RESILIENT CITIES NETWORK Deltares ARUP

One Pocket at a time:

A practical guide to Pocket Parks for Urban Greening and Resilience



Acknowledgement

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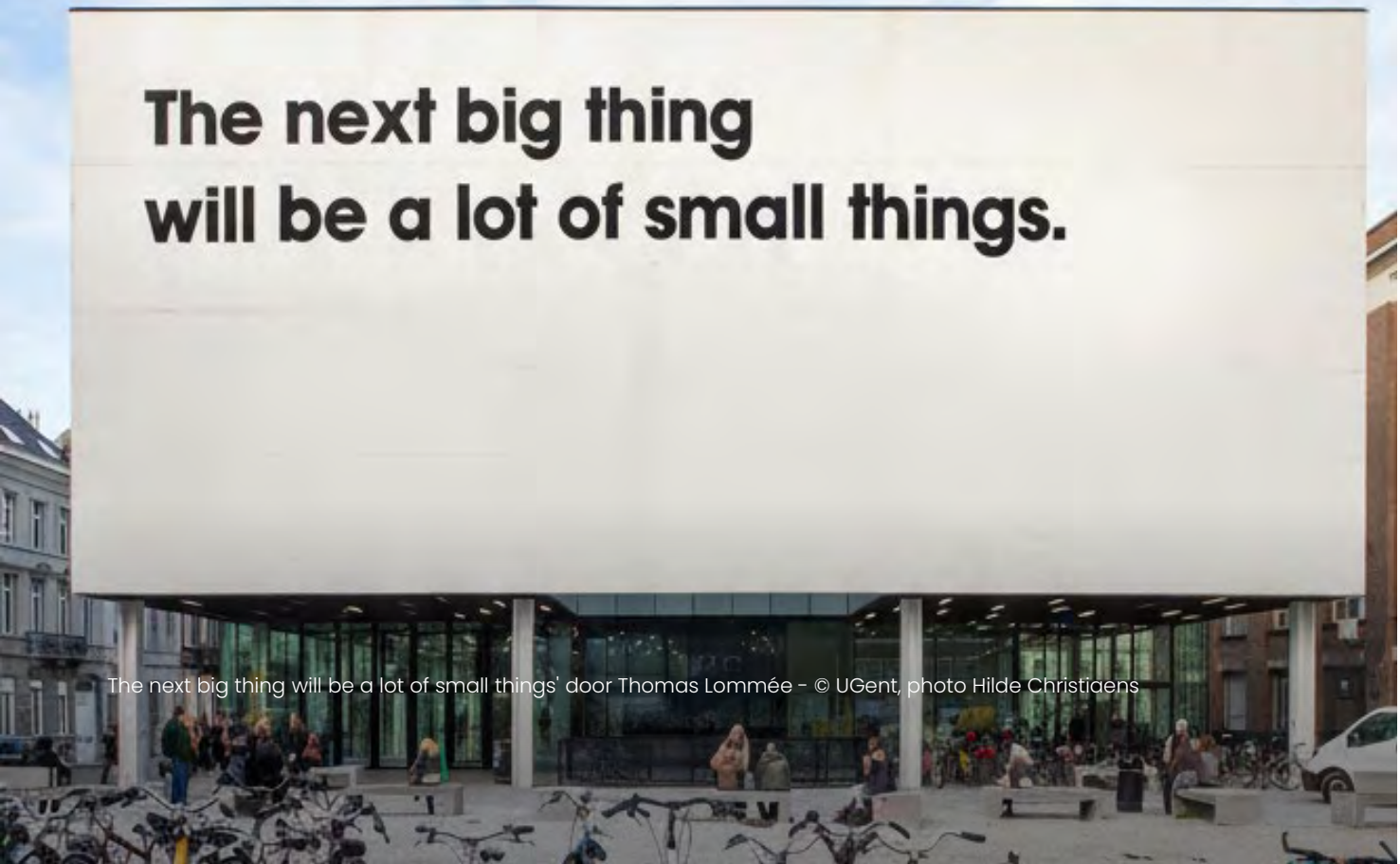
01.

Our call to action

Dear **urban changemaker**,

Around the world, Pocket Parks are taking root in many forms, functions and collaborations. This guide offers a perspective on these small but powerful spaces showcasing how cities are reshaping streets, courtyards and forgotten corners into high-impact green spaces such as gardens, rest stops, small-scale forests, playgrounds and so much more.

The transformation of these spaces are not just limited to their small footprints. When done thoughtfully, Pocket Parks can be scaled into a network of green infrastructure across cities that strengthen climate response, build resilience and improve wellbeing.



The next big thing will be a lot of small things' door Thomas Lommée - © UGent, photo Hilde Christiaens

- **Are you an urban practitioner seeking to replicate innovative projects and stories?**
- **Are you a policymaker who wants to advocate for the value and impact of Pocket Parks?**
- **Are you a formal or informal community-based organisation that wants to transform underused or leftover spaces in your neighbourhood?**
- **Or are you a private property owner looking to make your outdoor space more meaningful?**

Then this guide is for you.

This guide is for anyone looking to draw inspiration and take action in their own neighbourhood.

Our guide draws from insights from city leaders, urban practitioners and community groups across 16+ cities as well as our combined experience at the Resilient Cities Network, Arup and Deltares. In these pages, we define and contextualise Pocket Parks, dive into their link to wider nature-based solutions and urban resilience strategies and highlight the elements that make them work in practice.

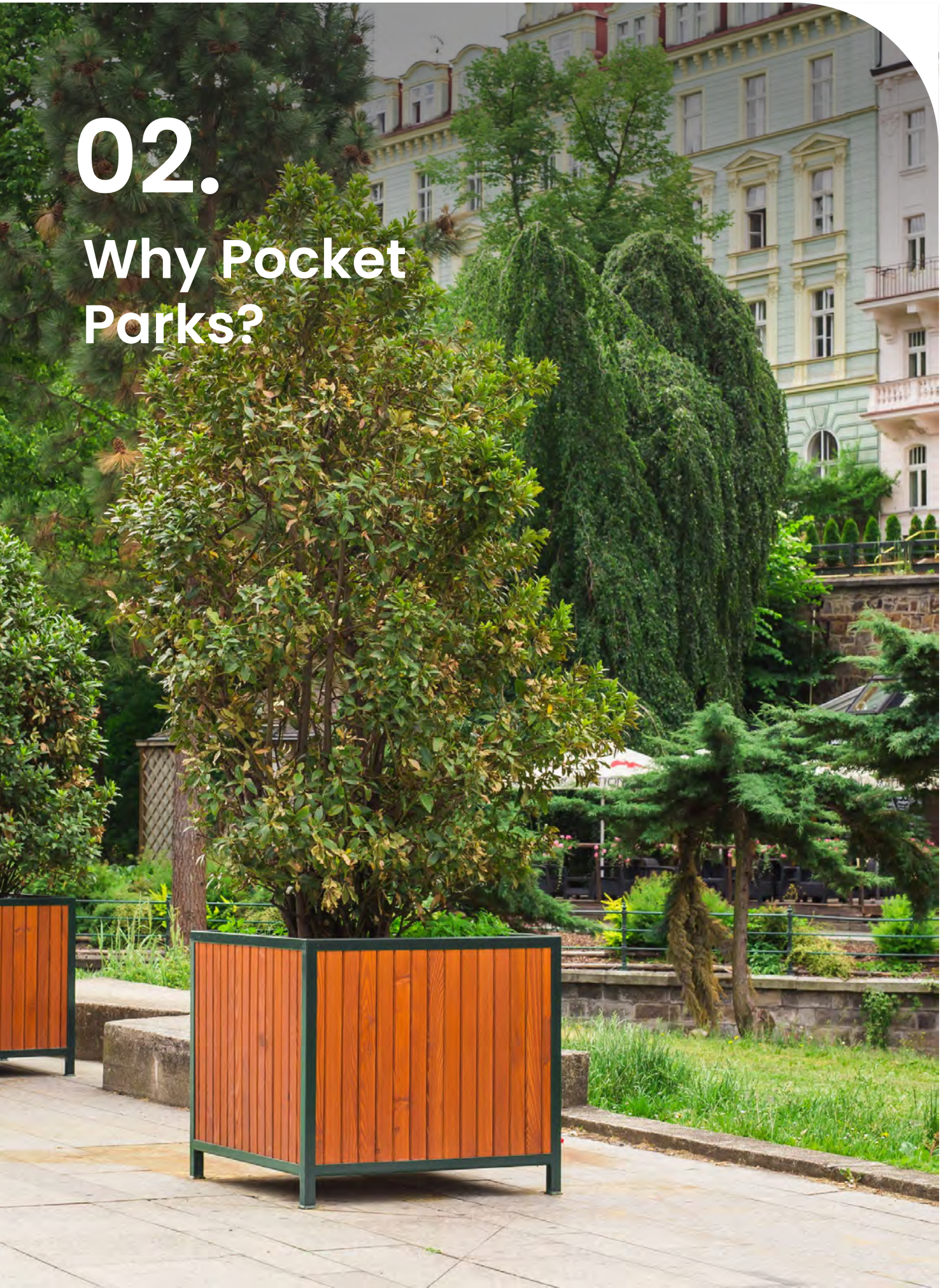
You will also find practical entry points to help you get started. Look out for both quantitative and qualitative impacts that can be unlocked through single interventions or a network of them.

Throughout this guide, case studies bring these approaches to life, showcasing diverse ways cities and communities are creating and sustaining Pocket Parks.

We hope you enjoy this read and get inspired by ideas you can carry into your own context.



02.
Why Pocket Parks?



Imagine you're leaving the office after a long day of working in a cubicle that receives no sunlight. You've been sitting at your desk for the past 8 hours. When you step outside, you find a small square of green tucked between tall buildings. You lay down on the grass for a moment and close your eyes. The shade of the trees creates a cool pocket that protects you from the harsh summer heat. The noise of the streets suddenly fades away behind the sound of water trickling from a fountain. For a few minutes, the city feels different, your body cools down, your breathing slows.

Now imagine you're a busy work from home parent. After picking up your child from daycare or school, you would like to take them the park. However, this isn't always easy because there is no park within walking distance and you don't have time to take a bus across the city. Then you hear about a new tiny park that neighbours were raising funds to create. You bring your kids there after work, and they get to run, climb and play. You make conversation with someone who lives a few blocks away and exchange phone numbers. You realise, with your busy schedule, you never got a chance to meet your neighbours before.

Imagine you own a small restaurant. Every time it rains, water leaks into your basement because the empty concrete lot next door channels runoff straight to your door. Then the municipality transforms that lot into a green space. Rain drains into the ground instead of pooling at your entrance. The constant headache that it seemed would never end now has a solution.

This is the power of pocket parks.

It is no secret that cities are increasingly under threat from cascading effects of climate change related shocks and stresses. Extreme heat, heavier rainfall and biodiversity decline continue to put pressure on infrastructure and daily life. They shape how people move, where they gather and whether public spaces remain usable throughout the year. Access to nearby spaces that offer shade, cooling and relief is becoming more critical, especially for those most exposed to these conditions.

At the same time, urban life is becoming more fragmented. Digital routines and a shrinking number of shared spaces are contributing to deeper isolation in dense urban environments. In many rapidly urbanising cities, particularly in the Global South, unprecedented growth has left little to no room for accessible green or open space. Where such spaces exist, they are often inaccessible to all, unsafe or poorly maintained.

In highly urbanized areas, space is increasingly scarce and infrastructure competes to fill every square meter.

For people navigating city life while facing flooding, heat stress, water scarcity, limited green space, isolation, mental health challenges, or simply a lack of places to move and gather, these spaces become essential. Far from luxuries, they function as everyday infrastructures for wellbeing.

Cities are therefore looking for ways to bring nature back into busy city life in ways that respond to these overlapping challenges

Nature Based Solutions (NbS) are increasingly being implemented in urban settings to unlock a range of environmental and socioeconomic benefits. However, not all measures in the NbS toolbox are applicable in already space-constrained urban areas and it is not always possible to implement NbS at scale. At the same time, we know that some NbS can be versatile, tactical and creative in their planning and implementation. Pocket Parks exemplify this approach, as small-scale, adaptable interventions that can be strategically inserted into underutilised urban spaces to deliver immediate and cumulative benefits.

Pocket Parks allow us to invest in small changes that can create big impact through scaling and replication. With the immense challenges we are faced with today, no act is too small, and when done in a coordinated and connected manner, they can tackle climate risks, while embedding elements of play, creativity and joy into everyday life.

Pocket Parks respond to space constraints by creating opportunities for recreation, providing green space and climate action in existing neighbourhoods. They offer relief from heat, help reduce flood risk and support biodiversity while improving quality of life, health and access to recreational spaces. They are particularly relevant where large-scale park development is difficult or risks displacing vulnerable communities. Pocket Parks offer a more inclusive alternative by working with existing, underutilised spaces thereby enhancing liveability without requiring relocation. This makes them especially valuable from an equity perspective, as they improve everyday environments while allowing communities to remain rooted in place.

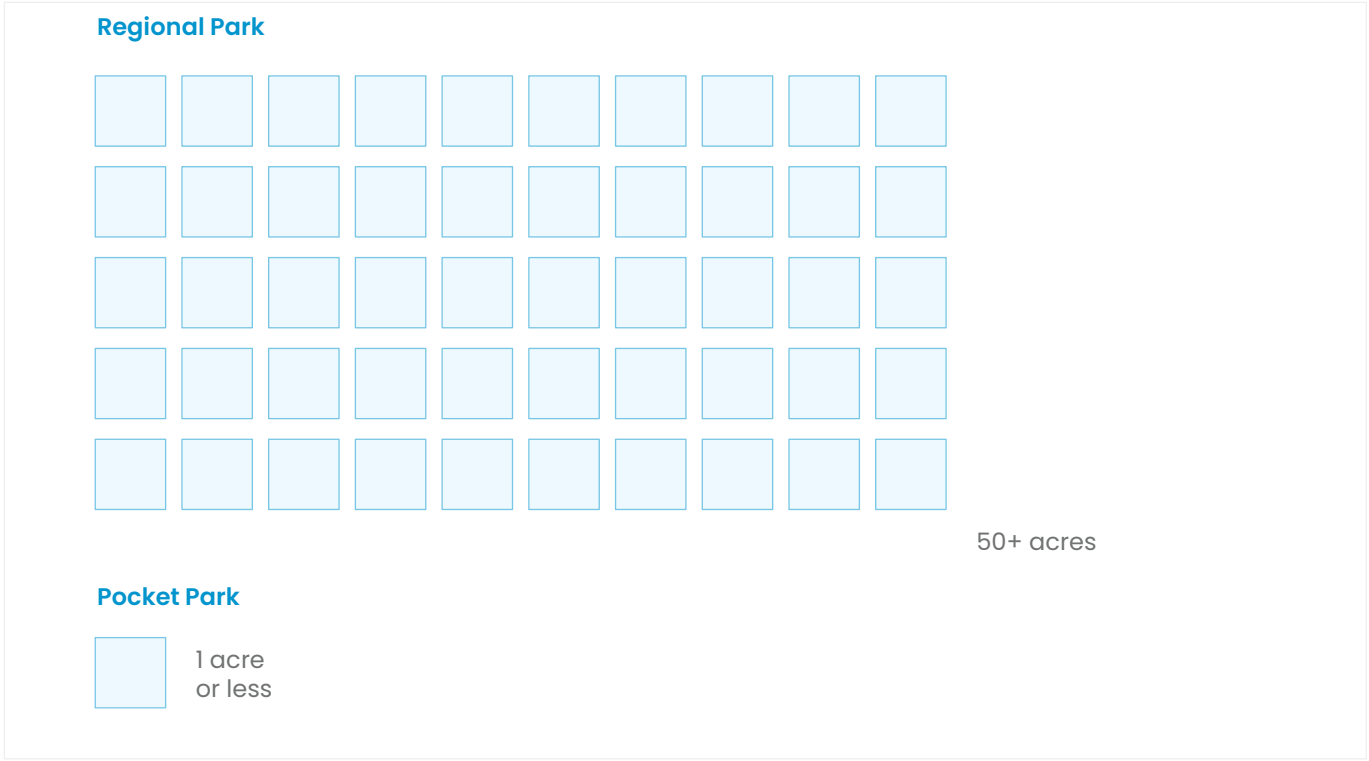
Pocket Parks come in all shapes and sizes. Whether as one singular park adding a space for joy to an everyday routine in a dense neighbourhood or as a network of Pocket Parks deployed as a nature corridors strategy to support the biodiversity, they go beyond piecemeal solutions. Seen together, they function as a network of solutions for shaping broader urban resilience.

