



gent:

Ghent sustainability report 2023

Focus on *Planet*

Voluntary Local Review



Foreword by the mayor

Dear reader,

Before you is the fourth sustainability report. Following the initial report and the focus on *People* (2021) and *Prosperity* (2022), we are now focusing on the Planet.

That our planet is under major stress is obvious. With global warming, rising sea levels, increasing drought, greater risk of flooding, climate change is undeniable. Reading the many reports about it in the media, one would almost become discouraged. It is sometimes hard to find a positive signal about the future of our planet. Yet we must not throw in the towel.

We are currently at a tipping point. It is up to cities like Ghent to make the difference, by showing together with citizens, entrepreneurs and civil society that change is possible. That we do believe in a better world and that we hold fate in our own hands.

The crises of recent years are an opportunity to make the right choices, always with a view to the future. The Sustainable Development Goals are a powerful compass here. In this report, we address 5 strategic sustainability goals: clean water and sanitation (SDG 6), responsible consumption and production (SDG 12), climate action (SDG 13), life below water (SDG 14) and life on land (SDG 15).

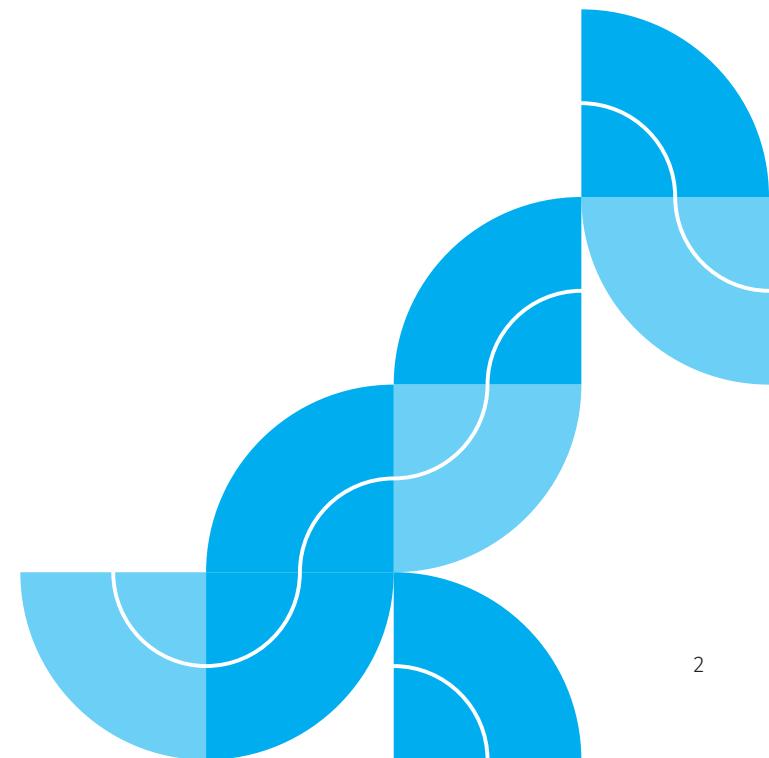
We show that Ghent is a pioneer in the field of soil desealing and water infiltration. That we encourage our residents to green our city by building vertical gardens. That we dare to experiment with circular facade bricks to reduce CO₂ emissions from construction projects. That we increasingly view waste materials as raw materials to make our economy climate-neutral. That we actively look for places in our city to plant trees of the future that will provide shade and coolness to several generations of Ghent inhabitants.

A strong local government that works well with many partners and stakeholders is a sine qua non for an active sustainability policy. In Ghent, we succeed in this. We join forces to take initiatives together that benefit our planet. This sustainability report is the best proof. As always, we will submit this report to the UN as a Voluntary Local Review. Apart from that, it is also an overview of our good practices within the city and can inspire other administrations to adopt a similar approach.

Thanks to everyone who contributes to the sustainable development goals in our city. Based in Ghent, we lead by example. Out of love for our city, and for our planet of which we need to take care more than ever.

Mathias De Clercq

Mayor
City of Ghent



Introduction

This report is the fourth in a series of Ghent sustainability reports. This time we focus on the *Planet*.

The *Planet* topic comprises five sustainable development goals (SDGs):

- > clean water and sanitation (SDG 6),
- > responsible consumption and production (SDG 12),
- > climate action (SDG 13),
- > life below water (SDG 14),
- > and life on land (SDG 15).

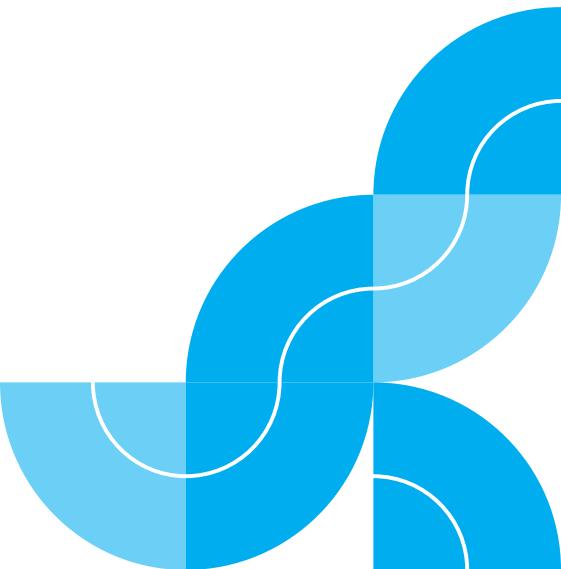
In September 2015 all UN Member States committed to pursuing a total of 17 Sustainable Development Goals by 2030. We divide the 17 goals into five mainstays: *People*, *Planet*, *Prosperity*, *Peace* (peaceful, stable societies with strong public services) and *Partnership*.



The SDGs are deliberately broad in scope. They aim to eliminate poverty worldwide and put the planet back on track towards sustainability.

Ghent's sustainability reports *People* (2021) and *Prosperity* (2022), can be found [here](#). *Partnerships* and *Peace* are covered in each report and form the common thread. The City of Ghent also produces an initial and a final report. The initial report (2020) represents a baseline measurement. Then the final report (2024) will show the evolution of the figures.

You can read inspiring and various examples in the Ghent sustainability reports. Because in Ghent, we are working together with many partners to make the city more sustainable. Initiatives by citizens, companies, civil society organisations, knowledge institutions and the government are featured. In this way, we hope to support policymakers and simultaneously inspire enthusiasts. Because we need everyone to take daily steps towards a more sustainable city and world.



About the report

Planet is a broad and essential topic within the field of sustainability. A healthy earth is the basis for every step towards a more sustainable planet. Progress in this area is not always as rapid as hoped. But the multitude of initiatives by individuals and organisations is encouraging. Especially in Ghent, such initiatives do not go unnoticed. That is why we highlight some of them in this report.

We are submitting this report for the fourth time to the [UN as a VLR](#) (Voluntary Local Review). A commitment that makes us unique in Belgium.

How to read this report

In the first section, you will find an overview of the SDGs covered by the *Planet* component. Based on the SDGs we establish a link to the **City of Ghent's strategy**.

For each SDG you can read about **initiatives in Ghent** that contribute to these sustainable development goals. We show what the City of Ghent is doing and especially where we are collaborating with many stakeholders such as civil society, citizens, businesses and knowledge institutions. This report does not aim for completeness, but highlights successful collaborations.

Furthermore, you will find **data by SDGs** in this report. The data comes from the [SDG index for Flemish cities and municipalities](#), a set of more than 200 indicators collected by the VVSG. In addition, the City of Ghent itself monitors several indicators. You can view them on [this dashboard](#).

The second section of the report introduces you to **eight inspiring Ghent projects** that contribute to the *Planet* objectives. We also look at how **international partnership** is an important piece of the puzzle in achieving a more sustainable world.

Lastly, we describe how sustainability in our **own city organisation** is being fleshed out. We provide an overview of initiatives and ambitions that work towards achieving the *Planet* objectives.

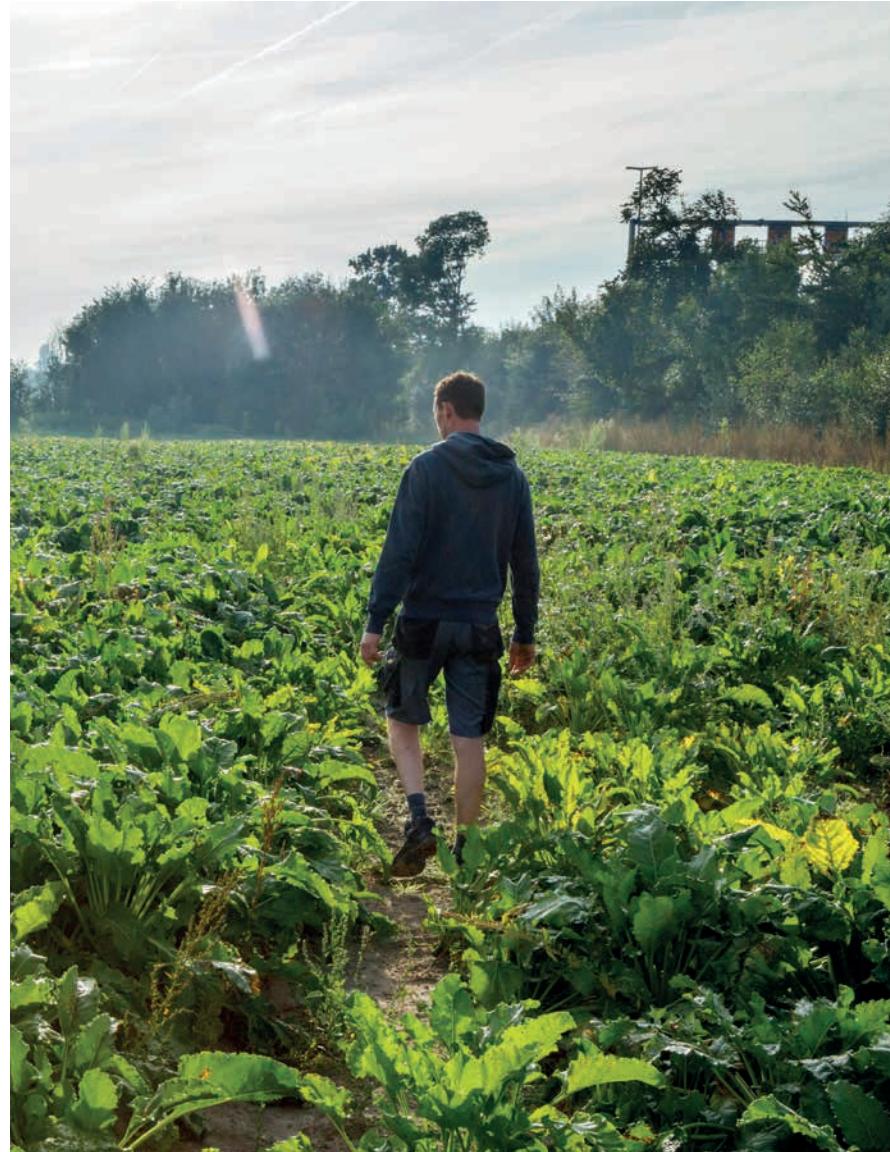


Table of Contents

Section 1. General introduction

- Foreword by the mayor
- General introduction 2
- Table of Contents 3
- Charts and tables 7
- Focus on Planet Ghent infographic 8

Section 2. Presentation of SDGs

SDG 6: Clean water and sanitation: ensure access and sustainable management of water and sanitation for all

- SDG 6 in brief 10
- City of Ghent strategy 10
- City of Ghent approach 11
- Access to sanitation and hygiene 11
- Water quality, water pollution, reuse of (waste) water 11
- Efficient water use, sustainable water harvesting, reduced water shortages 12
- Supra-local (cross-border) water management 12
- Protection/Restoration of water ecosystems 12
- Ghent and SDG 6: in figures 14

SDG 12: Responsible consumption and production: ensure sustainable consumption and production patterns

- SDG 12 in brief 18
- City of Ghent strategy 18
- City of Ghent approach 19
- Sustainable consumption patterns, sustainable production patterns 19
- Food waste 19
- Waste generation and recycling 19
- Reuse of materials 21
- Sustainable practices in businesses 21
- Sustainable practices in public procurement 21
- Awareness of sustainable development and lifestyles 22
- Ghent and SDG 12: in figures 23

SDG 13: Take urgent action to fight climate change and its impact 26

- SDG 13 in brief 27
- City of Ghent strategy 27
- City of Ghent approach 28
- Resilience and adaptability of the environment (for climate impacts) 28
- Climate focus integrated into national policy (planning & implementation) 29
- Climate education, climate awareness, climate mitigation, climate adaptation, climate communication, impact mitigation (on people & institutions) 30
- Ghent and SDG 13: in figures 31

SDG 14: Conserve and make sustainable use of the oceans, seas and 32 maritime resources

- SDG 14 in brief 33

SDG 15: Protect, restore and promote the sustainable use of 34 ecosystems, manage forests sustainably, combat desertification and land degradation and revert and stop biodiversity loss

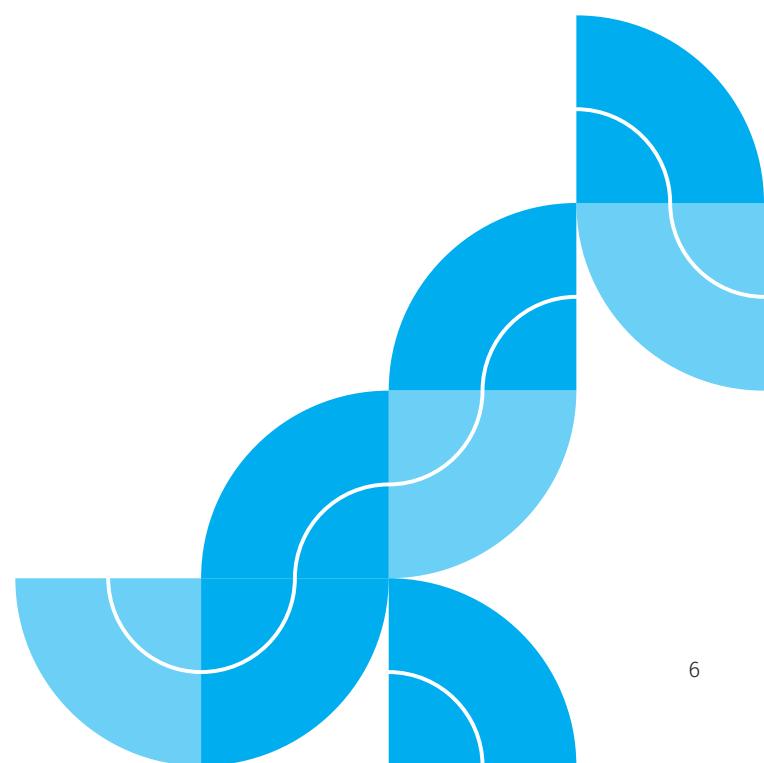
- SDG 15 in brief 35
- City of Ghent strategy 35
- City of Ghent approach 36
- Freshwater ecosystem and services (conservation, restoration, use) 36
- Green climate aspects 36
- Forest conservation, forest management, forest restoration, (global) (re)forestation 37
- Desertification, affected land, degraded soil (due to drought, flooding), neutral land degradation
- Conservation/Protection of natural habitats, biodiversity, endangered species 38
- Ghent and SDG 15: in figures 39

Inspiring Ghent-based projects 42

- Oostakkerdorp green zone 43
- Planting with neighbours 46
- PlastiCity 49
- Circular facade brick 52
- Koerknallen and Tegelwippen 54
- Trees of the future 57
- Citizen Science weather and climate 60
- Greentrack Ghent 63
- International partnership 66

Sustainability in the city organisation 69 Focus on the Planet

- City buildings 71
- Green roofs 71
- Sustainable commuting 72
- Car fleet phase-out
- Circular materials management 73
- Reuse furniture 73
- Circular purchases 73
- Circular waste management 73
- Short chain in staff restaurant 74



Charts

- Chart 1** Index SDG6 - Clean water and sanitation 15
Chart 2 6A Drinking water 16
Chart 3 6B Sewerage 16
Chart 4 Reference year 2018 figures 20
Chart 5 2021 figures showing the effect of the protein shift (half-and-half) in hot meals 20
Chart 6 Index SDG12 - Responsible consumption and production 24
Chart 7 12A Waste 25
Chart 8 12B Environmental awareness 25
Chart 9 CO₂ emissions (ktonne CO₂) 31
Chart 10 Green climate aspects 37
Chart 11 Index SDG15 - Life on land 40
Chart 12 15A Area of green space 41
Chart 13 15B Sealing 41
Chart 14 The road to Ghent Climate City 70
Chart 15 City buildings with solar panels 71
Chart 16 Total local renewable electricity generation with citizen participation 71

Table

- Table 1** We track SDG 6 using the following indicators 14
Table 2 We monitor SDG 12 using the following indicators 23
Table 3 We monitor SDG 15 using the following indicators 39
Table 4 Table % of employees coming to work in a sustainable way 72
Table 5 Evolution of fleet 2020 to 2022 72
Table 6 Composition of fleet 2020 to 2022 72

Ghent sustainability report 2023

Focus on the Planet

6 SCHOONWATER
ENSANITAIR



SDG 6

- > Ghent features more than **50 free drinking water stations**.
- > Ghent has more than **100 public toilets**.
- > The **water quality** of Ghent's inland waters has improved significantly in recent years.¹
- > The **waterbeds** of Ghent's inland waters are generally polluted to heavily polluted due to historical pollution.²

SDG 12

- > Ghent scores better compared to the Flemish city centres in terms of **consumption of vegetarian food, purchasing seasonal products, preventing food waste and purchasing organic products**.³
- > **Waste production** per capita in Ghent decreased between 2013 and 2020⁴
- > Ghent residents are throwing out **less and less food**⁵



1 The Flemish Waterways NV and the City of Ghent. (2018). Policy vision "Water in the city". Consulted at https://www.vlaamsewaterweg.be/sites/default/files/download/15061_tk_010_joint_vision_layout_2019.pdf

2 VMM. (2023). Water quality geo portal. Consulted at <https://www.vmm.be/data/waterkwaliteit>

3 Citizen survey Municipality-City monitor, Agency Inland Administration

4 Public Flemish Waste Company 2013-2020

5 Citizen survey Municipality-City monitor, Agency Inland Administration

6 <https://www.integraalwaterbeleid.be/nl/bekkens/bekken-gentse-kanalen/in-de-kijker/regio-van-gent-zeer-kwetsbaar-bij-waterbom>

7 [Ghent in Figures](#)

8 Statbel: Proportion of undeveloped cadastral area to total cadastral area.

9 provinces.incijfers.be: Land use file

SDG 13

- > On average it is 3°C **warmer** in the centre of Ghent than outside and this difference can reach 8°C on hot days.
- > [Ghent and surroundings](#) seem to be extremely vulnerable in the event of a **water bomb**.⁶
- > There is a **CO₂ reduction** of 76.3% between 2007 and 2020 allowing us to achieve the set targets.⁷

14 LEVEN IN
HET WATER



15 LEVEN OP
HET LAND



SDG 14

No link to Ghent's urban context.

