

SOLUTIONS

1.1 USE OF LAND 

1.1.1 Re-use of land

Synergies

- 1. Housing  3
- 2. Economy performance  2
- 3. Employment  3



Description:
The reuse of land in a city involves repurposing existing spaces to meet the evolving needs of the community. focuses on maximizing the utility of land resources, minimizing environmental impact.

RETROFIT SCENARIOS

SOLUTIONS

1.1 USE OF LAND 

1.1.2 TOD

Synergies

- 1. Performance in mobility  2
- 2. Safety in mobility  1
- 3. Accessibility  2



Description:
Implement Transit-Oriented Development principles near public transportation hubs like bus stops, subway stations, and light rail stops. This strategy promotes higher-density development within walking distance

RETROFIT SCENARIOS

SOLUTIONS

1.1 USE OF LAND 

1.1.3 15 minutes city

Synergies

- 1. Accessibility  2
- 2. Education  2
- 3. Environmental quality  1



Description:
is an urban planning and design concept that envisions cities where residents can access most of their daily needs within a 15-minute walk or bike ride from their homes

RETROFIT SCENARIOS

SOLUTIONS

1.2 GREEN URBAN AREAS 

1.2.1 Pocket Parks and Green Roofs

Synergies

- 1. Biodiversity and ecosystems  2
- 2. Air quality  2
- 3. Noise  2



Description:
Create small parks and green spaces within the neighborhood to provide recreational areas and improve air quality. Consider encouraging green roofs and rooftop gardens on buildings to maximize green space

RETROFIT SCENARIOS

SOLUTIONS



SOLUTIONS



SOLUTIONS



SOLUTIONS



SOLUTIONS

1.2 GREEN URBAN AREAS 

1.2.2 Community Gardens

Synergies

- 1. Education  2
- 2. Economy performance  2
- 3. Community involvement  1



Description:
Allocate areas for community gardens where residents can grow their own vegetables, flowers, and plants. Fostering a sense of community and ownership among neighbors

RETROFIT SCENARIOS

SOLUTIONS

1.2 GREEN URBAN AREAS 

1.2.3 Increase amount of green areas

Synergies

- 1. Biodiversity and ecosystems  2
- 2. Air quality  2
- 3. Noise  2



Description:
Solution that involves the creation, preservation, and enhancement of natural spaces within the urban environment. This approach aims to improve the overall quality of life for residents.

RETROFIT SCENARIOS

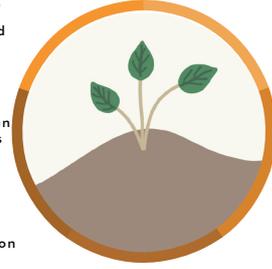
SOLUTIONS

1.3 GREEN URBAN AREAS 

1.2.4 Increase and preserve natural areas

Synergies

- 1. Use of land  1
- 2. Adaptation to heatwaves  2
- 3. Adaptation to droughts  2



Description:
This strategy aims to maintain or restore biodiversity, provide recreational spaces, improve air and water quality, and enhance overall ecological resilience.

RETROFIT SCENARIOS

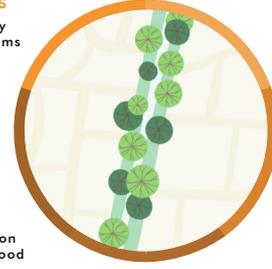
SOLUTIONS

1.3 BIODIVERSITY AND ECOSYSTEMS 

1.3.1 Green Corridors

Synergies

- 1. Biodiversity and ecosystems  2
- 2. Air quality  2
- 3. Adaptation to pluvial flood  2



Description:
That connect various parts of the neighborhood, make it easier for residents to access green spaces while also improving pedestrian and cyclist safety

RETROFIT SCENARIOS

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SOLUTIONS

1.3 BIODIVERSITY AND ECOSYSTEMS

1.3.2 Bird-friendly windows

Synergies

1. Housing



Description:
Encourage the installation of bird-friendly window treatments in nearby buildings to reduce bird collisions

RETROFIT SCENARIOS

SOLUTIONS

1.3 BIODIVERSITY AND ECOSYSTEMS

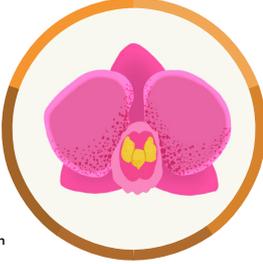
1.3.3 Native Plant Restoration

Synergies

1. Use of land

2. Adaptation to heatwaves

3. Adaptation to droughts



Description:
Replace non-native and invasive plant species with native vegetation in green zones and natural areas

RETROFIT SCENARIOS

SOLUTIONS

1.3 BIODIVERSITY AND ECOSYSTEMS

1.3.4 Animals shelter

Synergies

1. Education

2. Community involvement



Description:
Install birdhouses, bat boxes, and insect hotels to attract different wildlife species

RETROFIT SCENARIOS

SOLUTIONS

2.1 ENERGY INFRASTRUCTURE

2.1.1 Improve access to electrical services

Synergies

1. Energy consumption

2. Employment

3. Urban planning



Description:
Improving access to electrical services in a city involves addressing the availability, reliability, and affordability of electricity for all residents and businesses.

