Greenvolve

GREEN CITIES WITH SMART CITIZENS

PR3 Database on green solutions and public consultations

COLLECTION OF GOOD PRACTICES AND INNOVATIVE SOLUTIONS FOR GREEN CITY ELEMENTS

GREENVOLVE Green Cities with Smart Citizens
2021-1-HU01-K220-ADU-000033719

www.greenvolve-project.eu

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Intro

INTRODUCTION TO THE COLLECTION OF GOOD PRACTICES AND INNOVATIVE SOLUTIONS FOR GREEN CITY ELEMENTS

This is the Greenvolve project third main output (PR3) titled “Database on green solutions and public consultations" that covers **“Collection of good practices and innovative solutions for green city elements”**. The intention of this database is to provide citizens with real life examples of Green cities and smart citizens in action across Europe. The collection focuses on sustainable urban development, not just in creating green spaces but integrating sustainability into urban planning. It empowers citizens with knowledge and tools for green city initiatives, encouraging active participation. Highlighting co-creation, it features collaborations between authorities and citizens for sustainable solutions. With a European perspective, it draws from the continent's sustainable living commitment, offering insights into diverse urban challenges.

It is recommended for this output that readers also refer to:

- The **“Handbook on Green City Elements”**, the first output (PR1) of the Greenvolve project. **Green city elements** are processes, issues, and solutions that are significant for a pleasant, green and sustainable urban environment, ultimately, for the better well-being and health of the citizens (e.g., green roofs and walls, plastic waste, recycling of clothes, bee-friendly gardens, etc.). Each element is covered based on the following structure: basic introduction, description of operation, main features, the most common challenges (related to its operation and/or for which it gives a solution), and best practices. Visualisation and illustration support the materials.
- Projects second output (PR2) - **“Citizens’ Engagement Toolkit”** aims to provide the reader with an understanding of citizen engagement and green urban city projects while providing practical tips for adult citizen (18 to 65+) stakeholders to be able to engage successfully with green city project consultations. Focus particularly on engaging and upskilling local communities, NGOs and wider civil society. These citizen engagement strategies could also be useful for architects and public planners who seek more in-depth knowledge on innovative methods of involving citizens in urban planning.
- 4th and final output provides access to the **Greenvolve online platform** (PR4). The above mentioned outputs on green city elements, active citizenship and best practices are integrated online in order to provide users with an opportunity to learn interactively on public consultations and green city efforts.

*It is important to note that Greenvolve project does not claim credit for these folowing innovations and best practices in this collection.

*All photographs and visual elements used in this collection are either sourced from the original project websites or are available free for use, with appropriate credit given to the authors.

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Intro about GREENVOLVE

ABOUT THE GREENVOLVE PROJECT

The “Green Cities with Smart Citizens” (Greenvolve) project is a two-year project co- funded by the European Union under the ERASMUS+ KA220-ADU – Cooperation partnerships in adult education programme (Agreement Number: 2021-1-HU01-KA220-ADU-000033719).

Project focused on advancing sustainable urban development. It emphasizes the importance of public consultations in green city projects for comprehensive discussions about a city's future, including the impact on community life, social and economic conditions, and the environment.

Greenvolve addresses the need for informed, collective decision-making and broad-based ownership of solutions, aligning with EU policies like the European Green Deal and the EU Biodiversity Strategy for 2030.

The project seeks to empower citizens aged 18-65 with knowledge and skills for effective participation in urban design and decision-making, particularly in green city initiatives.

Greenvolve supports the Sustainable Development Goals of the UN, targeting the sustainable development of human settlements in an urbanizing world. It acknowledges the dual role of cities as centers of economic and social development and as potential sites of social exclusion and environmental challenges. The project also addresses health risks associated with urban living, such as water and sanitation issues extreme weather and air pollution.

Greenvolve is innovative in its dual focus: enhancing knowledge about green cities and facilitating citizen participation in green city consultations. It fosters active citizenship, a key competence for lifelong learning, by helping citizens understand civic and social life concepts, global developments, and sustainability. The project aims to create a more holistic approach to urban planning and development control, considering land-use patterns, urban spatial design, health outcomes, equity, resource use, cleaner transport, energy investments, and increased biodiversity and nature.

More information about the project is available in our platform - www.greenvolve-project.eu

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Structure

Description of categories for each best practice/innovation

When evaluating and documenting each BEST PRACTICE AND INNOVATIVE SOLUTION, it's essential to have a structured approach to ensure consistency and clarity. The following categories have been chosen to provide a comprehensive overview of each example:

- **Project Overview:**

This captures the basic details such as the title of project, location, country, contact information, and the website address.

- **Project Details:**

This section provides insights into the basic abstract of the project, its thematic area, thematic sub-category, the type of actor/agent involved, and the typology of green urban site (city urban gardens, public parks, protected areas etc.).

- **Green City Elements (GCE):**

A core section that elaborates on specific green initiatives like Sustainable Mobility, Renewable & Alternative Energy Sources, Water as Natural Resource, and various other sustainable practices and solutions. For more information about GCE visit our websites **E-CARDS** where you can find out each of them.

- **Engagement and Consultation:**

This focuses on the community and public involvement aspects, detailing the target groups, public engagement, best practices, the consultation tools used, and any E-tools and social media platforms leveraged. For detailed information about citizen engagement and public consultations learn more visiting our website and open 2. RESULT - **ADULT EDUCATION TOOLKIT**

- **Innovation and Impact:**

A crucial section that highlights the level of scale of innovation from 1 to 5 where 1 is commonly known and 5 is something completely out of the box, provides an abstract of elements of innovation, and outlines the expected impact of the project in scale - LOW - MEDIUM - HIGH.

- **Budget:**

A transparent look into the financial aspects, detailing the budget spent and source of money if available.

- **Benefits and Challenges**:

An honest assessment that lists the environmental, material/economic, and social benefits while also addressing any challenges encountered.

- **Resources and Transferability:**

This section provides information on any teaching materials/resources developed, links to these resources, the personal skills required, adherence to non-discriminatory principles, and the transferability potential of the project in scale LOW - MEDIUM - HIGH.

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COOL ROOMS IN VIENNA

Location: Vienna
Country: Austria
Contact Information: wieneuplus@ma25.wien.gv.at
Website Address: Link

Image: © justocker via GettyImages.com

The Cooling Zone project in Vienna, launching in summer 2023, offers a respite from the summer heat, particularly for vulnerable populations. These zones, maintained at a comfortable temperature range of 20-24 degrees Celsius, are designed to alleviate heat stress without causing any physical strain. The pilot project, part of the Vienna Heat Action Plan and the neighborhood renewal program WieNeu+, will initially feature two locations in partnership with Urban Innovation Vienna and local organizations. These zones provide a haven where people can relax, enjoy cold drinks, rest, and engage in social activities, all free of charge and without the obligation to spend. Located in Leopoldstadt and Brigittenau, the zones aim to combat both social isolation and heat-related health risks, contributing to a more heat-resilient city. The ultimate goal is to establish a dense network of such zones, especially in areas experiencing significant heat island effects.

Thematic Area – Climate change adaptation
Thematic Sub-category -
- Buildings & environment
- Behavioural adaptation to extreme weather

Type of Actor/Agent - Local Council
Typology of Green Urban Site – Street and residential project

Green City Elements:
- Adapted Touristic Facilities
- Smart Governance
- Smart Environment
- Sensorization
- Heatwaves
- Heating and Cooling

Engagement and Consultation:
Target Groups - Citizens
Public Engagement - n/a
Consultation Tools Used - n/a

Resources and Transferability:
Teaching Materials/Resources: n/a
Personal Skills Required: Low
Non-discriminatory Principles: Yes
Transferability Potential: High

Innovation and Impact:
Innovative approach to urban heat management, providing cool indoor spaces as a refuge from summer heat waves, particularly for vulnerable populations. The impact of this initiative extends beyond immediate comfort; it contributes to public health by preventing heat-related illnesses and aligns with Sustainable Development Goals by fostering inclusive, safe, and sustainable urban environments. This project sets a precedent for addressing urban heat challenges in a holistic and community-focused manner.
Expected Impact **High**
Level of Scale of Innovation 4

Budget:
Budget Spent, Source of Money: EU fonds and Local Council fonds

Benefits: The "Cooling Zone" project in Vienna offers key benefits, such as providing a cool environment for vulnerable populations during heat waves, reducing health risks, and fostering social interaction to combat isolation. These zones also promote inclusivity and sustainable urban living.

Challenges: Challenges include ensuring reliable operation and accessibility, particularly for those most in need, and securing sustainable funding and support for the project's continuity. Addressing these challenges is crucial for the initiative's long-term effectiveness and success.

PEER PARLIAMENTS

Location: Brussels
Country: Belgium
Contact Information: european-union.europa.eu
Website Address: climate-pact.europa.eu/

Image: © Kelly via Pexels.com

"The European Climate Pact is a movement of people united around a common cause, each taking steps in their own worlds to build a more sustainable Europe. Launched by the European Commission, the Pact is part of the European Green Deal and is helping the EU to meet its goal to become climate-neutral by 2050."[1] The message given is: Get together with a group of family, friends, students, or colleagues and discuss how best we can fight climate change by changing the way we travel, eat and use energy.
[1] Link

Thematic Area – Climate change mitigation
Thematic Sub-category -
- Sustainable Mobility
- Renewable & Alternative Energy Sources
- Better consumption & production

Type of Actor/Agent -Public
Typology of Green Urban Site – Urban areas

Green City Elements:
- Human-Powered Mobility
- Public Transport
- Electric and Alternative Mobility
- Shared Mobility and MaaS
- Multimodal Mobility
- Green Urbanism
- Integrated Photovoltaics in Urban Environment
- Energy Efficiency in Urban Planning
- Energy Communities
- Solar Energy – Photovoltaics
- Positive Energy Neighbourhoods
- Alternative Energy Sources
- Buildings and Climate Change
- Conscious Consumption
- Citizen Engagement
- Urban Energy Consumption
- Energy Savings
- Energy Efficiency in Buildings

Engagement and Consultation:
Target Groups - Citizens.
Public Engagement - Was applied.
Consultation Tools Used - Link

Innovation and Impact
Encouraging everyone to host or join a Peer Parliament. Desing climate policies for people and with people
Expected Impact **Medium**
Level of Scale of Innovation 3

Budget:
Budget Spent, Source of Money: Private funds
Benefits:
Temperature & Climate control, Improved Air Quality, Improved environmental resilience, Increased cultural significance, Social cost savings (such as the impact of reduced air pollution), Creation of green jobs and business opportunities, Improved visual quality of the environment, Recreational opportunities, Providing educational opportunities.
Challenges: Taking awareness about the climate change problem.