SDG 15

- > Since October 2019, the City of Ghent is the first local authority in Flanders to have planted more than **10 hectares of new forest**. As a result, it is the first to receive the [golden forest label](#) from the Flemish government.
- > Thanks to 20 years of inventory, we have a good idea of the distribution and evolution of the various types of vegetation in Ghent. This can be seen on the **biological evaluation map**.
- > **Sealing** is increasing in just about all cities and municipalities, including Ghent.⁸
- > The surface area taken up by **green spaces** (relative to area of land take) is also decreasing in Ghent.⁹

6 CLEAN WATER AND SANITATION



SDG 6: Clean water and sanitation: ensure access and sustainable management of water and sanitation for all

SDG 6 in brief

With these objectives, we aim to provide clean drinking water and sanitation for all. We are also committed to sustainable water use, because too much waste still ends up in the water. To improve water quality, this pollution must stop and wastewater must be treated more often. Also, by 2030, all countries should have a functioning water management system and commit to sustainable water harvesting to curb water shortages. The SDG objectives and targets, set by the UN, can be found [here](#).

City of Ghent strategy

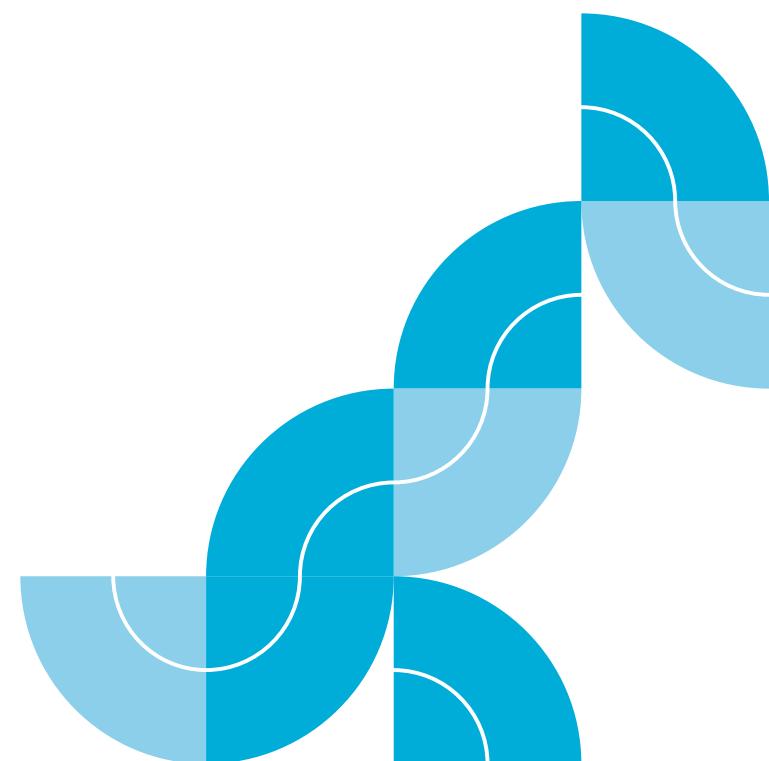
These objectives from Ghent's 2020-2025 strategy align with SDG 6.

In Ghent, we work together towards a healthy and clean living environment by among others:

- > Increasing the environmental quality of the water system
- > Public sanitary facilities

More greenery, nature and water make for a pleasant and climate-robust Ghent by, among others:

- > Optimising a water policy



City of Ghent approach

For each target, we look at how the City of Ghent contributes to the SDG agenda.

Access to drinking water

Providing drinking water is a mandatory task for drinking water companies. For the City of Ghent, this is [Farys](#).

Ghent has plenty of places where you can refill your water bottle or cup for free, but not everyone knows where to find them. As part of the heat action plan the City of Ghent launched the website [www.stad.gent/verkoeling](#), which shows all free drinking water stations.

A total of more than [50 free drinking water stations can be found on the map](#). There will also be posters making it clear to passersby that free water is available. Drinking water stations are very important in hot weather for vulnerable groups such as the elderly, young children and homeless people. Therefore, city staff will actively promote the new map.

Access to sanitation and hygiene

The city of Ghent offers free [indoor public sanitary facilities](#). The supply and facilities evolve depending on policy, needs and budget. Besides specific public sanitary facilities, free sanitary facilities are also available in car parks and public buildings such as museums, libraries and swimming pools. Info about the more than 100 public toilets in Ghent can be found here. Toilets are cleaned with detergents bearing the European eco-label. Attention is paid to accessibility and gender neutrality. [Sanitary facilities must be available to everyone in the city](#). This ensures there is a sufficient and quality supply at busy times such as during the [Ghent Festival](#).

Water quality, water pollution, reuse of (waste) water

Water quality

The water quality of Ghent's inland waterways has improved significantly in recent years. This is largely due to the connection of discharge points to the public sewerage network with connection to water treatment plants. Nevertheless, the quality of Ghent's inland waters is generally poor. Overflows, residual unconnected discharge points and historical pollution of the waterbed are the main sources of pollution.¹

The city of Ghent and Farys mapped out the discharge points [and initiated a plan to remediate them](#). This inventory revealed 537 discharge points from houses directly bordering the watercourse. These are believed to be 243 rainwater discharge points, 159 dry weather discharge points or highly concentrated sewage and 135 discharge points whose nature remains undetermined for the time being.

Addressing overflows and private discharge into the Lieve will improve water quality. Although wastewater discharge is prohibited there, it usually does not involve malicious intent. After all, owners do not always know where their drains run and where their private sewers connect to the public ones. If the City of Ghent suspects that wastewater is being discharged into the Lieve through or under the building, the city and Farys guide property owners to take steps.

In addition, under the impetus of the City of Ghent, the area of the Ghent inland waterways has been included in the new [river basin management plans 2022 - 2027](#) designated as class 4. This class means that the various water actors aim to achieve good ecological status in this area by 2033.

Flemish Waterways NV and City of Ghent. (2018). Policy vision "Water in the city". Consulted at https://www.vlaamsewaterweg.be/sites/default/files/download/15061_tk_010_gezamenlijke_visionota_layout_2019.pdf

Waterbed quality

The waterbeds of Ghent's inland waterways are generally polluted to heavily polluted due to historical soiling².

Ghent aims to achieve basic quality for all waterbeds. Waterbed quality is one of the indicators to describe overall water quality. Improving water quality is a shared responsibility of watercourse managers, sewer managers and public authorities. The river basin management plans define actions to improve water quality, among others.

Efficient water use, sustainable water harvesting, fewer water shortages

The City of Ghent aims to increase the efficiency of water use in all sectors. To this end, it encourages rainwater use among citizens and city services. In addition, the sustainable extraction and provision of fresh water is a task for the drinking water company, which is Farys for Ghent.

Supra-local (cross-border) water management

Ghent has quite a few watercourse managers: the Province of East Flanders, Flemish Waterways NV, the VMM and some polders and drainage basins. The City of Ghent strives for good cooperation with each of these partners. With the drawing up of the [rainwater and drought plan in Ghent](#) the city also liaises with the port and other administrations.

Flemish Waterways nv is the waterway manager for Ghent, among others. Together with the City of Ghent, they work on the waterways at various levels. They are responsible for safety, water management, functional and recreational use, commercial aspect and co-use by citizens, experience value, the role in a climate-robust city and the waterways' image value.³

Protection/Restoration of water ecosystems

Due to the historical confluence of the Lys and Scheldt rivers, water is in the DNA of the City of Ghent. The 'Structural Vision 2030 - Space for Ghent' starts

with a number of spatial concepts as a starting point. Two of them are 'Water, topography and soil form the basis for the growing city' and 'Green-blue infrastructure provides oxygen in and around the city'.

For Ghent in particular, the natural water network fulfils a prominent role. On a spatial level, this function remains underused. The watercourses and valley areas connect the countryside with the city centre. Combining the water network with [green areas creates green climate aspects](#), but they do more than just connect. They also carry cool and clean air into the city centre and bring cooling through ventilation streams, open water, evaporation and shading.

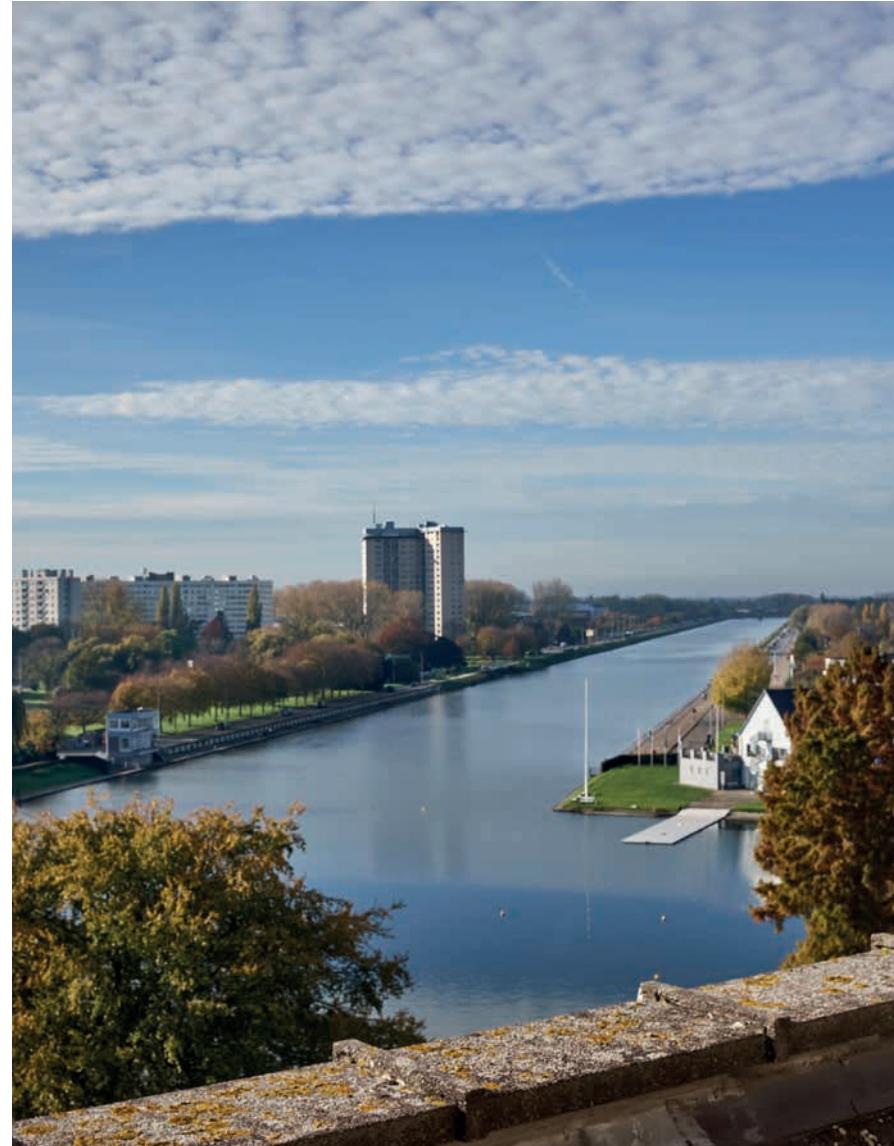
It is also about preventing flooding by retaining water at its source and reusing it. Allowing rainwater to infiltrate locally has become even more important due to falling groundwater levels. It constitutes a necessary replenishment of these groundwater reserves. Alternative solutions and innovations are needed to solve the water issue in the inner city and the core city. Besides sufficient natural infiltration options, innovations such as green roofs, water squares and alternative forms of above- and below-ground water storage are also important for the further development of the city. In short, the degree of sealing has to come down. That is why the City of Ghent is working on a [rainwater and drought plan](#) by the end of 2024.

A well-functioning sewerage system is also critical. Wastewater is quickly and efficiently diverted to a treatment facility and consideration is given to the potential of wastewater as a source of energy.

VMM. (2023). Water quality geo portal. Consulted at <https://www.vmm.be/data/waterkwaliteit>
Flemish Waterways NV and City of Ghent. (2018). Policy vision "Water in the city". Consulted at
https://www.vlaamsewaterweg.be/sites/default/files/download/15061_tk_010_gezamenlijke_visienota_layout_2019.pdf

Over the centuries, Ghent has always sought an outlet to the sea. From the thirteenth century onwards, this was through the Lieve to the Zwin near Damme. The silting up of the Zwin caused a new canal to be dug in the sixteenth century: the Saservaart towards Honte, a former inlet of the Western Scheldt. As the city's first economic lifeline, the Lieve was often ignored throughout history. For several years now, the city has been restoring this historically important watercourse to its former glory. The Lieve is systematically becoming visible again. Meanwhile, large parts of the project have already been completed. The objective is to give the Lieve more space and to promote interaction with the surrounding residential and working environments.

Then there are the (recreational) water structures such as the Blaarmeersen and the Watersportbaan. In addition, more urban water venues are being developed, such as in Keizerspark, Portus Ganda, Reep, Graslei and Korenlei.



Ghent and SDG 6: in figures

To provide an overview of the evolution for SDG 6, we refer to the [SDG index indicators](#) for Flemish cities and municipalities, compiled by United Nations University Institute on Comparative Regional Integration Studies (UNU-CRIS) in collaboration with VVSG and Idea Consult.

The indicators from this selection measure an *outcome*. In other words, they look at the extent to which objectives are effectively achieved.

The indicator does not necessarily have a direct relationship with local government policy. Several factors influence the evolution of indicators. Moreover, there are often contextual factors at play the administration has limited control over. Examples include: macroeconomic trends, corona virus, international conflicts, climate change.

Table 1 We track SDG 6 using the following indicators:

	Description	Source	Source detail	Measuring points
A Drinking water				
Cut off water supply	People disconnected from water supply network (per 10000 population)	Flemish Environment Agency	Application of general water sales regulations	2019
Average water consumption	Average water consumption across households with 1-5 residents.	provincies.incijfers.be	Flemish Environment Agency	2021
B Sewerage				
Purification rate	Number of inhabitants connected to a sewerage system and discharging into a sewage treatment plant (WWTP) compared to the number of inhabitants.	Municipal Monitor, ABB	Flemish Environment Agency	2015- 2021
Sewerage rate	Ratio between the total number of inhabitants connected to the sewerage system and the maximum number of seweraged inhabitants. This is the number of inhabitants anticipated by the municipality to discharge into the sewerage system when the total sewerage plans were drawn up. This indicator is an expression of the progress of the development of the sewerage system within the municipality.	Municipal Monitor, ABB	Flemish Environment Agency	2015- 2021
C Protecting watercourses				
Weighted average water quality watercourses	Average presence of shallow streams and rivers with good structure and water vegetation weighted by proportion of runoff area by municipality.	province.incijfers.be		2019
Biology average water quality in watercourses	Surface water quality expressed in terms of the occurrence of certain plant and animal species (macroinvertebrates)	Flemish Environment Agency	Water quality geo portal	2021
Physiochemistry average water quality watercourses	Presence of oxygen, nutrients, pesticides, etc.	Flemish Environment Agency	Water quality geo portal	2021

How to read the charts

Each indicator was rescaled to a score from 0 to 100. This methodology is applied in similar international exercises.

