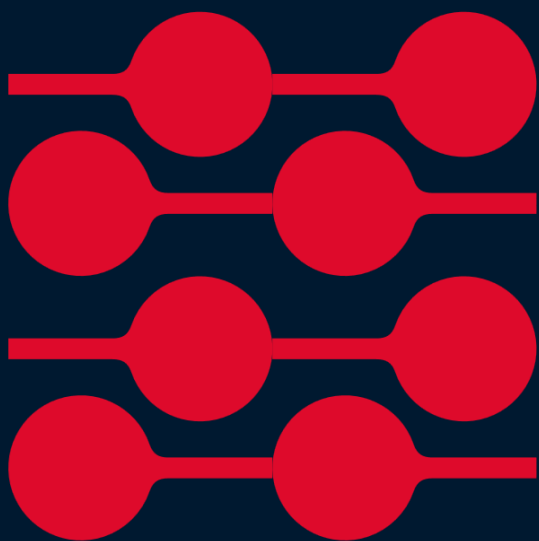


Manaaki Tāmaki Makaurau



Overseas Case Studies

2025, Version 1.0





Revitalising heritage infrastructure into connected and sustainable community spaces

Williams Landing Pilot Park

Location: Melbourne, Victoria, Australia

Project description

Pilot Park is a 100-metre-long linear park located in Williams Landing in Melbourne. It was developed as the first step of Melbourne Water's 'Greening the Pipeline' project and showcases how unused heritage infrastructure can be revitalised to make space for people. Not only did the project address Williams Landing's urgent need for new open space, but it also illustrated the multiple benefits that can be delivered when development prioritises developing new multi-use spaces that protect and celebrate local heritage.

When: Opened in 2017.

Who: Melbourne Water in collaboration with Wyndham City Council, Victoria State Government, GHD Woodhead, VicRoads, and City West Water.

Costs: Approx. \$3.12 million.

Key insights

1. Multi-use parks that directly connect to active transport networks can help **support healthy lifestyles**.
2. Stormwater biofiltration and management systems can enable more **resilient** green open spaces with limited impacts on climate disruption.
3. **Repurposing** decommissioned assets is a way to provide new open spaces where this is limited land availability while also protecting and celebrating local heritage.

How does this case study bring the strategic directions to life?

Make all of Tāmaki Makaurau our backyard

- Revitalises unused infrastructure to provide new recreation opportunities.
- Improves bike and walking path networks.



Enhance our response to climate disruption

- Repurposes decommissioned infrastructure for cost-effective and sustainable stormwater management.
- Collects, stores and repurposes stormwater for the irrigation of green space.
- Prioritises self-sufficiency and resilience.



Enhance our environment, biodiversity and heritage

- Protects and celebrates the community's historic heritage.



Support Aucklanders to live healthy, active lives

- Enhances active transport connections to key locations within the community.
- Connects the once divided community and reduces barriers to accessing recreation opportunities.
- Delivers a range of play and recreation opportunities.



What motivated the project?

Prior to the park's construction, Williams Landing was in urgent need of a new open space for play, recreation and connection. It is a fast-growing community in West Melbourne, with many young families. The area also had limited land availability and low levels of rainfall, making it difficult for local organisations to develop new areas for recreation.



Aerial view of Pilot Park. Image credit: 3FB Aerworx.



Pilot Park's opening day in 2017. Image credit: 3FB Aerworx.



1. Supporting healthy, active lives

Since its opening, Pilot Park has played a pivotal role in providing recreation opportunities, reducing barriers to accessing recreation and enhancing the local active transport network.

- **A multi-use open space:** The park features an off-the-road concreted space for children to safely play on bikes and scooters, an outdoor gym area, and several green and tree-lined play areas.
- **Enhancing active transport connections:** The park features a direct connection to the adjoining Federation Trail bike path. This path runs along the park and links to nearby schools and community facilities. This connection has increased the bike path's visitation rates. Additionally, connection has been further enhanced by the park's limited use of fencing. As well as bridging the communities on either side of the sewer, this has greatly reduced walking times to the local shopping centres and increased the use of active transport.

