Re-Value

Detailed Roadmap for the Waterfront Pilot in Bruges

Re-Value Deliverable D3.1

Report information

Deliverable: D3.1: Detailed Roadmap for the Waterfront Pilot in Bruges

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Front page photo: Kaaidistrict, by city of Bruges

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Executive Summary

This detailed roadmap for the waterfront pilot in Bruges primarily illustrates the bigger picture: our goal towards climate neutrality and spatial quality in the Kaaidistrict, accompanied by the long-term vision of the city, including important policy plans as the climate plan and the spatial policy plan.

The pilot area of Re-Value, the Kaaidistrict, has already been designated as a transformation area in the spatial policy plan of Bruges (2023), a place where the city aims to achieve climate neutrality on a small scale in the short term.

The Re-Value project, with relevant partners and partner cities, guides the city of Bruges to reach our goal by linking several policy plans, foresee staff budget and funds for community building to realise the action plan for the Kaaidistrict, which is a result of the Impact Model Workshop. Re-Value gives the city the space to experiment with new spatial instruments and community building (Kaaiklappers) to reach this goal.

The action plan consists of three main themes, three anchors to which all actions carried out until the end of 2026 can be linked. The three anchors are: community building, spatial transformation and 'design by research'. Every action of each anchor is described. For each actions the activities, timing and state of play are added.

Furthermore we discussed stakeholder management and the connection with Re-Value.

The annex of this roadmap gives more insights in the pre-Re-Value situation of Bruges, the local and supralocal policy plans regarding to spatial quality and climate neutrality. The annex also describes the Kaaidistrict, the pilot area of Re-Value. Several studies and simulations were carried out and are also explained in this annex.

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Introduction

The city of Bruges is one of the 9 partner cities of the European Horizon project Re-Value. The Kaaidistrict is the identified waterfront area in Bruges where the city aims to reach climate neutrality by 2030 through the implementation of new spatial instruments and cocreation community building. The Impact Model workshop (D1.1: Re-Value Impact Model (initial version)) has been an insightful exercise for the city to get a clear vision on what should be tested and implemented in the Kaaidistrict.

The 'Kaaidistrict' is located along the Ghent-Ostend canal and serves as the transition between the city centre and the Sea Port, situated between Sint-Pieters and Sint-Jozef. This Kaaidistrict covers an area of approximately 30 hectares and constitutes a strategic fringe zone with remaining active business, production, and trade. The monofunctional use, inefficient spatial utilisation, subpar architecture and environmental design, large parking areas, etc., are all areas that could benefit from improvement. Due to its pivotal location, proximity to the city centre, and the presence of water, this area is under pressure, leading to a turning point filled with opportunities and challenges.

The city has initiated a concept study to develop a robust spatial framework and establish an action plan for implementation. The study, established in 2022, shows the future image of the Kaaidistrict with high ambitions. It includes redeveloping the area with varied use, integrating manufacturing, housing, tourism, sustainable logistics, etc. Three zones are proposed: an urban retail cluster, a food hub, and a makers district, each with specific economic and societal programs. Circularity is the common thread throughout the concept study of the Kaaidistrict with a focus on circular water flows, material flows, energy flows and food flows. The reorganisation of the district will make cars less prominent and make way for quality places to stay with greenery and water as image-defining elements.

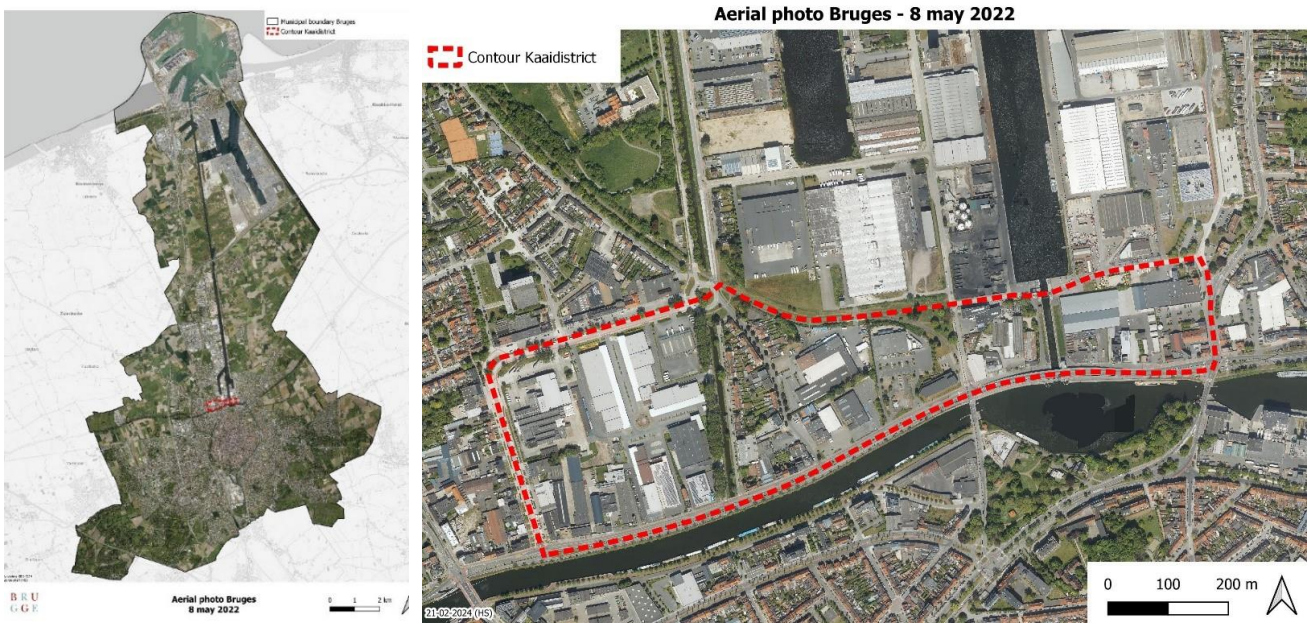


Figure 1: aerial photo of Bruges and the Kaaidistrict

The Spatial policy plan of Bruges (2023) is the guiding principle for choices on how space in Bruges will be further used, organised and ordered in the coming decades. The Kaaidistrict was already defined as transformation area in the policy plan. Recognizing the need to play a leading role in the transformation of the Kaaidistrict, the city of Bruges assumed the role of director. The goal is to re-develop this transitional area into a space with layered, diverse, and multifunctional use, integrating manufacturing, businesses, various forms of housing, amenities, tourism, temporary use, sustainable logistics, etc.

There is a need for an integral development strategy that not only focuses on creating 'space' for new forms of the economy or broadening functions but also on creating networks of actors and spatial conditions that generate support for sustainable urban development with strong coherence and identity.

Both plans, the concept study of the Kaaidistrict and the Spatial policy plan for Bruges, together with the Climate plan 2030 – BruggeNaarMorgen (Bruges towards tomorrow) come together in this Re-Value project. Re-Value gives the city space to experiment with new spatial instruments, tools to build a community via storytelling and link these two with each other in order to achieve the ambitious goals set up by the city. Together with the other cities and partners in the consortium there is a continuous trajectory of exchange to learn from each other and to work together towards an European learning network.

As an output of the Impact Model workshop an action plan was established with three main topics, three anchors to which all actions carried out until the end of the Re-Value project 2026 can be linked. The three anchors are: community building, spatial transformation and design by research. Every action of each anchor is described in Chapter five of this roadmap. For each action the activities, timing and the state of play are added as well. Chapter one gives an overview of the climate plan 2030 of Bruges. More than 200 actions spread over seven guidelines are described in order to reach Fit for 55. Chapter two describes the long-term vision for Bruges. The strategy to engage the government and stakeholders is outlined in chapter three. The fourth chapter shows how Bruges implements the tools and expertise provided within Re-Value to revalue the Kaaidistrict itself. The sixth and last chapter briefly refers to the budget and long term financing.

More and detailed information about the concept study, climate plan, spatial policy plan and overall state of play in Bruges can be found in annex.

1. Fit for 55: Climate plan 'Bruges towards tomorrow' 2030

After signing the Covenant of Mayors for Climate and Energy 2030 in 2020 a Climate Plan 2030 was developed and approved by the City Council on February 21, 2022. The Climate Plan 2030 aims for Bruges to achieve climate neutrality by 2050 and a 49% reduction in local CO_2 emissions by 2030. This aligns with the ambitions of the Paris/Glasgow agreements, which focus on limiting global warming to a maximum of 1.5°C. The Climate Plan 2030 also contributes to the climate resilience of the city by preparing for increased risks of heat, drought, and flooding. An extensive risk analysis and a climate adaptation plan for the entire Bruges area have been incorporated into this Climate Plan 2030.

Local CO_2 emissions are mainly concentrated in household heating and the heating of (public) buildings (more than 50%). Another significant contributor is transportation, with motorised travel accounting for one-third of local CO_2 emissions.

The Climate Plan 2030 is structured around seven thematic bridges and 20 substantive pillars, encompassing over 200 actions. Below is an overview of all the bridges and pillars. A more detailed plan with actions can be consulted in annex.

Bridge 1: Bruges heats fossil-free
- Pillar 1: accelerate the decrease in energy demand by increasing the renovation rate
- Pillar 2: switch to fossil-free heating systems in buildings

Bridge 2: Bruges is a renewable electricity city
- Pillar 3: Expand the capacity of wind energy production
- Pillar 4: Increase the production capacity of photovoltaic solar panels
- Pillar 5: Efficient and innovative use of electricity

Bridge 3: Bruges moves smart, fossil-free and healthy
- Pillar 6: Smart handling of mobility demand
- Pillar 7: Increase the share of cycling, walking, and public transport in the mobility mix
- Pillar 8: Vehicles become fossil-free and energy-efficient

Bridge 4: Bruges undertakes climate-friendly and circular
- Pillar 9: Develop Bruges as a circular city
- Pillar 10: Work on climate-friendly and circular businesses, industrial areas, and the port

Bridge 5: 'Brugge smaakt' (Bruges tastes)
- Pillar 11: Enjoying food with less climate impact
- Pillar 12: Stimulate, sustain, and connect local food production
- Pillar 13: Transform food loss and surplus into profit

Bridge 6: Bruges is climate-resilient
- Pillar 14: Create a water-resistant city through smart de-paving, targeted separation, and source measures
- Pillar 15: Ensure a pleasant living environment, climate-resilient agriculture, and resilient nature through green-blue measures and networks
- Pillar 16: Build a climate-resilient city together with Bruges citizens and partners

Bridge 7: Bruges organises itself for a climate neutral future for everyone
- Pillar 17: Keep the climate transition affordable for everyone
- Pillar 18: Measure and communicate achievements of the Climate Plan 2030
- Pillar 19: Aligning city organisation with a comprehensive approach
- Pillar 20: Engaging external partners for the realisation of the 2030 climate plan

At the end of 2023 there was an estimation of 27% CO_2-reduction as compared to 2011. In the figure below it's clear that the emission is following the intended line to reach climate neutrality by 2050.

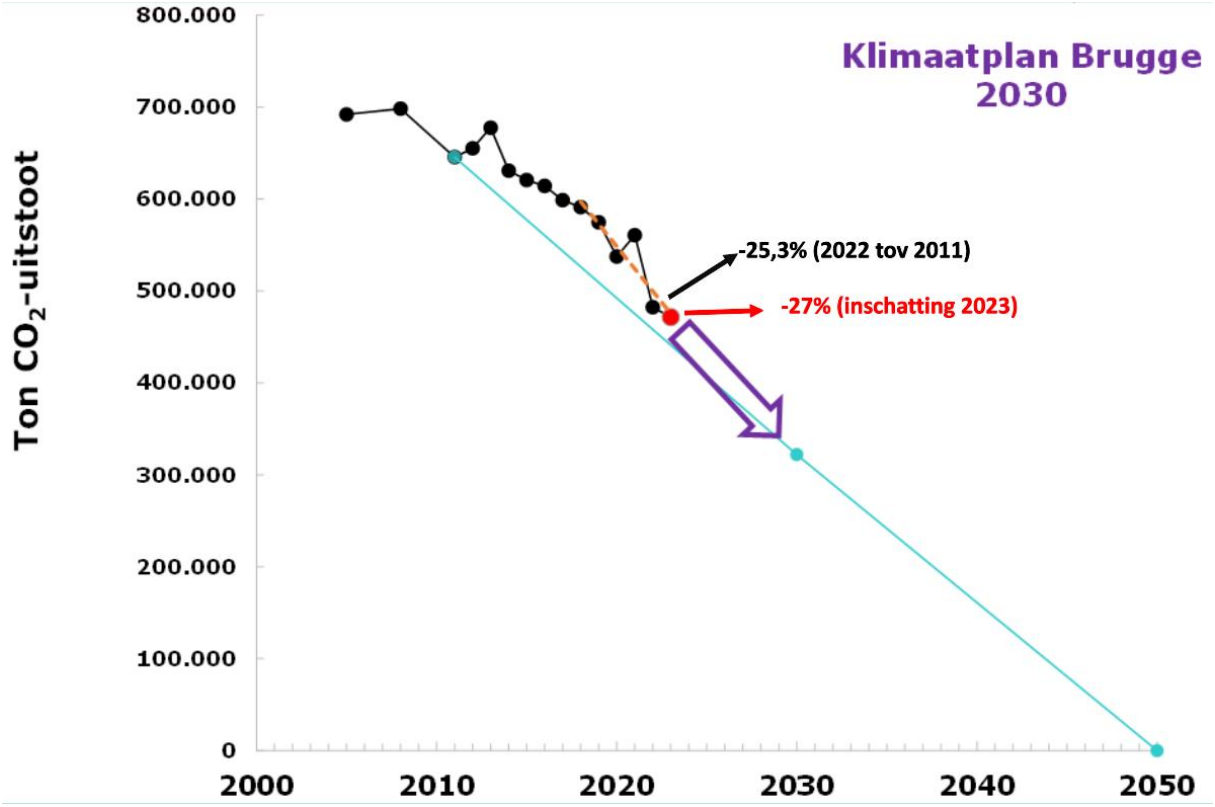


Figure 2: Evolution of the local CO_2 emission in Bruges

In the 'Spatial Policy plan Bruges' 'directing transformation spots' is one of the 5 policy frameworks. The Kaaidistrict was identified as one of the three transformation spots, spots where the city wants to show on a small scale how the city wants to evolve to by 2050. More information about the spatial policy plan can be found in annex (chapter 10).

Regarding the Kaaidistrict, the city wants to engage in all the bridges of the climate plan to transform this spot in the image of the future for Bruges. Thanks to Re-Value there is more experimental space to test new spatial instruments, legal frameworks and build a community in order to achieve both climate mitigation and adaptation goals. With the help of the Impact Model workshop an action plan was set up.

2. Long-term vision for Bruges

The long-term vision of the Kaaidistrict was already described in the concept study for the area. This study was finished in 2022. The final product of the concept study shows the future image of the Kaaidistrict that responds the high ambitions of the city. It's not a blueprint that dictates how the built space should look but results in a shared vision as a potential realisation of the set ambitions. The transition of the project area will happen step by step, and the vision for the future will be adjusted gradually. In the meanwhile the Kaaidistrict was identified in the Spatial Policy Plan of Bruges as a transformation spot with the city as leading actor to direct this area in the direction the city wants to go. The city atelier, as a new format, should be an instrument for the city to be an active partner in the redevelopment of this transformation spot.

The long-term ambition of the city for the Kaaidistrict is to develop an urban district with a unique identity.

The Kaaidistrict will no longer be a place 'between' or 'next to' other places or neighbourhoods. The image of a residual space that accommodates urban programmes that are not wanted elsewhere will be radically reversed. The Kaaidistrict will become an independent and proud urban district: a district that brings about the 'overlap' between city and harbour, where living and working have a place in juxtaposition and equivalence. We create a 'city district of the future' with the ubiquitous water as a strong identity, giving the 'Venice of the North' a meaningful extension. The Kaaidistrict will be a breeding ground for creative and circular economy, a place where innovative housing concepts are established, where efforts are made to share space, sustainable mobility, future-proof water management, where sustainable heat and energy networks are developed, where public space is qualitative and integrated.

The proposal for the development of the Kaaidistrict is determined not only by the built-up fabric and programming, but also by the public space. The reorganisation of the district brings the car less into prominence and makes way for high-quality recreational spaces with greenery and water as image-defining elements. The Kaaidistrict will thus be embedded in the urban fabric with only generously sized public spaces where people can walk, enjoy, play, ...

The concept study, created and supported by a broad audience of internal stakeholders, made it clear that there are many opportunities in the idea of a new economy where production, logistics and circular economy are at the forefront. Reserving industrious space near a critical mass, multimodal accessibility of the site and the presence of shared space and infrastructure will gain further importance.

In order to realise the ambitions established in the concept study (and above), a new spatial implementation plan is necessary. The process to achieve such a spatial plan can take many years.

Therefore we want to already design less (or non) mandatory masterplans and experiment with other new spatial instruments within the Re-Value project in order to be an active partner in the development of the Kaaidistrict. A new format regarding the permit procedure is also necessary. We will hence test a city atelier as a guiding instrument leading quicker to a unanimous and inclusive permit of the city.

Next to this, we want to co-create with every kind of stakeholder in order to shape a large community: the Kaaiklappers. Together with them, we dream of a Kaaidistrict area within Re-Value, as a real transformation spot with:

- Less concrete, more green, more nature-based solutions in public space
- Increase the quality of public space
- Nice examples of tactical urbanism
- A lot of awareness for climate mitigation and adaptation amongst all citizens of Bruges

Both long-term and short-term vision embrace the NEB model and philosophy. The city of Bruges is striving for a new urban district that is not only sustainable, but also inclusive and beautiful.

3. Governance and stakeholder engagement strategy

Regarding (semi-)internal stakeholders there are several existing and new governance structures that are made in order to tackle challenges and see opportunities across several departments:

The Re-Value team takes part of

- Internal climate team: a team with representation of all departments of the city involved in the climate plan 2030. There are monthly meetings with the presentation of the state of play of all bridges and pillars of the climate plan. They are looking for linking opportunities across several departments, solutions for challenges which could be a leverage for everyone, … There is an annual update and monitoring of the climate plan and the achieved figures. This monitoring report is presented to the college of mayor and aldermen before being showcased at an open network event for all residents of Bruges.
- The annual evaluation of the dynamic roadmap of the mobility plan in the Kaaidistrict, together with several city departments and linked authorities and companies (public transport, manager of waterways, management of supra-local roads and highways)

The Re-Value team leads

- City atelier: a new spatial format we are experimenting with within the Re-Value project. There are monthly meetings with all departments (public domain, mobility, youth, culture, …) involved in future developments and complex projects in the Kaaidistrict with mandated municipal officers. If required real estate developers or architects could be invited to present their masterplan or principles to the members of the city atelier. There are no policy makers involved in the city atelier. The city atelier could be seen as a guiding vehicle for developers and architects in order to get their plans quickly aligned with the policy plans and frameworks of the city. As the involved colleagues received a mandate, decisions are made during the city atelier. Beforehand there is time to evaluate the plans within the particular department. In this way all relevant departments are promptly notified of ongoing matters and developments at once. Every attendant of the city atelier could be seen as an expert with an equal voice. If necessary, feedback approvals are asked to the college of mayor and aldermen.
- Kaaiklappers (see external stakeholders)

The Re-Value team reports to

- Steering group: monthly meetings with colleagues of several departments, dedicated to the Kaaidistrict and Re-Value
- Team Kaaidistrict: monthly meetings with the municipal permit officers dedicated to developments in the Kaaidistrict.
- Team spatial planning: monthly meetings with the spatial planners, they are looking for solutions for ongoing challenges and barriers during spatial planning processes.

Regarding external stakeholders, we are experimenting within Re-Value with storytelling in the Kaaidistrict in order to create a community in the Kaaidistrict of all external stakeholders: 'Kaaiklappers'. 'Klappers' is a Flemish dialect word for people who are talking all the time. This community exists of neighbours, home owners, retail owners and managers, real estate developers, architects, social and cultural (network)organisations (Republiek, Entrepot, Avansa), welfare organisations, youth movements, intercommunal organisations, social employment companies, neighbourhood committees, creative professionals, colleagues of several involved departments, ...

Sint-Pieters, the sub-municipality to which the Kaaidistrict belongs, is a part of Bruges in which a lot of citizens live with a rather low income. In the Kaaidistrict itself, there are currently not a lot of inhabitants. We try to engage these citizens through door-to-door visits, phone, flyers, posters, social media and collaboration with the community workers.

4. Re-Valuing Bruges

The main goal for the Re-Value pilot area Kaaidistrict in Bruges is to achieve climate neutrality and spatial quality through the implementation of newly spatial instruments, tactical urbanism and community building.

The contribution of Re-Value for Bruges is based on several frameworks that provide different points of view. These frameworks led to an action plan which is described in Chapter 5 (Waterfront Pilot Transformation Activities). For every framework there are references to specific actions.

- 6 systemic challenges

These systemic challenges of urban planning and design are aligned with the Cities Mission. The Re-Value rounds (part of the Community of Practice) give us input and inspiration in order to find solutions regarding current and future challenges. For each challenge there is an indication in which anchor of the Re-Value action plan of Bruges the challenge is embedded.

The challenges are:

- Systemic changes in governance, regulatory structures, advocacy: anchor 2 is related; actions about city atelier, trade covenant, ...
- Societal and spatial quality: all three anchors are related.
- Financial and circular value chains: anchor 2 and 3 are related.
- Data-driven co-creation, digital twins: anchor 2 is related; actions about circularity
- Energy and mobility: all three anchors are related
- Nature-based solutions: all three anchors are related; f.i. visibility in the streetscape for anchor 1

- Three innovation cycles

The model of systemic challenges is supported by 3 innovation cycles:

- Aligning climate neutrality and urban quality, using participatory **story-building** to identify co-benefits.

  The Impact model workshop gave the city a broad support in order to identify stakeholders and finetune an action plan with three anchors. With the Kaaiklappers, see the Re-Value action plan for Bruges, anchor 1 (5.1 Anchor 1: The Kaaidistrict organizes itself), we try to build a story together with the stakeholders, identified in the third chapter.

- Co-creating **data-driven transition scenarios**, empowering cities to use better data / data better.

  Re-Value partner VITO helps the city of Bruges to model and simulate the energy demand of medium-scale buildings such as the Kaaidistrict through 'City Energy Analyst' (CEA). This program provides the ability for the user to build their own database of physical parameters of buildings and further customize them. CEA even allows the user to use GIS tools to assign geometric parameters of buildings to their locations. This enables a flexible design and planning process for metamorphosis of neighborhoods. The program

also provides design and optimization tools for district heating and cooling systems. More information about the simulated scenarios could be found in annex.

- De-risking investments, through value-based **financial and partnership models**.

Together with GIB several Re-Value rounds where organised in order to search for funding, financial support and partnership models in order to realise the spatial transformation in the Kaaidistrict, given the lack of city ownership of the area, except for the public domain.

- Innovation Camps

VLAJO is delegated through JAE to organise the Innovation Camps in Bruges. During two years, 120 students (16-17 years old) of 5 secondary schools in Bruges are working about 5 challenges regarding circularity of water flows, energy flows, food flows, material flows. In October 2023 and March 2024 they gathered to brainstorm about the challenges and to listen to several experts in the respective domains. In February 2025 the students will present their learnings to everyone who's interested.

- NEB Impact Model

The impact model workshop contributed a lot the broad view for an action plan. The lunch-to-lunch workshop led to main challenges in the Kaaidistrict, taking all domains and impact categories into account. Based on these challenges, deficiencies and gaps, the defined actions were clustered around three anchors: community building, spatial transformation and 'design by research'.

- NEB Compass

The NEB compass is a framework for projects that wish to use the NEB principles as criteria for their activities. The compass suggests direction for the project and lays the foundation for more detailed tools. The compass describes three core values to become truly 'NEB' and three principles across the values. These values and principles aren't new but should all be integrated in NEB projects.

The three core values of NEB are beautiful, sustainable and inclusiveness. All values are shown at three levels of ambition. The three principles described by the compass as a way of working are:

- Participatory process
- Multi-level engagement
- Transdisciplinary approach

A first high level assessment was made for the Kaaidistrict. As there is still room for improvement the compass will be integrated in the action plan and will transform through Re-Value and other actions. Therefore the compass will be used as a living document.

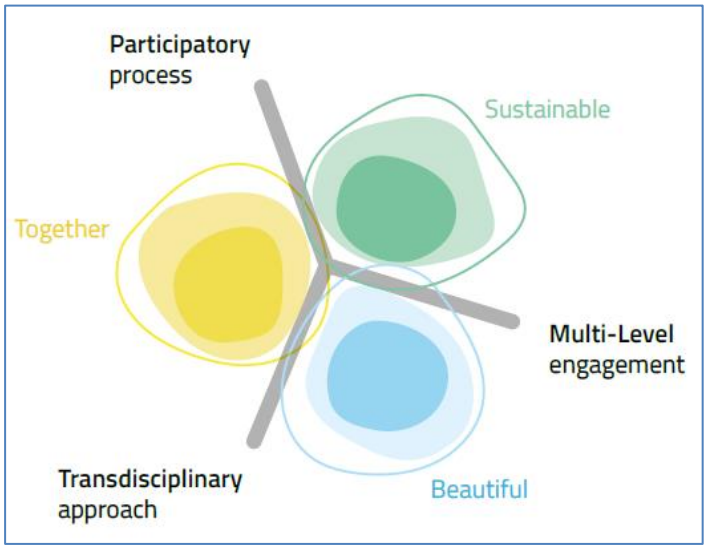


Figure 3: Figure NEB Compass: core values and principles

5. Re-Value Action Plan for the Kaaidistrict

As mentioned earlier, the city of Bruges developed an action plan, based on and resulted from the Impact model workshop, the Re-value program and the local initiatives and energy. The action plan consists of 3 large parts, 3 anchors: Community building, Spatial transformation and 'Design by research'. For each anchor the KPI's and several actions are described, sometimes with more features like extra funding (additional funding next to Re-Value) or the need of a legacy framework. This action plan will be approved by the city council and will be yearly evaluated in-depth. Moreover the plan is definitely a working plan and will be adapted continuously to finish with a detailed overview of the actions at the end of the Re-Value project with an evaluation: which action worked, which action didn't work. For every action, the state of play and current situation is indicated. Every performance or action in Bruges will be linked to one or more actions in the action plan.

