embassy
Save Your Skin Foundation
Manulife

Publication Supporter

School of Cities – University of Toronto

Season Advisors

Danielle Paterson, David Cornfield Melanoma Fund
Dorsa Jalalian, DIALOG
Fadi Masoud, University of Toronto

Special thanks for the invaluable contributions from artists, designers, The Bentway *Sun/Shade* Advisors, and community partners. Much like the public realm itself, this work relies on trust, accountability, and reciprocity.

foreword

The conversation in Toronto is changing. Though lamenting our cold winters is still a collective pastime, it's become increasingly more common to hear people complain about the weather year-round, with the summer heat emerging as a new and universal concern for our northern city. As global temperatures rise year after year, Toronto is warming faster than the average city, and heatwaves are getting longer, stronger, and more frequent. The summer of 2025 revealed that the season once considered peak time for outdoor play, recreation and celebration is now challenged by inhospitable conditions that shape how we move through, gather in, and engage with our shared spaces. According to Toronto Public Health and Environment and Climate Change Canada (ECCC) not only does extreme heat contribute to an average of 120 premature deaths per year in the city, but it disproportionately affects the most vulnerable among us, leaving many exposed to unsafe conditions with limited options for relief. The adaptation of Toronto's public spaces is therefore not a choice but an urgent necessity.

Our response must consider resilience and adaptation in both environmental and social terms. Shade, cooling infrastructure, and natural landscapes are vital, but so too are the cultural and behavioural shifts that influence how we think, program, operate, and inhabit public space. Our recreational and social amenities must now be recognized as frontline strategies for safeguarding community health and wellbeing in a warming world.

The Bentway has long understood that shade is a critical, but often undervalued, urban resource. Positioned below a 7km elevated highway that doubles as Toronto's longest continuous canopy, The Bentway spaces have had to make shadow a virtue. Draped in ever-moving slices of sun and shade, the site serves as a key destination for reprieve and relief in the hot summer months, as well as a case study in the balance and benefits of light and shadow. This new type of public space is not only demonstrates how to repurpose an old piece of infrastructure, but also reveals new design and programmatic possibilities for a hotter city.

In summer of 2025, The Bentway presented *Sun/Shade*, a free public art exhibition that brought together artists, designers, and researchers to explore how new thinking about sun and shade can help cities adapt to rising temperatures and create a more comfortable public realm. The following report brings together city officials, policy makers, artists, designers and community members to build on the City of Toronto's Thermal Comfort Guidelines and to demonstrate that adaptive design and programming can create public spaces that are not only cooler, but also stronger, more equitable, and more socially connected.

It's time to recognize that 'cool' public spaces are essential public health infrastructure and the future of flexible design in northern cities—vital for allowing our communities to not only endure rising heat, but to adapt, grow, and flourish.

1. introduction

Bentway Phase 1, 2018.

the cool factor

Northern cities around the world are warming, and Toronto is no exception.

While the city experiences cold continental winters, summers are becoming hotter, longer, and increasingly punctuated by extreme heat events, with projections of over 60 days above 30°C by 2050.[1]

For decades, urban design and planning practices in Toronto have prioritized sunlight and minimized shade, reflecting a broader North American tendency to favour air-conditioned indoor environments over outdoor thermal comfort. This focus on cooling from within has meant there has been less attention paid to the cooling potential of our outdoor spaces, leading to a legacy of highly exposed and increasingly vulnerable public places.

[1] Learn more about how to prepare for extreme weather from the City of Toronto.

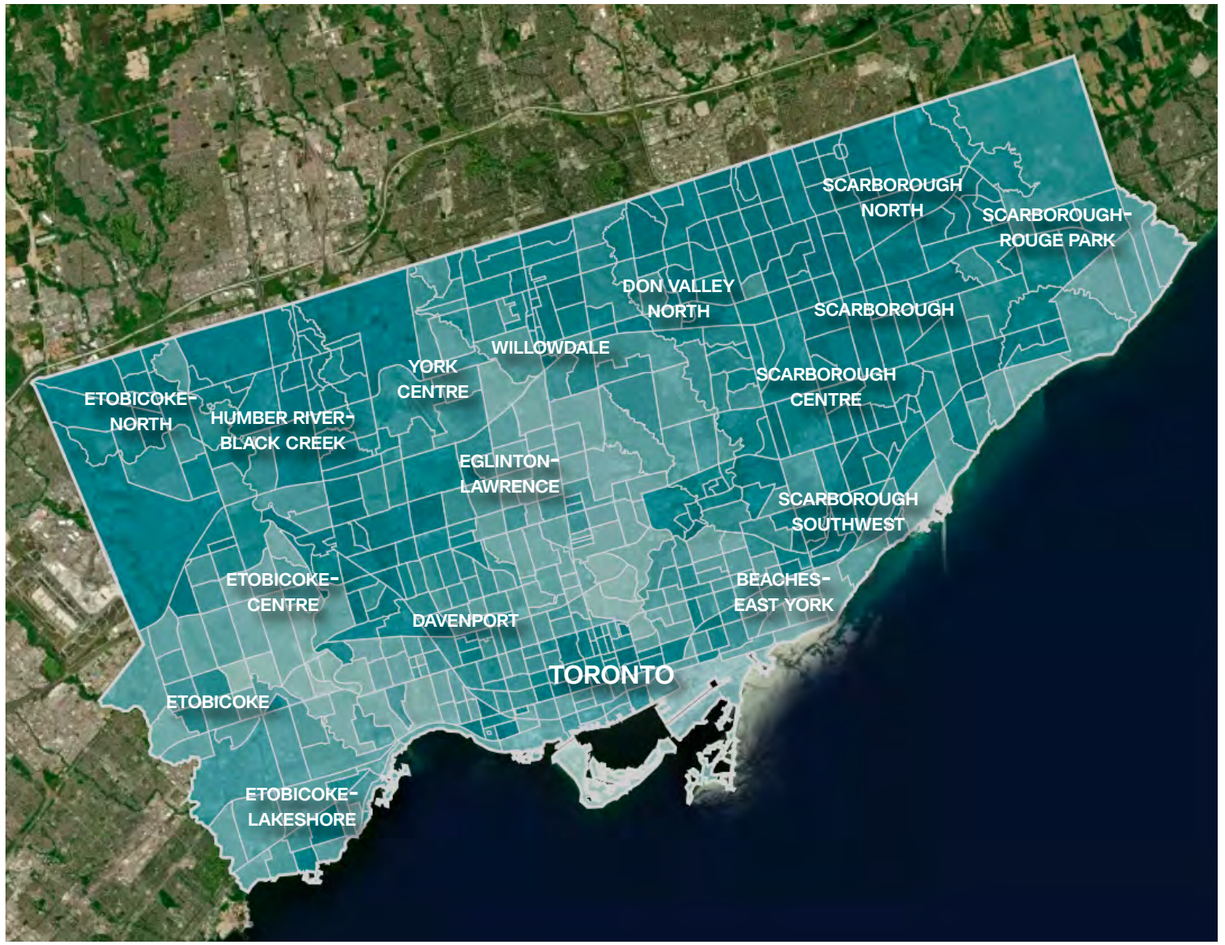
“We're going to have to organize faster now—responding to extreme heat emergencies will become a part of daily life.”

María Fernanda Camarena
Sun/Shade Artist
Celeste

Shade, a simple yet powerful cooling resource, remains underutilized in northern cities.

Its absence diminishes the comfort and usability of public spaces, intensifies the urban heat island effect, increases energy demand, and heightens both social and health risks during heat events. Access to shade is also unevenly distributed in Toronto (as it is in many cities): higher-income neighbourhoods benefit from having more mature trees and shaded streets, while lower-income areas face greater exposure to sun, heat-reflective surfaces, and limited relief.[2]

Extreme heat is more than a matter of comfort—it is a serious and growing public health crisis. Vulnerable residents, including older adults, children, outdoor workers, and those without reliable access to air conditioning, face the highest risk of heat-related illness and death.



Priority Index map by Tree Equity Score Analyzer. The higher the priority index, the more likely residents are disproportionately affected by extreme heat, pollution, and other environmental hazards that could be reduced by increased tree plantings.

Low priority index — High priority index

[2] Learn more about heat vulnerability in Toronto in research conducted by Shuchen Bu, Karen L. Smith, Fadi Masoud, and Alexandra Sheinbaum.

Bentway Phase 1, 2018.

> “Parks are not just recreational amenities—they are frontline infrastructure for climate adaptation.”

Dorsa Jalalian
Associate & Senior Urban Designer
DIALOG

summer 2025 by the numbers

May 15 – September 30, 2025

5

Heat warnings issued by Environment & Climate Change Canada [3]

29

Total days under heat warning [3]

14

Days with a maximum temperature of 32°C or more (vs. 4 in the year 2000) [4]

32

Nights above 20°C or more (vs. 12 in the year 2000) [4]

93

Heat-related emergency department visits from June to July [5]

[3] Read more about the City of Toronto's Additional Heat & Health Resources.
[4] Learn more about Toronto's increasingly hot summers in Ethan Lang's article for CBC News.
[5] Check out CBC's news stories from June and July 2025, reporting heat-related emergency department visits.

Key Questions

How can we reposition shade as an essential resource in our cities?

How can we leverage public spaces to proactively solve for extreme heat?

2. our research

methodology

To examine the changing role of both sun and shade on the development of our urban environment, civic priorities, and collective behaviours, we adopted a collaborative, multi-pronged research approach. **See the Appendix for more details.**

Expert Interviews

What & How
The Bentway met with a wide range of subject-matter experts for one-on-one interviews to explore their understanding of extreme heat in the city of Toronto and abroad. Interviewees were selected for their experience developing policy related to thermal comfort, designing public spaces and public art experiences.

When
Summer 2025

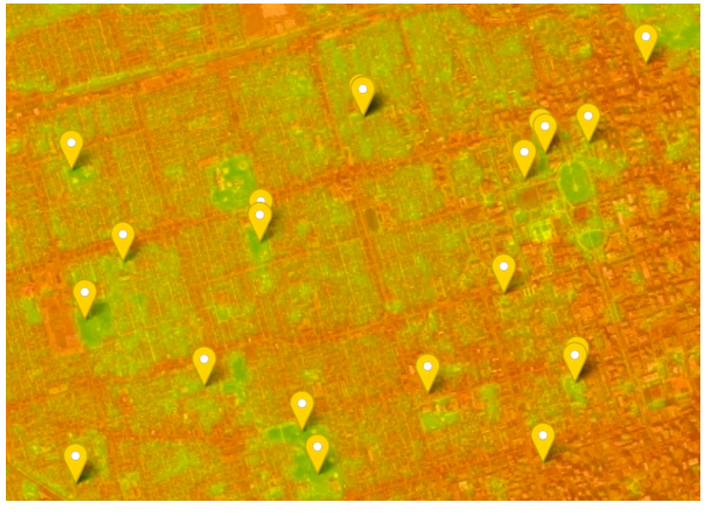
Where
Interviews conducted remotely

Policy Reviews

What & How
Using a cross-jurisdictional comparative policy review, we compared documents related to shade, heat, and climate resilience. Toronto's policy development pathway was explored chronologically and through the lens of these comparisons.

When
Summer 2025

Where
Toronto



Interactive Mapping

What & How
Using community-driven digital mapping, remote-sensing data and social media, we invited members of the public to help us identify their preferred 'cool spots,' public areas where they find shade across the city. The map collected these spots into a publicly available resource for beating the heat.

