Summary of the Dutch national guide



Greenery in and around the City

Green standards for healthier, more resilient cities. This document provides a summary of GIAC, the English translation of the Dutch “Handleiding Groen in en om de Stad” (GIOS). GIAC helps define what green space is needed, where, and why. From street trees to green networks, it supports spatial planning and decision-making through clear, measurable green standards.

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Het industriegebouw
Goudsesingel 128
Unit 02.01 & 02.03

3011 KD Rotterdam
+31 6 27101368
Olivia@nflux.nl

THE WHY AND FOR WHO

Problem, Purpose & Public

European cities are facing increasing pressure on limited urban space. Housing, infrastructure, mobility, energy transition, climate adaptation and recreation all compete for the same land. At the same time, the impacts of climate change are becoming more visible through rising temperatures, longer periods of drought, more intense rainfall events and ongoing biodiversity loss. In addition, cities play an important role in achieving the ambitions of the EU Nature Restoration Regulation and other environmental objectives.

The value of urban green space is widely recognised. Green areas help reduce heat stress, improve water management, support biodiversity, promote public health and strengthen the quality and attractiveness of urban environments. Increasingly, green infrastructure is viewed not as an amenity, but as essential urban infrastructure.

Yet many cities struggle to translate ambition into implementation. While the benefits of green infrastructure are well understood, insight into where greenery is most needed, how much is sufficient and which interventions will deliver the greatest impact is often lacking.

Cities often lack consistent guidance for defining, justifying and enforcing requirements for green space within spatial developments. This makes it difficult to position greenery as an equal consideration alongside housing, infrastructure and other spatial demands. As a result, decisionmakers are confronted with fundamental questions:



- How much green is needed
- Where should investments be prioritised?
- Which functions should green space fulfil?
- How can individual projects contribute to broader environmental and societal goals?
- And how can progress be measured over time?

To help address these challenges, the Netherlands developed the Green In and Around the City (GIAC) guide. GIAC was created in response to a growing need for a practical and evidence-based approach to safeguarding green space in urban development. Rather than treating greenery as an optional amenity, the guide positions it as a fundamental spatial component that should be planned, justified and embedded alongside other urban functions. GIAC provides cities with common guidance to translate green ambitions into concrete actions and long-term spatial decisions.

WHY NOW?

Growing pressure from urbanisation, climate change, biodiversity loss and the energy transition is increasing competition for space. At the same time, the EU Nature Restoration Regulation is shifting urban greening from policy ambition to a measurable responsibility, creating a need for robust and evidence-based green planning.

What does GIAC offer?

GIAC helps cities define, justify and safeguard green requirements alongside other spatial demands such as housing, mobility, water management and energy infrastructure. GIAC proposes 5 main purposes.

It supports cities in embedding these requirements into policies, plans and development processes, ensuring that greenery becomes an integral part of spatial decision-making.

5 MAIN PURPOSES:

- Defining green and qualitative green;
- Showing how green can be measured;
- Clarifying which spatial units should be used;
- Offering design principles that fit local situations;
- And showing how green standards can be built in a way that provides sufficient safeguards while allowing local flexibility.

Rather than applying a one-size-fits-all standard GIAC adapts to local conditions such as urban density, climate, soil and water systems, landscape characteristics and ecological context. At the same time, it connects interventions across multiple scales, from streets and neighbourhoods to city-wide and regional green networks, ensuring that local projects contribute to wider environmental, social and climate objectives.

"The GIAC guide is a practical framework for making green a measurable and equal part of urban development"

- Olivia Riksen

Who is GIAC intended for?



GIAC is designed for everyone involved in shaping, planning and managing the urban environment. The framework primarily supports municipalities, regions and metropolitan authorities in embedding green infrastructure into policies, plans and development projects. At the same time, it provides a common language for urban planners, landscape architects, developers, housing organisations, consultants and public space managers, helping them align decisions and work towards shared environmental, social and climate objectives.

POSSIBLE STAKEHOLDERS

- Municipalities
- Regions and metropolitan authorities
- Urban planners
- Landscape architects
- Developers
- Housing organisations
- Consultants
- Public space managers

Already interested?
See the key takeaway on the last page.