Resources and Transferability:
Teaching Materials/Resources: Link
Personal Skills Required: n/a
Non-discriminatory Principles: Yes
Transferability Potential: Low

EUROPEAN ANTI-FRAUD OFFICE

Location: Brussels
Country: Belgium
Contact Information: Link
Website Address: Link

Image: © RossHelena via Canva.com

The Hercule programme protected the EU's financial interests by supporting action to combat irregularities, fraud and corruption affecting the EU budget. Among these irregularities, it´s possible finding some projects related to GCE, financed by EU, for example, and no gestioned correctly by partner or in charge entity.

Thematic Area – Digitalisation
Thematic Sub-category -
- Smart city domains for the citizens in green cities
- Smart city solutions and tools.

Type of Actor/Agent -Government
Typology of Green Urban Site – Cities or Rural areas (wherever fraud exists)

Green City Elements:
- Green Urbanism
- Positive Energy Neighbourhoods
- Integrated Photovoltaics in Urban Environment
- Energy Efficiency in Urban Planning
- Energy Communities
- Solar Energy - Photovoltaics
- Alternative Energy Sources
- Water storage
- Irrigation
- Bee-friendly gardens
- Impacts of Climate Change on Tourism
- Circular Design
- Servitisation
- Waste-Resource Marketplaces
- Short Supply Chain
- Smart (People, Governance, Mobility, Environment, Living, Smart Metering
- Co-creation in Urban Planning
- Artificial Intelligence
- Urban Energy Consumption
- Energy Contracts
- Energy Savings
- Energy Efficiency in Buildings

Engagement and Consultation:
Target Groups - Citizens
Public Engagement - Was not applied.
Consultation Tools Used - n/a
Useful links - Link1, Link2

Innovation and Impact
With this tool, the EU tries to prevent fraud in different areas of society. Among them, it can be considered essential to ensure that the funds allocated to environmental improvement projects, whether at a private level or at a global city level, are allocated to the purpose for which they have been granted.
Expected Impact **Medium**
Level of Scale of Innovation 3

Benefits:
Improved environmental resilience, increased cultural significance, Well-being benefits (such as people's perception of increased biodiversity and improved visual quality of the environment), social cost savings (such as the impact of reduced air pollution), improved visual quality of the environment
Challenges: People must denounce irregular behaviour regarding use of misuse of European money.

Resources and Transferability:
Teaching Materials/Resources:
Link1, Link2, Link3
Personal Skills Required: Medium
Non-discriminatory Principles: Yes
Transferability Potential: Medium

SCIENCE MEETS REGIONS

Location: Brussels
Country: Belgium
Contact Information: medialab@go.ugr.es erf@ugr.es
Website Address: Link1, Link2

Image: © Abhilash Sahoo via Pexels.com

Impronta Granada is an alliance between the University of Granada and the Provincial Council of Granada with the aim of addressing the challenges of the province and its municipalities, establishing a creative and productive dialogue between the diverse knowledge that is treasured by the various institutions and social actors.

Thematic Area – Climate change mitigation
Thematic Sub-category -

- Sustainable Mobility
- Green Urbanism related to Energy consumption
- Renewable & Alternative Energy Sources
- Water as natural resource
- Buildings & environment
- Behavioural adaptation to extreme weather
- Smart city domains for the citizens in green cities
- Smart city solutions and tools
- Energy Efficiency
- Green Urbanism related to improving social relations.

Type of Actor/Agent - Scientists and policy makers
Typology of Green Urban Site – There is a wide diversity of urban and/or rural areas that can be improved with the help of science.

Green City Elements:

- Green Urbanism
- Energy Communities
- Alternative Energy Sources
- Water Recovery and Reuse
- Water storage, Riverbanks and seashore areas
- Smart (Economy, People, Governance, Mobility, Environment, Living)
- Citizen Engagement
- Energy Savings

Engagement and Consultation:
Target Groups - Citizens
Public Engagement - Was applied, proper public engagement
Consultation Tools Used - In-person focus group, survey or feedback forms at public meetings, focus groups, webinar, stakeholder interviews.
Link

Innovation and Impact
Within the framework of the project, the first participatory action would be some innovation laboratories that will be carried out under the title of Innovation Laboratories – Current territorial challenges: climate change, depopulation and economy. The meeting will take place in different collaborative work sessions between different academic and social actors. The objective of this action is to generate innovative solutions to problems related to climate change that may affect the different municipalities of the province of Granada.
Expected Impact **Medium**
Level of Scale of Innovation 3

Benefits:
Temperature & Climate control, improved Air Quality, more wildlife & better habitats, improved environmental resilience, increased cultural significance, social cost savings (such as the impact of reduced air pollution), creation of green jobs and business opportunities, improved visual quality of the environment, recreational opportunities, enhancing social ties, providing educational opportunities.
Challenges: The 17 sustainable development goals, which seek to improve the lives of people around the planet are complicated and take long time to be implicated.

Resources and Transferability:
Teaching Materials/Resources: File
Personal Skills Required: High
Non-discriminatory Principles: Yes
Transferability Potential: Medium

CONFERENCE ON THE FUTURE OF EUROPE

Location: Brussels
Country: Belgium
Contact Information: climate-pact.europa.eu
Website Address: futureu.europa.eu

Image: © Hans via Pixabay.com

The conference is an unique and timely opportunity for European citizens to debate on Europe's challenges and priorities. The European Parliament, the Council and the European Commission have committed to listen to Europeans and to follow up, within their sphere of competences, on the recommendations made.

Thematic Area – Climate change mitigation
Thematic Sub-category -
- Sustainable Mobility
- Waste management

Type of Actor/Agent - Citizens
Typology of Green Urban Site – any site where an idea be proposed

Green City Elements:
- Electric and Alternative Mobility
- Energy Communities
- Solar Energy – Photovoltaics
- Green Urbanism
- Biomass
- Aerothermal Energy
- Geothermal Energy
- Ground Source Heat Pumps
- Micro Hydro Power
- Other Types of Hydroelectricity
- Wind Energy
- Alternative Energy Sources
- 3Rs and 7Rs
- Waste-Resource Marketplaces
- Urban Energy Consumption

Engagement and Consultation:
Target Groups - Citizens.
Public Engagement - Was applied
Consultation Tools Used - Link

Innovation and Impact
Encouraging everyone to host or join a Peer Parliament. Design climate policies for people and with people.
Expected Impact **Medium**
Level of Scale of Innovation 3

Budget:
Budget Spent, Source of Money: Europien Union
Benefits:
Temperature & Climate control, Improved Air Quality, improved environmental resilience, Social cost savings (such as the impact of reduced air pollution), Creation of green jobs and business opportunities, Improved visual quality of the environment, Recreational opportunities, Adjusting psychological well-being and physical health.
Challenges: Improve among all the future of Europe.

Resources and Transferability:
Teaching Materials/Resources: Link
Personal Skills Required: Low
Non-discriminatory Principles: Yes
Transferability Potential: Medium

NET ZERO

Location: Nicosia
Country: Cyprus
Contact Information: akti@akti.org.cy
Website Address: Link

Image: © Yuliya Furman via Canva.com

The initiative aims at addressing the much-needed shift towards sustainability in the HoReCa (Hotels, Restaurants, Cafes) sector. The activities are structured around three major targets

- energy saving practices and the reduction of CO ₂emissions;
- water saving practices;
- shift towards a sustainable supply chain through sustainable procurement practices and promotion of circular economy practices.

Thematic Area – Digitalisation
Thematic Sub-category -

- Sustainable Mobility
- Renewable & Alternative Energy Sources
- Waste management

Type of Actor/Agent - NGO
Typology of Green Urban Site – Tourism facilities

Green City Elements:

- Smart Governance
- Citizen Engagement
- Co-creation in Urban Planning
- Artificial Intelligence

Engagement and Consultation:
Target Groups - Citizens
Public Engagement - Was not applied
Consultation Tools Used - n/a

Innovation and Impact:
This initiative focuses on driving sustainable transformation in the HoReCa sector. It revolves around three key objectives: 1 - implementing energy-saving measures and reducing CO_2 emissions, 2 - conserving water, and 3 - transitioning to a sustainable supply chain by adopting sustainable procurement and circular economy practices. Aligned with the UN's Sustainable Development Goals and the EU's Greenhouse Gas (GHG) Directive, this program encourages the HoReCa sector to embrace sustainability. It emphasizes tracking resource consumption reductions, introducing practical sustainability solutions, and compensating for - GHG emissions. A handbook is accessible, offering ideas and strategies to companies on measures they can adopt to enhance their sustainability and progress towards achieving net-zero emissions.
Expected Impact **Medium**
Level of Scale of Innovation 3

Benefits: Well-being benefits (such as people's perception of increased biodiversity and improved visual quality of the environment), Creation of green jobs and business opportunities.
Challenges: The Net Zero project faces challenges in reducing energy and water consumption, promoting sustainable supply chains, and accurately tracking emissions. This involves navigating energy crises, implementing conservation practices in the HoReCa industry, engaging suppliers in sustainability, balancing costs, and aligning with international standards. Success depends on effective training, monitoring, and collaborative efforts among stakeholders.

Resources and Transferability:
Teaching Materials/Resources: Link
Personal Skills Required: High
Non-discriminatory Principles: n/a
Transferability Potential: High

CONSTRUCTION OF THE CIRCULAR CHILDCARE CENTRE

Location: Gladsaxe
Country: Denmark
Contact Information: info@lendagerark.dk
Website Address: Link1, Link2

Image: © Polyamate's Images via Canva.com

The childcare centre in Gladsaxe, Denmark, sets a pioneering example in sustainable construction, being the world's first Nordic Swan Ecolabel certified building constructed on circular principles. Utilizing materials from a demolished primary school, it showcases a model for circular, sustainable, and resource-efficient building practices. This innovative project aligns with the UN Sustainable Development Goals and the Nordic EcoLabel criteria, emphasizing low energy consumption, good indoor environment, sustainable materials, and high civil engineering standards. It not only provides a healthy and safe environment for children but also serves as a blueprint for future environmentally friendly construction, demonstrating the feasibility of recycling materials without hazardous chemicals and contributing to the overall sustainability of the building sector.