When
Through August to September 2025

Where
Toronto

Artistic Research

What & How
The Bentway takes a unique approach to engagement, one in which artist-led programming doubly acts as applied research and development. We explore lines of inquiry to generate important urban conversations, solutions, and experiments. In conversations traditionally dominated by planners and policymakers, we see artists as urbanists, experts, and solution-builders in their own right.

In our public *Sun/Shade* program, The Bentway's curatorial team worked closely with artists from Toronto, the global south, remote northern climates, and beyond, to create new artistic interventions that took the form of installations, performances, and more. Artists were invited to reflect on cities' changing relationship with shade, and to propose new approaches to collaborating with sun and shadow.

When
May – October 2025

Where
Toronto

Public Surveys

What & How
The Bentway developed a standardized questionnaire and handed it out at our Phase 1 site, below the Gardiner, to help us gauge public engagement with our programming and query respondents' behaviours around extreme heat. The survey asked Bentway visitors to let us know why they came, and if they were seeking relief from extreme heat. Many were!

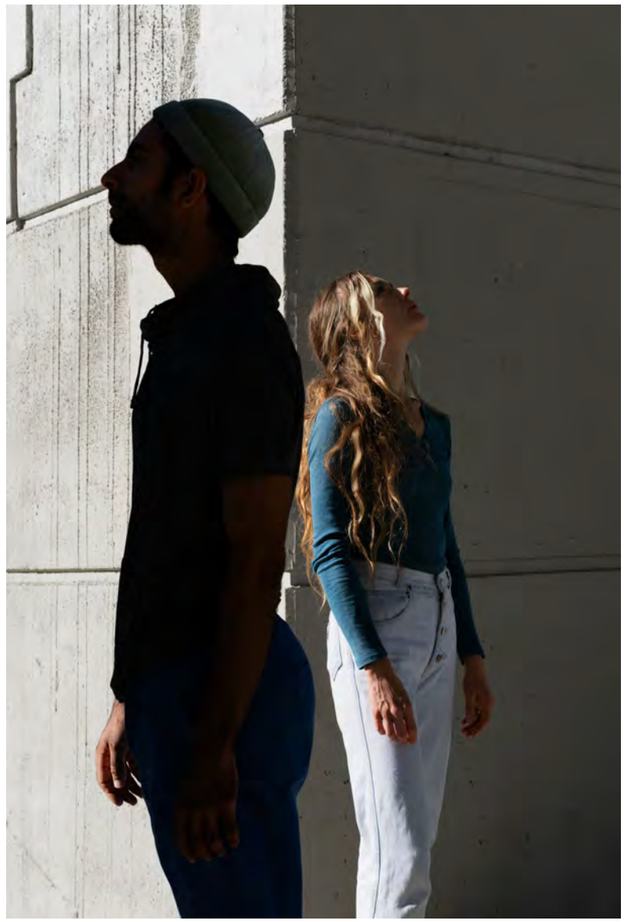
When
Summer 2025

Where
The Bentway Phase 1 site

learning from others:
public spaces and urban heat

Cities around the world are redefining public space as vital climate infrastructure. Those that have already faced extreme heat events provide clear lessons in how design, policy and management can make shared environments cooler, safer and more equitable. The following learnings are taken from interviews with city policymakers from C40 Cities, a global network of cities committed to meeting the challenges of climate breakdown, and our policy overview review.

Read our full policy overview here.

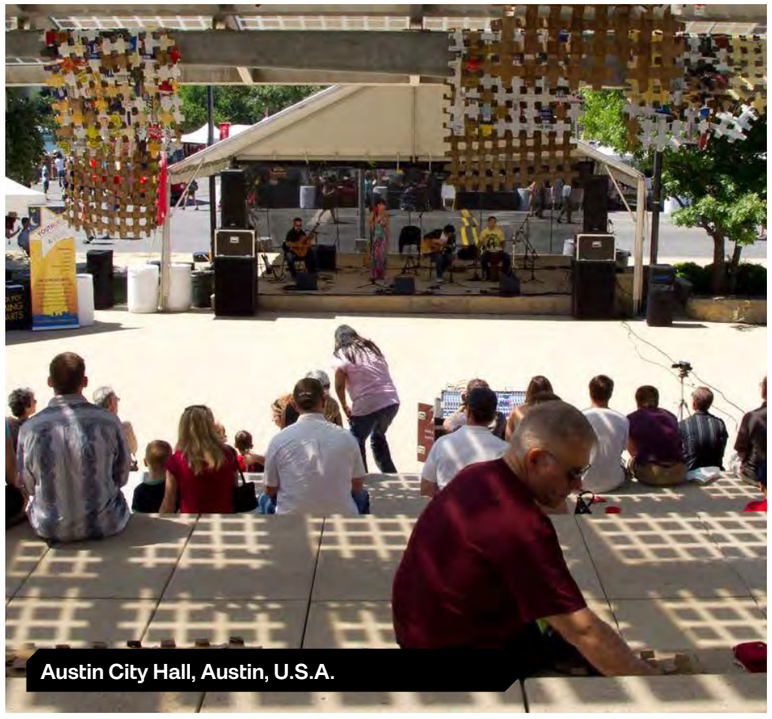


> **Adaptation needs to be placed-based...** a one-size-fits-all approach doesn't work.

Candace Jordan
Climate Change Adaptation Lead
City of Melbourne

Austin – Combine data with local knowledge.

Austin has used detailed heat mapping alongside community engagement to pinpoint where public cooling is needed. By integrating technical data with lived experience, public spaces can become responsive to both climate and community realities.



Austin City Hall, Austin, U.S.A.

Read more about Austin's approach here.

Paris – Integrate cooling in daily life.

After deadly heatwaves, Paris launched its Oasis program, which worked to transform closed schoolyards from paved spaces into permeable shaded gathering spots. During heat emergencies these shaded public schoolyards are open around-the-clock for everyone in the neighbourhood. They become a lifeline during a crisis, but also provide a valuable amenity for the communities they serve day-to-day.

Oasis courtyard, Brèche aux Loups Elementary School, Paris, France

Read more about Paris's Oasis approach here.

Milan – Find existing shade and make it public.

In the compact, historical urban fabric of Milan, planners have focused on unlocking underused shaded spaces, like schoolyards and courtyards, to serve as public refuges in summer. Adaptation begins with facilitating public access, not new construction.

School Oasis in the Crescenzago neighbourhood in Via Turroni, Milan, Italy

Read more about Milan's approach here.

Miami-Dade County – Design for the most vulnerable.

Miami-Dade approaches heat as a public-health issue and prioritizes access to shaded and ventilated spaces in neighbourhoods most exposed to risk. Equitable design is framed as the foundation to climate resilience.

Deering Estate, Miami, U.S.A.

Read more about Miami-Dade's approach here.

Melbourne – Set targets, measure progress, and make change.

Melbourne sets measurable targets for shade and canopy coverage across its public realm. Tree growth and surface temperatures are monitored regularly to evaluate progress, ensuring that climate goals become realities at street level.

Fitzroy Garden, Melbourne, Australia

Read more about Melbourne's approach here.

Toronto – Show respect for all living things.

Toronto's newly adopted Thermal Comfort Guidelines prioritizes a life-centric approach that acknowledges the value of all living things within the city. The intended result will create public spaces that are resilient, biodiverse, flexible across seasons, and responsive to extreme temperatures.

Bentway Phase 1, Toronto, Canada

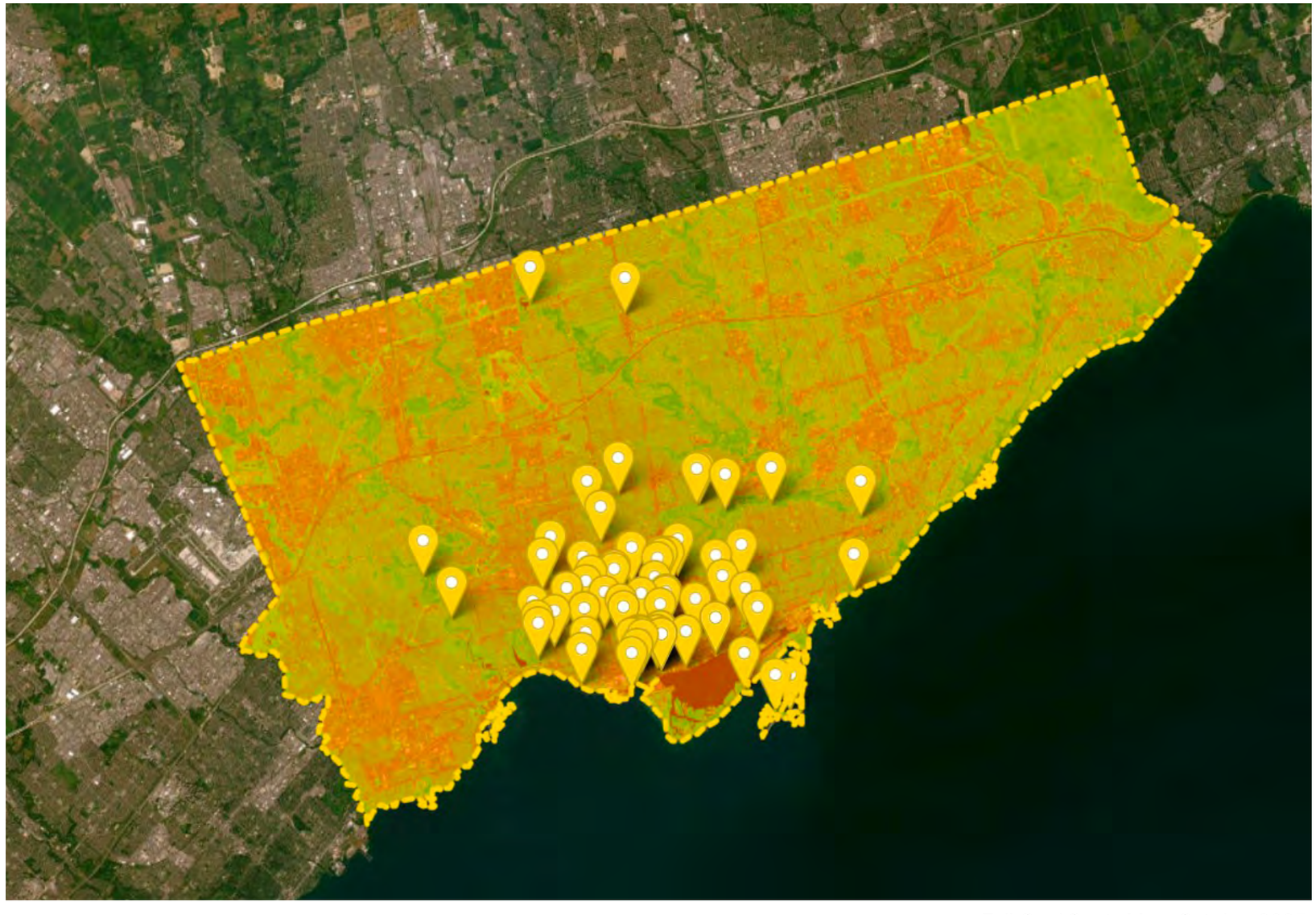
Read more about Toronto's approach here.

cool spots community map

In the Summer of 2025, The Bentway invited Torontoninas to share their favourite shaded places across city on the *Cool Spots* interactive mapping tool. From leafy parks and splash pads to overpasses and tucked-away laneways, these places of thermal refuge are often hidden in plain sight.