2. Increasing resilience through stormwater management

Williams Landing and its surrounding areas experience high heat vulnerability and limited rainfall. Responding to this, the park features an on-site stormwater harvesting, storage and re-use system. After its collection in neighbouring suburbs, this system channels stormwater flows through the renovated sewer. Here, it is treated by a series of raingardens situated atop the sewer. Treated stormwater is then transferred to on-site storage tanks to be pumped across the park, watering its 54 trees and 1200 square metres of irrigated landscaping. This feature provides multiple benefits:

- **Increasing climate resilience:** Overcoming Williams Landing's limited rainfall, the park's stormwater system enables year-round access to treated water. Because of this, the park's large green areas can reliably go through regular wetting and drying cycles with limited reliance on existing water networks.
- **Reducing stormwater runoff:** Through its stormwater management system, the park diverts 1.5 million litres of local stormwater per year. As the Williams Landing community grows, this will reduce the stress on local waterways and increase community resilience.
- **Mitigating urban heat island effects:** The park's large green spaces and reliable access to water has enabled it to reduce its ambient temperatures by approximately 20 degrees. This has decreased the park's contribution to Williams Landing's urban heat island effects, improving local amenity.

- **Reducing pollutant levels:** By treating stormwater in the raingardens that run along the pipeline, the park has greatly improved local water quality, decreased pollutant levels, and reduced its impacts on the natural environment.

3. Revitalising decommissioned assets to protect and celebrate heritage

Key to the development of the park was the revitalisation of the overgrown and decommissioned heritage-listed sewer. The sewer had been unused for 23 years, sitting as a fenced-off barrier that separated community members on either side. Transforming it into a space for community, recreation and connection was a powerful way to both improve local amenity and provide a new open space in an area with limited land available for new development. This has also allowed the park to protect and enhance local heritage.

- **Showcasing heritage:** The Main Outfall Sewer is the central feature of the park, running along its central spine. Informative signage and viewing portals adjoining it allow visitors to engage with the history of the site. Significant efforts were undertaken during the planning stage to ensure limited development impacts on the integrity of the pipeline.
- **Providing heritage learning:** By protecting and showcasing the pipeline's heritage, the park provides opportunities for residents to engage with local heritage in a high-amenity space. This has greatly increased community buy-in to the project and generated renewed excitement about the revitalisation of the rest of the pipeline. Post-completion survey data shows that 82% of nearby residents would be willing to pay for subsequent projects along the pipeline.

References

- Centre for Water Sensitive Cities, "[*Greening the Pipeline – Williams Landing Pilot Park*](#)"
 Melbourne Water, "[*Greening the Pipeline*](#)"
 GHD Woodman, "[*Transforming a pipeline reserve into a vibrant space that connects communities*](#)"
 Healthy Active by Design, "[*Greening the Pipeline Pilot Park*](#)"



Section of the sewer pipeline prior to development. Image credit: 3FB Aerworx.



Growing more resilient buildings and cooler cities

Toronto Eco-Roof Incentive Program and Green Roof Bylaw

Location: Toronto, Canada

Project description

In 2009, the City of Toronto launched its Eco-Roof Incentive Program. The program encourages the installation of green roofs and cool roofs on both new and existing buildings, through financial incentives and bylaw amendments. Green roof and cool roof installations, known collectively as eco-roofs, support Toronto's climate change adaptation and resilience efforts. Since its inception, the program has supported the installation of over 600 eco-roof projects, creating over 1.1 million m² of eco-roof space.

The Green Roof Bylaw

In 2009, Toronto adopted a bylaw requiring and governing the construction of green roofs. The Green Roof Bylaw sets out a graduated green roof requirement for new developments or additions that are more than 2000m² in gross floor area. Requirements range from 20-60% of the available roof space of a building, dependant on the size of the building. All green roofs in the City of Toronto, whether voluntarily constructed or mandated, must conform to the Toronto Green Roof Construction Standard.