So how do we define a pocket park?

Pocket Parks may be defined as relatively small, open, multi-functional spaces that allow for the introduction of nature and green areas in the urban fabric. The small-scale recreation possibilities may include functions such as playgrounds, dog parks, workout stations, water fountains, vegetable or flower planters among others. Typically, they are around 0.02 hectares or the size of a tennis court. Although several others size up to 0.4 hectares or the size of 10 tennis courts.

Beyond their physical and spatial characteristics, Pocket Parks may also have different planning and ownership structures. They may be implemented in a formal nature, where municipalities transform underused or derelict open spaces into high quality green areas with shared public functions. They may also be informal in nature, where communities identify and transform shared spaces both public or privately owned, and thereafter share responsibility in its ownership and maintenance efforts. Read more about their governance and operation models in the next chapter. The modular and flexible nature of Pocket Parks hence make them a versatile measure in the broader toolbox of NbS for climate resilience.

Scale comparison: Pocket parks (≤1 acre) in contrast to conventional urban parks (50+ hectares)[1]



[1] Adapted by the author based on common size definitions of urban parks and pocket parks; Pocket Park Toolkit by Trust for Public Land.

Did you know?

Pocket Parks first appeared in European cities as a response to the destruction caused by World War II[2]. As communities started to rebuild, bombed sites were transformed into small green spaces where people could gather. These spaces required minimal resources and limited labour, making them practical solutions during a time of scarcity. One such example is Ropers Garden in London.

What began as a quick and practical response to damaged land, had a much greater impact than anyone anticipated. For many people, these spaces returned a much needed sense of familiarity and comfort, helping lift people's spirits in times of crisis.

While the term "Pocket Park" is often traced back to these post-war European examples, similar spaces emerged organically in other parts of the world, shaped by the local context. In cities like Hong Kong, small green spaces developed from the pressures of extreme density and constant redevelopment. Often located in leftover or irregular plots, between buildings, under flyovers or on sites cleared through demolition.

Some of these sites were historically associated with what were colloquially known as "three-cornered shit pits", a term originally used for public toilets built on small, leftover plots in response to public health needs in the early 20th century. Over time, these fragmented spaces evolved into small parks offering moments of relief[3].

Their evolution highlights how Pocket Parks are not a single model, but a flexible typology shaped by local needs, constraints and cultural context through history

What does it take to reach higher impact?

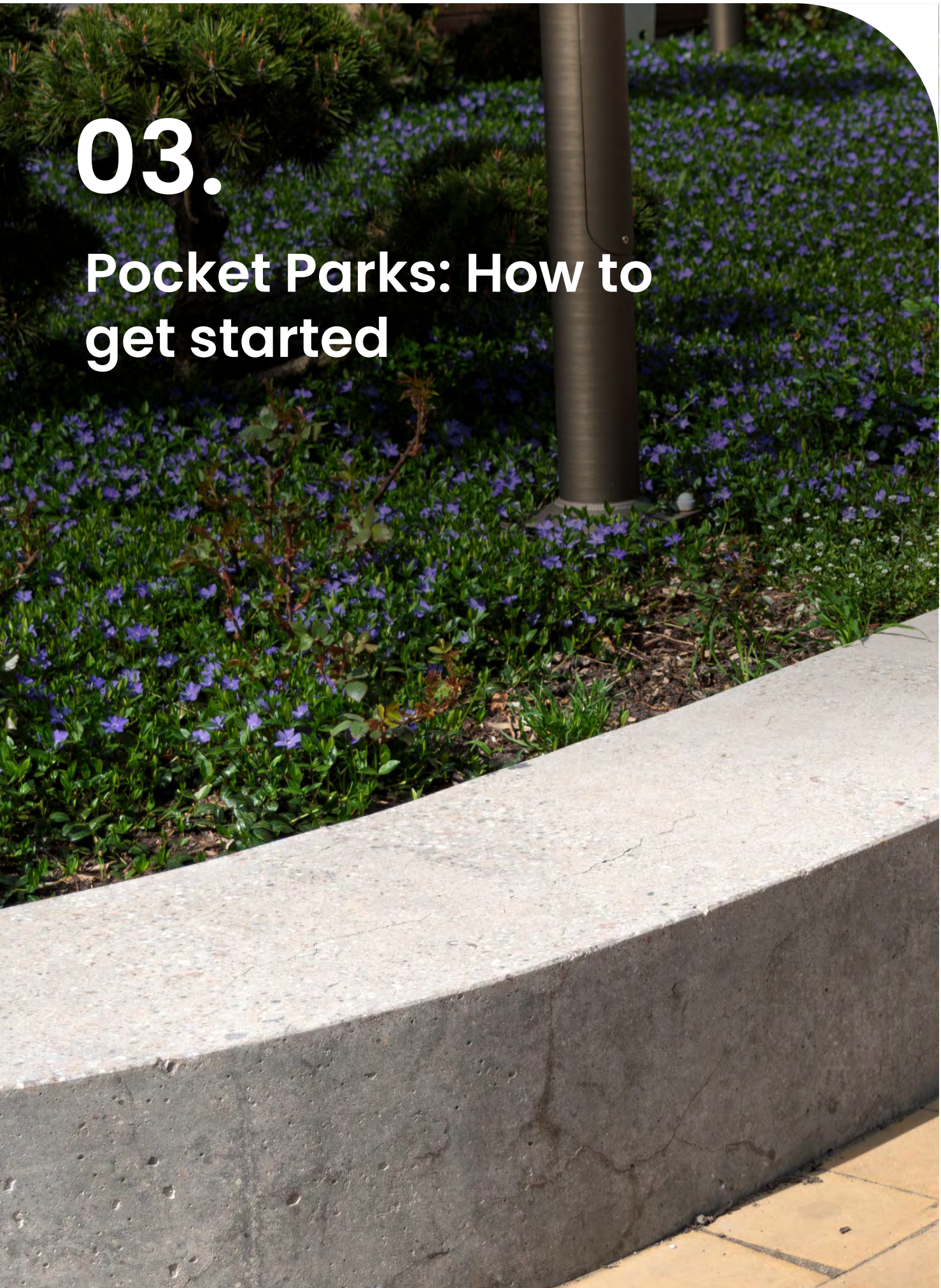
Pocket Parks form a piece of the puzzle of a broader urban system. To effectively address climate challenges, they must work in synergy with a network of other parks and NbS at multiple scales, as well as with existing grey infrastructure. This means thinking beyond individual sites and understanding how small interventions connect to larger blue-green networks across the city. To maximize their impact, Pocket Parks must also align with other systems such as energy, mobility and the built environment, ensuring they are not isolated elements but part of a coordinated urban approach.

It is also important to recognise that designing more parks does not automatically produce belonging, social connection, or health equity. Realizing this potential requires conscious design choices. A Pocket Park must be actively welcoming to everyone, attending not just to physical access but to social access: safety, cultural acceptance, and the freedom to use space without feeling marginalised.

When designed by or with communities, Pocket Parks are more likely to respond to these needs. Community-driven or co-designed parks often instinctively resolve these needs. Evidence reflects it, through consistent reports of strong perceived impacts on community building and wellbeing. In this sense, a Pocket Park becomes more than a green space, it becomes a place to be.

Sustaining that impact requires institutional awareness and active support. Community-led parks, regardless of their formal ownership structure, thrive when municipalities recognise them as legitimate social and environmental assets, reduce bureaucratic friction, and align their systems with the community energy they aim to support. Where that alignment exists, Pocket Parks consistently punch above their weight as drivers of both urban resilience and social cohesion.

[2] Assessing mini-park installation priority for regreening planning in densely populated cities
[3] "Reimagining Hong Kong's Pocket Parks" by Thinking City;



03.

Pocket Parks: How to get started

Pocket Parks can be designed in a multitude of ways, with some securing funding before even looking for a site, and others taking advantage of tactical urbanism to create small scale impacts without formal governance and financing frameworks. For the purpose of this guide, case studies and technical guidance will refer to 5 stages of designing a Pocket Park, however it is important to note that not every stage will apply to every Pocket Park and many Pocket Parks will not follow this process in the order laid out.



Context and Site Selection

Context and Site Selection

Understanding local needs and possible locations

Every urban environment is a unique patchwork of buildings, open spaces, public and/or private infrastructure, transport corridors, waterways and more, creating the unique characters of a city. Cities across the world face a huge variety of climates that are rapidly beginning to change and break away from familiar patterns and are made up of populations with a wide variety of needs. The unique nature of a city, its communities, and its climate should all feed into selecting the right site for a Pocket Park.

Although small in scale, there is immense potential for a Pocket Park to respond to its local context and community needs. When it comes down to knowing where it is best located, a simple strategy is to leverage local knowledge and know-how. Local individuals and community groups are often aware of both the spaces that are underutilised, derelict or disused, as well as what functions may be best suited based on the residents that have both direct or indirect access to the space. Note that working with the local stakeholders and community members early on from the stage of site selection is essential. This improves opportunities for shared ownership, shared maintenance and management of the Pocket Parks.

Understanding the local context goes beyond simply identifying vacant or underused land. It requires a deeper reading of the neighbourhood through its history, its demographics, its daily rhythms, and the invisible barriers that may shape how people move through and experience public space. A site that appears ideal on a map may in practice be inaccessible to elderly residents, overlooked by families with young children, or feel unsafe for women walking alone at night. A site that may look vacant, may already have purpose for the communities around it.

frequently heard, such as renters, younger and elderly residents, or newer arrivals will help surface these nuances early and ensures that the site selection process reflects genuine need rather than assumption. By extending the Right to the City approach into how we shape our Pocket Parks from the beginning of the process, there is emphasis on the collective right of all urban residents to shape, access, and benefit from public space in equitable and inclusive ways.

Did you know?

The Right to the City[4], first pioneered by French philosopher Henri Lefebvre in 1968, calls for a radical reimagining of who cities truly belong to. David Harvey expanded this vision, arguing that the city is not simply a backdrop to daily life but a commons — a shared social space that all urban inhabitants have the right to shape, access, and claim as their own. This means ensuring that land serves a social function that maximizes collective wellbeing and puts people at the forefront. The Right to the City demands the full and meaningful participation of all residents in decisions that shape their neighbourhoods and lives - and are able to enjoy the fruits of such investments no matter their identities. This right belongs to everyone, regardless of gender, race, ethnicity, income, disability, age, tenure or any other dimension of identity —as does the rights to not be displaced due to developments and the right to have access to quality public spaces and infrastructure. The right to the city is not merely a right of access to what already exists, but a right to change it.

[4] The Right to the City by David Harvey;



Sites for Pocket Parks can vary in nature depending on the nature of the developer, the ownership and funding structure, and the aims for the site. There are 3 main models of Pocket Park site selection:

1 Community-led: communities identify small areas of land in their local community that are not being used to their best, and independently or with support from local municipalities or private sector organisations develop these areas into pocket park and prairies. Communities are usually well placed to select sites and assess the local needs accurately.

2 City/ Municipality-led: cities and agencies identify plots of land in their own local plans that may be suitable for small scale nature-based solutions or placemaking amenities. These sites are usually selected based on their development potential, and ability to respond to local climate needs.

3 Development-led: developers own plots of land in the urban environment that they plan to develop into commercial, residential or mixed-use developments. When assessing the build up of the site, they may choose to also provide public realm amenities to mitigate their own flood risk, deliver social value aims, or deliver on Biodiversity Net Gain targets. This can take the form of a privately funded pocket park that is open to the public.

Context and Site Selection

City Spotlight

Pocket Parks by Popular Vote: participatory budgeting drives Pocket Parks in Ciudad Juárez

In Ciudad Juárez, Mexico, the development of Pocket Parks is embedded within a broader participatory budgeting programme that allocated significant annual funding to public space and infrastructure improvements. Through this initiative, the municipality sets aside a fixed budget of 300,000,000 Mexican Pesos (about $16,500 USD) each year, allowing residents to propose, prioritize and vote on projects that respond to the needs of their neighbourhood.

To support this process, the city established a dedicated Department of Participatory Budgeting to oversee projects from selection to implementation, working across municipal departments. A Resilience Coordination team complements this by ensuring projects integrate community, children, and public space recovery perspectives.

In this context, site selection begins by identifying demand. Residents put forward proposals for specific spaces they want to see improved by gathering signatures from friends and neighbours. These requests are then reviewed and brought into a city-wide voting process, where citizens, including children and elderly groups, participate in selecting which projects will be implemented.



Remodeling of "Lapíz" plaza in Ciudad Juárez´s center


View of "Lapíz" plaza and "Senderos del Desierto" in Ciudad Juárez´s center

"We have been working with participatory budgeting for 3 to 4 years to mobilize the community. Neighbours share their experiences, people get involved, and they see that projects are actually being implemented. The first vote had around 100,000 participants, and today we have reached up to 400,000 people voting."

Yesenia Hidalgo
Director of the Resilience Coordination Office
Municipality of Ciudad Juárez

Context and Site Selection

City Spotlight

Building Green into Density: The Hague implements multi-level pocket gardens as a modular solution

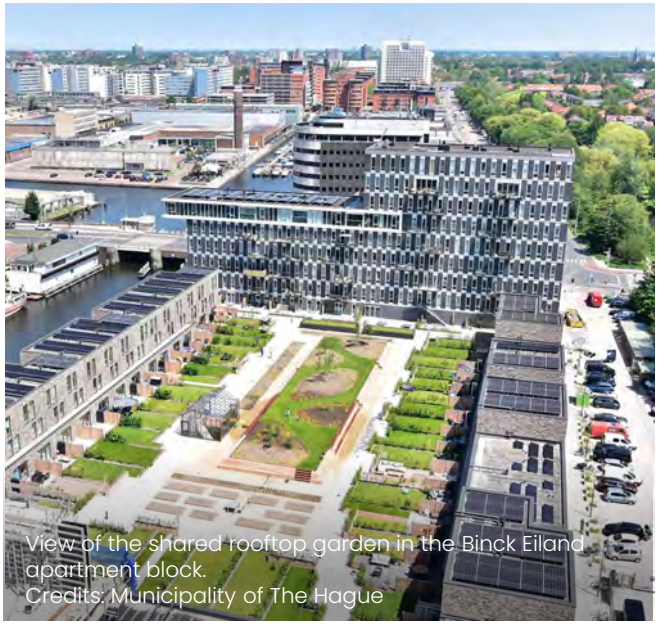
In the redevelopment of the Binkhorst district in The Hague, pocket rooftop gardens have been introduced as a way to increase green space in a dense urban environment. These gardens function as small Pocket Parks within residential buildings and are typically located above street level, ranging from the first floor to much higher rooftops. One example is the Binck Eiland development, which includes a shared rooftop garden on an elevated first level, designed mainly for residents. The housing was planned for families, so the garden provides a communal outdoor space where residents can relax, socialise, and where children can play.