These actions – together with other local and regional decisions and actions – should lead to climate neutrality as described in our climate plan 'BrugesTowardsTomorow' (chapter 10 in the annex). For each action we will continuously feedback with the NEB Impact Model and the NEB compass (see also action 5.2.3). We are striving for the highest ambitious level for each value (beautiful, sustainable, inclusive) and the three core principles: participatory process multi-level engagement and a transdisciplinary approach.

5.1 Anchor 1: The Kaaidistrict organizes itself

Objective: COMMUNITY BUILDING – TACTICAL URBANISM

We aim to raise awareness among residents, developers, property owners, retailers, youth groups, and other stakeholders. We call this community the "Kaaiklappers". The goal is to enhance liveability and connectivity in the neighbourhood through encounters, cooperation, and shared experiences.

In co-creation with internal and external stakeholders, we will develop ideas using storytelling and nudging. Tactical Urbanism refers to small-scale interventions that make public spaces more enjoyable and foster slower vehicle traffic. Examples include temporary changes to the built environment that address urban challenges.

Key Performance Indicators (KPI's):

- Number of attendees at Kaaiklappers events and the Kaai Festival
- Number of temporary activities and implementations

5.1.1 Kaaiklappers

Description:

The Kaaiklappers represent the collective of all stakeholders for the Kaaidistrict, broadly defined:

- Architects and developers of future construction projects
- Landowners, store managers, and business operators
- Residents of the surrounding streets, as well as adjacent neighbourhoods
- Key figures from Mintus (welfare organisation of Bruges), with Patrick Anthone as the contact point
- Youth movements, neighbourhood organizations, and the Sint-Pieters Festival Committee
- Stakeholders from various studies, such as the makers' study and the mobility study
- Stakeholders from the circular festival
- City services

The Kaaiklappers are regularly invited to be informed, brainstorm, gather inspiration, provide input, and remain continuously involved in the project. The Kaaiklappers can be invited more selectively when a topic or activity is particularly relevant to a specific group. Depending on the event's objective, all or a specific group of Kaaiklappers are invited.

Location: Depends on the purpose and type of activity

Actions and timing: At least 5 Kaaiklappers events per year

State of play (September 2024): Initiated

- First event: Kaaiklappers, September 12, 2024
    - Location: Slachthuis site on Sint-Pieterszuidstraat
    - Agenda: Informing about the makers' study, mobility study, concept study, actions around the green zone, tactical urbanism, and a call for collaboration for the Kaai party in May 2025
    - Attendees: 125 stakeholders, a broad mix of real estate developers, citizens, retail owners, stakeholders of the neighbourhood,
    - The first Kaaiklappers event was a real success, it was a nice networking event with positive vibes, constructive conversations between several stakeholders and new inspiration for concrete actions.
- Follow-up meetings with attendees from the first event are being scheduled

Below you can find some pictures of the first Kaaiklappers event.

Figure 4: Pictures of the Kaaiklappers event in Bruges, 12 September 2024

5.1.2 Communication and dissemination

Description:

We want to inform the Kaaiklappers, other interested people in Bruges and other local authorities in Flanders / Europe. A community needs continuous input of local information, regularly co-creational sessions and wants to know the state of play.

Actions and timing (2024-2025):

- Update of the website of the Kaaidistrict (pilot area of Re-Value)
- publishing a newsletter every couple of months
- information panels (see further)
- attendance at several little events in the neighbourhood (f.i. fun fair)
- examples of tactical urbanism

State of play (September 2024): initiated

- For the first Kaaiklappers event leaflets and mails were distributed and door-to door visits were carried out (https://mailchi.mp/8296200a604d/save-the-date-uitnodiging-afterwork-kaaiklappers-donderdag-12-september-2024-vanaf-1700-uur?e=518162233d)
- The website is up-to-date and will be regularly updated

2.1.3 Annual Kaai party

Description:

Through an annual Kaai party, we strengthen the community in and around the Kaaidistrict. The focus is on entertainment and reaching as many citizens as possible. The target audience is broader than the Kaaiklappers. We aim at the stakeholders, but also future residents, the greater surrounding neighbourhoods of Sint-Pieters, Sint-Jozef and Kristus Koning. We organize the Kaai party in a people- and children-oriented way.

A part of the Sint-Pieterszuidstraat will be made car-free. Several activities will happen and information about the Kaaidistrict is provided in an accessible way.

Location:

- May 18, 2025: Sint-Pieterszuidstraat
- May 2026: Location to be determined

Actions and timing:

- May 18, 2025
- May 2026

State of play (September 2024): initiated

- The date and location were set in collaboration with the neighbourhood worker of Sint-Pieters.
- Initial contacts have been made.
- Preparations will start in October. The first brainstorming session is scheduled, during which the goal, target audience, and various activities will be determined.

Figure 5: Proposed zone the Kaai party 2025 (red) and border of the Kaaidistrict (blue)

5.1.4 Accessible Kaai pavilion

Description:

We are searching for a location and building to serve as a meeting place in the Kaaidistrict. The Kaai pavilion will act as a landmark in the area and a meeting point for passersby. It will also serve as a central information hub and/or gathering point. Workshops (Kaai-ateliers) can be organized here, possibly in collaboration with the Kaaiklappers.

Location:

- Horeca Totaal: relocation of RBSC Clubhouse
- Gamma parking: former Shell Shop
- Spinnerijpad (F31)

Funding: Circular Hub, funding other city departments

Legal framework:

- Apply for permits
- Acquisition by the city?

Actions and timing:

- 2024:
    - Contact NMBS, Gamma, Dovy, and Horeca Foods
    - Test soil quality
    - Seek funding and partnerships for the pavilion's realization
    - Define the concept (funding, stakeholders, collaboration with the Triennale, Circular Hub, students, potential activities, etc.)
- 2025: realization pavilion
- 2025-2026: Program of activities in cooperation with various partners (food, makers, children's camps, Circular Hub, etc.)

State of play (September 2024): Initiated.

Several potential paths have been explored, but several locations have encountered obstacles. Another option is the Shell Shop is located in a desolate area (Gamma), surrounded by hard surfaces and close to the R30. It is not an attractive place, lacks landmark status, and is not a location that passersby would visit by chance.

Figure 5: Examples of a possible Kaai pavilion (left and right), possible location at Gamma (middle)

5.1.5 Visibility in the streetscape

To increase awareness of the Kaaidistrict as a transformation site, we aim to provide maximum information in the streetscape. We also ensure that our contact details are visible so that passersby can easily reach us. Increasing the visibility and recognizability of the Kaaidistrict as a transformation area can be achieved in various ways, such as placing information panels, revitalizing unused zones with simple interventions, or applying tactical urbanism.

a Attractive green zone F31

Description:

We aim to activate the green zone around F31. The F31 is a cycle highway that runs from Bruges to the coast. We want to enhance the experience and spatial quality for passersby and local residents by transforming this area into an attractive zone with flowers, plants, herbs, benches, and more, in collaboration with local residents and schools. We want to create a rest point and a place where more information can be found about the goals of the Kaaidistrict.

Location:

- (1) Green zone at the edge of the Kaaidistrict, owned by Horeca Foods
- (2) The Spinnerijpad (F31) between Horeca Foods and Horeca Totaal as a starting point
- (3) Expansion along F31 along the old railway track

Figure 6: Map of the green zone around F31

Funding: Circular Hub

Actions and timing:

- 2024:
  - Develop a plan with initial realizations in collaboration with the Public Domain Cluster
  - Follow-up session with Kaaiklappers
- 2025:
  - Realization of the attractive green zone with information panels about the Kaaidistrict
  - Organization of the green zone and its enhancement

State of play (September 2024):

- Started:
  - Brainstorming session with local residents: May 30, 2024
  - Discussions with schools and organizations for collaboration
  - Plan development in collaboration with Public Domain Cluster

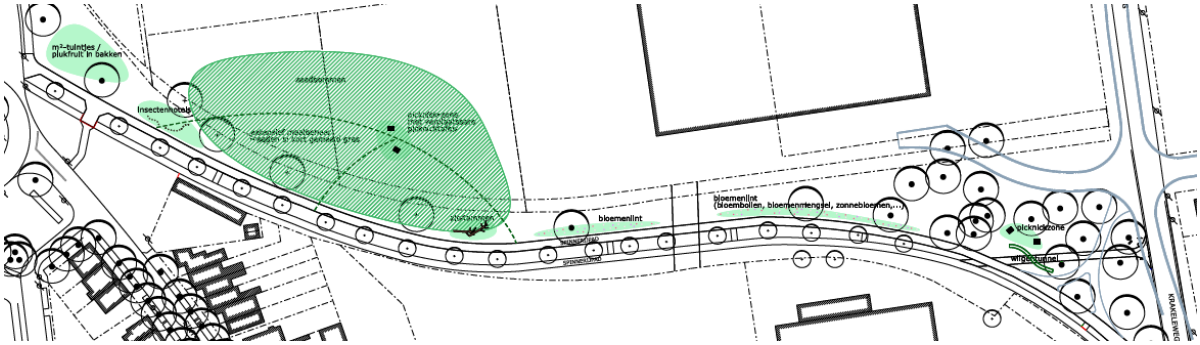


Figure 7: Map of the green zone around F31 and a proposed design

b Façade gardens and green rebels

Description:

The area around the Kaaidistrict currently appears gray and harsh, with a significant amount of paved surfaces, closely aligned with the image of the port area. However, in a sustainable vision for the future, we see a new role for the Kaaidistrict as a key connector between urban green spaces. The water structures and cycling corridors serve as the natural carriers for this area. We aim to maximize the use of the blue-green network in the Kaaidistrict to enhance biodiversity and integrate climate-adaptive measures. As part of this effort, we also want to encourage private individuals and businesses to green and de-pave their front gardens, driveways, and parking spaces.

Funding: current (municipal) grants

Legal framework: apply for permits

Actions and timing (2024-2025):

- Screening the environment
- Contact and facilitate companies and local residents
- At least 5 greening projects in the Kaaidistrict

State of play (September 2024): not started yet

c Street art

Description:

We aim to bring more attention, both literally and figuratively, to the Kaaidistrict. Inspired by 'The Bridges,' the Bruges Street Art Festival made possible by local artist Wietse and the city of Bruges, we want to attract even more street art to the area. The third edition of the festival took take place in 2024. In 2022, the theme centered around the intersection of culture and climate. By 2026, we aim for a peak moment where the Kaaidistrict will be recognized even more as a future hub through street art.

Funding: socio-cultural organisations f.i. Avansa, Republiek, Bruggeplus, ...

Legal framework: apply for permits

Actions and timing (2024-2025):

- Contact Visit Bruges, Wietse (The Bridges), Treepack
- Activate local residents around Tactical Urbanism
- At least two examples of street art (and in a broader sense, tactical urbanism) per year in (or near) the Kaaidistrict

State of play (September 2024):

- Bridges Street art festival 2024: one façade in the Slachthuisstraat has been painted by Naomi King. The festival was situated in Sint-Pieters, Sint-Jozef and Kristus Koning.
- We are exploring the incorporation of street art at the Kaai Party, for example workshops, screenprinting...

Figure 8: Street art project 'Bridges' in Bruges and façade painting of Naomi King in the Slachthuisstraat

d Installation of information panels

Description:

The placement of attractive information panels in the streetscape. The panels are site-specific and on one hand tell the broader story of re-value and our Kaaidistrict, while on the other hand they focus on specific interests of the place, such as the green zone at Spinnerijpad, the R30 with mobility nodes or future developments on specific plots of land.

The pavilion in Kaaidistrict (see Anchor 1 – 3. Accessible Kaai pavilion) is the central hub for information, panels, ...

Legal framework: apply for permits

Actions and timing (2024-2025):

- Increase visibility and recognition in the streetscape by developing an 'information panels plan'.
- Place at least four information panels in the Kaaidistrict, integrated into a broader framework.

State of play (September 2024): Initiated

Exploratory discussions with the communications department, to be connected with the pavilion location

e Circular festival

Description:

Circularity is the common thread within the concept study of the Kaaidistrict. The project aims for maximum circularity in managing flows of waste, water, energy, and materials. The Circular Festival will put the Kaaidistrict on the map, highlighting its focus on circularity. The Kaaiklappers community will also be actively involved in this event.

Actions and timing (2025):

- March 28-29: Brainstorming session scheduled
- Location: Green Zone F31 development?

State of play (September 2024): Initiated.

Circular festival February 2024: circular urban furniture on the site of Slaughterhouse

Figure 9: Pictures of the circular festival in Bruges, 25 February 2024

f Car-free Sunday

Description:

During Car-Free Sunday, we aim to inform visitors in an accessible way about the Kaaidistrict as Bruges' future hub. The event will showcase, on a small scale and interactively, how we envision Bruges in 2050.

Location: city centre

Actions and timing: Yearly car-free Sunday events in September

State of play (September 2024): Initiated.

The first stand was set up on Car-Free Sunday 2024: a part of the Sint-Pieterszuidstraat was made into a scale model, featuring the current buildings and trees, and streetscape at the edges of the model. The children could make the "street of your dreams" with the help of wooden models and white board markers on an acrylic sheet.

Some pictures you can find below.

Figure 10: Pictures of the car-free Sunday in Bruges, 15 September 2024

g Continuation of the Triennale

Description:

The 2024 Triennale has come to an end. For almost five months, 'Spaces of Possibility' took place in the streets of the west part of the city centre with contemporary art and architecture installations. Over 400.000 people discovered streets, parks and squares and looked at Bruges from a different perspective, about what could be possible with public space.

There is already some speculation about the 2027 Triennale. We want to put the Kaaidistrict, tactical urbanism, and the Kaaiklappers on the map and bring the Triennale to North Bruges.

Financing: city of Bruges, Brugge Plus

Actions and timing (2024-2025):

- Discussions with Brugge Plus and stakeholders
- Brainstorming on themes for the 2027 Triennale

State of play (September 2024): Not started yet

5.1.6 Collaboration with universities and colleges

Description:

Current students are of great importance to involve in the Re-Value project, given their potentially valuable contributions from various fields: architecture, sustainable construction, community building, circular construction, sustainable energy technologies, etc. During the course of this project, we want to engage more students from colleges and universities in the realization of (temporary) inspiring developments in the Kaaidistrict. This mainly concerns Vives, Howest, and KUL.

Financing: budget of universities

Actions and timing (2024-2025):

- Establish partnerships with colleges and universities
- Involve students in future (temporary) uses and developments
- Have students work on the Kaaidistrict as part of their bachelor thesis
- At least one collaboration with students per academic year.

State of play (September 2024): Initiated.

In the fall of 2023, the Kaaidistrict and Re-Value were included as a case in the Vives Honours Degree program. The students were given the following challenge: "How can we convince project developers to develop in a climate-neutral and climate-resilient way and to think and act more collectively about their projects, thereby making the Kaaidistrict more attractive for those who live and/or work there?" The assignment evolved into an innovative, climate-neutral, and climate-resilient concept for part of the project area. At the end of December 2023, four groups of students presented their cases.

The first contacts are there to organise new collaborations during the school year 2024-2025.

5.2 Anchor 2: The city and spatial transformation

Objective: GOVERNANCE STRUCTURE – SPATIAL INSTRUMENTATION
The city facilitates and directs the spatial transformation to orient the Kaaidistrict as a transformation site in the right direction. To succeed in this, the quality of integrated processes and project management is extremely important. This means we must efficiently manage project or policy objectives, embed them in a legitimate process, and translate them into practice.

The city acts as a director and thus has many tools to establish frameworks and collaborations.
We can speak of striving for an "Extended Valuable Proposition," a comprehensive value assessment.
We aim to use spatial instruments and innovative approaches to achieve climate neutrality and high-quality spatial transformation. In this way, there are tangible qualitative benefits for both parties: the city as well as developers, landowners, and local residents.

To experience these tangible benefits:

- **Collaboration is essential**, across property boundaries and between private and public parties.
- **Policy stability, predictability, and foresight** are required: the continuity and predictability of laws and regulations, enabling involved parties to adapt to new rules and providing legal certainty for investments and projects.
- **New integral concepts related to circularity** (energy, water, materials) are needed.
- We aim to **implement socially relevant business models**.

KPI's:

- Realization of RUPs (Spatial Implementation Plans)
- Non-contestable environmental permits
- Collaboration between different land owners regarding energy, spatial quality, water, ...
- Master plans that are executed and finally evolving to realisation

5.2.1 City atelier

Description:

A city atelier is being established as an overarching entity between various city services involved in urban development in the Kaaidistrict. Projects that shape the city's image will be submitted to the city atelier. These are projects that have a significant impact on spatial quality and the cityscape. The goal of the city atelier is to anchor the ambitions and objectives in the Kaaidistrict, qualitatively assess complex projects, provide solution-oriented support to project developers, improve efficiency, and simplify administrative processes so that the city can approach the developer/owner with a clear and internally unified position.

Location: Oostmeers, Bruges

Actions and timing: Monthly meetings since February 2024 with a pre-established agenda.

State of play (September 2024): initiated, 5 city ateliers done

Figure 11: Pictures of the first city atelier in Bruges, 8 February 2024

5.2.2 Implementation of spatial tools

a Masterplan

Description:

The city wants to take on the role of director in the further development of the Kaaidistrict. The Kaaidistrict has been identified by the city as a transformation site. Aside from the public domain, the city holds no land positions there and is therefore dependent on the pace of private parties. The city's ambition is to redevelop the area into a space with layered, diverse, and multifunctional use. This can only be achieved through collaboration between the various stakeholders: landowners, city services, developers, and architects. The city asserts that more is possible when collaboration occurs. Therefore, the city facilitates this cooperation by developing master plans for building blocks in partnership with stakeholders and an external party, through dialogue, co-creative research, and forming a shared vision for the respective zone.

Actions and timing:

- Realise the masterplan in co-creation with the home and retail owners
- Follow-up of future developments
- Facilitate the home and retail owners

Options for master plans in 2025: Makers District east of the lock, food hub.

State of play (September 2024): initiated

A first master plan is being drawn up for the building block Slachthuisstraat – Sint-Pieterskaai. This concerns a zone with 12 smaller and diverse plots, located south of the new development of the slaughterhouse site (ION). This master plan will be delivered in February 2025.

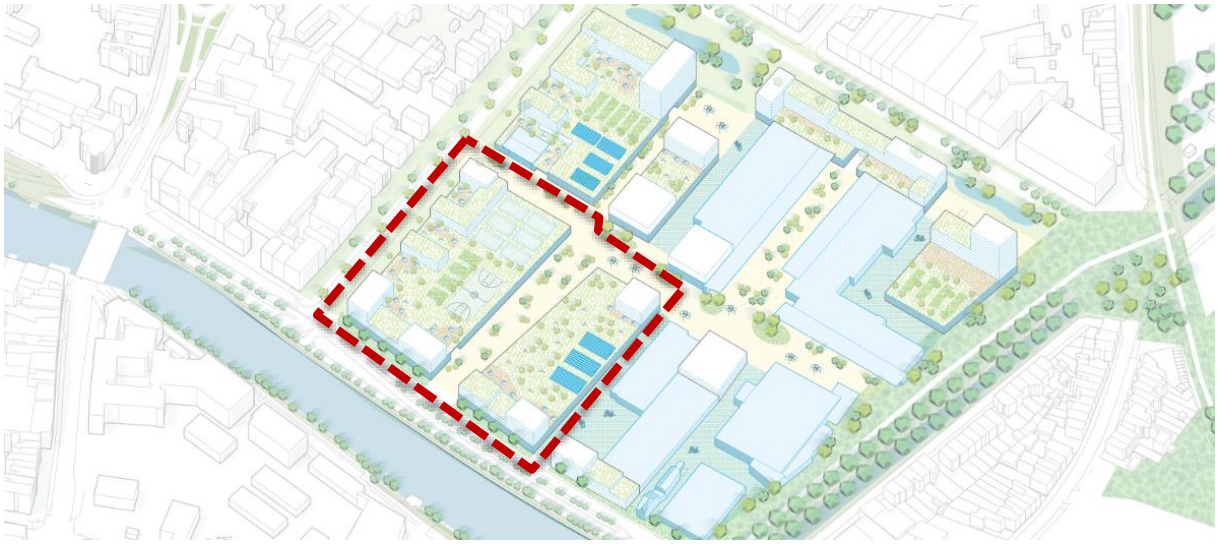


Figure 12: Map of the Retail cluster, masterplan building block Slachthuisstraat / Sint-Pieterskaai

b Charette period

Description:

A charrette period is a collaborative brainstorming session between two or more developers/architects, within a defined time frame, working towards a shared vision. During this intensive period, with feedback moments and two city workshops, a vision is developed for the entire building block, guided by certain principles as signposts. The city aims to engage in an open dialogue with the developers and architects of an entire building block or several plots, in order to achieve a shared master plan for the block within a limited time and with a strict deadline. The city's ambitions to bring the future vision, outlined in the concept study, to fruition are high.

Actions and timing:

A subsequent charrette period may possibly be organized for the development of the master plan in the retail cluster.

State of play (September 2024): initiated

A first charrette period is being organized in October 2024 for the building block in the Makers District to the west of the lock. Developers CAAAP and Global Estate have concrete plans to redevelop plots there. The charrette period will be led by Umpalumpa. The two city ateliers are scheduled for Monday, September 9, and Wednesday, October 16, 2024.

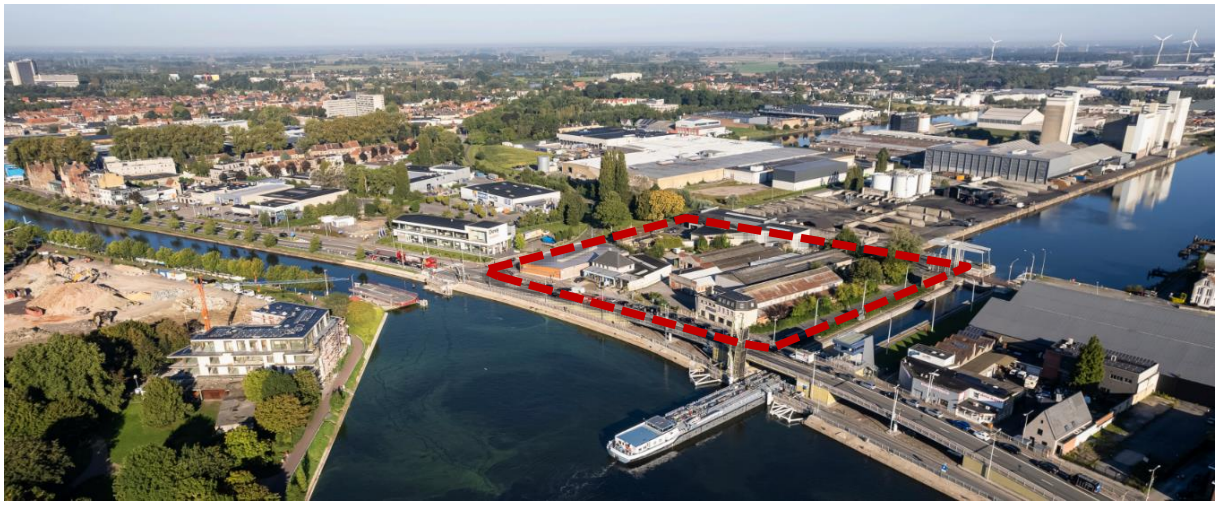


Figure 13: Picture of the building block in de Makersdistrict (charette period)

c Spatial implementation plan

Description:

The current Kaaidistrict area has several spatial plans that no longer fit with the city's vision and the outcome of the concept study. The Retail cluster is currently covered by BPA 21 Sint-Pieters Zuid-Oost from 1993. The regulations allow, among other things, commerce, catering, offices and other economic activities in a maximum of three storeys. Residential is restricted to the company residence or a capped multi-family dwelling. Residential on the first floor can be up to 16m deep. A maximum of 30% of the floor area and a maximum of 300m^2 can be used for living. Site occupancy is limited to 80%. This limited area for residential therefore deviates from the concept study.

The Food Hub and the Makers District fall under the regional RUP 'demarcation regional urban area Bruges' (GRUP 118 - subplan 2), in the subarea 14 Sint-Pieterskaai, approved in 2013. In it, there is ambiguity about the conformity of 'makers + living' with the zoning regulations, which allow 'living above shops' in addition to 'specific regional business area for retail and offices'. Further, the regulations do not ensure the desired development in the food hub.