RETROFIT SCENARIOS

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SOLUTIONS

2.2 ENERGY CONSUMPTION 

2.2.1 Improving building envelopes walls and windows

Synergies

- 1. Energy infrastructure  3
- 2. HOUSING  2
- 3. Adaptation to heatwaves  3



Description:
Improve insulation of their properties. This reduces heat loss during the winter and keeps buildings cooler in the summer, reducing the need for heating and cooling energy.

RETROFIT SCENARIOS

SOLUTIONS

2.2 ENERGY CONSUMPTION 

2.2.2 Improving efficiency in energy generation

Synergies

- 1. Housing  3
- 2. Public building control  1
- 3. Innovation  2



Description:
improving efficient thermal energy generation (heat pumps – condensing boilers (use of district heating and cooling)

RETROFIT SCENARIOS

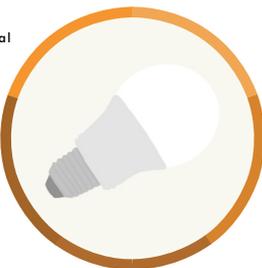
SOLUTIONS

2.2 ENERGY CONSUMPTION 

2.2.3 Street LED Lighting

Synergies

- 1. Environmental impacts  2
- 2. Green urban areas  1
-  1



Description:
Promote the use of energy-efficient LED lighting throughout the neighborhood, including street lighting. LEDs use less energy and have a longer lifespan than traditional incandescent bulbs

RETROFIT SCENARIOS

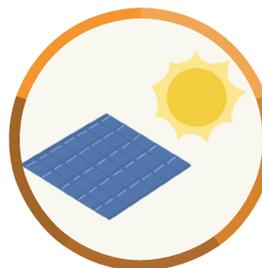
SOLUTIONS

2.3 RENEWABLE ENERGY 

2.3.1 On site Solar and wind production

Synergies

- 1. Energy consumption  3
- 2. Housing  2
- 3. Innovation  1



Description:
Installation of solar panels and wind turbines on rooftops of residential and commercial buildings

RETROFIT SCENARIOS



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SOLUTIONS

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SOLUTIONS

2.3 RENEWABLE ENERGY 

2.3.2 Create energy communities

Synergies

- 1. Energy consumption 
- 2. Education 
- 3. Innovation 

Description:
to create groups of individuals, businesses, or organizations that collaboratively participate in the generation, distribution, and consumption of energy.

RETROFIT SCENARIOS

SOLUTIONS

2.3 RENEWABLE ENERGY 

2.3.3 Microgrids

Synergies

- 1. Energy infrastructure 
- 2. Housing 
- 3. Innovation 

Description:
Develop neighborhood microgrids that combine renewable energy sources like solar and wind with battery storage systems. These microgrids can provide backup power during outages

RETROFIT SCENARIOS

SOLUTIONS

3.1 WATER INFRASTRUCTURE 

3.1.1 Improve accessibility to potable water

Synergies

- 1. Use of land 
- 2. Housing 
- 

Description:
To provide reliable, safe, and accessible potable water services for all residents

RETROFIT SCENARIOS

SOLUTIONS

3.1 WATER INFRASTRUCTURE 

3.1.2 Water Testing devices

Synergies

- 1. Innovation 
- 2. Urban planning 
- 

Description:
Regularly test the quality of the water supply to identify contaminants, such as lead, arsenic, or bacteria. Establish a robust monitoring system to ensure water safety

RETROFIT SCENARIOS

SOLUTIONS



SOLUTIONS



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SOLUTIONS



SOLUTIONS

3.1 WATER INFRASTRUCTURE 

3.1.3 Water filters

Synergies

- 1. Water consumption 
- 2. Housing 
- 3. Innovation 



Description:
To remove impurities and ensure water meets quality standards. Technologies like advanced filtration, chlorination, and UV treatment can be used to improve water quality

RETROFIT SCENARIOS

SOLUTIONS

3.1 WATER INFRASTRUCTURE 

3.1.3 Improve accessibility to waste water treatment

Synergies

- 1. Water consumption 
- 2. Housing 
- 3. Innovation 



Description:
To ensure the safe disposal or reuse of water after it has been used in households, industries, and other sources.

RETROFIT SCENARIOS

SOLUTIONS

3.2 WATER CONSUMPTION 

3.2.1 Rainwater Harvesting

Synergies

- 1. Green urban areas 
- 2. Effluents management 
- 3. Housing 



Description:
Promote rainwater harvesting systems in homes and public spaces to reduce the reliance on municipal water supply for non-potable uses like gardening, car washing, and toilet flushing

RETROFIT SCENARIOS

SOLUTIONS

3.2 WATER CONSUMPTION 

3.2.2 Greywater Recycling

Synergies

- 1. Effluents management 
- 2. Education 
- 3. Housing 



Description:
Encourage the reuse of treated greywater from showers, sinks, and laundry for irrigation or flushing toilets

RETROFIT SCENARIOS

SOLUTIONS



SOLUTIONS



SOLUTIONS



SOLUTIONS



SOLUTIONS

3.3 EFFLUENTS MANAGEMENT 

3.3.1 Provide household sanitization

Synergies

- 1. Use of land  2
- 2. Housing  1
-  2



Description:
To promote public health, preventing the spread of diseases, and enhancing the overall quality of life for residents.