These rooftop pocket gardens in the Binkhorst area serve several purposes. They help increase green space in a neighbourhood where ground-level land is limited. They also support water management by allowing rainwater to be stored and absorbed on rooftops instead of flowing directly into the drainage system. In addition, green roofs can support plants and insects, contributing to urban biodiversity.

The Municipality of The Hague played an important role in encouraging these developments by introducing planning regulations. Developers are required to ensure that at least 40 percent of the rooftop area of new buildings is green. Buildings must also be able to store up to 50 millimetres of rainwater during heavy rainfall. These requirements have led to many residential buildings in the district incorporating rooftop gardens.

Several stakeholders are involved in the process. The municipality sets the rules and checks whether the requirements are met before buildings are completed. Developers design and construct the buildings, while investors provide financial backing. Once the buildings are occupied, residents' associations are responsible for maintaining the shared rooftop spaces.

The case highlights the importance of introducing green infrastructure requirements early in the development process and shows how private developments can contribute to urban greening.



View of the shared rooftop garden in the Binck Eiland apartment block.
Credits: Municipality of The Hague

"In Binck Eiland, the residential development was designed with families in mind. This focus highlighted the need for shared communal spaces, which ultimately became the driving motivation for creating the rooftop pocket garden"

Sander Brinkman
Policy officer, Public Space Binckhorst
Municipality of The Hague

Context and Site Selection

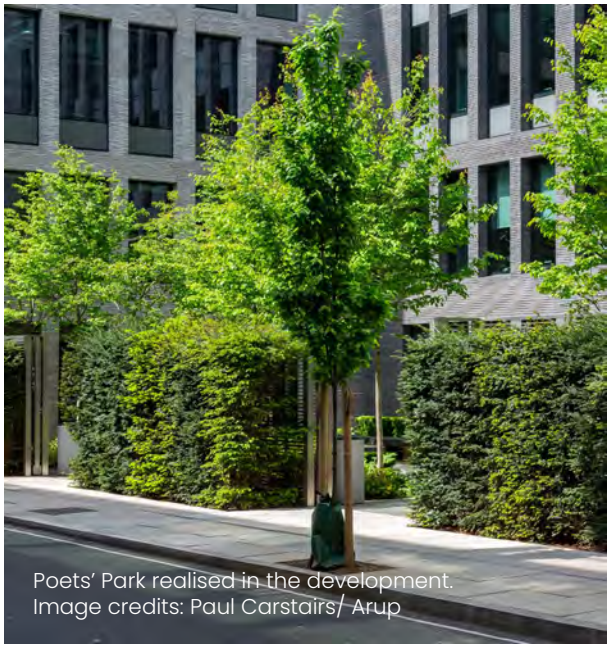
City Spotlight

A Pocket Park Within the Private Footprint: London integrated Poets' Park into Office Development

Arup and Make Architects designed the 80 Charlotte Street office building in London, which contains a small Pocket Park known as "Poets' Park", developed as part of the private building's footprint.

This park location was selected to be south facing and publicly accessible within the site footprint, providing placemaking and public realm amenities for both the building tenants and the surrounding neighbourhood. The park design aims to fit into the 'village atmosphere' of the London Fitzrovia neighbourhood.

This is financed, owned, and operated by the building owner. The development of the Pocket Park contributed to the office achieving BREEAM Excellent and LEED Gold ratings, which helps the developer attract sustainability focused tenants, while providing placemaking and public realm amenities to the neighbourhood.



Poets' Park realised in the development.
Image credits: Paul Carstairs/ Arup





Things to Keep in Mind

Applying one universal site selection methodology to Pocket Parks can risk overlooking key differences in site contexts.

- Consider regional differences in climate. For example, open spaces are often used only during specific hours in places with harsher climates. Selecting a site that responds to this use in peak hours in essential.
- Consider cultural differences. Understand how different groups typically interact and what functions work better than others. Design functions that compliment local cultural practices. Select a site that can interact with other local amenities like food and drink, convenience and community spaces. Also note that some contexts have controlled access to public spaces that need to be taken into account. Work with local stakeholders to define stewards, co-owners and maintenance personnel.
- Consider cultural and historical relevance of the land. Assess what this space has been used for before and the meaning it may have for a community and ensure you are making culturally and historically sensitive selections for future use of the space.
- Consider existing green spaces in the surrounding urban fabric. Avoid misplacing your park and make sure it speaks to the environmental and social functions of surrounding green and blue spaces. This includes consideration of movements of flora and fauna through the cityscape.
- Consider equitable distribution and placement of the Pocket Parks: If limited in the number of Pocket Parks to be created, prioritize sites that provide access to green space for underserved communities, and consider tenure arrangements that support public access. Be intentional in where these parks are situated and programme them to match the community needs. Especially in dense neighbourhoods Pocket Parks can serve as essential third spaces - informal social environments that exist outside the home and work/school- and double up as an extension of the living space.



Designing your Pocket Park

Programming and co-designing your Pocket Park

Often overlapping with understanding local needs and the site selection process, a key stage is selecting the appropriate functions and uses that the Pocket Park can offer to the local communities. There are several aspects to consider at this point. The first is understanding which components or building blocks could fit the needs of the local communities for their multi-functional Pocket Park. The second is about the key co-benefits that you want to unlock for the local communities. And naturally the costs associated with delivering the intended uses. This means understanding the inherent social and spatial characteristics that are being imagined for the space. For instance, is the Pocket Park primarily intended as a green pocket? Or is intended as a play space? Or perhaps both? The third is about the process of designing the Pocket Park. How do you engage and co-design the space together? Who do you need on board and when? We explore these aspects in the following section.

A. What Components Can Make Up a Pocket Park?

Pocket Parks are made up of two core components, which are key to adding value to a neighbourhood:

1. **Environmental focused components that** aim to help urban environments adapt to the effects of climate change, including flooding, drought and the urban heat island effect.
2. **Community/ social focused components** that aim to improve community wellbeing in the built environment.

Any given pocket park should select its own components tailored to the site context based on space available, community needs, and local environmental needs; what works for one city may not work for another.

The two categories of components should work in tandem to complement each other and create both amenity space and climate resilience. A combination of the two can bring both environmental and social benefit to a space. Take a Pocket Park with wildflower meadows, tree pits and a pond. This can create a play space for local children and provide mental health benefits from urban rewilding. It also improves flood resilience through attenuation and increased infiltration while reducing the urban heat island effect through increased shade and green space.

This integrated approach is increasingly reflected in designing thinking around the world. For instances in the New European Bauhaus initiative, which calls for public spaces that are not only sustainable and climate-resilient, but also beautiful and inclusive. By encouraging the transformation of everyday urban environments into greener, more attractive and socially engaging places, it reinforces the idea that Pocket Parks and gardens can play a vital role in addressing climate challenges while simultaneously enhancing community wellbeing and sense of place.

[5] New European Bauhaus initiative; https://new-european-bauhaus.europa.eu/about/about-initiative_en?

Designing your Pocket Park

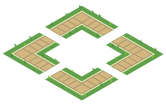
Did you know?

The New European Bauhaus (NEB)[5], launched by the European Commission, is a creative and policy initiative that connects sustainability, aesthetics, and inclusion to shape better living environments. It aims to make the green transition tangible by promoting spaces that are not only environmentally responsible, but also beautiful and accessible to all. In the context of Pocket Parks, NEB encourages moving beyond basic green interventions toward high-quality, climate-responsive, and community-driven spaces. This means integrating elements such as urban cooling, biodiversity, and water management with thoughtful design and strong local identity. It also emphasizes participatory processes, ensuring that communities are actively involved in shaping and caring for these spaces. Ultimately, NEB positions Pocket Parks as small-scale but powerful interventions that can improve everyday urban life while contributing to broader goals of resilience, social equity, and environmental sustainability.

Examples of Pocket Park Components

Every Pocket Park is inherently unique and is shaped by its community, wider environment and the character of the space it reclaims. These small-scale interventions offer planners, developers and local communities an opportunity to retrofit underused, neglected or fragmented urban land into vibrant and multifunctional green spaces. By integrating a combination of nature-based solutions into the fabric of these sites - from large trees to community gardens, Pocket Parks can deliver a wide range of environmental, economic and social benefits. This section of the guide explores how, when thoughtfully designed and locally led, Pocket Parks can unlock meaningful improvements at the local scale and beyond.

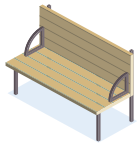

Trees and Tree Pits


Community Gardens


Playgrounds

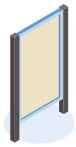

Picnic tables


Rain gardens

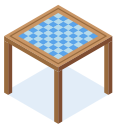

Seating areas


Ponds


Wildflower meadows


Community notice boards


Wildlife habitat structures


Chess tables


Bike racks



City Spotlight

Cooling the City Through Food: Chennai scales modular food gardens through the Chennai Urban Farming Initiative

The Chennai Urban Farming Initiative (CUFI), led by the Chennai Resilience Centre, is an innovative nature-based solution that transforms unused urban rooftops into productive vegetable pocket gardens while integrating livelihoods and community resilience. Originally conceptualized by students from the University of British Columbia and aligned with the city's Resilience Strategy, the project responds to Chennai's dense concrete landscape and lack of accessible green space.

The initiative's core principle is that green infrastructure should not only provide environmental benefits but also support livelihoods. This reflects Chennai's longstanding tradition of linking ecological practices with income generation. The initiative introduced modular garden kits that can be installed on any ground-level or concrete rooftop surface. These kits include grow bags, soil, vermicompost, seeds, and organic inputs, allowing gardens to be installed easily on concrete surfaces without permanent alterations. The high quality of these kits has resulted in strong outcomes, including seed germination rates of 80–90%, significantly outperforming conventional benchmarks.

The project initially targeted vulnerable communities, particularly relocation housing areas and the National Integrated Child Development Services Scheme (ICDS) "Anganwadi" or daycare centres, where these gardens support early childhood nutrition. Anganwadis have proven especially effective due to strong engagement from teachers and parents, as well as existing familiarity with local plants and traditional knowledge. Gardens established in these centres not only supply fresh greens for midday meals, helping address nutritional deficiencies such as iron deficiency but also serve as educational tools, engaging children in hands-on learning and promoting biodiversity.

Supported by funding from organizations such as the ArshtRock Foundation and the Rockefeller Foundation, the initiative has expanded to over 144 centres, with additional sites planned for research on nutritional outcomes. Implementation has been strengthened through partnerships with organizations like Okapi Research and Advisory, Sempulam Sustainable Solutions, Centre for Indian Knowledge Systems, and community organizations like Pudiyador and Information and Resource Centre for the Deprived Urban Communities (IRCDUC).

What distinguishes Chennai's approach is the deliberate investment into livelihood generation through a gardening workforce called the "Madras Mali", to maintain the distributed network of pocket gardens. This key co-maintenance and co-management innovation trains women from self-help groups (SHGs) affiliated with the Tamil Nadu Urban Livelihoods Mission as professional gardeners. They deliver services to both private and public owned urban gardens under the CUFI. This creates dignified employment while supporting adoption among middle- and upper-income households, forming a sustainable revenue stream. The programme has trained over 245 women from SHGs to become professional gardeners, empowering them financially and connecting them to city residents needing gardening services.

The CUFI initiative has demonstrated multiple impacts: improved nutrition, enhanced community engagement, increased biodiversity, and reduced indoor temperatures by an average of 1-2°C and up to 7°C during peak summer conditions. Key lessons highlight the importance of high-quality inputs, community ownership, and ongoing technical support. Overall, the project provides a scalable model for integrating urban agriculture, climate resilience, and livelihoods in rapidly growing cities.

Designing your Pocket Park

City Spotlight

"Chennai's approach to urban greening is not just about restoring nature. It is rooted in a long tradition where ecology and livelihoods are intertwined, ensuring that every green intervention also creates meaningful economic opportunities for its communities."

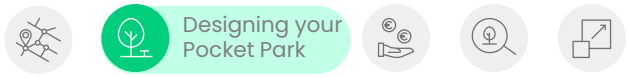
Krishna Mohan Ramachandran
Chief Resilience Officer, Chennai


A underused rooftop transformed into a modular urban farm


An underused pocket space at an Anganwadi transformed into an urban farm


Fresh produce harvested from a local urban farm


Children learning about the edible greens grown at the local Anganwadi



B. Shaping the Pocket Park: Functions, Co-Benefits, and Trade-offs

When choosing components for a Pocket Park site, there are typically two main motivating factors: co-benefits and costs. Before components are chosen, clear targets and aspirations for the site should be set out: is this a park for a private developer with a large budget and an aim to reduce flood risk to their development, or is it a community focused park with a smaller budget that aims to provide amenity space and attract local wildlife? The make-up of those two parks might look very similar on the surface, but when you break down actual component selection it can quickly reveal the real motivations behind choosing a certain suite of interventions for the site.

The selection of solutions to form this small-scale urban rewilding must adapt to site constraints including space, budget, and climatic conditions, while also responding to site goals including biodiversity, urban cooling, and encouraging social interaction. These conditions and goals can vary globally, and selected solutions should always be co-designed with communities and local stakeholders to best understand what will make the biggest impact in a given city.

Defining Co-benefits for Pocket Parks

Co-benefits enable investments to generate additional, often critical, outcomes that amplify the overall impact of a project. By addressing multiple, interconnected challenges simultaneously, they allow each dollar invested to go further—maximizing value and multiplying benefits across sectors.

In the context of Pocket Parks these co-benefits can be environmental or social – and can both be integrated together to maximize positive outcomes.

Environmental Co-benefits of Pocket Parks

The exact benefits achieved by any integration of nature-based solutions into urban spaces to form a Pocket Park will vary greatly based on its specific design. Some possible co-benefits include:

- **Water quantity** - the ability of the feature to mitigate small scale flooding through water storage.
- **Water quality** - the ability of the feature to remove or reduce pollutant loads in the water.
- **Biodiversity** - the ability of the feature to provide space for and encourage an increase in biodiversity.
- **Temperature regulation** - the potential of the feature to mitigate the urban heat island effect, and contribute to a drought tolerant landscape.
- **Carbon sequestration** - the ability of the solution to absorb carbon and mitigate the effects of climate change.[6]
- **Soil regeneration** - the potential of the intervention to recover damaged soil by improving porosity and building organic matter.

Similarly to cost, these can be assessed as high, medium, and low benefit depending on the design and installation location. The table below provides a comparative analysis to help selection of a component quickly against the goals for the site. It shows an overview of the associated costs with specific physical and spatial components that may be considered in a Pocket Park. Apply the information here while choosing which component fits your context or needs best or in order to do a simple cost-benefit analysis.

[6] Pocket Parks can contribute to carbon absorption and climate change mitigation through vegetation and soil storage. However, at the individual park scale, these effects are relatively small and often not quantitatively significant on their own, meaning they are typically not measured in detail in project-level assessments. Their real climate value becomes more meaningful when considered as part of a wider, connected network of Pocket Parks and green infrastructure across a city, where cumulative impacts can become more substantial.

