

SUSTAINABLE CITY



TASK 6



WHAT IS UTOPIAN?



It is derived from the Greek word **utopia**, which means "impossible design or thought." The word **utopian** is used as an adjective, non-reflective thoughts.

WHAT IS

Sustainable cities, urban sustainability, or eco-city is a city designed with consideration for social, economic, environmental impact, and resilient habitat for existing populations, without compromising the ability of future generations to experience the same.

SUSTAINABLE CITIES?

ARE SUSTAINABLE CITIES UTOPISTIC?

**“It always seems
impossible until it's done.”**

NELSON MANDELA



Sustainable Cities



Why sustainable city is an ideal city?

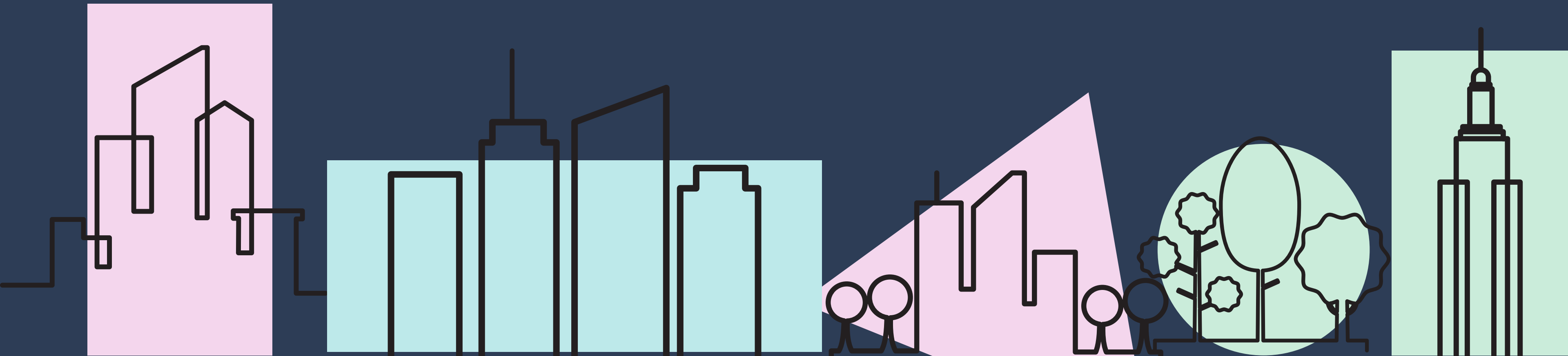
A sustainable city should promote economic growth and meet the basic needs of its inhabitants, while creating sustainable living conditions for all. Ideally, a sustainable city is one that creates an enduring way of life across the four domains of ecology, economics, politics and culture.



Vancouver, Canada

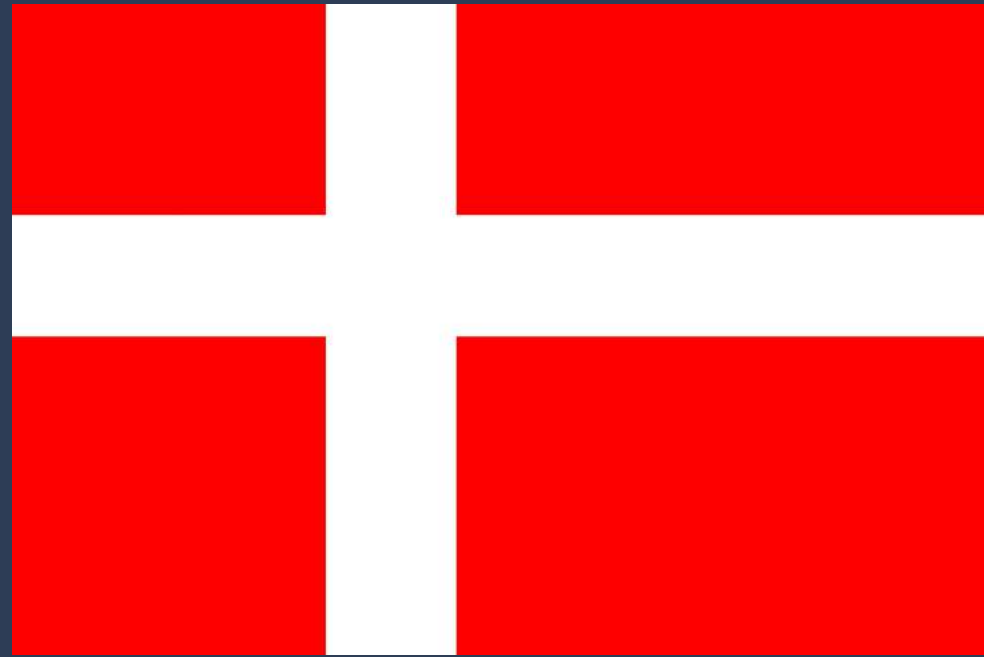
It is a port city in British Columbia in the west of Canada. It is the largest metropolis in Western Canada and the third largest in the country. A zero emission building is extremely energy efficient and uses only renewable energy.

They plan to transition to zero-emission buildings in all new construction by 2030. To achieve this, they are setting limits on emissions and energy use in new buildings, and they will lower those limits over time.