Furthermore, recent legal developments must be applied: on May 17, 2024, the Flemish Government ratified amendments to the Environmental Permit Decree. The "environmental decision" was introduced, allowing spatial impulse projects, works of general interest, and activities related to business operations to be realized more quickly. An environmental decision simultaneously rules on the environmental permit and the modification of a BPA (Special Zoning Plan) or RUP (Spatial Implementation Plan) within the planning area. The implementation of this system and the

environmental decision is dependent on the adjustment of the Environmental Permitting Decree and the further development of the Environmental Portal. There is currently no clarity on this, which is why drafting a RUP offers the most certainty.

Legal framework:

- VCRO: Flemish Codex on Spatial Planning (Vlaamse Codex Ruimtelijke Ordening)
- Environmental Permit Decree

Actions and timing:

A municipal RUP (spatial implementation plan) must be drawn up to allow the execution of the concept study. The drafting of a RUP, due to various steps such as reports, public consultations, public inquiries, GECORO (Municipal Commission for Spatial Planning), etc., can take several years.

State of play (September 2024): initiated

In August, the drafting of an initial note was started. Delegation and approval will be requested from the Flemish government as soon as possible.

5.2.3 Implementation of NEB Impact model and NEB compass

Description:

The New European Bauhaus Impact model is an assessment and guidance tool that can be used in complex urban developments. The approach fully integrates the triple bottom line of the New European Bauhaus (sustainability, beauty and inclusion). The Impact model can be optimally used at different levels: building block, neighbourhood and city. It is structured in such a way that cities can use their existing indicator sets and monitoring processes (e.g. 10 core indicators of Flanders) as building blocks for integrated planning. The NEB compass is already mentioned in chapter 4

Actions and timing:

- Reflecting on the Impact model and compass on a regular basis and consulting with the permit officers
- Consistently testing projects assessed within the city atelier against the Impact model indicators
- Linking existing indicators and tools to NEB Impact model
- Assessing the three core values and working principle for the project.
- Thinking about up-scaling the NEB tools for the whole city

State of play (September 2024): initiated

Meeting indicators with permit officers as input for update of the Impact Model

5.2.4 Trade covenant

Description:

A trade covenant is a voluntary agreement between one or more developers and a local authority. The conclusion of trade covenants is regulated by Article 5 of the Integral Trade Settlement Policy Decree of 15 July 2016. This Integrated Commercial Establishment Policy aims to create a policy at both vision, plan and permit level based on four overarching basic objectives:

- creating sustainable retail establishment opportunities, including avoiding undesirable retail ribbons
- ensuring an accessible offer for consumers
- ensuring and enhancing liveability in the urban environment, including strengthening core shopping areas
- achieving sustainable mobility.

On this last point, a trade covenant in the Retail Cluster can be used. Indeed, there is a need for conclusive parking management in the Retail Cluster in order to tackle the high level of paving, aim for a modal shift and increase the spatial quality of the zone.

Legal framework:

- Cooperation agreements
- Urban development company? SPV? Other development vehicle?

Actions and timing (2024-2025):

- Talk to as many owners/developers/stakeholders as possible: get to know each other's incentives, goals and convince them to work together.
- Consultation cluster Environment (OMV + planning and policy) - PoAB (Port of Antwerp-Bruges)
- Research Adaptive structure for building parking buildings
- Adapt urban development regulations (e.g. maximum parking standard)
- Optimise bicycle parking (scale up, in 'garage', etc.)

State of play (September 2024): Not started yet

5.2.5 Circularity

Within the concept study, maximum circularity is prioritised within the Kaaidistrict. It is proposed to manage at least the flows of water, energy and materials. Food can be added to this.

a Water

Description:

Future developments should comply with the recent stormwater ordinance. In it, rainwater neutrality and primarily reuse are prioritised. Besides traditional reuse in households and businesses, reuse for

irrigation of crops in the food hub is also ensured by sufficient storage. This is the only way to address the drought problem.

Rainwater that is not reused is infiltrated via above-ground infiltration zones. These zones can be an integral part of the green-blue network. Where necessary, cooperation is established across plot boundaries to optimise the blue network.

In terms of wastewater, a separate sewage system is obviously the norm. Additional links must be sought with neighbouring industry to recover water and/or heat. Setting up a separate grey-water network should therefore be investigated.

Actions and timing:

- elaboration of blue network throughout the various master plans
- study grey-water network and links to neighbouring businesses and the port

Legal framework: regional and local rainwater regulation

State of play (September 2024): Not started yet

b Energy

- **Renewable electricity**

Description:

The development of the Kaaidistrict is based on 100% renewable energy. The use of fossil fuels will be excluded. We want to maximise renewable energy, integrate low-threshold sustainable forms of renewable energy, maximise PV and research energy sharing.

Actions and timing:

2024:

- Putting specifications in the market for study: on which roofs in the Kaaidistrict should low-threshold PV, roof gardens, green roofs, greenhouses, other activities be deployed + inventory innovative techniques PV roof tiles / cladding
- Explore possibilities for PV on Entrepot (sustainable construction that can be built/moved modularly + energy parts
- Putting specifications on the market for study: possibilities for aquathermal and geothermal installations + advice on urban development charges
- Wouter Demuynck (Gruund): working out concept/management model to develop collective heat/energy

2025:

- Explore solar carports/parkings (temporary - circular)
- Pilot project provided with collectively useable cistern + infiltration, use by both OD and the buildings themselves on the site.

- Pilot project: softening and greening of existing development
- Exploration function engine room of a new housing development on the site of slaughterhouse (with developer ION)

State of play (September 2024): initiated

Re-Value partner VITO simulated three scenario's regarding energy demand in the Kaaidistrict:

- Current situation of the built environment in the Kaaidistrict
- New situation according to the concept study with several assumptions
- New situation with high ambitions for energy transition

The results of the simulation can be found in annex.

- **Heat**

Description:

Preparation of a study on opportunities for aquathermal and geothermal energy in the Kaaidistrict. This involves working across parcels. Furthermore, possible cooperation with the surrounding industry to exchange water, heat and energy is being investigated. This involves a local heat grid for the Kaaidistrict, with the possibility of connecting to the existing grid (IVBO).

Actions and timing (2024-2025):

- Close collaboration with developers in order to realise collective sustainable heat
- Facilitate developers and link them to experts

State of play (September 2024): initiated

Further investigations with VITO regarding district heating in the Kaaidistrict. VITO simulated a district heating network for the two scenario's of the new situation (concept study and high ambitions).

The results of the simulation can be found in annex.

- **Collective neighbourhood renovation**

Description:

Deploying the Neighbourhood Renovation Tool (VITO) to renovate and decarbonise existing and preserve (residential) fabric. Through five steps in a data-driven system, it works with stakeholders to efficiently identify renovation needs.

- Analyse: Gain insight into the current state of the residential built environment and its inhabitants
- Simulate: Calculate the impact of renovation strategies. Discover opportunities for collective renovation and sustainable heat networks through data analysis.
- Refine: Respond to the local context by simulating the impact of policy instruments.
- Engage: Prepare climate tables and engage homeowners with a clear, tailored plan.

- Follow up: Prepare, implement, and follow up on renovations.

Actions and timing:

2024: meeting with climate team and neighbourhood climate coach Sint-Pieters

2025: start collective renovation

2026: renovation of at least 5 private houses

State of play (September 2024): initiated

Meetings with VITO regarding energy model in the Kaaidistrict about what should be the best way to decrease the energy demand. The insights can be read in annex.

c Materials

Description:

Material flows should be conceived circularly. For water and energy, there are known systems. Material flows can also be mapped. The reuse of existing buildings is an example, insofar as they can be adapted to contemporary standards. In case of (partial) demolition, material flows should be mapped.

Furthermore, there are numerous ways to close material flows. The recycling shop is the example. However, the scale should be raised to an 'urban resource centre'. Here, products are handed in, repaired, traded and exchanged. This at the level of both individuals and businesses. This 'urban resource centre' can also serve as a depot for building materials to be reused.

Actions and timing:

State of play (September 2024): not yet started

d Management model

State of play (September 2024): not yet started

5.2.6 Revision of urban planning regulations

Description:

The current Bruges Urban Planning Regulation dates back to May 1, 2011, and is in need of revision. Today, the regulation no longer aligns with the current vision of mobility. It operates with minimum parking standards, making it difficult to incorporate shared mobility solutions, and leaves little room to develop alternative mobility modes in large projects. Thirteen years ago, oversized bicycles were not yet included in the regulations, but they are now an essential part of urban mobility. Additionally, important regulations to ensure housing quality are missing. For example, no specifications are made regarding minimum outdoor spaces for housing units or the sizes of bedrooms.

Actions and timing: legislature 2024-2032

5.2.7 Urban planning charges

Description:

The various developments in the Kaaidistrict are only possible if viewed beyond individual plots. Therefore, urban planning charges are necessary to ensure that the entire district is developed and made attractive.

In connection with the optimization of the current street pattern, a new slow traffic network must be created within the different clusters. Various pathways will provide access to public/private areas where motorized traffic is not allowed.

Additionally, zones around the plots will be designated where a targeted approach can offer significant added value. For the Makers District, this could involve the buffer with the harbor or the area around the high Boudewijn Bridge. In the retail cluster, slow pathways are part of the urban planning charges.

Actions and timing:

2024:

- Consensus on the urban planning charges for the development of the Slaughterhouse site (ION) and the Makers District (GEG and CAAAP).
- Calculation of costs for the development of public space
- Acquiring expertise in real estate calculations

2025:

- Drafting of regulations for urban planning charges by the Environment Cluster and the Public Domain Cluster (see Neteland, Antwerp) if deemed necessary
- Imposing the required charges for each development or master plan

State of play (September 2024): initiated

First meeting with permit officers, department public domain and the lawyer

5.3 Anchor 3: Design by research

Design by research forms one of the essential components for the implementation of the concept study. Through additional research, such as the mobility study or an in-depth investigation into makers, the concept study will be adjusted where necessary. The concept study should therefore not be seen as a fixed document. However, the spirit of the concept study must always be taken as the starting point. Progressive insight is of paramount importance in the development of the Kaaidistrict.

KPI's:

- Realisation of the 37 actions in the dynamic mobility roadmap
- Realisation of the new Krakele bridge
- Realisation of a makers district

5.3.1 Monitoring the dynamic roadmap (mobility)

Description:

The city of Bruges commissioned a mobility study to test the ambitions and vision from the concept study against the traffic carrying capacity of the Kaaidistrict (pilot area of Re-Value). This concerned both the 'narrow' carrying capacity of roads and intersections and the 'broad' carrying capacity of quality of life and road safety. A dynamic roadmap was drawn up for this study with 37 actions that depend on specific developments (private developments, reconstruction and redevelopment of public domain, traffic calming criteria) and their speed. The aim is to achieve modal shift in the Kaaidistrict. This requires both push and pull measures. The public domain adjacent to the Kaaidistrict is characterised by its industrial past. With the future intertwining of functions, the public domain needs to be adapted to contemporary standards, without losing sight of business activity. Building a slow network is therefore a must.

Listed below are a few examples of actions from the roadmap that should ideally be prioritised and realised in the Kaaidistrict as soon as possible in order to implement the modal shift and to make the change in program possible in the future. Two actions are described more in detail.

- Cut a couple of streets
- Realise turning points on R30 (ring road)
- De-pave and green large streets and roundabouts
- Set the setback line in order to create a 'city boulevard' – more experience and spatial quality along the water
- Measures park management
- Redesign intersections
- Provide bike paths

Actions and timing (2024-2025):

- Annual evaluation and update of the actions carried out
- Close contact with the mobility service and Bart Slabbinck
- Maximally facilitating the implementation of actions

State of play (September 2024): Initiated, first evaluation of the roadmap 2024

a Sint-Pieterszuidstraat and Slachthuisstraat

Sint-Pieterszuidstraat is today characterised by two parallel lanes, leading to an oval roundabout at Slachthuisstraat. A local truck parking area is also connected to this rondabout at the slaughterhouse site. With a total width of more than 65 metres in the area of the truck parking and more than 35 metres at the V-mart, this street could be much more attractive.

Slachthuisstraat is a 25-metre-wide avenue with newly planted trees on both sides. The lack of full-sized high-trunk greenery and wide concrete flats contribute to the urban heat island. However, full-grown trees are still present at the rondabout and truck parks.

The concept study and mobility study make a statement about the adjustments in terms of mobility. The optimisation of the public domain should contribute to:

- Less paving
- Preserving existing trees
- Integrating greenery and water
- Increasing road safety

In addition, a solution must be provided for the local truck parking. Without an alternative location, it should be retained in its current location. Once a new housing development next to the park site is completed, the current car park will accommodate around eight trucks belonging to local truckers who park their vehicles in the evenings or at weekends. In principle, this car park is not intended for overnight parking.

Actions and timing:

2024: (in)actual use of truck parking mapping

2025:

- Explore alternatives for local truck parking
- New design of the Sint-Pieterszuidstraat

b Sint-Pieterskaai

Sint-Pieterskaai is mentioned several times in the dynamic roadmap. Reference is made to creating additional turning points on Sint-Pieterskaai that can alleviate the R30 intersections. In addition, the city wants to turn it into a 'city boulevard'. This will require a reverse construction line along the side of the Quay District in places where there is no protected cityscape. A quick win is also to rationalise the number of entrances and exits along Sint-Pieterskaai.

Actions and timing:

2024: Look up all permits for plots on Sint-Pieterskaai. Work with local stakeholders to draw up a vision for entry and exit.

2025: follow-up dynamic roadmap

5.3.2 Makers study and follow-up

Description:

The maker study first refined the spatial-economic ambitions for the Makers District. An exploration of the manufacturing sector in and around Bruges was carried out. West of the lock there are opportunities for a clustering of small-scale manufacturing activities in one 'makershub', supplemented by offices for creative professions and research. East of the lock there are opportunities to expand and cluster larger activities around an 'urban resource center'. To effectively realize the interweaving of making activities, a design discussion model has been drawn up.

Financing:

- subsidies VLAIO: supra-local issuance policy and area director
- developer and WVI (intercommunal organisation)

Legal framework: PPS and collaboration agreement

Actions and timing:

- 2024: regarding west side of the lock
    - Exploring management model with possible PPP in cooperation with WVI
    - Exploration of creative makers in cooperation with Republiek
    - Exploratory talks with interested makers
- 2025: Development management model

State of play (September 2024): Initiated, first meetings with WVI and Republiek

5.3.3 Study of Krakelebrug

Description:

The Krakelebrug, a movable bridge on the Ghent-Ostend Canal, dates from 1921 and is currently inaccessible to road traffic since it was damaged by a collision on 22 September 2022. A repair proved too complex. The replacement of the Krakele Bridge was already included in the list of structures to be rebuilt. A study was launched for the design of a new bridge. Meanwhile, an SWO was drawn up between De Vlaamse Waterweg, AWV, Farys and the city of Bruges'.

The new bridge will be constructed as a 'table bridge' to minimise the impact on surrounding residential projects and the World Heritage Site. The waterway and clearance width will be optimised, and the bridge deck will be substantially widened so that there will be two driving lanes, a two-way cycle path (connecting to the surrounding cycle highways) and pedestrian zones on both sides.

Actions and timing (2024-2025):

- Stay up-to date – keep contact of mobility colleague
- Take part of meetings with the project steering group

State of play (September 2024): initiated

- Approval project note Krakele bridge
- Info market 27 June 2024

6. Budget and long term financing

The Re-Value budget covers a large part of the investments within the Re-Value project.
Extra budget will be found through:

- Riding the current municipality grants
- Flemish subsidy projects and funding
- European subsidy projects and funding
- Collaboration with the Circular Hub, socio-cultural organisations, universities in Bruges
- Adding an urban development cost for developers

Actions that need extra budget apart from the Re-Value project are mentioned in the action plan.
Long-term budget will be found and partnerships will be concluded throughout the Re-Value project. Innovation Cycle 3 and GIB will guide is in the right direction. Together with other partners we will look for solutions and new financial instruments.

7. Conclusion and next steps

The city of Bruges developed a Re-Value action plan, based on and resulted from the Impact model workshop, the Re-value program and the local initiatives and energy. The action plan consists of 3 large parts, 3 anchors: Community building, Spatial transformation and 'Design by research'. The plan, described detailed in chapter 5, is a living document and will be regularly adapted. The plan will evolve to a broad supported document which could be used for other neighbourhoods in the city or in other cities all over Europe. During the next two years the city of Bruges is eager to realise each action as a step towards climate neutrality and high spatial quality in the Kaaidistrict. Every action will be assessed according the used efforts and budget. Continuous exchange with other Re-Value cities will help the city of Bruges to reach the ambitious goals the city set. The action plan will be approved by the board of mayor and aldermen at the end of 2024.

About Re-Value – Re-Valuing Urban Quality & Climate Neutrality in European Waterfront Cities

The Re-Value partnership consists of nine European waterfront cities and selected European organisations that work to make the urban transition irresistible for everyone. This is done by demonstrating how climate neutrality and urban quality can be aligned, by re-valuing the cities' connection to their waterfronts, strengthening co-benefits and mitigating potential adverse impacts.

Ålesund (Norway), Bruges (Belgium), Burgas (Bulgaria), and Rimini (Italy) demonstrate how integrated urban planning and design can be optimally deployed to achieve climate neutrality and significantly reduce GHG emissions by 2030. In addition, Cascais (Portugal), Constanța (Romania), İzmir (Türkiye), Písek (Czechia), and Rijeka (Croatia) learn, replicate and develop their own participatory story-building, data-driven scenarios, and financial and partnership models on integrated urban planning and design to accelerate their journeys to climate neutrality.

The partnership is coordinated by the Norwegian University of Science and Technology (NTNU) and is funded by the European Union's Research and Innovation funding programme Horizon Europe under grant agreement 101096943.

Learn more about the partnership and the outcomes on re-value-cities.eu.

Partners

Annex: Detailed description of Bruges and its waterfront pilot

1. Pilot in Bruges

Bruges is the capital and largest city (in terms of population) of the Belgian province of West-Flanders. Bruges has thirteen sub-municipalities: Bruges centre, Kristus-Koning, Sint-Jozef, Sint-Pieters, Koolkerke, Sint-Andries, Sint-Michiels, Assebroek, Sint-Kruis, Dudzele, Lissewege, Zwankendamme and Zeebrugge.

The Kaaidistrict is located in the north of the historical centre (Sint-Pieters).

Image: Aerial photo of Bruges

1.1 History and geography

Bruges, situated at the interface of the coastal plain and the inland, originated during Roman times as a small settlement along a tidal channel. The city grew thanks to a secure fortress built in the 9th century as a defence against the Normans. Baldwin I, the first Count of Flanders, settled in Bruges, and his descendants made the city the power centre of the County of Flanders.

In the early Middle Ages, Bruges developed into an international port and trading city, especially due to the Flemish cloth trade. In the 14th century, the Burgundian court connected with Flanders, leading

to a period of prosperity and the Golden Age of Bruges. However, after the death of Duchess Mary of Burgundy in 1482, a decline ensued, and Antwerp took over the role of the trading metropolis.

Bruges underwent centuries of wars and changes in power but retained its Catholic identity. During the Belgian independence in 1830, Bruges was impoverished, but its connection to the Belgian rail network in 1838 brought new opportunities. The city revived, partly due to an English colony and a revaluation of Gothic architecture.

In the late 19th century, Zeebrugge was built as a new seaport, and in the 1970s, Bruges underwent a visionary urban renewal project focused on historical renovation, sanitation, greenery, and reducing car traffic. This contributed to Bruges' status as one of the most beautiful and pleasant cities to live in.

Image: Ferraris map of Bruges in 1777

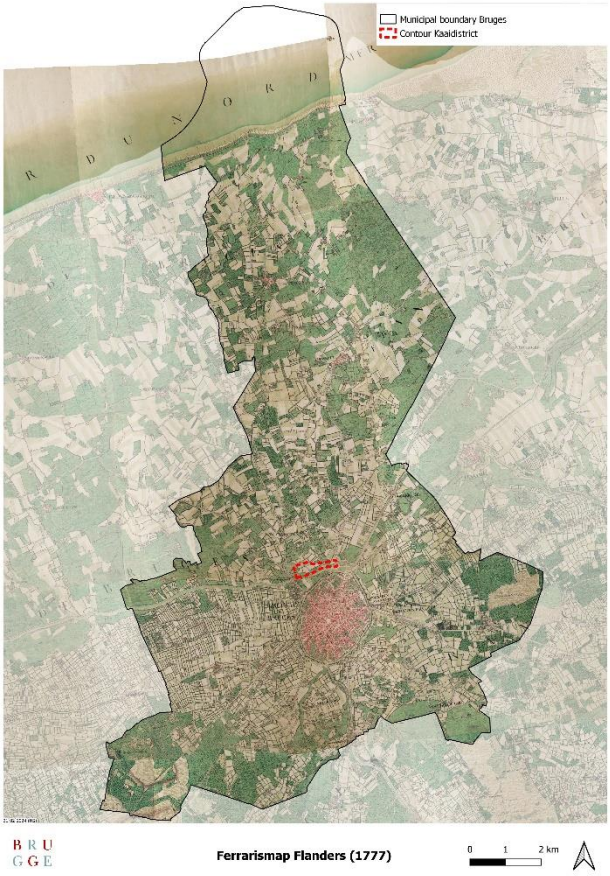
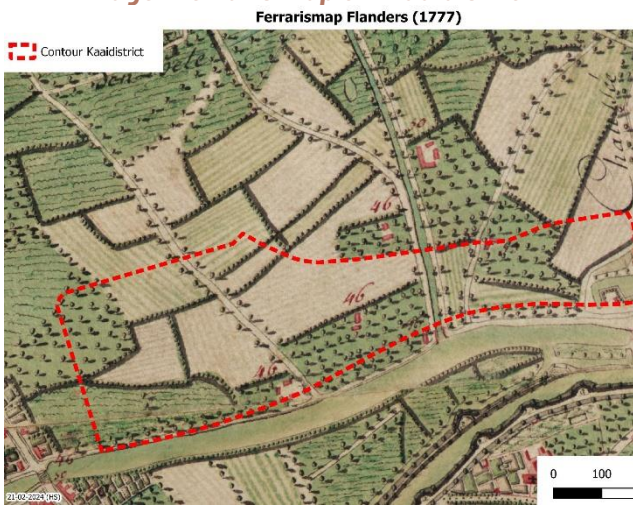


Image: Ferraris map of "Kaaidistrict"



1.2 Demography, housing and income

According to the figures from 2020-2021, the city of Bruges is characterised demographically, compared to Flemish and national averages, by an overall above-average proportion of seniors (approximately 25% of the population is over 65 years old), a lower proportion of young people, a low percentage of immigrant residents, a limited number of job seekers, and an above-average level of prosperity.

In terms of population density, Bruges scores lower than most central cities. When considering the total area, Bruges is larger compared to other central cities. In 2021, the city of Bruges has a population of around 120,000 residents. The local inhabitants of a city or municipality have a significant impact on the economy in all its facets.

Table: Area – number of inhabitants and population in Bruges (in comparison with other cities in Flanders)

Region	Area (in km²)	Number of inhabitants	Population density[number per km²]
Aalst	78,66	87978	1119
Antwerpen	204,3	529417	2599
Brugge	140,99	118467	843
Genk	87,59	66673	762
Gent	157,74	263703	1674
Hasselt	102,68	79089	772
Kortrijk	80,7	77213	959
Leuven	57,51	101032	1758
Mechelen	65,8	86911	1327
Oostende	40,95	71755	1755
Roeselare	60,4	63763	1058
Sint-Niklaas	84,19	79357	952
Turnhout	56,71	45874	811

Below you can find per statistical sector:

- Number of inhabitants in Bruges
- Proportion of tenants in Bruges: at least 36% of the households in the Kaaidistrict are tenants.
- Average tax incomes in Bruges: The incomes in the Kaaidistrict are on average lower than the average income in Bruges.