Thematic Area – Circular Economy
Thematic Sub-category -

- Buildings & environment
- Waste management
- Circular economy in buildings
- Better consumption & production
- Energy Efficiency

Type of Actor/Agent - Local Council
Typology of Green Urban Site – Street and residential project

Green City Elements:

- Buildings and Climate Change
- Circular Design
- 3Rs and 7Rs
- Conscious Consumption
- Short Supply Chain
- Cradle-to-cradle
- Smart Economy
- Smart Governance
- Smart Living

Engagement and Consultation:
Target Groups - Citizens
Public Engagement - Was applied
Consultation Tools Used - n/a

Resources and Transferability:
Teaching Materials/Resources: Link
Personal Skills Required: High
Non-discriminatory Principles: Yes
Transferability Potential: High

Innovation and Impact:
Childcare centre in Gladsaxe stands out for its innovative circular construction approach, being the first of its kind to achieve Nordic Swan Ecolabel certification. This project is groundbreaking in its use of recycled materials from a dismantled school, effectively reducing environmental impact and CO_2 emissions. It exemplifies holistic sustainability in construction, from employing sustainably sourced wood to focusing on energy efficiency. This center not only demonstrates the practicality of reusing materials without including harmful chemicals but also serves as a pioneering model for applying circular economy concepts in building. The success of this project offers invaluable lessons and could potentially lead to transformative practices in eco-friendly construction.
Expected Impact **High**
Level of Scale of Innovation 5

Benefits: Provides environmental benefits through its circular construction, reusing materials to reduce waste and CO_2 emissions, while setting new standards in sustainable building practices.
Challenges: managing collaboration among various stakeholders and avoiding hazardous chemicals like asbestos. This was achieved by adhering to Nordic Swan EcoLabel's strict chemical guidelines.

GREENING THE CITYSCAPE: COPENHAGEN'S INNOVATIVE GREEN ROOF INITIATIVE

Location: Copenhagen
Country: Denmark
Contact Information: Link
Website Address: Link

Image: © ferrantraite via GettyImages.com

In 2010, Copenhagen, Denmark, launched its Green Roof Policy, a forward-thinking initiative requiring new municipal buildings with roof slopes of less than 30 degrees to feature green roofs. This broad-reaching policy covers a wide range of structures, from schools and mixed-use buildings to cycle shelters and underground garages. The primary goal of this initiative is to bolster climate resilience, promote urban biodiversity, and enhance the overall well-being of Copenhagen's citizens. The policy has been remarkably effective, leading to the creation of over 40 green roofs and covering approximately 200,000 square meters within the first two years. Spearheaded by the City of Copenhagen's Environment and Technical Administration, this initiative stands as a testament to the city's commitment to environmental sustainability and urban innovation.

Thematic Area – Climate change adaptation
Thematic Sub-category - Green Urbanism related to Energy consumption
Type of Actor/Agent - Government
Typology of Green Urban Site – Green roof or wall

Green City Elements:

- Green Urbanism
- Irrigation
- Green roofs and walls
- Buildings and Climate Change
- Green roofs and walls
- Green areas and Heat Island Effect
- Heatwaves
- Smart Environment
- Co-creation in Urban Planning
- Energy Efficiency in Buildings

Engagement and Consultation:
Target Groups - Citizens, homeowners
Public Engagement - n/a
Consultation Tools Used - n/a

Resources and Transferability:
Teaching Materials/Resources: Link1, Link2
Personal Skills Required: Medium
Non-discriminatory Principles: Yes
Transferability Potential: High

Innovation and Impact:
Initiative stands as a pioneering approach in urban sustainability, being the first in Europe to mandate green roofs in a city's climate plan. The innovation lies in its wide applicability across various building types and its integration with the broader Cloudburst Management Plan to address climate change challenges like increased stormwater volumes. This policy differentiates between low-maintenance extensive roofs and recreational intensive roofs, offering a nuanced approach to urban greening. Its success has set a precedent for urban climate adaptation worldwide, combining environmental, social, health, and economic benefits in a comprehensive urban sustainability model.
Expected Impact **High**
Level of Scale of Innovation 4

Budget:
Budget Spent, Source of Money: Local council and private investments.
Benefits: Environmental benefits like improved rainwater retention and reduced urban heat, enhances social well-being through recreational green spaces, and offers economic advantages by reducing infrastructure costs related to stormwater management.
Challenges: High maintenance and costs associated with intensive green roofs, the complexities in implementing these roofs across diverse urban structures, and the need for effective rainwater management and ecological sustainability within this broad initiative.

RESTO: PIONEERING SUSTAINABLE BUILDING RENOVATION IN ESTONIA

Location: Võru
Country: Estonia
Contact Information: einari.kisel@taltech.ee
Website Address: Link

Image: © Nanostockk via GettyImages.com

The RESTO pilot project, launched in early 2022 in Estonia, represents a significant step towards sustainable urban renovation. A collaboration between the city of Võru, the FinEst Smart City Center of Excellence, and TalTech, the project aims to create a digital tool for local governments to develop effective building renovation strategies. Addressing the European Union's Green Deal's ambitious goal of renovating all existing buildings by 2050, RESTO focuses on enhancing energy efficiency and climate neutrality in urban architecture. By collecting and analyzing data on thousands of renovation options for each building, the tool is designed to guide renovations in a cost-effective and environmentally friendly manner. This innovative approach, tested in Võru through a specific pilot project, could revolutionize the way cities approach building renovation, balancing historical preservation with modern energy needs.

Thematic Area – Digitalisation
Thematic Sub-category -

- Buildings & environment
- Smart city solutions and tools

Type of Actor/Agent - Local council, Taltech, FinEst Smart city centre of excellence, others
Typology of Green Urban Site – Urban areas

Green City Elements:

- Buildings and Climate Change
- Smart Governance
- Smart Environment
- Citizen Engagement
- Sensorization
- Artificial Intelligence
- Energy Savings
- Energy Efficiency in Buildings

Engagement and Consultation:
Target Groups - Citizens, property owners
Public Engagement - Was applied
Consultation Tools Used - n/a

Resources and Transferability:
Teaching Materials/Resources: Video
Personal Skills Required: High
Non-discriminatory Principles: Yes
Transferability Potential: High

Innovation and Impact:
RESTO project is marked by its innovative approach to urban renovation, primarily through the development of a sophisticated digital tool to aid local governments in planning and executing building renovations. This tool uniquely integrates extensive data from various sources, analyzing around 6000 renovation options for each building, with the aim of optimizing energy efficiency and reducing emissions. The impact of this innovation is significant: it enables a more targeted, cost-effective approach to renovation, ensuring that buildings, even in heritage-protected areas, can meet modern energy standards without compromising their historical value.
Expected Impact **High**
Level of Scale of Innovation 5

Budget:
Budget Spent, Source of Money: 0.6 mill EUR, EU fonds and Taltech

Benefits: It enhances energy efficiency and reduces carbon emissions, supporting climate change mitigation. Improves living conditions with better-insulated buildings, fostering public awareness about sustainable practices and project drives cost savings in energy, stimulating job creation in construction and renewable energy sectors.

Challenges: Need for accurate data collection from diverse sources and also adapting the tool to evolving urban development and environmental standards for long term goals.

FUTURE MOBILITY ECOSYSTEM" PILOT PROJECT

Location: Tallin, Rae Parish
Country: Estonia
Contact Information: raivo.sell@taltech.ee
Website Address: Link

Image: © Pilot via FinEstcentre.eu

The "Future Mobility Ecosystem" project, led by the FinEst Centre in Estonia, aimed to revolutionize urban transportation. Running from January 2020 to May 2023 with a budget of 1.2 million EUR, it sought to integrate self-driving shuttles and micro-mobility solutions into the existing public transport system. A key achievement was an open information exchange platform, connecting different transport modes. The project also introduced on-demand self-driving buses, made affordable through the re-manufacturing of end-of-life electric vehicles, and developed an open-source software solution and a comprehensive big data database. This initiative, tested in real urban settings, involved collaborations with the City of Tallinn, Rae Parish, and various other partners.

Thematic Area – Digitalisation, Climate change mitigation
Thematic Sub-category -

- Sustainable Mobility
- Smart city solutions and tools

Type of Actor/Agent - Local council, Taltech, FinEst Smart city centre of excellence, others
Typology of Green Urban Site – Urban areas

Green City Elements:

- Public Transport
- Electric and Alternative Mobility
- Multimodal Mobility
- Circular Design
- Smart Governance
- Smart mobility
- Sensorization
- Artificial Intelligence

Engagement and Consultation:
Target Groups - Academia and researchers, Citizens, Local Councils and city staff
Public Engagement - n/a
Consultation Tools Used - n/a

Resources and Transferability:
Teaching Materials/Resources: Video, Toolkit
Personal Skills Required: High
Non-discriminatory Principles: n/a
Transferability Potential: Medium

Innovation and Impact:
The "Future Mobility Ecosystem" project represents a significant innovation in urban transport, blending self-driving shuttles and micro-mobility solutions with traditional public transport systems. Its innovative open information exchange platform and the integration of various transport modes mark a substantial leap in smart city development. The project's impact extends to enhancing urban mobility, reducing traffic congestion, and potentially lowering carbon emissions. The use of remanufactured electric vehicles for self-driving buses showcases a sustainable approach to resource use. This comprehensive initiative, tested in real urban environments, not only improves transport efficiency and accessibility but also paves the way for the future of sustainable urban transportation systems.
Expected Impact **High**
Level of Scale of Innovation 5

Budget:
Budget Spent, Source of Money: 1.2 million EUR, EU fonds and Taltech
Benefits: enhanced urban mobility through the integration of self-driving shuttles with public transport, reduced traffic congestion, and potential environmental gains from lower emissions.
Challenges: seamless integration of varied transport modes, guaranteeing the safety and reliability of self-driving vehicles, gaining public trust in new technologies, and maintaining economic viability post-pilot.

REHABILITATION OF THE FORMER MATRA SITE IN ROMORANTIN-LANTHENAY: A FLOOD-RESISTANT DISTRICT

Location: Romorantin-Lanthenay
Country: France
Contact Information: isabelle.bajou@loir-et-cher.gouv.fr
Website Address: Link

Image: © from project via website

The redevelopment of the former Matra site, a 6-hectare area in central Romorantin-Lanthenay along the Sauldre river, focused on nature and flood protection. After demolishing most old buildings, except those listed as Historic Monuments, the project embraced flood risks as its core principle. With 80% landscape and 20% construction, it features natural flood regulation, housing (mainly social) with flood-adaptive garages, and elevated individual homes to counter flooding. The landscape design, including rainwater basins and sheltered walkways, enhances safety and flood resilience, proven effective in the 2016 floods. This transformation promotes social diversity and urban nature, integrating site-specific challenges.

Thematic Area – Climate change adaptation
Thematic Sub-category -

- Buildings & environment
- Behavioural adaptation to extreme weather
- Smart city domains for the citizens in green cities
- Smart city solutions and tools.