The Eco-Roof Incentive Program

The Eco-Roof Incentive Program provides monetary incentives for adding green roofs to existing buildings, new buildings with a gross floor area of less than 2000m², and all new construction projects by Toronto School Boards and non-for-profit organisations. It also incentivises the adding of cool roofs to existing buildings and new low-rise buildings less than 5 units.

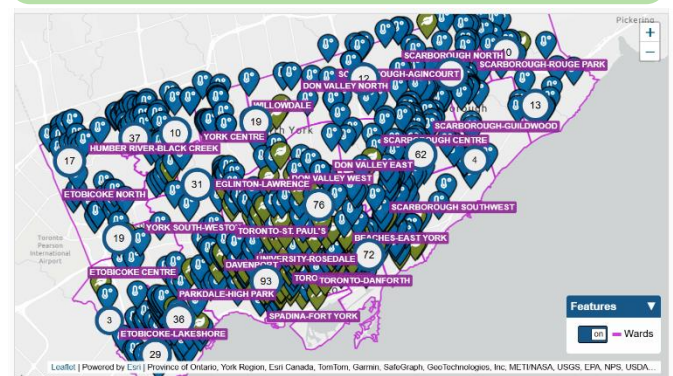
When: 2009 – ongoing

Who: The City of Toronto and building owners

Costs: Incentives for green roofs – up to \$100,000 per project. Incentives for cool roofs – up to \$50,000 per project.

Key insights

1. Provides **innovative open spaces** which can be used for a number of purposes, **creating more varied opportunities for recreation** in urban settings.
2. Utilises otherwise unused urban space to **support the response to climate disruption**, through enhanced stormwater management, cooling and energy use reduction.
3. **Contributes to the enhancement of biodiversity** through the creation of new habitats for wildlife and native plants in the city.



Map of eco-roof spread across Toronto. Screenshot from [the Eco-Roof Incentive Program Map](#).

How could this case study bring the strategic directions to life?

Make all of Tāmaki Makaurau our backyard
Deliver innovative open spaces in high-density areas

- Creates amenity spaces where there is limited land availability to provide new recreation opportunities.
- Provides space to introduce urban agriculture opportunities.



Enhance our response to climate disruption

- Repurposes unused space for cost-effective and sustainable stormwater management.
- Reduces temperatures and energy use in urban areas.
- Green roofs contribute to cleaner air by helping remove pollutants.



Enhance our environment, biodiversity and heritage

- Green roofs provide habitats for birds, pollinators and urban wildlife and native plants.



What motivated the project?

In 2006, Toronto's leadership adopted a Green Roof Strategy, "Making Green Roofs Happen." The strategy was developed after a university study commissioned by the city indicated that the widespread use of green roofs would significantly benefit the city economically – with specific emphasis on stormwater management and reducing urban heat, minimising the associated energy used for cooling. This encouraged the construction of green roofs on city and privately owned buildings through incentives, public education and the development of an approval process. The city's Green Roof Bylaw and Eco-Roof Incentive Program was then adopted in 2009.



1. Providing innovative open spaces and creating more varied opportunities for recreation in urban settings

- Through the incentive program, two types of roofing are encouraged: cool roofs and green roofs. A cool roof has an exterior surface which reflects sunrays and reduces heat build-up. Green roofs, also known as living roofs or vegetated roofs, support the growth of vegetation.
- Green roofs offer an opportunity for open space to be created on rooftops. This is a creative way of utilising space in dense urban areas, while also introducing new types of recreational activities for people to enjoy – for example, gardening.
- Providing pockets of nature in urban areas can also have positive impacts on the wellbeing of communities – both for physical health (for example, if the space is used as a community garden to produce fresh food) and mental health (by using time in nature as a vehicle to combat stress).