Image: number of inhabitants in Bruges

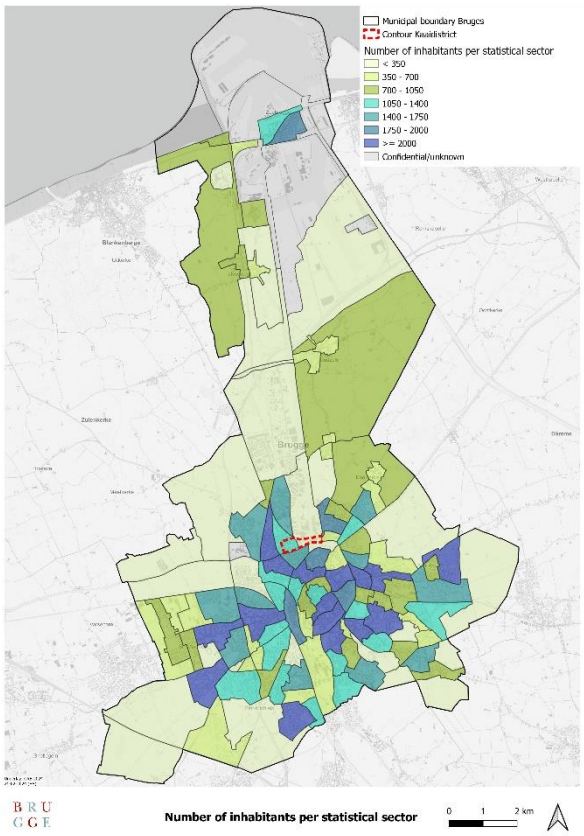


Image: proportion of tenants in Bruges

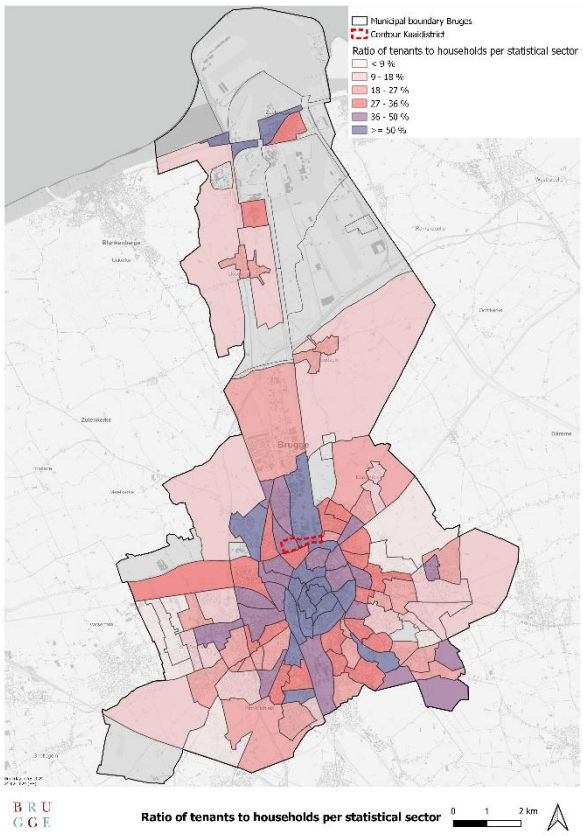
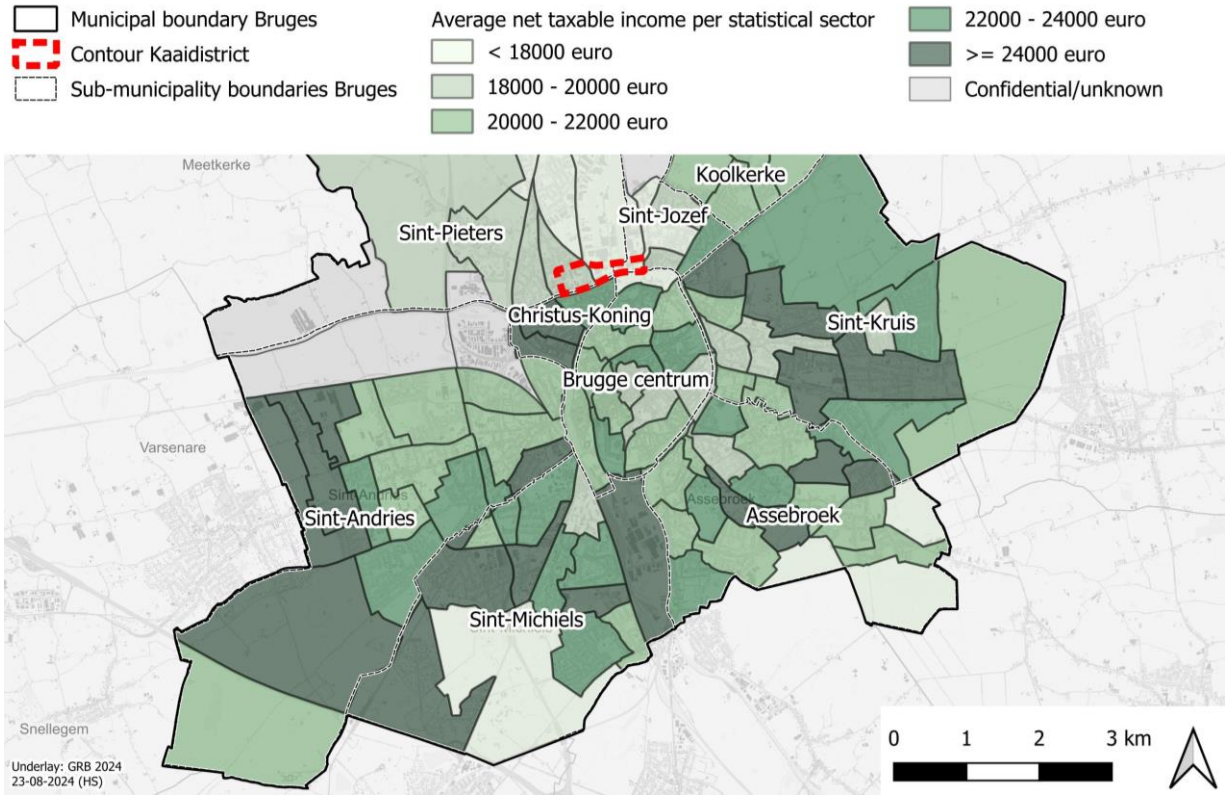


Image: average net taxable income



1.3 Building and energy

Image: gas consumption in Bruges

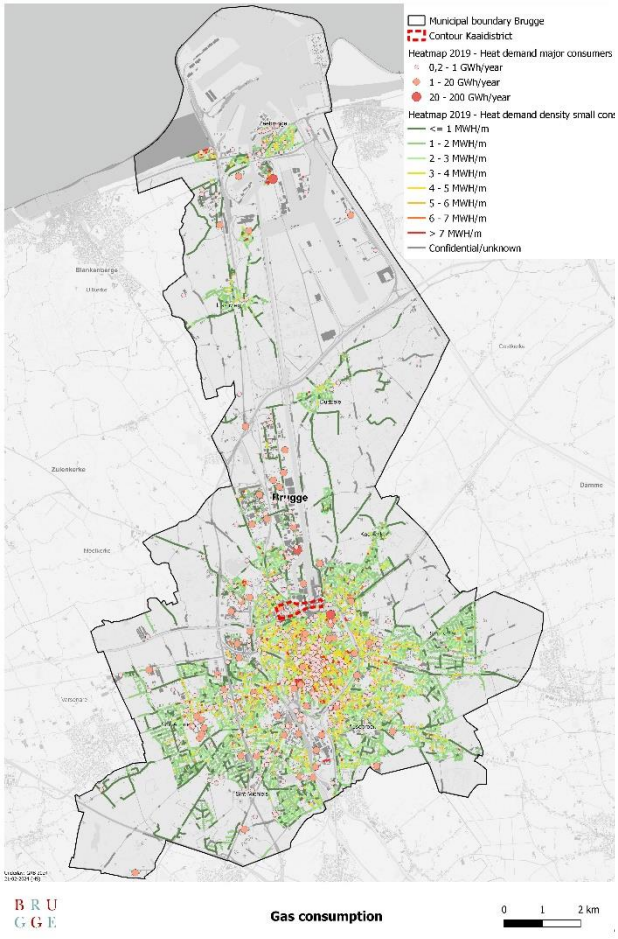
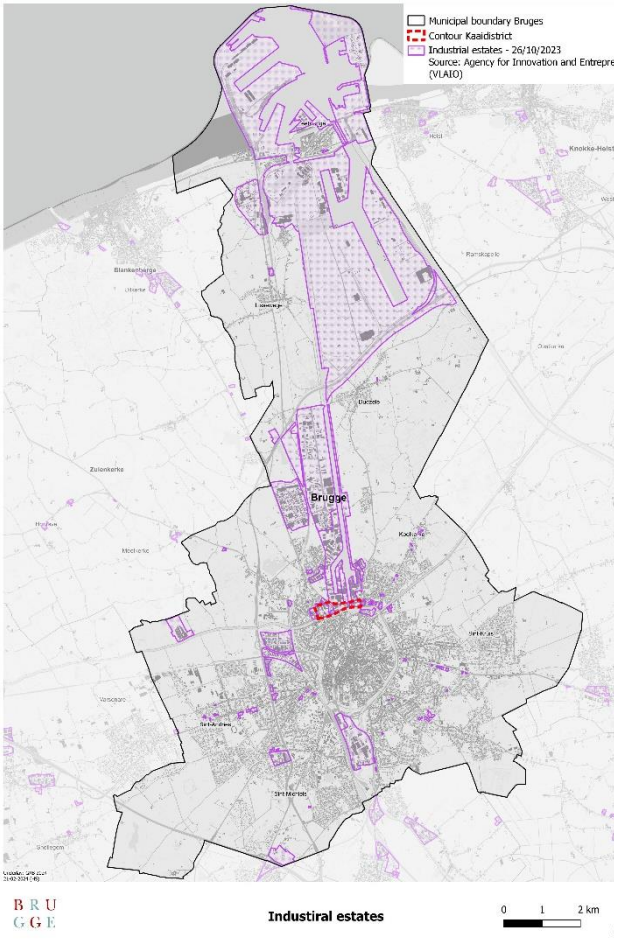


Image: industrial estates Bruges



2. Spatial Planning

No western country was as late in enacting legislation in the field of spatial development as Belgium. The first Belgian legislation on spatial planning dates back to 1962: the 'Law on the organisation of spatial planning and urban development.' In the 1970s, the drafting of the first regional plans began.

2.1 Regional plan and Special development plans

The regional plan is an outdated planning instrument that is only still in effect in places where it has not been replaced by a newer plan. The most recent regional plans date from 2000. After 2000, many areas saw changes in the designations of the regional plan through the creation of 'spatial implementation plans'.

The regional plan is a spatial plan that assigns an exact function to the territory in the Flemish Region. Colours indicate the purpose of each zone (e.g., residential area, industrial area, agricultural area, forest, nature or park area, community facilities, and public utilities, etc.). The government's vision on future spatial planning is presented to some extent using hatching.

A royal decree in 1972 established the legal basis for the development of regional plans. The various sub-plans were approved between 1976 and 1980. If necessary, these plans could be further detailed by general development plans and special development plans. Special Development Plans in particular, were widely used. The existing special development plans remain in force until a Spatial Implementation Plan is established to replace the special development plans.

Image: Regional Plan of Kaaidistrict

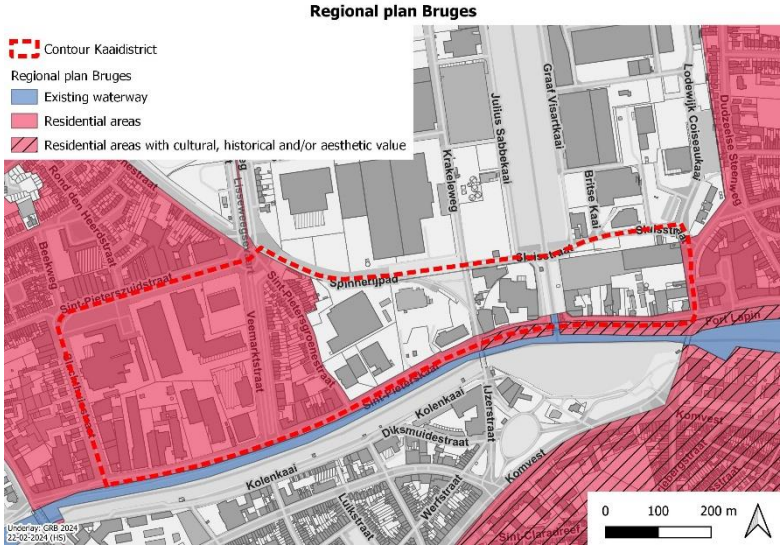


Image: Regional Plan of Bruges

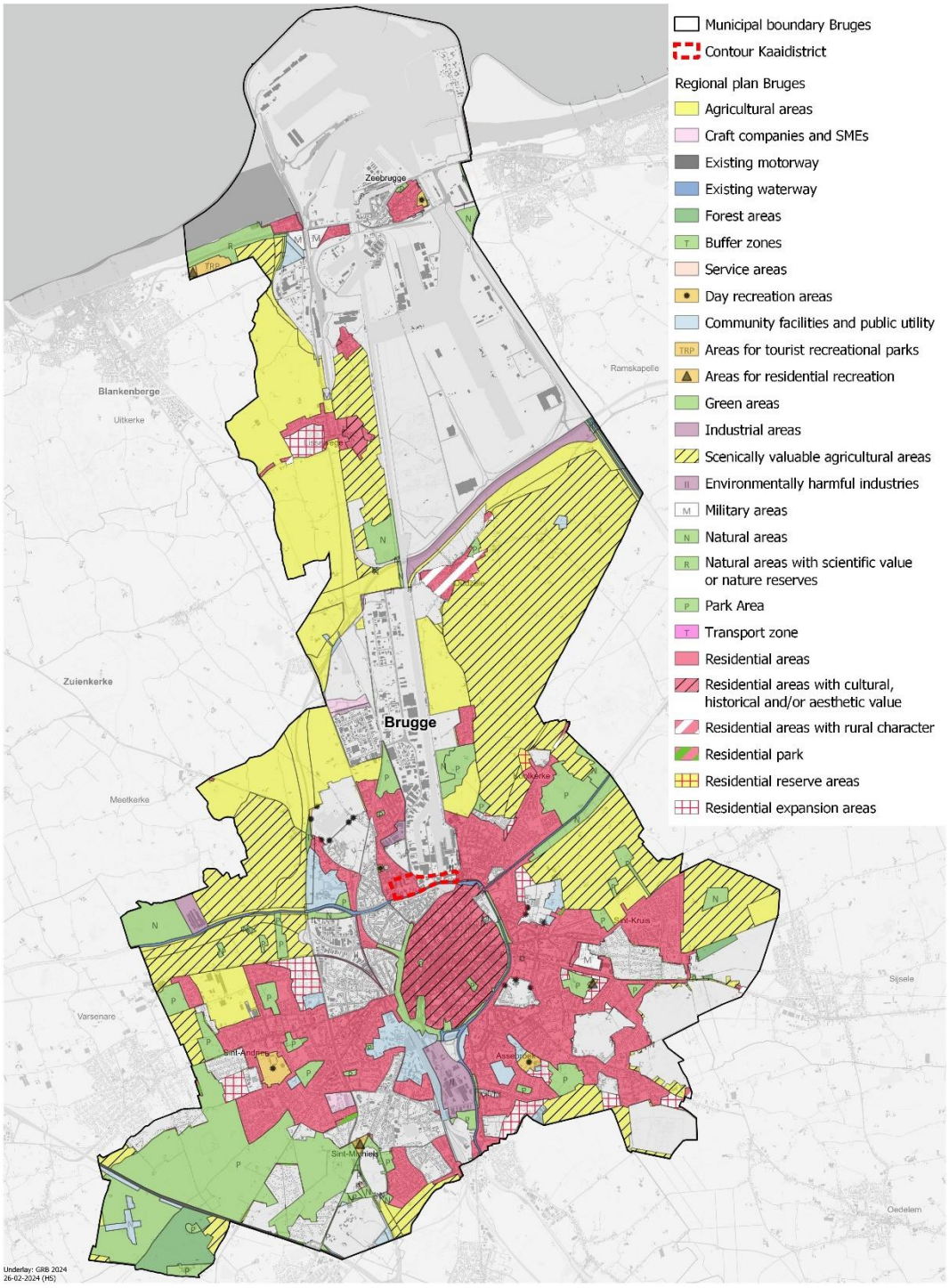
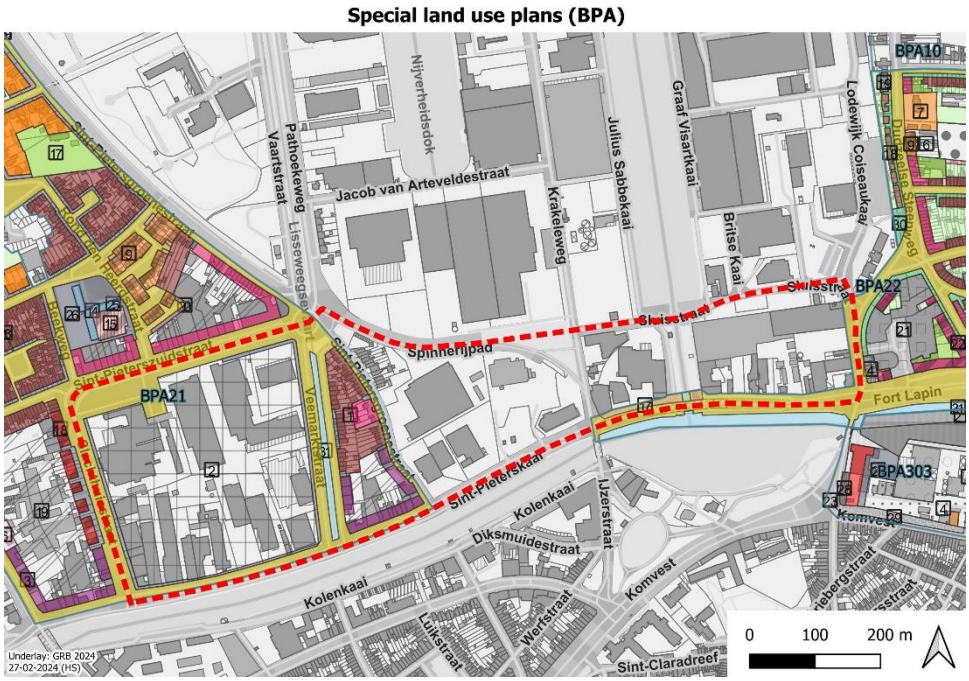


Image: Special development plans of Kaaidistrict



The legend of the Special Development Plan can be found on p.55.

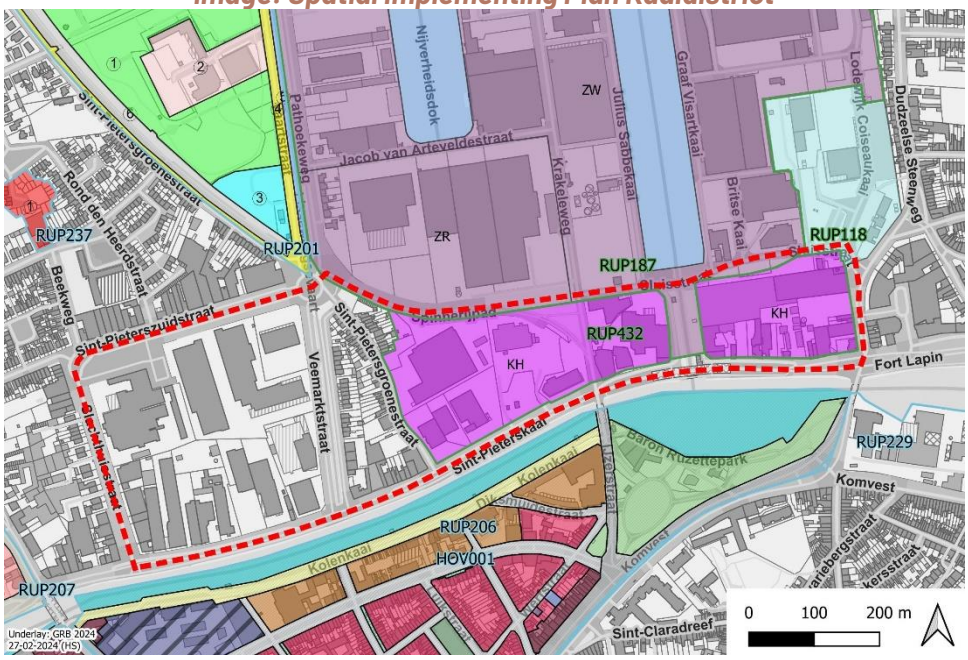
2.2 Spatial Implementing Plan

Since 1996, a spatial implementation plan has been the successor to regional plans and special development plans. These plans allow the government to determine land use in a specific area. A spatial implementing plan always replaces existing zoning plans (e.g., regional plan, special development plans, older spatial implementation plans). It forms a legal framework and is binding for citizens, developers, or applicants for a planning permit.

A spatial implementation plan can be drawn up by the local government, the province, or the region and always fits within the implementation of existing spatial structure plans.

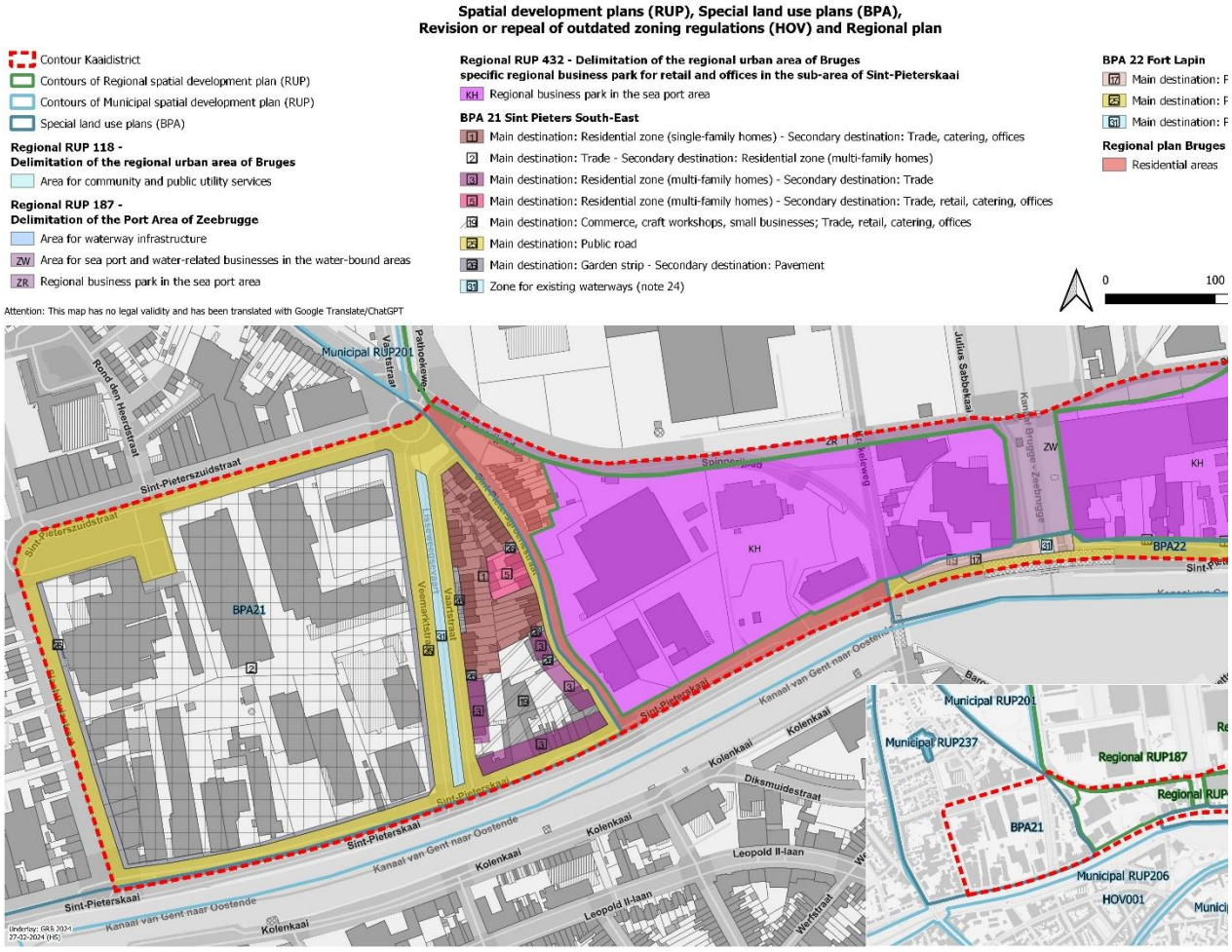
Below you can find two maps of how the Kaaidistrict looks like today according to the special development plans, spatial implementation plan and regional plan:

Image: Spatial Implementing Plan Kaaidistrict



A more detailed map can be found at p. 56 of this report.

Image: Overview map of Kaaidistrict



2.3 Spatial Structure Plan

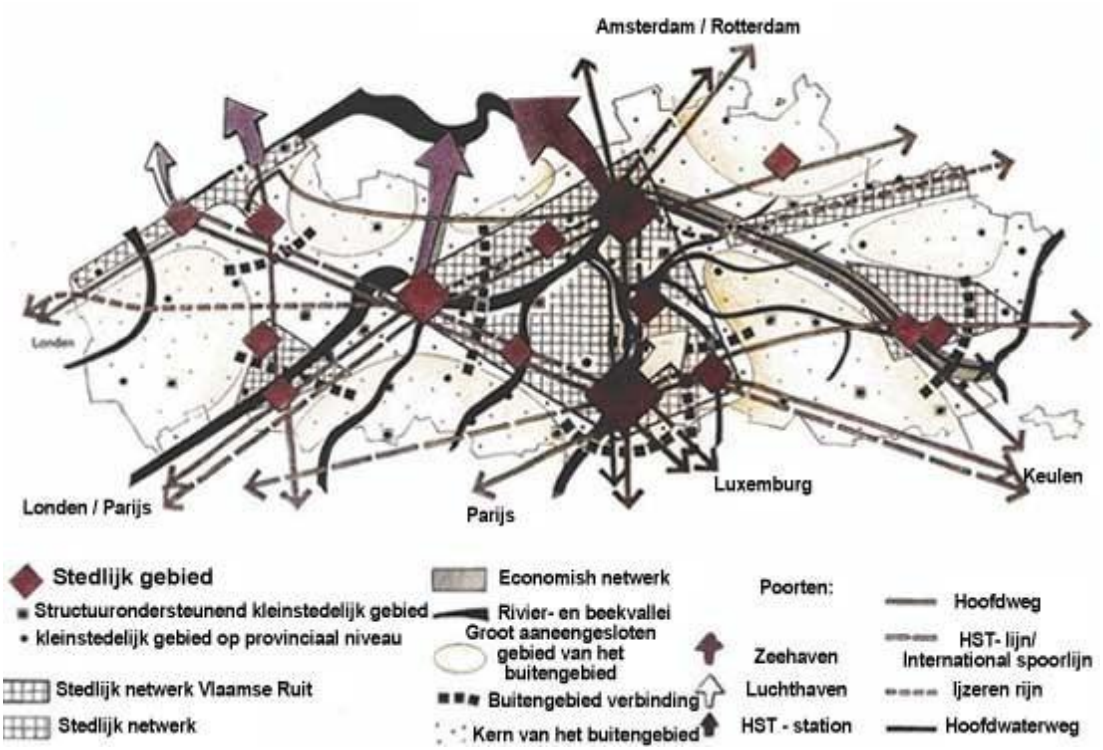
2.3.1 Spatial Structure Plan Flanders

The Spatial Structure Plan Flanders is a plan that coordinates the desired future spatial planning in Flanders. It is the first policy plan in Flanders regarding spatial planning, binding for the relevant (including lower) authorities.