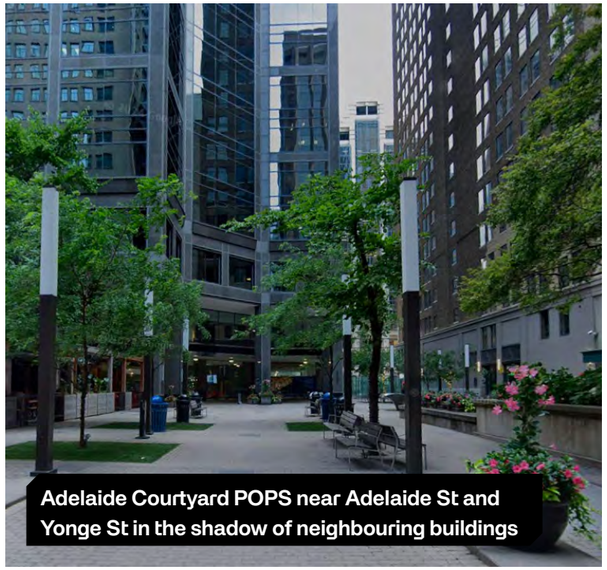
This project built upon existing web-based tools used by cities like Barcelona and Melbourne which provide feedback for navigating the city during extreme heat events.

As temperatures rose above 30°C, Torontonians submitted cool spots by the dozens, dropping pins on a huge variety of publicly accessible places for residents and visitors of the city to take relief. The collective mapping helped to reveal cool corridors across the city. Not only did it highlight new connections but it also suggested how we can rechoreograph our movements across Toronto, seasonally.

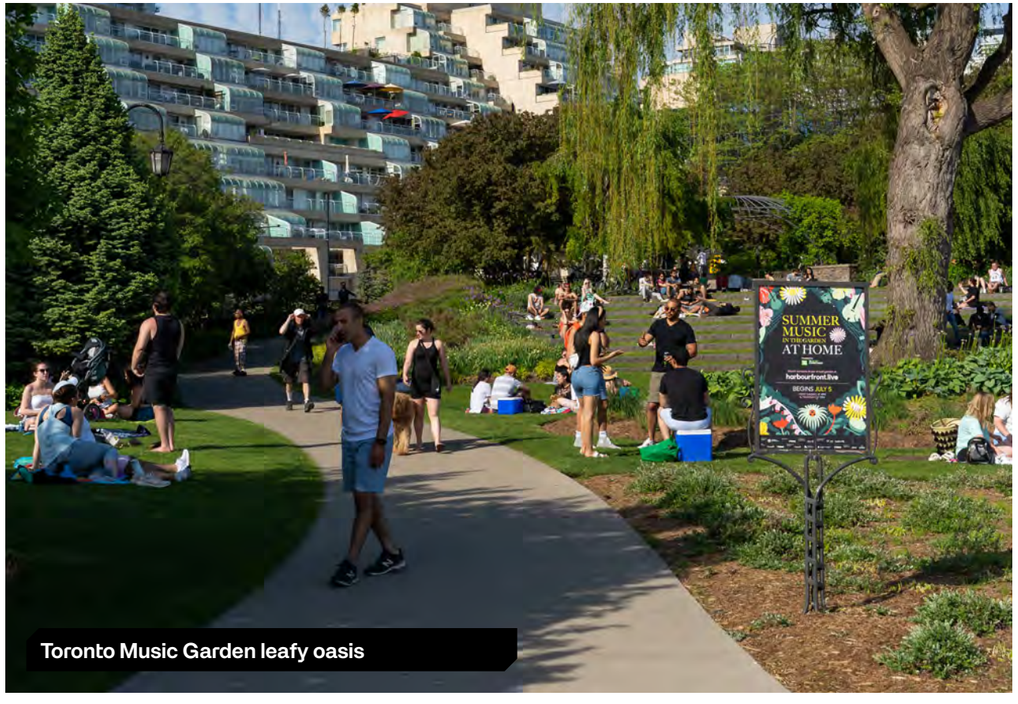


Full *Cool Spots* Map, October 2025.

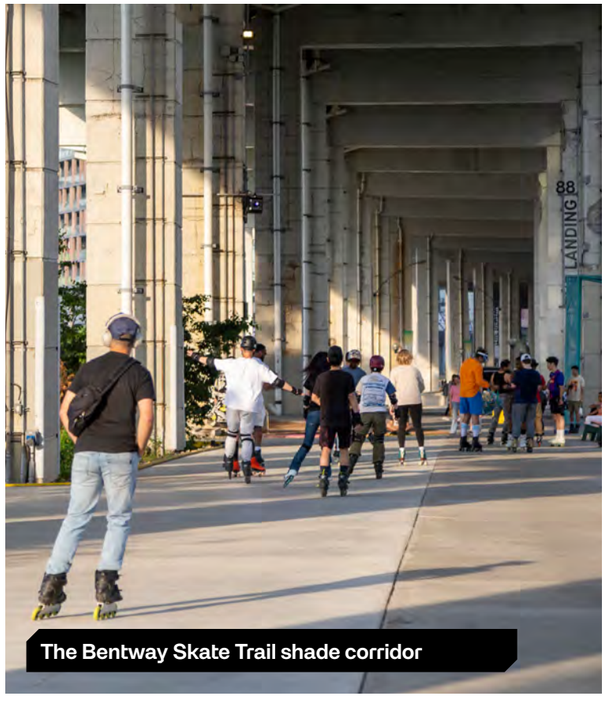
Community Square misters at Harbourfront Centre



Adelaide Courtyard POPS near Adelaide St and Yonge St in the shadow of neighbouring buildings



Toronto Music Garden leafy oasis



The Bentway Skate Trail shade corridor

We reviewed the submissions to understand what these favourite cool spots had in common.

Trend A – Cool spots weren't *just* cool.

Participants chose spaces because they had something to look at, were co-located with water or even had an activity to engage in.

Trend B – Cool spots were everywhere.

Even in the depth of Toronto's concrete core, participants identified publicly accessible shaded spaces. Trees weren't the only source of coverage; favoured spots included paved areas where other structures in the built environment provided shade.

Trend C – We love nature!

Most participants identified spots based on the quality of the trees that provided shade. Our sense of interconnectedness with nature influences how we seek out shade.

Trend D – We are a 24-hour city.

Torontonians demonstrated they favoured certain spots for certain times, suggesting we naturally follow the sun when we are planning our days.

“Shade can be refuge, intimacy, and pleasure—a place to rest and be held.”

Larissa Belcic
Founder & Director, Former Bentway artist
Nocturnal Medicine

Communal Picnic, Bentway Phase 1, 2020.

3. *Sun/Shade* program

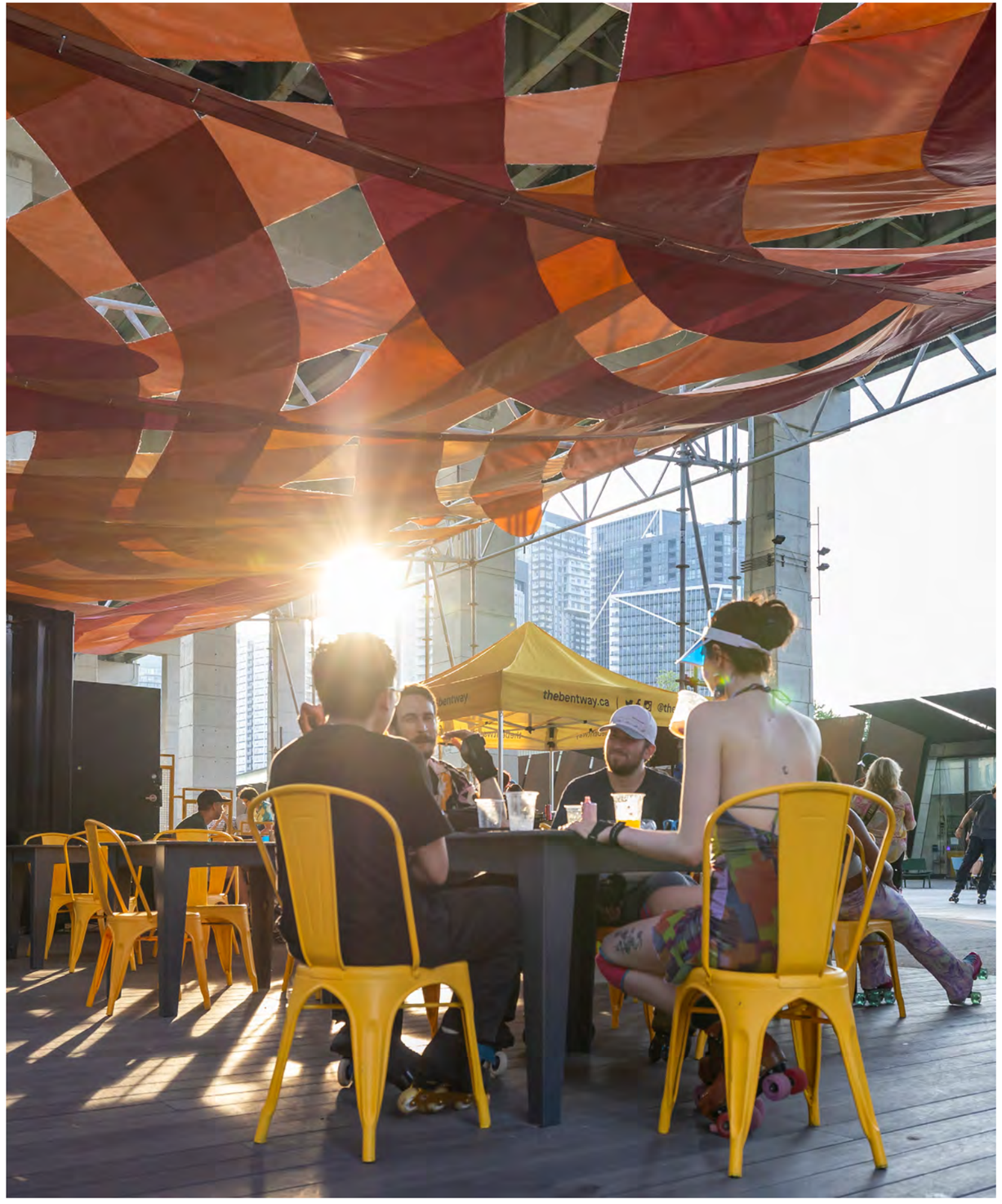
Sun/Shade

The Bentway's Summer 2025 program of art, events, and ideas.

In light of the accelerating thermal changes our city is experiencing, it is increasingly important to reexamine the critical relationship between sun and shade. Cities around the world have long grappled with extreme heat and recognize the vital, democratizing role that shade plays: it provides shelter and relief, creates new spaces for safe gathering, and unintentionally maps cool corridors for safer travel. As we've read so far, Toronto is now facing these extreme temperatures more frequently, and this prompted The Bentway team to curate a season of artistic programming guided by the two questions:

How can we collaborate with the sun in new ways?
How can shade help define new spaces for civic life?

The Bentway's 2025 summer exhibition of public art, *Sun/Shade*, brought together artists and designers from Canada, the U.S., Mexico, Puerto Rico, Norway, the Netherlands, and beyond to use sun and shade as creative tools, demonstrating how new approaches to familiar environmental resources can enhance urban life, provide new forms of shade, and better protect and maintain public health. The collection of public artworks on view as well as the season's 65+ events drew 150,000+ attendees across the summer, provoking vital conversations and encounters, while shining a light on the many benefits of shade.