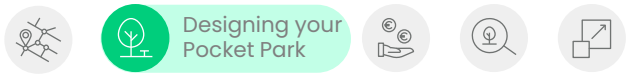


Table 1: Co-benefits assessment of various environmental features (WMCA, 2024)

Feature	Water quantity	Water quality	Amenity value	Biodiversity	Temperature regulation	Soil regeneration
Infiltration and Detention Basins	High	High	Medium	Medium	Medium	High
Ponds and Wetlands	High	High	High	High	High	High
Bioswales	Medium	High	Medium	Medium	Medium	Medium
Raingardens	Medium	Medium	Medium	Medium	Medium	High
Bioretention Tree Pits	Medium	Medium	Medium	Low	High	Medium
Green, Blue & Brown Roofs	Low	Medium	Low	Medium	High	Low
Rainwater Downpipe Planters	Low	Low	Medium	Low	Low	Low
Wildflower meadows	Medium	High	Medium	High	Medium	High
Shrub Groups and thickets	Low	Low	Medium	High	High	Medium
Tree canopy	Low	Low	Medium	High	High	Low

Tool Spotlight

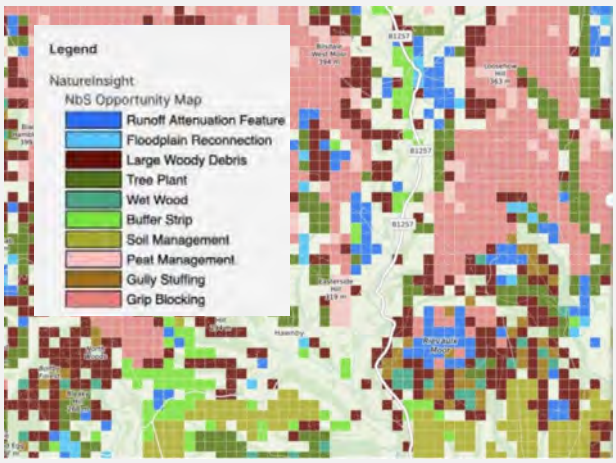
Analysing Impact on Sight to Maximize Environmental Co-Benefits

NatureInsight® is a tool co-developed by Arup and SCALGO that can rapidly assess the potential of Nature Based Solutions on sites.
This quantifies the potential impact of 10 nature-based solutions on:

1. Potential increase in carbon sequestration.
2. Potential increase in habitat.
3. Hydrological impact of increasing flood storage capacity.

In parallel, the tool assesses the cost of the identified solution, the amount of space it would take up, and the amount of water that it could store. The process facilitates rapid optioneering to understand the effectiveness of a bespoke NbS portfolio in key locations.

For areas less than 0,4 km^2, this tool can assess the impact of tree planting, buffer strips, soil management, peat management, gully stuffing, and grip blocking, while considering the effect of underlying soils on infiltration rates.



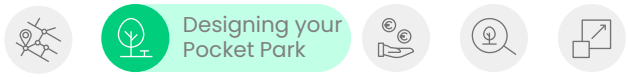
Example output from a NatureInsight® analysis of a site in the UK
Copyright: Arup

Table 2: Installation and maintenance costs of various environmental features (WMCA, 2024)

Feature	Installation Cost	Maintenance Cost
Infiltration and Detention Basins	Low	Low
Ponds and Wetlands	Medium	Medium
Bioswales	Low	Low
Raingardens	Medium	Low
Bioretention Tree Pits	High	Medium
Green, blue & Brown Roofs	High	Low
Rainwater Downpipe Planters	Medium	Low
Wildflower Meadows	Low	Low
Shrub groups and thickets	Medium	Medium
Tree Canopy	Medium	Medium

Defining Costs Associated with Environmental Components

A lot of work has been done to try and understand both the installation and maintenance costs of various nature-based solutions that could be installed into Pocket Parks across the world. While the number itself can vary hugely, certain principles of high, medium, and low-cost relative to each other can be applied to most contexts. The West Midlands Combined Authority guide 'An Introduction to Nature-Based Sustainable Drainage Systems (NbSuDS)' provides a common framework to quickly assess the cost and co-benefits of various NbS interventions.



Social Co-benefits of Pocket Parks

Pocket Parks also deliver several social, cultural and recreational co-benefits in parallel to unlocking a number of climate benefits. Hence, careful consideration of the design to unlock social and health benefits, alongside community programming and activation of the site, is essential

While selecting which components reflect the community needs, some aspects to consider as follows:

- **Social Interaction and Gathering.** These includes arrangements for seating, gathering, shared tables as well as modular elements that can accommodate a variety of uses. Pocket Parks may be flexible to both planned or spontaneous use of the space during peak times or may also allow for slow use during quieter moments. You will see that usage patterns often overlap with demographic characteristics like age groups, and it is important to respond to these needs. For example, ensuring ample number of benches may attract the elderly and other young groups to use the space as an extension of their homes. In this way, Pocket Parks have the potential to become third places, serving as essential community infrastructure. However, note that in cities where good quality public spaces are scarce, such Pocket Parks may experience high pressure and footfall. While such unforeseen impacts may be anticipated in these cases, they also further emphasize the potential of scaling up and delivering a network of Pocket Parks.

- **Play and Intergenerational Activity.** Making Pocket Parks child-friendly can also draw users from diverse age groups and encourage intergenerational interactions. Consider selecting components that appeal to multiple age groups, from toddlers to teenagers to older adults. This ensures that the space is used throughout the day and for multiple purposes. This mix of generations also fosters an informal sense of community supervision, where children are watched over not just by their own parents or carers, but by the wider community present in the space. This collective sense of guardianship during play reflects a broader culture of neighbourly care, helping children feel safe and giving parents and carers the reassurance that comes with being part of a watchful, connected community.

- **Wellbeing and Respite.** Access to greenery, shade, and a quiet place to sit has well documented benefits for mental health and stress reduction. Pocket Parks offer a moment of calm within dense urban environments, serving as a resource for individual wellbeing as much as collective life.

- **Inclusivity and Accessibility.** A well-designed Pocket Park should be welcoming to all members of the community regardless of age, gender, ability, or background. This means considering universal access, safe sightlines, and a layout that does not inadvertently exclude certain groups. Note that especially in neighbourhoods with more vulnerable groups, offering easy to access Pocket Parks may unlock a number of benefits for health and well-being.

- **Cultural Identity and Local Expression.** Through planting choices, native species, artwork, materials, or programming, a Pocket Park can reflect the cultural identity of its surrounding community and foster a sense of pride and belonging. Engage local artists and artisans to shape the components of the Pocket Park. This is crucial to ensuring shared ownership and maintenance.

- **Livelihood Generation.** A Pocket Park can be deliberately designed to generate local livelihoods, through the sale of produce, plants, or community-made goods, or through intentional programming that creates meaningful employment, such as maintenance crews and environmental education workshops.

- **Safety and Comfort.** A successful Pocket Park must feel safe and comfortable for all users at all times of day. This includes ensuring clear sightlines, adequate lighting, and activity patterns that create natural surveillance without compromising privacy. Safety also relates to perceived comfort: well-maintained vegetation, clean seating areas, and the presence of other community members all contribute to a welcoming environment. Prioritising safety not only encourages more frequent use but also promotes equitable access by ensuring that vulnerable groups—such as women, children, and the elderly—feel confident using the space.

City Spotlight

Growing Connections Through Pocket Parks: Greater Manchester's Curious Gardens and community spaces are helping neighbours connect and learn together.

In Greater Manchester, small green spaces are being used in a practical way to respond to local challenges, supporting climate adaptation, improving everyday wellbeing, and creating opportunities for people to shape their neighbourhoods.

Through the Resilience for Communities (R4C) programme, led by the Resilient Cities Network with local authorities and community partners, two Pocket Park projects show how this can work on the ground.

In **Higher Folds (Wigan),** a community garden has been created on previously underused land, in an area affected by surface water flooding, food insecurity, and limited access to employment. The space includes food growing areas, a pond, accessible planters, and shared facilities for the community. It has been developed and is maintained with local partners including HF Works CIC and Groundwork. A key part of the project has been working with young residents, many previously out of work, who have been involved in building and maintaining the site, gaining skills and paid experience along the way.

In **Edgeley (Stockport)**, the *Curious Garden* builds on the nearby "What If?" community space. An overgrown site has been opened up and turned into a place for growing food, learning new skills, and spending time outdoors. Alongside this, the space is used for creative activity and informal gatherings, helping people connect with each other and with their local environment. The "What If?" approach focuses on strengths rather than deficits, creating space for people to think about what they want for their area, and how they might get there.

In both locations, residents have been closely involved in shaping, creating, and now looking after the spaces. This has been supported by local organisations, the councils, and contributions from private sector partners through social value commitments.

Building trust and working at a local pace has been essential.

The impact of these projects goes beyond the physical changes. They help manage water and increase green cover, but also support mental wellbeing, build confidence, and strengthen connections between neighbours. Importantly, they show how relatively small interventions, when locally led, can contribute to wider resilience goals.

In Greater Manchester, this work is now informing a broader approach to community resilience, linking local projects like these to emerging frameworks and longer-term planning. This creates a clearer pathway for other places looking to use Pocket Parks not just as green spaces, but as part of how communities prepare for and respond to change.



Launch of the Higher Folds Community Garden, UK' credit - Turnpike Gallery, Leigh, UK

City Spotlight



Activities at the What if? Hub and Curious Garden' credit: Saz Media, UK



Activities at the What if? Hub and Curious Garden' credit: Saz Media, UK



Child playing at Launch of the Higher Folds Community Garden, UK credit - Turnpike Gallery, Leigh, UK



C. Process of selecting the components of your Pocket Park

In the previous section we examined the range of environmental and physical components that can be combined in a Pocket Park. The next question is how to select the right ones.

There is no single formula. Each site comes with its own constraints, opportunities and community dynamics. While this guide outlines a toolbox or possible interventions, the value of a Pocket Park lies in how these components are combined in response to the local context.

In practice, selecting the right components involves balancing environmental components, site and spatial characteristics and community needs. In some instances, technical tools can help assess what is possible and effective. In others, the most important insights come from the people who live, work and interact with the space every day, i.e. the potential future users. It is important to note that these approaches are not mutually exclusive and are often most effective when used together.

The following cases illustrate how both approaches can inform the design process. **Using technical tools to inform design decisions:**

Tool Spotlight

Visualizing Climate Solutions: Athens uses the Climate Resilient City Tool (CRCTool) to evaluate and select NbS options

Developed in 2018 for Netherlands-wide application, the Climate Resilient City Tool (CRCTool) is now widely used by professionals to explore the applicability of nature-based solutions in urban contexts. It supports the selection of adaptation options in urban planning and stakeholder dialogues, helping address precipitation, drought and heat risks.

The tool uses a conceptual water balance model to estimate the hydrological effects of different interventions within an urban district. It provides insight into changes in infiltration, evaporation and surface runoff, along with indicative construction and maintenance costs, enabling users to assess the effectiveness of NbS options.

CRCTool can be used to compare scenarios or co-create urban designs in a visually intuitive environment. Results are displayed on a map and in a table, making trade-offs easier to understand. It also works alongside other assessments, such as urban heat island maps added as GIS layers to align interventions with hotspots. A public platform offers further guidance. The tool is open and free to use.

It has been applied in multiple European cities, including Athens, Gdynia and Lillestrom, and in many locations globally. In Athens, it was used during a workshop on redeveloping a flood- and heat-prone site in the Votris district into a public park. A diverse group of participants explored design options for the former industrial site.

As ideas were drawn directly on the map, the tool supported real-time discussion. Adding trees or green infrastructure allowed immediate feasibility checks, including estimates of water storage and heat reduction. This helped guide decisions and align perspectives across disciplines.

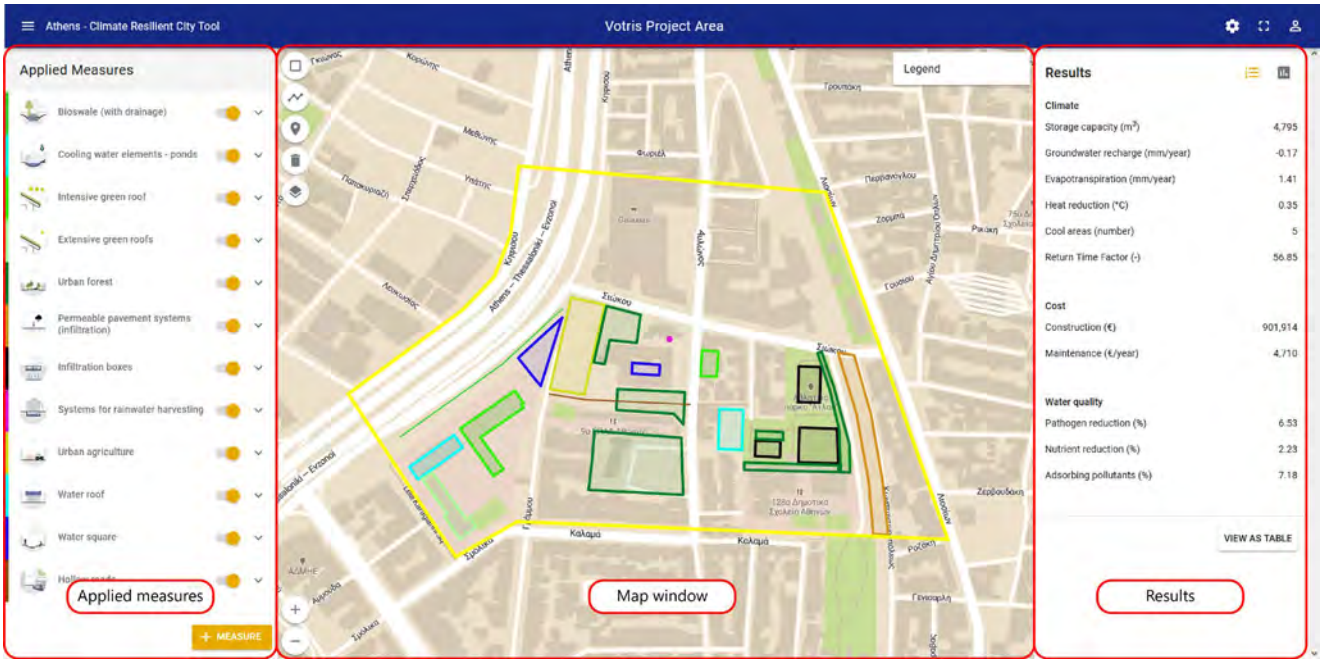
Beyond its technical function, the CRCTool helped structure dialogue, enabling stakeholders to work towards a shared vision. The figures below show its web-based, map-centric interface, designed to be intuitive for both technical and non-technical users. The central map is used to define the project area and draw measures, while a left-hand panel allows users to select and rank options based on effectiveness for flooding, heat or drought.