Following the Spatial Structure Plan Flanders in 1997, the Municipal Spatial Structure Plan for Bruges was approved in 2006. Changing needs, the legal or policy context in Flanders prompted renewed visions on space. This was always done with the 'good organisation' of the city in mind.

Spatial implementation plans are plans that determine land use in a specific area. A Spatial Implementing Plan always replaces existing zoning plans (e.g., regional plan, Special development plans, older Spatial Implementing Plans).

Image: Spatial Structure Plan Flanders



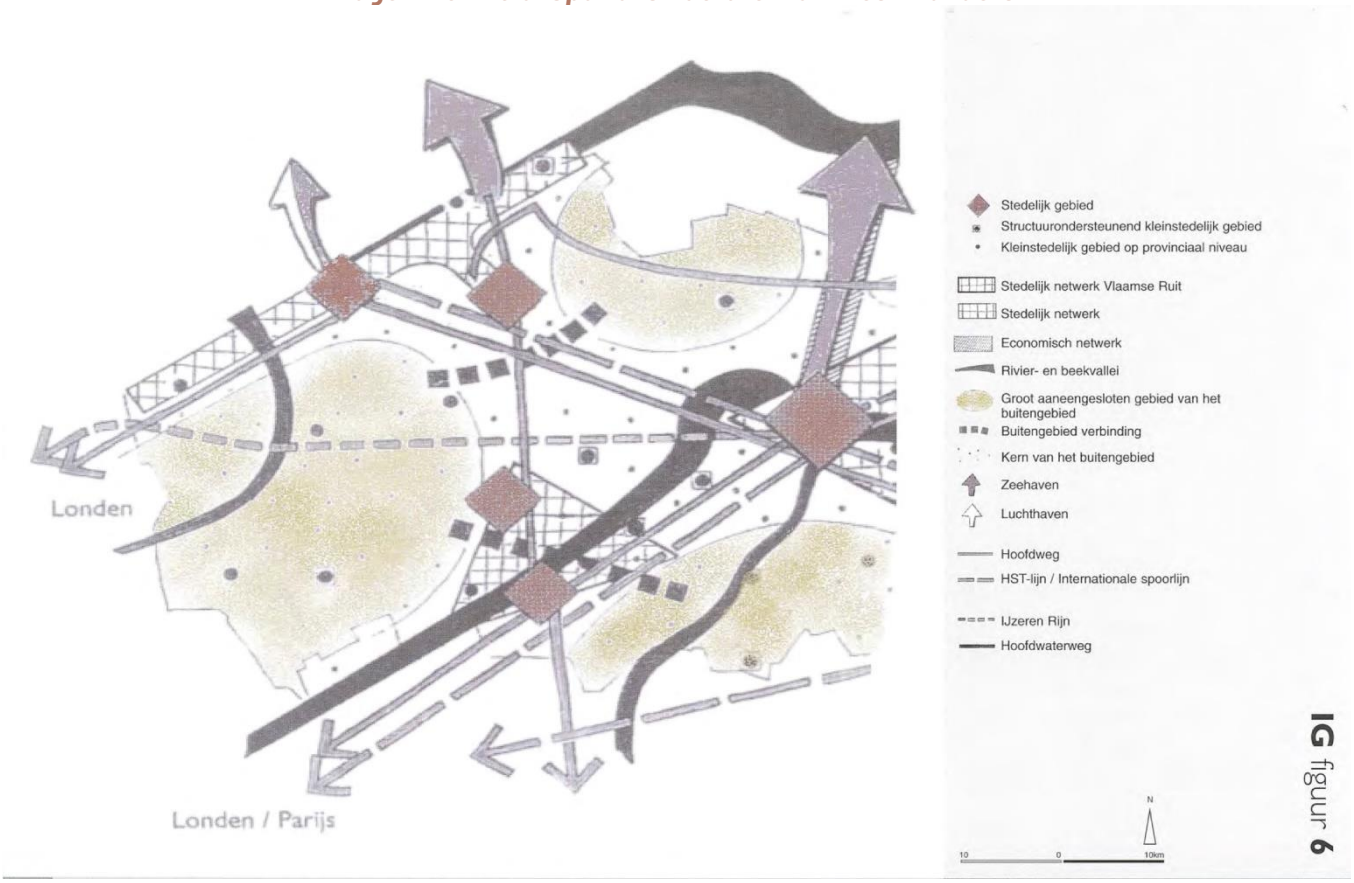
2.3.2 Provincial Spatial Structure Plan West Flanders

On March 6, 2022, the Flemish Minister responsible for spatial planning, approved the Provincial Spatial Structure Plan West Flanders. This document outlines the long-term vision of the province and creates conditions and possibilities to adjust and develop land use in West Flanders. This is done, among other things, by drafting provincial spatial implementation plans, advising on implementation and structure plans of other policy levels, or supporting/realising specific projects on the ground.

Two partial revisions have taken place since then, in 2014 and 2019[1].

[1] All documents can be consulted via: https://www.brugge.be/stad-bestuur/beleid/ruimtelijk-beleid/vlaams-beleidskader-voor-ruimtelijk-beleid.

Image: Provincial Spatial Structure Plan West Flanders



2.3.3 Municipal Spatial Structure Plan Bruges

The municipal Spatial Structure Plan Bruges[2] is a policy plan in which the City of Bruges indicates the direction in which it wants to see the spatial development of the city evolve. The municipal government commissioned the preparation of a structure plan for the city centre in 1976, making Bruges the first municipality in Belgium to do so. This Municipal Spatial Structure Plan for Bruges has since been drawn up for the entire city and was finally determined by the City Council in April 2006 and later approved by the Permanent Deputation of the Province of West Flanders.

The structure plan is a policy document that determines how the city will develop in the future for various policy domains.

In this document, after analysis, places are identified where:

- New homes can be built

[2] The Municipal Spatial Structure Plan Bruges can be consulted via https://www.brugge.be/stad-bestuur/beleid/ruimtelijk-beleid/vlaams-beleidskader-voor-ruimtelijk-beleid.

- Business areas can develop
- Space is provided for sports and recreation
- Agricultural land remains (further) in use
- The natural landscape can be preserved, protected or even expanded
- Additional infrastructure is desirable

2.4 Spatial Policy Plan

In 2018, the Flemish government transitioned from structural planning to policy planning as a renewed way of spatial planning. The Flemish Strategic Vision for the Spatial Policy Plan Flanders - the successor to the Spatial Structure Plan Flanders - provides an image of the Flanders the Flemish government wants to evolve into by 2050.

2.4.1 Spatial Policy Plan Flanders

The strategic vision of the Spatial Policy Plan Flanders was approved by the Flemish government in July 2018. The strategic vision includes a future vision and an overview of long-term policy options. However, no policy frameworks have been approved yet.

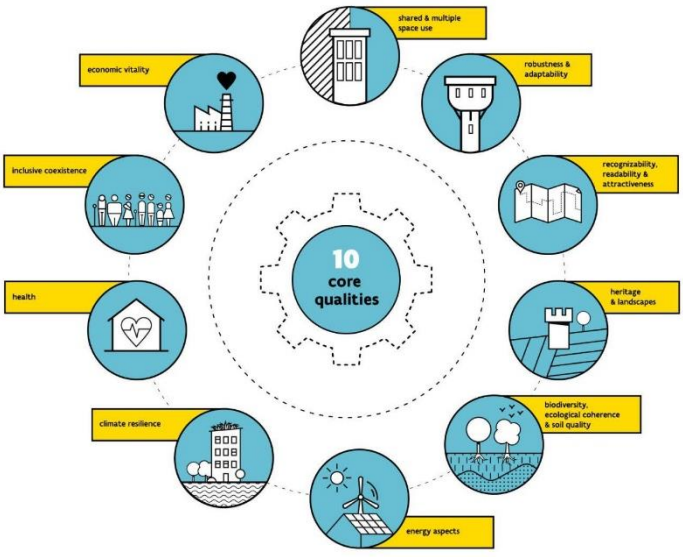
The Spatial Policy Plan Flanders introduced a framework for a high-quality design and optimal management of the environment with the ten core qualities. The ten core qualities provide a common language to discuss environmental quality. By visualising and discussing the core qualities with residents and users, opportunities, needs, and expectations become concrete and understandable. This allows for better translation into the ultimate development. The ten core qualities enable both customization and collaboration on environmental quality. They contribute to high-quality spatial developments that fit optimally into their environment.

The ten core qualities are: An optimal living environment...

- Focuses on shared and multiple spatial uses. The space is suitable for multiple users at different times. The design takes interweaving into account and can be adapted to future needs.
- Is robust and adaptable. The space is flexible or easily adaptable for temporary or changing societal needs, through re-use or temporary and reversible spatial use.
- Ensures recognizability, livability, and attractiveness. The spatial design is adapted to the environment. The design focuses on proportional volumes and appropriate materials. Attention is given to greenery, attractive views and a good transition between public and private space.
- Values heritage and landscape characteristics. The spatial design respects heritage and landscape characteristics, building on cultural-historical values.

- Considers biodiversity, ecological coherence, and soil quality. The spatial design strengthens ecological coherence and biodiversity and does not compromise soil quality. It also contributes to the strengthening of the green-blue network.
- Contributes to the energy transition. By choosing building forms, sun orientations, and material choices that reduce energy consumption, the spatial design contributes to energy efficiency. It also optimizes the production, storage, and distribution of renewable energy.
- Is climate resistant. The spatial design reduces climate sensitivities, such as heat stress and flood risk, and contributes to a climate-resistant environment, for example, by limiting pavement.
- Improves health. Safety, the ability to move and play, attention to air and noise pollution... The design takes into account various health aspects.
- Promotes inclusive living. All groups in society have easy access to green spaces, public areas, and basic facilities.
- Is economically vital. There are opportunities for entrepreneurs, and there is room for economic activities.

Image: ten core qualities, a framework for a high-quality layout and optimal management of the environment.



2.4.2 Spatial Policy Plan West Flanders

In March 2022, the provincial deputation of West Flanders approved the concept note for the Spatial Policy Plan West Flanders. The strategic vision has been drawn up at this level but has not been definitively determined.

2.4.3 Spatial Policy Plan Bruges

The spatial Policy Plan for Bruges[3] - the successor to the Municipal Spatial Structure Plan - is a future plan for the space in our city. The plan, approved by the City Council on December 18, 2023, will be the guiding principle for choices on how space in Bruges will be further used, organised and ordered in the coming decades. It is a strategic plan and at the same time, implementation oriented. The Spatial Policy Plan Bruges shows that many actors are trying to make the city a place where it is good to live, work, and do business, an attractive city to invest in, a city worth visiting, and a city where there is room for nature and land for farming.

The Spatial Policy Plan Bruges contains a number of strategic emphases or key lines and reflects what the City of Bruges really wants to focus on. These key lines are anchored in the strategic vision: in 2050, Bruges is a city

- With respect for open space in all its forms and uses... (theme 'central open space')
- That goes hand in hand with qualitative growth... (theme 'growing in quality')
- Continues a versatile heritage story... (theme 'living and diverse heritage')
- In motion, where residents meet each other... (theme 'neighbourhood network')
- And converge in a dynamic city to the sea... (theme 'magnet for the region')

These five ambitions each represent a part of the strategic vision. They are thematically constructed without sticking to a strict sectoral division. Climate, mobility, energy, etc., are interwoven throughout the entire strategic vision. The policy plan consists of both a strategic vision and policy frameworks that are conceived as flexible and implementation oriented. The policy frameworks are each a short-term elaboration (symbolic perspective 2035) of a specific part of the strategic vision. They can be lifted or replaced when realised.

With the first set of five policy frameworks, we make the story about the city we want to be in 2050 - the strategic vision - more concrete in space. With each policy framework, we land in a different environment: open space, the neighbourhood, the residential fabric, specialized campuses, and places where the city is in change or transformation. The policy frameworks provide guidance to space makers and seekers and to those who make decisions about the space in Bruges. The policy frameworks are as follows:

Activate the green-blue framework

- Protecting Open Space – Expanding the Green-Blue Framework
- Activating the green-blue framework is crucial. The framework ensures a strong city where we capture and retain water, where heat is mitigated, where people can play in green and blue patches, and larger areas, where soft connections and modes of transportation are linked.

[3] The complete Spatial Policy Plan for Bruges can be consulted via: https://www.brugge.be/stad-bestuur/beleid/ruimtelijk-beleid/het-beleidsplan-ruimte-brugge.

This way, the rest of the city can also be developed in a future-oriented and complementary manner.

Concentrate Neighbourhood Dynamics

- Centrality – Collectivity – Accessibility
- By concentrating neighbourhood dynamics, we ensure proximity to amenities, preferably organised collectively where possible, and accessible by foot or bicycle. Bruges aims to further realise and strengthen its ambition as a cycling city. By bringing together neighbourhood dynamics, spaces for interaction are created. These places are necessary for a warm city with a warm society.

Transforming Residential Fabric

- Residential Environment – Housing Stock – Circularity
- Opening up new open space for living or working is no longer the focus. We must make room for it within the space we already occupy today. Our residential fabric will often need to be reconfigured.

Intensifying Campuses

- Efficient Use of Space – Good Neighbouring
- Our specialized campuses will also often need to be reconfigured. The right functions in the right places will result in a high-quality spatial and architectural outcome.

Directing Transformation Areas

- Recognizing Opportunities – Attitude – Approach
- Various transformations are happening or are about to happen in different places in Bruges. To respond effectively, we outline a process. We collaborate with various space creators based on a clear and validated agenda for the future of new urban areas. Not 'new' in the sense of expanding the urban fabric but transforming existing places that look entirely different today.
    - Transformation areas are promising zones where the city of Bruges estimates that a lot of dynamism will concentrate in the coming years.
    - Some places have been identified as transformation areas because they offer significant opportunities to realise the strategic vision 'in a concentrated for'. The city of Bruges will use these places to build expertise and experience with process management in the coming years. This includes the station area, Zeebrugge, and the "Kaaidistrict".
        - The "Kaaidistrict" is the area along the Sint-Pieterskaai where the harbour and the centre meet. In terms of location, the Kaaidistrict forms an interesting

transition zone. On the south side, there is the historical city centre of Bruges, while on the north side, you can see the sea through the Boudewijn Canal.

- The "Kaaidistrict" is located at a point where various green-blue carriers converge: the Boudewijn Canal, the Gent-Oostende Canal, the Ramparts, and the Blankenbergse Dijk are all in the vicinity.
- The "Kaaidistrict" stands out due to its atypical plot structure and grain size. With a combination of businesses, warehouses, parking spaces, offices, and snippets of residential areas, the area has a somewhat cluttered appearance and a low spatial yield.
- The location on the border between the city and the port, without fully belonging to either, gives the "Kaaidistrict" a unique dynamic. The area serves as a mixing zone for functions from both environments, although this mixture is not always successful today.

3. Assessment of the Application for Environmental Permit

For deep renovations, new developments, and construction projects, an environmental permit is required. The applicant must request this permit. The assessment of this application is currently under the supervision of a municipal environmental official. Every application for an environmental permit is tested against numerous legal provisions and regulations (Special development plans or Spatial Implementing Plan, rainwater ordinance, urban planning ordinance, subdivision regulations, ...). The municipal environmental official also takes into account the city's existing policy plans (e.g., Bruges Spatial Plan, Bruges climate plan "Brugge Naar Morgen", existing policy-desired development, ...) and seeks advice from the relevant city services and other authorities.

In addition, the permit application must also be assessed in accordance with good spatial planning (opportunity test, VCRO[4]). For this purpose, the municipal environmental official uses a checklist.

The environmental permit application integrates and encompasses the urban planning permit, former environmental permit, subdivision permit, and vegetation modification permit since 2017. The applications are submitted to a single counter.

Regarding the environmental aspect of the environmental permit application, the legislation of The Decree on General Environmental Policy, Vlarem, and environmental impact assessment is applicable.

Vlarem is an implementing decree of The Decree on General Environmental Policy and consists of two parts: Vlarem II and III. The main purpose of Vlarem is to prevent and limit nuisance, environmental pollution and safety risks from businesses and commercial establishments. Annex I of Vlarem II contains a classification list in which various business activities are assessed based on their impact on the environment.

Vlarem II contains the general and sectoral environmental conditions that mainly classified installations must meet. Vlarem III contains additional general and sectoral environmental conditions specifically for GPBV installations. GPBV stands for Integrated Prevention and Control of Pollution, involving industrial installations with a potentially significant impact on the environment.

The environmental impact assessment (EIA) regulations consist of the Decree of the Flemish Government of December 10, 2004, determining the categories of projects subject to environmental impact assessment decree.

For certain projects, a project-EIA must be prepared or not, as determined in the The Decree on General Environmental Policy.

[4] Flemish Spatial Planning Code, more information can be found at: https://codex.vlaanderen.be/portals/codex/documenten/1018245.html

Currently, there is a legislative amendment in preparation, namely the Draft Decree on the Modernization of environmental impact assessment. The environmental impact assessment decree may change in the (near) future.

4. Municipal Urban Planning Regulation on Building, Subdividing, and Planting

An urban planning regulation[5] is a supplement to the rules of the Flemish Spatial Planning Code. It establishes additional rules on how construction is allowed. A regulation can apply to all of Flanders or at the provincial or municipal level. The municipal urban planning regulation, in full 'Municipal urban planning regulation on building, subdividing, and planting,' includes urban planning regulations applicable to construction activities. The regulations may relate to: demolition works, building height, roofs, changes in function, garage doors, painting and plastering facades, green protection, use of materials, minimum residential area, splitting a property, parking spaces and bicycle storage, felling and planting of plants, ...

The regulation is valid for the entire Bruges territory. If the urban planning regulation conflicts with the provisions of a valid Regional plan and Special development plan, Spatial Implementing Plan, or not expired subdivision, the regulations of this Regional plan and Special development plan, Spatial Implementing Plan, or subdivision apply in these cases.

[5] The municipal urban planning regulation of the city can be consulted via https://www.brugge.be/wonen-bouwen/bouwvoorschriften/stedenbouwkundige-verordeningen.

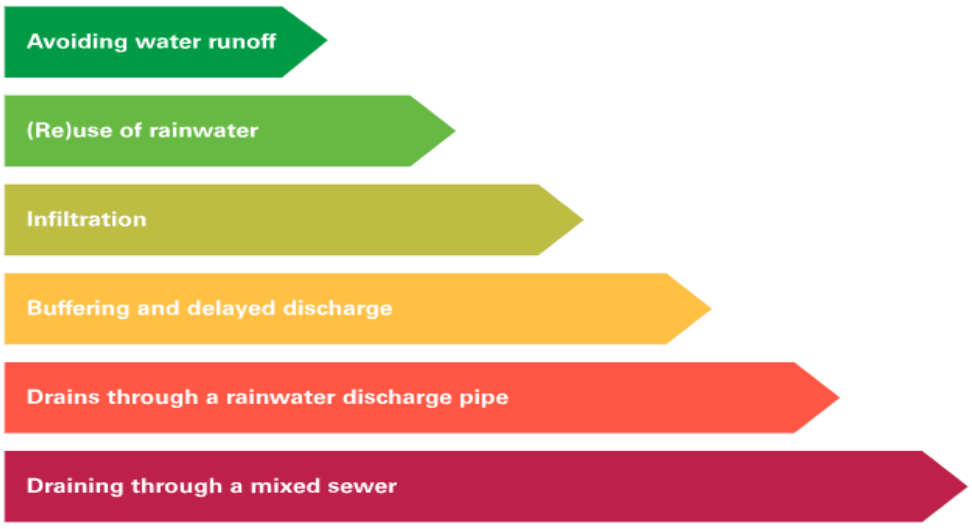
5. Regional Rainwater Regulation

Longer periods of drought (especially in the summer) and extreme rainfall are increasingly observed. Along with a high degree of paving, this leads to a lack of groundwater and floods. This has resulted in a tightening of the rainwater regulation. The aim of this new rainwater regulation is to retain more rainwater on-site and avoid runoff. The new rainwater regulation is valid from October 2023 and applies to covered constructions, pavements, and actions in public areas. The main proposed measures are:

- Installation of a rainwater tank
- Provision of infiltration facilities
- Provision of buffer facilities

The regulation specifies when and under what conditions rainwater use, infiltration, and rainwater buffering should be carried out in construction projects and pavements. Natural drainage next to the building and alongside/through the pavement is always preferred.

Image: Lansink's Ladder



6. UNESCO World Heritage City

The city of Bruges has valuable architectural heritage, a unique architectural history, and is renowned for its brick Gothic style. In addition, the city has an authentic and integral mediaeval urban fabric and is the 'birthplace' of the Flemish Primitives. These factors played a role in the city being inscribed four times on the World Heritage[6] list:

- **1998:** Begijnhof
- **1999:** Belfort
- **2000:** Historic city centre of Bruges. A buffer zone of two hundred meters was delineated around this zone.
- **2009:** Holy Blood Procession as intangible cultural heritage.

The preservation and management of the UNESCO World Heritage Bruges, alongside the protection of certain cityscapes, must be accompanied by the development of a comprehensive vision for the management of the entire city centre and the buffer zone. Therefore, the city has developed several policy documents for the conservation and management of World Heritage sites:

- **Statement of Outstanding Universal Value**: a document outlining characteristics and criteria that constitute the Outstanding Universal Value and justify inclusion on the World Heritage list.
- **Management Plan**: a plan of action involving all stakeholders.
- **State of Conservation**: an annual report to UNESCO describing all management actions and interventions by the city in the World Heritage and buffer zone.

The urban planning regulation stipulates that a visual impact study must be conducted for constructions with a highest point of:

- 15 m for the city centre UNESCO World Heritage zone
- 20 m within the buffer zone
- 30 m outside the buffer zone

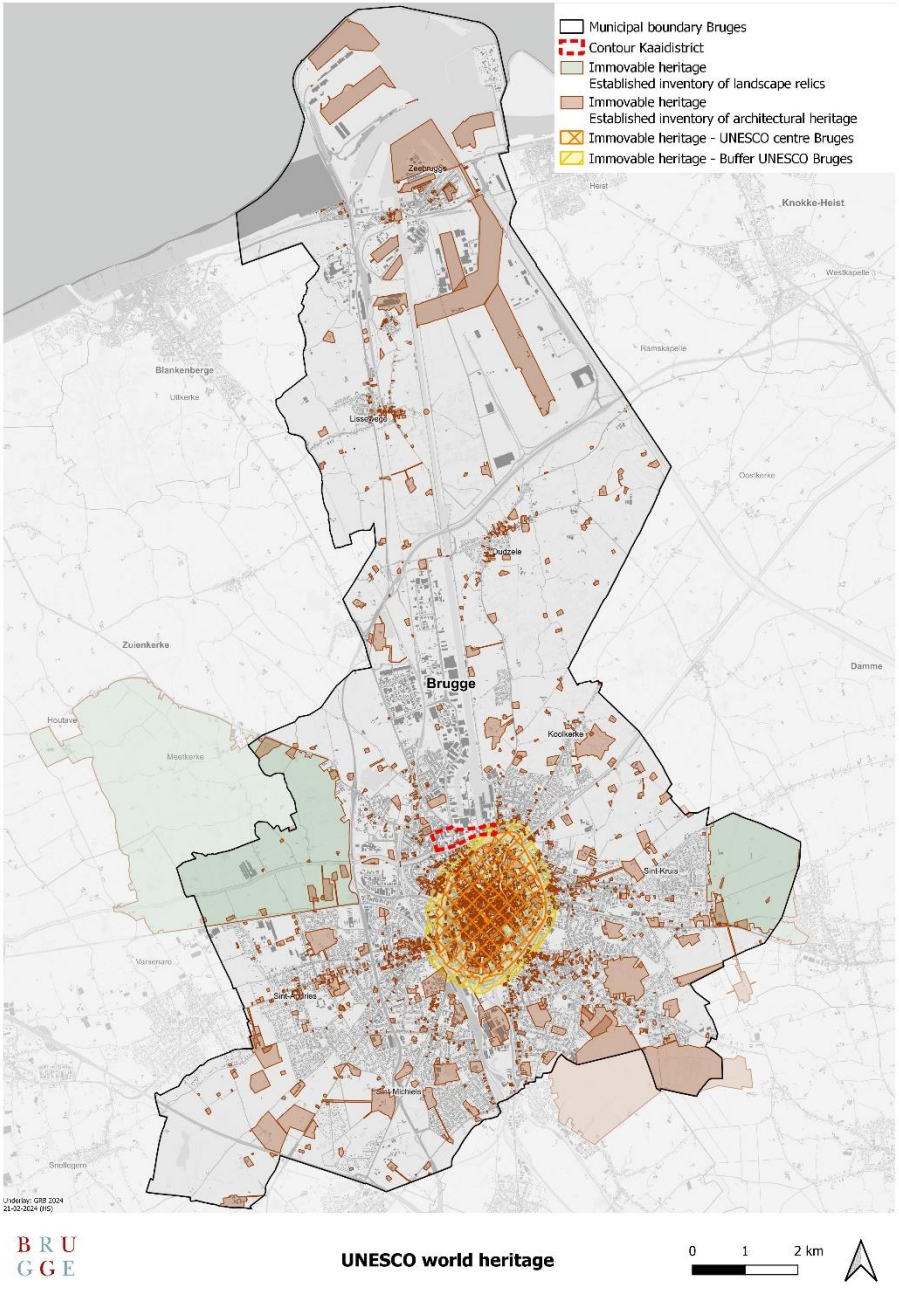
It seems desirable that when the precise delineation of the visual axes is examined, a reconsideration of these maximum heights could also be contemplated.