Sun/Shade program

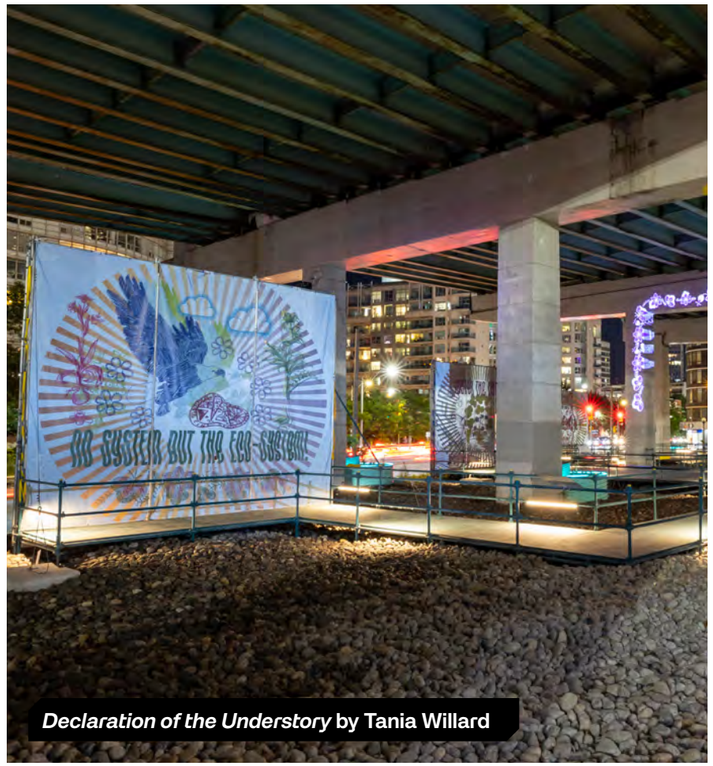
Edra Soto's (Chicago, U.S.A.) installation referenced the shade-making facades of working-class Puerto Rican bungalows and created an expansive, sun-filtering threshold that underscored the value of heat-responsive architecture, place-making, and cultural exchange.

la sombra que te cobija / the shadow that shelters you by Edra Soto

Casting a Net, Casting a Spell by Celeste

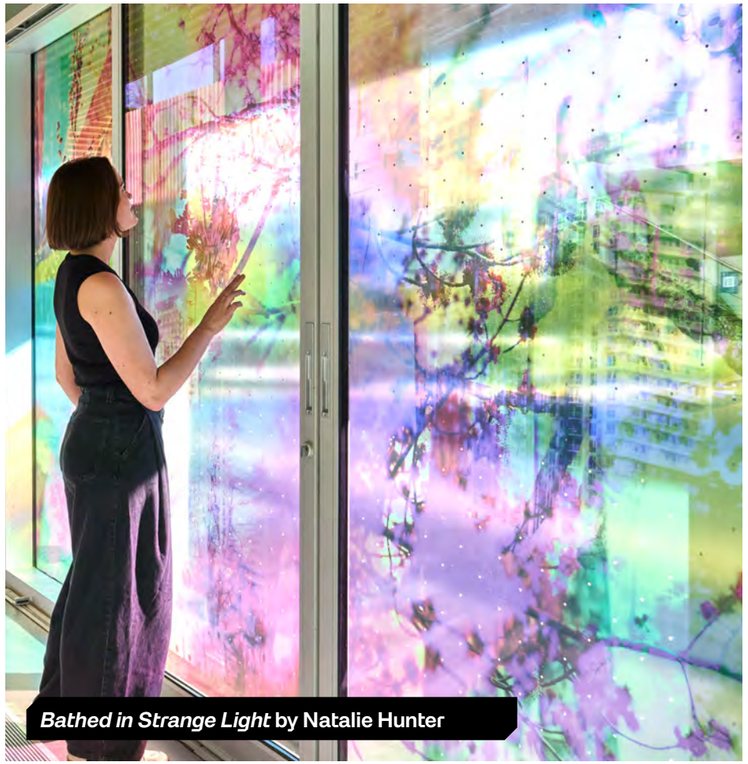
Artist duo Celeste's (Mexico City, MX) majestic, quilted canopy welcomed shade down to a seating area below, offering relief from the heat and creating a space for gathering. Like a suncatcher, *Casting a Net, Casting a Spell* embraced and harnessed the sun, weaving in archetypes that have surrounded the sun since ancient times across different cultural contexts.

Tania Willard, a mixed Secwépemc and settler artist, approached the space below the highway as a tree canopy reminiscent of the "understory" floor of southern Ontario forests, where pockets of shade and sunlight shape unique ecosystems. In a stunning mixed-media installation, floral motifs, iridescence, and powerful slogans offered a meditation on the power of shade as a life force.



Declaration of the Understory by Tania Willard

Sun/Shade program

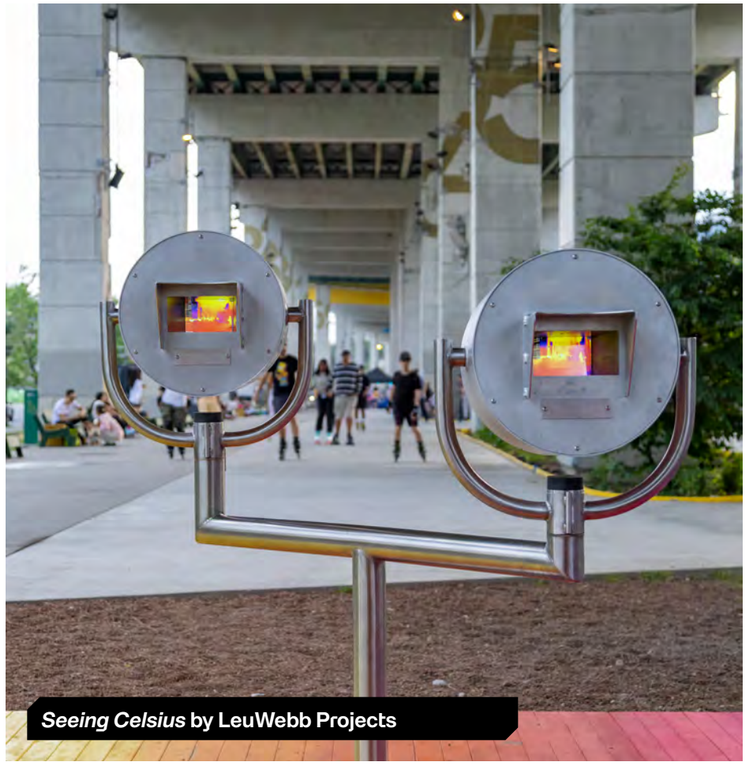


Bathed in Strange Light **by Natalie Hunter**

Working in collaboration with the sun's rhythms, Natalie Hunter's (Hamilton, Canada) photographs on the windows of The Bentway Studio explored how ever-shifting sunlight shapes our experience of public spaces. As the sun moved throughout the day, translucent images cast down a colourful, slow-moving cinema.

Echoing both the downtown's towering skyscrapers and a forest of trees, Mary Mattingly's (New York, U.S.A) *Second Shade* combined lush greenery and repurposed construction materials to make a unique 20ft tall urban canopy. The installation showcased the cooling potential of green roofs, soft landscaping, and responsive architecture.

Second Shade **by Mary Mattingly**



Seeing Celsius **by LeuWebb Projects**

What happens when we can see heat? By adding thermal-imaging technology to the familiar viewfinder found at scenic lookout points, LeuWebb Projects (Toronto, Canada) enabled audiences to see the temperature differences across The Bentway space and the bodies that move through it. This work offered a new perspective that shifted the view on urban spaces and the materials that shape them.

Sun/Shade program

A flock of 50 trees in shopping carts playfully traveled throughout the city, stopping to create a refreshing shade canopy in usually sunny spaces, and calling attention to the critical physical and mental health role that urban trees play. A project by NL Architects (Amsterdam, NL), *Moving Forest* embarked on an eight-week journey to public spaces throughout the city—from The Bentway, to YZD at Downsview, to the Waterfront—joined by pop-up readings and performances along the way.

***Moving Forest* by NL Architects**

***Sand Flight* by Ingri Fiksdal and Jonas Corell Petersen**

The performance *Sand Flight* explored how global warming is changing our relationship to the urban world. Developed in response to the rapid heating of our urban centres, and long-standing rituals in Scandinavian cultures including the sun-worshipping dances of the Bronze age, this new performance piece by Ingri Fiksdal and Jonas Corell Petersen (Oslo, NO) imagined a speculative mythology for climates-to-come, where shade-worshipping becomes a new tradition.

A simulated sunset unfolding in real time, Quayola's (Rome, IT) *SOLAR* offered an alternate way of experiencing the city—slowed down, bathed in colour, and suspended between nature and technology. Guided by a robotic arm, the work translated the sun's daily path from rise to set into a series of artist-created algorithmic gestures and glowing orbits. Presented beneath the Gardiner Expressway, where shade is constant, this radiant new work reminded us of the sun's power, how light shapes our sense of time and place, and that every shadow has its source.

***SOLAR* by Quayola**

4. findings

findings

Acknowledge cultural ingenuity and borrow strategies from warmer climates.

Since many adaptive behaviours are culturally determined, we have much to learn from other geographic locales where intense heat is common.

Adopt a 24-hour relationship with the sun.

By adjusting daily routines around eating, exercising, and socializing we can adapt to rising heat levels without extensive resources. In hot climates, people change their patterns of behaviour to avoid daytime heat and exist in a more sustainable relationship to the sun over the course of a day.

Let nature in: embrace shade as a life force.

Shade needs to be understood as a life-giving adaptation in the city, not an impediment to planting.

Focus on flexibility: shade is a critical design feature in all public spaces.

We should adopt a flexible, hybrid approach to shade creation by planting trees, embracing the adaptive reuse of existing shaded areas, and installing purpose-built shade-structures.

Stop design devolution: reconnect with the rhythms of nature.

The prevalence of air conditioning has resulted in design devolution, whereby our buildings and public spaces are formally and functionally cut off from their relationship to the sun; instead, our interiors are overly air-conditioned and our outdoor realms are lacking shade provision. All of this ultimately leads to seasonal amnesia, or forgetting what it feels like outside from one season to the next. It's time to reconnect our built fabric to nature's cycles.

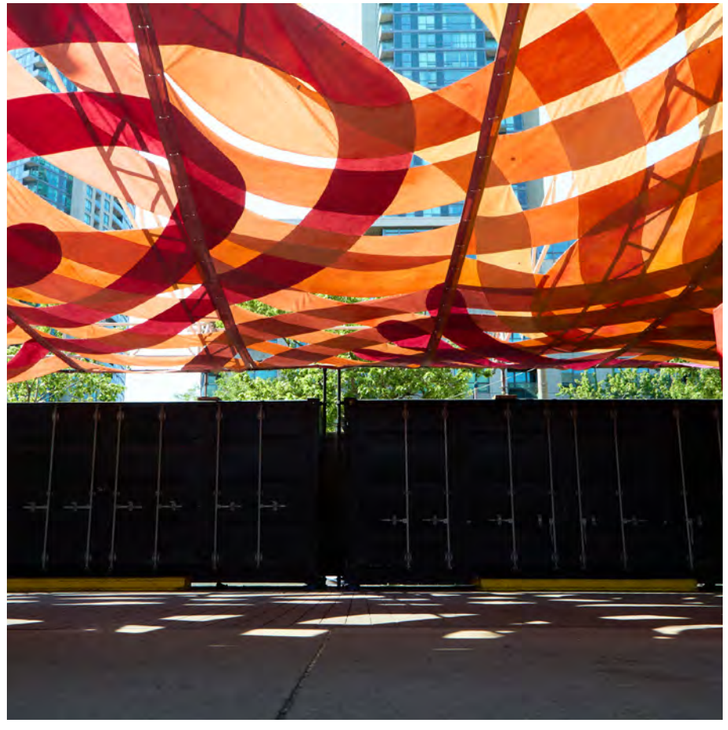
Acknowledge cultural ingenuity and borrow strategies from warmer climates.