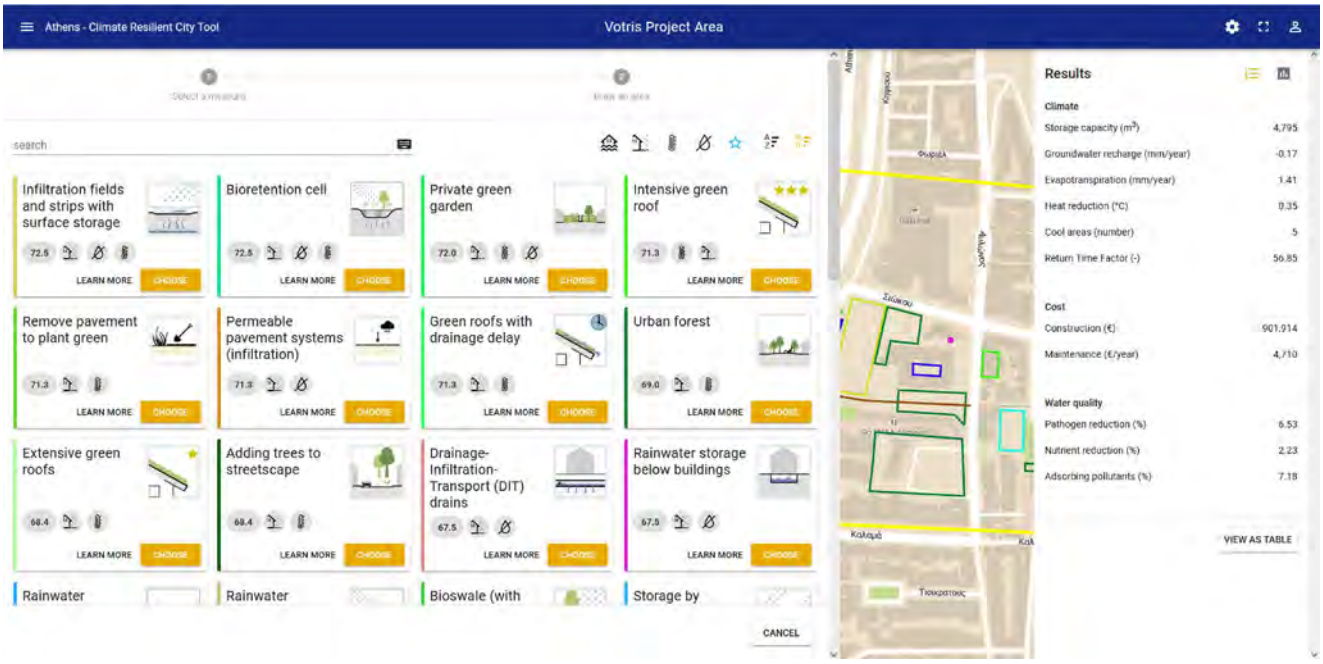
Designing your Pocket Park

Once measures are added, the tool generates a results table summarizing impacts, including hydrological performance and indicative costs, supporting exploration and discussion rather than final design decisions.

Pocket parks, as small-scale green interventions within dense urban fabrics, can also be effectively explored using the CRCTool.

By drawing and testing different configurations of greenery, permeable surfaces and shading elements, users can assess how such nature-based solutions contribute to local cooling, stormwater management and overall neighbourhood resilience, supporting their integration into urban design strategies.





City Spotlight

Centering Lived Experience in Design: Melaka applies the Climate Resilience Measurement for Communities (CRMC) to shape Pocket Parks

While the CRCTool helps technically assess the selection of NbS, it is also important to understand how risk is experienced as the community level. The Climate Resilience Measurement for Communities (CRMC) can add an important layer of understanding.

The CRMC is a community-based framework designed to assess resilience across multiple climate hazards including floods, heatwaves, storms and wildfires. Rather than solely focusing on physical infrastructure and systems, it looks at a broader system of factors that shape resilience, including social networks, access to resources, governance structures and local capacities.

Through a combination of household surveys, interviews and group discussions the tool helps surface how different groups perceive risk, what challenges they face in their daily lives and where the gaps in resilience exist. These insights help guide the selection of components, ensuring that design align with real patterns of use and local priorities.

Applied at the neighbourhood level, the framework surfaces physical conditions alongside social networks, livelihood patterns and natural assets. In the Resilience4Communities (R4C) program in Melaka, this understanding informed the design decisions for a Pocket Park in Kampung Morten, drawing on resident's routines, heritage constraints and existing community structure to shape a space grounded in lived experience.



Activities at the What if? Hub and Curious Garden' credit: Saz Media, UK



Community Member shares back ideas for interventions in Kampung Morten, Melaka.

City Spotlight

Implementing a Co-Design Approach

Reimagining schoolyard through co-design: OASIS invites students, teachers and parents to transform schoolyards into shared climate spaces

The OASIS Schoolyard initiative reimagines school grounds as shared, climate responsive spaces that serve both students and a wider community. Implemented in Cities such as Paris, Semarang and Quezon City, the initiative responds to increasing urban heat, limited access to green space and lack of inclusive public areas in dense neighbourhoods.

At the core of the OASIS approach runs a deep participatory approach that calls on students, teachers, school staff, local authorities and community members. The process begins with understanding the site and its users through mapping, observation and initial conversations. This is followed by a series of participatory workshops where students, teachers and school staff identify challenges and imagine possible transformations. This engagement is not limited to a one-off consultation.

Instead, ideas are tested, visualized, and revised, sometimes through exhibitions or presentations that keep conversations inclusive to needs and wants of all stakeholders involved.

The iterative process is key not only to translating real needs into concrete design, but also to building long-term ownership among those who will care for and use the space. At the same time, it creates valuable educational co-benefits: participants in the process, especially children of all age groups, gain a deeper understanding of climate challenges such as urban heat and water management, while also learning that tangible actions can be taken to adapt to these issues. In this way, the process empowers them not only as users of the space, but as active contributors to more resilient and sustainable urban environments.



School Children adding designing their ideal schoolyard with cut-outs and found materials in Quezon City.

City Spotlight

"It's all about community participation. The construction of the Pocket Park needs to go hand in hand with the community, so the space doesn't just become a space, it becomes a place."

Aurora Lokita
Senior Manager, Programs and MEL
Resilient Cities Network



School Children painting their newly transformed schoolyard.



School children sharing a hug with paint on their hands.

City Spotlight

Balancing Heritage and Climate Needs: Melaka develops a co-designed Pocket Park for an aging community in Kampung Morten

In Kampung Morten, a historic riverside neighbourhood in Melaka, Malaysia, the introduction of a Pocket Park responds to overlapping climate and social challenges. The area faces increasing heat and periodic flooding, while also navigating pressures on local heritage. Existing open spaces are often underused or lack the qualities needed for everyday life, particularly for an aging population. Residents of the Kampung expressed the need for accessible shared spaces where they can rest and gather.

Within the Resilience for Communities (R4C) program, funded by the Z Zurich Foundation, and jointly implemented by R-Cities and the Melaka Historic City Council Resilience, a site was identified on available municipal land as an opportunity to test how small-scale, nature-based solutions can respond to local needs. While the park alone will not solve flooding or extreme heat impacts, it contributes to cooling the area, improving environmental quality and supporting the community's wellbeing.



Community member from Kampung Morten, Melaka shares ideas with the group at co-design workshop

The intervention also recognizes that resilience goes beyond physical infrastructure, requiring spaces that reflect local identity, honours heritage and strengthen social ties.

The design of the space was shared through a process of co-design that invites residents, local leaders and city representatives to define not only what the space should include but how it should function and be sustained over time. This approach considers three interconnected dimensions:

1. The **hardware**: physical elements including planting, shading and seating
2. The **software**: how the space is activated through everyday use and community actives
3. The **orgware**: the structures needed to manage, maintain and take ownership of the space over time.

By balancing community input with practical constraints such as cost and maintenance, the process ensures that the Pocket Park connects to people's actual needs and is feasible, creating a space that communities can own and evolve.

"We need to understand what's feasible. Something might be a good idea, but if there is no capacity to maintain it, then it might not be the right choice."

Nini Purwajati
Lead, Programs and Engagement
Resilient Cities Network

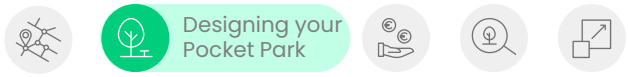
City Spotlight



Group photo of Community Members, R-Cities Coordination team and Local Implementation partner Urban Scale after co-design workshop.



Community Members from Kampung Morten, Melaka, design their pocket parks using coloured pencils and post-its at co-design workshop.



Things to Keep in Mind

Selecting the right components and creating a combination that works together and compliments each other is crucial to ensure the Pocket Park is used as intended but is also flexible to being appropriated in unexpected ways. Some aspects to consider are:

- Contextual differences: What works in a European context may not work in an Asian context and vice versa. This could apply to which functions are programmed, which native species of plants are used and so on.

- Equitable distribution of functions and nature: Pocket Parks have a dual role to play for both the environment and society. Ensure that the functions and spatial elements selected are equitable in nature and serve these 2 functions. Note that in some cases, trade-offs will need to be made. In some cases, social and recreation functions may take precedent over the nature and environmental aspect. Assess these trade-offs to avoid negative impacts while also meeting community needs. Note that cultural expectations and use of public space will also have an impact on assessing these trade-offs.

- Humane design elements: Pocket Parks will attract both intended and unintended use of open space. With growing socio-economic inequalities, the pressure on public spaces in increasing. Consider design elements that are flexible to these pressures without compromising on the intended use. If you foresee a disuse of the space, work with community groups to resolve and develop best case scenarios.

- Avoid green gentrification or displacement: Adding green pockets can create unintended impacts like gentrification. Some communities are fearful of these negative impacts and thereby reject such solutions. While selecting components and designing the Pocket Parks, work with local communities to address and develop mitigation strategies together.

- Inclusive design principles: Whether individual components or a combination of them, ensure that the design strategies accommodate all ages, genders, abilities and cultural norms. At the same time, respond to the local demographic composition. For example, if the neighbourhood houses predominantly elderly groups, ensuring easy access, slow-use spaces and appropriate anthropometry of the components is essential. Be inclusive to non-human species as well. Make room for bees, birds, hedgehogs and other animals that inhabit the area. Also make room for pets by providing dog-friendly areas, water bowls etc.

- Shared programming and stewardship: An essential aspect of ensuring the Pocket Park is sustainably used is how the space is activated after implementation. Work with the communities to program events, moments and a shared maintenance and stewardship plan. Identify key stakeholders who can co-own this process from beginning to end.

- Select locally sourced and native plant species: Draw from indigenous practices and select plants that can thrive within existing natural soil and water cycles. Avoid non-native or invasive species that can disrupt local ecosystems and outcompete local flora. Similarly, ensure that the design choices support local fauna and create conditions where native species can thrive. Prioritizing locally available plants helps reduce cost lower costs, simplifies maintenance and better adaptation to local climate and soil condition.

Governance and Financing

How to deliver Pocket Parks

Going about implementation, governance and financing processes

Behind every thriving green space is a network of actors; residents, municipal departments, developers, businesses and civil society organisations that work together to shape how a park is conceived, built, maintained and used. Getting governance correct is arguably as important as getting the design right; a beautifully designed park that has no clear ownership, no budget for upkeep, and no community investment will quickly fall into disrepair.

This section outlines the four principal models though which Pocket Parks are delivered, explores how financing and long-term stewardship can be structured, and draws lessons from cities around the world.

Four Models for Delivering Pocket Parks

In practice, most Pocket Parks blend elements from more than one model. What matters is that roles and responsibilities are clearly defined from the outset, and that at least one actor takes clear ownership of long-term stewardship. The models below are not mutually exclusive; they are starting points for designing a governance approach that fits the local context.





01 Community-Led

Residents and neighbourhood groups as primary drivers

Key Characteristics

- Initiated and driven by residents, local groups, or civic organisations.
- Municipality plays an enabling or supporting role, not the lead.
- Sites identified through local knowledge and grassroots advocacy.
- Design and programming shaped by the community being served.
- Stewardship responsibilities held by the community long-term

Benefits

- Creates deep local ownership and pride, increasing longevity.
- Ensures programming reflects genuine community needs.
- Builds social cohesion through the co-creation process itself.
- Low barriers to getting started, can begin with minimal capital.
- Community champions often become long-term stewards and advocates.
- Can reach communities overlooked by formal planning processes

Things to Consider

- Highly dependent on volunteer capacity and individual champions
- Risk of stalling if key organisers move away or lose capacity.
- Can be difficult to navigate permitting without expert support.
- Potential inequities due to resourcing : well-resourced communities more likely to succeed
- Maintenance quality may be inconsistent without formal organisational and funding structures.
- Risk of exclusion if consultation processes are not truly open
- May be limited on technical expertise based on stakeholders engaged

Governance and Financing

City Spotlight

Restoring Native Forest Through Community Action: Extended Family in Quito grows a pocket forest through "Sembrando Raíces" initiative

Sembrando Raíces is a community-led initiative in Quito that transformed a degraded area within Parque Bicentenario, into a growing Andean pocket forest. The project was initiated by an extended family during the COVID-19 pandemic, bringing together multiple generations from grandparents to grandchildren, and has since evolved into a long-term effort focused on reintroducing native species and restoring ecosystems within a public space.

This case illustrates a fully community-led model, where the identification of the site, design of the intervention, and implementation were driven by citizens. The group selected an abandoned former golf course where the soil had been degraded over decades due to intensive chemical use and introduced a layered planting strategy using native species to recreate the structure of an Andean forest. Implementation was carried out through collaborative workdays, or "Mingas", an indigenous ancestral collaborative practice that brought together the entire family and established strong ownership from the outset.



Entire Extended Family in the site of the Pocket Forest in Quito



Panoramic top view of pocket forest with introduced water bodies in 2026, 6 years after the start of the initiative

Governance of the space remains primarily in the hands of the community. To ensure continuity, the group formalised an agreement with the municipality, allowing them to steward the site over the long term and ensuring that the space remains a forested area rather than being repurposed for other uses.

Over time, the project has expanded through partnerships with local actors. Collaboration with community nurseries has supported access to native species, while engagement with the local zoo has enabled ecological monitoring, including species such as the marsupial Andean frog, through small water bodies on site. Financing and maintenance are largely sustained through community contributions, complemented by in-kind support and small partnerships.



Grandparents, parents and grandchildren come together to restore degraded golf course in Quito.

Governance and Financing

City Spotlight

A Houston homeowner's association plants a pocket praire to reduce erosion

In Houston, more than two-thirds of homes are governed by homeowners' associations, private organizations that collect dues, maintain shared amenities and sets rules for residents of a given area. In 2025, residents of the Brays Village East Homeowners Association in the Alief community were experiencing issues with a patch of land adjacent to a body of water on HOA property. Maintenance crews continually mowed the area, leading to erosion into the nearby waterway and flooding issues. Residents teamed up with the community organization AliefVotes to design and plant a pocket prairie with native plants, reducing erosion and maintenance costs for the homeowner's association. Additional funding from Orbia, Resilient Cities Network and Z Zurich Foundation helped support initial excavation and planting of the space, with future ownership and maintenance belonging to the residents and homeowners association.



Installed sign with Information on the Pocket Prairie in Alief, Houston


Installation of garden beds in Prairie in Alief, Houston


Completed section of prairie with benches and garden beds



02 City/Municipality-Led

Local government as both client and long-term steward

Key Characteristics

- Municipality leads site identification, stakeholder mapping, risk analysis and mapping, design commissioning, and delivery.
- Embedded within city-wide spatial strategies and climate plans.
- Uses data tools to prioritise sites with highest environmental return.
- Community input gathered through structured consultation
- Ongoing maintenance managed by parks department or public agency.
- Can be integrated with wider NbS, mobility, and urban greening plans.

Benefits

- Has the potential to enable strategic, city-wide distribution of green space - addressing equity.
- Can achieve network effects through coordinated planning.
- Access to public capital, procurement frameworks, and technical expertise
- Integrates with broader climate and biodiversity plans from the outset.
- Long-term maintenance is formally budgeted and accountable.
- Data-led prioritisation directs resources to highest-impact sites

Things to Consider

- Risk of 'consultation theatre' - community views may not shape outcomes.
- Procurement cycles can be slow, limiting rapid response delivery.
- Maintenance budgets are vulnerable to austerity and political change.
- May prioritise visible or high-traffic sites over most-deprived areas.
- Loss of community ownership can reduce activation and stewardship.
- Risk of green gentrification if not paired with anti-displacement policies

City Spotlight

Testing Green Space Through Temporary Use: The Hague develops A pilot park with local communities.