BUILDING BLOCKS OF GIAC

Understanding the GIAC guide

GIAC does not start with a fixed green standard. Instead, it helps cities determine what type of green infrastructure is needed based on local ambitions, environmental conditions and spatial constraints. By combining functional objectives, local context, spatial scales and quality requirements, the methodology translates green ambitions into practical planning, design and management decisions. The 5 building blocks that GIAC is built on are:

1

Multi-functional Green Infrastructure

GIAC starts from the understanding that green infrastructure serves multiple functions simultaneously. Green space can improve health, recreation and social cohesion, while also supporting biodiversity, water management and climate resilience. Understanding which functions are most important in a specific location forms the starting point for defining green requirements.

Working Across Spatial Scales

Green infrastructure functions as a connected system rather than a collection of individual projects. GIAC therefore evaluates green space across multiple scales, from streets and neighbourhoods to cities and surrounding regions. This approach helps ensure that local interventions contribute to wider ecological networks, climate adaptation goals and broader urban ambitions. As the interaction between these spatial scales is a core element of GIAC, the next chapter explores this multi-scale approach in more detail.

2

3

The three GIAC Lenses

GIAC determines green requirements through three complementary lenses: objectives (such as climate adaptation, biodiversity and recreation), development context (including land ownership, available space and development stage), and urban typology (such as density and landscape setting). Together, these lenses ensure requirements fit local circumstances.

Quality Beyond Quantity

A central element of GIAC is that green infrastructure is not only assessed by its size or coverage. The benefits delivered by green space depend equally on factors such as biodiversity value, connectivity, accessibility, vegetation structure, management and spatial design. GIAC therefore combines quantitative targets with qualitative assessment.

4

5

From Analysis to Implementation

GIAC is designed to support implementation as well as analysis. The methodology helps translate ambitions into policies, spatial requirements, design principles, management strategies and monitoring frameworks, ensuring that green infrastructure becomes a lasting part of urban development and decision-making.

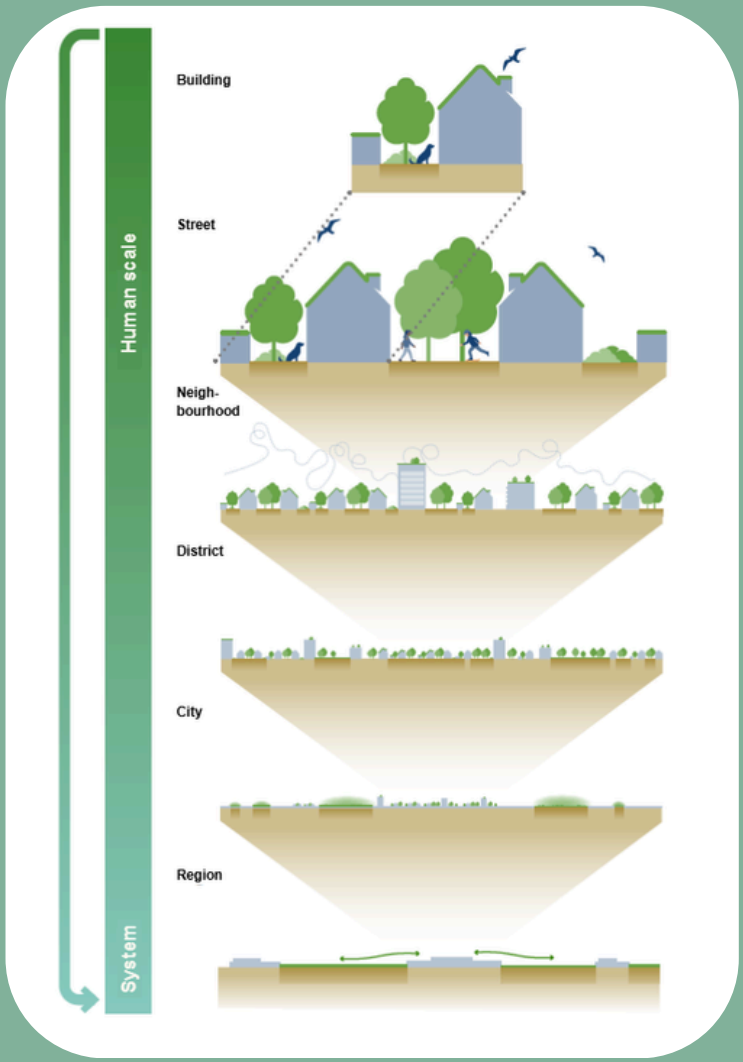
FROM BUILDINGS TO REGIONAL NETWORKS

Multi-layer approach

A key element of the GIAC methodology is its multi-scale approach. Green infrastructure functions at different spatial scales, each contributing to specific environmental, social and climate objectives. By connecting these scales, GIAC enables small local interventions to contribute to wider green-blue networks, biodiversity, climate resilience and recreational accessibility. The six scales GIAC focusses on are:

1. Green at building level
At the smallest scale, green roofs, façades, balconies and private gardens can contribute to climate adaptation, biodiversity and quality of life. These interventions are particularly valuable in high-density areas where opportunities for larger green spaces are limited. While small individually, they can collectively make a significant contribution to the urban green network.

2. Green at street level
At street level, green infrastructure becomes part of everyday public space. Trees, planting beds and other forms of street greenery provide shade, cooling and water retention, while improving the



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attractiveness and liveability of streets. These interventions also strengthen ecological connections throughout the city

3. Green at neighbourhood level
At neighbourhood level, green space supports daily contact with nature. Parks, play areas and communal green spaces provide opportunities for recreation, social interaction and physical activity. GIAC emphasises that green space should be available close to where people live and work.

4. Green at district level
At district scale, larger parks, ecological corridors and green-blue structures start functioning as interconnected systems.

5. Green at city level
At city scale, green infrastructure forms the backbone of urban ecological and recreational networks. Strategic green structures connect districts, strengthen climate resilience and improve access to larger green areas across the city.

6. Green around the city
The GIAC methodology also considers the relationship between the city and its surrounding landscape.



In the Dutch approach, this includes the wider area surrounding the city. At this scale, green infrastructure supports regional biodiversity, water systems, recreation and landscape connectivity, creating benefits that extend beyond municipal boundaries.

INSIGHT AND ACTION

The GIAC baseline assessment

Effective green planning begins with a clear understanding of existing conditions. The GIAC guide therefore starts by building a comprehensive picture of a city's current green infrastructure, not only in terms of quantity, but also quality, function and future opportunities for intervention. This provides the evidence needed to make informed decisions and prioritise investments.

The first step is understanding how much green is present. This includes green surface area, tree canopy cover, green roofs, façades and other forms of green infrastructure. By analysing green distribution across different spatial units, cities can identify areas with limited access to green space and establish a baseline for future monitoring.

The value of green infrastructure depends on more than area alone. Factors such as ecological value, native vegetation, connectivity, management and green-blue networks influence how effectively green space performs. GIAC therefore evaluates both the quality of green infrastructure and the benefits it delivers for people, nature and climate resilience.

Green requirements should respond to local challenges. By combining green infrastructure data with information on heat stress, flooding, drought and pressures, cities can identify where interventions are likely to deliver the greatest impact. Spatial analyses can also reveal opportunities for replacing unnecessary impervious surfaces with green infrastructure.

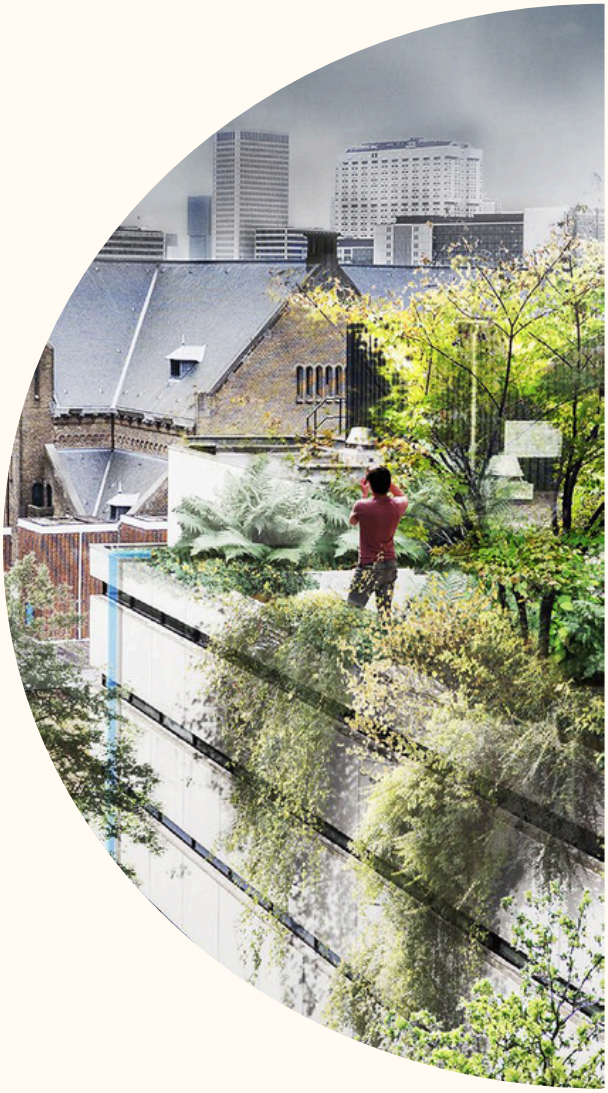
Successful implementation depends on identifying when and where change is possible. GIAC therefore considers land ownership, the role of private and public green space, and the lifecycle of urban assets. Major maintenance, infrastructure replacement and urban renewal projects often provide natural opportunities to deliver greening measures more efficiently.