RETROFIT SCENARIOS

SOLUTIONS

3.3 EFFLUENTS MANAGEMENT 

3.3.2 Advanced Treatment Plants

Synergies

- 1. Use of land  3
- 2. Employment  3
- 3. Innovation  3



Description:
Upgrade sewage treatment plants with advanced technologies such as biological nutrient removal, membrane bioreactors, and ultraviolet (UV) disinfection

RETROFIT SCENARIOS

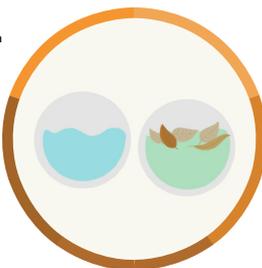
SOLUTIONS

3.3 EFFLUENTS MANAGEMENT 

3.3.3 Combined Sewer Separation

Synergies

- 1. Green urban areas  3
- 2. Water infrastructure  2
- 3. Adaptation to pluvial floods  3



Description:
If the neighborhood has combined sewer systems that carry both stormwater and sewage, consider a separation project. This can reduce the risk of combined sewer overflows during heavy rainfall events

RETROFIT SCENARIOS

SOLUTIONS

4.1 SOLID WASTE INFRASTRUCTURE 

4.1.1 Accessibility to solid waste

Synergies

- 1. Housing  2
- 2. Solid waste management  1
- 3. Education  2



Description:
To provide effective solid waste management this involves collection and disposal.

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SOLUTIONS

4.1 SOLID WASTE INFRASTRUCTURE 

4.1.2 Composting Infrastructure

Synergies
1. Green urban areas



\$2
2
1

Description:
Providing compost bins, the resulting compost should be used to enrich local green spaces

RETROFIT SCENARIOS

SOLUTIONS

4.1 SOLID WASTE INFRASTRUCTURE 

4.1.3 Modernize Transfer Stations

Synergies
1. Employment
2. Innovation



\$3
2
3

Description:
Investing in equipment like conveyor belts, shredders, and balers for better waste management

RETROFIT SCENARIOS

SOLUTIONS

4.2 SOLID WASTE MANAGEMENT 

4.2.1 Regular Collection Schedule

Synergies
1. Urban planning
2. Community management



\$2
1
1

Description:
Establish a consistent and frequent waste collection schedule, taking into account the specific needs

RETROFIT SCENARIOS

SOLUTIONS

4.2 SOLID WASTE MANAGEMENT 

4.2.2 Bulk Waste Pickups

Synergies
1. Urban planning
2. Community management



\$2
2
2

Description:
Implement a system for scheduled bulk waste pickups to address larger items that cannot fit in standard bins. This can help prevent illegal dumping

RETROFIT SCENARIOS

SOLUTIONS

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SOLUTIONS

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SOLUTIONS

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SOLUTIONS

4.2 SOLID WASTE MANAGEMENT 

4.2.3 Community Cleanup Events

Synergies

- 1. Green urban areas 
- 2. Education 
- 3. Community involvement 



Description:
Organize community clean-up events involving residents, schools, local businesses, and community organizations

RETROFIT SCENARIOS

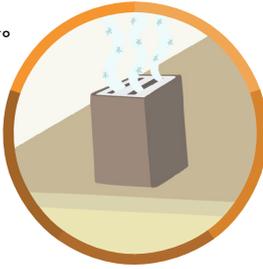
SOLUTIONS

5.1 AIR QUALITY 

5.1.1 filters for chimneys

Synergies

- 1. Adaptation to heatwaves 
- 2. 
- 2. 



Description:
Helps to reduce the effect of harmful gases absorbing in the air

RETROFIT SCENARIOS

SOLUTIONS

5.1 AIR QUALITY 

5.1.2 Road maintenance

Synergies

- 1. Performance in mobility 
- 2. Safety in mobility 
- 3. Use of land 



Description:
Maintain roads and reduce dust emissions by using dust suppressants and paving unpaved roads

RETROFIT SCENARIOS

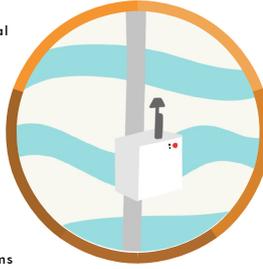
SOLUTIONS

5.1 AIR QUALITY 

5.1.3 monitoring station of the air quality

Synergies

- 1. Environmental impacts 
- 2. Noise 
- 3. Biodiversity and ecosystems 



Description:
To assess and managing the levels of various air pollutants, promoting public health, and supporting environmental sustainability.