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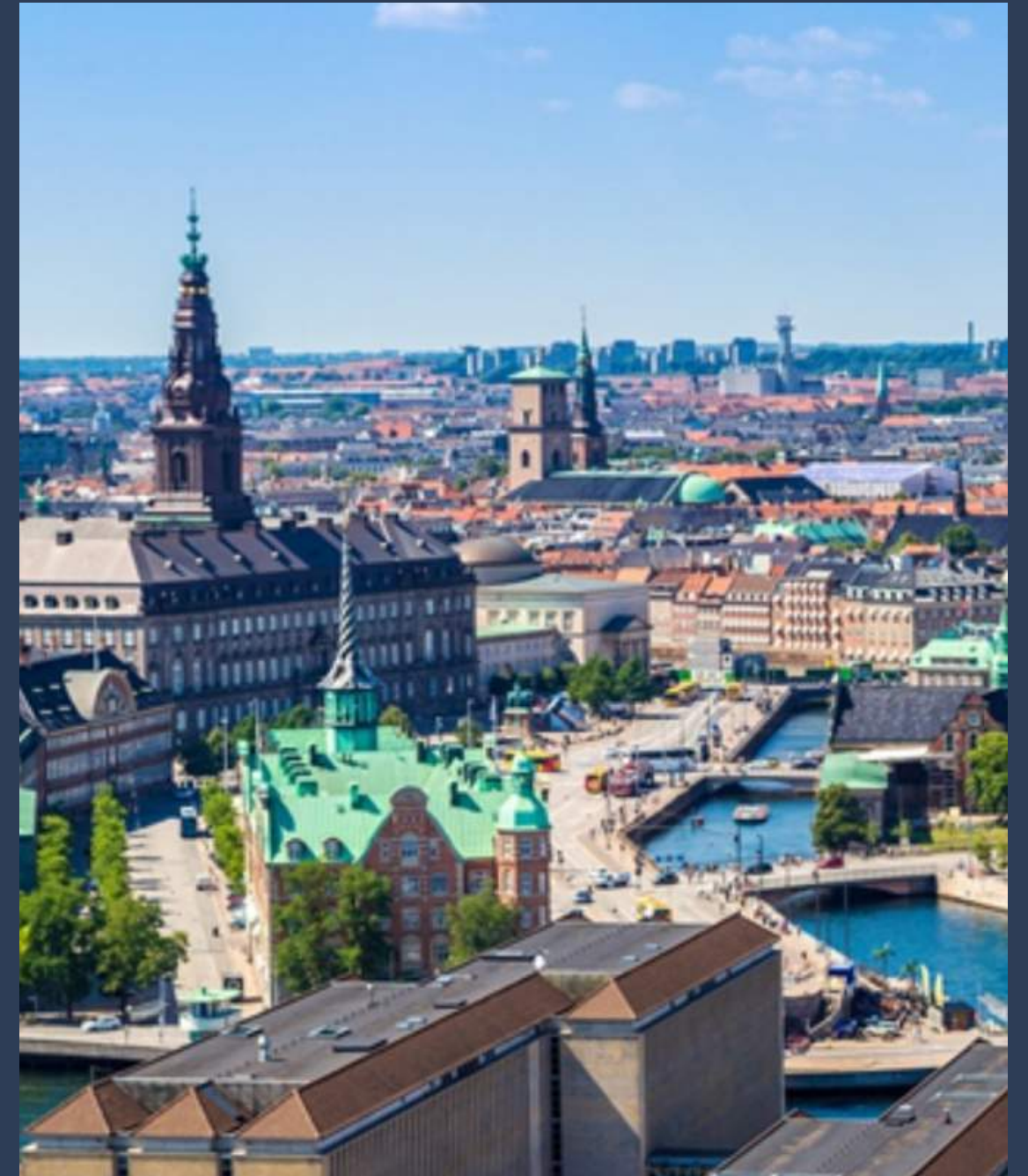
Copenhagen Denmark