Type of Actor/Agent - Local Council
Typology of Green Urban Site – Street and residential project

Green City Elements:

- Sustainable Drainage Systems
- Riverbanks and seashore areas
- Buildings and Climate Change
- Buildings and Climate Change
- Flash Flood
- Smart Environment

Engagement and Consultation:
Target Groups - Citizens
Public Engagement - n/a
Consultation Tools Used - n/a

Resources and Transferability:
Teaching Materials/Resources: n/a
Personal Skills Required: High
Non-discriminatory Principles: Yes
Transferability Potential: Medium

Innovation and Impact
The Municipality initiated a constructive dialogue with the French State to identify ad-hoc technical solutions considering natural risks. In this district, the layout was designed "like that of a tributary of the river". This is why the gardens, basement and floors of the dwellings have been raised by at least 1.50m, so that the garages are more likely to be flooded than the dwellings. The architect took into account the topography of the place. The levels of each construction being different, this facilitates the safe departure of the inhabitants, as long as a level 30 cm higher than the level of the 100-year flood is not reached. Following the same logic, sidewalks and pedestrian crossings have been raised to allow residents to leave their homes without being trapped. Similarly, each accommodation has terraces accessible by fireboats.
Expected Impact **Medium**
Level of Scale of Innovation 3

Budget and Analysis:
Budget Spent, Source of Money: 7 million EUR financed by the Municipality
Benefits:
Flooding & water quality, improved environmental resilience, social cost savings (such as the impact of reduced air pollution)
Challenges: n/a

LYON CONFLUENCE - A SUSTAINABLE AND INNOVATIVE CITY

Location: Lyon
Country: France
Contact Information: www.lyon-confluence.fr/en/contacter
Website Address: www.lyon-confluence.fr

Image: © ภาพของ Keng Merry via Canva.com

Lyon Confluence has been mobilised to support sustainable development and fight climate change since the beginning of the project. This commitment is translated through objectives for energy sobriety and increased renewable energy production, as well as the development of sustainable modes of transport.
In La Confluence, energy sobriety goes hand in hand with the sustainable consumption of natural resources. The challenge is also to limit the effects of climate change through adapted urban development. The aim of the urban project implemented in La Confluence is to build a city that is pleasant to live in. This requires urban planning that cares for plants, animals and humans. The challenge is to design and maintain sustainable urban living that gives nature its full rights.

Thematic Area – Climate change mitigation
Thematic Sub-category -

- Sustainable Mobility
- Green Urbanism related to Energy consumption
- Renewable & Alternative Energy Sources
- Buildings & environment
- Smart city domains for the citizens in green cities
- Smart city solutions and tools
- Energy Efficiency
- Green Urbanism related to improving social relations

Type of Actor/Agent - Local Council
Typology of Green Urban Site – Street and residential project

Green City Elements:
Mobility (Human-Powered, Multimodal, Electric and Alternative, Public Transport), Integrated Photovoltaics in Urban Environment, Energy (Efficiency in Urban Planning, Communities, Management Systems, Savings, Efficiency in Buildings), Solar Energy - Photovoltaics, Water (Recovery and Reuse, Storage) , Sustainable Drainage Systems, Irrigation, Buildings and Climate Change, Shading facilities, Green areas and Heat Island Effect, Heatwaves, Extreme Cold, Flash Flood, Compost, Short Supply Chain, Cradle-to-cradle, Smart (People, Governance, Mobility, Environment, Living), Sensorization, Heating and Cooling

Engagement and Consultation:
Target Groups - Citizens
Public Engagement - Was applied, proper public engagement

Innovation and Impact:
In La Confluence, new builds and eco-renovated homes are equipped with tablets for monitoring energy usage, contributing to a Community Energy Management System (CEMS) that optimizes energy supply in the area and greater Lyon. The district also features an efficient urban heat network connected to CEMS, providing heating and hot water. Additionally, La Confluence is testing Navly, an innovative driverless electric shuttle, to improve local transportation and explore future urban travel modes.Expected Impact **High**
Level of Scale of Innovation 5

Benefits: Temperature & Climate control, Improved Air Quality, Flooding & water Quality, More wildlife & better habitats, Increased biodiversity, Improved environmental resilience, Limiting impact of heatwaves by reducing urban temperatures, Well-being benefits (such as people's perception of increased biodiversity and improved visual quality of the environment), Social cost savings (such as the impact of reduced air pollution), Improved visual quality of the environment, Recreational opportunities, Aesthetic enjoyment, Adjusting psychological well-being and physical health, Enhancing social ties.

Challenges: n/a

Resources and Transferability:
Teaching Materials/Resources: n/a
Personal Skills Required: Medium
Non-discriminatory Principles: n/a
Transferability Potential: High

RESPONSE

Location: Fontaine d'Ouche, Dijon
Country: France
Contact Information: metropole-dijon.fr/Nous-contacter
Website Address: Link

Image: © Pixel-shot.com

Dijon, alongside Turku in Finland, leads Europe's RESPONSE program as a "flagship city," guiding six other European cities: Brussels, Zaragoza, Botosani, Ptolemaïda, Gabrovo, and Severodonetsk. These cities aim to replicate Dijon and Turku's solutions, focusing on creating positive energy islands that produce more energy than they consume. The project in Dijon involves nearly 600 homes and municipal buildings, impacting over 1100 residents. It includes the installation of smart thermostats, radiators, and connected smoke detectors for better energy management, comfort, and expense reduction. The initiative targets efficient energy use and plans for photovoltaic installations to produce 1600 MWh/year, partly powering 24 public buildings, including schools, a stadium, a swimming pool, and community centers.

Thematic Area – Energy transition
Thematic Sub-category -

- Green Urbanism related to Energy consumption
- Renewable & Alternative Energy Sources
- Buildings & environment
- Smart city domains for the citizens in green cities
- Smart city solutions and tools
- better consumption & production
- Energy Efficiency

Type of Actor/Agent - Local Council
Typology of Green Urban Site – Street and residential project

Green City Elements:

- Positive Energy Neighbourhoods
- Integrated Photovoltaics in Urban Environment
- Energy Efficiency in Urban Planning
- Energy Communities
- Solar Energy – Photovoltaics
- Buildings and Climate Change
- Shading facilities
- Smart Living
- Citizen Engagement
- Sensorization
- Energy Management Systems
- Urban Energy Consumption
- Energy Savings
- House Appliances
- Energy Efficiency in Buildings

Resources and Transferability:
Teaching Materials/Resources: Link
Personal Skills Required: Low
Non-discriminatory Principles:Yes
Transferability Potential: High

Engagement and Consultation:
Target Groups - Citizens
Public Engagement - Was applied, proper public engagement
Consultation Tools Used - Survey or feedback forms at public meetings, workshop with small discussion, presentations, short online videos, Link

Innovation and Impact:
Dijon is a true life-size experimentation laboratory, with around 80 innovations tested to build a carbon-neutral metropolis:
- Bifacial solar panels
- A vast urban heating network;
- Test batteries for storing solar energy;
- Smart thermostats and sensors.

Expected Impact **High**
Level of Scale of Innovation 4

Budget:
Budget Spent, Source of Money: 7.4 million EUR, Horizon 2020: Smart Cities & Communities

Benefits:
Improved environmental resilience, limiting impact of heatwaves by reducing urban temperatures, social cost savings (such as the impact of reduced air pollution), providing educational opportunities.

Challenges: n/a

HAFENCITY: PIONEERING SUSTAINABLE URBAN DEVELOPMENT

Location: Hamburg
Country: Germany
Contact Information: info@hafencity.com
Website Address: Link

Image: © AnjoKanFotografie via GettyImages.com

HafenCity in Hamburg exemplifies best practices in sustainable urban development, featuring innovative building standards with the HafenCity Ecolabel to ensure energy-efficient, low-impact construction. Its district heating networks use solar power and waste heat, drastically reducing CO_2 emissions. HafenCity's smart mobility strategy prioritises eco-friendly transport options like walking, cycling, and public transit, alongside a car-sharing system, to reduce car ownership and enhance urban living quality. These initiatives collectively demonstrate a comprehensive approach to climate-resilient, sustainable city planning.

Thematic Area – Climate Change Mitigation
Thematic Sub-category -

- Sustainable Mobility
- Green Urbanism related to Energy consumption
- Renewable & Alternative Energy Sources
- Buildings & environment
- Circular economy in buildings
- Energy Efficiency

Type of Actor/Agent - HafenCity Hamburg GmbH - company owned by the city of Hamburg
Typology of Green Urban Site – Street and residential project

Green City Elements:

- Positive Energy Neighbourhoods
- Energy Communities
- Buildings and Climate Change
- Circular Design
- 3Rs and 7Rs
- Conscious Consumption
- Short Supply Chain
- Green Urbanism
- Flash Flood
- Smart Living
- Solar Energy - Photovoltaics

Engagement and Consultation:
Target Groups - Citizens
Public Engagement - Was applied.
Consultation Tools Used - n/a

Resources and Transferability:
Teaching Materials/Resources: Link
Personal Skills Required: High
Non-discriminatory Principles: Yes
Transferability Potential: Medium

Innovation and Impact:
The initiative represents a transformative model in urban planning with a focus on combating climate change and fostering public involvement.

- Eco-friendly building standards through the HafenCity Ecolabel, ensuring lower environmental impact and energy usage.
- Innovative heating solutions leveraging renewable energy sources, contributing to substantial reductions in carbon emissions.
- Emphasis on sustainable transportation and community-centric mobility, enhancing urban connectivity and reducing reliance on cars.

This not only aids in climate change mitigation but also actively involves the public in shaping a greener, more sustainable urban environment.
Expected Impact **High**
Level of Scale of Innovation 5

Budget:
Budget Spent, Source of Money: mix of public and private investments.
Benefits: Flooding & water Quality, Improved environmental resilience, , Increased cultural significance, Creation of green jobs and business opportunities, Social cost savings (such as the impact of reduced air pollution), Recreational opportunities, Enhancing social ties, Providing educational opportunities.
Challenges: integrating innovative sustainability and social resilience into its urban development while maintaining its unique maritime character and historical context. Balancing ecological considerations, such as flood protection, with the city's established architectural heritage and transitioning to sustainable mobility concepts are key aspects of this pioneering urban project.

CO-LAB

Location: Rhodes
Country: Greece
Contact Information: infodesk@pnai.gov.gr
Website Address: www.pnai.gov.gr/the-rhodes-co-lab

Image: © Naim Benjelloun via Pixels.com

The Rhodes Co-Lab aims to transform Rhodes into a model for sustainable tourism development. Working with local and international partners, the project will devise and implement practical sustainability solutions. It includes establishing a think tank with global experts to advance the tourism sector's sustainability. Aligned with the Greek government and South Aegean Region's initiatives, and part of TUI's sustainability agenda, the Co-Lab's launch featured discussions with Greek Prime Minister Kyriakos Mitsotakis about its impact on tourism both in Greece and internationally.