RETROFIT SCENARIOS

SOLUTIONS

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SOLUTIONS

5.2 NOISE 

5.2.1 Noise Barriers

Synergies

- 1. Green urban areas 
- 2. Environmental impacts 
- 3. 



Description:
Noise barriers, such as sound walls, fences or vegetation to block or absorb sound waves

RETROFIT SCENARIOS

SOLUTIONS

5.2 NOISE 

5.2.2 Quiet Technologies

Synergies

- 1. Housing 
- 2. Innovation 
- 3. Public building control 



Description:
Promoting electric vehicles, quieter HVAC systems, and the use of noise-reducing materials in construction and manufacturing

RETROFIT SCENARIOS

SOLUTIONS

5.2 NOISE 

5.2.3 Noise Regulations

Synergies

- 1. Education 
- 2. Urban planning 
- 3. Community involvement 



Description:
Limits on noise levels during specific hours, such as nighttime, when people are trying to sleep. Penalties for violations can act as a deterrent

RETROFIT SCENARIOS

SOLUTIONS

5.3 ENVIRONMENTAL IMPACTS 

5.3.1 Smart sensors

Synergies

- 1. Energy consumption 
- 2. Green urban areas 
- 3. Housing 



Description:
to protect and preserve wildlife with the presence of motion sensors, timers, or dimmers on natural areas, those only will activate the light when they recognize the human size.

RETROFIT SCENARIOS

SOLUTIONS



SOLUTIONS



SOLUTIONS



SOLUTIONS



SOLUTIONS

5.3 ENVIRONMENTAL IMPACTS 

5.3.2 Smart lighting

Synergies

- 1. Green urban areas 
- 2. Innovation 
- 3. Affordable and Clean Energy 



Description:
To ensure they are only active when needed, reducing unnecessary light pollution

RETROFIT SCENARIOS

SOLUTIONS

5.3 ENVIRONMENTAL IMPACTS 

5.3.3 Street Light direction

Synergies

- 1. Green urban areas 
- 2. Biodiversity and ecosystems 
- 3. Housing 



Description:
Using fixtures that direct light downward, such as shielded or full-cut-off fixtures. These fixtures prevent light from spilling upward or outward, focusing it where it's needed

RETROFIT SCENARIOS

SOLUTIONS

6.1 PERFORMANCE OF MOBILITY SERVICE 

6.1.1 Smart Traffic Management

Synergies

- 1. Energy consumption 
- 2. Safety in mobility 
- 3. Sustainable Cities and Communities 



Description:
Implement smart traffic management systems that use sensors and data analytics to optimize traffic flow. This can reduce congestion, minimize travel times and improve the overall efficiency of transportation

RETROFIT SCENARIOS

SOLUTIONS

6.1 PERFORMANCE OF MOBILITY SERVICE 

6.1.2 Digital Payment Systems

Synergies

- 1. Innovation 
- 2. Community involvement 
- 3. Sustainable Cities and Communities 



Description:
Introduce contactless payment options for public transportation and shared mobility services

RETROFIT SCENARIOS

SOLUTIONS

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SOLUTIONS

SOLUTIONS

SOLUTIONS

6.1 PERFORMANCE OF MOBILITY SERVICE 

6.1.3 Effective and complete signalization

Synergies

- 1. Environmental impacts 
- 2. Accesibility 
- 3. Urban planning 



Description:
Refers to the system of traffic signals, signs, and road markings that regulate and guide the flow of traffic on roadways

RETROFIT SCENARIOS

SOLUTIONS

6.2 GREEN MOBILITY 

6.2.1 EV Charging Stations

Synergies

- 1. Use of land 
- 2. Economy performance 
- 3. Renewable energy 



Description
Install electric vehicle (EV) charging stations in residential areas, parking lots, and public spaces

RETROFIT SCENARIOS

SOLUTIONS

6.2 GREEN MOBILITY 

6.2.2 Bike Infrastructure

Synergies

- 1. Use of land 
- 2. Green urban areas 
- 2. 



Description:
Invest in bike lanes, bike-sharing programs, and bike racks throughout the neighborhood. Ensure that there are safe and convenient routes for cyclists

RETROFIT SCENARIOS

SOLUTIONS

6.2 GREEN MOBILITY 

6.2.3 Electric public transport

Synergies

- 1. Energy consumption 
- 2. Noise 
- 3. Adaptation to heatwaves 



Description:
Invest in new electric public transportation, like buses to reduce the emissions of pollution in the atmosphere

RETROFIT SCENARIOS

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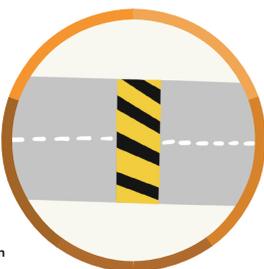
SOLUTIONS

6.3 SAFETY IN MOBILITY 

6.3.1 Speed Bumps and Humps

Synergies

- 1. Use of land  \$1
- 2. Adaptation to heatwaves  1
- 3. Adaptation to droughts  1



Description:
Install speed bumps or humps on residential streets to reduce speeding and encourage drivers to slow down