Copenhagen is the capital and most populous city of Denmark

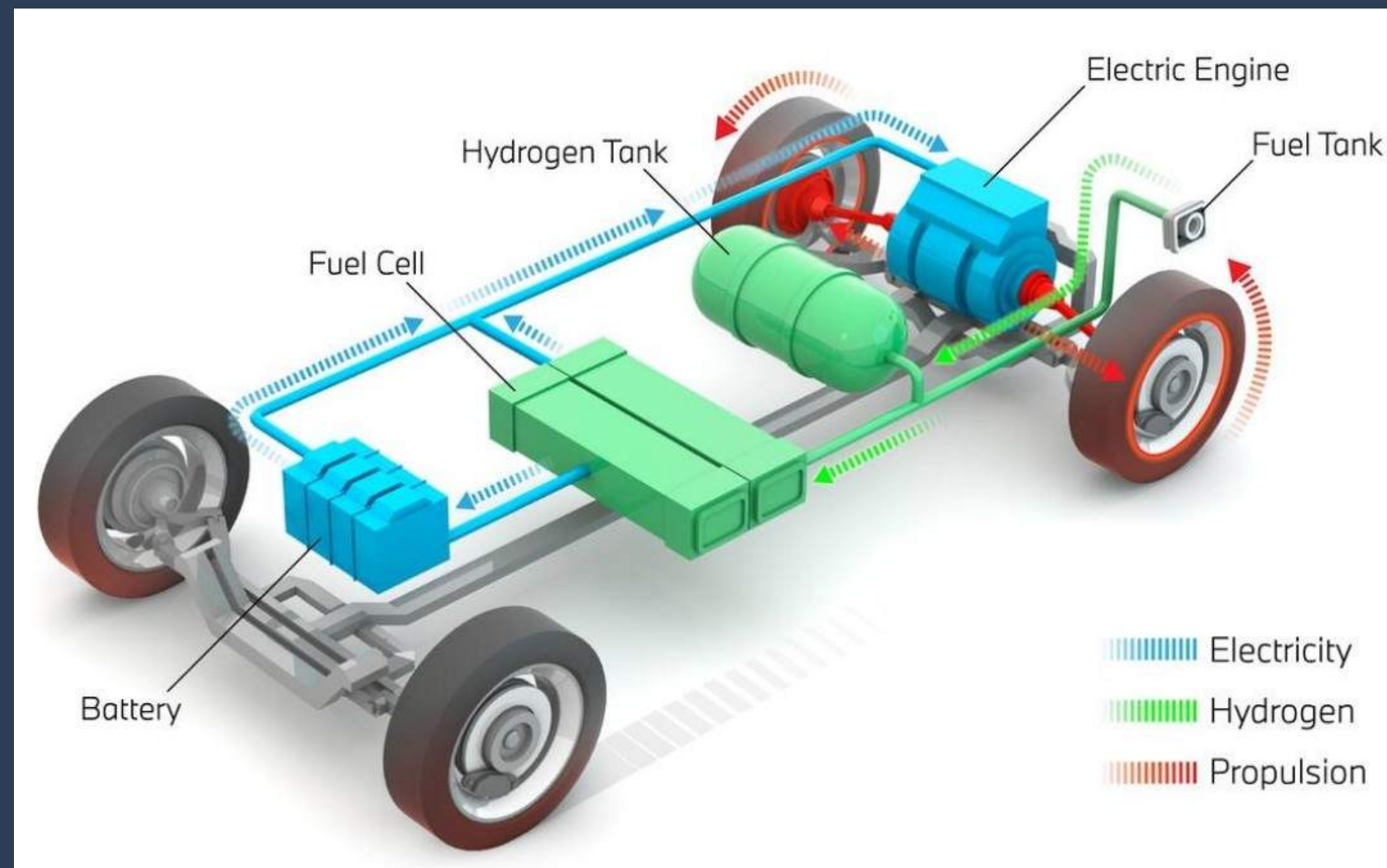


In 2012, Copenhagen launched its plan to become the world's first carbon neutral capital by 2025.

It has achieved the goal and remains a reference point for what can be achieved with a clear strategy and determination.



In fuel cell technology, a process known as reverse electrolysis takes place, in which hydrogen reacts with oxygen in the fuel cell. The hydrogen comes from one or more tanks built into the FCEV, while the oxygen comes from the ambient air. The only results of this reaction are electrical energy, heat and water, which is emitted through the exhaust as water vapor. So hydrogen-powered cars are locally emission-free





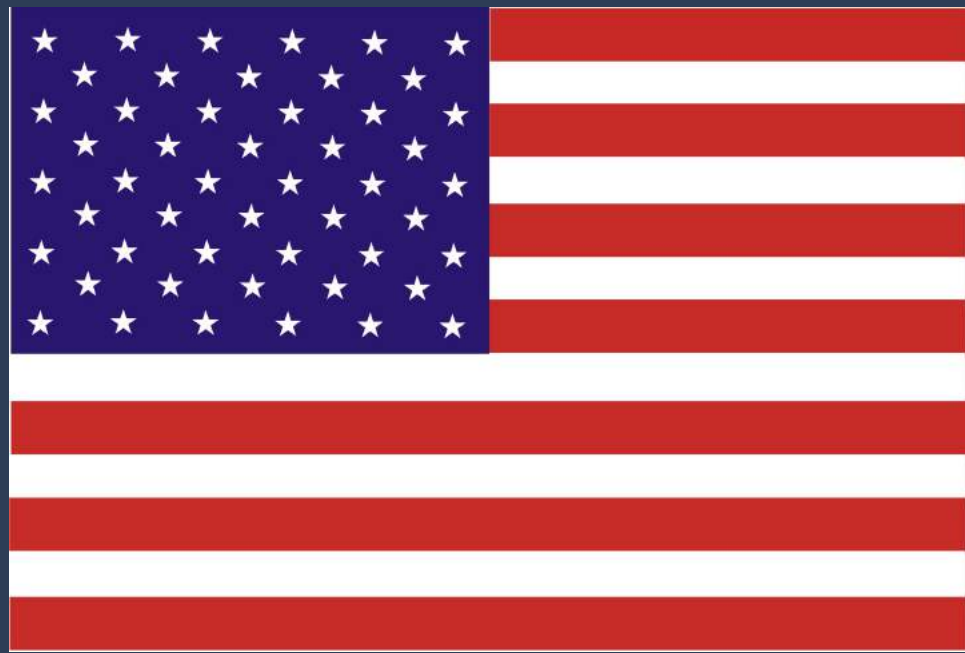
LJUBLJANA, SLOVENIA

Ljubljana may be better known for its castle and historical architecture, but it is also a green gem (it was Europe's Green Capital 2016).





More than 75 percent of the city is given to parks and green spaces, with 230 km of cycle paths, most of which have been developed in a short period of time, partly in response to the positive example of Copenhagen.



San Francisco, USA

San Francisco was taking steps towards sustainability long before the idea became mainstream.