Thematic Area – Circular Economy
Thematic Sub-category -

- Sustainable Mobility
- Tourism Adapted to Climate Change
- Waste management
- Smart city domains for the citizens in green cities
- Smart city solutions and tools

Type of Actor/Agent -Government
Typology of Green Urban Site – Tourism facilities

Green City Elements:

- Public Transport
- Electric and Alternative Mobility
- Compost
- Smart Economy
- Smart People
- Smart Governance
- Smart Mobility
- Smart Living
- Citizen Engagement
- Co-creation in Urban Planning
- Artificial Intelligence

Engagement and Consultation:
Target Groups - Citizens
Public Engagement - Was not applied
Consultation Tools Used - n/a

Innovation and Impact:
The Rhodes Co-Lab initiative marks a significant step towards sustainability in tourism, being the first of its kind for a major destination. Led by the South Aegean Region and in partnership with the TUI Group, it focuses on collaborative approaches to sustainable transformation. Rhodes, as a global tourism hub, serves as a key testing ground for these innovative sustainability practices, covering all aspects of the holiday experience.
Expected Impact **Medium**
Level of Scale of Innovation 3

Benefits: Well-being benefits (such as people's perception of increased biodiversity and improved visual quality of the environment), Creation of green jobs and business opportunities
Challenges: n/a

Resources and Transferability:
Teaching Materials/Resources: Link
Personal Skills Required: Medium
Non-discriminatory Principles: n/a
Transferability Potential: Medium

THE LARGE RING ROAD FOR BICYCLES

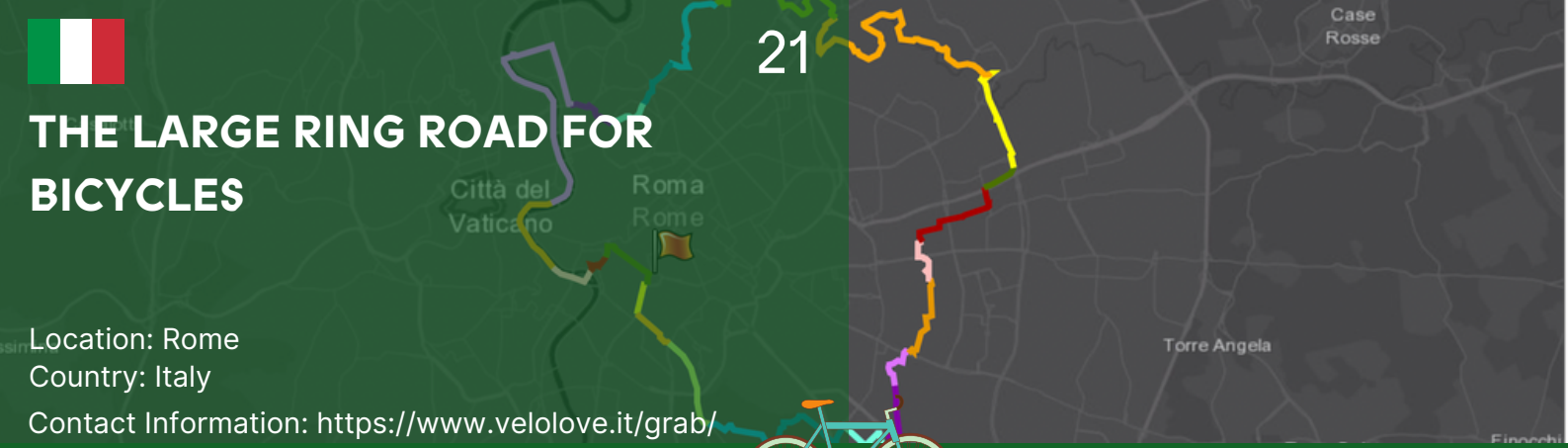


Image: © velolove.it/grab/

Location: Rome
Country: Italy
Contact Information: https://www.velolove.it/grab/
Website Address: https://www.velolove.it/grab/

GRAB, the Large Ring Road for Bicycles, is the participatory project for the construction of a cycle-pedestrian ring accessible to all that develops for 45 km within the city of Rome. It is a light infrastructure with high environmental, social, economic and cultural profitability, a useful public work designed to improve the places it crosses without adding volumes and concrete in a massively built-up area. GRAB finally imposes the pedestrianization of the Appia Antica and is the prologue to the birth of a single Capitoline archaeological park from the Fori to the Regina Viarum, it is a magnet for new tourism, from cycle travelers to lovers of urban trekking, a car-free route for mobility interdistrict, the link around which to develop and sew a true metropolitan cycle network, the driving force of widespread interventions for the regeneration of the suburbs and the re-functionalization of marginal and degraded areas.

Thematic Area – Climate change mitigaton
Thematic Sub-category -

- Sustainable Mobility
- Tourism Adapted to Climate Change
- Smart city domains for the citizens in green cities

Type of Actor/Agent - Local Council
Typology of Green Urban Site – Greenbelts, ecological corridor or Greenway

Green City Elements:

- Human-Powered Mobility
- Smart Mobility
- Citizen Engagement

Engagement and Consultation:
Target Groups - Citizens
Public Engagement - Was applied, proper public engagement
Consultation Tools Used - Focus groups, stakeholder interviews
Link

Resources and Transferability:
Teaching Materials/Resources: n/a
Personal Skills Required: Low
Non-discriminatory Principles: Yes
Transferability Potential: Medium

Innovation and Impact
The GRAB project benefits the entire city beyond just cyclists. It aims to be the core of Rome's future cycling network, connecting existing, planned, and future routes. It integrates with public transport hubs, including subway, tram, and train stations, and includes the construction of velostations. Designed with universal accessibility, it features wide, smooth cycle paths, protected areas at vehicular crossings, and safety enhancements like 30 km/h zones and raised platforms at intersections. GRAB serves as a model for new mobility solutions that can be replicated across the city.
Expected Impact **Medium**
Level of Scale of Innovation 3

Benefits:
Improved air quality, Improving physical fitness and reducing depression, well-being benefits (such as people's perception of increased biodiversity and improved visual quality of the environment), social cost savings (such as the impact of reduced air pollution), creation of green jobs and business opportunities, improved visual quality of the environment, recreational opportunities, adjusting psychological well-being and physical health, improving physical fitness and reducing depression risks.
Challenges: n/a

KILOMETROVERDEPARMA

Location: Parma
Country: Italy
Contact Information: info@kilometroverdeparma.org
Website Address: www.kilometroverdeparma.org/

Image: © FelixMittermeier via Pixabay.com

The KilometroVerdeParma is a concrete, widespread, tangible project aimed at everyone, which aims to create green areas and permanent woods in Parma and its province. Anyone who wants to make their resources available, be they time, space or money, can make their contribution to KilometroVerdeParma.
Behind the scenes of the project, with the aim of carrying it forward, defining the guidelines and coordinating all the people involved, there is the Consorzio Forestale KilometroVerdeParma Social Enterprise, a non-profit organization established in May 2020.
The goal of the KilometroVerdeParma project and of those who created it is to take action on today's environment, involving as many people as possible, to create a model to be entrusted to tomorrow's generations.
The most evident action is represented by the planning of forestation interventions, for the redevelopment of urban and extra-urban areas throughout the Parma area. Reforesting means returning entire areas to nature: all by creating value for communities, creating liveable and socializing spaces; contributing to climate mitigation and decarbonisation; protecting biodiversity. Upstream, this activity involves the promotion of synergies between public and private realities and a mapping of the territory, to identify the lands that can host new forests.

Thematic Area – Climate change mitigation
Thematic Sub-category -

- Buildings & environment
- Behavioural adaptation to extreme weather
- Smart city solutions and tools
- Green Urbanism related to improving social relations

Type of Actor/Agent - NGOs
Typology of Green Urban Site – City urban gardens

Green City Elements:

- Green areas and Heat Island Effect
- Heatwaves
- Citizen Engagement

Engagement and Consultation:
Target Groups - Citizens
Public Engagement - Was applied, proper public engagement
Consultation Tools Used - Link

Resources and Transferability:
Teaching Materials/Resources: Not publicly available
Personal Skills Required: Low
Non-discriminatory Principles:No
Transferability Potential: High

Innovation and Impact:
It is a large-scale urban reforestation project which beneficial effects are destined to extend well beyond the spaces immediately adjacent to the occupied area, becoming a hallmark of Parma and providing its citizens with a multiplicity of benefits: environmental, social and cultural, economic and reputational.
Expected Impact **Medium**
Level of Scale of Innovation 3

Benefits:
Temperature & Climate control, Improved Air Quality, Increased biodiversity, Improved environmental resilience, Limiting impact of heatwaves by reducing urban temperatures, Well-being benefits (such as people's perception of increased biodiversity and improved visual quality of the environment), Social cost savings (such as the impact of reduced air pollution), Improved visual quality of the environment, Recreational opportunities, Aesthetic enjoyment, Enhancing social ties, Providing educational opportunities.
Challenges: n/a

GENOVA GREEN STRATEGY

Location: Genova
Country: Italy
Contact Information: open@openfabric.eu
Website Address: Link

Image: © via project website

The Genova Green Strategy aims to enhance public green spaces and restructure urban areas in Genova. Its goals include increasing soil permeability and mitigating environmental risks, reimagining the city's connection with nature. This plan sets guidelines for developing open spaces and includes a major urban forestry initiative to plant thousands of trees and create new green areas. The strategy positions Genova as a global model for integrating nature into urban settings and addressing hydrogeological risks and climate change adaptation.

Thematic Area – Climate change adaptation
Thematic Sub-category -

- Sustainable Mobility
- Buildings & environment
- Smart city solutions and tools

Type of Actor/Agent - Local Council
Typology of Green Urban Site – Street and residential project

Green City Elements:

- Greenbelts
- Ecological corridor or Greenway
- Human-Powered Mobility
- Green Urbanism
- Riverbanks and seashore areas
- Buildings and Climate Change
- Green areas and Heat Island Effect
- Bee-friendly gardens
- Heatwaves
- Flash Flood
- Smart Governance
- Citizen Engagement

Engagement and Consultation:
Target Groups - Citizens
Public Engagement - Was applied, proper public engagement
Consultation Tools Used - In-person focus group, Link

Resources and Transferability:
Teaching Materials/Resources: n/a
Personal Skills Required: High
Non-discriminatory Principles: n/a
Transferability Potential: Medium

Innovation and Impact:
Genova is envisioned as a multifaceted city - a "rising," "plain," "compact," "garden," "agricultural," and "archipelago" city - in the "Genova Green Strategy." This ten-year plan focuses on expanding urban greenery and redesigning public spaces to enhance the city's climate resilience. It aims to mitigate environmental risks, increase soil permeability, reduce heat islands, and redefine the city's relationship with nature.
Expected Impact **High**
Level of Scale of Innovation 5

Benefits: Temperature & Climate control, Improved Air Quality, Flooding & water Quality, More wildlife & better habitats, Increased biodiversity, Improved environmental resilience, Limiting impact of heatwaves by reducing urban temperatures, Improving physical fitness and reducing depression, Increased cultural significance, Well-being benefits (such as people's perception of increased biodiversity and improved visual quality of the environment), Social cost savings (such as the impact of reduced air pollution), Creation of green jobs and business opportunities, Improved visual quality of the environment, Recreational opportunities, Aesthetic enjoyment, Adjusting psychological well-being and physical health, Enhancing social ties, Providing educational opportunities, Improving physical fitness and reducing depression.
Challenges: n/a

GREEN MOBILITY FOR SENIORS (GREENSAM)

Location: Riga
Country: Latvia
Contact Information: evita.riekstina@riga.lv
Website Address: https://greensam.eu/

Image: © AntonMatveev via GettyImages.com

The aim of the project is to promote green mobility in Baltic Sea region cities, focusing on one user group – older urban residents, providing them with extensive opportunities to actively use environmentally friendly urban transport. As a result of the project implementation, through the co-design process with active participation of the target group and the public, local municipalities' knowledge about senior mobility needs will be improved, the effectiveness of green mobility services will be enhanced, and the proportion of seniors using green mobility services will increase.