RETROFIT SCENARIOS

SOLUTIONS

6.3 SAFETY IN MOBILITY 

6.3.2 Raised Crosswalks

Synergies

- 1. Use of land  \$2
- 2. Adaptation to heatwaves  1
- 3. Adaptation to droughts  1



Description:
Raise crosswalks to sidewalk level to enhance pedestrian visibility and encourage drivers to yield to pedestrians

RETROFIT SCENARIOS

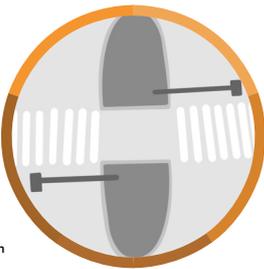
SOLUTIONS

6.3 SAFETY IN MOBILITY 

6.3.3 Pedestrian Islands

Synergies

- 1. Use of land  \$2
- 2. Adaptation to heatwaves  1
- 3. Adaptation to droughts  1



Description:
Create pedestrian islands in the middle of wider streets to provide a safe refuge for pedestrians when crossing the road

RETROFIT SCENARIOS

SOLUTIONS

7.1 ACCESSIBILITY 

7.1.1 Curb Ramps

Synergies

- 1. Performance in mobility  \$1
- 2. Safety in mobility  1
- 3. Urban planning  1



Description:
Install curb ramps at intersections and street crossings to provide wheelchair users, providing easier access to sidewalks and road crossings

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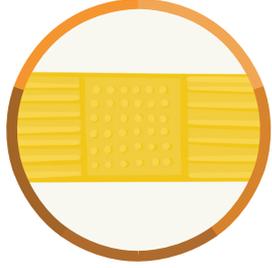
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SOLUTIONS

7.1 ACCESSIBILITY 

7.1.2 Tactile Paving

Synergies
1. Urban planning



\$1
2
1

Description:
Incorporate tactile paving, such as detectable warning surfaces, to assist visually impaired individuals in navigation. These surfaces provide tactile and audible cues about changes in terrain and crossing points

RETROFIT SCENARIOS

SOLUTIONS

7.1 ACCESSIBILITY 

7.1.3 Accessible Transit Stops

Synergies
1. Performance in mobility



\$2
1
1

Description:
Make bus stops and train stations accessible with ramps, elevators, and proper signage for people with disabilities. Ensure that platforms are level with vehicle entrances for easy boarding

RETROFIT SCENARIOS

SOLUTIONS

7.2 HOUSING 

7.2.1 Regularization of land tenure

Synergies
1. Use of land
2. Housing
3. Urban planning



\$3
1
3

Description:
Establish clear land rights for residents, potentially through community land trusts or government programs, to provide security and incentivize long-term investment in housing

RETROFIT SCENARIOS

SOLUTIONS

7.2 HOUSING 

7.2.2 Housing affordability policies

Synergies
1. Economy performance
2. Use of land
3. Urban planning



\$3
1
2

Description:
To create a more affordable and inclusive housing market, it requires a multifaceted approach involving policy interventions, regulatory measures, and collaborative efforts from various stakeholders.

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SOLUTIONS

7.2 HOUSING

7.2.3 Reduce vacant units/ apartments

Synergies

- 1. Use of land 
- 2. Housing 
- 3. Urban planning 



Description:
to increase occupancy rates, enhance the utilization of existing housing stock, and address factors contributing to vacancies.

RETROFIT SCENARIOS

SOLUTIONS

7.3 EDUCATION

7.3.1 Community participation

Synergies

- 1. Urban planning 
- 2. Community involvement 
- 3. Urban planning 



Description:
Collaborate with local community organizations, religious institutions, and social groups to spread awareness about the importance of education and promote school enrollment

RETROFIT SCENARIOS

SOLUTIONS

7.3 EDUCATION

7.3.2 Scholar incentives

Synergies

- 1. Community involvement 
- 2. Community involvement 
- 3. Urban planning 



Description:
Offer incentives such as scholarships, free uniforms, or school supplies for students who enroll or maintain good attendance

RETROFIT SCENARIOS

SOLUTIONS

7.3 EDUCATION

7.3.3 Extracurricular activities

Synergies

- 1. Community involvement 
- 2. Community involvement 
- 3. Urban planning 



Description:
Offer sports, arts, and clubs, to make the school experience more appealing to students. Highlight these activities during recruitment efforts

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SOLUTIONS

8.1 ECONOMY PERFORMANCE 

8.1.1 Co-working areas

Synergies

- 1. Use of land 
- 2. Employment 
- 3. Community involvement 



Description:
Create a neighborhood business incubator or co-working space where aspiring entrepreneurs can access resources, mentorship, and low-cost office facilities

RETROFIT SCENARIOS

SOLUTIONS

8.1 ECONOMY PERFORMANCE 

8.1.2 Simplify bureaucratic process

Synergies

-  3
-  1
-  3



Description:
Simplify the process of starting a small business by reducing bureaucratic barriers and offering guidance on permits, licenses, and regulations