[6] More about the city of Bruges as a UNESCO Heritage City can be found at: https://www.brugge.be/unesco-werelderfgoed-brugge

The buffer zone around the Bruges city centre is a conglomeration of urban elements that show unclear coherence. It currently includes, among other things, a ring road (with or without buildings), green space, and commercial facilities.

Developments in the buffer zone should remain possible. For this purpose, an overarching Spatial Implementation Plan can be created for specific sub-areas. The feasibility of the desired developments and changes in land use must be examined and tested in advance against a set of criteria or parameters to be developed, whether or not linked to an alternative study. The various parameters must be included in an objective weighting framework. The Kaaidistrict is partly located in the buffer zone of the UNESCO heritage area 'historic centre'.

Image: UNESCO World heritage in Bruges


Municipal boundary Bruges
Contour Kaaidistrict
Immovable heritage
Established inventory of landscape relics
Immovable heritage
Established inventory of architectural heritage
Immovable heritage - UNESCO centre Bruges
Immovable heritage - Buffer UNESCO Bruges
Zeebrugge
Heist
Knokke-Heist
Westkapelle
Ramskapelle
Blankenberge
Uitkerke
Lissewege
Oostkerke
Ludzele
Zuienkerke
Damme
Brugge
Houtave
Meetkerke
Koolkerke
Sint-Kruis
Varsenare
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7. Vision on Building Higher in and around Bruges

The city of Bruges developed a high-rise vision following recommendations from UNESCO in 2010. This high-rise vision started from seven core qualities that constitute the World Heritage of the historic city centre. For Bruges as a UNESCO World Heritage site, the high-rise debate involves:

- Texture and morphology of the city, and thus limiting abrupt scale differences.
- The readability of the historical layers and the historical ensemble value.
- The skyline of the city with a strong dominance of civil and religious buildings originating from the Middle Ages; The Belfry, the Church of Our Lady, and the St. Salvator's Cathedral particularly dominate the city's skyline and are often visible from a wide area.
- The relationship between the city centre and its surroundings; and thus, the spatial context of the historic city in a relatively open and flat landscape.

Based on this, parameters were established for assessing the tension between preserving core qualities and building higher. It built further on existing policies that modestly deal with building higher in and around Bruges. Two zones were defined where building higher has a clear place and is more dominant than building lower. These are two zones that have already been designated as transformation areas in the Spatial Planning Policy Plan for Bruges, namely the Kaaidistrict and the area around the Bruges station. However, even there, a height restriction was imposed in line with the established policy.

Several elements from the vision are anchored in the urban planning regulation or in various Spatial Implementation Plans. Other elements still need to be anchored. Until that is done, the vision on building higher is considered a policy-desired development, and this vision can be invoked as an assessment criterion within 'good spatial planning' when reviewing a permit application (as long as it does not contradict more strongly legally anchored regulations).

8. Mobility Plan

The city's mobility plan [7] was approved by the city council in January 2016.

The plan is based on 1,900 suggestions received from the people of Bruges during public consultation sessions. The plan follows the STOP principle, prioritising pedestrians, cyclists, public transport, and finally, private cars. Four main lines have been developed.

8.1 Simplified and Clearer Parking

Currently, the city centre has various parking zones, but eventually, the entire city will become one large residential zone. The resident card will soon apply to the entire city centre. To manage parking pressure in the suburbs adjacent to the city centre (about a 5-minute walk), residents will also have a resident card for their specific suburban zone.

Visitors are encouraged to use peripheral parking or underground parking. The city continues to promote car-sharing and expands short-term parking in the suburbs.

8.2 Traffic Safety and Livability

The expansion of pedestrian zones in three phases contributes to this. Bruges is the only central city to sign the SAVE charter. Along with the association Parents of Accident Victims, several objectives regarding traffic safety must be achieved within a reasonable time. Introducing a 30 km/h zone in some suburbs is high on the agenda, as is reducing speed on the ring road around Bruges (R30) in certain sections.
The focus remains on ensuring a safe school environment.

- Restricting heavy traffic in the city centre and suburban residential areas

To enhance the livability, attractiveness, and safety of our city, new measures have been implemented to manage heavy traffic better:

- Vehicles weighing more than 12 tons will no longer be allowed in the city centre.
- Vehicles weighing between 3.5 tons and 12 tons will only be allowed between 6am and 11am and between 7pm and 9pm

Bus traffic will be better coordinated with congestion and mixed traffic in the city. This means different routes and lighter traffic in the city centre. Specifically, the intention is to allow smaller buses to operate in certain zones of the historic city centre.

[7] The mobility plan can be consulted at https://www.brugge.be/stad-bestuur/beleid/mobiliteitsplan.

Buses should also avoid the centre if deemed unnecessary. The city aims to improve public transportation and better access to the northern suburbs.

9. Housing Policy Plan

The housing policy plan[8] consists of objectives and actions, with a distinction between strategic and operational objectives. Strategic goals (SG) are long-term goals towards 2050, at a high and reasonably abstract level. Achieving these ambitions exceeds the city's capabilities, and significant levers are at higher policy levels. Operational goals (OG) are concrete and lie between strategic goals and actions. These goals are regularly evaluated and adjusted when needed. There is also a list of multiple operational objectives.

Table: Strategic Goals (SG) towards 2050

SG1	In 2050, all homes are of high quality	
	OG 1.1	The city takes initiatives to ensure that all homes meet the minimum requirements for safety and health.
	OG 1.2	The city takes initiatives to significantly improve the energy efficiency of homes.
	OG 1.3	The city works towards a pleasant, safe, healthy, and green living environment.
SD2	In 2050, decent housing is affordable for everyone	
	OG 2.1	The city stimulates the development of a housing supply that is affordable for households with low incomes.
SD3	In 2050, everyone has the assurance of being able to (continue to) live in a suitable home	
	OG 3.1	The city develops a strategy and actions to avoid evictions.
	OG 3.2	The city develops a strategy and actions to avoid and resolve homelessness.
SD4	In 2050, demand for and supply of housing are aligned	
	OG 4.1	The city ensures a diverse and affordable supply based on housing needs.
	OG 4.2	The city stimulates the development of a diverse private rental offer.
	OG 4.3	The city stimulates the development of new housing forms.

[8] The housing policy plan (and associated actions) can be consulted at https://www.brugge.be/woonbeleidsplan-stad-brugge.

SD5	In 2050, everyone has equal access to a home that meets their needs	
	OG 5.1	The city combats discrimination in the private rental market.
	OG 5.1	The city ensures that there is a sufficient supply of adapted homes for people with specific housing needs who cannot find a place on the private market.
SD6	In 2050, Bruges is diversely composed, and people of different generations and social backgrounds live together harmoniously	
	OG 6.1	The city stimulates the development of a housing supply that meets the housing preferences of diverse groups.
	OG 6.2	The city ensures a pleasant, green, and safe living environment where diverse generations enjoy spending time in public space.
	OG 6.3	The city uses the principle of 'residential care zones' as a planning concept.

The actions focus on various policy domains: vision formation, planning and consultation, regulations regarding housing quality, urban planning regulations, financial instruments, social housing, city housing, project development, assistance and shelter for urgent and serious housing needs, information, advice, and guidance.

10. Climate plan "Brugge Naar Morgen"

10.1 Objective

On June 30, 2020, the city of Bruges signed the Covenant of Mayors for Climate and Energy 2030. By doing so, the city committed to reducing its CO_2 emissions by at least 40% by 2030 compared to 2011 (the first year with sufficient reliable data) and to adapt the city to the new climate conditions.

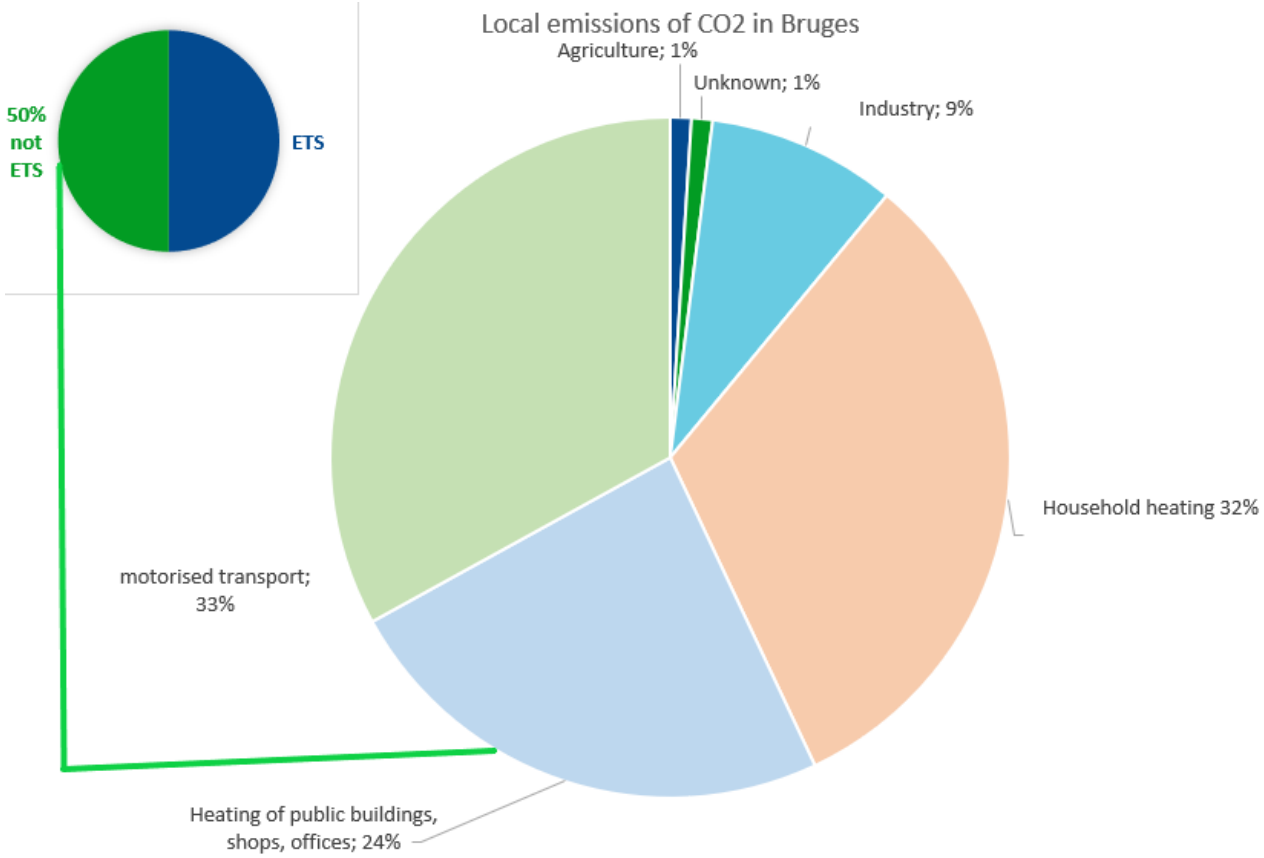
Image: climate plan of Bruges

To achieve this, a Climate Plan 2030[9] was developed and approved by the City Council on February 21, 2022. The Climate Plan 2030 aims for Bruges to achieve climate neutrality by 2050 and a 49% reduction in local CO_2 emissions by 2030. This aligns with the ambitions of the Paris/Glasgow agreements, which focus on limiting global warming to a maximum of 1.5°C. The Climate Plan 2030 also contributes to the climate resilience of the city by preparing for increased risks of heat, drought, and flooding. An extensive risk analysis and a climate adaptation plan for the entire Bruges area have been incorporated into this Climate Plan 2030.

[9] The complete climate plan can be consulted via: https://www.brugge.be/klimaat-milieu-natuur/klimaat/bruggenaarmorgen.

Local CO_2 emissions are mainly concentrated in household heating and the heating of (public) buildings (more than 50%). Another significant contributor is transportation, with motorised travel accounting for one-third of local CO_2 emissions.

Diagram: Local CO_2 Emissions in Bruges



While a climate plan for 2020 still had some room to focus on efficiency improvements and limit the scope to quick wins or a limited number of emission sectors and policy domains, this flexibility no longer exists towards 2030. This climate plan primarily addresses the broad changes in the energy system needed to achieve not only a climate-neutral but also an attractive, livable, healthy, and affordable city by 2050. The Climate Plan 2030 is structured around seven thematic bridges and 20 substantive pillars, encompassing over 200 actions. Below is an overview of all the bridges and pillars, with a clarification of some policy actions and plans under each bridge.

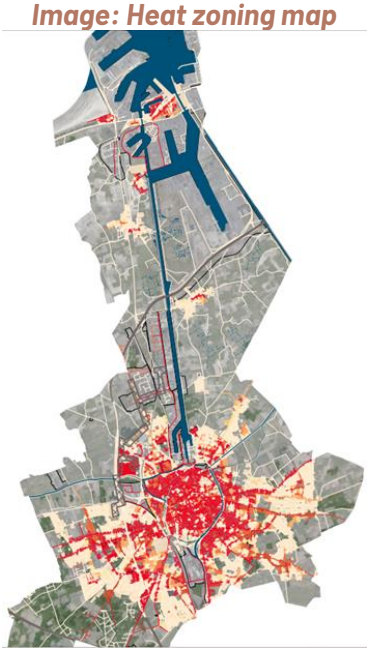
10.2 Bridges, pillars and actions

Bridge 1: Brugge Heats Fossil-Free

- Pillar 1: Accelerate the decrease in energy demand by increasing the renovation rate.
- Pillar 2: Switch to fossil-free heating systems in buildings.

In 2020, the city created a heat zoning map[10] that scientifically indicates how all private homes and buildings in the city should be sustainably heated by 2050, considering cost-optimal solutions. The red areas suggest collective heating through a district heating network and sustainable sources. The white-yellow areas indicate buildings that are best deeply renovated for individual, sustainable heating using heat pumps (the 'all-electric' option).

Image: Heat zoning map



The Kaaidistrict is not coloured, as its future heat demand is yet unknown.

To connect the red 'collective' zones with a sustainable heat source, the city conducted a study to identify potential heat sources (waste heat, aquathermy, solar thermal, sewage heat, etc.). The study compared the energy and financial potential of these sources, considering parameters like Total Cost of Ownership (TCO) and Levelized Cost of Heat (LCOH).

The city established a district heating Task Force to centralise knowledge and engage stakeholders, ensuring collaboration and support for Bruges' district heating ambitions.

To centralise all knowledge and projects related to district heating networks and engage in discussions with key stakeholders, the heat networks task force was established (see also Bridge 7: Bruges organises itself): the heat network coalition, a structure to involve both internal and external stakeholders more actively in Bruges' district heating ambitions. This coalition aims to implement actions outlined in the climate plan (Bridge 1, Pillar 2) and create support for them. The heat network coalition convenes semi-annually.

[10] The heat zoning map can be consulted through the following link: https://www.brugge.be/energieplatform/warmtezoneringskaart.

Bridge 2: Bruges is a Renewable Electricity City

- Pillar 3: Expand the capacity of wind energy production.
- Pillar 4: Increase the production capacity of photovoltaic solar panels.
- Pillar 5: Efficient and innovative use of electricity.

In May 2021, the City Council approved the Bruges Wind Plan. This plan establishes the foundation for a spatial analysis determining suitable locations for large-scale wind turbines.

Currently, efforts are underway to develop a solar plan, outlining the spatial potential for solar energy within the city. Alongside identifying potential locations, this plan is expected to detail various approaches for each type (installations on existing roofs, unused land, in conjunction with horticulture or agriculture, on carport systems, or (peripheral) parking areas). The plan will also address strategies for activation and ways to overcome limiting factors.

Bridge 3: Bruges Moves Smart, Fossil-Free and Healthy

- Pillar 6: Smart handling of mobility demand.
- Pillar 7: Increase the share of cycling, walking, and public transport in the mobility mix.
- Pillar 8: Vehicles become fossil-free and energy-efficient.

The Spatial Policy Plan of Bruges is a significant lever for sustainable mobility. This is achieved by aligning the selection of new residential developments with the availability of services and facilities in proximity. The principle of the '15-minute city,' where essential services and facilities are within a 15-minute walk (1 km) or a 15-minute bike ride (5 km), is already embraced as a design principle by many cities. While Bruges is already, in many areas, a 15-minute city, it aims to distinguish itself by exploring the extent to which this principle can be a target for every urban development. This vision is rooted in a historical context where, in the Bruges city centre, there were already references to 'city quarters,' a literal connection to the concept of a 15-minute city.

Bridge 4: Bruges Undertakes Climate-Friendly and Circular

- Pillar 9: Develop Bruges as a circular city.
- Pillar 10: Work on climate-friendly and circular businesses, industrial areas, and the port.

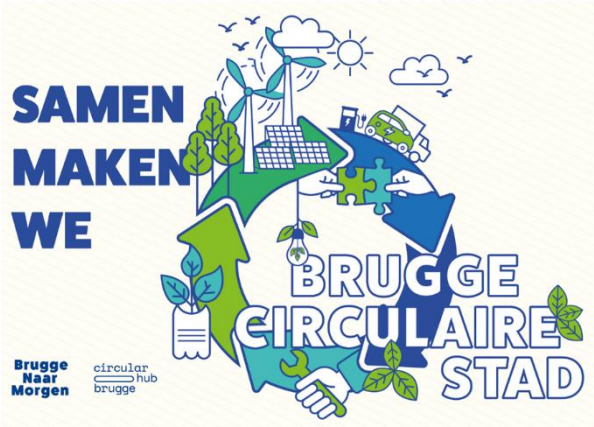
Circular Hub Brugge serves as the network platform and experimental laboratory for socio-circular collaboration in the Bruges region. The city of Bruges has joined forces with ambitious businesses, engaged educational institutions, social economy organisations, and enthusiastic citizens to bring the tradition of a circular economy to reality. In 2022, the city, along with stakeholders, defined a comprehensive vision for Bruges Circular 2030[11].

Circular Hub Brugge plays a leading role in implementing the action plan. Collaborating with partners, it inspires, activates, and facilitates citizens, entrepreneurs, visitors, and other authorities to maximise their efforts in promoting circularity. Bruges aims to be a pioneer in circular heritage. The

[11] This vision note of "Brugge Circular" can be consulted via the following link: https://www.circularhubbrugge.be/src/Frontend/Files/MediaLibrary/10/20221006-eindrapport-circulaire-strategie-stad-brugge.pdf.

city pursues a holistic and measurable approach, leveraging local levers to optimise circular potential, including technological development and knowledge-sharing through research and educational institutions, logistics management, and the utilisation of waste streams through waste and material processors and the harbour, as well as scaling up and collaboration based on Bruges' regional role.

Image: Circular Bruges



Bridge 5: "Brugge Smaakt" (Bruges tastes)

- Pillar 11: Enjoying food with less climate impact.
- Pillar 12: Stimulate, sustain, and connect local food production.
  Pillar 13: Transform food loss and surplus into profit.

Since 2015, the city of Bruges had implemented a sustainable food strategy known as "Brugge Smaakt![12]" This strategy revolved around six themes: short chains, urban farming, city gardening, food waste reduction, Fair Trade, and education. Over the years, the Bruges Food Lab had evolved into an overarching platform that aims to bring together more stakeholders across the entire value chain, contributing to positioning Bruges as a food smart city. The lab supports various initiatives outlined in the climate plan.

Since 2024 there is a new sustainable food strategy: 'Brugge smaakt naar meer' (Bruges tastes like more). With this new, updated food strategy, the city can take further steps in the coming years. This updated vision came about by joining forces with organisations, citizens, government departments and experts. 'Bruges tastes like more' consists of four mutually reinforcing pillars:

- HEALTHY: Healthy for people and planet
- RESPECTFUL: respectfully from ground to mouth
- DELICIOUS: honest flavours for every day and everyone
- TOGETHER: food, the language of connection

Bridge 6: Bruges is Climate-Resilient

[12] This vision note of "Brugge Smaakt" can be consulted via the following link: https://www.brugge.be/klimaat-milieu-natuur/klimaat/brugge-smaakt/duurzame-voedselstrategie.

- Pillar 14: Create a water-resistant city through smart de-paving, targeted separation, and source measures.
- Pillar 15: Ensure a pleasant living environment, climate-resilient agriculture, and resilient nature through green-blue measures and networks.
- Pillar 16: Build a climate-resilient city together with Bruges citizens and partners.

The city of Bruges presents three future visions to achieve a resilient society and ecosystem: a "water-resistant," "green," and "cool" city. To realise these visions, the city focuses on four action areas:
1. building knowledge about the impacts of climate change and adaptation strategies and techniques
2. implementing targeted interventions in the current and future climate
3. communication and awareness
4. co-creation with all Bruges stakeholders.

The climate adaptation plan[13] provides a concrete implementation of this vision through spatial typologies. Each typology faces similar challenges but also presents comparable opportunities for taking measures. The urban landscape of Bruges is divided into seven climate adaptation typologies: the historical centre, confined buildings, subdivisions, modern urban planning, industry, and polder and nature buildings. Additionally, four typologies were defined to encompass the unique combination of valuable landscapes in Bruges: dunes, polders, meadows, and forests on sandy soils. In addition to spatial typologies indicating challenges and potential solutions, the climate adaptation plan also provides spatial opportunity maps for the concrete implementation of measures in urban and open areas.

The vision, action areas, outcomes of the participatory process, and the results of this development were translated into an action program. This program is organised according to the four action areas mentioned above, supplemented with a section for policy implementation and plan monitoring. The program comprises a total of 54 specific actions that the city of Bruges, along with its numerous partners, will enthusiastically implement, preparing the city for the impacts of climate change up to the horizon of 2050.

Bridge 7: Bruges organises itself for a climate neutral future for everyone

- Pillar 17: Keep the climate transition affordable for everyone.
- Pillar 18: Measure and communicate achievements of the Climate Plan 2030.
- Pillar 19: Aligning city organisation with a comprehensive approach
- Pillar 20: Engaging external partners for the realisation of the 2030 climate plan

In addition to taking actions to reduce CO_2 emissions, measures must be implemented to adapt the city to climate changes. These measures aim to mitigate the impacts of climate change as effectively as possible. The city's climate adaptation plan presents an analysis of risks and vulnerabilities,

[13] The climate adaptation plan can be fully accessed via https://www.brugge.be/klimaat-milieu-natuur/klimaat/bruggenaarmorgen/het-klimaatadaptatieplan.

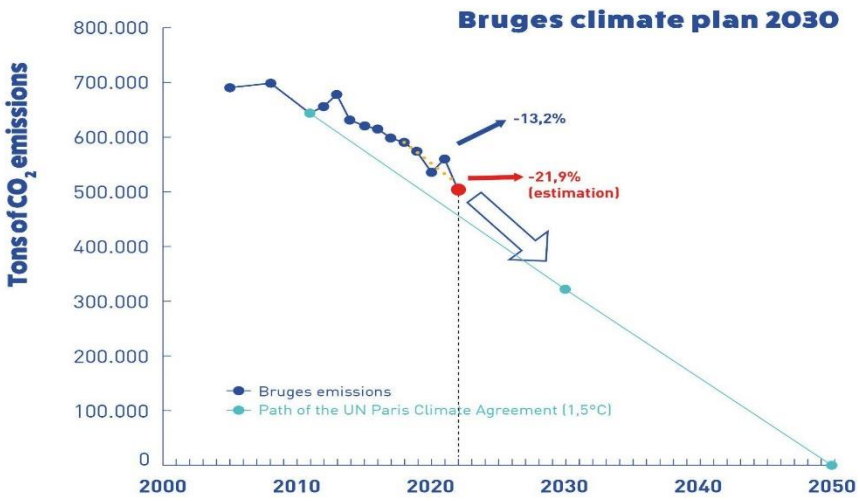
proposing over 50 concrete measures for both short and medium terms. The plan also includes ideas for involving and engaging citizens in various actions.

10.3 Progress of Climate Plan

The implementation of the Bruges Climate Plan "BruggeNaarMorgen" is in full swing. Regular monitoring of the results is crucial to stay in touch with progress. Transparent communication of these results is equally important to inform all stakeholders and interested parties about the ongoing developments. In 2022, the first monitoring report was created, presenting key results to the wider public, which was well-received.

A second monitoring report[14] (October 2023) has been prepared based on the latest available data. The primary observation is that the local CO_2 emissions in 2021 did not follow the declining trend but increased again. This increase is attributed to a harsh winter and the resurgence after the calm period during the early stages of the COVID-19 pandemic. However, estimates for 2022 show a clear decreasing trend. This is strongly linked to the energy crisis, characterised by high energy prices and robust energy-saving measures implemented by the government, businesses, and individuals.