Thematic Area – Digitalisation
Thematic Sub-category -

- Sustainable Mobility
- Tourism Adapted to Climate Change
- Waste management
- Smart city domains for the citizens in green cities
- Smart city solutions and tools.
- Better consumption & production
- Energy Efficiency

Type of Actor/Agent - Local Council, partnership
Typology of Green Urban Site – Street and residential project

Green City Elements:

- Public Transport
- Electric and Alternative Mobility
- Smart Economy
- Smart People
- Smart Governance
- Smart Mobility
- Smart Living
- Citizen Engagement
- Co-creation in Urban Planning
- Artificial Intelligence

Engagement and Consultation:
Target Groups - Citizens (seniors)
Public Engagement - Was applied, proper public engagement.
Consultation Tools Used - Presentations, focus groups, survey or feedback forms at public meetings.

Resources and Transferability:
Teaching Materials/Resources: Link
Personal Skills Required: Medium
Non-discriminatory Principles: Yes
Transferability Potential: High

Innovation and Impact:
This project, focusing on enhancing urban mobility for seniors in Baltic Sea Region cities, adopts an innovative approach by specifically addressing the often-overlooked mobility needs of the ageing population. It includes a comprehensive toolkit tailored for older residents, promoting green mobility with practical solutions. An interdisciplinary mobility lab offers a holistic strategy to tackle mobility challenges, evidenced by a successful pilot in Riga. The project emphasizes understanding seniors' mobility habits and needs for evidence-based solutions. It also updates public space guidelines for better senior accessibility and explores blockchain's potential in public transport to improve efficiency and sustainability.
Expected Impact **Medium**
Level of Scale of Innovation 4

Budget:
Budget Spent, Source of Money: EU fonds 1.94 million EUR
Benefits: Improved Air Quality, Well-being benefits (such as people's perception of increased biodiversity and improved visual quality of the environment), Social cost savings (such as the impact of reduced air pollution), Creation of green jobs and business opportunities.
Challenges: A key challenge for the project is improving the digital skills of elderly people, essential for them to effectively use advanced mobility solutions like blockchain-based public transport systems.

THE OGRE RIVER TWIN – A SYSTEM THAT TIMELY SHOWS THE FORECASTED FLOODS

Location: Ogre
Country: Latvia
Contact Information: ogredome@ogresnovads.lv
Website Address: Link

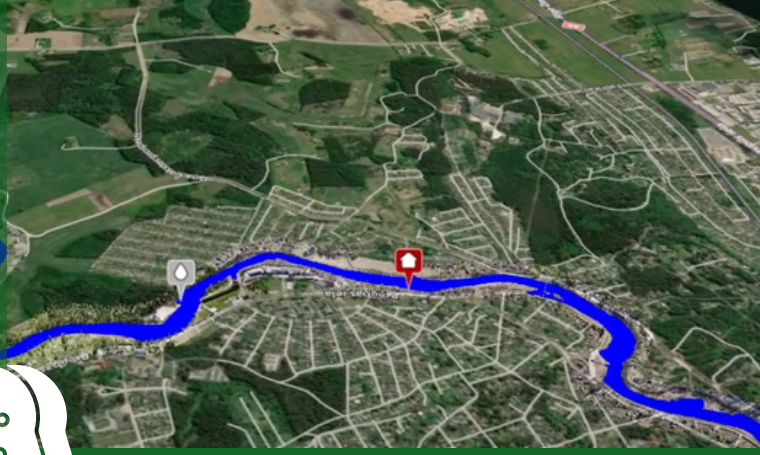


Image: © via Ogre municipality, Link

Monitoring and flood risk forecasting throughout Latvia is carried out by the Latvian Environment, Geology, and Meteorology Center, and there are about 80 hydrological observation stations located throughout the country. However, determining the exact time of a flood prediction is not that simple. This is done by observing the situation in the river on-site, conducting ice measurements, and looking at satellite images. Ogre is the first municipality in Latvia where a modern and accurate water level monitoring system has been established, allowing one to follow the situation in the Ogre River.

Thematic Area – Climate Change adaptation
Thematic Sub-category -

- Behavioural adaptation to extreme weather
- Smart city solutions and tools

Type of Actor/Agent - Government, Local Council
Typology of Green Urban Site – Watershed management

Green City Elements:

- Water Recovery and Reuse
- Sustainable Drainage Systems
- Riverbanks and seashore areas
- Buildings and Climate Change
- Flash Flood
- Smart Economy
- Smart People
- Smart Governance
- Smart Mobility
- Smart Living
- Sensorization
- Artificial Intelligence

Engagement and Consultation:
Target Groups - Citizens
Public Engagement - Was applied, proper public engagement
Consultation Tools Used - Presentations, focus groups, survey or feedback forms at public meetings

Resources and Transferability:
Teaching Materials/Resources: Video
Personal Skills Required: Medium
Non-discriminatory Principles: Yes
Transferability Potential: High

Innovation and Impact:
Digital map of the Ogre River in 3D format has been developed, obtained by scanning the river and its banks for a length of 20 km. On this map, it is possible to show changes in water levels, which is certainly the most significant achievement of the collaboration from universities and other stakeholders providing the opportunit of creating a river "digital twin".
Expected Impact **High**
Level of Scale of Innovation 4

Benefits: Flooding & water Quality, More wildlife & better habitats, Improved environmental resilience, Well-being benefits (such as people's perception of increased biodiversity and improved visual quality of the environment), Social cost savings (such as the impact of reduced air pollution), Creation of green jobs and business opportunities, Improved visual quality of the environment, Providing educational opportunities.

Challenges: Creating a digital twin for river flooding faces challenges like collecting accurate data, managing the complexity of river systems, requiring significant computational resources, integrating real-time data, adapting to various environments, accounting for climate change impacts, designing user-friendly interfaces, ensuring cybersecurity and privacy, integrating with existing systems, and maintaining and updating the model regularly.

COOLDIGA ART FEST IN METAVERSE

Location: Kuldiga
Country: Latvia
Contact Information: artis@kuldiga.lv
Website Address: Link

Image: © via kuldigasnovads.lv

The "COOLDIGA Art Fest" in Kuldīga city offers an unprecedented virtual experience, showcasing the evolving potential of the metaverse in art exhibitions and future city development. This innovative festival transforms Kuldīga into a digital art hub, featuring 3D creations by artists from across Latvia. The festival, focusing on digital art and photography, aligns with modern technological trends, providing a platform for artists to create works in video animation and augmented reality. This approach not only enhances the art festival experience but also explores new interdisciplinary methods, contributing to the cultural and technological development of the city. As from 2023 Kuldiga Old town is a UNESCO site visitors can explore old city undisturbed and use METAVERSE technology to get further information of individual art works as well as this is a first step for digitalising city and slowly introducing tourists and locals to augmented reality technology, digital twins and smart city solutions.

Thematic Area – Digitalisation
Thematic Sub-category -

- Smart city domains for the citizens in green cities;
- Smart city solutions and tools.

Type of Actor/Agent - Local Council
Typology of Green Urban Site – CIty in general

Green City Elements:

- Adapted Touristic Facilities
- Smart Economy
- Smart People
- Smart Governance
- Smart Environment
- Smart Living
- Sensorization
- Co-creation in Urban Planning
- Artificial Intelligence

Engagement and Consultation:
Target Groups - Citizens
Public Engagement - Was not applied
Consultation Tools Used - n/a

Resources and Transferability:
Teaching Materials/Resources: n/a
Personal Skills Required: Medium
Non-discriminatory Principles: Yes
Transferability Potential: High

Innovation and Impact:
The "COOLDIGA Art Fest" in Kuldīga represents a significant fusion of art and technology, providing a model for future city planning that embraces cultural enrichment, technological education, and economic growth. By showcasing digital and augmented reality art, the festival not only enriches the local cultural landscape but also inspires innovation among artists and creatives. It has the potential to boost tourism, foster community engagement, and enhance the city's image as a hub of modernity. Incorporating such innovative events into city planning can guide Kuldīga towards becoming a dynamic, culturally vibrant city, attracting investments and setting a precedent for integrating technology and art in urban development.
Expected Impact **High**
Level of Scale of Innovation 5

Budget:
Budget Spent, Source of Money: Local Council funds
Benefits: Improving physical fitness and reducing depression, Increased cultural significance, Improved visual quality of the environment, Recreational opportunities, Adjusting psychological well-being and physical health, Enhancing social ties.
Challenges: Its challenging to get residents to adopt new technologies like digital and augmented reality.

AUTONOMOUS VEHICLES DISTRIBUTING GOODS IN VILNIUS

Location: Vilnius
Country: Lithuania
Contact Information: info@clevon.com
Website Address: https://clevon.com

Image: © project Link

This urban delivery system is a new initiative transforming urban logistics in Vilnius, marking the city as the first in Europe to embrace a fleet of autonomous delivery vehicles for its bussy center. This project heralds a new era in eco-friendly delivery, leveraging a fleet of electric-powered, driverless vehicles that navigate through city traffic to deliver groceries directly to consumers. The initiative is a collaboration between the innovative startup "LastMile" and "Clevon," an Estonian pioneer in autonomous delivery solutions. These autonomous vehicles are uniquely designed with multiple lockable compartments to accommodate varying sizes of food orders, ensuring a seamless and secure delivery experience. What sets this apart is its commitment to sustainability and efficiency – operating completely free of charge for customers and reducing delivery service costs while minimizing environmental impact with electric propulsion. This system not only offers a more sustainable option for urban deliveries but also enhances customer convenience with real-time tracking and secure, code-locked deliveries.