2. Supporting the response to climate disruption

- **Stormwater management:** In assembling a green roof, there will always be a root-repellent system, a drainage system, a filtering layer, a growing medium (soil) and plants installed on a waterproof membrane of an applicable roof. This design helps green roofs to absorb rain that could otherwise flood basements, overload sewers and pollute waterways. It is estimated that annually eco-roof projects divert over 18.9 million litres of stormwater.
- **Cooling air:** Eco-roofs help combat the urban heat island effect in cities, keeping temperature cooler and more comfortable. Studies in South Korea and Toronto have shown that green roofs and green infrastructure can reduce building temperatures and regulate nearby surface air temperatures, helping to aid cooling. In turn, this helps reduce energy consumption used in heating and cooling of buildings. It is estimated that eco-roof projects reduce energy consumption by over 2,300 megawatt hours annually.
- **Reducing air pollution:** Green roof planting helps to remove carbon, create oxygen and reduce harmful pollutants in the air. It is estimated that eco-roof projects avoid over 434 tonnes of greenhouse gas emissions annually.

3. Contributing to the enhancement of biodiversity

- Green roofs can play a significant role in biodiversity conservation, providing habitats in urban settings for birds, pollinators, urban wildlife and native birds.
- The Toronto Green Roof Construction Standard governs the design and construction of green roofs. Alongside this, Toronto Building has prepared Supplementary Guidelines and Guidelines for Biodiverse Green Roofs. The latter identifies,

describes and illustrates best practices for creating habitats and promoting biodiversity on green roofs in Toronto.



Avling Kitchen and Brewery green roof. Image credit: City of Toronto.



The Toronto City Hall podium green roof, demonstrating leadership by installing green roofs on city-owned facilities. Image credit: Wikimedia Commons.

References

- City of Toronto, [“Eco-Roof Incentive Program”](#)
- City of Toronto, [“Eco-Roof Incentive Program Map”](#)
- City of Toronto, [“Green Roof Overview”](#)
- City of Toronto, [“City of Toronto Green Roof Bylaw”](#)
- Zheng, N. (2024). [Investigating the economic value of green roofs in Canada’s leading cities \(Vancouver and Toronto\): A hedonic pricing analysis.](#)



Transforming underutilised spaces into vibrant, people-centred public open spaces

High Park

Location: Calgary, Canada

Project description

The project involved the transformation of an underused 90,000 square-foot parking lot into High Park, a creative new rooftop park and event space six floors above the street. It is located in Calgary's Beltline neighbourhood, a densely populated urban area. This vibrant community park features a 200-metre boardwalk with colourful parklets that provide large spaces for fitness, arts and events, providing a safe, year-round venue for festivals and gatherings.

When: Opened in September 2020, initially as a pilot project. Phase two opened in September 2021.

Who: Operated by the Beltline Neighbourhoods Association, High Park was designed by Public City Architecture in collaboration with the Beltline Neighbourhoods Association, BUMP Festival and Calgary Parking.

Costs: The rooftop transformation was part of bigger project called 'Platform' that was budgeted at CAD \$80m (the bigger project is not yet completed). Beltline Neighbourhoods Association received CAD \$200,000 to upgrade High Park.

How does this case study bring the strategic directions to life?

Make all of Tāmaki Makaurau our backyard

- Meets the community's need for more inclusive access to everyday open space and responds to the shortage of public space in a densely populated city.



Deliver innovative open spaces in high-density areas

- Showcases innovation in existing high-density urban areas and unlocks underused spaces for community use and active lifestyles.
- Provides areas for rest, outdoor fitness programs and festivals/events.



Support Aucklanders to live healthy, active lives

- Empowers communities by providing a flexible venue for local events, ensuring programming reflects community needs.
- Offers a range of recreation opportunities including sport, recreation, events, gatherings and picnics.