RETROFIT SCENARIOS

SOLUTIONS

8.1 ECONOMY PERFORMANCE 

8.1.3 Local production

Synergies

- 1. Use of land 
- 2. Employment 
-  2



Description:
Encourage residents to buy locally by promoting neighborhood businesses, which can help stimulate economic growth and create jobs

RETROFIT SCENARIOS

SOLUTIONS

8.2 EMPLOYMENT 

8.2.1 Local fairs of jobs and products

Synergies

- 1. Use of land 
- 2. Green urban areas 
- 3. Community involvement 



Description:
Organize local business networking events and markets to promote and showcase products and services from neighborhood entrepreneurs

RETROFIT SCENARIOS

SOLUTIONS



SOLUTIONS



SOLUTIONS



SOLUTIONS



SOLUTIONS

8.2 EMPLOYMENT 

8.2.2 Programs which promote young and women jobs offer

Synergies

- 1. Education 
- 2. Innovation 
- 3. Community involvement 



Description:
To foster inclusive economic growth, reducing unemployment rates, and addressing gender disparities in the workforce.

RETROFIT SCENARIOS

SOLUTIONS

8.2 EMPLOYMENT 

8.2.3 Vocational programs

Synergies

- 1. Education 
- 2. Innovation 
- 3. Community involvement 



Description:
Establish vocational training centers, adult education programs, and workshops. These programs can help residents acquire new skills, making them more competitive in the job market

RETROFIT SCENARIOS

SOLUTIONS

8.3 INNOVATION 

8.3.1 STEM workshops

Synergies

- 1. Economy performance 
- 2. Education 
- 3. Community involvement 



Description:
Encouraging science, technology, engineering, and mathematics (STEM) education and training programs in the neighborhood can nurture a skilled workforce and spark innovation

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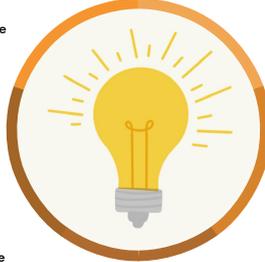
SOLUTIONS

8.3 INNOVATION 

8.3.2 Innovation hubs

Synergies

- 1. Performance in mobility 
- 2. Education 
- 3. Energy infrastructure 



Description:
Offer resources like high-speed internet, access to 3D printers and other tools, mentorship programs, and networking events. By bringing like-minded individuals together, innovation hubs can foster new ideas

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SOLUTIONS

8.3 INNOVATION 

8.3.3 Eco-innovations and green jobs

Synergies

- 1. Economy performance 
- 2. Employment  



Description:
To foster environmental sustainability, economic growth, and the creation of employment opportunities in eco-friendly sectors.

RETROFIT SCENARIOS

SOLUTIONS

9.1 ADAPTATION TO HEATWAVES 

9.1.1 Cool roofing materials

Synergies

- 1. Energy consumption 
- 2. Housing 
- 2. 



Description:
To encourage the use of cool roofing materials and green roofs that reflect more sunlight.

RETROFIT SCENARIOS

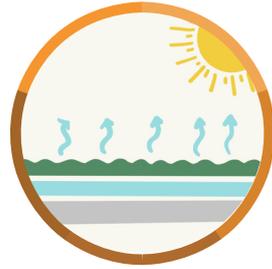
SOLUTIONS

9.1 ADAPTATION TO HEATWAVES 

9.1.2 Reflective coatings

Synergies

- 1. Energy consumption 
- 2. Housing 
- 1. 



Description:
Apply reflective coatings or materials to existing roofs and pavements.

RETROFIT SCENARIOS

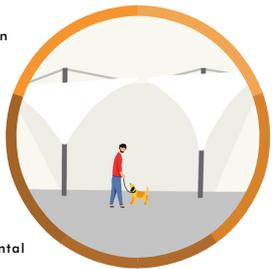
SOLUTIONS

9.1 ADAPTATION TO HEATWAVES 

9.1.3 Shading structures

Synergies

- 1. Green urban areas 
- 2. Energy consumption 
- 3. Environmental impacts 



Description:
Integrating shading structures and vegetation like awnings, pergolas, and canopies on sidewalks and public spaces.

RETROFIT SCENARIOS

SOLUTIONS



SOLUTIONS



SOLUTIONS



SOLUTIONS



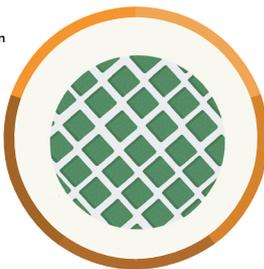
SOLUTIONS

9.2 ADAPTATION TO PLUVIAL FLOOD 

9.2.1 Permeable pavements

Synergies

- 1. Green urban areas 
- 2. Water infrastructure 
- 3. Effluents management 



Description:
Permeable pavements allow rainwater to pass through and be absorbed by the ground, reducing surface runoff

RETROFIT SCENARIOS

SOLUTIONS

9.2 ADAPTATION TO PLUVIAL FLOOD 

9.2.2 Rain gradens and bioswales

Synergies

- 1. Green urban areas 
- 2. Water infrastructure 
- 3. Effluents management 



Description:
These are depressions planted with native vegetation that help absorb and filter rainwater. Rain gardens reduce runoff and allow water to infiltrate into the ground