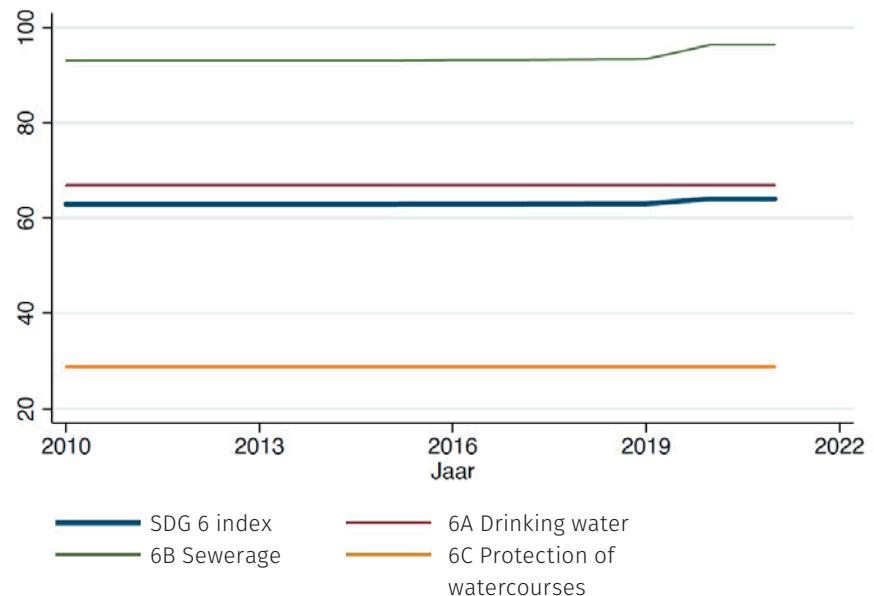
For each SDG target, which can be seen in the last three charts (A Drinking water, B Sewerage, C Protect Watercourses), the average of the index scores of the corresponding indicators is taken. The blue line shows the Ghent SDG index score for that target.

The average of the target scores in turn leads to an index score for each SDG. For SDG 6, this is a score of 64.

Higher index scores equal better results, lower scores equal worse results. Each score is always compared with other Flemish municipalities. So it is not because Ghent has a high score for an SDG (e.g., 90 or more) that the work is done and we ignore that SDG. It means that we are doing well compared to other Flemish municipalities for the indicators for that SDG.

An improvement in the index score over time means that we are effectively improving. We therefore see a rising score for SDG 6 in Ghent. With an index of 64, Ghent also scores better than the average of Flemish cities and municipalities for this SDG (index of 61).

Chart 1 Index SDG6 - Clean water and sanitation



SDG 6: CLEAN WATER AND SANITATION: ENSURE ACCESS AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL

Chart 2 6A Drinking water

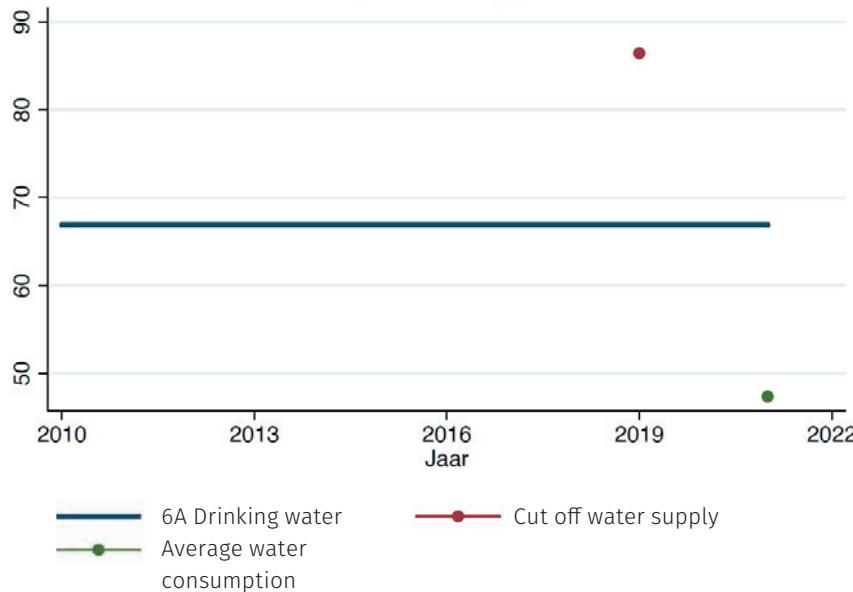
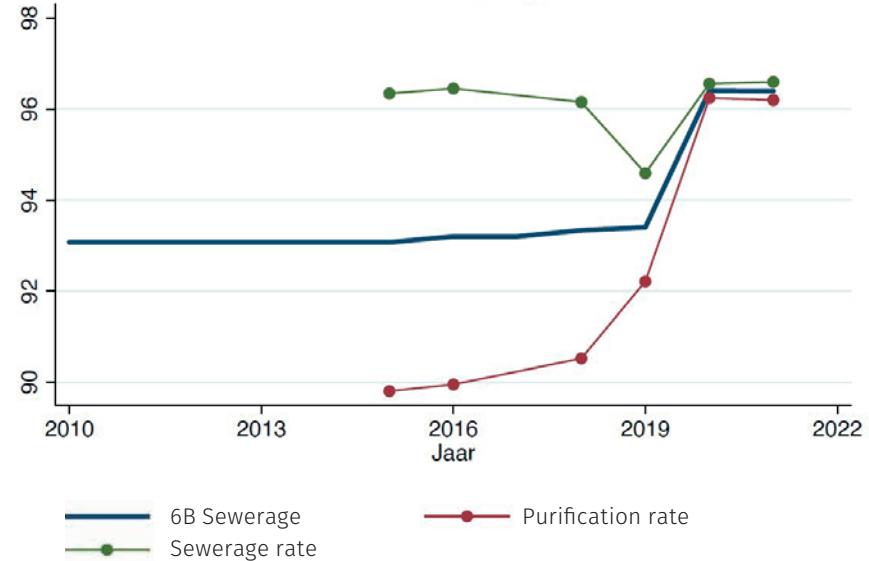


Chart 3 6B Sewerage



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



SDG 12: Responsible consumption and production: ensure sustainable consumption and production patterns

SDG 12 in brief

With this objective, we strive for the transition to a circular economy and address complex issues. How will we use raw materials more efficiently? How can we further reuse refuse and reduce our food waste? Businesses, government and consumers are already being urged to consume differently. By doing so, they reduce the pressure on the environment and become less dependent on raw materials. As a result, we limit the negative impact of our consumption on future generations. The SDG objectives and targets, set by the UN, can be found [here](#).

City of Ghent strategy

Among others, these targets from the Ghent 2020-2025 strategy align with SDG 12.

A diverse and sustainable economic fabric:

- > Scaling up the economy of the future

In Ghent, we work together towards a healthy and clean living environment

by among others:

- > Increasing cleanliness and circular waste policy for all users in the city

Ghent continues to lead the way in a bold and social climate policy by, among others:

- > Lowering the climate footprint of food
- > Lowering the CO₂ footprint of industry, SMEs and the service sector

'Groep Gent' is a versatile and results-oriented organisation by, among others:

- > Offering integrated facilities services



City of Ghent approach

For each target, we look at how the City of Ghent contributes to the SDG agenda.

Sustainable consumption patterns, sustainable production patterns

Making smarter use of materials, producing less waste and reducing CO₂ emissions?
[Find out what is happening in Ghent with respect to the circular economy.](#)

We limit Ghent's CO₂ footprint by using fewer primary raw materials and allowing materials and products to circulate for longer and with higher quality. In this way, we are moving from a linear to a circular economy. As Europe's Technology Capital, Ghent is focusing on clean technology to speed up this transition. This way, we apply new technologies in terms of materials, water, energy and mobility to build a sustainable future for our city, citizens and environment.

Examples include the URBCON project, through which we are working to reduce CO₂ emissions in the construction sector (see [Ghent sustainability report 2022 with focus on Prosperity](#)) and [Plasticity](#), for increasing the recycling of plastics in Ghent.

Since 2016, six actors from the Ghent region have joined forces to pool their knowledge, experiences and opportunities involving cleantech and circular economy. With a cross-sectoral approach, this [Cleantech Cluster Ghent Region](#) for sustainability with vigour. These six partners are the City of Ghent [North Sea Port](#), [Ghent University](#), [Cleantech Flanders](#), Province of East Flanders and [POM East Flanders](#).

Also [Smart Delta Resources](#), a collaboration of heavy industry from the chemical, steel, energy and food sectors, port and authorities (including the City of Ghent) in the Scheldt-Delta region (Zeeland/West Brabant/East Flanders), is also committed to this objective. This collaboration helps industry develop sustainability plans with concrete, innovative programmes aimed at CO₂ reduction, circularity, sustainable raw materials and green energy.

Food waste

Food plays a prominent role within sustainable consumption. The CO₂ footprint of food is 2.8 tonnes per inhabitant per year. Since 2013, the City of Ghent has been a pioneer in the fight against food waste. With '[Ghent en Garde' \(Ghent on guard\)](#)' we are heading for a more sustainable food system through initiatives such as '[Restorestje](#)', [Foodsavers Ghent](#), [The Goedinge](#), [Vanier](#), etc. Several projects have received a [Food Waste Award](#).

[Ghent's food council](#) guides the 'Ghent en Garde' food policy. It backs numerous organisations that actively work with food leftovers. One example is '[Rabet on your plate](#)', where volunteers cook with leftover food. In 'Let's Save Food's rescue vending machines, you can save daily bread and pastry leftovers from the dustbin.

Data from the City Monitor shows that compared to the 13 Flemish centre cities, Ghent scores significantly better in terms of the consumption of vegetarian food, the purchase of seasonal and organic products and the prevention of food waste. The purchase of locally grown vegetables is average. Other results are less easy to map out, due to missing data.

The City of Ghent's procurement strategy and all public contracts involving food, drinks and catering apply the 'Ghent en Garde' food strategy.

In practical terms, it focuses on the following key principles: agroecology, fair trade and short chain, *plant-based* food, animal welfare, corporate responsibility, health, sustainable fishing, seasonal fruit and vegetables, food leftovers and waste and sustainable logistics.

These principles are implemented to varying degrees depending on the available resources and the maturity of the market and the user. The most mature contract is hot meals in schools, daycare centres and after-school care. There, the City offers meals with 20% organic components, sustainable fish ([ASC/MSC](#)), fair trade products, seasonal menus, in accordance with nutritional guidelines, recyclable packaging, sustainable logistics, Thursday Veggie Day, etc.

Since 2021, the city has been offering 'half-and-half'. This means that on a weekly basis, in addition to Thursday Veggie Day, half the protein will be *plant-based*.

The City of Ghent adheres to the [Cool Food Pledge](#), an initiative by the World Resources Institute. They annually calculate our footprint of meals served at schools, daycare centres, after-school care centres, hotel schools and staff restaurants.

In addition, meal portions have also been reduced, resulting in 5,000 kg less food being purchased and prepared per month.

Chart 4 Reference year 2018 figures:

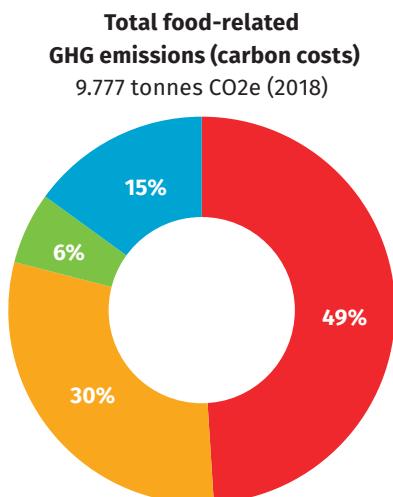
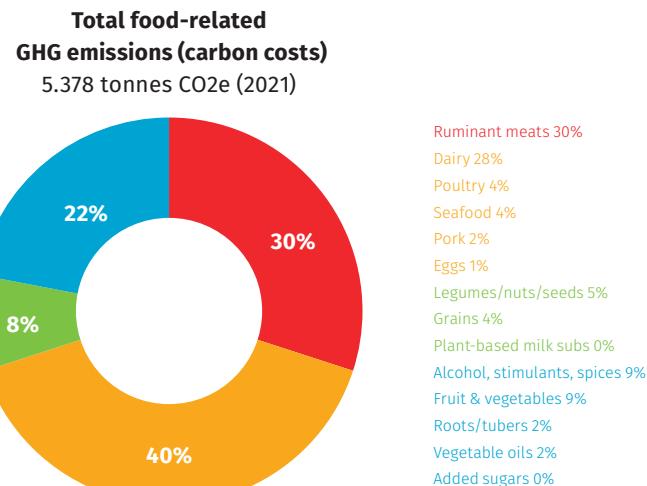


Chart 5 The 2021 figures in which the effect of the protein shift (half-and-half) in hot meals is obvious:



The City of Ghent also participates in EU projects. For example [FEAST](#), a living lab to explore local food challenges. And the city takes part in [COACH](#). For this project, it has drawn up a contract specifically aimed at the short chain. The City of Ghent is also a member of [SF4C](#). As part of this, a *whole school food approach* is being developed together with the other partners. Making food, beverage and catering procurement contracts more sustainable is on the agenda here.

Waste generation and recycling

Better recycling keeps valuable materials in circulation. In order to promote specific material streams, the right processing techniques must be used. Technological evolution does not stand still and new forms of waste treatment are emerging all the time. To collect more through current streams or to create new ones, we are bound by current legislation and cannot simply change the sorting rules. The definition of biowaste was expanded in January 2019 and in January 2020 we started expanding the definition of PMD in Ghent.

Reuse of materials

There is an extensive network of [thrift shops](#) in Ghent, in close collaboration with waste collector IVAGO. From 2023, IVAGO will no longer pay per kilo of material collected, but rather per kilo actually sold or reused. That amount could add up to 80,000 euros, which is more than the shops used to get and this will put the focus even more on reuse.

In order to promote reuse, the Ghent-based initiative 'Gent Repareert, dat 't weer marcheert' (Ghent repairs, so that it works again), is the collective name for all Ghent Repair Cafés. In 2019, some 50 Repair Cafés were organised. On average, around 40 visitors attended them. 70% of visitors were helped. Electrical (56%) took the largest share, followed by repairs to bicycles (16%) and textiles (14%).

Besides repairing objects, sharing products is also a way to ensure that fewer products and therefore fewer materials are needed. Therefore, the City of Ghent aims to examine whether local sharing centres are possible, in addition to the sharing initiatives implemented on the private market.

Sustainable practices within companies

[Circuit Circular](#) gives innovative circular project ideas a boost with financial support and guidance from the City of Ghent. Anyone who views waste as a raw material, offers new sustainable products or services or wants to share materials and products that encourage consuming less is eligible.

But also collaborations with [Circular Kickstart](#) and [Capture](#) are great examples of supporting sustainable practices within companies.

Sustainable practices in public procurement

In collaboration with experts from the City of Ghent's policy departments and suppliers, relevant sustainability criteria are identified for each purchasing dossier. The City of Ghent questions potential suppliers and examines how we can achieve our sustainable policy goals together. For food and drink purchases, this is done on the basis of concrete criteria such as: biofood, vegetable proteins, *fair trade*, etc. As it is much more difficult to draw up concrete sustainability requirements for other purchases, a general sustainability criterion is used. Hence, sustainability plays a role in all purchases. This is done, for example, by assessing suppliers on their efforts within the area of sustainability and circularity in the award criteria. For example, they can earn points if their materials are reusable, can be dismantled or are recyclable.

The City of Ghent has a sustainable public procurement concept and a sustainable procurement strategy with five objectives:

1. For each new need, maximum use is first made of what is already available within the organisation. Products and services are actively shared.
2. Every effort is made to avoid unnecessary purchases. This includes asking whether products can be repaired or repurposed.
3. When it effectively comes to a purchase, maximum assurance is given that, on the one hand, it involves a professional ...
4. ... and on the other hand a sustainable purchase.
5. Products or services that have completed their life cycle are reused as much as possible. This may be as a product in its entirety, or by reusing parts or by *up-* or *downcycling*.

The City of Ghent signed the '[Green Deal Circular Purchasing](#)' thus committing to pay attention to circular purchases. As part of this, two circular purchasing projects were set up between June 2017 and June 2019. In the future, the handling of (waste) materials will also be scrutinised internally so that materials management is in line with circular economy principles.

[In addition, the City of Ghent is committed to fair trade.](#) You can find info on the City of Ghent's 3-track policy on fair trade on p.11-13 of the [international solidarity policy document](#).

Awareness of sustainable development and lifestyles

The City of Ghent runs communication campaigns with different angles such as Low Emission Zone Ghent and Ghent Climate City. In addition, parks, nature and forests are also addressed and the sustainable development objectives are becoming increasingly important.

The City of Ghent reaches its residents with topics linked to sustainability both online (website, social media) and offline (brochures, flyers, city magazine).

Therefore the City of Ghent also focuses on global citizenship and translates global events into the local level. This is how we impart knowledge and a sense of responsibility to our residents, encouraging them to bring about change, both in our city and elsewhere in the world. In this way, every Ghent citizen can contribute to international justice and sustainability.



Ghent and SDG 12: in figures

To provide an overview of the evolution for SDG 12, we refer to [indicators in the SDG index](#) for Flemish cities and municipalities, compiled by UNU-CRIS in collaboration with VVSG and Idea Consult.

The indicators from this selection measure an *outcome*. In other words, they measure the extent to which objectives are effectively achieved. The indicator does

not necessarily have a direct relationship with local government policy. Various factors influence the evolution of the indicators. Moreover, there are often context factors at play that the administration has only limited control over. Examples include macroeconomic trends, coronavirus, international conflicts, climate change.