> **Climate change is a planetary issue.**
> **Extreme heat is not something to be fixed by Toronto on its own.**

Ingri Fiksdal
Sun/Shade Artist

In a diverse city like Toronto with a large number of diasporic communities hailing from warmer climates, we are well positioned to learn from our neighbours.

At The Bentway, artists Celeste (Mexico City) and Edra Soto (Chicago) created shade structures that drew on the vernacular approaches to shade in their native Mexico and Puerto Rico, respectively. Celeste's *Casting a Net, Casting a Spell* brought us into a state of connection mediated by draped fabric reminiscent of the climatically adept *tianguis* markets of Mexico City. Speaking of the ad-hoc shading vendors deploy, María Fernanda Camarena of Celeste explains of this ad hoc shading employed by vendors: "People in Mexico City are very resourceful; they know how to work their way around the conditions and situations they are in… it's improvisational… and it's very beautiful to be underneath…"



Top: Condesa *tianguis* in Mexico City.
Bottom: *Casting a Net, Casting a Spell* by Celeste.

Top: Source material, Dorado, Puerto Rico, provided by Edra Soto.
Bottom: *la sombra que te cobija / the shadow that shelters you* by Edra Soto.

Edra Soto's geometric pavilion *la sombra que te cobija / the shadow that shelters you* recalled the wrought-iron screens, commonly known as *rejas*, frequently installed outside of homes and entryways across Puerto Rico. This breathable architecture references our changing relationship to the sun over the course of the day in how the patterns of the facade shift across the ground.

These precedents shared through the artworks featured in *Sun/Shade* demonstrate that shade is not only environmentally, but also culturally determined, and learning from a diversity of cultural strategies is essential for the design of our public spaces.

This finding was echoed in our policy review. Non-continental cities with consistently higher temperatures, like Melbourne and Paris, have treated shading as a form of social infrastructure, and intentionally built and deployed programs such as the Urban Forest Strategy (Melbourne) and Oasis (Paris) to promote social gathering, not retreat.

Our *Cool Spots* map reinforced the socially constructed nature of shaded spaces, with 30% of respondents preferring found or infrastructural spaces, indicating a collective appreciation for improvised inherited cool spaces over formalized parks.

Together these findings suggest that Toronto's approach to extreme heat will not depend on tree canopy or technological solutions alone, but on cultural ingenuity. We must create a shared architecture of coolness that reflects the best strategies of our diverse population!

“Northern cities aren’t accustomed to those ‘barbell hours’ of morning and evening use. We open at sunrise and close at sunset, but **we’re missing the hours that could really matter for people to get outside.**”

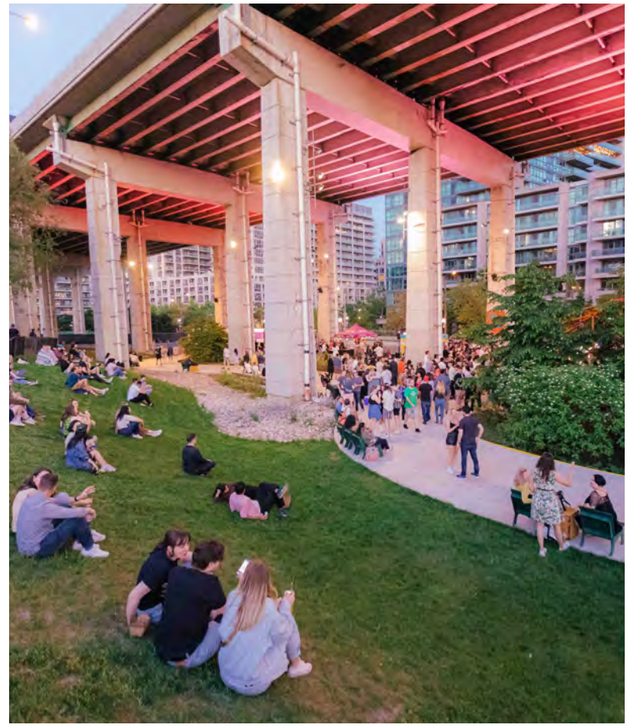
Anya Domlesky
Director of Research
SWA Group

Adopt a 24-hour relationship with the sun.

Cities should leave their shaded public spaces open as long as possible to foster 24-hour use, encourage socialising, and avoid over-dependence on air-conditioned indoor spaces.

Alan Webb, an educator and architect with LeuWebb Projects (Toronto) explains that activity levels in cities are determined by climate.“In Toronto," he says "we're just not on the same schedule as the heat! In other countries, the seasons inform the city's transformation: During warmer months you escape the hottest part of the day at 4pm, the giant awnings come out in the squares, you know, it’s a cycle.”

When creating the *Cool Spots* map, we prompted contributors to tell us what time of day they visited their spots. Participants described in detail their nuanced relationship with the solar movement, and how they choose heavily shaded areas of the city at midday, and exposed edges of the lake in the evening.



Opening Party at Bentway Phase 1, 2024.

Most Bentway site users indicated they visit during evening hours between 4pm-9pm, suggesting a gradual evolution in Toronto's public life, where evening occupation of public spaces is preferred during summer heat-waves.

Cultivating a 24-hour relationship to the sun requires the city's inhabitants to learn a new choreography. As audiences gathered under the shade of the Gardiner during hot summer afternoons and early evenings to experience *Sand Flight*, a dance work by Norway's Ingri Fiksdal and Denmark's Jonas Corell Petersen, they were reminded of this reality. The performance reimagined the sun-worshipping rituals of the Scandinavian Bronze Age, envisioning a speculative future in which shade becomes sacred.

In the context of a changing climate, *Sand Flight* underscored the need to invent new cultural traditions that respond to evolving environmental conditions, including a new temporal relationship to the sun.

Dancers for *Sand Flight* performing on a massive dune of sand beneath the Gardiner Expressway at The Bentway.

“Adaptable spaces are those that can hold multiple programs and uses in multiple seasons without being over-defined.”

Fadi Masoud
Professor of Landscape Architecture & Urbanism
Daniels Faculty, University of Toronto

Sunday Social, Bentway Phase 1, 2022.

Let nature in: embrace shade as a life force.

We need to place new value on shade-loving plants and make them familiar features in our urban environments.

Projects like a *Declaration of the Understory* by mixed Secwépemc and settler artist Tania Willard (Secwépemc, Canada) demonstrate a critical shift in our thinking about urban nature. Willard's work emphasized that **shaded spaces support dense ecological systems, and also sustain social and cultural life.**

Declaration of the Understory takes its name from the document issued by Secwépemc Kukpi7 Chiefs and Councillors in response to concerns over understory plant recovery following major wildfires near the artist's home in the British Columbia interior. At her installation below the Gardiner, Willard built on this call to action by reimagining the highway as a tree canopy, reminiscent of the Carolinian forests in southern Ontario where pockets of shade and sunlight shape unique ecosystems below.

At the centre of the installation is the *hepatica*, or liverleaf, an early spring wildflower that thrives in shaded conditions and covers eastern woodland floors with in vibrant purple. Referencing the pathways of *hepatica* flowers that burst up from the understory during the change of seasons, floral motifs in Willard's artwork activated the architecture of the highway as an imagined rewilding of public space. Altogether, the work proposed a renewing of relations with the lands, urban ecologies, and Indigenous communities.

> "We're talking about a catastrophic level of climate change that is and always was part of colonial impacts in the Americas... **Rewilding different ecologies is important in urban landscapes. Most of the time, rewilding does not emphasize Indigenous territory and Indigenous knowledge. For me, that's something we can grow and emphasize.**"

Tania Willard
Sun/Shade Artist

Joshua Welch, Senior Program Officer at Evergreen, echoes Willard, noting that planted shaded corridors are the ‘veins of the city’. They create a self-sustaining system of cooling the city, that supports the movement of people through it.

Shade provides a core civic function—it is not an absence of life; it is life.

> **A lone street tree won't do anything. Cooling depends on networks of trees, not individual plantings.**

Joshua Welch
Senior Program Officer
Evergreen

Tree canopy

Tree cover distribution in Toronto, 2018 from the City of Toronto's CanopyTO Study (2021).

The Bentway Conservancy

Focus on flexibility: shade is a critical design feature in all public spaces.

“We've designed cities starting from the roadway to the property line, while older cities’ fabric is structured around shared common spaces such as plazas, gardens, and courtyards—each with their own microclimate, access to shade, and dimensions of social life.”

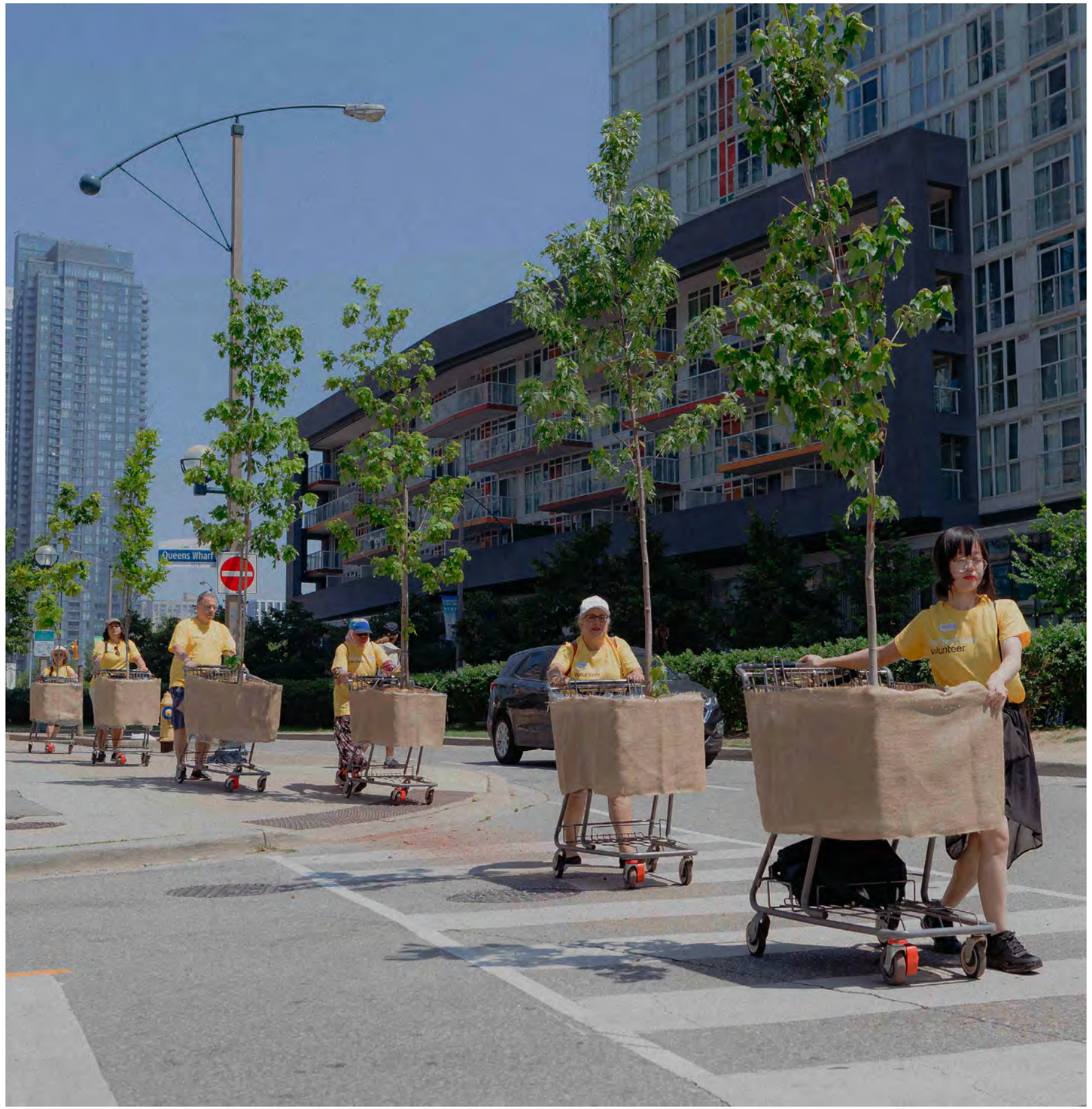
Fadi Masoud
Professor of Landscape Architecture & Urbanism
Daniels Faculty, University of Toronto