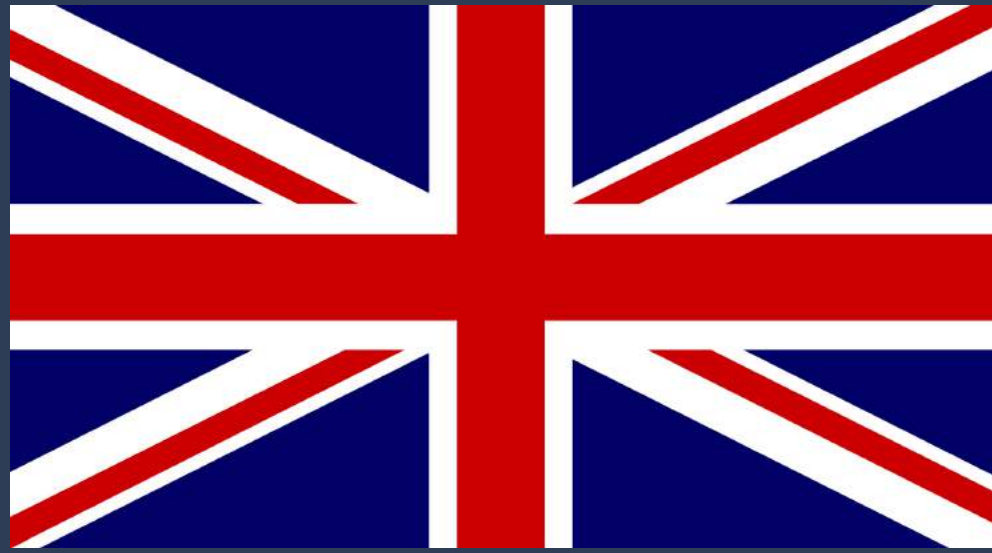




Recycling is required by law, and plastic bags were banned in 2007.

San Francisco's organic market environment is thriving, and many of its restaurants depend on sustainable sourcing. It probably has more farm-to-table restaurants than anywhere else in the country.





Bristol, UK

Bristol has a long and rich history of countercultural and environmental activity, from the growth of city farms and the opening of one of the country's first green bookstores in the 1980s to becoming headquarters for the country's largest renewable energy supplier (Ecotricity) in 2018.



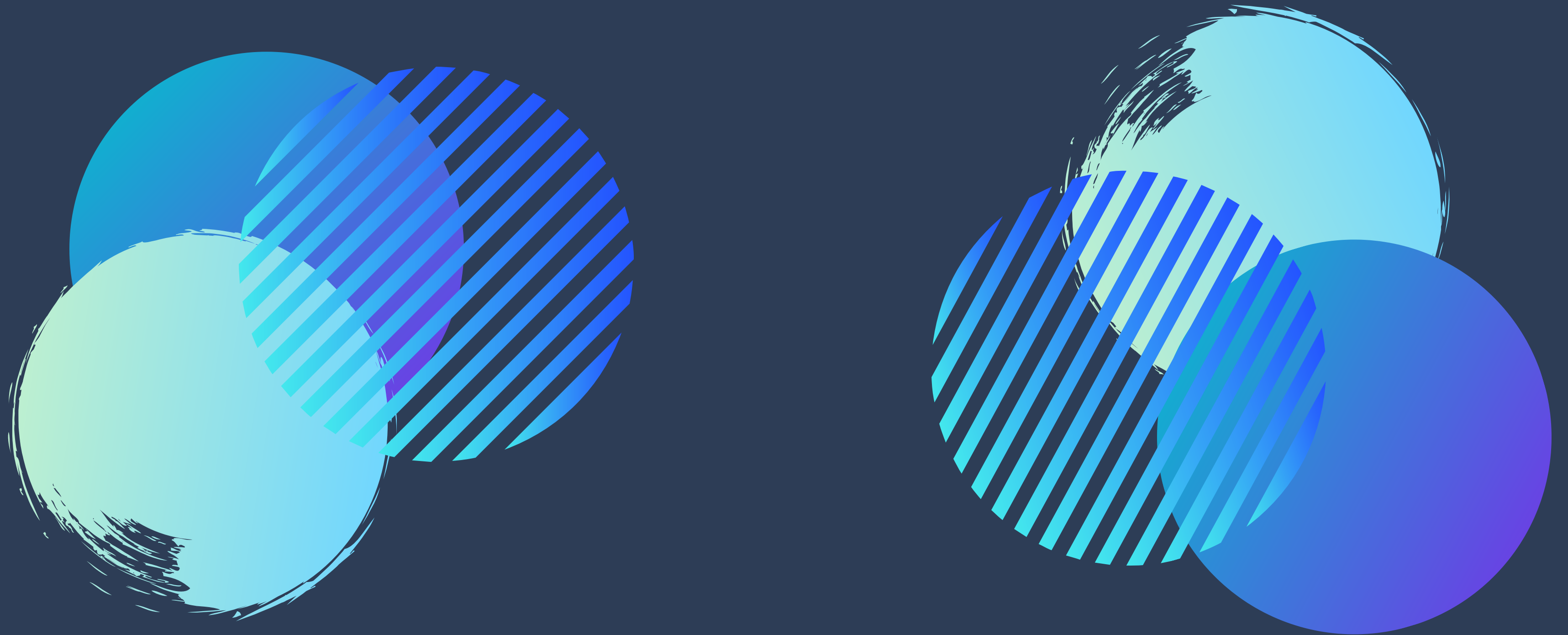


And its residents are some of the UK's most enthusiastic recyclers.



**Also in 2019, Bristol was
named the vegan capital of
the world.**

WHAT CAN DEGROWTH TEACH US?