Data based decisions

The baseline measurement can be used as a spatial design tool by turning data into choices. Instead of only asking whether an area meets a percentage standard, municipalities can use the baseline to decide where greenery is most needed, which type of greenery is most effective and how greenery can be combined with other spatial functions. Per urban challenge, the GIAC baseline can offer the following planning responses:

Heat stress

The baseline can reveal local hotspots and streets where shade and cooling are most urgent. This can guide choices about tree planting, façade greening, green roofs, shaded walking routes and reduction of pavement.



Water management

The baseline can show where infiltration, retention and storage are needed. Because water flows across areas, the design response should not only look at the project site, but also at the wider water system.

Biodiversity

The baseline can identify missing links in ecological networks and show whether the area provides necesary factors:



places to stay, connections, food, variation and safety. This can guide the design of green corridors, native planting, ecological management and habitat creation

Existing neighbourhoods
The baseline can be linked to asset life cycles and maintenance planning. If sewer replacement, road renewal or public space maintenance is planned, these moments can be used to redesign streets with more greenery, less pavement and better integration of aboveground and underground space.

New developments
The baseline and the desired green standard can be translated into requirements for tenders, permits, land development calculations and design briefs.
Where the municipality owns the land, this can be included directly in the development conditions. Where land is privately owned, the guide suggests that different instruments may be needed, including permitting and regulation.

In this way, the baseline becomes more than a measurement exercise. It becomes a way to structure spatial decisions: where to intervene, at what scale, with which type of green, with which standards, and through which planning or management process.

Key take-aways

Green infrastructure should be planned with the same level of ambition, evidence and accountability as any other spatial function. Greenery in and around cities should become a measurable, qualitative and enforceable part of spatial development. GIAC helps cities achieve this by combining a clear national benchmark with local flexibility, integrating insights across spatial scales from building to landscape, and linking green infrastructure to climate adaptation, biodiversity, health, social cohesion, and spatial quality.

A robust baseline measurement is the crucial first step. The baseline measurement creates comparability, reveals gaps and supports prioritisation. With this information policy ambitions can be translated into actual design choices in the physical environment.

Used well, the baseline measurement enables municipalities and provinces to move from general ambitions to concrete spatial decisions about where and how to green the city.

About &flux

&flux is a Dutch consultancy firm that helps governments, cities and organisations accelerate the transition towards a sustainable and climate-resilient future. We specialise in urban greening, climate adaptation, water, energy, and rural transitions. In our daily work, we bring stakeholders together and translate ambitions into concrete measures and action. By connecting vision with implementation, we help create healthier, greener and more liveable cities and regions.

Olivia would like to meet you!

As Consultant Climate Adaptation, Water & Green, Olivia Riksen helps cities turn urban greening ambitions into measurable and practical requirements. Together with Arcadis, she developed the GIAC guide and has supported municipalities in embedding green standards in policy, planning and development. Get in touch with Olivia to explore what GIAC can do for your city.



&flux

+31627101368
olivia@nflux.nl
@OliviaRiksen

Consultant Climate adaptation, water & green