Table 2 We track SDG 12 by the following indicators:

	Description	Source	Source detail	Monitoring points included in analysis
A Waste				
Total waste per inhabitant	Total household waste incl. comparable industrial waste	Provinciesincijfers.be	Public Flemish Waste company 2013-2020	2013- 2020
Residual waste per inhabitant	Total amount of residual waste expressed in kilograms per inhabitant	Provinciesincijfers.be	Public Flemish Waste company 2013-2020	2013- 2020
Share intended for recycling	Share in kilograms of selectively collected waste compared to total household waste. Sum of selectively collected waste (excluding car tyres, WEEE and medicines)/total household waste including comparable industrial waste * 100. Disclaimer: Please note that the data represents the amount of waste collected on the territory of the municipality. Total selectively collected waste excludes car tyres, WEEE and pharmaceuticals (due to lack of data at municipal level).	Provinciesincijfers.be	Public Flemish Waste company 2013-2020	2013- 2020
B Environmental awareness				
Acting environmentally conscious: on a bicycle	Proportion of residents cycling short distances at least weekly	Municipal monitor, ABB	Citizen survey	2014- 2017, 2020
Acting environmentally conscious: on foot	Proportion of residents walking short distances at least weekly	Municipal monitor, ABB	Citizen survey	2014- 2017, 2020
Acting environmentally conscious: limiting plastic	Proportion of residents limiting plastic purchases at least weekly	Municipal monitor, ABB	Citizen survey	2020
Acting environmentally conscious: limiting food disposal	Proportion of residents limiting food disposal at least weekly	Municipal monitor, ABB	Citizen survey	2017, 2020
Acting environmentally conscious: fair trade	Proportion of residents buying fair trade products at least weekly	Municipal monitor, ABB	Citizen survey	2020

How to read the charts

Each indicator is rescaled to a score from 0 to 100. This methodology is applied in similar international exercises

For each SDG target, shown in the last three charts (A Waste, B Environmentally Conscious Action), the average of the index scores for the corresponding indicators is taken. The blue line shows the Ghent SDG index score for that target.

The average of the target scores in turn leads to an index score for each SDG. For SDG 12, this is a score of 64.

Higher index scores equal better results, lower scores equal worse results, and in each case compared to other Flemish municipalities. So it is not because Ghent scores high for an SDG (e.g., 90 or more) that the work is done and that we ignore that SDG. It means that we are doing well compared to other Flemish municipalities for the indicators for that SDG.

An improvement in the index score over time means that we are effectively improving. We therefore see a strongly rising score for SDG 12 in Ghent. With an index of 64, Ghent also scores significantly better than the average of Flemish cities and municipalities for this SDG (index of 56).

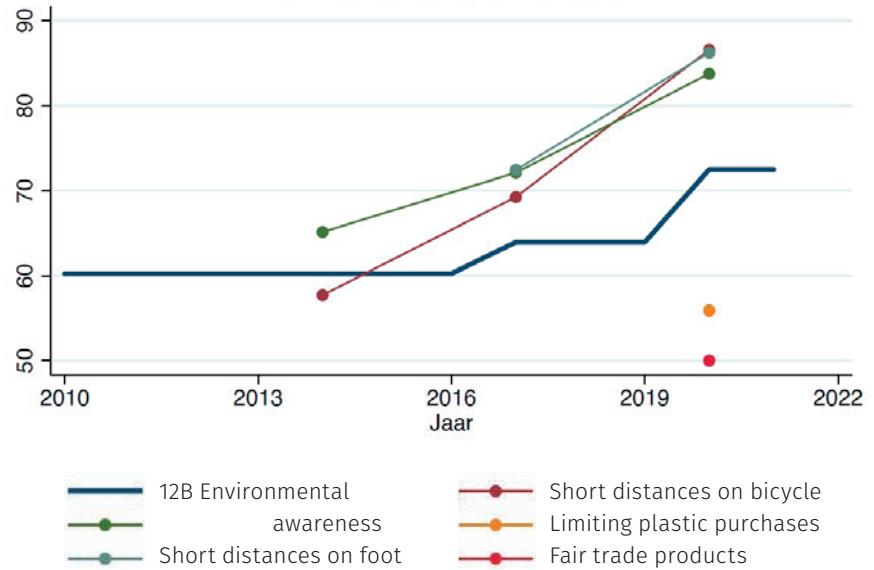
Chart 6 Index SDG12 - Responsible consumption and production



Chart 7 12A Waste



Chart 8 12B Environmental awareness



13 CLIMATE ACTION



SDG 13 - Take urgent action to combat climate change and its impacts

SDG 13 in brief

Climate change and natural disasters pose dangers to people and the environment. To combat the impact of climate change, we need to strengthen the resilience and adaptive capacity of people and their environment. According to SDG 13, this cannot be done without fully integrating the climate focus into (inter)national policies. Increased awareness and support for climate action is also needed. This can happen through education and improving human and institutional capacity around climate information, mitigation and adaptation. This SDG and targets, set by the UN, can be found [here](#).

City of Ghent strategy

These objectives from Ghent's 2020-2025 strategy align with SDG 13.

Ghent widens the housing supply and increases quality of existing housing and makes it more energy efficient by, among others:

- > Increasing the housing quality and energy efficiency of Ghent homes

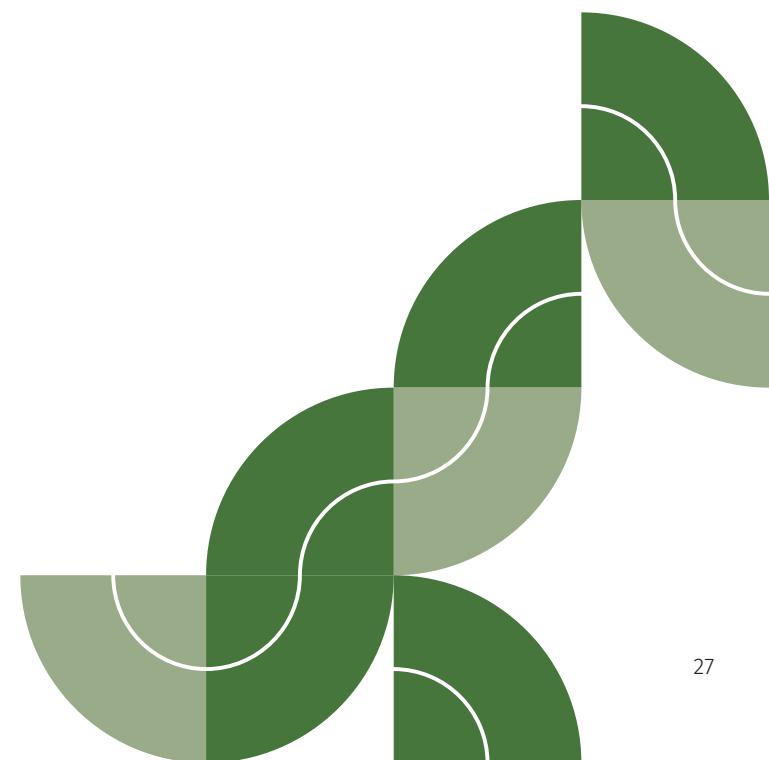
Ghent continues to lead the way in a bold and social climate policy by, among others:

- > Lowering the climate footprint of food
- > Lowering the CO₂ footprint of industry, SMEs and the service sector
- > Increasing the local production of renewable energy

More greenery, nature and water make for a pleasant and climate-robust Ghent by, among others:

- > Optimising a water policy
- > Desealing and greening the public domain

Groep Gent is a flexible and results-oriented organisation by, among others:



City of Ghent approach

For each target, we look at how the City of Ghent contributes to the SDG agenda.

Resilience and adaptability of the environment (for climate impact)

The most damaging climate impact originates in extreme events such as heat waves, very heavy precipitation, floods and long periods of drought. These will become more frequent and intense. Moreover, the effects are stronger in an urbanised environment due to high levels of paving, accelerated rainwater runoff and lack of greenery and space for water.

[Ghent's climate adaptation strategy](#) is committed to preventing and reducing the negative effects of climate change. Climate adaptation alone cannot absorb all climate extremes. Exceptional events can always occur and disrupt the city for short or long periods of time. Therefore, contingency planning is needed.

The city deals reactively with heat spikes, flooding or droughts. At times of extreme weather, an emergency and communications plan spring into action. For flooding and heat, this is done by the Emergency Planning Cell and the fire brigade. The Flemish Drought Commission or provincial governor gives recommendations in case of concerning drought.

Examples include the heat plan with extra attention to (socially isolated) elderly people, children, the (chronically) ill and people living alone. For festivities such as the Ghent Festival, we fall back on the heat plan specifically aimed at events.

In addition, the city is taking a preventive approach by focusing on soil desealing, open spaces, compaction, more greenery and water. For heat, flooding and drought, the City of Ghent looked at the possible consequences and how we as a city can best fight them. The City of Ghent mapped out the effects of heat, flooding and drought in various climate scenarios.

Heat

Longer and more intense heat waves lead to heat stress. This is more obvious in urban areas due to the urban heat island effect. Heat stress primarily affects our health. Older people, people with cardiovascular diseases and small children are especially vulnerable. This makes heat one of the deadliest aspects of climate change for our region.

But when it is extremely hot, we also sacrifice comfort, do not sleep as well and working conditions become more difficult. In addition, a heat wave also impacts other areas. Water and air quality drop and transport infrastructure suffers, just think of the deterioration and deformation of bridges and viaducts. But nature, food production and energy consumption also face challenges. In the centre of Ghent it is on average 3°C warmer than outside. A difference that can reach 8°C on hot days. That is the conclusion of researchers from VITO and Ghent, who conducted [conducted the heat study](#) on behalf of the City of Ghent. Through *citizen science* the urban climate in Ghent is being mapped out by UGhent with the unique MOCCA (Monitoring the City's Climate and Atmosphere) project. For this purpose, a network of weather stations was set up in the city. [See below in this report under 'inspiring Ghent projects' how this is done.](#)

For hot days, the City of Ghent has drawn up a [map with more than 50 locations](#) where you can fill your cup or water bottle with free drinking water. There are also shaded areas: public places where it is slightly cooler and where you can take shelter from the heat for free during opening hours.

Rainwater and drought plan

In our region, flooding mainly causes economic damage, to buildings and contents, road infrastructure and agricultural crops. This then causes human suffering such as water in the basement, stress, financial impact or crop failure. Businesses not only suffer water damage, but also temporarily shut down. Moreover, flooding can also temporarily hamper the traffic flow.

Flooding and drought at the same time, isn't that a bit contradictory? No, they are both part of the same story. Heat waves and higher temperatures lead to more evaporation. Because warm air can hold more water vapour, more water circulates

in the air. As a result, more water evaporates from watercourses and soil, reducing both water levels and groundwater resources. Combined with less precipitation, this leads to drought and water shortages. When it starts raining after such a hot and dry period, greater amounts of precipitation fall. And because a parched soil finds it difficult to absorb water, such showers cause flooding.

Under the [Blue Deal](#) Flanders is urging all municipalities to draw up a thorough [rainwater and drought plan](#) by the end of 2024. Showing a rainwater and drought plan with where and how we will treated, reused or buffered, as much as possible locally. Only as a final step do we discharge the water in a delayed manner. Ghent will provide [a rainwater and drought plan by the end of 2024](#).

To map out the risks for Flanders today and tomorrow (in case of more extreme precipitation), flood maps have been produced. These maps can be consulted at [www.waterinfo.be](#). On them information can be found about the territory of Ghent such as: flood-prone areas, expected water depths, flow velocities, vulnerable institutions (hospitals, care institutions, fire stations, police stations), traffic infrastructure and much more. For Ghent, the sensitivity and impact of flooding was also mapped out. This can occur when the sewerage system cannot handle excessive precipitation, or when the watercourses overflow.

It is important to note that these maps do not convey an actual scenario. They are simulations using models that always represent a worst-case scenario. For example, a rainstorm simultaneously hitting the entire territory of Ghent. A situation that has become more frequent recently, such as the one in Verviers, Bologna or Lyon. Hence also [the water bomb study by Flanders](#) and the expert panel's recommendations to adopt a supra-local approach. [Ghent and surrounding areas](#) appear to be extremely vulnerable in the event of a water bomb.

Drought maps of Ghent

Prolonged drought mainly impacts wildlife and agriculture. If groundwater sinks too deeply, the consequences are dire. The roots of young trees can less easily reach the groundwater, moisture-loving plants perish in barren soil, harvests fail, valuable peat soils dry up and ponds run dry.

But shipping and its industry may also grind to a halt due to low water levels in the canals. Even the availability of drinking water or processed water for companies could be compromised. However, drinking water production does not take place in Ghent and was therefore not included in the drought study.

To know the impact of the dry periods from 2017 to 2020 and future droughts, Ghent commissioned a drought study in [2021](#). In the study, researchers propose bold measures to make the city more resilient to prolonged droughts. As part of the drought study, drought maps were also drawn up in 2021. These can be [consulted here](#).

Climate focus integrated into national policy (planning & implementation)

At the City of Ghent, we start from our own climate plan 2020-2025. The full plan can be found [here](#). This plan ties in with other covenants and agreements at several policy levels.

In December 2015, 195 countries, including Belgium, marked a historic moment by signing the Paris Climate Agreement. With the agreement, the signatories aim to limit warming to 1.5°C. The use of fossil fuels must end quickly, as it is a major cause of the excessive CO₂ emissions. In order to achieve this, measures must be taken at all levels, from the European to the individual citizen. Back in 2009, the City of Ghent was the first in Belgium to sign the Covenant of Mayors, a European initiative to mobilise local administrations against climate change. Over the past 10 years, many actions have been completed, helping to ensure that the objective we formulated then, -20 % CO₂ by 2020 compared to 2007, is within reach. Our [most recent CO₂ monitor \(2020 data\)](#) shows that we have also effectively met this target.

By analogy with this Covenant of Mayors for climate mitigation, the reduction of buoyant gas emissions, Ghent also signed a Covenant of Mayors for climate adaptation (adaptation to climate change) in 2014. This formal commitment led to the creation of a strategy and action plan. All new versions of the Covenant of

Mayors were also endorsed by the City of Ghent. The most recent one commits to the ambition of being climate-neutral by 2050.

On 9 December 2019, the Flemish government approved the Flemish Energy and Climate Plan 2021-2030. Flanders aims to reduce its greenhouse gas emissions by 35% by 2030 compared to 2005.

In line with the Paris Agreement, Europe launched the new integrated Covenant of Mayors on Climate and Energy in 2015. The Ghent City Council signed it on 23 November 2015. This new covenant aims to reduce CO₂ emissions by at least 40% by 2030. Climate adaptation is also included in this covenant, so that mitigation and adaptation both figure in one action plan. The commitment to Europe also includes long-term goals, such as a climate-neutral city by 2050. In practical terms, this means no net CO₂ emissions. Ghent also commits on a European level as chair of the Eurocities Environment Forum, a specific policy group on the environment and climate.

Climate education, climate awareness, climate mitigation, climate adaptation, climate communication, impact mitigation (on people & institutions)

It is important to proactively consider how we can minimise the impact of extreme weather events. Or how we can make the city as climate-robust as possible. This is a shared responsibility. As a local authority, we are committed to soil desealing and greening. We opt for an infrastructure that can collect, infiltrate, reuse and/or delay rainwater, such as separate sewers, canals, infiltration facilities. Such achievements are mainly linked to projects for the (re)construction of the public domain.

It is essential that everyone do their bit and deseals, greens up and collects rainwater on their own property as much as possible. This can be done with a cistern, a vertical garden, buffering water with a green roof or soil desealing and allowing rainwater to seep into the soil. All actors in the city, both citizens and businesses, must be on board. To this end, the City of Ghent will provide assistance and support in various ways.

What can you do as a citizen? You can deseal your own [garden and driveway, create vertical gardens and greenery garlands](#) or even join forces with your [neighbours](#). [Below in the report, under inspiring Ghent projects you will find](#) examples of this. If you make [climate adaptations](#) you can request both a subsidy and advice from the [Energy centre on rainwater use](#).

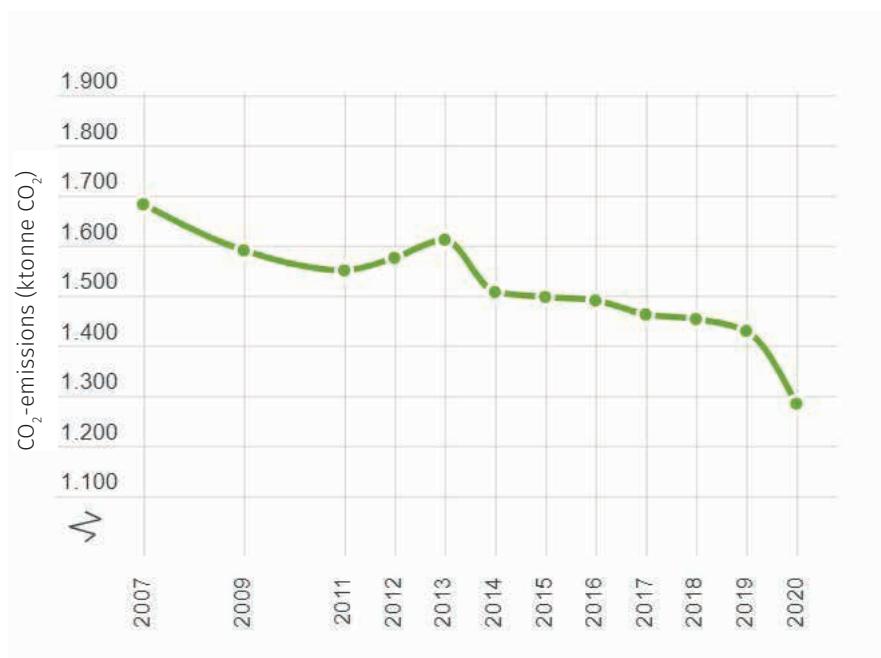
Want to climate-proof your home by saving energy or water? Or are you too hot in the summer? Citizens decide what they think is important. The city tells what it will yield and how much it will cost through the "[Check your home](#)" tool.