WHAT IS DEGROWTH ?

The objective of degrowth is to reframe humanity's goals to address the climate emergency by dramatically scaling down aggregate energy and resource use back into balance with the living world.

People (and the environment) today are the gears of a machine that uniquely aims to produce more to increase Gross Domestic Product. Downsizing, in this context, attempts to reverse this mechanism and put it at the center of the system that people need, while the economy is a tool to ensure that people are fully realized. will be reduced.

Serge Latouche describes downsizing as a political slogan with theoretical implications aimed at strongly underlining the need to "give up the dogmatic goal of exponential growth". Not negative growth. Growth can be defined as "growth" in the sense of abandoning the absolute belief in progress and development.

Latouche proposes eight interconnected modifications, called the virtuous circle of the eight R's, to build a society that is shrinking:

E-evaluation (clearing the world vision from growth ideology); Reconceptualizing (adopting new values)

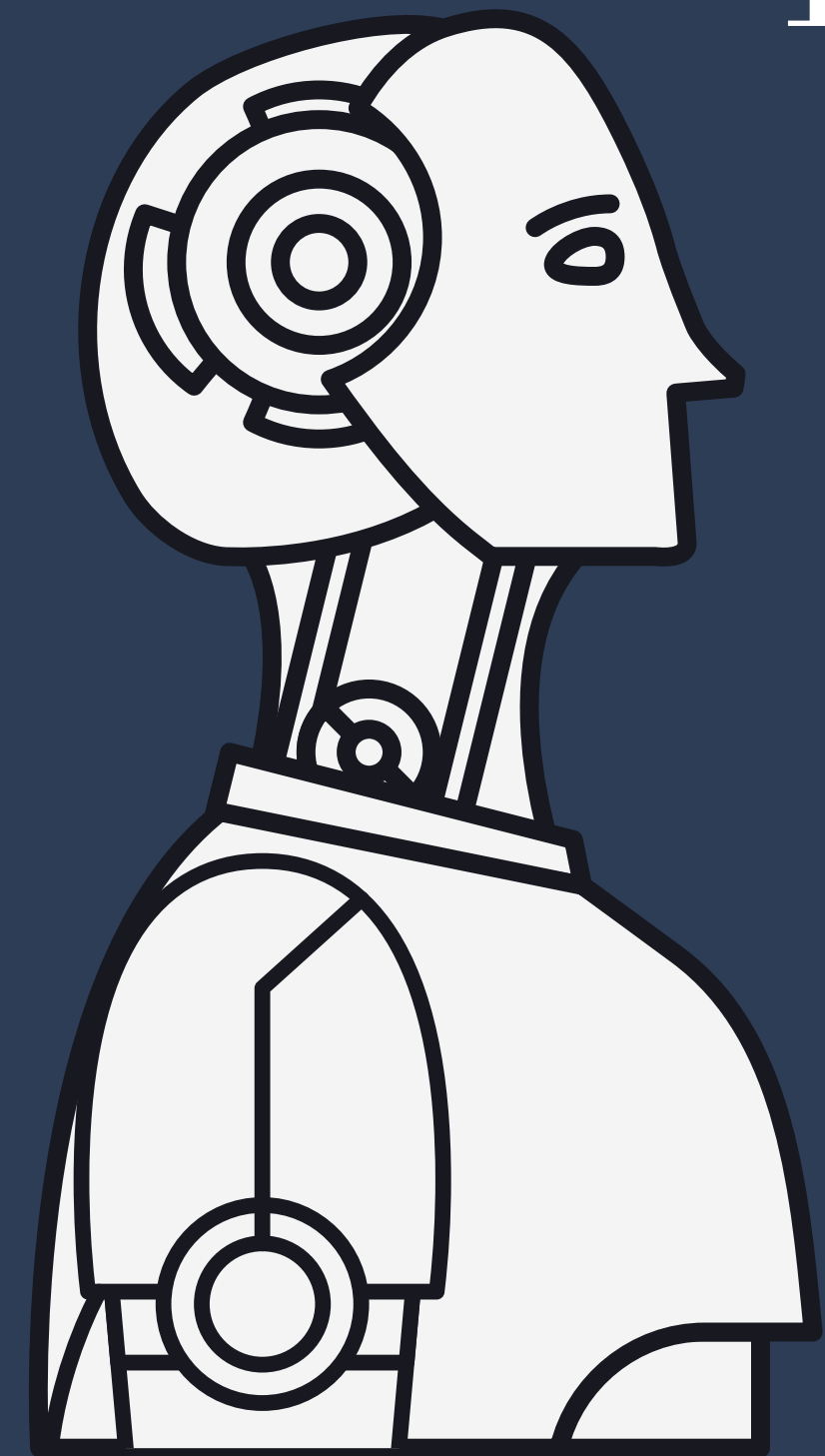
Reconstruction (productive device) Redistribution (money, land and work) Re-localization Reduce (overconsumption, waste, mass tourism, and working time)

Reuse.

Recycling.

As Latouche argues in his theory of downsizing, sustainable development is a flexible and indeterminate paradigm and is therefore risky because it does not clearly break with the logic of capitalist accumulation, economism, and growth.

HOW CAN SCIENCE, TECHNOLOGY AND ETHIC HELP US ?