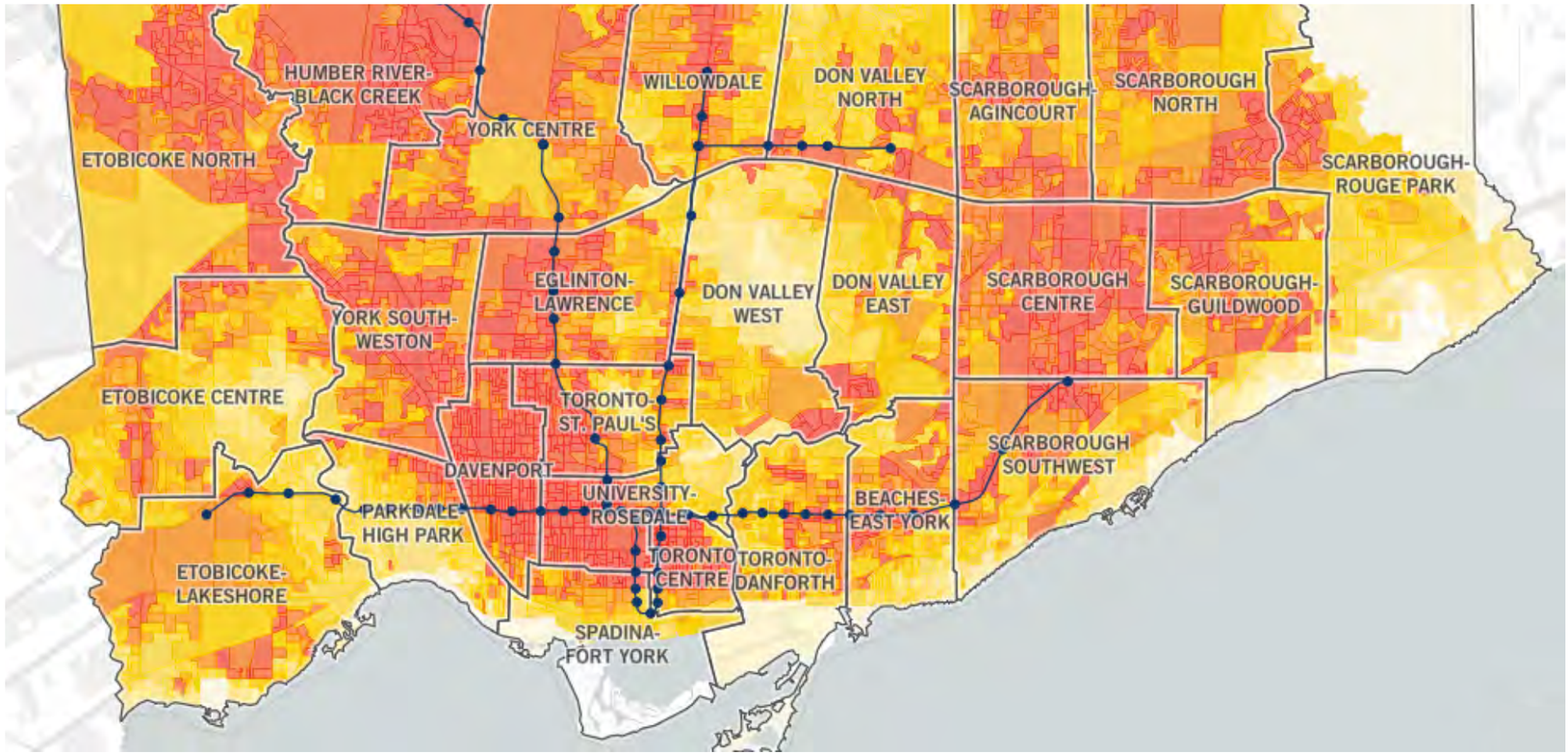
The urgency of rising heat levels means policy approaches must embrace hybridity, flexibility and seasonality.

When shade is established in the majority of public spaces, a network that enables comfortable travel through cities can be established. Cities like Paris have embraced hybridity by making previously private shaded spaces like school yards public after hours to alleviate urban overheating. In a similar way, **spaces like The Bentway demonstrate that single-purpose infrastructure can be rethought to solve multiple issues—an elevated highway built to move cars can double as the city’s longest continuous canopy.** During our summer 2025 season, 1 out of 6 guests visited our site to cool off, emphasizing the power of hybrid shading approaches.

NL Architects' roaming *Moving Forest* project reminded Torontonians that even temporary shade brings relief and can set the stage for social connection. Dorsa Jalalian, a senior urban designer at DIALOG, and co-author of Toronto's Thermal Comfort Guidelines, remarked on the fact that trees are the ultimate flexible climate infrastructure: in the summer, they provide much-needed shade, but when winter comes, and with it the need for sunshine, the trees adapt and shed their leaves, letting in the warmth.[6] *Moving Forest* further emphasized how **adaptability of public spaces during extreme heat is crucial**, and how we should be outfitting them to react to extreme heat when necessary.

[6] Learn more about tree adaptability in Kevin Jiang's article in the Toronto Star.



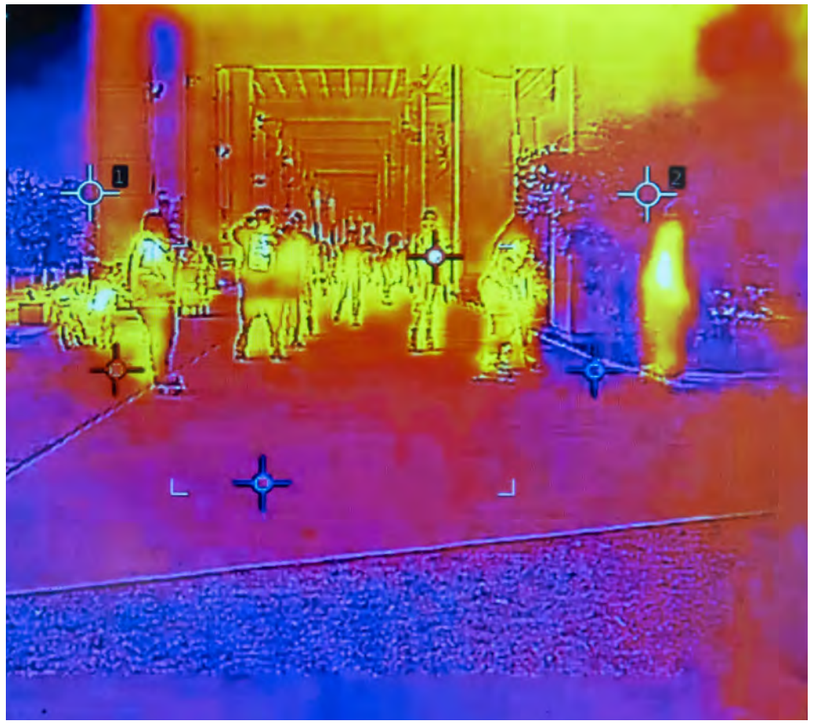


Low vulnerability High vulnerability

Mapping showing heat vulnerability in Toronto, determined by the equation: Heat Vulnerability = Heat Exposure x (Sensitivity – Adaptive Capacity), from the University of Toronto's School of Cities.

LeuWebb Projects' *Seeing Celsius* invited the public to see the heat signatures of public spaces in real time. Through visualizations with infra-red technology, their view-finders registered the huge differences in heat-gain across the materials that make up our city. Shade became more than visible shadow: it illustrated how critical its cooling effect is on the materials that make up public spaces.

When shade is incorporated into all public spaces, the socio-economic disparities related to urban over-heating are lessened. As cities embrace an adaptable approach, it is critical to measure outcomes. This helps to ensure the efficacy of the design strategy—our health and livelihoods depend on it.



Visualization of surface temperatures at Bentway Phase 1 using *Seeing Celsius*' view-finders in June 2025. The warmer the colour, the higher the surface temperature.

Stop design devolution: reconnect with the rhythms of nature.

We must build sensitively and design public spaces that respond to climate. In turn, we will foster our complex connections with nature's cycles.

Artist Tania Willard captures this condition succinctly:

"It's been a strategic part of colonization to create distance with our environments. So... we need to then spend money to make ourselves comfortable in this way that we've been taught is *the* way. And I'm interested in what we get when we start to erode that scale that doesn't speak to us and build relations to the land."

“Once mechanical systems and artificial lighting became mainstream, the building industry forgot how to design. We need to design so that we can be as passive as possible... not just for comfort and energy conservation, but for resilience because mechanical systems fail.”

Tommaso Bitossi
Climate Engineer and Consultant, Partner
Transsolar KlimaEngineering

The Bentway Conservancy

Left: Bentway Skate Trail during the summer.
Right: Bentway Skate Trail during the winter.

The City of Toronto's Thermal Comfort Guidelines begins by encouraging the protection 'of all living things'—reinforcing that the protection of non-human life goes hand-in-hand with safeguarding our own flourishing. **Acknowledging our interconnectedness will help us face the very climate challenges that we deny and avoid, and empower us to create the conditions needed to step more fully into our responsibilities as citizens.**

Associate Professor of Landscape Architecture and Urbanism at the University of Toronto, Fadi Masoud, stresses that **thermal comfort should be a starting point of design** and that heat, precipitation, air quality, and even flooding are interconnected. After cold winters, northern cities often forget the need to plan for shade; this can be described as 'seasonal amnesia'.

Design education represents an obvious lever to improve the quality of our public spaces and encourage the readoption of climatically sensitive buildings and public realm in our city. Engineer at Transsolar KlimaEngineering, Tommaso Bitossi, characterizes it as future proofing against systemic professional inertia, suggesting, "We still have people teaching what they have learned 30 years ago. We need a generational exchange."

Calls to Action

ACTION	AVOID	ADOPT
Look to other cultures to understand how to address urban overheating in northern cities.	The creation of overly exposed public spaces with no flexibility of use and/or without programming that invites adaptability and shade-making.	Innovative cultural approaches to responsive shade creation.
Cultivate a 24-hour relationship with the sun.	Relying on air-conditioned interiors that keep our daily routines largely unchanged across all seasons.	A seasonal perspective, where activity traces temperatures, and routines adapt—across the day and the seasons.
Embrace shade as a life force!	Seeing shaded areas as dark and unwelcoming.	An understory approach, where diverse plantings thrive in the shade and create a safe area for gathering during hotter hours.
Make shade an essential element in all public spaces.	The implementation of shade as an afterthought in the development of the public realm.	Shade by any means available: trees, adaptive reuse of built structures, temporary canopies.
Stop design devolution: reconnect with the rhythms of nature.	The incorrect siting of trees and shade mechanisms in public spaces, and building forms that rely exclusively on mechanical ventilation.	Design to harness the sun's energy, using form and the siting of buildings and plantings to create sustainable and natural shaded areas.