Ghent and SDG 13: in figures

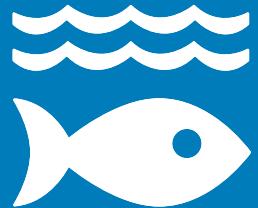
We track SDG 13 using the following indicators:

The City of Ghent uses its own CO₂ monitor, which can be consulted at [Ghent in figures](#). More info on the calculation of the CO₂ monitor can be found [here](#). These figures form the basis for reporting by the City of Ghent. We see a CO₂ reduction of 76.3% between 2007 and 2020 and therefore we meet the targets set.

Chart 9 CO₂ emissions (ktonne CO₂):



14 LIFE BELOW WATER



SDG 14 - Conserve and sustainably use oceans, seas and maritime resources

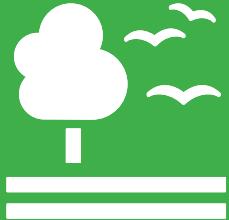
SDG 14 in brief

Oceans, with their temperature, currents and undersea life, drive global systems that make Earth habitable for humans. In doing so, they have a major impact on climate, weather, air, drinking water and food.

Without careful management of this vital, global resource, a sustainable future is impossible. Management includes the protection of ecosystems and coastal and marine areas. This encompasses combating sea pollution or ocean acidification, regulating fisheries, restoring fish stocks, granting economic benefits to small island states and establishing international scientific cooperation. The causes of marine pollution can also be addressed on land.

In a strict sense, this objective has no links to Ghent's urban context. Therefore, we do not provide environmental indicators here. Although Ghent is not located by the sea, the city does have an indirect influence on this SDG. Among others, through the port of Ghent and the watercourses that eventually also flow into the sea. We refer to SDG 6 'Clean water and sanitation' and SDG 15 under the target 'Freshwater ecosystem and services'.

15 LIFE ON LAND



SDG 15 - Protect, restore and promote the sustainable use of ecosystems, manage forests sustainably, combat and reverse desertification and land degradation and halt biodiversity loss

SDG 15 in brief

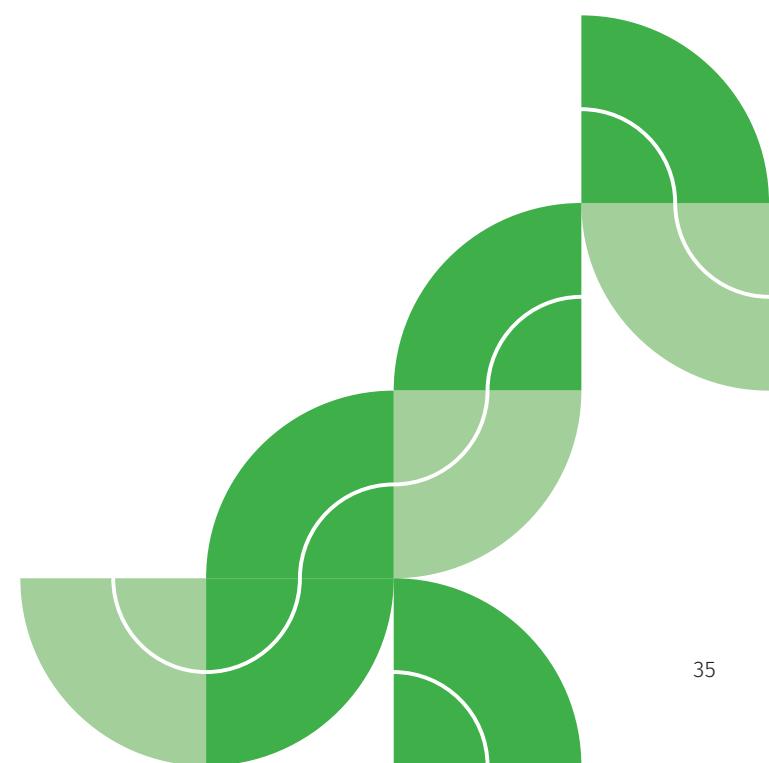
SDG 15 focuses on the various threats facing life on land. We need to protect, restore and promote the sustainable use of our ecosystems (freshwater and mountains). But also halt deforestation, desertification, land degradation and biodiversity loss. In addition, illegal trade in plant and animal species must be stopped and policies are needed to control invasive alien species. Genetic resources must be used fairly. This SDG and targets, set by the UN, can be found [here](#).

City of Ghent strategy

These objectives from Ghent's 2020-2025 strategy align with SDG 15.

More greenery, nature and water make for a pleasant and climate-robust Ghent by, among others:

- > Desealing and greening the public domain
- > Expanding and (re)designing parks, woods and nature for and with the people of Ghent
- > Optimising the management of public green spaces, forests, nature and animal policy



City of Ghent approach

For each target, we look at how the City of Ghent contributes to the SDG agenda.

Freshwater ecosystem and services (conservation, restoration, use)

Green structure plan

Greenery comes in various forms. A park for sport and play, a swamp for biodiversity, a forest for cooling and hikes, etc. Greenery in all its forms has a major impact on climate.

[Ghent's green structure plan](#) looks at all these different types of green spaces. The overall picture can be broken down into the following layers: recreational green, forest, nature, landscape and climate green. For each layer, the green structure plan presents objectives and maps showing how we intend to achieve them.

Each layer within the green structure plan is structured as a hop-step-jump plan: close to home, citizens find small green spaces, taking a step towards larger green spaces in the neighbourhood and finally jumping into one of the five green centres on the edge of the city.

Green centres

These are large park and nature areas of more than 100 hectares. They are also partly located on the territory of neighbouring municipalities.

Each green centre should be at least 100 hectares in size, and we need a minimum of 100 m² per inhabitant. Hence, they become areas that can accommodate recreational needs at the urban level. Large playgrounds and sports grounds fit in here. The target is for everyone to have access to a green centre no more than 5 km from their home. The green centres should also provide space for nature development and for plenty of new forest. In other words, they sustain both the recreational green structure and Ghent's nature and forest structure.

To function well, greenery needs cohesion. For instance, anyone can cycle from park to park and a sparrow can flit from bush to bush to find conspecifics and food. An

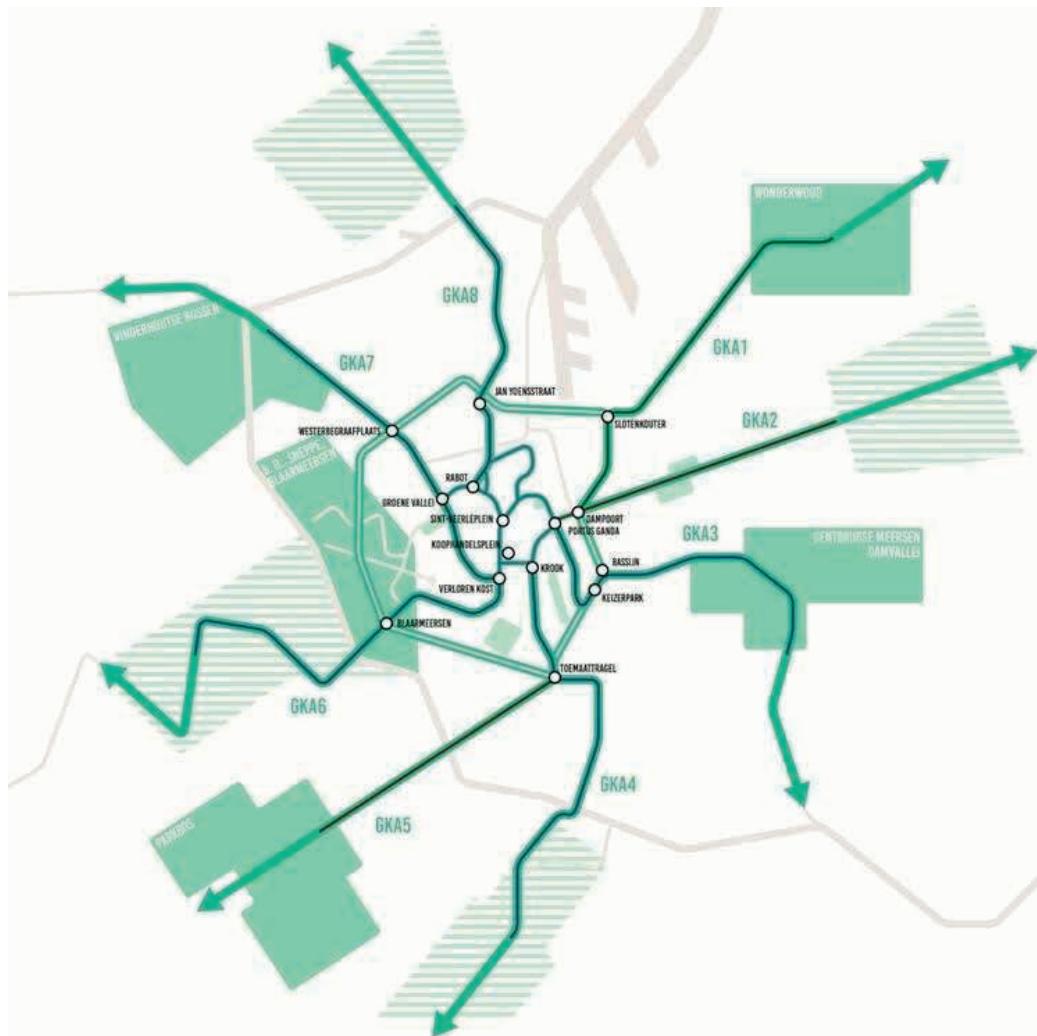
ideal green structure therefore consists of a network of large and small areas that are well-spaced and interconnected.

Green climate zones

Eight [green climate zones](#) together form a green, water-rich and car-free network connecting the city centre with open spaces and the five green centres on Ghent's outskirts. The zones also better connect fragmented areas of nature and water in the city.

This large-scale green structure brings more nature into the city and helps to reduce the negative impact of climate change on the city. Thanks to these connections, the habitat of many plants and animals increases, which keeps their populations healthy. [The green climate zones also supply cool air deep into the centre of Ghent](#) and retain rainwater. Moreover, this also promotes a switch from cars to more active travel.

Chart 10 Green climate zones



Forest conservation, forest management, forest restoration, (global) (re)afforestation

A spatial implementation plan (SIP) is a plan that lays down the zoning and planning regulations in a given area. It makes clear what can and cannot be done for all plots in a given area. Thanks to the [SIP Green](#) the total area designated as green space increases by about one fifth. In this way, the city is taking an important step to arm itself against the changing climate. The SIP 169 Green has been in force since 6 December 2021. This instantly gave 370 hectares, 560 football pitches, a green purpose. Some 257 hectares consist of existing green spaces that will also be protected for the future. On the one hand, it involves 109 hectares of existing publicly accessible green spaces, which used to be located in residential areas and have now been given a park designation. On the other hand, it involves 148 hectares of valuable nature and forest that will be protected. The SIP Green also makes about 113 hectares of new developments such as forest expansion, nature development or parks possible through the repurposing of additional green areas.

The City of Ghent has been the first local authority in Flanders to plant more than 10 hectares of new forest since October 2019, making it the first to earn the [golden forest label](#) from the Flemish government. The forest labels serve as an encouragement for local administrations to engage in forest expansion. In 2021, the City of Ghent received the silver forest label.

Desertification, degraded land and soil (due to drought, flooding), neutral land degradation

Soil is highly valuable and at the same time very vulnerable. Ghent has very precious soils, which, if left undisturbed, provide space for regional and valuable nature. Prevention is better than cure, because soil formation and recovery are very slow processes. It is therefore advisable to handle soils with care and, in the case of construction projects, to proceed in a thoughtful manner when moving or desealing soil.

The City of Ghent has been mapping out Ghent's nature since 1999. Thanks to 20 years of inventory, there is a good overview of the distribution and evolution of the various types of vegetation in Ghent. The [biological evaluation map](#) was last updated in 2020 on the basis of site visits and aerial photos and is continuously edited.

Since the end of 2021, everyone can use the [online map](#). This makes it a practical tool to use in order to protect nature even better and to grant permits responsibly. Building owners, notaries, estate agents and buyers can now also look up whether a plot features valuable vegetation and which nature protection measures apply across the entire Ghent territory.

Conservation/protection of natural habitats, biodiversity, endangered species

The [species plan](#) shows which plants and animals are important to Ghent and how to protect them. It includes 94 priority species. Action plans are being developed for all these species. The species plan constitutes input for the management and design of areas. For areas that the City does not manage, it enters into dialogue with the owners. Concrete action they can take for nature on their property results from these consultations. For green zones and adjacent outdoor areas, target species are determined so that appropriate action can be taken.

The City promotes nature-inclusive building, both in its own and external construction projects. This is a form of sustainable construction. By integrating

existing natural elements as much as possible into a construction project, a structure contributes to local biodiversity.

In order to increase support for nature, wildlife and plants, the City of Ghent aims to properly inform, sensitise and involve Ghent residents. [To this end, it works with 'Natuurpunkt'](#). Campaigns visualise the species present, through monitoring among others and participation in measurement networks. This gives the city a better picture of the species present and allows it to adjust future action accordingly.

The City of Ghent is also committed to correctly informing citizens about action they can take with respect to wild animals and to avoid possible damage. Such campaigns can prevent citizens from calling the police when they see a fox in their garden, for example, but also avoid their chickens being eaten. Such action ties in with the concept of 'animalism'. A term that refers to the ambition to allow humans and wildlife to live together in harmony, even in more urbanised areas. This is accomplished through special actions to make species visible, or through specific campaigns.

Ghent and SDG 15: in figures

To provide an overview of the evolution for SDG 15, we refer to [indicators in the SDG index](#) for Flemish cities and municipalities, compiled by UNU-CRIS in collaboration with VVSG and Idea Consult.

The indicators from this selection measure an *outcome*. In other words, they measure the extent to which objectives are effectively met. The indicator does not

necessarily have a direct relationship with local government policy. Various factors influence the evolution of the indicators. Moreover, there are often contextual factors at play over which the administration has only limited control. Examples include: macroeconomic trends, coronavirus, international conflicts, climate change.

Table 3 We track SDG 15 using the following indicators:

	Description	Source	Source detail	Measuring points included in analysis
A Surface area green space				
Surface area of green space (relative to surface area of land take)	Share (%) of total city/municipality surface area taken up by residential green space, neighbourhood green space and district green space.	provincies.incijfers.be	Land use file	2013, 2016, 2019
Surface area of valuable ecotope	Surface area of valuable ecotope relative to total area.	provincies.incijfers.be	Land use file	2020
'Bosteller': hectare of new forest (not compensation)	Notification of ha of new forest on Bosteller.be.	bosteller.be		2020- 2021
B Sealing				
Unbuilt cadastral surface area out of total cadastral surface area	Share of undeveloped cadastral surface area out of total cadastral area.	Statbel		2011- 2020
Soil sealing	Proportion of surface area where the nature and/or condition of the soil surface has been altered by the application of artificial, (semi-)impermeable materials resulting in the loss of essential soil ecosystem functions.	Municipal Monitor, ABB	Agency Information Flanders	2015, 2018
C Erosion bottlenecks				
	Total surface area of erosion bottlenecks (actual, potential and unspecified) by municipality (% surface area).	provincies.incijfers.be	Database Subsoil Flanders	2021

How to read the charts

Each indicator was rescaled to a score from 0 to 100. This methodology is applied in similar international exercises.

For each SDG target, seen in the last three charts (A Area of Greenery, B Desealing, C Erosion bottlenecks), the average of the index scores for the corresponding indicators is taken. The blue line shows the Ghent SDG index score for that target.

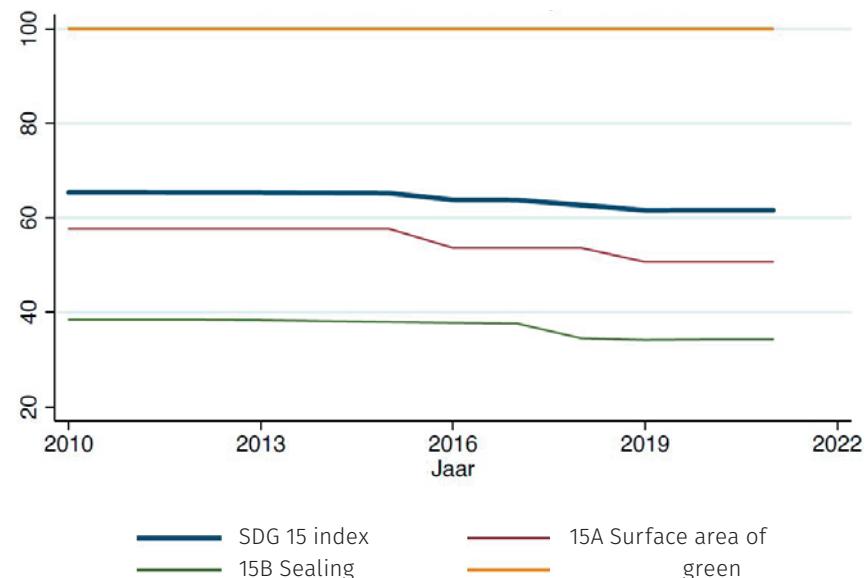
The average of the target scores in turn leads to an index score for each SDG. For SDG 15, this is a score of 62.