The Pilot Park in the Binkhorst district is a temporary green space created and led by the municipality on land reserved for a future tram line. It was developed as a rapid response to housing growth, providing green space for residents before permanent parks are completed.

This project highlights a municipality-driven approach to Pocket Parks, using public land to deliver immediate benefits while testing ideas for long-term development. The park was designed with a low-cost strategy, allowing nature to grow naturally rather than fully constructing the landscape. This supported biodiversity, with spontaneous vegetation and habitats for insects such as wild bees.

The park is co-created and co-implemented with local community members and a core-group of neighbourhood champions who are also residents in the area.

A key feature is the use of the site as a temporary tree nursery. Around 200 trees are grown on-site and later relocated across the district, making efficient use of municipal resources.

The municipality also leads community engagement through seed distribution and events. Overall, the Pilot Park shows how temporary, publicly led Pocket Parks can improve liveability and support future planning. The ideas and impacts measures in the Pilot Park will later be integrated into a larger future Waterfront Park planned to be implemented from 2029 onwards.

Governance and Financing

City Spotlight



Members of the community engaging in the construction of the Pilot Park



Opening event for the Pilot Park in Binkhorst



03 Development-Led

Commercial and residential developers as public realm creators

Key Characteristics

- Pocket Parks delivered as part of new residential or commercial developments.
- Driven by planning requirements, conditions, or voluntary developer commitments.
- Often linked to SuDS, biodiversity net gain, or open space standards
- Developer funds design, construction, and sometimes initial maintenance
- Long-term stewardship may transfer to residents' management company or local authority.
- Typically, higher design specification due to commercial and reputational incentives

Benefits

- Unlocks private capital without drawing on public budgets.
- Regulatory leverage creates systematic delivery at scale across the development pipeline.
- Often achieves higher design quality and specification.
- Introduces green space into new neighbourhoods from day one.
- Integrates climate infrastructure into built form by design.
- Developer interest in placemaking can drive genuine quality outcomes

Things to Consider

- Parks may be designed for aesthetic appeal rather than community utility.
- Long-term maintenance responsibilities are often unclear or underfunded
- May serve existing or prospective residents, not wider neighbourhood needs.
- Risk of privatization: spaces may not be genuinely publicly accessible.
- Delivery dependent on development pipeline - stalls in market downturns
- Community excluded from design if developer leads without co-design requirement

City Spotlight

Delivering Rooftop Pocket Parks Through Developer-Led Compliance:
The Hague's Binkhorst District redevelopment

In the redevelopment of the Binkhorst district in The Hague, rooftop pocket gardens have been introduced as small-scale green spaces within residential buildings, helping to increase greenery, manage rainwater and support biodiversity in a dense urban area where ground-level space is limited (as seen in the case study on page 15).

These rooftop gardens also contribute to climate adaptation by retaining rainwater during heavy rainfall and reducing pressure on the drainage system, while creating habitats for plants and insects. Although the municipality stimulated these outcomes through regulations such as requiring at least 40% green roof coverage and a rainwater storage capacity of 50 mm, the responsibility for implementation and quality control lies largely with developers.

Developers must translate these requirements into practical design solutions, integrate green infrastructure into building plans, and ensure that projects meet the set standards before completion. This makes them key actors in delivering pocket parks in practice. The case demonstrates that, while policy frameworks are essential, it is the proactive role of developers that ultimately ensures these small-scale NbS are realised within urban developments.



04 Private Sector/Corporate-Led

Private sector as Pocket Park adopters

Key Characteristics

- Private companies sponsor, adopt, or fund Pocket Parks in exchange for recognition.
- Structured through formal agreements with clear obligations on both sides.
- Municipality typically retains oversight and sets quality standards.
- Sponsor may fund build costs, maintenance, or both.
- Works best with dedicated city coordination and a pre-approved pipeline of eligible sites
- Motivated by brand visibility, employee wellbeing, and ESG commitments.

Benefits

- Unlocks private resources without drawing on public budgets.
- Can generate significant savings in public maintenance costs.
- Builds visible corporate-civic partnerships in local communities.
- Creates reputational incentives that sustain long-term engagement.
- Allows municipalities to scale delivery faster than public finance alone.
- Growing ESG reporting requirements are increasing corporate motivation

Things to Consider

- Corporate interest can be inconsistent or short-term.
- Risk of commercial branding displacing the public character of the space
- Dependent on active municipal coordination - does not self-organise.
- Limited uptake in areas without a strong commercial sector presence
- Equity risk: corporate sponsors may favour high-visibility, wealthier areas.
- Robust public accountability mechanisms required to prevent quality decline

Governance and Financing

City Spotlight

A Forest That Heals: The Roha Medical Campus Miyawaki Forest, Addis Ababa

At the heart of the Roha Medical Campus in Addis Ababa, one of Ethiopia's most advanced healthcare developments, sits a one-hectare indigenous forest. Developed under the campus's ESG leadership, the project is grounded in the idea that nature is part of the healing process. Drawing on practices such as forest bathing, the forest is designed as a therapeutic environment where exposure to nature supports patient recovery and wellbeing. Research from around the world shows that patients in hospitals surrounded by natural environments heal faster and experience lower fatality rates.

The forest is embedded into the hospital's design. Patients have direct views into the canopy, and pathways allow visitors and staff to move through and rest within it. It also serves a protective function, acting as a buffer between the campus, a major highway, and a nearby airport, reducing exposure to noise and air pollution.

What distinguishes this project is the level of ecological intent behind its delivery. With very limited indigenous forest remaining in Addis Ababa, the team commissioned an ecological study to identify native species suited to the site. More than 50 species were selected, resulting in 12,500 seedlings planted using the Miyawaki method. Due to the lack of a commercial market for indigenous plants, sourcing required coordination with public nurseries, highlighting the role of institutional support in enabling private initiatives.

The project demanded significant upfront investment in soil restoration, planting, and early maintenance. However, after two years of intensive care, the forest now requires minimal intervention. Survival rates exceed 90%, and the site is already supporting birds, insects, and other species.

While privately led, the project operates within a broader system of environmental knowledge and local partnerships. It demonstrates how corporate actors can deliver high-quality green infrastructure when supported by technical expertise and clear long-term intent, contributing both to site-specific outcomes and to wider ecological restoration efforts.



Planting of Native Species the Roha Medical Campus in Addis Ababa



Completed planting of pocket forest in soon to be completed Roha Medical Campus



Egg nest from native in Pocket Forest



Choosing and Combining Models

In practice, the most resilient and impactful Pocket Parks draw on more than one governance model. A city-led site selection process can identify priority locations; a development-led mechanism can fund and deliver parks on privately owned land; while in other cases, the private sector may act primarily as a funder for parks developed on public land. Community groups can take on stewardship, and corporate sponsors can support long-term maintenance. The models are therefore complementary tools to be combined, rather than competing alternatives.

Across all four models, certain conditions consistently support success:

- Clear ownership and accountability from the outset - ambiguity about who is responsible for maintenance is the single most common cause of Pocket Park decline.
- Genuine community co-design, regardless of who leads delivery - parks that reflect the needs of the people they serve are more likely to be used, maintained, and protected.
- A credible long-term stewardship plan that outlasts the individuals who championed the project - succession planning is as important as initial governance design.
- Equity safeguards to ensure green space reaches communities most exposed to climate risk, not just the most commercially attractive or well-organised neighbourhoods.
- Enabling conditions from municipalities - streamlined permitting, technical support, data access, and recognition mechanisms - these lower barriers for any actor to deliver.

Financing and Long-Term Stewardship

A Pocket Park is not a one-off development; it is a living asset. Trees grow, rain gardens silt up, play equipment ages, and planting must be refreshed seasonally. The most common reason Pocket Parks fall into disrepair is not poor design but the absence of a credible, long-term stewardship plan with adequate financing. Governance planning must therefore address both the capital investment required to create a Pocket Park and the operational expenditure needed to maintain it.

Financing the Build

Capital funding for Pocket Parks can be sourced from a range of mechanisms, and most successful projects draw on more than one:

- Municipal capital budgets and green infrastructure programmes
- National or regional resilience and climate adaptation funds
- Developer contributions and planning obligations (e.g., Section 106 agreements in the UK, or SuDS requirements)
- Philanthropic grants and foundations focused on urban nature or community resilience.
- Community fundraising, crowdfunding, and the Participatory Budgeting processes
- Corporate sponsorship and adoption programmes (as modelled in Quito)
- Development Parter financing – for e.g. European Union funds, including LIFE and ERDF programmes, for cities in eligible regions.

The governance model that works best will always be the one that fits the local context - the legal framework, institutional capacity, character of community organisations, and nature of the private sector. What matters is that governance is treated as seriously as design and considered from the very beginning.



Budgeting for Maintenance

Studies in the UK suggest annual operational maintenance costs of approximately £0.71 per m² per year for urban parks,[7] though this varies significantly by park type, climate, and the complexity of features installed. Nature-based features such as rain gardens and bioretention tree pits tend to require lower maintenance investment than hard landscaping, but they do require specialist horticultural knowledge. Cities and communities planning Pocket Parks should budget explicitly for:

- Regular horticultural maintenance (mowing, planting, pruning, seasonal replanting)
- Inspection and upkeep of water management features (clearing of inlets, checking of overflow systems)
- Repair and replacement of furniture, play equipment, and signage.
- Community programming and activation costs, where relevant
- Periodic ecological monitoring if biodiversity targets are part of the design brief.

Stewardship Models

Long-term stewardship works best when responsibility is shared and formalised. Effective models include:

- Friends of the Park groups with a formal memorandum of understanding with the municipality, defining roles and providing budgetary support
- Community Land Trusts and similar models where communities hold partial or full ownership of the space.
- Maintenance endowments established at the point of development, providing a ring-fenced fund for future costs.
- Adoption agreements with corporate sponsors, structured as multi-year contracts with renewal clauses.
- Green space wardens or dedicated part-time staff, funded through a mix of public and private contributions.

Whatever stewardship model is chosen, it should be designed to outlast the individuals who championed the park's creation. Succession planning - ensuring that knowledge, relationships, and responsibilities can transfer - is as important as the initial governance design.

[7] The Association for Public Service Excellence (APSE) suggests a cost of £6000-£8000 per hectare per year for maintenance costs in a standard urban parks under local authority management. This statistic is likely to significantly change based on management models, maintenance needs and local economic climate.

Governance and Financing

Things to Keep in Mind

Across the models described above, certain conditions consistently appear in successful Pocket Park programmes. Cities and communities looking to scale up delivery should attend to these foundations:

- Consider Policy and regulation. Complex or slow approval processes are one of the most commonly cited barriers to community-led Pocket Park delivery. Municipalities can unlock significant activity by designating fast-track permitting for small-scale green infrastructure, pre-approving standard designs for common contexts, and publishing clear guidance on what permissions are required.

- Consider Capacity. Community groups and small organisations often lack the technical knowledge to design effective green infrastructure. Cities can close this gap by providing access to urban designers, landscape architects, or ecologists through subsidised consultancy programmes, open-source design toolkits, or dedicated municipal advisory teams.

- Consider Planning intelligence. Tools such as Arup's Terrain™ and Deltares' Climate Resilience Toolbox allow cities to map underperforming sites and identify where Pocket Parks would deliver the greatest environmental return. Making this data accessible to communities and developers - not just municipal planners - can democratise the site selection process.

- Consider Motivation. Whether through public recognition for corporate sponsors, awards for community groups, or density bonuses for developers who exceed green space requirements, cities can shape the incentive landscape to make Pocket Park delivery attractive across all actor types.

- Consider Justice. Green gentrification - where new green spaces drive up property values and displace lower-income residents - is a documented risk of Pocket Park programmes. Governance frameworks should include equitable distribution requirements, anti-displacement policies, and meaningful participation mechanisms for the communities most in need of green space.

- Consider Quality and Performance. Not all small green spaces deliver meaningful benefits automatically. Poorly designed Pocket Parks may underperform in cooling, biodiversity, water management, or usability. Cities should set clear quality standards and basic performance criteria, alongside simple monitoring. This highlights the need for an integrated approach, where designers, ecologists, and communities collaborate to ensure well-functioning, high-impact spaces.





Monitoring and Use

Measuring the co-benefits and being responsive to feedback and change

Assessing the Impact of Pocket Parks

Pocket Parks deliver a wide range of benefits that vary according to their design, configuration and features within urban environments. Monitoring their impact must be built into project design from the outset. Systematically tracking a Pocket Park's performance transforms raw data into a powerful communication tool that demonstrates real impact, builds stakeholder confidence, and makes the case for scaling such NbS across the city. This evidence base is equally vital for attracting investment, as funders and decision-makers increasingly demand proof that interventions deliver measurable returns — whether ecological, social, or economic. Beyond securing the next project, robust monitoring creates a living knowledge resource that other cities, practitioners, communities and investors can draw on when developing similar interventions.

Monitoring the success of a park can take very different forms based on the aims of the park and the components selected. Although their advantages span many areas, they can be broadly grouped into three overarching domains: Environmental and Climate Resilience, Social Value, Wide Economic Benefit.

Defining success of your Pocket Parks should depend on the goals set out at the design and site selection phase of the project. However, there are often resource constraints which limit the extent of monitoring of Pocket Parks once they have been delivered to the communities. This call for more collaboration with local community organisations, think tanks and universities who are able to deploy and use their capacity in understanding how the Pocket Park is performing and identify needs and opportunities for impact and improvement..

Environmental and Climate Resilience

Potential quantifiable environmental impacts to monitor:

- Increase in permeable area. By increasing permeable surface area and vegetation cover, Pocket Parks slow the movement of stormwater, enhance the "sponginess" of the urban landscape, and support infiltration. Evidence shows that trees and SuDS features can delay stormwater flow by between 57 - 81%[8] and retain 43% - 84% of runoff[9], depending on features. Additionally, green spaces alone can enable around 30% of annual rainfall to infiltrate into the soil,[10] which can also potentially support aquifer recharge, critical in more water stressed regions.
- Improvement in water quality. Pocket Parks can not only provide flood resilience but also improve water quality by filtering pollutants such as nitrates, phosphorus and total suspended solids (TSS). Green Spaces have been found to reduce nitrates by around 70%, phosphorus by between 22-95% and a 42-100% reduction in TSS. SuDS features also follow a similar pattern, with removal efficiencies of up to 70%, 62%, and 79% respectively.[11]

[8] The IGNITE report 'Nature-based solutions to the climate emergency' (IGNITE, 2020) reports 57% stormwater runoff delay for filter strips or swale systems, 73% for green roofs, and 81% for SuDS-enabled street trees
[9] The IGNITE (2020) report suggests an assessment of rainwater runoff retention of up to 43% for street trees, 78% for SuDS-enabled trees and 84.2% for green space
[10] The IGNITE (2020) report suggests a 30% annual rainfall infiltration of 30% for new green spaces in urban environments
[11] The IGNITE (2020) report descibes the ability of various nature-based solutions and SuDS systems to reduce pollutant loads into rivers and water bodies through surface run-off. These are reductions compared to baseline runoff without filtering through green systems and are heavily dependent on incoming water quality, rainfall quality and soil and plant selections for sites.