Graph: Reduction in CO_2 emissions



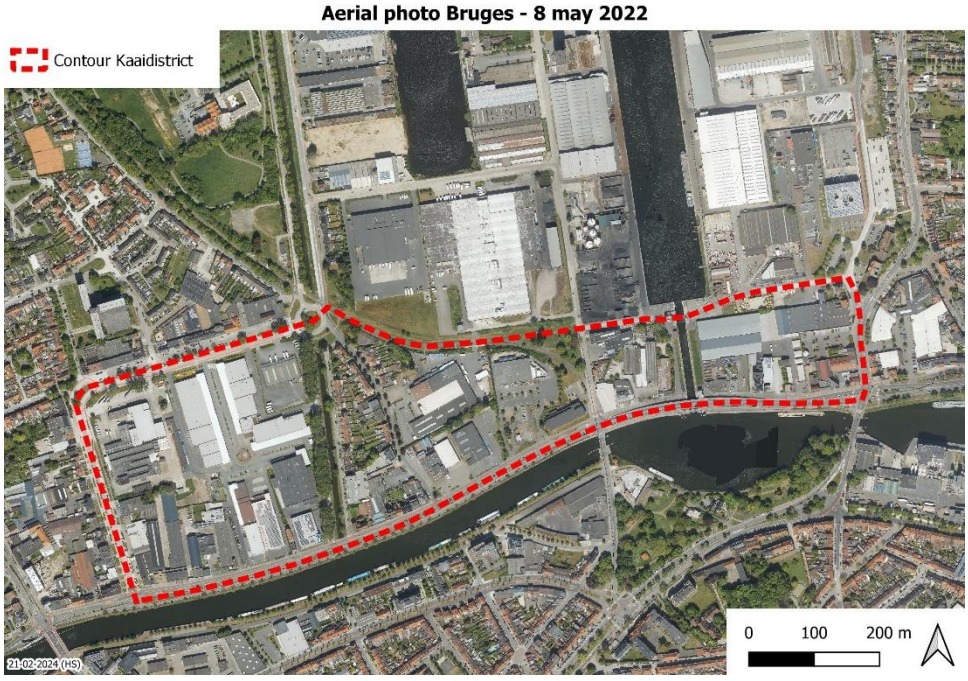
[14] The complete latest monitoring report can be consulted via https://www.brugge.be/monitoringrapport-2023-klimaatplan-bruggenaarmorgen.

11. Waterfront pilot Kaaidistrict

11.1 Location and exploration

The 'Kaaidistrict' is located along the Ghent-Ostend canal and serves as the transition between the city centre and the Sea Port, situated between Sint-Pieters and Sint-Jozef. This Kaaidistrict covers an area of approximately 30 hectares and constitutes a strategic fringe zone with remaining active business, production, and trade. The monofunctional use, inefficient spatial utilisation, subpar architecture and environmental design, large parking areas, etc., are all areas that could benefit from improvement. Due to its pivotal location, proximity to the city centre, and the presence of water, this area is under pressure, leading to a turning point filled with opportunities and challenges. For instance, at the Boudewijn lock, where the harbour physically connects with the city centre, a developer has proposed a design for a mixed-use residential-commercial project combined with public functions. However, without a comprehensive view of future transformation, such ad hoc proposals tend to manifest as isolated entities lacking positive connections with the urban context. Moreover, proposals for extensive real estate development projects raise heightened attention to the preservation of productive and employment-providing functions.

Image: Aerial photo of Kaaidistrict



The Kaaidistrict is part of Sint-Pieters, one of the sub-municipalities of Bruges. As shown in the maps below, the Kaaidistrict consists of two statistical sectors. As mentioned earlier, the infill of the Kaaidistrict is currently monofunctional: the number of private homes and the population are very low. The numbers of inhabitants indicated on the map are the amount of inhabitants for the whole statistical sector, not only for the Kaaidistrict. The income of the inhabitants is rather low, especially compared to the city centre and the southern part of the city.

Image: number of inhabitants in Kaaidistrict

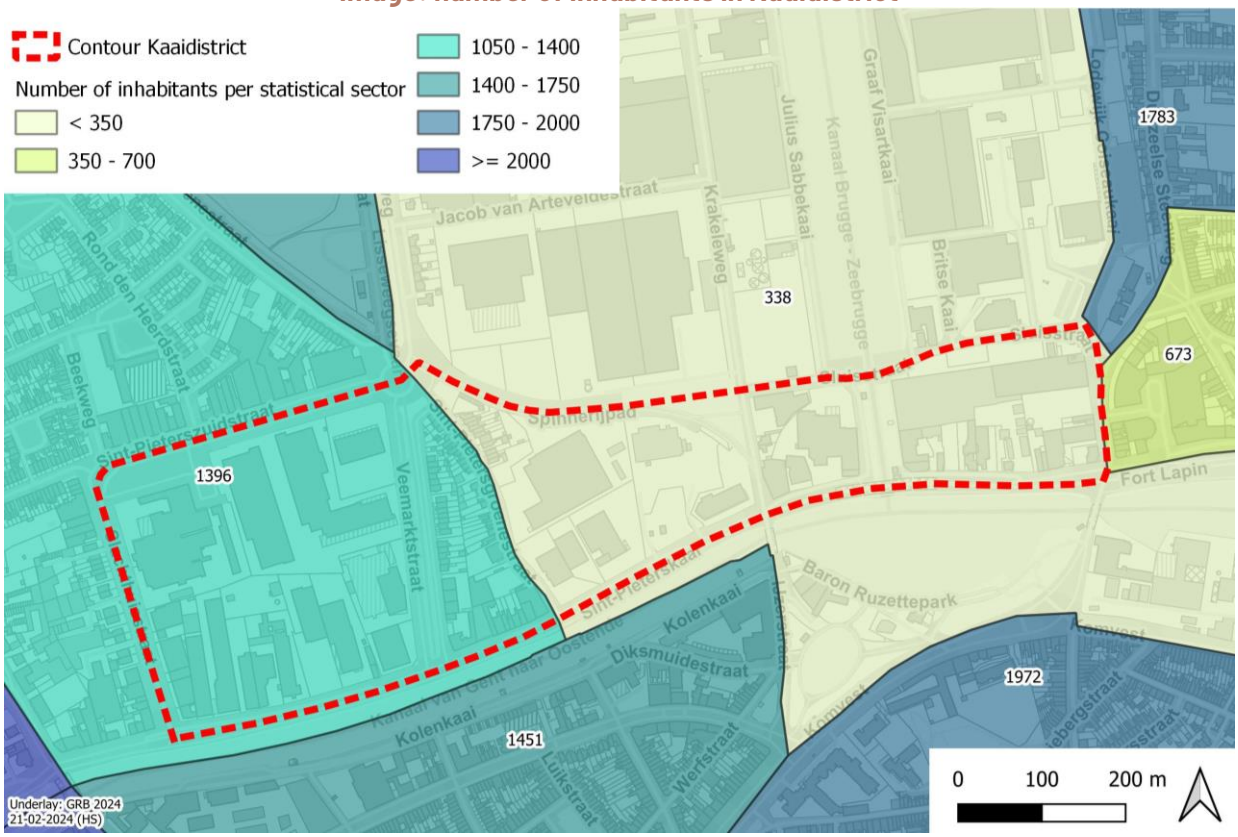


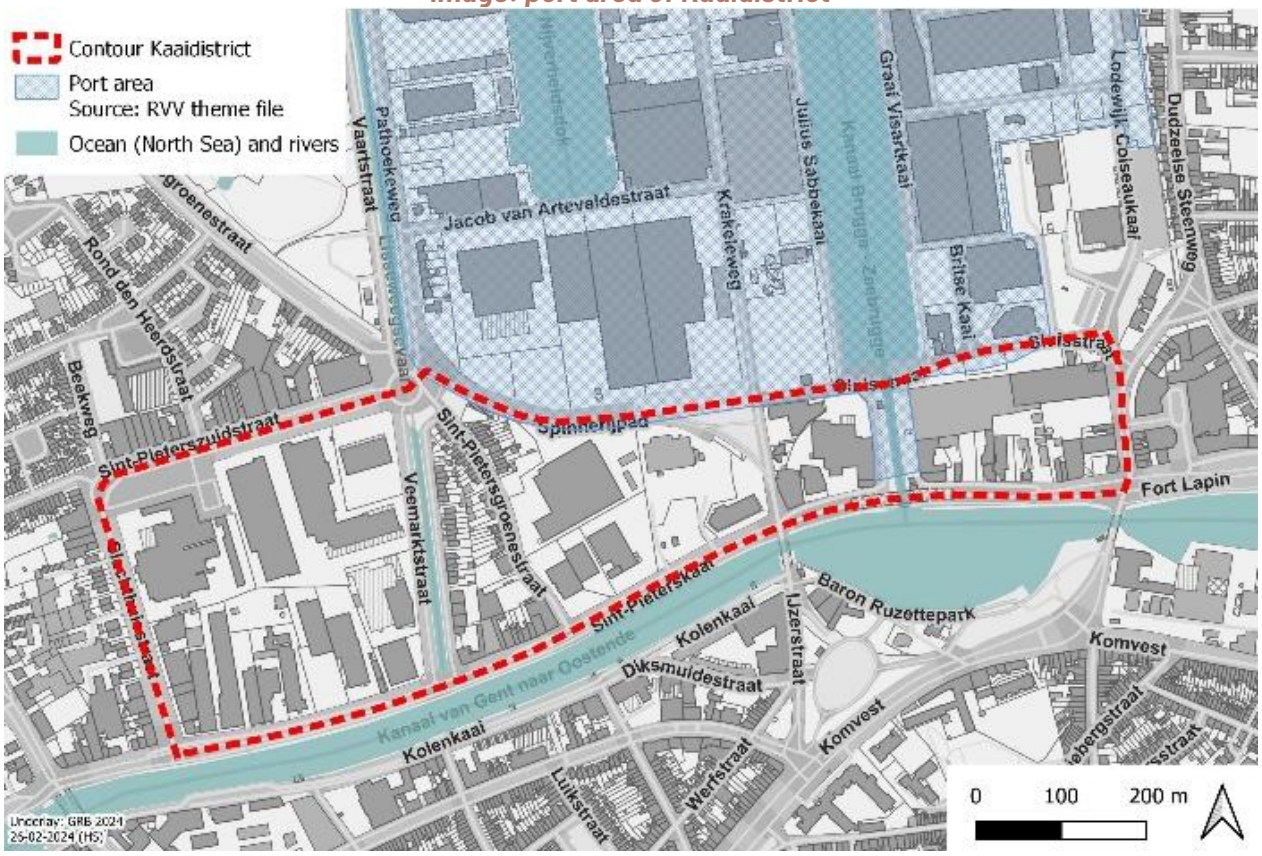
Image: Average net taxable income per statistical sector

There are still a number of businesses with high gas consumption (pink dots) f.i. Horeca Totaal (large food market), supermarkets and the slaughterhouse that was bought up by developers and is now inactive (orange dot).

Image: gas consumption of Kaaidistrict

The port area borders the Kaaidistrict and, with the lock (connection of the Ringvaart and Bruges-Zeebrugge Canal), is even partly in it.

Image: port area of Kaaidistrict



The Kaaidistrict is partly within the buffer zone of the UNESCO heritage area of the historic centre. In this zone, a visual impact study is required for new buildings and developments of at least 30 m high. In addition, some buildings in the Kaaidistrict are also on the inventory list of built heritage. Some examples can be found below.
The average income of the citizens in Sint-Pieters is lower than the average in Bruges. Together with neighbouring Sint-Jozef, Sint-Pieters is traditionally the working-class neighbourhood.

Image: UNESCO World heritage of Kaaidistrict

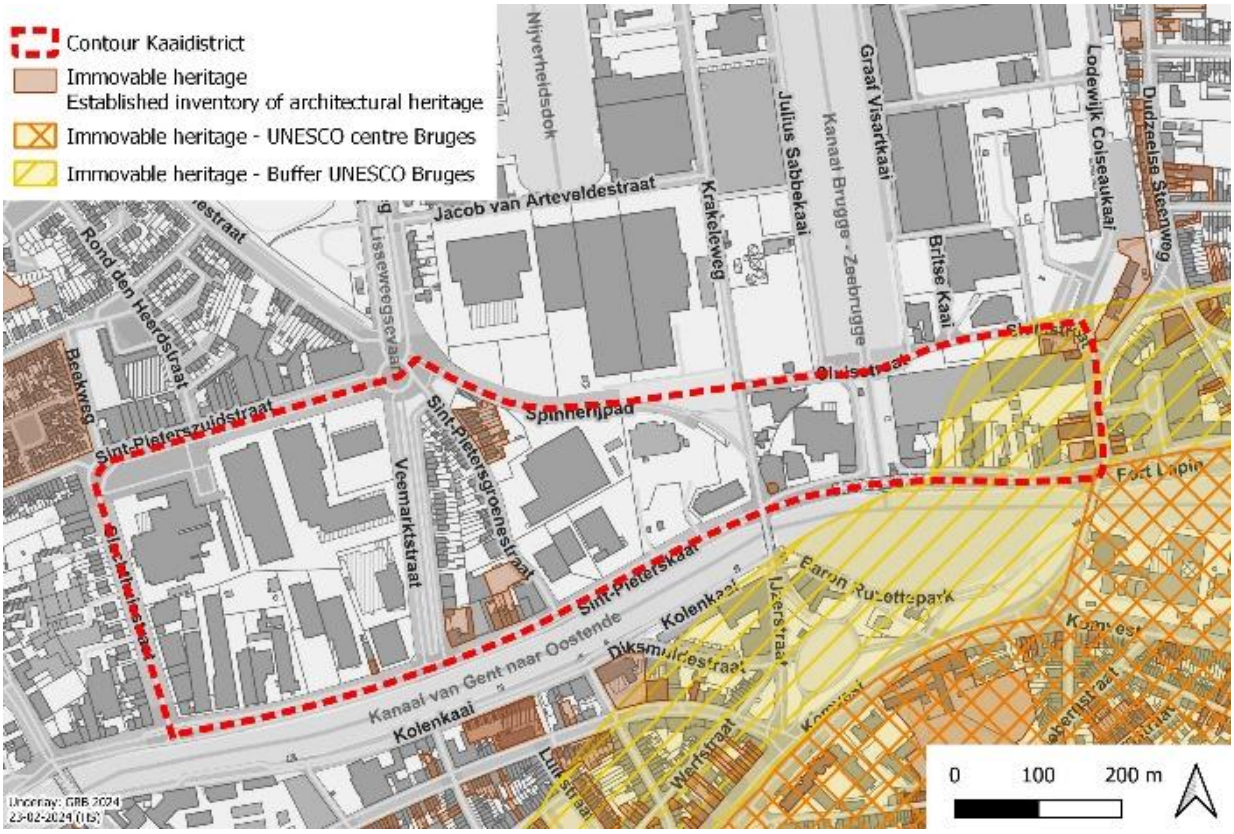
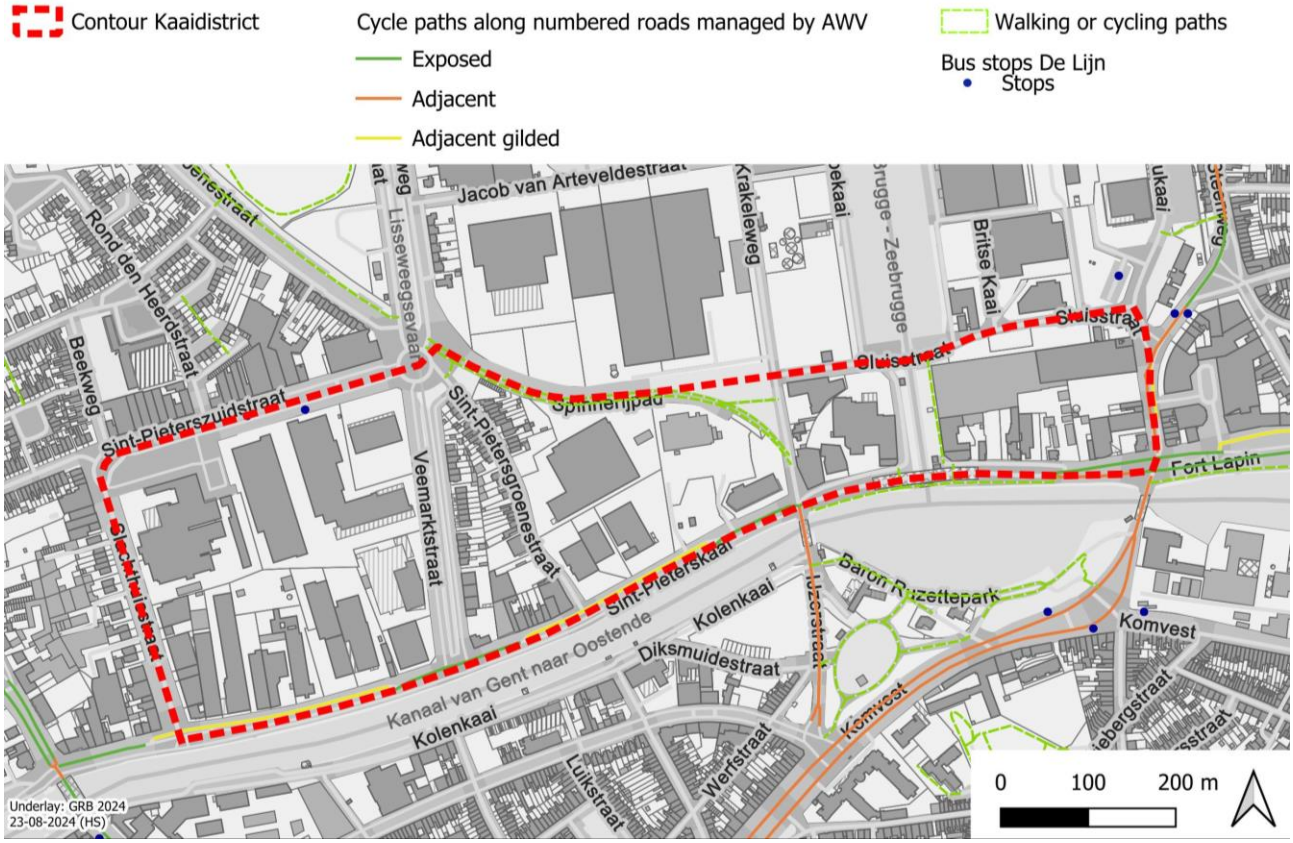


Image: Buildings on the inventory list of built heritage along the Sint-Pieterskaai

In terms of accessibility, the area is well-connected by car but less accessible for pedestrians or cyclists, although bike-friendliness will significantly improve through the 'City Bike Route' project. Public transport is not well-developed, although the transformation area is close to the (smaller) Bruges Sint-Pieters train station (1 to 2km for the Kaaidistrict).

Image: Accessibility of the Kaaidistrict



11.2 Concept study Kaaidistrict

Concrete cases posed challenges for the city. Recognizing the need to play a leading role in the transformation of the Kaaidistrict, the city of Bruges assumed the role of director. The goal is to re-develop this transitional area into a space with layered, diverse, and multifunctional use, integrating manufacturing, businesses, various forms of housing, amenities, tourism, temporary use, sustainable logistics, etc. As part of this directorial role, the city commissioned a conceptual subsidy to develop a robust spatial framework through co-creative design research and create an action plan for implementation.

The concept study went through three phases:

11.2.1 Exploration

The Kaaidistrict currently presents a somewhat disorganised appearance. The view along the Sint-Pieterskaai is dominated by warehouses and large parking spaces. In the area, besides a limited number of industrial buildings, there are mainly shops for large-scale retail and department stores. Among outdated sections, there are some more recent developments, for example, at the V-Market and Dovy Keukens. Particularly on the western side of the area, there is vacancy, with the Bruges Slaughterhouse being the largest vacant site. The city of Bruges does not own any land within the Kaaidistrict, so the development of the built heritage will occur at the pace of private parties. The parcel structure, therefore, becomes influential in shaping the future.

Image: Kaaidistrict now

Due to its location in the city, the Kaaidistrict is an ideal place to develop new urban economies. As the development of the Kaaidistrict will happen gradually, the establishment of a robust spatial framework becomes increasingly important. A strong public space structure is crucial to effectively

connect the Kaaidistrict with the surrounding residential fabric, forming the basis for a high-quality living and working environment. Simultaneously, the area is integrated into the citywide spatial context. Potential actions for a robust spatial structure include:

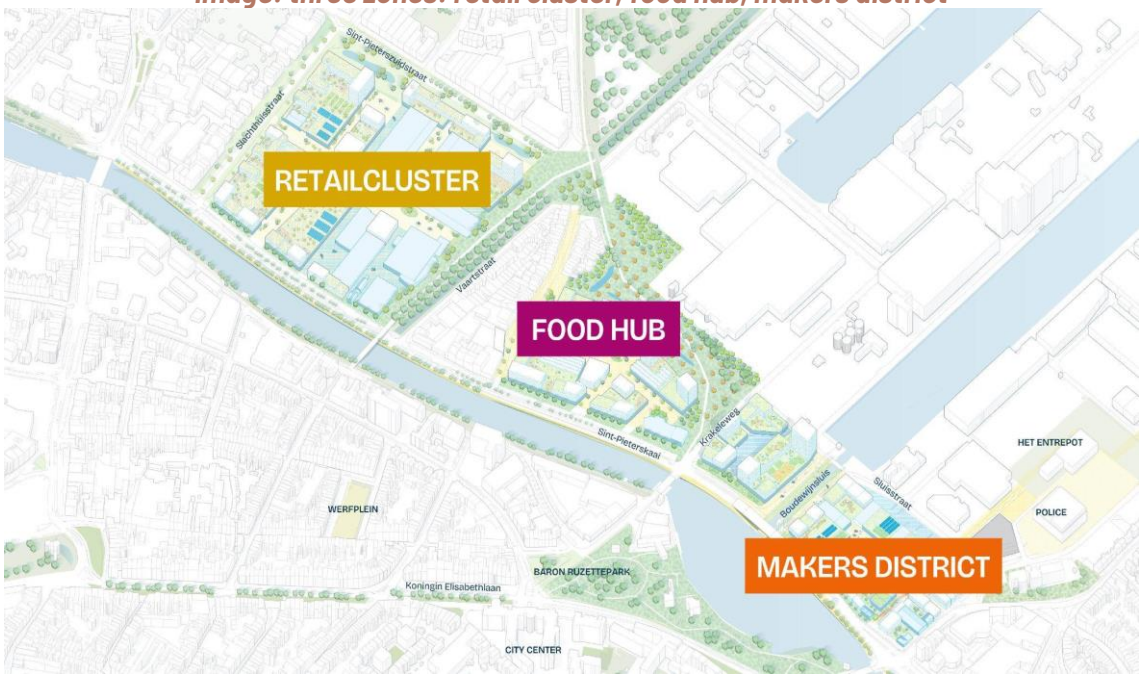
- Expansion of green infrastructure and a cycling network.
- Enhancement of the waterfront experience.
- Quality connections to city neighbourhoods.
- Separated access.

Efforts should be directed towards greater building density through sustainable spatial usage. The spatial claims within the Kaaidistrict are inherently substantial due to its unique location in the city and market pressures. Integration becomes the urban planning challenge, aiming to bring economic programs together with other urban functions in a compact manner. Various programmatic approaches are explored for the economic/social program, such as retail and urban facilities, urban logistics, and productive manufacturing. The economic function is woven, wherever possible, with a residential program. The approach involves multiple spatial uses, bringing together a variety of programs within an urban, mixed development. Different programs are projected above each other, resulting in a layered urban structure, metaphorically represented as a lasagna.

11.2.2 Vision formation and design research

Providing a glimpse into the long-term perspective, the Kaaidistrict as a whole develops a strong identity within the city. Simultaneously, the different requested economic and societal programs find their own place within the Kaaidistrict, maximising alignment with the specific spatial context. Three zones are distinguished:

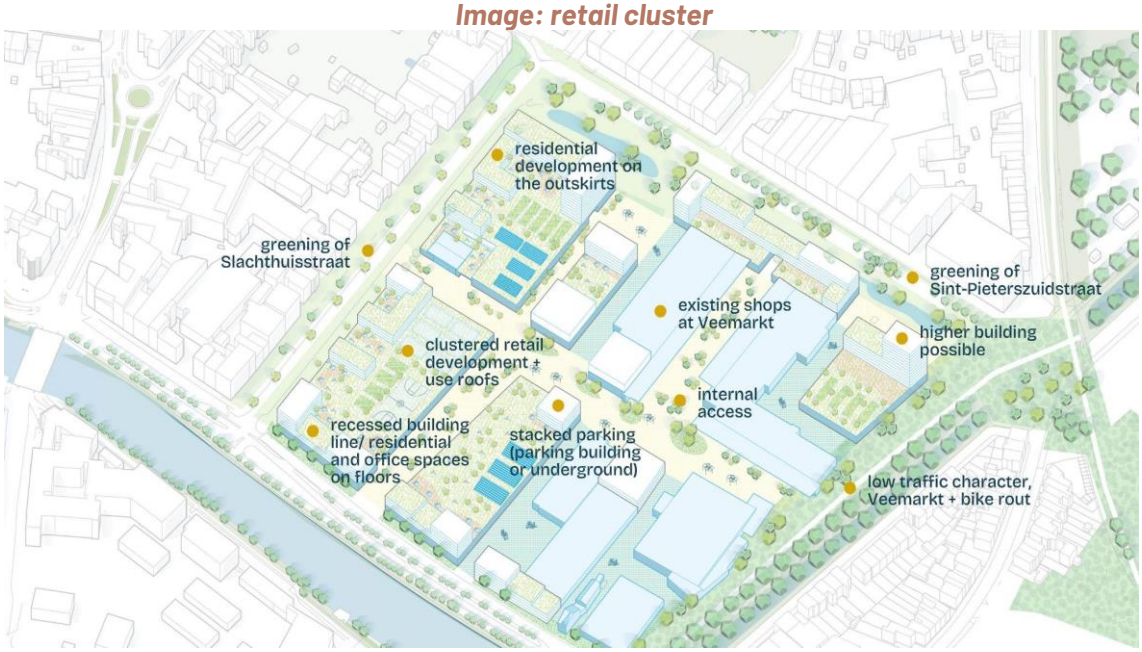
Image: three zones: retail cluster, food hub, makers district



1. **Urban retail cluster**, as a compact expansion around the V-market

   A compact expansion around the V-Markt, concentrating all retail around it. The area allows for a pleasant central and connected indoor space. Those who come to shop by car should park underground or in a parking structure. Living on the outskirts of this zone is possible and attractive for developers.