Higher index scores equal better results, lower scores equal worse results, and in each case in comparison with other Flemish municipalities. So it is not because Ghent scores high for an SDG (e.g., 90 or more) that the work is done and we ignore that SDG. It means that we are doing well compared to other Flemish municipalities for the indicators under that SDG.

An improvement in the index score over time means that we are effectively improving. We see a declining score for SDG 15 in Ghent, in line with other Flemish cities. With an index of 62, Ghent scores lower than the average of Flemish cities and municipalities for this SDG (index of 64).

Desealing is increasing in almost all cities and municipalities, with the exception of just under 10%, almost all located in the province of West Flanders. The municipalities that were already heavily sealed are also deteriorating the most. We see a similar trend in the total area of green space, also in Ghent.⁴

Chart 11 Index SDG15 - Living on land



⁴ https://www.vvsg.be/Leden/Internationaal/SDG-pagina/Voluntary_Subnational_Review_VVSG_VVP_NL_digital.pdf

SDG 15 - PROTECT, RESTORE AND PROMOTE THE SUSTAINABLE USE OF ECOSYSTEMS, MANAGE FORESTS SUSTAINABLY, COMBAT AND REVERSE DESERTIFICATION AND LAND DEGRADATION AND HALT BIODIVERSITY LOSS

Chart 12 15A Surface area of green space

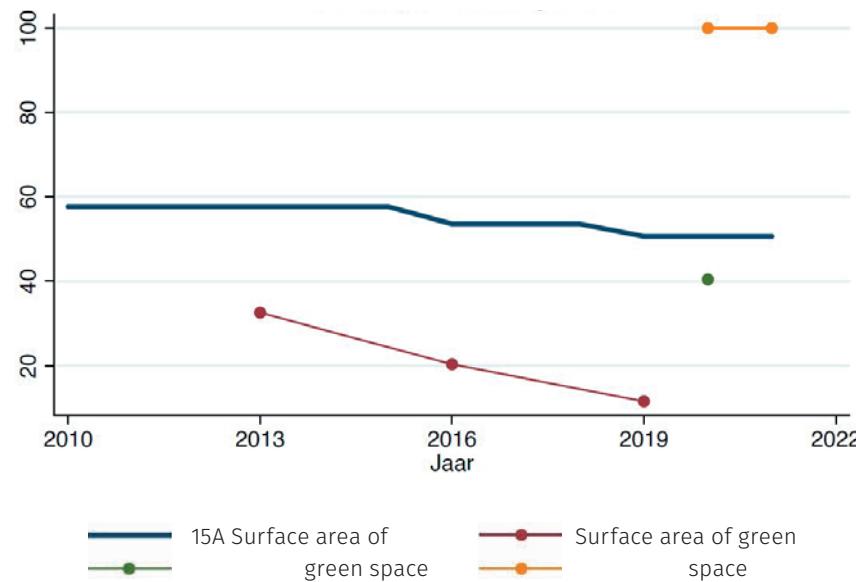
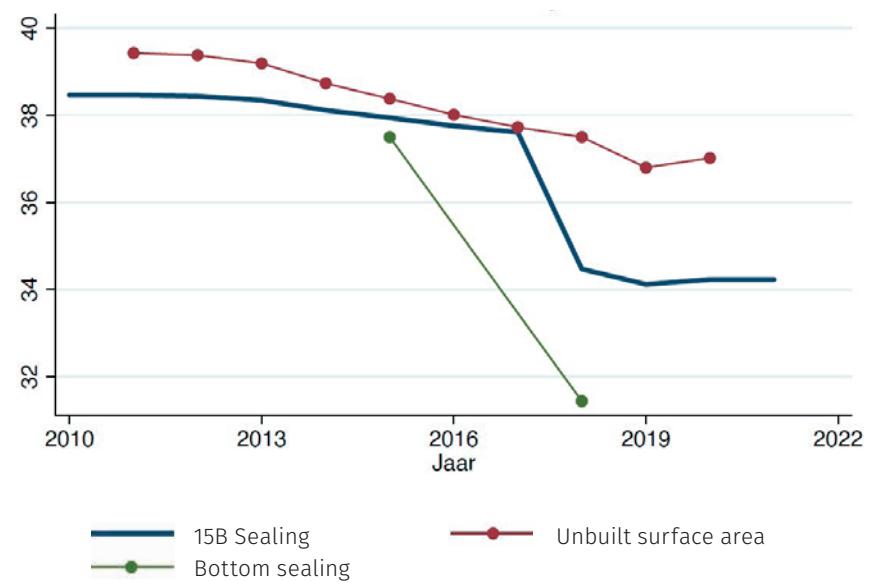
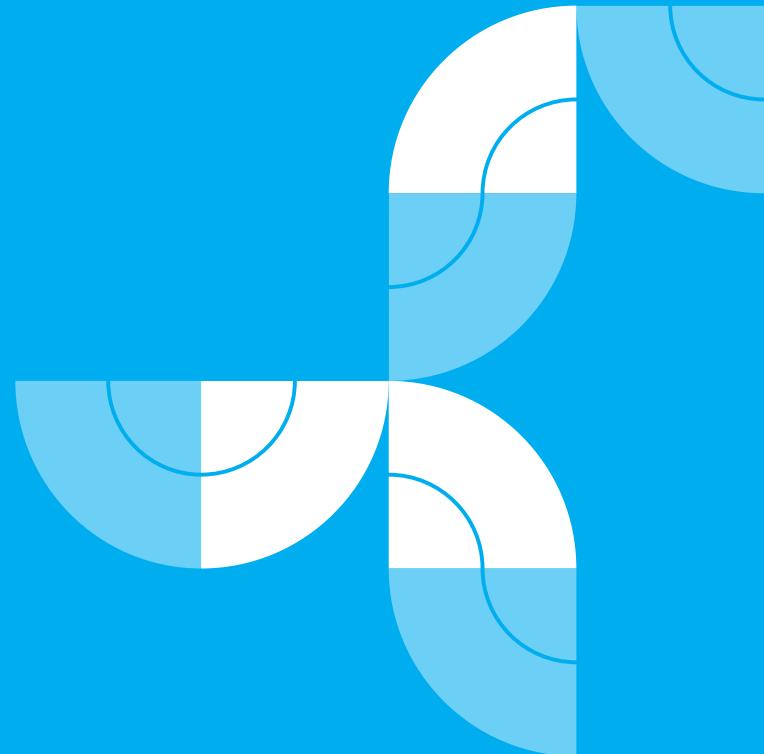


Chart 13 15B Sealing



Inspiring Ghent projects





Green zone Oostakkerdorp



What and where?

There had long been a desire among residents of Oostakker village and the surrounding area to redesign the central square. The perceived value and quality of the original square were far from optimal. Traffic flow and unstructured parking around the square left much to be desired. The same applied to the diversity of materials and the lack of outdoor terraces.

The residents of Oostakker felt strongly and wanted a welcoming village square. They emphasised space for gatherings and greenery, parking and safety.

The design focuses on child-friendliness and robustness to offset climate change. The new quiet green 'meadow' between St Amand church and the gazebo has become a gathering spot where convivial activities can be organised.

Around the church, you can have fun on the adventure trail full of boulders, spinning logs, reclaimed tombstones, cool sayings and other artistic elements. Two pedal boats beckon a race: who can produce the highest rainwater spray from the fountain?

Two new play areas were added next to the gazebo in April 2023, including wooden sheep and a piglet. A reference to the former Dries where cattle were herded. You will also find bolder equipment such as a large spinning top and metal tumble bars.

The location can be found on [Google maps](#).

The role of water

Water will also be at the top of the list. Where possible, paths and paving will drain directly into nearby green spaces. On Eekhoutdriesstraat, WADIs (Water Drainage Infiltration) will be constructed to infiltrate water from the carriageway and the parking lanes will have infiltratable grass concrete slabs.

On the green square, WADIs will be constructed along the access road to the church and in the play area. This will allow the soil to absorb water from the paths, the roof of the church and the rebuilt gazebo.

The roof of St Amand church was isolated. The rainwater will end up in one of the many WADIs around the church. The Green Service of the City of Ghent will take care of the plants using water from two 20,000-litre cisterns. Two water bikes are located by the church. If there is enough rainwater, two fountains will spray the water into the WADIs

In addition, the relocated bus stop makes way for greenery and soil desealing. A waiting infrastructure was provided for the new location. The roof of this infrastructure visibly drains into a WADI through two spouts.

The spatial atmosphere has been preserved by the distinctive three-trees and the four valuable veteran trees, including a 101-year-old peace tree. All this is enhanced by a unique collection of ornamental trees such as: sackcloth tree, amber tree, tulip tree and mock beech. More than 15,000 perennials and over 20,000 flower bulbs add even more variety to the area. And those who walk past the sparrow bush on the corner of the church and Pijphoek Street will hear a flutter of sparrows twittering.

Paving was installed only when functionally strictly necessary. This assumes that any paving has to be used intensively. The project 'Proeftuin Ontharding' (Desealing test garden) is part of the programme [Flanders breaks out!](#) An initiative by the Department of the Environment that is strongly committed to reducing land take. Thanks to the project, the paved sealed surface area decreased drastically by 3,889 m². Currently, some 6,866 m² of green space has been created in the project's public domain. After the reconstruction, this will rise to 10,755 m², accounting for an increase of nearly 60%.

In the heart of Oostakker, a fully contiguous traffic-free park zone of about 8,050 m² will be created. Currently, this is only 2,565 m² in the green zone around the church. In this way, the current parking square will be converted into a green heart with space for experiences and encounters.

INSPIRING GHENT PROJECTS: GREEN ZONE OOSTAKKERDORP

The city of Ghent has won a [Public Green Award for the redevelopment of Oostakkerdorp](#). The jury praised the creative approach, which included sufficient playfulness, soil desealing and greenery in the project while respecting the heritage. The City's bee- and insect-friendly policies were also highlighted.

Who?

The City of Ghent and [Farys](#), with grants from the Department of Environment Flanders (Proeftuinen Ontharding).

The design came about through participation with Ghent citizens. On 2 and 8 December 2015, two design workshops were organised together with a delegation of 80 Oostakker residents.

This involved determining the strengths, weaknesses, opportunities and threats for Oostakker and looking at how the city could qualitatively address these in the design of the village square.

Besides the participation of Ghent's citizens, Ghent also received input from the children of Oostakker through a whole series of drawings made by the pupils of the primary school [Edugo Sint-Vincentius](#).



Further info

[Green Zone Oostakker Village](#), Proeftuin Ontharding for [Flanders Breaks Out!](#)
[Department of Roads, Bridges and Watercourses, City of Ghent](#)





Planting with neighbours



What?

Vertical gardens are always a good idea. They bring more atmosphere to your street, provide shade on hot days and reduce flooding during heavy rainfall. Plants increase biodiversity and provide food for birds and insects. The more vertical gardens and front gardens we build in our city, the more tiles we break up. And that is what we aim to do with Plants with Neighbours: ensure that rainwater does not flow directly into the sewer, but seeps into the soil.

The City of Ghent helps the greening of the streets in cooperation with the Vertical Garden Brigade. Entice your neighbours and apply for Planting with Neighbours together with at least five motivated neighbours on the same street or on adjacent streets within a radius of 500 metres. Once your application has been approved, the Vertical Garden Brigade will pick a date with you for the planting day. On that planting day, you can count on a member of the Vertical Garden Brigade to explain how to break up the pavement, lay border stones, install climbing aids, plant and care for the plants. Moreover, during planting day, you will also get help from the vertical gardening brigadier and you can use practical work materials. You will also receive one or maximum two large rubbish bags for the rubble and 1 m³ of fresh topsoil.

Who?

[Ghent Environmental Front](#) (GMF) is a regional environmental association that has been pushing the environment and sustainable mobility through positive actions since 1997.

The Plants with Neighbours initiative was the result of [a collaboration](#) between the City of Ghent and the GMF. In 2017, the GMF wrote a plan for the [Ghent citizens' budget](#) and, thanks to many votes, won first place with the idea of planting 500 vertical gardens in the homes of Ghent citizens. After the info evening and the publication of the offer, applications quickly poured in.

The GMF then bought the necessary materials with funds from the City of Ghent. This was soon followed by the first vertical gardens on Scheldestraat in Sint-Amandsberg, where five residents helped the neighbourhood to install the vertical gardens. After the first season, they had already planted several hundreds of such gardens.

Through the purchase of better equipment and smooth collaboration, the GMF managed to plant more than 500 vertical gardens the following season.

In the last season, they tested out different ways to install vertical gardens even more efficiently. The requests also kept pouring in. They invested the last part of the budget in a webshop.

In May 2020, the Vertical Garden Brigade concluded a new subsidy agreement with the City of Ghent for some 700 free vertical gardens for Ghent residents, distributed across priority streets and roads that are being repaved.

Why?

Due to the huge success that was the 2020 call, more than 500 people were still on the waiting list for a vertical garden at the end of 2021. The service appears to work quickly and accurately and has developed a recognisable and unique way of working. The success lies in the integral carefree service offered by the Vertical Garden Brigade.

As a function of the [climate objectives](#) it was decided to offer this service beyond 2021 through a cooperation agreement between the City of Ghent and Ghent Environmental Front.

Planting with Neighbours is a continuation of these pilot projects. The initiative is based on the same collective approach where a request arises from several neighbours to create more green space. People get to work in those streets where an integral redevelopment is not planned. While people are supported and inspired to get started with vertical gardens themselves. The advantage of this approach is that we get to work with enthusiastic residents.

INSPIRING GHENT PROJECTS: PLANTING WITH NEIGHBOURS

Besides individually planting vertical gardens, a collective approach is also desirable and opportune. This was evident from a number of soil desealing projects carried out by the GMF with the support of the City of Ghent on Henri Mortierstraat and Désiré Toeffaertstraat in Gentbrugge, where front and vertical gardens were installed in a street approach.

In 2022, Plants with Neighbours received no applications for the soil desealing and greening of front gardens. Therefore, a new approach was devised and, since 2023, Plants with Neighbours focuses specifically on vertical gardens. In addition, a targeted call was launched to five street clusters with many front gardens, within which we distributed 30 front garden recommendations.



Further info

[Planting with Neighbours](#)
[The vertical garden brigade](#)



© Hannelore Bonami



PlastiCity



What?

In order to enable a transition to a more circular society, you cannot avoid plastics. And that is precisely the main challenge in the Interreg [PlastiCity project](#). This project investigates how we can significantly increase the recycling rate of plastics and make beautiful, functional and sustainable products using recycled plastics.

PlastiCity is part of the [Interreg 2 Seas](#) programme. This is a [European territorial cooperation programme](#) for England, France, the Netherlands and Belgium (Flanders) and is co-financed by the [European Regional Development Fund](#) (ERDF).

A lot of plastic waste is available in urban environments that can be considered for recycling. The PlastiCity project was launched to develop solutions that significantly increase the recycling rate of post-consumer (PC) and non-household (NH) plastics in urban areas.

PC and NH Plastics are post-consumer non-household. Therefore it does not involve household waste, but business waste from shops, industry and service companies

As part of this project, the potential of waste streams and factors in the urban environment was identified. In addition, new strategies were developed and local value chains created to increase the recycling rate of PC NH plastics.

This eventually resulted in a theoretical design of an *Urban Water Tree* that can be made almost entirely from recycled plastics. The *Urban Water Tree* can serve as an example of how the City of Ghent could incorporate recycled plastics on its path to climate neutrality.

Who?

Partners in the project come from four countries:

- > Belgium: City of Ghent (coordinator), University of Ghent, [D.P.L. Group](#), [GRCT](#), [Van Werven](#)
- > Netherlands: Municipality of The Hague, Metabolic
- > France: ARMINES, Team2, Theys Recyclage, WeLOOP
- > United Kingdom: Southend-on-Sea Borough Council, University of Portsmouth

These four cities in the Interreg 2 Seas region face large amounts of plastic waste. Despite previous efforts, overall recycling rates are limited to around 20 to 30%. One of the main causes is the lack of cooperation and management between industry, public authorities, and the private sector to achieve optimal plastic waste management. This results in suboptimal logistics, economic costs and plastic waste ending up in the water.

Moreover, the region's cities are huge exporters of plastic waste. In doing so, they are not only displacing the problem but also missing out on economic opportunities. Countries like China have recently closed their borders to European plastic waste exports. As a result, waste management companies urgently need to find solutions. The region needs a change in waste management practices and would benefit from a better attitude towards plastic in the circular economy.

The total budget for the project was €9.45 million. Of this, €5.50 million is funded by the Interreg 2 Seas European Territorial Cooperation programme, which in turn is funded by the European Regional Development Fund ([ERDF](#)).

The PlastiCity project lasted 45 months, from January 2019 to March 2023.

Why?

Unfortunately, plastics, especially single-use applications, have another drawback. They pollute our oceans and landscapes. Everyone is familiar with the terms 'microplastics' and 'plastics soup'. Soil pollution is less well known, although the fields where our crops grow are 4 to 23 times more polluted with microplastics compared to the oceans. As plastic production increases, new fossil

fuel infrastructure will be added and emissions from the exploration, extraction, transport and refining of oil, natural gas and coal will rise.