- Decrease in local temperatures. Vegetation provides shade, evaporative cooling, and reduced surface heat absorption, potentially resulting in daytime air temperature reductions of around 2.7–3°C[12] and ground surface temperature reductions of up to 11°C depending on the measure.[13] An evenly distributed, small-scale net of open green spaces expands better the cool inflow of air in dense urban areas. Meaning that the local climatic relief that a Pocket Park creates can be amplified by weaving Pocket Parks in the urban fabric. (Source: BAFOK Bezirkliches Konzept zur Anpassung an die Folgen des Klimawandels in Charlottenburg-Wilmersdorf)
- Increase in carbon sequestration. In addition, they contribute to carbon sequestration: trees typically sequester around 5.5 kg of CO_2 per year per tree and can store more than 230 kg of carbon over their lifetime,[14] while green spaces and SuDS swales sequester carbon through vegetation and soil at measurable rates per square metre.

Social value

While often less easy to quantify, Pocket Parks often generate substantial social value. Potential social value impacts to monitor:

- Reduction in noise pollution. Parks can reduce noise pollution, an increasingly recognised urban stressor by approximately 4 dB per tree or per square metre of green space,[15] providing quieter, more comfortable environments, particularly in narrow streets and urban environments plagued with traffic.
- Improvement in air quality. Parks can also play a meaningful role in improving air quality by capturing particulate matter and absorbing pollutants. For example, within 50 metres of a park interior, green space can reduce nitrogen dioxide concentrations by 2.6% and PM_{10} levels by over 9%.[16]
- Impact on mental health. Regular exposure to green space such as a 30-minute weekly visit has been linked to a 7% reduction in the prevalence of depression,[17] whilst for every 1% increase in accessible green space near people's homes, it correlates with a 4% reduction in anxiety and mood disorder treatments.[18] Similar patterns emerge in workplace studies. Employees with view of trees and landscapes took an average of 11 hours less sick leave compared to ones without a view, equating to average savings of around £1,600 per employee.[19]

[12] The IGNITE (2020) report assesses a 3°C reduction in surrounding temperature from street trees and 2.7°C reduction in daytime air temperature from green space.
[13] The IGNITE (2020) report calculates reductions in surface temperature from green features ranging from 3°C from living walls to 14.5°C from intensive green roofs. It should be noted that these studies are based on solar radiation analysis in the UK.
[14] The IGNITE (2020) report assesses carbon sequestration from street trees as 5.5kg annually, 0.27kg per m2 annually for filter strips and swale systems, and 0.2kg per m2 annually for green space.
[15] The IGNITE (2020) report assesses the impact of various NBS on human-made noise in our urban environments. This suggests a 4db reduction per tree and per square metre of green space, alongside 2.6-46db reductions from living walls and green roofs.
[16] IGNITE (2020)
[17] Shanahan D.F., Bush R., Gaston K.J., Lin B.B., Dean J., Barber E. and Fuller R.A. (2016). Health benefits from nature experiences depend on dose. Scientific reports, 6, p.28551.
[18] Nutsford D., Pearson A.L. and Kingham S. (2013). An ecological study investigating the association between access to urban green space and mental health. Public health, 127(11), pp.1005-1011.
[19] Elzeyadi I. (2011). Daylighting-bias and biophilia: quantifying the impact of daylighting on occupants health. US Green Building Council.



- Impact on physical health. The presence of nearby green space increases the likelihood of meeting recommended physical activity levels, with people living in greener neighbourhoods being 24% more likely to achieve these targets.[20] Those residing within a mile of green space are 38% more likely to engage in regular exercise.[21] Pocket Parks, when distributed across a city, can offer frequent, accessible points for activity, contributing to reductions in cardiovascular risk, obesity, blood pressure, type-2 diabetes, and other health conditions.[22] They can also be designed as edible gardens that improve nutrition and overall health.
- Educational opportunities. This includes learning for childhood development, such as social and psychomotor skills, as well as recognising nature as an informal learning agent. This informal learning supports an understanding of ecological systems and principles, as well as raising awareness of sustainability. Close contact with a natural setting enables direct learning about the environment.[23]
- Livelihood generation. Pocket Parks can be designed to become generate employment opportunities, which can improve the economic prospects of the area they are set in. For example in South East Asia, Pocket Parks can help generate increased activity for both formal and informal food vendors as a result of higher footfall and use of public space.[24]

Economic Value

Pocket Parks and urban greening have also been proven to provide indirect benefits to communities in the form of property values and increased time spent outside of the home. Potential economic impacts to monitor:

- Increase in property values. Economically, Pocket Parks provide indirect but important benefits. Property values increase in proximity to green and blue infrastructure; street trees and SuDS installations can raise property values by around 4.7% and rental values by over 6%.[25] Properties near parks see stronger effects, with value increases approaching 9.5% and rental uplift around 7%.
- Increase in commercial trading. At a commercial level, businesses benefit from increased footfall and consumer spending. Around half of park visitors visit a local business before or after their time in the park, and an increase of 40% in commercial trading rates[26] after investment in well planned green space, reinforcing the economic uplift created through small-scale green infrastructure.

Taken together, Pocket Parks represent a highly effective, multi-benefit intervention capable of strengthening environmental resilience, enhancing public well-being, and contributing to local economic performance. Their footprint is relatively small, but a Pocket Park's capacity to deliver wide-ranging urban benefits can be profound, particularly when deployed at city scale.

[20] Mytton O.T., Townsend N., Rutter H. and Foster C. (2012). Green space and physical activity: an observational study using Health Survey for England data. Health & place, 18(5), pp.1034-1041.
[21] Cohen D.A., McKenzie T.L., Sehgal A., Williamson S., Golinelli D. and Lurie N. (2007). Contribution of public parks to physical activity. American journal of public health, 97(3), pp.509-514.
[22] WHO Europe (2016) *Urban green spaces and health*
Kaczyńska, M. Urban Green Spaces' Influence on Civilization Diseases—Meta-Analysis and Critical Review. *Sustainability* 2024, 16, 3925. [23] *Urban green spaces and health*. Copenhagen: WHO Regional Office for Europe, 2016
[24] Widjajanti, Retno et al. (2025). Design Strategies for Inclusive Public Space to Facilitate Street Vendors: A Case Study of Jetayu Park, Indonesia. International Journal of Sustainable Development and Planning. 20. 10.18280/ijsdp.200608.
[25] INSPIRE (2020) suggests an increase in property values of 2.5%, 4.7%, and 9.5% for properties with living walls, street trees and green spaces respectively, and rental increases of 6.15% for street trees and 7% for proximity to parks.
[26] INSPIRE (2020)

Monitoring and Use

City Spotlight

Making the Economic Case for Nature: Cape Town demonstrates the value of investing in waterway restoration

Cape Town, through its Liveable Urban Waterways mega-project, has worked on making the economic case for the nature based solutions through an independent cost-benefit analysis which found that in two catchments impacted by the programme, every Rand 1 invested in waterway rehabilitation returns between Rand 1.56 and Rand 2.02 in benefit. These benefits come in the form of flood damage avoidance, maintenance savings, protection of property values, job creation, and health and wellbeing improvements.

These benefits come in the form of flood damage avoidance, maintenance savings, protection of property values, job creation, and health and wellbeing improvements.

The specific restoration projects under whole programme would save up to ZAR 55 million (USD 3.1 million) on dredging and canal refurbishment, safeguard tourism and property revenues, and create about 60 local jobs every year for each catchment area studied. The results of the cost benefit analyses show that that over 25 years, the proposed interventions could generate a total net benefit of up to Rand 257 million in both catchments.[27] These returns actually increase under more pessimistic climate scenarios, making investment now the most rational long-term choice.



Sand Langevlei canal project in Cape Town, which will remove 550m of concrete canal and restore 8 600m2 of natural environment. Credit: City of Cape Town

[27] Nature-based infrastructure to improve inland water quality could result in net benefits up to R257 million;

Monitoring and Use

City Spotlight

Managing Flood Risk at Scale: Mansfield delivers a town-wide network of blue-green infrastructure

Arup partnered with Severn Trent Water to deliver the Mansfield Sustainable Flood Resilience Project, one of the UK's largest town-scale blue-green infrastructure programmes.

Nearly 500 interventions were implemented across Mansfield, distributing measures throughout the town to retain and recharge rainwater and reduce pressure on the local sewer network.

The programme introduced more than 20,000 smaller blue-green solutions across seven intervention types, collectively providing around 58,000 m³ of floodwater storage.[28] In addition to flood mitigation, the project delivered 18 wider benefits evaluated through improvements in natural, social, financial, manufactured, human and intellectual capital.



Mansfield SuDS features in a pocket park at planning stage © Arup



Mansfield SuDS features in a pocket park after implementation © Arup

[28] Mansfield sustainable drainage systems - Arup

Monitoring and Use

City Spotlight

Modelling the Impact of City-Wide Greening: Dar es Salaam demostrates the benefits of nature-based solutions at scale

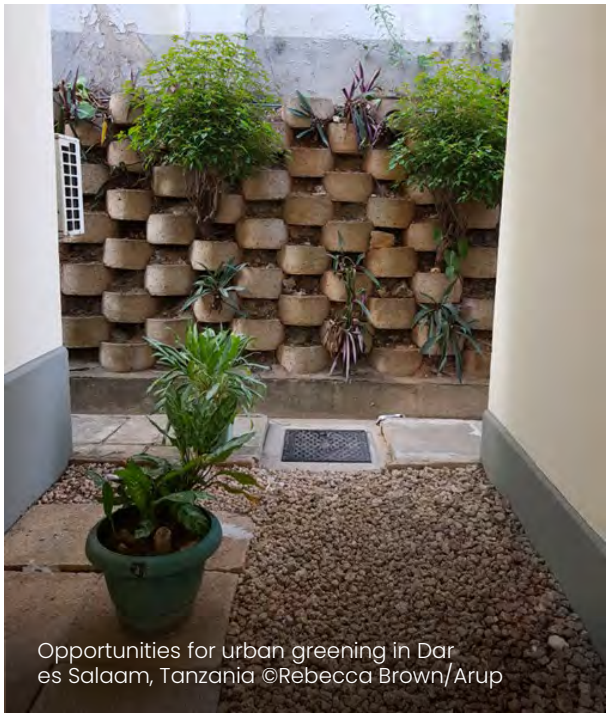
In Dar es Salaam, the assessment highlighted how nature-based solutions and urban greening can play a pivotal role in enabling climate-resilient urban development.[29] The insights generated will support future plans to address the city's pressing challenges of flooding, water scarcity and rising temperatures.

The programme explored the potential for large-scale implementation of greening techniques across the city. Modelling the cumulative impact of city-wide interventions, both in 2022 and projected to 2030/40 demonstrated substantial environmental and social benefits.

City-wide greening was shown to reduce flood risk, mitigate the Urban Heat Island effect, limit soil erosion and drought impacts and improve the lives and livelihoods of residents. The interventions could enable the storage of 730,000 m³ of rainfall within the soil, reducing the volume of stormwater entering drainage systems. Analysis suggests that up to 17,000 buildings could become less susceptible to flooding, with soil loss decreasing by around 4%.[30]

Cooling benefits are particularly significant. The modelling indicated that reducing grey surfaces and preserving existing forests and mature trees could lower local air temperatures by up to 5°C, while also reducing air pollution and the incidence of heat-related illnesses. Maintaining natural open spaces and forest areas also helps limit land degradation; average annual soil loss could fall by roughly 4% (840,000 tonnes).

There is also extensive potential for carbon sequestration and air quality improvements through tree planting. Projections show that around 1,182,000 new trees could be planted by 2030, providing a natural means of countering CO_2 emissions and enhancing local air quality. These benefits would be felt most strongly in low-income settlements, where heat stress, pollution and flooding currently pose the greatest risks.



Opportunities for urban greening in Dar es Salaam, Tanzania ©Rebecca Brown/Arup

[29] Dar es Salaam urban greening – Arup
[30] Dar es Salaam urban greening – Arup



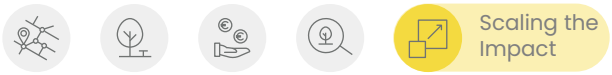
Things to Keep in Mind

- Consider using monitoring as a learning opportunity. Monitoring of the impact can also serve as a learning moment. Going beyond the quantitative aspects of monitoring and deploying citizens science methodologies and shared community assessments is essential to capture the true impact and co-benefits to society.

- Consider capturing qualitative experiences. Conventional monitoring frameworks tend to focus on data and quantitative metrics. Provide room for capturing experiences, narratives, memories and local knowledge on how the Pocket Parks are adding value to day to day life in the community.

- Consider formalizing maintenance roles. Effective maintenance is crucial for Pocket Parks. Without a clear owner or caretaker to activate and maintain the space, there is a risk of misuse or deterioration. To prevent negative outcomes, it is important to have someone embedded in the local system, whether a dedicated staff member or selected community ambassadors who may responsible for overseeing and caring for the park.

- Consider risks of displacement. While Pocket Parks generate clear economic benefits, such as increased property and rental values, these gains can contribute to displacement pressures in surrounding areas. Rising desirability may make neighbourhoods less affordable for existing residents. Cities should anticipate these dynamics and integrate measures such as anti-displacement policies, inclusive planning, and equitable distribution of green space to ensure that the benefits are shared without unintended social costs.



Scaling the Impact

Learning from the experience and inspiring other Pocket Parks

Pocket Parks are often overlooked as a serious policy instrument. Individually, their footprint is modest and their impact local. But when distributed thoughtfully across a neighbourhood or city, they begin to function as something greater: they become a network of interconnected natural infrastructure. At that scale, their collective contribution to water and heat resilience becomes significant as function in absorbing and temporarily retaining stormwater that would otherwise overwhelm drainage systems, cooling urban air through shade and evapotranspiration, and reducing the surface temperatures that drive the urban heat island effect. What policy cannot achieve by investing in one Pocket Park, it can achieve by investing in many.

This networked logic is also the logic of resilience. Pocket Parks, when integrated into the broader fabric of the city, help distribute and absorb these pressures. They manage risk not by eliminating it, but by spreading it, ensuring that no single street, neighbourhood, or drainage system bears the full burden of an extreme event.

Crucially, Pocket Parks do not operate in isolation from the wider systems that surround them. They should function in alignment with a larger network of nature-based solutions such as urban forests, green corridors, wetlands, river floodplains, and bioswales, with each element reinforcing the others. They can also be integrated to support traditional grey infrastructure. A Pocket Park that captures runoff during a storm event contributes to the same hydrological cycle that a downstream wetland helps regulate, while also minimizing the burden on overwhelmed storm management systems. A shaded square that cools a city block connects to the broader canopy network that moderates temperatures across entire districts, and lessens the burden on cooling systems in homes and businesses. In this layered system, Pocket Parks serve as connective tissue: small in scale, but essential to the coherence and performance of the whole.

The case for Pocket Parks extends beyond their environmental performance. These spaces carry a remarkable diversity of functions that are social as much as ecological. They offer refuge and recreation in dense urban neighbourhoods, support community cohesion, improve mental wellbeing, and provide equitable access to nature in areas where larger parks are absent. When their full range of environmental and social potential is understood and designed for, the opportunities multiply. There is considerable room to scale up impact not only by increasing the number of Pocket Parks, but also by deepening what each one can do.

Scaling Pocket Parks requires action at every level. Policy frameworks must recognise them as legitimate climate infrastructure. Planning processes must actively identify and activate underused urban spaces. And implementation approaches must bring communities, ecologists, and designers together to realise their combined potential. None of this happens by default; it requires deliberate institutional alignment. In many countries around the world, private developers are also mandated to contribute to a percentage of green or open space, for example the Open Space Regulation in India.[31] These types of regulations may also be leveraged to deliver high quality Pocket Parks in residential developments.

A critical part of that alignment is reducing the bureaucratic friction that excludes smaller community groups from participating. Simplifying permit processes, cutting unnecessary administrative steps, and creating clearer pathways for community-led activity can create the conditions that make scaling possible. When institutions remove those barriers, they unlock the full social, ecological, and economic value that these spaces are capable of generating.