RETROFIT SCENARIOS

SOLUTIONS

9.2 ADAPTATION TO PLUVIAL FLOOD 

9.2.3 Detention basins

Synergies

- 1. Water infrastructure 
- 2. Use of land 
- 3. Biodiversity and ecosystems 



Description:
Construct detention basins or ponds to temporarily store excess rainwater during heavy storms. These basins can release water slowly over time, preventing rapid runoff

RETROFIT SCENARIOS

SOLUTIONS

9.3 ADAPTATION TO DROUGHT 

9.3.1 Rain water harvesting systems

Synergies

- 1. Housing 
- 2. 
- 3. 



Description:
Collect rainwater from rooftops and store it in tanks or cisterns for later use. This harvested rainwater can be used for irrigation

RETROFIT SCENARIOS

SOLUTIONS

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SOLUTIONS

9.3 ADAPTATION TO DROUGHT 

9.3.2 Desalination plants

Synergies

- 1. Green urban areas 
- 2. Biodiversity and ecosystems 
- 3. Air quality 



Description:
In areas near coastlines, desalination plants can be constructed to convert seawater into freshwater for residential and industrial use. This solution is particularly useful when freshwater sources are scarce

RETROFIT SCENARIOS

SOLUTIONS

9.3 ADAPTATION TO DROUGHT 

9.3.3 Xeriscaping and drought tolerant landscaping

Synergies

- 1. Use of land 
- 2. Green urban areas 
- 3. Water consumption 



Description:
Introduce native or drought-resistant plants that require minimal irrigation

RETROFIT SCENARIOS

SOLUTIONS

10.1 URBAN PLANNING 

10.1.1 Participatory budgeting

Synergies

- 1. Economy performance 
- 2. Community involvement 
- 3. Air quality 



Description:
Involve residents in decisions regarding the allocation of public funds for urban projects. Let them prioritize and vote on initiatives they believe will benefit the community

RETROFIT SCENARIOS

SOLUTIONS

10.1 URBAN PLANNING 

10.1.2 Interactive mapping

Synergies

- 1. Education 
- 2. Innovation 
- 3. Community involvement 



Description:
Utilize Geographic Information Systems (GIS) to create interactive maps that residents can explore. These maps can display proposed changes, land use plans, and zoning information

RETROFIT SCENARIOS

SOLUTIONS



SOLUTIONS



SOLUTIONS



SOLUTIONS



SOLUTIONS

10.1 URBAN PLANNING 

10.1.3 Site visits

Synergies

- 1. Performance in mobility 
- 2. Use of land 
- 3. Accessibility 



Description:
Organize guided walks or site visits to allow residents to experience firsthand the areas being considered for development or improvement. This can provide valuable insights and a deeper understanding of local issues

RETROFIT SCENARIOS

SOLUTIONS

10.2 MANAGEMENT AND COMMUNITY INVOLVEMENT 

10.2.1 Neighbourhood advisory council

Synergies

- 1. Urban planning 
- 2. 
- 3. 



Description:
Composed of residents, building managers, and local authorities to gather input and feedback on building management practices and improvements

RETROFIT SCENARIOS

SOLUTIONS

10.2 MANAGEMENT AND COMMUNITY INVOLVEMENT 

10.2.2 Community workshops

Synergies

- 1. Employment 
- 2. Education 
- 3. 



Description:
Organize community events and workshops to educate residents about sustainable practices and encourage their involvement in energy conservation efforts

RETROFIT SCENARIOS

SOLUTIONS

10.2 MANAGEMENT AND COMMUNITY INVOLVEMENT 

10.2.3 Mobile app

Synergies

- 1. Education 
- 2. Innovation 
- 3. 



Description:
Allows residents to access information about public building management, report issues, and stay informed

RETROFIT SCENARIOS



SOLUTIONS

29 PUBLIC BUILDING OPERATION 

29.1 Implement safety features

Synergies

- 1. Energy consumption 
- 2. Housing 
- 3. Community involvement 



Description:
Install fire alarms, sprinkler systems, and emergency exit signage, to ensure compliance with building codes and enhance occupant safety

RETROFIT SCENARIOS

SOLUTIONS

29 PUBLIC BUILDING OPERATION 

29.2 Building management system (BMS)

Synergies

- 1. Energy infrastructure 
- 2. Energy consumption 
- 3. Innovation 



Description:
Allow for remote monitoring and control of building systems, such as HVAC, security, and fire safety

RETROFIT SCENARIOS

SOLUTIONS

29 PUBLIC BUILDING OPERATION 

29.3 Energy consumption monitoring system in public buildings

Synergies

- 1. Energy consumption 
- 2. Innovation 
- 



Description:
Optimize resource usage in public buildings, reduce energy costs, lower carbon footprints, and contribute to broader sustainability goals. Such initiatives not only benefit the environment but also demonstrate a commitment to responsible resource management.