Global production of plastics, mainly from oil and natural gas, has increased from 2 million tonnes (1950) to 368 million tonnes (2020).

Transport, energy and agriculture are the three sectors most often blamed for climate change. But people often forget that the production of plastics also produces emissions. If we want to limit global warming to 1.5°C by 2050, we should not emit more than 570 billion tonnes of CO₂. 10 to 13% of that will be emitted from the production of plastics and the incineration of plastic waste.

By recycling plastics, we can avoid emissions. As plastics consist mainly of finite raw materials, they have a high potential value for recycling. On average in the EU, only 30% of plastic waste is recycled. If we want to move to a more sustainable but also viable economy, we need to use our resources more efficiently. It is therefore important to collect, reuse and recycle plastic waste so that it no longer pollutes our environment.

The City of Ghent's ambitions

Ghent is in a diverse and dynamic region with a young spirit in a historic area. As a port city, it has long had a rich recycling and waste management industry. In addition, the city is characterised by a large number of SMEs, all of which produce waste. Strong links with knowledge institutions and universities make Ghent a *talent hub* pioneering new logistics, separation and recycling technologies.

Ghent is on its way to becoming a continental hub for cleantech innovation. An initially small cluster has grown into a network of pioneering cleantech players active in materials, energy, water and mobility. The City of Ghent is constantly looking to fill knowledge gaps in its cleantech ecosystem as it strives to make the city carbon neutral by 2050. The PlastiCity project fits exactly into this vision. By connecting all actors in the circular plastic value chain, new business cases are

developed and new investments are attracted to the Ghent region. Collaboration and innovation are important and strong drivers in this respect.

PlastiCity gave insight into this very complex problem, allowing for more targeted work on solutions. The close relationships between the city, its knowledge institutions and entrepreneurs live on today in new projects on recycling and reusing plastics.

Co-creation

To boost demand for recycled plastic, the project aimed to show that you can make beautiful, sustainable, useful and marketable products with recycled plastic. Some products were shown at the [Design Fest Gent](#) in April 2022, where a workshop was also organised with mainly design students and professionals.



Further info

Are you interested in the results of this project? A handbook aimed at local authorities is available at <https://handbook.plasticityproject.eu/>



Circular facade brick



What?

In May 2023, the foundation stone was laid for the new wing of the [Design Museum Ghent](#), DING (Design in Ghent). In the design of the new building, utmost attention was paid to sustainability and reuse of materials. A circular facade brick was developed especially for the new wing. This innovative sand-lime brick consists mainly of lime, sand and construction waste from Ghent residents, such as finely pulverised concrete and glass. Compared to making other bricks, only a third of CO₂ is emitted.

City Development Corporation [Sogent](#) signed up with a number of partners in 2020 for the targeted *call* for circular building economy from Flanders Circular and OVAM. Using that support, the project partners worked together to develop a circular facade brick. StoneCycling made samples from fired bricks and Local Works Studio and BC Materials from pressed bricks.

[Flanders Circular](#) is the hub and inspiration for the circular economy in Flanders. It is a partnership between governments, companies, civil society and the knowledge community.

In order to use a new building material, it must be certified. Sogent therefore brought on board the certification body for the construction sector BCCA vzw ([Belgian Construction Certification Association vzw](#)). BCCA drew up a test framework for checking the raw materials used, the recipe for the brick and the production process in order to issue a suitability declaration at the end. The circular brick samples were tested extensively in labs each time for compressive strength, water absorption and frost resistance, among others. The 'recipe' for the brick was adjusted several times. For aesthetic and ecological reasons, pressed bricks were finally chosen, which are not fired but air-dried and hardened. Sixty-three per cent

of the stone consists of material from existing waste flows such as broken concrete and white glass, mixed with lime and fillers. The waste is collected from a recycling centre in Ghent. The pressed brick also has a lower carbon footprint than a fired brick. The lime hardens through CO₂ from the air. So the brick is not only ecological and innovative because the raw materials come from residual and local waste streams, but also because production takes place locally. This greatly reduces energy consumption to do with shipping.

The result?

In September 2022, BCCA issued a certificate for the prototype brick, exclusively valid for use in the DING construction project.

The developed process represents a model for producing bricks from waste that can be used anywhere. Currently, the brick can only be used for DING. We hope that in the future, the circular facade brick will be scaled up and used in other building projects. Because the more the model spreads, the more waste streams will be reduced thanks to usable building materials.

Who?

The circular facade brick for DING is the result of a research project within the targeted *call* for the circular building economy by [Flanders Circular](#) and [OVAM](#). Commissioned by the City of Ghent, the research was conducted by delegated building owner Sogent (Ghent city development company), together with Design Museum Ghent (AGB Kunsten en Design), the architectural team [Carmody Groarke](#) and [TRANS architecture | urban planning cvba](#). The producers are [BC Materials cv](#), [StoneCycling](#) and [Local Works Studio](#). Other partners include KU Leuven Faculty of Architecture, [Caluwaerts & Uytterhoeven \(Legal Office\)](#) and certification by BCCA. The project received financial backing from Flanders Circular, OVAM and the City of Ghent.



Further info

Follow the construction of the new wing of the Design Museum Ghent, [DING](#).



Koerknallen and tile-flipping



What?

The Ghent Climate Forum, created in 2022, is a new initiative that aims to accelerate the fight against the climate crisis in the Ghent region. It experiments and initiates collaborations. One of the campaigns organised by the Climate Forum is the Ghent 'Koerknallen' (tile breaking) championship. With this, the Ghent Climate Forum aims to encourage neighbourhoods to implement soil desealing.

The Ghent Climate Forum wants steps to be taken as soon as possible to reduce emissions and stop global warming. Topics such as 'energy poverty' and 'soil desealing' take centre stage. To this end, it joins forces with companies, the trade and environmental movement, the social, cultural and educational sectors. It is also supported by the City of Ghent.

In Ghent, many initiatives and organisations are committed to climate. This broad involvement is a major asset. The Ghent Climate Forum was set up to cooperate even more efficiently, exchange knowledge and connect initiators. The aim is to involve as many people as possible, regardless of their income and background.

Ghent's first 'Koerknallen' championship took place in October 2022. This campaign drew attention to the many sealed areas in the city. Five neighbourhoods challenged each other to achieve the largest TPI score where TPI equals 'Tiles Per Inhabitant Density'. The goal was to deseal the majority of front gardens, facades, backyards and other courtyards. At the same time, information evenings and lectures on garden design were also organised, which attracted a lot of interest. There was also a sale of trees and shrubs to brighten up the desealed areas. The inhabitants of Ledeburg were the most active 'koerknallers' and won the competition. They won a

performance by a Ghent artist of their choice who provided music and entertainment during a community event.

Why?

As much as 40% of Ghent's surface area, including outlying and port areas, consists of hard surfaces. This high percentage makes us vulnerable to extreme drought, heat and precipitation. That is why every desealed square metre counts. Thanks to 'koerknallen', Ghent inhabitants removed nearly one thousand tiles, spread across approximately 65 locations. This resulted in many vertical gardens and green courtyards.

Tiles do not allow water to flow through and when it rains, the water often goes straight into the sewer. If it rains a lot over a short period of time, the sewer system is not always able to handle it efficiently. The result: wet basements and flooded streets. Replacing tiles with plants and desealing the soil allows the soil to absorb rainwater like a sponge. Soils absorb rainwater during wet periods and plants provide cooling in hot(er) weather. Stones, on the other hand, retain heat from the sun and release that heat back especially in the evening. More greenery in the neighbourhood helps to counter this heat island effect.

Greener gardens and streets not only help against the urban heat island effect, they are good for nature and biodiversity and make people healthier and happier. A green environment reduces stress and purifies the air.

Follow-up actions

The intention is therefore to continue 'koerknallers' even after the championship and replace unnecessary stones with greenery. In order to promote greening on private property, the City of Ghent introduced a desealing premium in early 2023 that financially supports 'koerknallers' as of 10 m². This is appreciated, because especially in historic neighbourhoods, there can be a lot of rubble from a single courtyard or front garden. And clearing stone debris is a hurdle for many, both administratively and financially.

INSPIRING GHENT PROJECTS: KOERKNALLEN AND TILE-FLIPPING

Accordingly, the ‘Koerknallen’ Championship became a pilot version of an even greater initiative running this year. From 21 March to 31 October 2023, the first **Flemish Tile-Flipping Championships** will take place all over Flanders. Naturally, Ghent will also compete for the final prize.

Who?

The Ghent ‘Koerknal’ is an initiative by the Ghent Climate Forum and some of its members [Ghent Environmental Front](#), [Natuurpunt Gent](#), [Energent](#) and [Ghent University Breekijzer vzw](#) provided support, VDK Bank sponsored.

The Ghent Climate Forum is still in its start-up phase. It builds on previous, positive collaborations in the city. A few years ago, several concrete projects, e.g., ‘Buurzame Stroom’ (neighborhood power), were elaborated that are still working today.

Currently, many organisations are already working on the Ghent Climate Forum: UGhent, ABVV-Ghent-Eeklo, Beweging.net, Gents MilieuFront, VDK, Natuurpunt, Vereniging voor Ontwikkeling en Emancipatie van Moslims--Development and Emancipation of Muslims(VOEM), VOKA East Flanders, City of Ghent, North Sea Port, Movement of low-income earners and children, UNIZO, the Ghent energy cooperative Energent, Gents Arts Council/Greentrack Ghent (with Vooruit, Handelsbeurs, Design Museum and SMAK). In the first two years, coordination will be up to UGhent, until the Climate Forum can act independently.



Further info

[Ghent climate forum](#)

[Flemish tile-flipping championships](#)





Trees of the future



What?

Every year, the City of Ghent plants many trees that last a long time. But [trees of the future](#) go one step further. In the city, these trees are given enough space and guarantees to grow without care for at least 100 years. The trees are given a varied underplanting and a layer of leaf compost. Hence, they become benchmarks for a pleasant environment, neighbourhood experience and biodiversity in the city.

Ghent's first tree of the future was planted on 25 January 2022 in the Sluizeken-Tolhuis-Ham neighbourhood, on the lawn between Stokerijstraat and Désiré Fiévéstraat. It is a sessile oak that is still small, about 3 metres, but will grow into an impressive specimen of almost 20 metres within 20 years. Later that spring, the City of Ghent's Green Service planted another [41 trees of the future](#) in 10 locations chosen by the people of Ghent. This project continued in 2023 with a new call by the [Ghent Environmental Front \(GMF\)](#).

From all the proposals, the Green Service together with the GMF selected feasible sites. A new load of more than 100 trees of the future was planted in early 2023. The other sites are planned for subsequent planting seasons. Hence, the results of this project are immediately visible.

We have to look everywhere for space to plant new trees of the future. Both in the streets within Ghent's historic centre and in the allotments on the city's outskirts. This could be an intersection with a lot of sealing, a turning point in a subdivision or a bare and paved square. In such locations, an iconic tree can often be planted to give the place more appeal and character. Complementing or connecting existing rows of trees with new trees is also a good idea.

Searching for and finding a suitable spot can be done in several ways. The best way is to check together with the neighbourhood whether there is a space in the street that meets the criteria to plant a tree of the future. It does not necessarily have to be a spot that is already green. On the contrary, preference is given to a spot that is paved. Desealing creates new greenery in the neighbourhood and offers numerous advantages. Biodiversity increases, rainwater can infiltrate the soil and cooling increases in the area.

Criteria

However, it must remain feasible, because not every location can give a tree enough space to grow to its full potential. A suitable site must meet numerous conditions. Here are the two most important ones:

- > There is a minimum distance of 7 metres between the planting site and nearby facades of houses or other large obstacles. This distance is preferably even greater. This gives more opportunity to plant a tree with a broad habitus. Those trees have a greater cooling effect and have a more significant impact on the urban landscape.
- > The tree must be given sufficient rooting space. There should be space for an desealed planting pit of at least 4 m^2 . Or a circle about 4.5 m in diameter. Underground growth structures or adapted substrates provide additional space for roots under paving. The rooting system should also be and remain cable and pipe-free.

Want to see for yourself whether a tree of the future could come to your neighbourhood? Take a quick test [here](#). Do you score 5/5? Then you can submit your proposal [here](#). The overview map of all future trees can be found [here](#).

Why?

We are deliberately making space in the city for soil desealing and greenery. This provides an opportunity to plant future monumental trees, which enrich the public space and contribute to a climate-robust city, a key objective in our city.

Planting new, large trees in an urban context helps us cope with the many challenges associated with climate change. After all, trees are not only beautiful, they create shade and keep you cool in summer. They improve air quality and living conditions, capture rainwater and create more biodiversity.

Who?

With the trees of the future, local residents and their offspring will benefit from convivial gathering places. The fact that the sites are planted by Ghent residents themselves, in cooperation with the Ghent Environmental Front, shows their involvement in what happens in their neighbourhood. So the City of Ghent's green policy is made together with urban partners and citizens.



Further info

[Green Service City of Ghent](#)
[The Ghent Environmental Front](#)





Citizen Science weather and climate



What?

Citizen science is a specific collaboration between science and society, such as citizens, volunteers and schoolchildren. Together, they are responsible for data collection, measurements, tests or calculations. A well-known example is the [bird counts](#) that citizens carry out in their gardens.

It is not an easy form of research, as it requires both an enthusiastic group of triggers and a large participant group. Sound guidance throughout the process is important.

A fine example of *citizen science* is UGhent's VLINDER project. This project involves collaboration with schools that help collect data on the climate in the city and the countryside. This *citizen science* project is an extension of the [MOCCA network](#) with professional weather stations in Ghent. [UGhent](#) draws both projects as the city's largest knowledge institution. The City of Ghent is a partner and limits its role to supporting a few weather stations and participating schools in Ghent.

Why?

Weather and climate are of major importance in our contemporary society. Powerful supercomputers allow for increasingly accurate weather forecasts and to that end, local weather measurements are becoming increasingly important.

Land use affects the atmosphere. With the ever-increasing resolution of atmospheric models, it becomes important to better understand this interaction. But reliable weather observations are usually limited to weather stations in very open and rural environments. The VLINDER project, operational since December 2019, is changing this and has provided a measurement network in highly diverse environments ranging from rural and urban centres to industrial sites and forests. As researchers, it is impossible to organise this on such a scale on our own. Hence, the VLINDER project calls on schools to set up weather stations in a wide variety of environments.

Students from participating schools will look for suitable locations, build the weather stations and analyse the measurements.

VLINDER project at the Flemish level

In this *citizen science* project, Flemish schools, researchers and local partners use a network of 70 weather stations to monitor the weather in the area and where no data is available today.

Today, the VLINDER measurement network features 70 measurement points in very different landscapes. The measurement sites are chosen to represent all Flemish and Brussels landscapes. Some VLINDER stations are located in highly urbanised and industrial environments, but there are also weather stations in dunes, forests and lakes. Many locations were established thanks to collaborations between schools, local authorities and businesses. In Ghent, four secondary schools participate: GO Atheneum Gentbrugge, Sint-Barbara, Secundair Kunstinstituut and Einstein Atheneum Oostakker.

The VLINDER project was initiated with funds (2018-2020) from the Department of EWI within the call for *citizen science*. To make the project as successful as possible, it is supported by several partners with extensive scientific, technological and/or educational expertise. Since December 2020, after completion of the first year of measurements, the measurements will continue under the name *Butterfly 2.0* in places where there is local interest and support. These are often cities, municipalities or companies that support a local VLINDER weather station in order to continue the measurements for at least 1 more year. Local sponsors have access to the data, are listed in the weather station and are kept informed about the further progress of the project.

MOCCA project at Ghent level

The local climate in a city shows significant differences from the surrounding rural area. A well-known example of this is the so-called urban heat island effect. To specifically map out the urban climate in Ghent, in 2016 UGhent launched the unique MOCCA (*Monitoring the City's Climate and Atmosphere*) project and installed a network of weather stations in the city.

Cities appear to be subject to the heat island effect. Especially during clear and windless nights, they remain warmer than the surrounding countryside. Explanations for this are that built-up areas store more heat than natural surfaces. The geometry of buildings also complicates heat emission at night. This means less moisture and consequently less evaporation in the city. Evaporation is an energy-consuming process, leaving more energy to warm the air. Lower wind speed and more human activity in the city are also associated with the generation of additional heat.

Warmer weather in the city sounds attractive, but it also has drawbacks. Persistent warm periods can cause heat stress. This may lead to major health issues among vulnerable groups. For instance, heat waves lead to more casualties than any other meteorological phenomenon. Due to the heat island effect, heat stress in cities requires extra attention.

In order to study the urban climate in Ghent, automatic weather stations have been installed in six locations. All stations are identical, which is important to collect reliable data. The locations have been chosen to represent different urban environments. There is also 1 station in rural Melle to compare urban weather with rural areas. The weather stations have been operational since July 2016.

Who?

The Department of Physics and Astronomy at UGhent leads the VLINDER network. The project is supported by dozens of local partners. These are mainly cities, including the City of Ghent, municipalities, provinces and companies. But also partners such as a golf club, nature reserves and a Rotary club. In addition, many other scientific, educational and technological partners are also involved to keep the project on track. The emphasis, however, is on cooperation with secondary schools.

The MOCCA project is also an initiative by UGhent's Department of Physics and Astronomy. They built and installed the weather stations and are responsible for data processing. In addition, the observatory A. Pien has sponsored one of the stations. Finally, the rain gauges on the weather stations have been lent by Farys. For finding suitable locations, which is not obvious in an urban environment, six partners were willing to cooperate. These are Honda Motor Europe Logistics, KMI, plant garden Ghent, City of Ghent, Province of East Flanders and St-Bavo school. These partners are regularly informed and involved over the course of the project.