Thematic Area – Climate change mitigation
Thematic Sub-category - Smart city solutions and tools
Type of Actor/Agent - Private business
Typology of Green Urban Site – Street and residential project

Green City Elements:

- Electric and Alternative Mobility
- Shared Mobility and MaaS, Servitisation
- Short Supply Chain
- Smart People
- Smart Mobility
- Artificial Intelligence

Engagement and Consultation:
Target Groups - Citizens.
Public Engagement - Was not applied
Consultation Tools Used - N/A

Innovation and Impact
The success of pilot phase has demonstrated its effectiveness across diverse weather conditions and urban terrains. With its proven adaptability and customer approval, Urban Delivery is paving the way for smart, green, and efficient urban commerce, all while contributing to a more sustainable future for city living.
Expected Impact **Medium**
Level of Scale of Innovation 5

Budget:
Budget Spent, Source of Money: Private funds
Benefits:
Improved Air Quality, Improved environmental resilience, Well-being benefits (such as people's perception of increased biodiversity and improved visual quality of the environment), Social cost savings (such as the impact of reduced air pollution), Creation of green jobs and business opportunities, Improved visual quality of the environment.
Challenges: For pilot to work legislation have to be adapted for letting self-driving cars in the streets of city.

Resources and Transferability:
Teaching Materials/Resources: N/A
Personal Skills Required: Low
Non-discriminatory Principles: Yes
Transferability Potential: High

LIFEMEDGREENROOF

Location: Msida
Country: Malta
Contact Information: lifemedgreenroof@um.edu.mt
Website Address: https://lifemedgreenroof.org/

Image: © Dayvison de Oliveira Silva via Pexels.com

The LifeMedGreenRoof project aimed to construct two demonstration green roofs as case-studies: one on the University of Malta's Faculty for the Built Environment campus building and one on a building located on the campus of Fondazione Minoprio, a project partner, in Italy. They would be designed to demonstrate the benefits of green roofs for meeting environmental and biodiversity targets. The project also aimed to show that green roof technology is safe and cost efficient, reducing energy consumption thanks to the insulation properties of the system. Furthermore, green roofs reduce the risk of flooding through the ability to absorb water.

Thematic Area – Climate change adaptation
Thematic Sub-category - Green Urbanism related to Energy consumption
Type of Actor/Agent - Government
Typology of Green Urban Site – Green roof or wall.

Green City Elements:

- Green Urbanism
- Irrigation
- Green roofs and walls
- Buildings and Climate Change
- Green roofs and walls
- Green areas and Heat Island Effect
- Heatwaves
- Smart Environment
- Co-creation in Urban Planning
- Energy Efficiency in Buildings

Engagement and Consultation:
Target Groups - Architects and design professionals
Public Engagement - Was applied, proper public engagement
Consultation Tools Used - Workshop with small discussion, presentations, written reports
Link

Innovation and Impact:
Guidelines on green roof technology.
Expected Impact **High**
Level of Scale of Innovation 4

Benefits:
Temperature & Climate control, Flooding & water Quality, More wildlife & better habitats, Increased biodiversity, Improved environmental resilience, Limiting impact of heatwaves by reducing urban temperatures, Creation of green jobs and business opportunities, Improved visual quality of the environment, Recreational opportunities, Aesthetic enjoyment, Adjusting psychological well-being and physical health, Providing educational opportunities.
Challenges: Lack of specialised human resources and expertise.

Resources and Transferability:
Teaching Materials/Resources:
LifeMedGreenRoof Project Policy Proposal Document.
Personal Skills Required: Medium
Non-discriminatory Principles: Yes
Transferability Potential: High

"NEW WATER" PROJECT (TREATED SEWAGE EFFLUENT)

Location: Msida
Country: Malta
Contact Information: customercare@wsc.com.mt
Website Address: wsc.com.mt/information/new-water/

Image: © Arthon meekodong from Canva.com

Malta is a semi-arid country located in the centre of the Mediterranean Sea. The scarcity of water has always been an issue since documented history and meeting the demand for both municipal water supply as well as the needs of the agricultural and commercial sectors has always provided an important challenge. The 'New Water' project is providing an annual production capacity of 7 million m^3 of high-quality water suitable for safe crop irrigation. The project will hence have the capacity to potentially address up to 35% of the current total water demand of the agricultural sector. In addition, the high quality of the New Water can enable its use for landscaping and industry, further enabling the use of this water during periods of low demand by the agricultural sector.

Thematic Area – Climate change adaptation
Thematic Sub-category -

- Water as natural resource
- Smart city solutions and tools
- Green Urbanism related to improving social relations

Type of Actor/Agent - Government
Typology of Green Urban Site – Agriculture and industrial areas

Green City Elements:

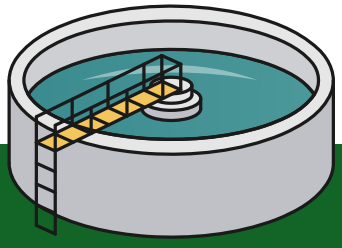
- Green Urbanism
- Energy Efficiency in Urban Planning
- Water Recovery and Reuse
- Water storage, Irrigation
- Buildings and Climate Change
- Impacts of Climate Change on Tourism
- Heatwaves
- Cradle-to-cradle
- Smart Economy
- Smart Environment
- Urban Energy Consumption

Engagement and Consultation:
Target Groups - Citizens
Public Engagement - Was applied, proper public engagement
Consultation Tools Used - In-person focus group

Innovation and Impact:
Waste water treatment, agriculture, circular economy.
Expected Impact **High**
Level of Scale of Innovation 4

Budget:
Budget Spent, Source of Money: 13 million EUR
Benefits:
Flooding & water quality, Increased biodiversity, improved environmental resilience, limiting impact of heatwaves by reducing urban temperatures, Increased cultural significance, creation of green jobs and business opportunities.
Challenges: Delays in project implementation.

Resources and Transferability:
Teaching Materials/Resources: n/a
Personal Skills Required: High
Non-discriminatory Principles: No
Transferability Potential: High



POCITYF (PHOTOVOLTAIC NOISE CANCELLING SCREEN)

Location: Alkmaar
Country: Netherlands
Contact Information: info@pocityf.eu
Website Address: Link

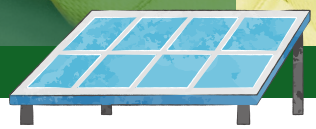


Image: © Kindel Media via Pexels.com

Among the multiple urban elements in which renewable energy has been integrated in the city of Alkmaar (housing neighbourhoods and energy sustainable public buildings, sports complexes and other types of facilities also powered by renewable energy.), it stands out for its originality. The photovoltaic noise screen built along the road that surrounds the Westrand district.

Thematic Area – Climate change adaptation
Thematic Sub-category -

- Sustainable Mobility
- Renewable & Alternative Energy Sources
- Behavioural adaptation to extreme weather
- Smart city domains for the citizens in green cities
- Smart city solutions and tools
- Energy Efficiency
- Green Urbanism related to improving social relations

Type of Actor/Agent -Government
Typology of Green Urban Site – Ring Road adjacent to a city district

Green City Elements:

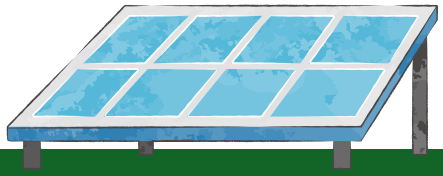
- Integrated Photovoltaics in Urban Environment
- Energy Efficiency in Urban Planning
- Solar Energy – Photovoltaics
- Green Urbanism
- Buildings and Climate Change
- Smart Economy
- Smart People
- Smart Governance
- Smart Mobility
- Smart Environment
- Energy Efficiency in Buildings

Engagement and Consultation:
Target Groups - Politicians, policy officers or their representatives
Public Engagement - Was applied, proper public engagement
Consultation Tools Used - Survey or feedback forms at public meetings, stakeholder interviews
Link

Innovation and Impact
Innovation in a historic scene tests with Vehicle-to-Grid (bus etc.) to get sustainable mobility will be performed with buses at a bus depot within the Westrand and an electricity producing noise cancelling screen will be constructed along the ring road adjacent to the district.
Expected Impact **Medium**
Level of Scale of Innovation 3

Benefits:
Temperature & Climate control, improved environmental resilience, increased cultural significance, social cost savings (such as the impact of reduced air pollution), improved visual quality of the environment), adjusting psychological well-being and physical health.
Challenges: Alkmaar is developing new technologies to be a sustainable and modern city, trying to give to citizens a healthier a comfortable life.

Resources and Transferability:
Teaching Materials/Resources: Video, Video
Personal Skills Required: High
Non-discriminatory Principles: Yes
Transferability Potential: Medium



OSLO'S SUSTAINABLE URBAN TRANSFORMATION

Location: Oslo
Country: Norway
Contact Information: Link
Website Address: Link

Image: © welcomia via Canva.com

In Oslo, the City Government is leading the charge in reducing greenhouse gas emissions through a multifaceted approach. Their commitment to sustainable transportation is evident in the continuous improvement of public transit, making it a more attractive alternative to private cars. Additionally, the exploration of zero-emission zones showcases their dedication to clean energy vehicles and reduced emissions. Investment in charging infrastructure underscores their commitment to electrification, ensuring that various vehicle types can transition to greener options seamlessly. By implementing parking measures, Oslo is taking steps to reduce car usage and incentivize the adoption of zero-emission vehicles. These comprehensive initiatives are collectively contributing to a citywide transformation, aligning with Oslo's broader mission to combat climate change and create a more environmentally friendly and livable urban environment for its residents.

Thematic Area – Climate Change Mitigation
Thematic Sub-category -

- Sustainable Mobility
- Renewable & Alternative Energy Sources
- Smart city solutions and tools
- Green Urbanism related to improving social relations

Type of Actor/Agent - Local Council, private business and other stakeholders
Typology of Green Urban Site – Street and residential project

Green City Elements:

- Public Transport
- Electric and Alternative Mobility
- Smart Mobility
- Smart Living
- Energy Savings
- Alternative Energy Sources
- Citizen Engagement
- Co-creation in Urban Planning

Engagement and Consultation:
Target Groups - Citizens
Public Engagement - Was applied
Consultation Tools Used - n/a

Resources and Transferability:
Teaching Materials/Resources: Link1, Link2
Personal Skills Required: Medium
Non-discriminatory Principles: Yes
Transferability Potential: High

Innovation and Impact:
Innovations include Zero-Emission Zones for clean-energy vehicles, extensive charging infrastructure for electric transport, and climate-friendly parking policies. These measures aim to reduce emissions substantially, enhance public transportation, and create a greener urban environment. Oslo's leadership in sustainable planning sets a global example for other cities.
Expected Impact **High**
Level of Scale of Innovation 3

Budget:
Budget Spent, Source of Money: Local council and, public and private investments.
Benefits: These initiatives offer broad benefits, including reduced emissions and air pollution for a healthier environment, improved public health, increased job opportunities, and potential economic growth through higher property values.
Challenges: high costs of developing infrastructure and ensuring its affordability, persuading residents to adopt sustainable transportation, addressing equity concerns to ensure accessibility for all, overcoming technological hurdles, maintaining consistent political support, and effectively integrating various aspects of these initiatives, such as public transportation and urban planning, into a cohesive and sustainable urban strategy.