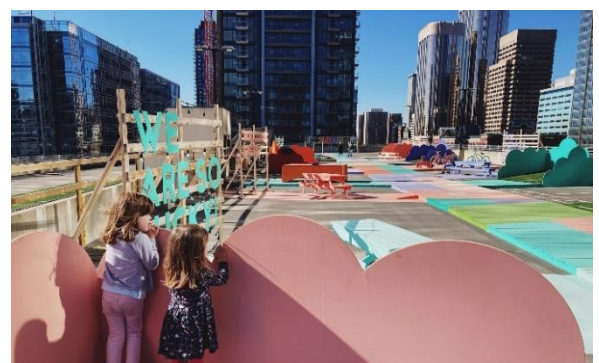


Key insights

1. The project **transforms** a 90,000-square-foot parking space into vibrant public space, demonstrating how an underused, single-use space can be reimagined for wider community benefit.
2. It provides space for a **range of recreation opportunities**, with flexible open spaces, including basketball courts and wellness areas, that cater to diverse community needs.
3. It serves as a **cultural destination**, hosting events, concerts, outdoor films and murals, and showcasing a people-centred approach to urban space.



Movie night at High Park, Calgary. Image credit: BLKWTR Creative and the Beltline Neighbourhoods Association.



High Park, Calgary. Image credit: BLKWTR Creative and the Beltline Neighbourhoods Association.

What motivated the project?

During COVID-19, the Calgary Parking Authority projected a CAD \$33 million decline in gross revenue compared to 2019. To offset losses, it explored new ways to generate revenue while providing value to communities. Supported by the Canadian government, the project aimed to revitalise an underused space, foster community connections and boost economic recovery. By transforming the parking lot into a vibrant, multifunctional hub that provides much needed additional public space, High Park supports local businesses and enhances urban life for residents and visitors.



1. Transforming a single-use car park into multi-use urban infrastructure

High Park is a community-driven initiative in Calgary's Beltline neighbourhood that has transformed an underused single-use parking lot into a vibrant and multi-use public space. This transformation incorporates thoughtful design that enhances both functionality and accessibility:

→ Functional transformation:

- Previously a single-use car park and concrete barriers, the rooftop has been transformed into a multi-use space featuring a 200-metre-long boardwalk, vibrant parklets and multi-use areas. The surface was reimagined with bold, colourful designs for Calgary's urban environment.
- The colourful design elements are not only playful and lighten the space but also reflect Calgary's urban character. These interventions are tailored to the structural requirements of a rooftop setting, while maximising its potential to serve the diverse needs of the inner-city population.

→ Accessible and event-friendly design:

- The rooftop offers easy access from the south side of City Centre Parkade via 10th Avenue and connects to Calgary's Plus 15 pedestrian networks from Gulf Canada Square, encouraging connectivity.
- Open daily from 7 a.m. to 11 p.m., High Park offers a welcoming space for casual visits and scheduled programming.

2. Recreation opportunities in a high-density area

→ High Park delivers a wide range of recreation opportunities for the community, including:

- three basketball half-courts for casual and organised play
- an expanded astroturf lawn for wellness activities and events
- lounge seating with a rooftop fire pit, offering space for relaxing and socialising.

→ High Park's flexible and multi-functional open spaces cater to diverse recreation needs and demographic groups. By offering playgrounds, sports facilities, cultural gathering places and quiet areas, High Park ensures options for both active and passive recreation and enjoyment.



High Park in Calgary, Canada. Image credit: Beltline Neighbourhoods Association and Eric Gonzolez.

3. A cultural destination within an urban city

→ High Park functions as a vibrant community hub in the heart of Calgary. Its community and culture features include:

- It regularly hosts concerts, outdoor film screenings and pop-up performances, offering a platform for both local artists and large-scale public events.
- The park also features more than 20 large-scale murals created as part of the BUMP Festival—transforming the rooftop into an open-air gallery that celebrates creativity and local identity.



200-meter boardwalk with colourful parklets. Image credit: Kokemor Studio.



Basketball court located in High Park. Image credit: Beltline Neighbourhoods Association and BLKWTR

References

- Good Company, *"High Park: Visual Identity"*
 Public City, *"High Park"*
 Neighbourhoods Beltline Association, *"Welcome to High Park"*
 Karen Bursjtein, *"Reimagining Calgary's Parkades"*