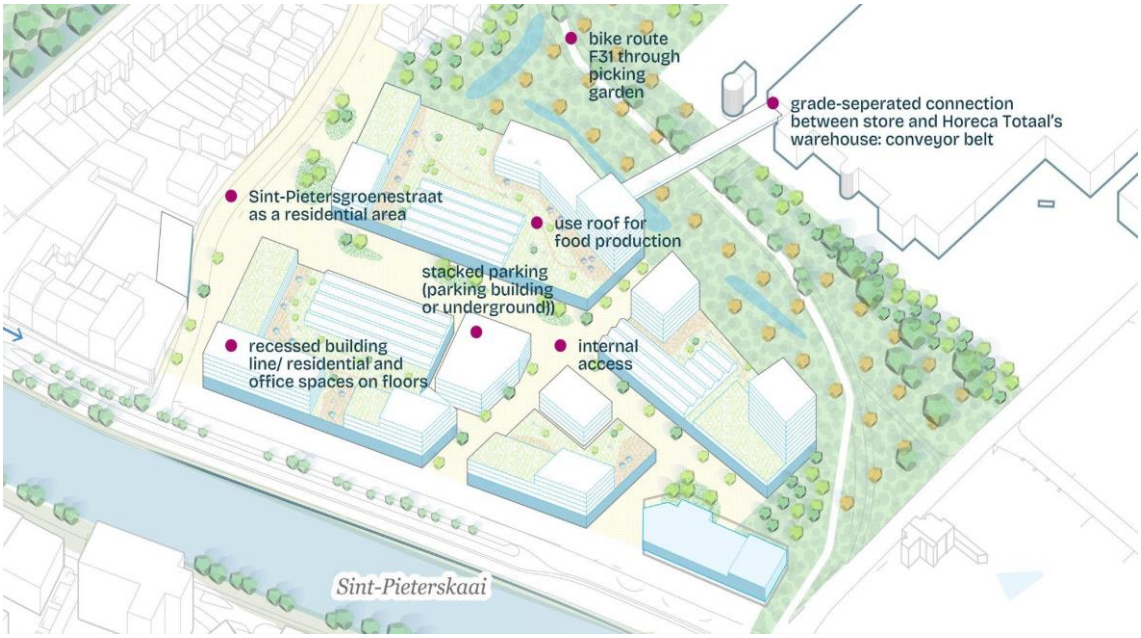
Image: retail cluster



2. A **food hub** where local production goes hand in hand with supplying the city centre.

   The food hub accommodates urban farming and businesses focused on food supply in the city. The collection of companies focused on healthy food with a short chain between production and distribution gives the food hub a strong identity. Think of picking gardens, rooftop gardens, various logistical systems for smart delivery, and the connection with the harbour.

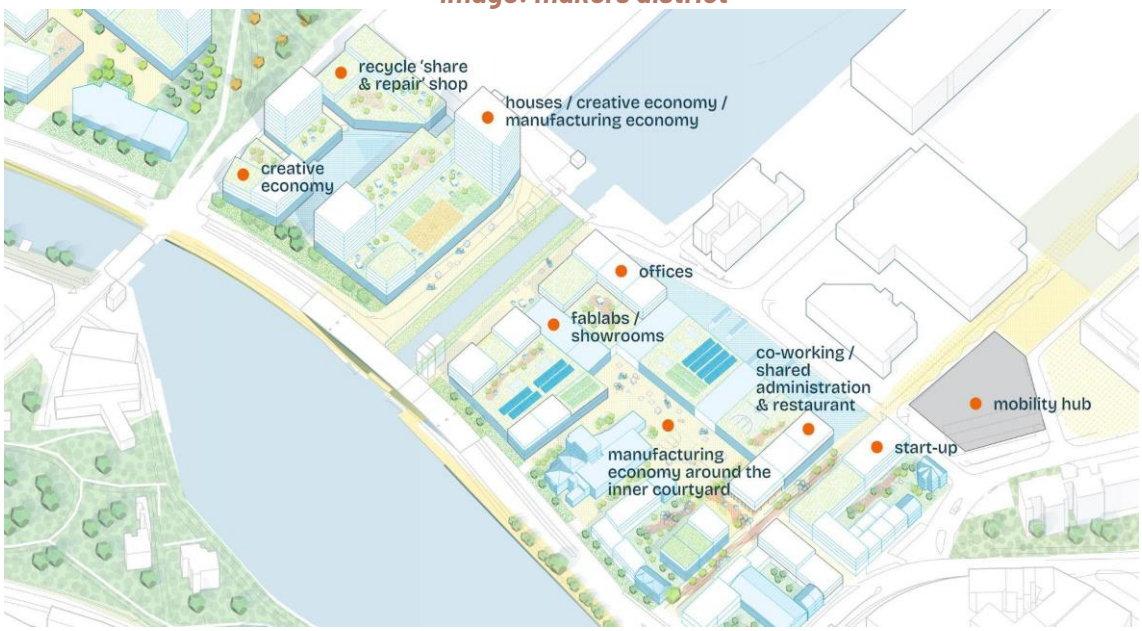
Image: food hub



3. A **makers district**, a place for urban production located at 'Lock square', directly connected to the city centre and the harbour.

   This area focuses on the experience of making. The courtyard of the makers district makes the area permeable and also serves as the beating heart as an extension of the workshops. Makers, residents and visitors come together.

Image: makers district



11.2.3 Development of Implementation strategy

A crucial aspect of this concept study[15] is the need for space for economic activities in the city. This is not just about providing areas for economic activities but creating optimal urban conditions for both more efficient use of current business activities and attracting new ones. The final product of this study is not a blueprint that dictates how the built space should look but results in a shared vision as a potential realisation of the set ambitions. The transition of the project area will happen step by step, and the vision for the future will be adjusted gradually. There is a need for an integral development strategy that not only focuses on creating 'space' for new forms of the economy or broadening functions but also on creating networks of actors and spatial conditions that generate support for sustainable urban development with strong coherence and identity:

- A more conscious approach to the transition to the 'friendly city.'
- Addressing new needs related to the workspace.
- Traditional project development is not sufficient.
- Integration at the building/parcel level is often inadequate.
- Significant role for spatial mediators
- ....

The next important step is the development of a spatial implementation plan (RUP of territorial Transformation Plan) for the area 'Kaaidistrict'. In fall 2024 a starting memorandum will be finalised with

- The description of the area
- The existing situation
- The current spatial planning context
- The vision of the city, future plans
- Formulation of planning objectives

The starting memorandum will be sent to citizens, higher authorities and stakeholders. The city will ask the regional government (Flanders) to give delegation and permission to the city to develop a new RUP.

The city of Bruges does not own any land within the Kaaidistrict, so the development of the built heritage will occur at the pace of private parties. The parcel structure, therefore, becomes influential in shaping the future.

11.3 Energy simulations by VITO

VITO used CEA (City Energy Analyst, an open-source computer program for modelling and simulating the energy demand of buildings at district level) to simulate 3 scenarios for the Kaaidistrict in terms of energy demand and heat networks:

- current status of the built environment

[15] The complete study can be consulted through https://www.brugge.be/stad-bestuur/beleid/stadsvernieuwing/kaaidistrict#1879-studies-en-plannen.

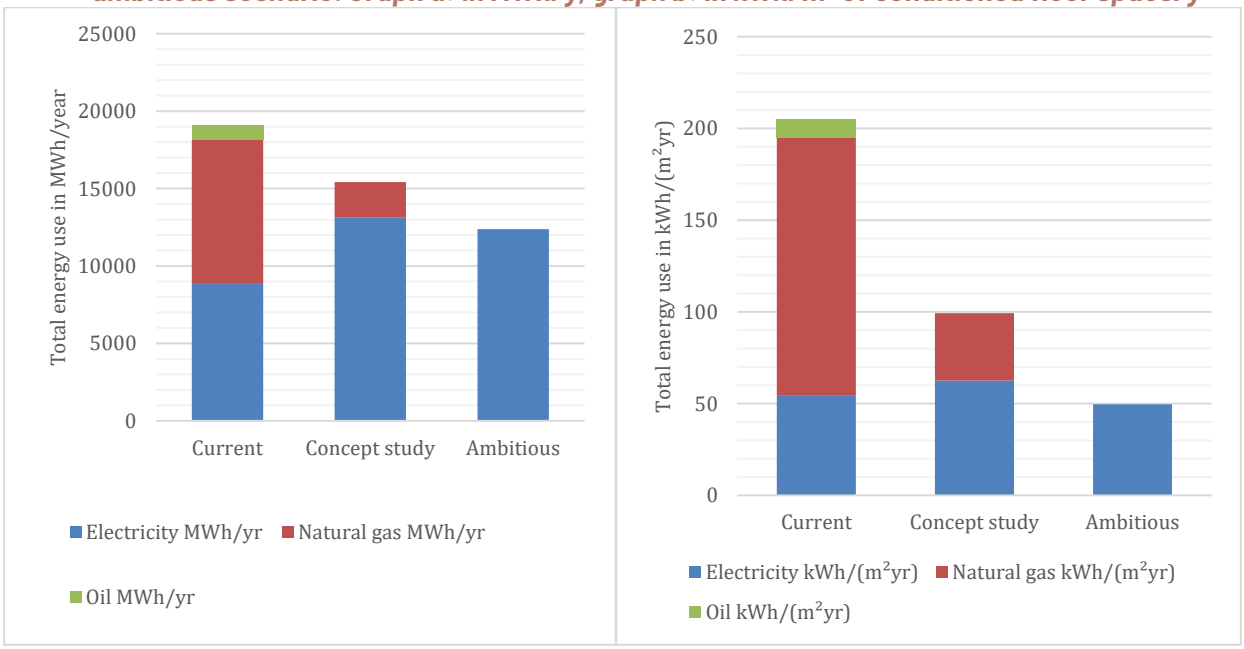
- new situation according to the concept study (switch to heat pump or electric heating without renovation measures, 40% of the roof area of the new buildings is used for solar panels, ...)
- new situation with high ambitions for energy transition (conversion to heat pump, all roofs are used for installing solar panels, building envelope of all buildings is renovated, ...).

It is important to note that the conditioned floor area doubles in the new situations compared to the current situation. This means that the Kaaidistrict will be used more intensively in the future.

The graphs below show that a significant share of natural gas is still used in the concept study, while the ambitious scenario moves completely towards fossil-free energy use.

The graphs show the decrease in the Kaaidistrict's energy use for the different scenarios. Here, there is a notable difference between the figure showing total energy use in MWh per year (a.) and this one showing energy use in kWh per square metre of floor space for the average of all buildings (b.). This is due to the doubling of the conditioned area. The site is used more intensively, so the total energy use decreases only slightly in MWh per year: a decrease of 19% for the concept study and 35% for the ambitious scenario. In kWh per square metre of floor area per year, however, the decrease is 49% and 75% for the concept study and the ambitious scenario, respectively.

Graphs: Total energy consumption per year for the three scenarios: current state, concept study and ambitious scenario. Graph a: in MWh/y, graph b: in kWh/m² of conditioned floor space/y

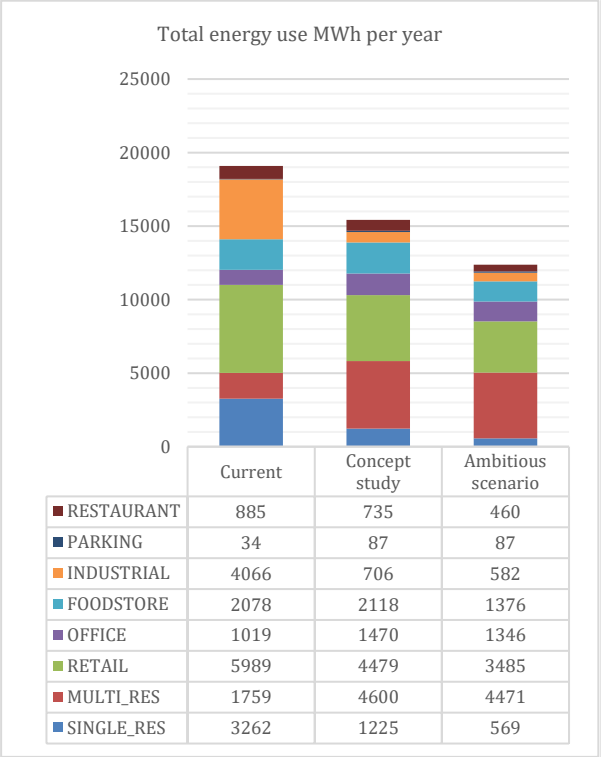


Graph a. Graph b.

Finally, the graphs below show the total energy consumption per year per building function on the left and the total energy generation from solar panels per scenario on the right. To be an energy-neutral neighbourhood on an annual basis, these two columns (energy use on the one hand and energy generation on the other) must be balanced. For the concept study, this is not yet the case: energy

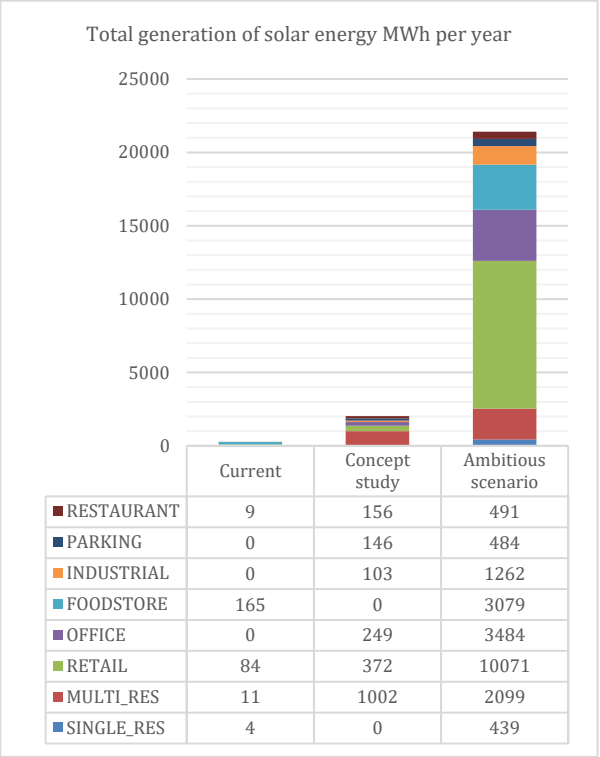
generation is only 13% of energy use here. For the ambitious scenario, there is 73% more energy generation than energy use, so this is an energy-positive scenario for the Kaaidistrict.

Graph a: Overview of the energy consumption for the three scenario's
Graph b: Renewable energy production with PV panels for the three scenario's



	Current	Concept study	Ambitious scenario
RESTAURANT	885	735	460
PARKING	34	87	87
INDUSTRIAL	4066	706	582
FOODSTORE	2078	2118	1376
OFFICE	1019	1470	1346
RETAIL	5989	4479	3485
MULTI_RES	1759	4600	4471
SINGLE_RES	3262	1225	569

Graph a.



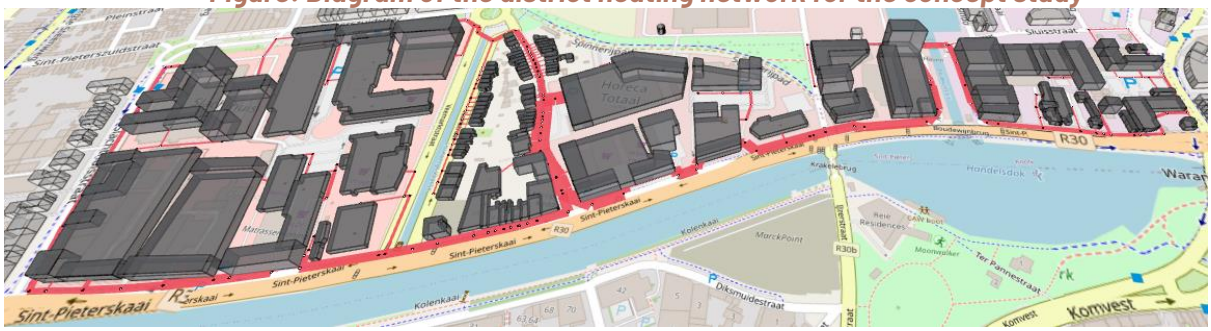
	Current	Concept study	Ambitious scenario
RESTAURANT	9	156	491
PARKING	0	146	484
INDUSTRIAL	0	103	1262
FOODSTORE	165	0	3079
OFFICE	0	249	3484
RETAIL	84	372	10071
MULTI_RES	11	1002	2099
SINGLE_RES	4	0	439

Graph b.

For the simulations of a district heating network, it was assumed that all buildings will be connected to the heat network. The simulations determine the network temperature for each hour, and this in the heat source and in all buildings (nodes). A precondition is that the water temperature in the network must be high enough to provide the requested heat in each demand node every hour. The source of the heat network was not modeled in detail; this could be a large heat pump or any other production unit.

The figure below shows a schematic representation of the piping network required to construct a district heating network in the Kaaidistrict. The red lines schematically indicate the thickness of the necessary pipe network: the thicker the line, the thicker the pipe needed there. The diagram shows that Horeca Totaal was chosen as the location for the heat production plant. This is because the greatest demand centralizes here with a reasonable location in the middle of the district. In this way, the diameters of the pipes can be minimized.

Figure: Diagram of the district heating network for the concept study



The table below shows some results of the simulations of the collective heat network. First of all, it is clear that the required energy and maximum peak power is remarkably lower for the ambitious scenario than for the concept study: for the ambitious scenario, the energy consumption is 38% lower and the maximum peak power is 31% lower. Interestingly, the maximum heat source temperature is the same for the two scenarios. The 95% quartile values of power and temperature are also shown. These values show that for 95% of the time the necessary heating power is more than half lower than the peak power, while a temperature of about 65°C is sufficient (compared to the maximum temperature of about 80°C).

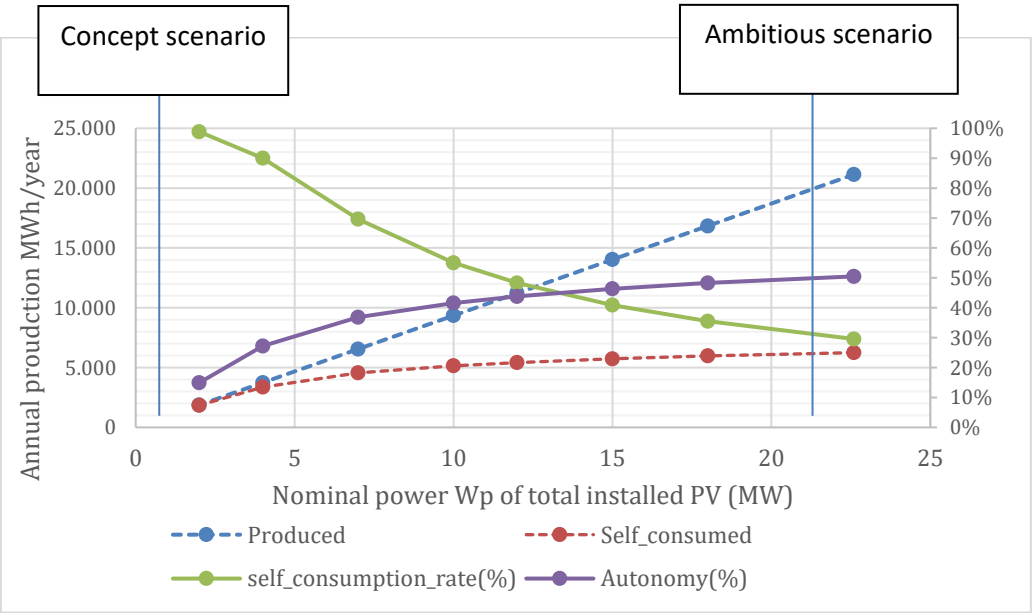
Table: Summary of some key parameters of district heating simulations

	Ambitious scenario	**Concept study**
Annual heating source load (MWh/year)	6786.5	11027.3
Maximum peak heat source capacity (MW)	4.7	7.0
95% quartile of hourly capacity (MW)	1.5	2.8
Maximum temperature of heat source (°C)	80.2	80.6
95% quartile of heat source temperature (°C)	65.1	65.2
Average temperature of heat source (°C)	53.4	54.5
Total length of pipe network (m)	7450	7281
Weighted average pipe diameter (mm)	49	55

The table also implies that investment costs for the heat network will be independent of heat demand. The average heat source temperature, the total length of the pipe network and the average pipe diameter are very similar for the two scenarios.

Finally, the figure below shows the installed capacity of solar panels varied from the concept study on the left to the ambitious scenario on the right. This shows that both the amount of solar energy consumed locally ("self_consumed" in red, read on the left axis) and autonomy ("autonomy (%)" in yellow, read on the right axis) level off toward a plateau. Without techniques that can optimize local consumption such as batteries, smart control or electric charging stations, you will be able to use your own solar energy on the site about 50% of the time at most, even with a very large number of solar panels (22.6 MW of the ambitious scenario). Without additional optimization techniques, it is recommended to install 12 to 15 MW of solar panels on the site.

Figure: Solar energy produced and consumed at the site. Power in MWh/y on the left axis (dashed lines), % self-consumption and autonomy on the right axis (solid lines), as a function of the installed rated capacity of solar panels at the site (MW) below



11.4 Mobility study

In October 2023, the mobility study[16] for the Kaaidistrict was approved by the College of Mayor and Aldermen. To respect the transition of the Kaaidistrict while considering the mobility capacity of the area, a series of actions were developed. These actions are outlined in a dynamic roadmap, providing flexibility to adapt to future development opportunities. The main conclusion is that the vision from the Kaaidistrict concept study can be maintained, with a focus on safeguarding the following policy lines through a dynamic roadmap:

- Residential streets and neighbourhoods do not serve as the primary access points for the Kaaidistrict.
- Existing shortcut routes need to be addressed at the right moment to establish a solid foundation for future developments.
- Traffic shifts resulting from these interventions and the expected increase in traffic due to the program will occur on main roads and parallel neighbourhood collector roads.
- Refinement of several traffic engineering principles from the concept study is necessary.

[16] The complete mobility study can be consulted through https://www.brugge.be/stad-bestuur/beleid/stadsvernieuwing/kaaidistrict#1879-studies-en-plannen.

- Private developments should strive for a 'modal shift' ('push and pull') embedded in an ambitious vision for mobility and parking management."

The dynamic roadmap is reviewed annually. Priorities are assigned and plans are made for the coming year. However, there are also agendas of higher authorities to be taken into account here f.i. Agency for Roads and Traffic (AWV), De Vlaamse Waterweg (DVW).

11.5 Makers study

During discussions with developers and stakeholders in the makers district, the city often receives inquiries about who these makers are and their specific needs.

To provide developers and stakeholders with more insights into the feasibility of the Makers District and to better assess development opportunities, research is conducted on the makers in Bruges and the potential to develop a Makers District in the Kaaidistrict.

This study builds on the concept study and is conducted in interaction with the target audience of makers. The following research questions are addressed:

1. Who are the actors active in the manufacturing industry in Bruges or looking to establish themselves in Bruges? How broad or extensive is this manufacturing industry, and which sectors are represented?
2. What needs do these makers have, and to what extent or how can developers spatially/infrastructure address these needs and expectations? What added value can a centralised Makers District offer makers?
3. What is the financial/economic capacity of this sector for infrastructure investments? Or how can the Makers District meet their establishment needs?
4. What management model for the infrastructure can be developed to meet expectations and economic capacity?
5. What role can the city or another public partner play in this management model and how should that be?

The Makers district currently shows low spatial quality. Several developers are interested in redeveloping this area, taking into account its waterfront location and the city's desire for it to host the creative and artisanal maker and initiate cross-fertilisation between them.

A spatial-economic analysis, design feasibility study, close consultation with the various city departments, working sessions with local and supra-local actors and a lot of bilateral talks with makers, entrepreneurs, businesses, developers and landowners were carried out to answer the above questions.

This study was finalised and approved by the college of the mayor and aldermen in July 2024.[17]

[17] The complete makers study can be consulted through https://www.brugge.be/stad-bestuur/beleid/stadsvernieuwing/kaaidistrict#1879-studies-en-plannen.

12. Detailed development plan

Image: legend of Special development plans

Image: detailed Spatial Development Plan