VIRTUAL WARSAW FOR VISUALLY IMPAIRED

Location: Warsaw
Country: Poland
Contact Information: n/a
Website Address: Link

Image: © Eren Li via Pexels.com

The "Virtual Warsaw" initiative by the City of Warsaw employs Internet of Things (IoT) technology, with beacon sensors and Bluetooth, to aid the city's approximately 40 000 visually impaired residents. This project enhances independent navigation via smartphones, offering a “Micro-Navigation System” for real-time information about surroundings, like bus stops and museum entrances, and “Individualized Programs” to boost independence in public spaces and employment. Prior to this, visually impaired residents faced challenges like high unemployment and dependence on others, with traditional navigation training being time-intensive.

Thematic Area – Digitalisation
Thematic Sub-category - Smart city solutions and tools
Type of Actor/Agent - Local Council
Typology of Green Urban Site – Street and residential project

Green City Elements:

- Smart People
- Smart Governance
- Smart Mobility
- Smart Environment
- Sensorization
- Artificial Intelligence

Engagement and Consultation:
Target Groups - Citizens
Public Engagement - Was applied
Consultation Tools Used - Written reports, proper public engagement

Resources and Transferability:
Teaching Materials/Resources: Link
Personal Skills Required: Medium
Non-discriminatory Principles: Yes
Transferability Potential: High

Innovation and Impact:
The infrastructure of the micro-navigation system comprises micro-transmitters creating a virtual space accessible via smartphone applications. This initiative involves partnerships with local businesses for “beacon” construction, NGOs like the Polish Blind People Association, universities, and experts in visual impairment and software development, ensuring a user-centric approach. The project has shown potential benefits in increasing independence among visually impaired residents, thereby reducing their need for city services and promoting a more inclusive society. The success and lessons of Virtual Warsaw offer a template for other cities to implement similar systems.
Expected Impact **High**
Level of Scale of Innovation 5

Budget:
Budget Spent, Source of Money: EU fonds and Local Council fonds
Benefits: Improving physical fitness and reducing depression, Recreational opportunities, Adjusting psychological well-being and physical health, Enhancing social ties.
Challenges: The early stages of Warsaw's "Virtual Warsaw" project saw challenges due to a lack of user input, leading to a shift towards a user-centered design. Involving visually impaired users for feedback and forming partnerships with local businesses and NGOs like the Polish Blind People Association were crucial steps in refining the project and ensuring its effectiveness.

SOLAR-POWERED TRANSIT: RZESZÓW'S GREEN BUS SHELTERS

Location: Rzeszów
Country: Poland
Contact Information: biuro@mlsystem.pl
Website Address: Link1, Link2

Image: © Smart Wiata from developer ML System Link

The eco-friendly bus shelter project in Rzeszów, Poland, involves the introduction of 140 new bus shelters, incorporating state-of-the-art solar technology. Developed in collaboration with ML System and Solaris buses, these shelters not only provide protection against weather elements but also function as solar panels. Some shelters are equipped with central energy control systems, heating, photovoltaic systems, and cooling systems. They also feature an innovative illumination system that enhances both functionality and architectural aesthetics. This initiative is part of Rzeszów's broader "Smart City" strategy, which includes a revamp of the public transport infrastructure with new central stations and electric buses, reflecting the city's commitment to renewable technology and sustainable urban development.

Thematic Area – Energy transition
Thematic Sub-category -

- Sustainable Mobility
- Renewable & Alternative Energy Sources
- Smart city solutions and tools
- Energy Efficiency

Type of Actor/Agent - Local Council, private business
Typology of Green Urban Site – Street and residential project

Green City Elements:

- Public Transport
- Electric and Alternative Mobility
- Integrated Photovoltaics in Urban Environment
- Solar Energy - Photovoltaics
- Buildings and Climate Change
- Smart Mobility
- Smart Living
- Urban Energy Consumption
- Energy Savings

Engagement and Consultation:
Target Groups - Citizens
Public Engagement - Was not applied
Consultation Tools Used - n/a

Resources and Transferability:
Teaching Materials/Resources: Link
Personal Skills Required: Medium
Non-discriminatory Principles: Yes
Transferability Potential: High

Innovation and Impact:
Rzeszów's smart bus shelters, equipped with solar technology, represent a significant environmental innovation, reducing carbon footprint by harnessing renewable energy. Socially, they enhance passenger comfort with features like heating and cooling systems, while also improving urban aesthetics with their modern design. Economically, these shelters lower operating and maintenance costs through energy-efficient solutions, offering long-term financial benefits to the city's public transport infrastructure.
Expected Impact **High**
Level of Scale of Innovation 4

Budget:
Budget Spent, Source of Money: mix of public and private investments.
Benefits: Improved Air Quality, Limiting impact of heatwaves by reducing urban temperatures, Social cost savings (such as the impact of reduced air pollution), Creation of green jobs and business opportunities, Adjusting psychological well-being and physical health, Providing educational opportunities.
Challenges: Financial challenges due to high initial costs and demands regular maintenance for their technological features. Integrating these shelters into the current urban infrastructure and securing public acceptance and usage also present significant challenges.

LJUBLJANA: LEADING EUROPE'S ZERO WASTE TRANSFORMATION

Location: Ljubljana
Country: Slovenia
Contact Information: glavna.pisarna@ljubljana.si
Website Address: Link

Image: © lumen from GettyImages.com

Ljubljana, the capital of Slovenia, has undergone a remarkable transformation in waste management, evolving from a city with almost no recycling to a leader in sustainability. Over the past two decades, Ljubljana has dramatically increased its waste recycling rate, now processing and separately collecting 68% of its waste with an aim to reach at least 75% by 2025. This achievement, part of its Zero Waste strategy, has earned it the title of European Green Capital in 2016. The city's approach includes popular household waste recycling centers and a commitment to sustainable practices, positioning Ljubljana as a pioneering example in urban environmental management and a model for cities worldwide striving for a Zero Waste future.

Thematic Area – Circular Economy
Thematic Sub-category - Waste management
Type of Actor/Agent - Government, private businesses
Typology of Green Urban Site – Urban areas

Green City Elements:

- Energy Efficiency in Urban Planning
- Circular Design
- 3Rs and 7Rs
- Paper waste
- Glass waste
- Compost
- Plastic waste
- Servitization
- Waste-Resource Marketplaces
- Conscious Consumption
- Smart Economy
- Smart Governance

Engagement and Consultation:
Target Groups - Citizens
Public Engagement - Was applied
Consultation Tools Used - n/a

Resources and Transferability:
Teaching Materials/Resources: Link
Personal Skills Required: Low
Non-discriminatory Principles: Yes
Transferability Potential: High

Innovation and Impact:
Comprehensive approach to transitioning from minimal recycling to a near-zero waste city. By implementing a city-wide recycling system that now processes 68% of its waste, with aspirations to increase this to 75% by 2025, Ljubljana has set a new standard in urban sustainability. The impact of this transformation is profound, both environmentally and socially. It has significantly reduced the city's reliance on landfills, thereby mitigating environmental pollution and conserving resources. The project has fostered a strong culture of environmental responsibility among its citizens, making Ljubljana a leading example of how urban areas can effectively combat waste management challenges and advance towards a more sustainable future.
Expected Impact **High**
Level of Scale of Innovation 4

Budget:
Budget Spent, Source of Money: Local council
Benefits: Project has reduced landfill waste, lessening pollution and preserving natural resources. Cultivated a sense of environmental stewardship among residents, enhancing community involvement and awareness regarding sustainability practices. The efficient recycling system has lowered the costs associated with waste disposal and fostered green job opportunities.
Challenges: Maintaining public participation, ensuring the ongoing efficiency of the waste management system, and continuously adapting to evolving waste types and volumes.

GRANADA: SPANISH CITY GOING FROM TRADITION TO INNOVATION

Location: Granada
Country: Spain
Contact Information: info@pocityf.eu
Website Address: Link

Image: © Pixabay

Smart-City Strategic Plan defines eight Strategic Objectives framed within the different areas of the Smart-City, and the actions that the city must carry out in the coming years. the Granada Replication Plan, which is being developed in the context of the POCITYF project, comprises a selection of Innovative Solutions to be replicated in the city, which represent a further step in the roadmap for the decarbonisation of Granada by 2050. These innovative solutions, which have already demonstrated their techno-economic viability and benefits in the different Smart Areas, will also enable progress to be made in achieving the Strategic Objectives defined in the Granada Smart-City Strategic Plan, and consolidate Granada as a Smart-City, in line with its City-Vision.

Thematic Area – Climate change adaptation
Thematic Sub-category - Buildings & environment
Type of Actor/Agent -Government
Typology of Green Urban Site – With the project called "Pilots of intelligent buildings of Granada", the municipality has found specific needed smart city measures for 177 Municipal Buildings, 4 Public Parking, 1 Railway station, and 1 Bus station.

Green City Elements:

- Green Urbanism
- Integrated Photovoltaics in Urban Environment
- Energy Efficiency in Urban Planning
- Solar Energy – Photovoltaics
- Energy Communities
- Alternative Energy Sources
- Smart Economy
- Smart People
- Smart Governance
- Smart Mobility
- Smart Environment
- Smart Living
- Citizen Engagement
- Urban Energy Consumption
- Energy Savings
- Energy Efficiency in Buildings

Engagement and Consultation:
Target Groups - Politicians, policy officers or their representatives
Public Engagement - Was applied, proper public engagement
Consultation Tools Used - Survey or feedback forms at public meetings, stakeholder interviews
Link

Innovation and Impact
A sustainable and liveable city. A city with an open and transparent municipal administration. A city which is committed to the business development. A city that uses new technologies and innovation as a lever for the development.
Expected Impact **Medium**
Level of Scale of Innovation 3

Benefits:
Temperature & Climate control, Improved Air Quality, Improved environmental resilience, Increased cultural significance, Social cost savings (such as the impact of reduced air pollution), Creation of green jobs and business opportunities, Enhancing social ties, Providing educational opportunities.
Challenges: Granada aims to be a sustainable and liveable city with a high quality of life in which the citizens are an active part of the decision-making process, and in which economic development is promoted through new technologies and innovation. The main objective is making Granada a true smart city in all aspects, both environmental and economic and social.

Resources and Transferability:
Teaching Materials/Resources: Video, Leaflet
Personal Skills Required: Low
Non-discriminatory Principles: Yes
Transferability Potential: Medium