Further info

The VLINDER project: <https://vlinder.ugent.be/>.

Interested in tracking weather measurements in your region? Then take a look at the [VLINDER dashboard](https://observatory.ugent.be/). The MOCCA project: <https://observatory.ugent.be/>



Greentrack Ghent

Sustainability and culture

What?

Greentrack Ghent is the think-and-do tank of the Ghent cultural sector that builds a sustainable future through exchange and experimentation. Greentrack supports its members by exchanging knowledge and experiences, setting up purchases together, monitoring energy consumption, and inspiring ambitions and action plans. Based on environmental indicators collected by the participating cultural organisations and the information shared by experts during information sessions, action plans are drawn up, ambitions formulated and shared, and joint actions taken.

On the one hand, Greentrack responds to concrete questions and issues that emerge in the search for a sustainable organisation; on the other, it aims to continuously inspire the cultural sector to be at the forefront of sustainability and experiment with new models and techniques. Projects are outlined such as buying sustainable energy and products together, investing in shared reusable cups and telling hopeful stories of the future. Learning paths are offered both for transition starters through an online learning platform to get started with sustainability, and for cultural workers with more experience. They can follow the path 'Towards a future-proof 2030'.

Read [here](#) their 15 steps towards a sustainable organisation.

For years, Greentrack has worked closely and successfully with the City of Ghent Environment and Climate Department, UGhent, other transition networks such as [Pulse Transition Network Culture](#) and cultural partners such as [Flanders Arts Institute](#). Exchanges also take place at European level with organisations such as [Creative Carbon Scotland](#) and the British [Julie's Bicycle](#). Greentrack has been part of the larger community of the [Ghent Arts Consultation](#) where it continues to work on the same topics, but for a wider community of cultural workers and creatives.

Why?

Ghent is known for its wealth of art and culture with a vibrant scene of artists, organisations and a culture-loving public. It is also a city committed to a switch to a just and sustainable society. With Ghent Climate City, the city council wants to transform Ghent into a sustainable and climate-neutral city by 2050. This ambition is also felt within Ghent's cultural sector, which has been paying attention to sustainability before, both within its own operations and in the programme. Culture plays an important role in the transition to a socially just and sustainable society. The cultural sector reaches a huge audience and, by propagating its own sustainable mission, can inspire and encourage its audience to join in this transition.

Direction [Ghent European Capital of Culture in 2030](#) this sustainability ambition is also noticeable. That is why the mayor recently signed 'the Eurocities Lille Call to Action for low carbon and more inclusive culture' together with more than 20 other European colleagues. With this he commits, in line with the declaration through culture, to work towards a climate-neutral and more inclusive city. And to provide good examples to Europe from Ghent through Eurocities. Read more about the [Call to Action](#) on the Eurocities website [Culture is part of the solution - Eurocities](#)

Impact?

Greentrack Ghent member organisations are committed to reducing their energy consumption in all layers of their organisation and operations. Many of them have invested in energy-efficient infrastructure in recent years. Many of these organisations consistently track their energy consumption on the online platform [EnergyID](#). Thanks to their regular input, Greentrack Ghent can monitor energy consumption in their buildings and hence CO₂ emissions. This allows us to monitor the effects of investments as closely as possible. The results can be found in [this energy report](#).

The Ghent cultural sector is, for now, the only one in Flanders to examine its energy management as a group. Besides the worthwhile investments in building shell, heating and opting for green energy, it turns out that measuring and studying energy consumption can also have a major impact.

By keeping track of your numbers on a monthly basis, you'll have a quicker view of breakdowns or leaks. At the same time, you also gain insight into the consumption of your programme offerings and can better tailor them to the location and season in which they are running. It is known that cooling in particular, but also heating weighs heavily on energy consumption. And it pays to check and address stealth consumption during absences, both inside and outside of closing periods.

Who?

Some key players in the Ghent arts sector, [BAM/Kunstenpunt](#), [At'the Dirty Guests](#), [NTGhent](#), [S.M.A.K..](#), [Timelab](#) and [VIERNULVIER](#), put their heads together in 2012 to see how they could step up their efforts in the transition process towards a sustainable city. When the network was launched, 20 Ghent cultural organisations immediately signed up. In the months that followed, 20 more followed and until just before the transition to the Ghent Arts Council, the network had 56 members. The City of Ghent immediately showed enthusiasm for the project and decided to financially support the start-up of the initiative. The King Baudouin Foundation also supported the initiative with a start-up grant. Projects such as [Young Lettuce](#) from [VTi/Kunstenpunt](#) and [Ecolife](#) all contributed to the functioning of the network.

Greentrack Ghent has been part of the Ghent Arts Council (GKO) since 2022, where the mission is continued in close cooperation with the Working Group on Diversity and Inclusion, the Working Group on Space and the community of the GKO. Greentrack Ghent vzw was dissolved in 2023 and has not been a member network since then. From then on, Ghent Arts Council vzw became the umbrella structure within which Greentrack's mission continues. In this sense, Greentrack's operation continues along the same lines: to encourage the Ghent cultural sector to operate sustainably and to contribute to a sustainable society. Two freelancers each work 1 to 1.5 days a week for the Ghent Arts Council/Greentrack Ghent and coordinate this process.

In 2020, the [Ghent Arts Council](#) established. This broad Ghent community unites everyone who contributes to the artistic imagination of the city of Ghent. Ghent Arts Council is a structural consultation within the arts sector and is organised through a Board of Directors that meets ad hoc and a select group of 16 people that highlights the sector on a monthly basis. The members of the select group can stay on for a maximum of 3 years and each year 1/3rd of the members make room for new faces.

Through Greentrack, secondary partners will also be involved. Initially, through Ghent organisations, we also want to sensitise their audiences, as they play an important role in reducing the impact of a cultural organisation. In addition, members also urge their suppliers of materials, technology and catering to make choices that reduce their ecological footprint.



Further info

[Greentrack Ghent](#)
[Ghent Arts Council](#)
[Ghent2030](#)



International Partnerships



International partnership

A key condition for achieving the SDGs is a commitment to international partnerships. A city is part of the world and based on this vision, the City of Ghent supports several foreign projects through grants. These projects each contribute to achieving the Planet goals. We describe a few great examples of projects that you could possibly support as well.

Macharius-Heirnis neighbourhood forest project (2021)



At the end of 2020, the planting of 50 hectares of district forest in Idiofa, Congo, was accomplished, partly thanks to the grant from the City of Ghent. In 2022, a follow-up project was set up, namely the introduction of forest agriculture. Specifically, this involves planting crops among the trees and starting bee-keeping that provides income for the population. Acacia will also be planted so that indigenous forest trees are not cut down as a function of charcoal production. The project has strong Ghent local anchoring and creatively establishes links between its own neighbourhood and the project in Congo.



Sustainable organic farm, Darey-Goro (2022) - grant to S-eau-s Sahel



With this project, S-eau-s Sahel wants to start an organic farm in the Darey-Goro region, and drill a well to provide water for agriculture. In addition, farmers will be informed and sensitised about climate change and how they can deal with it in a sustainable way. The farm will be run on the principle of 'Community Supported Agriculture'.



Strengthening social management of water with the Committee of Environmental Monitoring in Cajamarca (2020) - grant to CATAPA



In Cajamarca, Peru, large-scale mining puts great pressure on fragile ecosystems. In those zones where there are still clean rivers, mining companies want to set up new projects. This proposal is a continuation of the project that received grants from the City of Ghent in 2019. With this project, CATAPA, together with local partner Grufides, aims to set up additional committees to carry out water measurements. Water measurements are crucial because they prove how polluting mining is. It also informs the population about their rights and the importance of water. They also want to work on exchanges between all existing committees and strengthen them among themselves. Finally, they want to supplement their existing technical guide with new biological parameters based on information available to them through the many water measurements over the past year.



[Further info](#)

Communitree: planting trees towards a self-sustained community (2022) - grant to Chabwino



Chabwino has been active for some time in supporting a local community in Zomba, Malawi. For this project, they want to work on reforesting the region, where many trees have been cut down in recent years. While it also focuses on education around sustainability and reduction of wood consumption. Cooking stoves will also be made that consume less wood compared to the current open fires.



[Further info](#)



Sustainability in the city organisation

Focus on the Planet

Sustainability in the city organisation

Focus on the Planet

In this fourth sustainability report, we reiterate the ambition to take a closer look at our own city organisation. This set of indicators and initiatives is not a complete overview, but creates a picture of where the city organisation stands and what it is achieving in terms of sustainability. We focus on *the Planet* in this section.

Ghent aims to be climate neutral by 2050

That means no net emissions of greenhouse gases, such as carbon dioxide (CO_2) and methane. 2050 seems far away, but it is not. The route planner below shows the way. More information can be found in the [Climate Plan 2020 - 2025](#).

Chart 14 The road to Ghent Climate City



Ghent's ambition is to reduce CO₂ emissions within Ghent's territory by 2030. This will be achieved by focusing on several initiatives.

City buildings

Electricity is already entirely renewable, half of which is produced locally. For new construction projects and renovations, the city is setting a more stringent goal: from passive construction to fossil-free. All buildings will be built or renovated so that they no longer need fossil fuels for heating, cooling, ventilation, plumbing, hot water and lighting. Heat from the underground, from sewage and waste water or from our Ghent waterways is targeted. Sustainable waste heat from companies is also an interesting alternative.

For the city buildings, the city organisation has committed itself by signing the **Local Energy and Climate Pact** to achieving a 55% reduction in CO₂ emissions by 2030.

From 2023, more than 30% of the electricity consumption in city buildings for which the City or OCMW Ghent pays the bill will be produced from local and renewable energy (solar panels).

More than 50% of that locally produced electricity of renewable origin, is achieved with citizen participation.

Graph 15 City buildings with solar panels

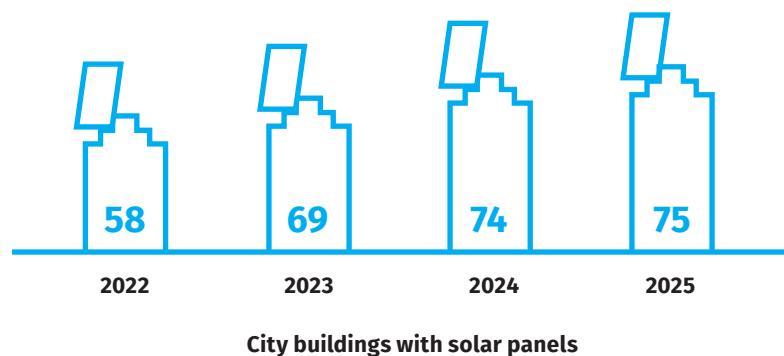
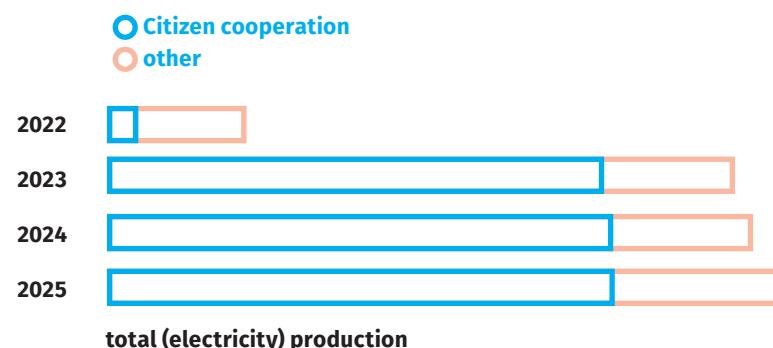


Chart 16 Total local renewable electricity production with citizen participation



Green roofs

The climate adaptation strategy includes a target to double the share of green roofs. The city's own urban heritage also contributes to this objective. In 2020 and 2021, 3,734 m² of green roofs were installed on city buildings, the majority on schools.

Sustainable commuting

The City of Ghent (including Education Ghent) and OCMW Ghent set an example in the field of sustainable travel and efficient use of resources.

It is taking its employees on a change path to achieve climate-neutral service travel by 2050.

It pays particular attention to sustainable behavioural change in order to achieve a new corporate culture with regard to service travel;

Table 4 % of employees coming to work in a sustainable way

2022	85% in a sustainable way
2020	85% in a sustainable way
2019	85% in a sustainable way
2018	84% in a sustainable way
2017	85% in a sustainable way

Car fleet phase-out

Currently, 1 in 5 vehicles in the fleet is electric. Further efforts are being made to increase sustainable service travel, fewer vehicles and fossil fuels. Particular efforts were made to make the city fleet LEZ-proof.

The City's Corporate Transport Plan has several fleet objectives

- > 30% fewer vehicles
- > 40% less fossil fuel 40% fewer kilometres travelled
- > 85% occupancy rate for passenger vehicles
- > 3/4 sustainable service travel
- > 2030 entire fleet diesel-free

Table 5 Evolution fleet 2020 to 2022

comparison	2020	2021	2022
CO₂	1,156,754 kg	1,275,039 kg	1,264,579 kg
vehicles	581 vehicles	531 vehicles	515 vehicles
petrol/diesel	292.448 litres	300.445 litres	281.362 litres

*deviating data due to covid year

Table 6 Fleet composition in 2022

fleet	Diesel	Petrol	CNG	Electricity
car	24	60	3	86
van	173	4	83	30
truck	29	0	14	0
bus	5	0	4	0

Circular materials management

In 2020 and 2021, the City of Ghent set up a lot of circular projects within its own organisation. The City of Ghent aims to be a leader in this. Circular pilot projects took place and we shared a [publication with lessons learned](#).

We don't always need new raw materials to make new products. Colleagues from Service Company Social Economy create circular gems with reclaimed materials, resulting in a pop-up webshop. Furniture from the old city office, banners from the Sinksenfoor, work clothes from the Green Service are processed into napkin holders, picnic blankets or speakers.

Reuse furniture

The City of Ghent's new in-house second-hand webshop encourages reuse and sharing.

This should facilitate the reuse of furniture and other products. This avoids unnecessary transport and extends the useful life of products and goods. This also allows a city department to furnish office space with a lower budget.

Ghent Flips!

The City of Ghent flips from a linear to a circular economy. Ghent Flips! is an internal group on the City of Ghent's intranet, where colleagues can find each other and inspiration to make maximum use of materials or limit waste. They avoid, share, reuse, repair and repurpose material. The 'Dienst Feesten en Ambulante Handel' (Department of Festivals and Mobile Trade) lends out party material for non-commercial purposes, Bavo from the Groendienst reuses green waste and Mario (Facility



Management) repurposes children's beds into ball pits. Numerous inspiring examples are shared within this group.

Circular purchases

Circularity is a fixture in the new procurement contracts. For instance, we are looking at how to make the procurement process more sustainable. What if a product is no longer needed? Can it then be used elsewhere? Can it be recycled?

Circular waste management

A large organisation produces a lot of waste. The City of Ghent is trying to reduce internal waste production with Ivago as its partner. Based on analysis that provided more insight into the current state of affairs, improvement actions were drawn up.

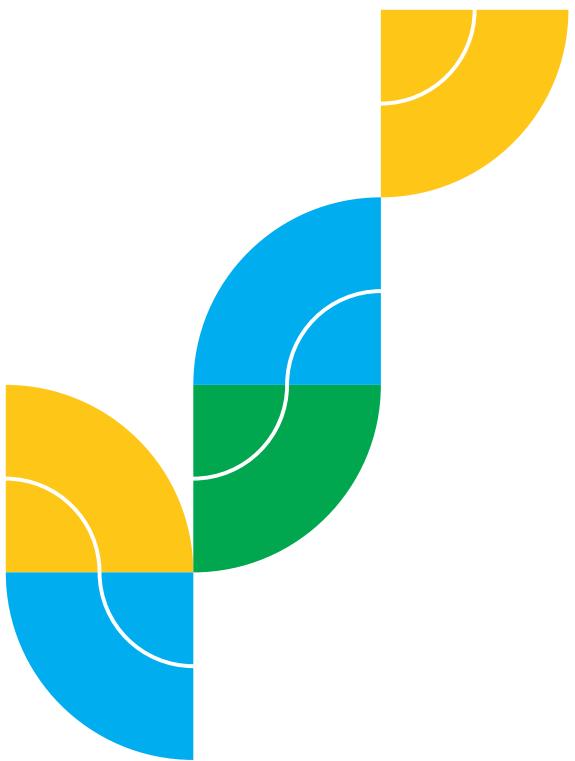
Coffee grounds are sustainably processed and used as raw material and deployed as raw material for soap production. Cleaning cloths are made from PET bottles. Each microfibre cloth consists of 2 recycled PET bottles. The cloths are made of 100 % recycled polyester.

#ambition? To significantly reduce waste generation within the business

Short chain in staff restaurant

Did you know that IKook has been opting for short chain for some time now? They work together with Vanier, which is an online short-chain webshop for the catering industry, mass caterers and retail. So dairy, meat and vegetables from the Ghent region end up on the plate or sandwich of all staff members.

During Short Chain Week, the emphasis will be on a seasonal vegetable, Ghent farmers' markets will also be highlighted.



gent:

The logo consists of the word "gent:" in a white, lowercase, sans-serif font. It is centered within a light blue rectangular box with rounded corners. The entire logo is oriented vertically on the right side of the page.

<https://www.stad.gent/sdg>