+ appendix

Bentway Phase 1, 2018.

authors

The Bentway Conservancy

Ilana Altman, Co-Executive Director
Anna Gallagher-Ross, Senior Manager, Programming
Josh Harskamp, Design Manager, Planning & Design
Cezzane Ilagan, Urban Design Coordinator, Planning & Design
Kyra Meier, Intern, Planning & Design
Essa El Issa, Intern, Planning & Design

The Bentway works to ignite the urban imagination, using the city as site, subject, and canvas.

Anchored under Toronto's Gardiner Expressway and guiding its complex future, The Bentway is a growing public space and much more. The Bentway is a new type of civic organization: a not-for-profit, powered by vital partnerships with the City of Toronto, residents, supporters, artists, city-builders, and dreamers. The Bentway is a catalyst rooted in experimentation, leading a creative movement to re-imagine the opportunities of urban spaces.

Phase 1 of The Bentway opened in 2018 and is already a vital public space, backyard park, cultural platform, connector for the western Waterfront corridor, and a demonstration of what is possible.

Learn more about The Bentway here.

Sun/Shade artists & partners

Artists

Casting a Net, Casting a Spell
by Celeste (Mexico City, Mexico)

Sand Flight
by Ingri Fiksdal and Jonas Corell Petersen (Oslo, Norway)

Bathed in Strange Light
by Natalie Hunter (Hamilton, Canada)

Seeing Celsius
by LeuWebb Projects (Toronto, Canada)

Second Shade
by Mary Mattingly (New York, U.S.A)

Moving Forest
by NL Architects (Amsterdam, Netherlands)

SOLAR
by Quayola (Rome, Italy)

la sombra que te cobija / the shadow that shelters you
by Edra Soto (Chicago, U.S.A.)

Declaration of the Understory
by Tania Willard (Secwépemc, Canada)

Partners

Apex Sound + Light

Arts and Culture Norway

Autodesk Research

BEATS + SKATES

Christie Lites

CONTACT Photography Festival

Design + Technology Lab at The Creative School – Toronto metropolitan University

Encore Global

Fashion Art Toronto

Fort York National Historic Site

Harbourfront Centre

Hotel X

Indigenous Curatorial Collective / Collectif des commissaires autochtones (ICCA)

Istituto Italiano di Cultura Toronto

Light + Dark

Melanin Skate Crew

Nordisk Kulturfond

Noble Space

Performing Arts Hub Norway

Quest Audio Visual

The Taylor Academy – The Royal Conservatory of Music

Toronto Dance Theatre

Toronto Public Library – Fort York Branch

Toronto and Region Conservation Authority

Videocittà

VIVA Singers Toronto

Waterfront Neighbourhood Centre

YZD

acknowledgements

Expert Interview Participants

Larissa Belcic & Michelle Farang Shofet
Artists & Landscape Architects
Nocturnal Medicine

Lisa Bitossi
Programme Manager, C40 Climate Solutions Network
Project Manager, Municipality of Milan

Tommaso Bitossi
Engineer, Partner
Transsolar KlimaEngineering

Maria Fernanda Camerena & Gabriel Rosas Aleman
Sun/Shade Artists
Celeste

Marc Coudert
Climate Adaptation & Resilience Manager
City of Austin

Anya Domlesky
Director of Research
SWA Group

Ingri Fiksdal & Jonas Corell Petersen
Sun/Shade Artists

Dorsa Jalalian
Associate & Senior Urban Designer
DIALOG

Candace Jordan
Climate Change Adaptation Lead
City of Melbourne

Christine Leu & Alan Webb
Sun/Shade Artists, Architects, and Educators
LeuWebb Projects

Fadi Masoud
Associate Professor, Landscape Architecture
University of Toronto

Danielle Paterson
Executive Director
David Cornfield Melanoma Fund

John Rigdon
Chief Urban Planning & Design Officer
Waterloo Greenway

Joshua Welch
Senior Program Officer
Evergreen

Tania Willard
Sun/Shade Artist, Assistant Professor
University of British Columbia

expert interviews

The Bentway met with a series of subject matter experts for hour-long 1:1 interviews to explore their understanding of urban heat and the correlation between public space, health and social connection. Interviewees came from Toronto and beyond and represented a wide range of professional backgrounds including urban design, public space management, engineering services, the arts, and academic research. Experts were asked specific questions about their work related to urban heat in addition to the following pro forma questions.

Interview Questions

Tell us about yourselves

1. Please tell us your full name and your role, profession, and/or affiliation.
2. Please share your area(s) of expertise.
3. How familiar are you to Toronto? Which neighbourhoods are you most familiar with?
4. What are some relevant urban-heat policy documents in your jurisdiction?

Perceptions and experience

5. Which climate-related challenges do you believe are currently under-addressed or missing from public discussions in your city and in Toronto?

Urgency and priorities

6. What do you think is the most urgent issue your city or Toronto needs to address in relation to urban heat and climate change?
7. Can you share a success story from your city where a heat-related design or public health problem was identified and solved or acted upon?
8. Are there any successful local of global examples of shade or cooling strategies that Toronto should learn from?

Shade and shadow (for C40 interviewees only)

9. Many cities have strict urban design guidelines around shadow impacts for new developments. How has your city changed its relationship to shade vs shadow in light of the urban heat island effect?
10. How does your city control design for thermal comfort in public spaces?

Action and responsibility

11. What are the main obstacles to making meaningful change on urban heat in your city?
12. What are the most useful tools cities have at their disposal to address urban overheating?

Other

13. Is there anything else you think The Bentway should consider or include in this research?

cool spots mapping tool

As summer heat intensifies, shade becomes more than a comfort; it becomes a public resource. *Cool Spots* invited Torontonians to share their favourite places to cool down across the city: spaces that make urban life more livable during increasingly hot summer seasons. From leafy parks and splash pads to overpasses and tucked-away laneways, these places of thermal refuge are often hidden in plain sight.

Project team

G.I.S. Production: Kyra Meier
Web Developer: Graham Powell
Concept & Design Development: Josh Harskamp

Please note that this tool adheres to The Bentway's privacy guidelines and does not collect or store any personal information.

Learn more about our *Cool Spots* tool and view the full map here.

Instructions and guidelines

- Click on the map to locate your cool spot (ensure your cool spot is public!).
- Give it a name, the time of day you use it, and write a short description.
- Your cool spot will be reviewed by a moderator and added to our *Cool Spots* map.

What our moderators will do

- Ensure your cool spot is in public.
- Ensure descriptions don't contain any profanity or inappropriate content.
- Ensure no personal information is shared.

Data sources

- Urban Heat Island: Landsat 8 Surface Reflectance Tier 1 Collection 2 [Dataset]. Retrieved from Google Earth Engine: https://developers.google.com/earthengine/datasets/catalog/LANDSAT_LC08_C02_T1_L2
- OpenStreetMap contributors. OpenStreetMap. Retrieved from https://www.openstreetmap.org
- Esri. World Imagery [Basemap]. Retrieved from https://www.arcgis.com/home/item.html?id=10df2279f9684e4a9f6a7f08febac2a9
- Regional Municipal Boundary [Shapefile]. Information & Technology Division, City of Toronto. (no date). https://open.toronto.ca/dataset/regional-municipal-boundary/

a policy overview of shade

Toronto

Publication Year	2007	2010	2012	2018	2025
Publication Title and Publishing Organization	*Staff Report: Shade Policy for the City of Toronto* by the City of Toronto's Medical Officer of Health	*Shade Guidelines* by the Toronto Cancer Prevention Coalition	*Toronto's Future Weather & Climate Driver Study: Outcomes Report* by the Toronto Environment Office	*Tree Canopy Study* by City of Toronto's Urban Forestry division	*Thermal Comfort Guidelines* by the City of Toronto, DIALOG, and Buro Happold
Key Concerns	• Skin cancer linked to ultraviolet radiation (UVR) exposure • Limited public awareness of health risks associated with prolonged sun exposure • Children are considered particularly vulnerable	• Continued concern about skin cancer through UVR exposure from outdoor environments • Health risks to children and outdoor workers, as both are seen as vulnerable populations	• Infrastructure risks from climate change • Increased urban heat stress and as a result, public health vulnerability is stressed	• Decreased permeable surfaces, which leads to a decrease in growing space for canopy expansion (p. 14) • Invasive species impacting canopy growth and tree health	• As urban heat island effects increases, outdoor public spaces become "a place of refuge" (p. 8) • Toronto needs to be designed for thermal comfort because there are disproportionate climate risks for vulnerable groups
Goals	• Prevent skin cancer through reducing the overall exposure to UVR through personal sun protection (e.g. hats) and shade • Recognize the additional benefits of shade, such as its role in mitigating Urban Heat Island effect	• Promote shade as a tool to mitigate UVR overexposure and contribute to a culture of sun safety (p. 37) • Elevate shade's role in mitigating Urban Heat Island effect as a co-benefit of shade (p. 32)	• Improve the level of certainty about extreme heat developing due to climate-related weather changes • Guide the City's investment and budgetary decisions about infrastructure	• Update the information available about Toronto's urban forest and its ecological benefits • Identify opportunities for increasing sustainable tree cover through possible planting areas	• Create climate-informed and equitable design standards to address heat and UVR exposures across neighbourhoods • Integrate thermal comfort strategies into land-use planning
Recommendations and Outcomes	• Suggest to adopt a "corporate-wide shade policy" (p. 7), establishing a commitment to increase shade • Double the tree canopy to 34%	• Complete a shade audit for sites used through the summer (p. 11) • Encourage City officials to develop shade guidelines using the Shade Audits outlined in this report	• Encourage City Council's decision making processes to consider the study's 2040–2045 projection of increased annual average temperatures	• Complete land cover mapping to examine the existing urban forest canopy and the possible planting areas (PPA) to understand the city-wide distribution of urban forests	• Develop guidelines and strategies which prioritize shade, comfort, and safety using tools like the Design Toolbox: Public Realm
Summary	This early policy set out strategies to reduce UV exposure by promoting shaded environments in public spaces. The report framed shade as a public health intervention, however it focused on individual projects rather than a city-wide strategy.	This guideline provided technical and design-oriented solutions. It also acknowledged the mitigation of urban heat effects as a co-benefit of shade. These guidelines did not seek legislative force, as it depended largely on voluntary adoption by designers, schools, and municipalities.	The Great Lakes have a uniquely moderating effect on Toronto. Using realistic extremes in their climate model, this report provided certainty about more frequent heatwaves in Toronto, advancing the conversation about the importance of shade.	The central argument of this policy is that urban forestry is critical for resilience, reducing heat vulnerability, and improving air quality. Expanding the urban canopy became a primary strategy to meet sustainability and livability goals. This study reframed shade provision as ecological infrastructure and an equity issue, rather than solely a public health issue.	These latest guidelines reflect Toronto's recognition of extreme heat as a pressing urban hazard. Its aim is to integrate shade and cooling strategies into all planning and design practices. The policy positions shade as part of a comprehensive heat-response strategy, linking urban design to climate justice and resilience.