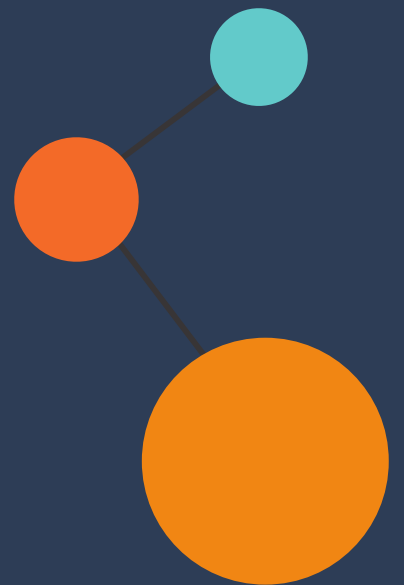
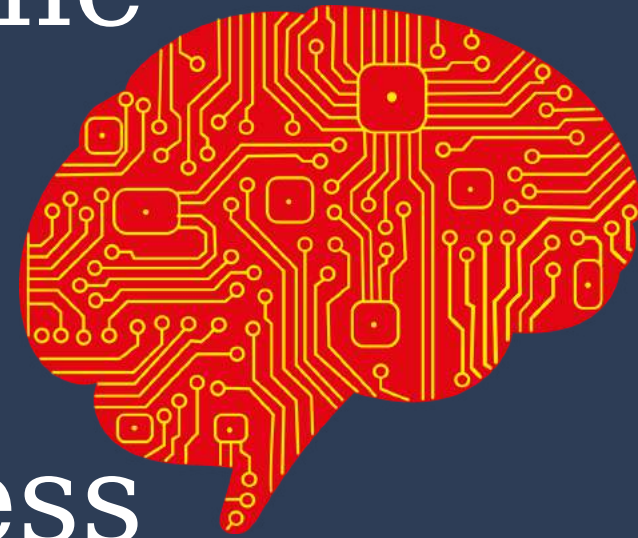
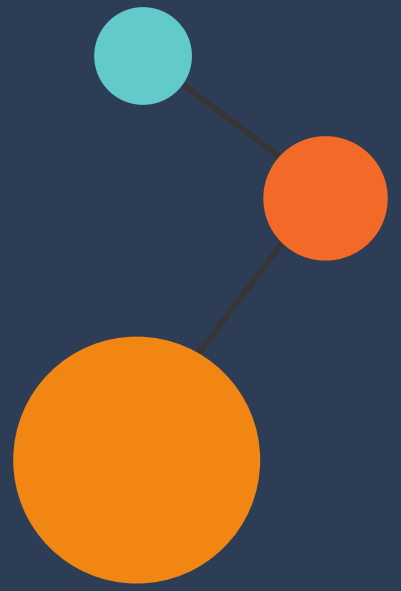
ETHIC

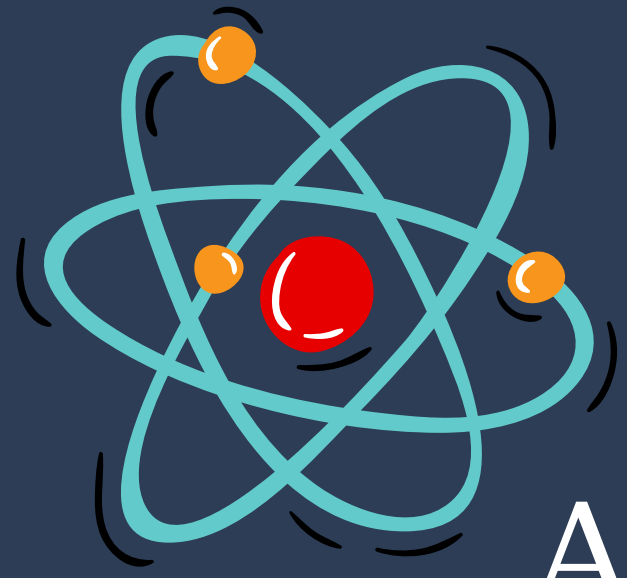


The purpose of ethics is to create a desired life by researching and questioning what is good for society. It affects the behavior of individuals and societies by providing collective sharing in transforming ethical right behaviors into social norms. In a sustainable utopia, it is important that environmental conditions are ethical for people to live in safety and peace. In this case, ethics shows us what can and should not be done morally.

TECHNOLOGY

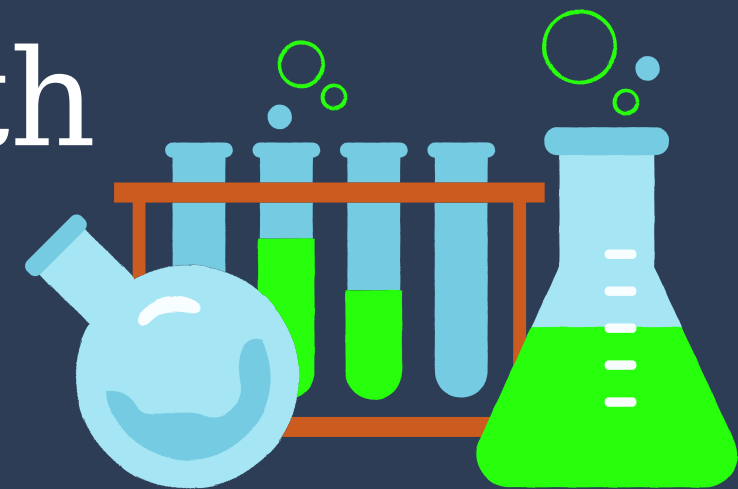
Technology is something we need to use to mitigate and prevent climate change. Many years have passed since the existence of the world, people improved themselves, technology improved. We have more possibilities than before, now we can access thousands of information with our mobile phones without leaving the sofa, within seconds. So why not use this power of ours to save our world?