[31] Identifying suitable policy instruments to promote nature-based solutions in urban plans by Davide Longato, Chiara Cortinovis, Mario Balzan, Davide Geneletti; https://doi.org/10.1016/j.cities.2024.105348

Scaling the Impact

City Spotlight

Scaling through Shared Stewardship: Quito Activates Co-responsilitity as part of a Larger Effort to Green the City

In Quito, Ecuador, the expansion of Pocket Parks is rooted in a broader commitment to increase green space and restore ecological function across the city, guided by a Metropolitan Ecosystem Restoration Plan to 2050 that includes strengthening urban green systems alongside protected areas, post-fire recovery, and ecological corridors. While the metropolitan average of green space appears sufficient, significant disparities remain between neighbourhoods, with some areas falling far below recommended levels and reaching as little as 4 m² per inhabitant. At the same time, recent forest fires and ongoing environmental pressures have reinforced the need for green spaces that contribute to risk reduction and ecological recovery.

Within this context, Pocket Parks are developed as part of a wider system of urban green spaces, designed to strengthen ecological connectivity across the city. This system extends beyond parks to include street tree networks, vegetation at street level, ravines, and remnant forest areas, linking small-scale interventions into a continuous ecological structure.

What stands out in Quito is how responsibility is shared across multiple actors. While the municipality provides the policy framework, technical guidance, and retains ownership of the land, implementation and maintenance depend on shared management.

Through the "Quito Adopta" initiative, private companies and community groups formally take on the care and stewardship of Pocket Parks across the city.

For private sector actors, this model offers clear visibility and recognition, including acknowledgement through official municipal platforms and communication channels, as well as the opportunity to associate their brand with tangible contributions to the city. For community groups, it provides the assurance that the spaces they care for will be maintained as protected green areas over time, creating stability and continuity in their stewardship efforts even as local administrations change. In some cases, community or private sector actors develop new Pocket Parks from scratch, while in others, they take on the management of pre-existing sites.

This combination of public leadership and shared stewardship has allowed the city not only to expand and maintain its green network more effectively, but also to foster a collective sense of responsibility for the relationship between the city, nature, and long-term wellbeing.

"The vision we propose goes beyond simply having a green space, which for many years was understood as a sports field or a playground. These spaces need to serve an ecological function, and people need to understand why. In the Metropolitan District of Quito, we promote coexistence between people and nature."

Sebastián Pillajo
Head of the Natural Heritage Unit at the Secretariat of Environment
Metropolitan District of Quito

Scaling the Impact

City Spotlight



Community Participating in Activity in Quito



Children identifying bird species in Quito

Scaling the Impact

What does this look like in your own context? Where would these spaces have the most impact, and how to they begin to connect across a city?

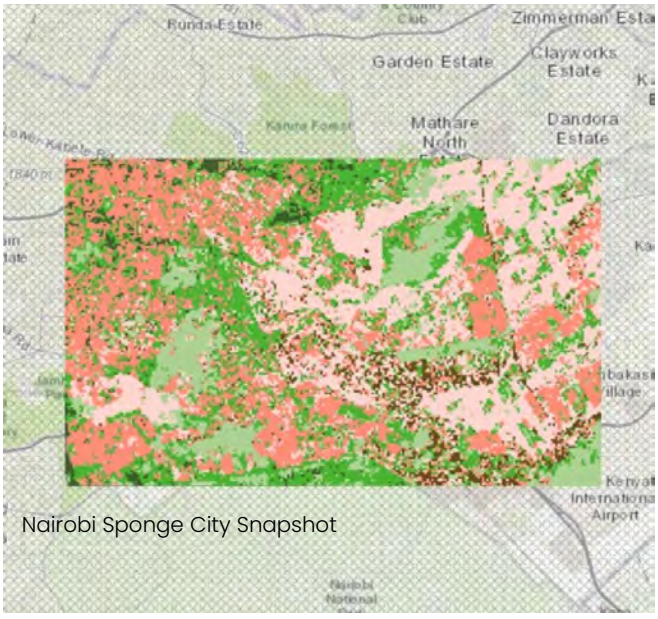
These are not always easy questions to answer. Tools and platforms can help make this visible, offering ways to assess opportunities and impact and learn from what is already happening elsewhere.

Tool Spotlight

Measuring Urban "Sponginess" at Scale: Arup's Terrain tool assesses the impact of green networks

Arup's Terrain™ tool can use large amounts of satellite imagery to map a city's green and blue surfaces and soil data, harnessing machine learning and data analytics to quantify each urban area's current "sponginess" (natural rainwater absorbency). By rapidly assessing the amount of blue, grey and green infrastructure, soil types and vegetation and water runoff potential, the tool can assess a city's natural absorbency and assign it a "sponginess" score (presented as a %).

By using the tool, cities can assess the impact of creating a network of Pocket Parks over its area, aiming to increase its "sponginess" score. Some example cities are included below from Arup's latest Sponge City Snapshot. This tool would be best suited to assessing the impact of scaling up Pocket Park networks, with individual parks only making a small impact on the city's "sponginess" score. Read more here.



Nairobi Sponge City Snapshot

City[32]	Overall % 'sponginess'	Green-Blue Area %
Nairobi	34%	52%
Singapore	30%	45%
Montreal	29%	36%
London	22%	31%

[32] Arup Global Sponge Cities Snapshot;

Scaling the Impact

City Spotlight

Mapping Pocket Parks Worldwide: ClimateScan finds and connect and nature-based solutions through citizen science

Find thousands of Pocket Parks around the world and add your own: ClimateScan.org

The online citizen science knowledge-sharing platform ClimateScan.org contributes to an accelerated climate adaptation by promoting more green and blue spaces in urban dense areas around the world. Implementation of Pocket Parks with small-scale NbS such as bio(swales), green roofs and green walls requires the involvement and enthusiasm of a multitude of stakeholders which can be stimulated by citizen science platforms. ClimateScan mapped over 25.000 NbS projects around the globe in 10 years with more than 3500 registered users uploading projects thanks to the openness of the website and active online and offline promotion.

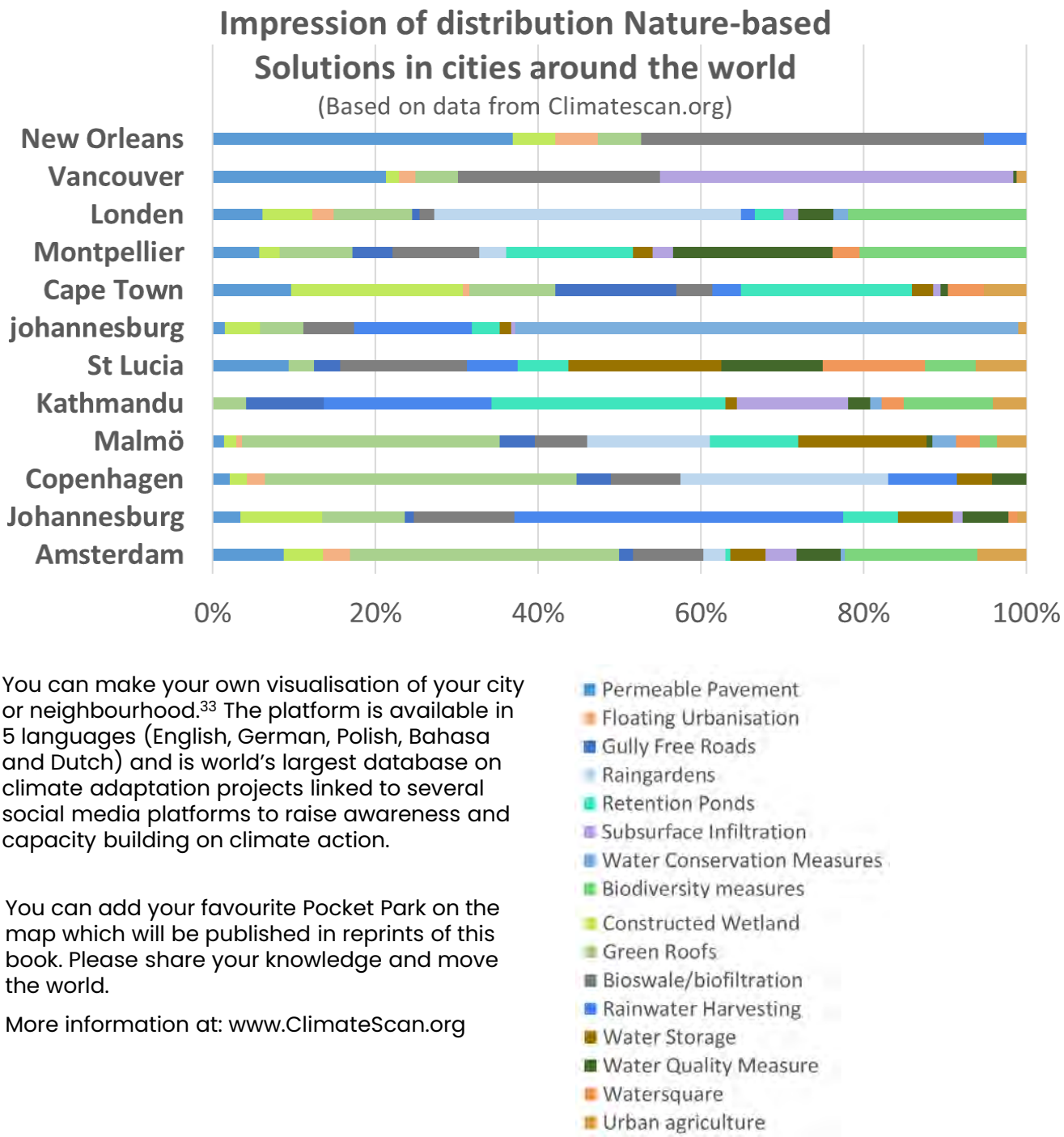
Pocket Parks is a category on itself (ClimateScan) showing that the parks can be found everywhere in the world but also the community gardens, tiny forest in urban dense cities and parcs show over 5000 case studies in total. Nature based implementations are mapped in the following focus topics: Water, Heat, Nature (Biodiversity), Urban Agriculture, Air Quality, Energy (Climate Mitigation), People (Social and Economic Value), Health and also allows project in 'Climate Events - Learning From Trouble' to indicate problem areas with evidence based videos of challenges as flooding.

ClimateScan is used in many cities of the world to show that (elements of) Pocket Parks are popping up in many cities (swales, raingardens, etc.)



Scaling the Impact

Tool Spotlight



You can make your own visualisation of your city or neighbourhood.[33] The platform is available in 5 languages (English, German, Polish, Bahasa and Dutch) and is world's largest database on climate adaptation projects linked to several social media platforms to raise awareness and capacity building on climate action.

You can add your favourite Pocket Park on the map which will be published in reprints of this book. Please share your knowledge and move the world.

More information at: www.ClimateScan.org

[33] Boogaard, F., Kondratenko, J. Low impact development devices DNA of cities for long term stormwater management strategies. Discov Water 4, 34 (2024). https://doi.org/10.1007/s43832-024-00090-0

04.
Key Takeaways



01.

Plan Ahead. When planning a Pocket Park at the earliest point, ensure that the whole cycle of engagement has been thought out, and design decisions cementing Pocket Parks into plans are made early. It is critical to have intentional plans that build time and funds for less visible work: earning trust, understanding what communities actually need, co-designing, iterating and maintaining. These costs are just as real as the capital costs for the physical infrastructure of the parks. Timing and early buy-in is crucial to creating a well-functioning space that is useful to the community. Cities should include Pocket Parks clearly in planning documentation to ensure support for them is clear and incentives are well documented, supporting communities, developers and municipalities to implement these interventions. This should include early identification of key stakeholders, intended users, and land ownership to ensure the project is feasible and aligned with community needs.

02.

Co-design beats consultation. Communities are the heart of Pocket Parks- they are the daily users and are often relied upon to passively or actively maintain the spaces. Communities should not be validating designs; they should be empowered to define what success means to them, ensuring they become stewards of the space. This can ensure long-term use and legitimacy of the space. Whether a park is being designed ground-up (when community need comes first and planning comes second) or top-down (when planning needs come first and community needs are then assessed) it is essential that planning teams work with stakeholders who know the local context and history. Stakeholders should represent the breadth of the community, and indigenous and First Nations knowledge systems must be integrated wherever possible. Such inclusive design not only increases the ownership of the parks but can potentially support them to withstand critical shifts such as staff turnover, funding shortfalls or shifts in political will.

03.

Not all green space is good space. A Pocket Park can exclude, harm or backfire if it is designed without care. Ensure that selected sites reflect the local context. In some cases, selecting the wrong plant species can lead to high water demand or low survival rates, especially as climate conditions shift. In others, overgrown or poorly lit areas may be perceived as unsafe and therefore remain unused. By harnessing local and indigenous knowledge, ensure that native species and traditional practices are integrated into the design of any elements in the park and are responding to the site's local climate extremes and expected future climate conditions. Ensure that planning takes into account how local communities respond to existing green spaces to ensure Pocket Parks feel safe for users.

04.

Pocket parks are multi-functional and multi-dimensional. Pocket Parks are inherently flexible in nature. Sites do not have to be formal or long-lasting- many Pocket Parks spring out of 'meanwhile use' spaces that can be temporarily developed while waiting for a larger development to be constructed. Seek to maximise the potential of your space. Pocket Parks can also be designed to maximize co-benefits. A well-designed space can manage stormwater and reduce flood risk, lower surrounding air temperatures through shade and evapotranspiration, provide safe places for children to play, support pollinator corridors, help improve mental and physical ailments, give people somewhere to rest and recover, and build the kind of informal social connections that make neighbourhoods more cohesive and more resilient to shocks. These are not separate outcomes requiring separate projects; they can emerge from a single, thoughtfully designed space

05.

Activate your space and tell its story well. Creating an intentional communication strategy for the launch of your park is essential. Communities will not use the space if they don't know about the space to begin with. Ensure at the planning stage that provisions for intentional event planning, communications, and storytelling are included to ensure the space is properly utilised. Monitoring and tracking impact can turn a Pocket Park into a demonstration case for what can resilient spaces look like. A single Pocket Park, done with genuine care and ownership that is communicated well, can become a proof of concept that demonstrates that nature-based solutions work to benefit both communities and nature, making the case for a second space easier. Then a third. Solid evidence of impact can influence political commitment and justify added investment. It also creates opportunities for learning and exchange with others doing similar work – potentially scaling the impacts of one park to many.

06.

One pocket at a time. Big wins take a lot of resources and a longer time, but taking small steps will pay off when you manage to scale the impact. Embrace the power of small-scale change and create new pathways for scaling the impact by demonstrating the successes and benefits of your Pocket Park. So, start where you can. Pick one space, do it properly, track what happens and share what you learn. You do not need to transform a city all at once. Start with one space, it could become that critical puzzle piece that jump starts resilience action across an entire city.



The 10 Pocket Park Indicators

(Inspired by the Healthy Streets Approach by Lucy Saunders)



A resilient Pocket Park is more than just a green space. It plays a vital role as urban blue-green infrastructure that supports environmental sustainability, community wellbeing, and local identity. By integrating nature, people, and place, these multi-functional pockets can help cities adapt to climate challenges while improving everyday life. Inspired by the Healthy Streets Approach by Lucy Saunders[34], we propose 10 indicators to shape your resilient Pocket Park. These indicators describe what makes a pocket park resilient, inclusive, and beneficial for both people and the environment.

[34] Healthy Streets Approach by Lucy Saunders;


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