a policy overview of shade

Publication Year	2024	2012 & 2024	2022 & 2024
Publication Title and Publishing Organization	*Paris Climate Action Plan (2024–2030)* by Ville de Paris (City of Paris)	*Urban Forestry Strategy (2012–2032)* and *Urban Forest Precinct Plan (2025–2035)* by the City of Melbourne	*Miami-Dade County Heat Action Plan* and *Miami Forever Climate Ready: Extreme Heat* by the Miami-Dade County and City of Miami
Key Concerns	• Climate change in Europe is progressing at twice the global rate • Heatwaves are becoming more frequent and severe each summer • Achieving carbon neutrality is urgent to curb greenhouse gas (GHG) emissions and limit future risks	• Climate change is projected to increase warm, dry conditions and extreme heat events • Increased densification due to population growth • Urban heat will exacerbated by drought and water restrictions, negatively affecting tree health	• Extreme heat events increasing in South Florida due to climate change and urban development • Vulnerable population, particularly lo-income communities, outdoor workers, and seniors are disproportionately affected
Goals	• Grounding the *Climate Action Plan* on reducing the city's carbon footprint and reducing local GHG emissions	• Set out guiding principles to mitigate climate change, reducing UHI effects • Design for health and wellbeing while creating healthier ecosystems • Become a water sensitive city and position Melbourne as an urban forestry leader	• Public education campaigns to increase heat risk awareness • Prevent heat-related illnesses through principles of equity, safety, building with nature, and more (Miami-Dade County) • Suggest shade, water, and design as solutions (City of Miami)
Recommendations and Outcomes	• Protect Parisians from climate risks • Promote a resilient, low-carbon economy where everyone acts collectively for the climate	• Proposed targets and strategies to increase canopy cover and urban forest diversity • Propose strategies to inform and consult with the community	• Developed a community-wide plan to: inform, prepare, and protect resident; keep homes and emergency facilities cool; and reduce heat in neighbourhoods
Summary	Paris was one of the first global cities to incorporate heat adaptation into its climate policy after the deadly 2003 heatwave. This plan emphasized shading, cooling networks, and re-naturalization of urban landscapes to mitigate rising temperatures. Paris demonstrated how extreme weather events can trigger long-term policy shifts, reframing shade and cooling as climate priorities rather than optional amenities.	Melbourne's strategy is a great practice in integrating shade provision with long-term resilience planning. The city set clear canopy targets tied to climate projections of rising heat stress. Its policies emphasized diversifying species to adapt to future climates. Crucially, Melbourne linked shade provision to social outcomes, recognizing that equitable access to shaded public spaces improve health.	Miami-Dade's recent initiatives reflect the urgency of responding to extreme heat in subtropical climates. The Heat Action Plan emphasizes emergency preparedness and rapid response, treating shade and cooling as critical life-saving infrastructure rather than long-term amenities. Strategies include public education campaigns targeted at high-risk populations such as low-income households and seniors.
Lessons Learned	This case study underscores the potential for Toronto to adopt stronger, mandatory measures in response to increasing climate risks.	Melbourne's success shows how strong institutional commitment and measurable targets can drive transformative outcomes.	In recognizing extreme heat as an urgent public safety issue, Miami-Dade places stronger emphasis on immediate emergency response.

seasonal survey

The Bentway's Summer Visitor Survey was designed to learn more about how people interact with space when public cooling infrastructure is most critical. The survey gathered our typical visitor details including visit purpose, frequency of use and mobility choices, but added an extra layer to understand whether individuals had come to the site to cool off, and their understanding of cool spot offerings across the city. Demographic questions help ensure that The Bentway continuous to serve our neighbours in an inclusive way. Findings will help refine ongoing programming, development of future Bentway spaces and modifications to our existing sites.

Survey Questions

Which Bentway site did you visit today? If more than one, pick the one you spent the most time at.

- ☐ The Bentway site under the Gardiner (250 Fort York Blvd)
- ☐ The Bentway Studio next to Canoe Landing Park (55 Fort York Blvd)
- ☐ Bentway Staging Grounds, under the Gardiner at Dan Leckie Way
- ☐ I didn't visit a Bentway site today

What is the primary purpose of your visit to The Bentway? Select all that apply.

- ☐ To participate in a Bentway program or event
- ☐ To see the art installations
- ☐ To use the facilities (i.e. washroom, outlets, water fountain, etc.)
- ☐ For physical activity/exercise (e.g. walking, running, rolling)
- ☐ Walking dog/pet
- ☐ Roller skating
- ☐ Photoshoot
- ☐ To meet other people
- ☐ To be alone
- ☐ To be outdoors
- ☐ To escape the heat
- ☐ To take children outside
- ☐ Other (please specify)

Was this your first time visiting The Bentway?

- ☐ Yes
- ☐ No

How often do you visit The Bentway?

- ☐ Yes
- ☐ No

What was your primary mode of travel to The Bentway?

- ☐ Walking
- ☐ Public transit
- ☐ Bicycle
- ☐ Car
- ☐ Taxi or rideshare
- ☐ Other (please specify)

If you or someone in your party drove, where did you park?

- ☐ Parking lot under the Gardiner, 250 Fort York Blvd
- ☐ Parking lot at 800 Fleet St, next to the Gardiner
- ☐ Parking lot at 859 Fleet St, nest to Lake Shore Blvd
- ☐ Not applicable

seasonal survey

Did you come to The Bentway to cool off today?
- ☐ Yes
- ☐ No

Did you try out the *Seeing Celsius* thermal-imaging viewfinder?
- ☐ Yes
- ☐ No

If yes, did it help you find a spot to experience your ideal temperature?
- ☐ Yes
- ☐ No

Do you think Toronto has enough public spaces to cool off when it's hot?
- ☐ Yes
- ☐ No

In regards to your time at The Bentway or participating in Bentway programs, how much do you agree with the following statements (on a scale of 1 to 5; 1 being the lowest)?
- ☐ The Bentway positively contributes to my physical health
- ☐ The Bentway positively contributes to my mental health and wellbeing
- ☐ I have more positive social connections

In regards to your time at The Bentway or participating in Bentway programs, how much do you agree with the following statements (on a scale of 1 to 5; 1 being the lowest)?
- ☐ Access to The Bentway has increased my time spent outdoors
- ☐ The Bentway and its events/programs help me better value the environment, including public spaces and environmental sustainability

How likely are you to recommend The Bentway to others (on a scale of 1 to 10; 1 being the lowest)?

Is there anything else you would like to tell us?

Demographics

Please share the first 3 digits of your postal code.

How old are you?
- ☐ 18 and under
- ☐ 19-29
- ☐ 30-39
- ☐ 40-49
- ☐ 50-59
- ☐ 60-69
- ☐ 70 and over
- ☐ Prefer not to answer

seasonal survey

Do you identify as part of the 2SLGBTQ+ community? 2SLGBTQ+ is an umbrella term for persons who identify, for example, as lesbian, gay, bisexual, queer, trans, two-spirit, genderqueer, questioning, or who otherwise express gender or sexual diversity.

- ☐ Yes
- ☐ No
- ☐ Unsure
- ☐ Prefer not to answer

Do you identify as a person living with a disability? Persons with disabilities are those who have a long-term or recurring physical, mental, sensory, or learning condition(s) and whose everyday activities are limited or impacted because of this condition(s). This includes episodic, invisible, and chronic conditions.

- ☐ Yes
- ☐ No
- ☐ Unsure
- ☐ Prefer not to answer

Do you identify as Black, Indigenous, and/or a Person of Colour and/or racialized?

- ☐ Yes
- ☐ No
- ☐ Unsure
- ☐ Prefer not to answer

With which gender identities do you most identify? Please check all that apply?

- ☐ Woman
- ☐ Man
- ☐ Gender non-binary/non-conforming/ genderqueer
- ☐ Two-spirit
- ☐ Agender
- ☐ Prefer not to answer

What is your approximate annual household income?

- ☐ Less than $25,000
- ☐ Between $25,000 and $49,999
- ☐ Between $50,000 and $74,999
- ☐ Between $75,000 and $99,999
- ☐ Between $100,000 and $124,999
- ☐ Between $125,000 and $149,999
- ☐ Over $150,000
- ☐ Prefer not to answer

further reading

Bell, Sarah, Lucy Benjamin, and Enzo Lara-Hamilton. “Keeping It Cool in Melbourne.” *After Comfort: A User’s Guid*e. e-flux Architecture, November 24, 2024. https://www.e-flux.com/architecture/after-comfort/621450/keeping-it-cool-in-melbourne/.

Bloch, Sam. *Shade: The Promise of a Forgotten Resource*. New York: Random House Publishing Group, 2025.

City of Toronto. *Thermal Comfort Study: For Large Area Studies, Public Realm Capital Projects, and Large Site Developments.* Toronto: City of Toronto, 2025.

City of Toronto, Toronto Environment Office. *Toronto’s Future Weather & Climate Driver Study: Outcomes Report.* SENES Consultants Ltd., October 30, 2012. Toronto: City of Toronto.

C40 Cities; Acclimatise; Urban Climate Change Research Network (UCCRN). “Heat Extremes” and “Heat Extremes and Poverty.” In *The Future We Don’t Want: How Climate Change Could Impact the World’s Greatest Cities: UCCRN Technical Report,* 42–56. Toronto: C40 Cities Secretariat, 2018.

Klinenberg, Eric. *Heat Wave: A Social Autopsy of Disaster in Chicago.* Chicago: University of Chicago Press, 2002; updated ed., 2015.

Masoud, Fadi, Paul Kushner, Oya Mercan, Blake Poland, John Robinson, Karen Smith, and Marianne Touchie. “Designing Equitable Urban Resilience in Toronto’s Tower Neighbourhoods.” *City Research Insights* 1, no. 3 (2023). University of Toronto School of Cities.

Miami-Dade County Office of Resilience. *Extreme Heat Action Plan*. Miami-Dade County, 2022. https://www.miamidade.gov/environment/library/2022-heat-action-plan.pdf.

Ville de Paris. *Plan Climat 2024-2030*. Paris: Ville de Paris, 2024. PDF file, June 25 2025. https://cdn.paris.fr/paris/2025/06/25/plan-climat-en-9E8O.pdf.

image credits

Bradley Golding — page number 28

C40 — page 14 (right)

City of Austin — page number 14 (left)

City of Melbourne — page number 15 (centre)

City of Toronto — page number 32

Corey Kelly — page number 23 (right)

Edra Soto — page number 27 (top)

Google — page number 17 (top right)

Harbourfront Toronto — page number 17 (top left)

HZD Photography — page number 11 (left, centre)

Jean-Baptiste Gurliat / City of Paris — page number 14 (centre)

Jonathan Gazze — page number 38 (left)

Manuela Goller — page number 31

Marlowe Porter — page number 23 (centre), 29, 26 (top)

Matthew Monteith — cover, page number 5, 13

Maxim Sokolov — page number 17 (bottom left)

Miami-Dade County — page number 15 (left)

Mila Bright Zlatanovic — page number 10, 17 (bottom right), 20, 21 (right), 22 (right), 23 (left), 35 (right), 38 (right)

Nic Lehoux — page number 4, 7, 33, 37, 40

Samuel Engelking — page number 12 (left), 19, 21 (left, centre), 22 (left, centre), 26 (bottom)

Sarah Holman — page number 12 (right), 24, 27 (bottom), 34

School of Cities — page number 35 (left)

Shawn Parent — page number 18

Tree Equity Score Analyzer — page number 6

Wei Qi — page number 15 (right), 30

Wes Guild — page number 36

Every effort has been made to identify and obtain permission for all images and materials used in this publication. If you notice any content that you believe is your property and has not been properly credited or cleared, please contact us at hello@thebentway.ca—we'll review it promptly and remove or update it as needed.

the bentway

55 Fort York Blvd
Toronto ON M5V 0R6

hello@thebentway.ca
+1 416 304 0222