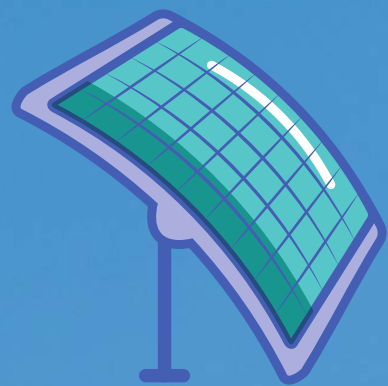




SCIENCE

A lot has happened since the birth of humanity. Science also developed with humans. Science can help us with the knowledge it has. We can use it to find better solutions to combat climate change. Some scientists are currently working to reduce the impact of global warming on Earth





The Design Of Our Future Sustainable City





YEAR
2030

hilton



Sheraton



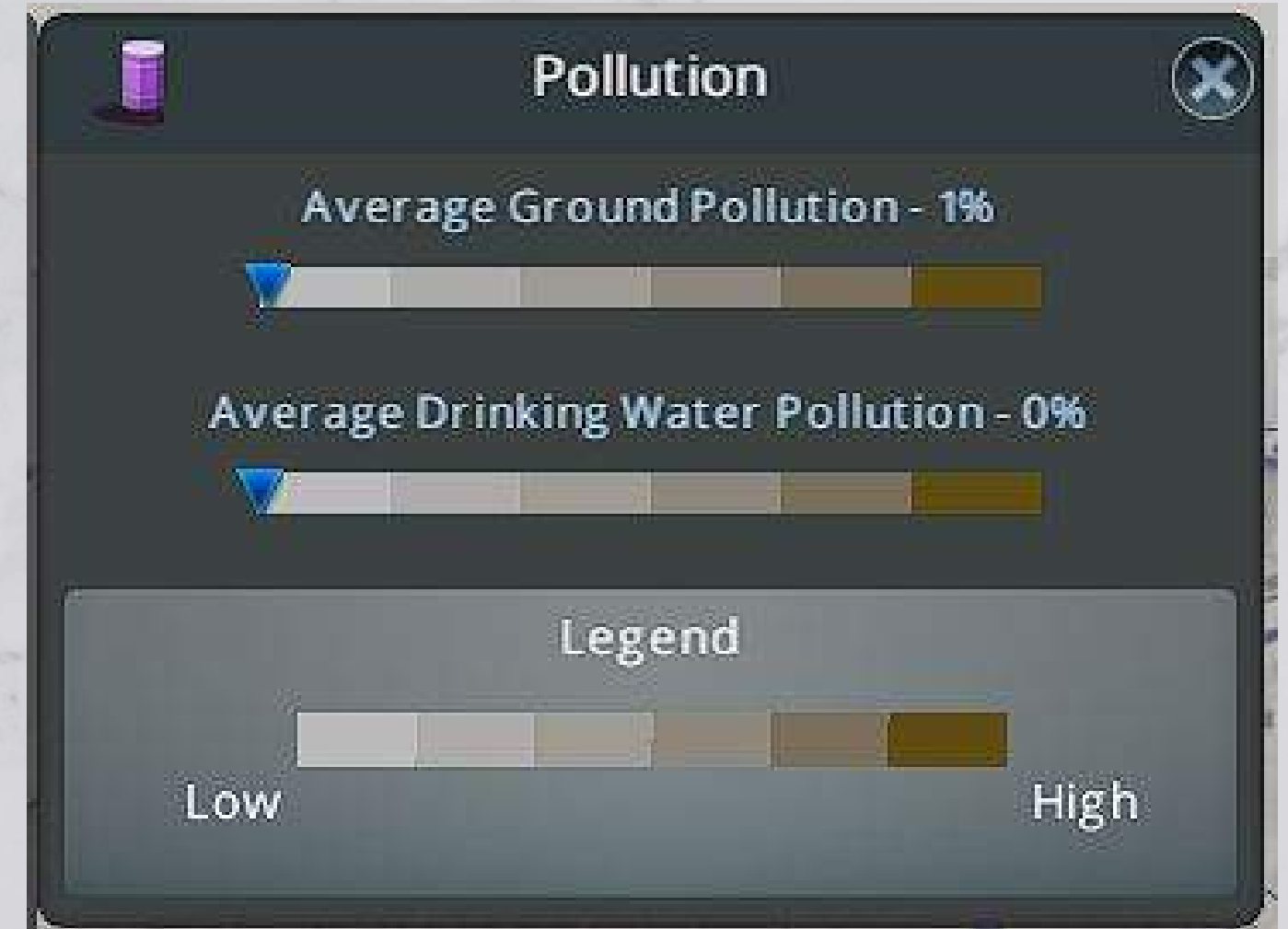
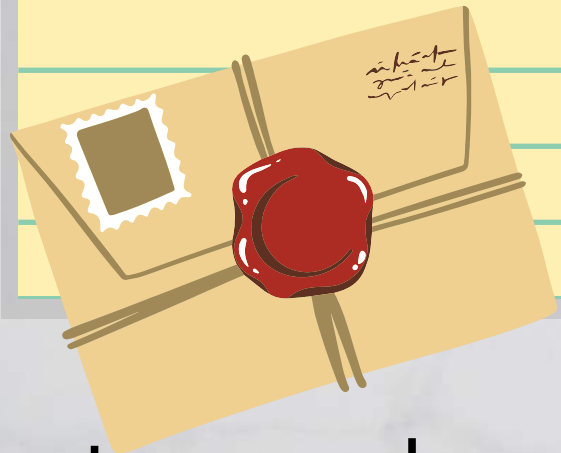
*advanced
wind power*

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SOIL POLLUTION OF MY CITY

While the limit unit of hazardous particulate matter is accepted as 20 micro grams per cubic meter by the World Health Organization, this value is realized at 400 in Adana.