RETROFIT SCENARIOS

SOLUTIONS

7.2 HOUSING 

7.2.4 Increase social housing projects

Synergies

- 1. Use of land 
- 2. Community involvement 
- 



Description:
to address housing affordability, provide secure and dignified housing for vulnerable populations, and contribute to inclusive urban development.

RETROFIT SCENARIOS

SOLUTIONS

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SOLUTIONS

2.1 ENERGY INFRASTRUCTURE 

2.1.2 Upgrade to a Smart Grid

Synergies

- 1. Energy consumption 
- 2. Innovation 
- 3. Urban planning 



Description:
Smart grids utilize advanced digital technology to monitor and manage energy distribution more efficiently. Allowing real-time data analysis, load balancing, quicker response

RETROFIT SCENARIOS

SOLUTIONS

2.1 ENERGY INFRASTRUCTURE 

2.1.3 Grid Modernization

Synergies

- 1. Energy consumption 
- 2. Employment 
- 3. Urban planning 



Description:
Upgrade the aging infrastructure to avoid blackouts requalification of the existing grid. (pass the cables from the air to underground)

RETROFIT SCENARIOS

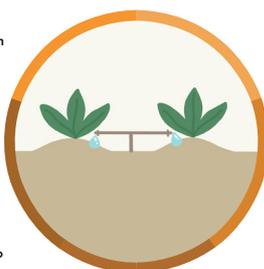
SOLUTIONS

3.2 WATER CONSUMPTION 

3.2.3 Drip Irrigation

Synergies

- 1. Green urban areas 
- 2. Biodiversity and ecosystems 
- 3. Apatation to droughts 



Description:
Promote the use of drip irrigation systems for gardens and landscaping. These systems deliver water directly to the base of plants, minimizing evaporation and water waste

RETROFIT SCENARIOS

SOLUTIONS

3.2 WATER INFRASTRUCTURE 

3.2.4 Leak Detection devices

Synergies

- 1. Use of land 
- 2. Urban planning 
- 3. 



Description:
To identify and repair water leaks promptly. Even minor leaks can waste significant amounts of water and strain the infrastructure

RETROFIT SCENARIOS

SOLUTIONS

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SOLUTIONS

3.2 WATER CONSUMPTION 

3.2.5 Real-Time Monitoring

Synergies

- 1. Innovation  \$2
- 2. Urban planning  2
- 3. Water infrastructure  1



Description:
Install real-time sewage monitoring systems to detect blockages, leaks, or overflows promptly

RETROFIT SCENARIOS

SOLUTIONS

4.2 SOLID WASTE MANAGEMENT 

4.2.4 access to separate waste collection points

Synergies

- 1 Green urban areas  \$1
- 2 Solid waste management  1
- 3 Education  1



Description:
To provide convenient recycling bins and educate residents on the importance of recycling.

RETROFIT SCENARIOS

SOLUTIONS

6.1 PERFORMANCE OF MOBILITY SERVICE 

6.1.4 Accessibility to public transport

Synergies

- 1. Accessibility  \$3
- 2. Use of land  1
-  2



Description:
To promote sustainable urban mobility, reducing traffic congestion, and enhancing overall transportation efficiency.

RETROFIT SCENARIOS

SOLUTIONS

6.2 GREEN MOBILITY 

6.2.4 Mobility sharing systems

Synergies

- 1 Environmental impacts  \$2
- 2 Accessibility  1
- 3. Urban planning  1



Description:
To promote the use of sharing mobility services like cars and bikes.

RETROFIT SCENARIOS

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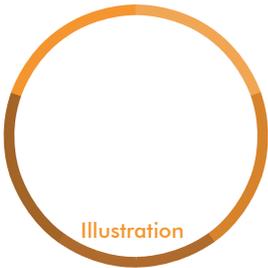
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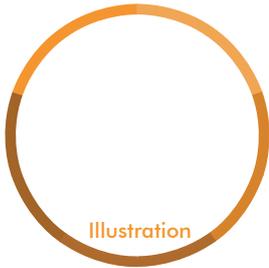
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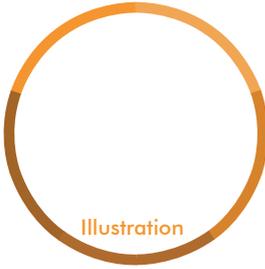
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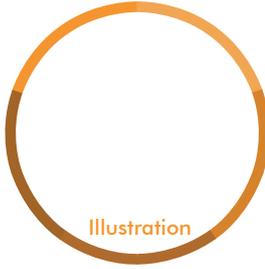
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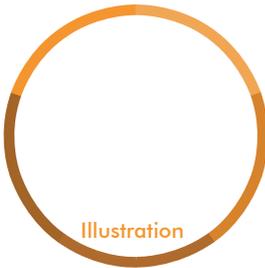
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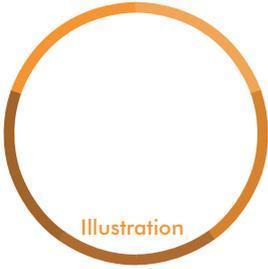
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