In my design, the soil pollution is 1% because the garbage of this city is taken to 3 garbage incinerators in my city and energy is obtained by burning the garbage here. This is how we prevent garbage from mixing with the soil.

AND PERCENTAGE OF WATER POLLUTION



1% soil pollution is due to industry.

Landfill Usage - 0%
and
Garbage burning situation - green

Garbage production per week
119,360

Waste incineration capacity is
144,000 per week.



**SOLAR ENERGY
FIELD**





UNIVERSITY





There are more trees than usual in this city that I designed because the tree plays a role in cleaning the air.

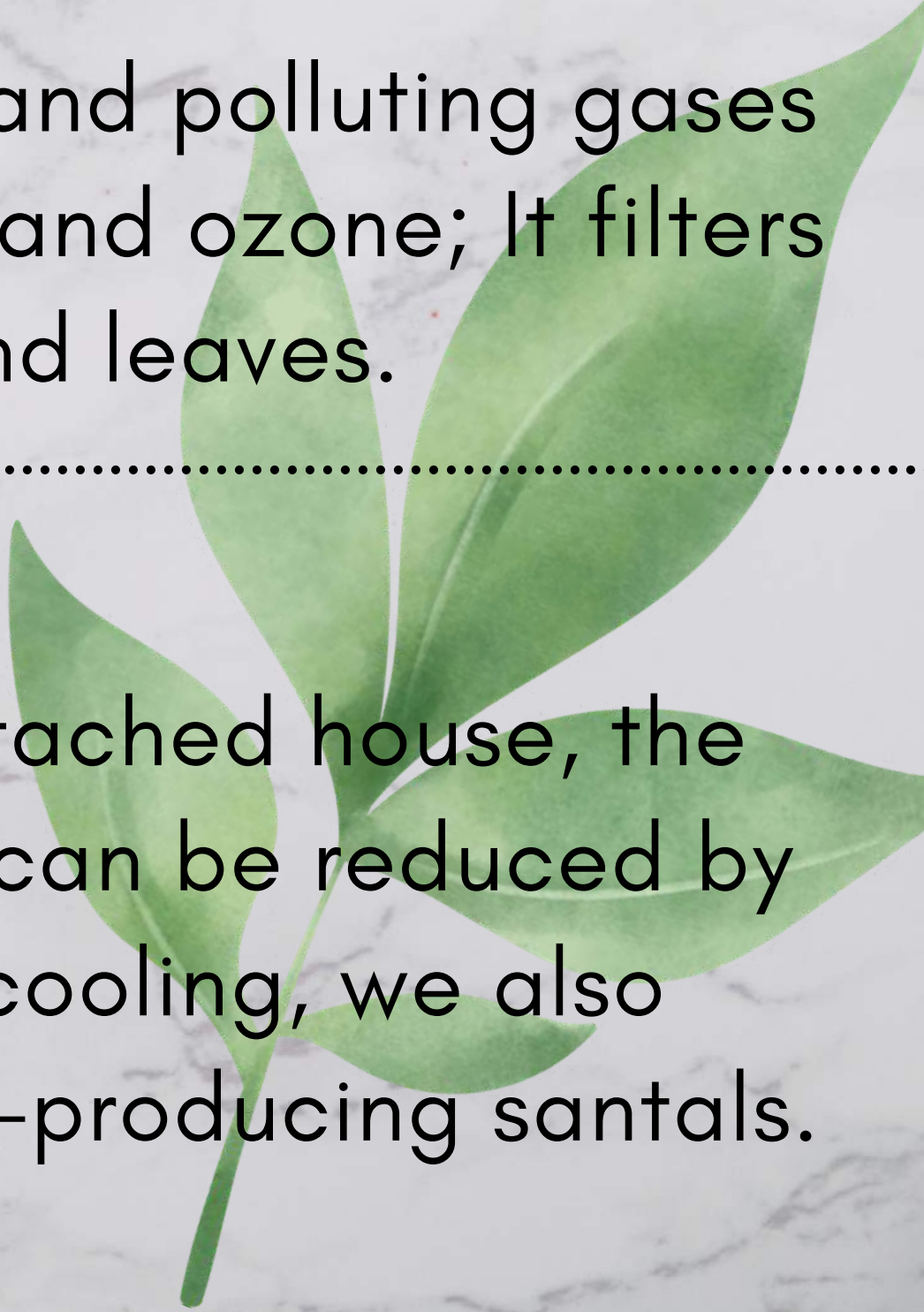
Here are 4 reasons why I put trees;

Trees cleanse the air;

1 Trees absorb the bad odor from the atmosphere and polluting gases such as ammonia, nitrogen dioxide, sulfur dioxide and ozone; It filters airborne particles, through the bark and leaves.

Trees save energy;

2 By planting correctly on all four sides of a detached house, the cost of air conditioning in the summer months can be reduced by 50%. By reducing the energy we spend for cooling, we also reduce the carbon emissions caused by energy-producing plants.



3

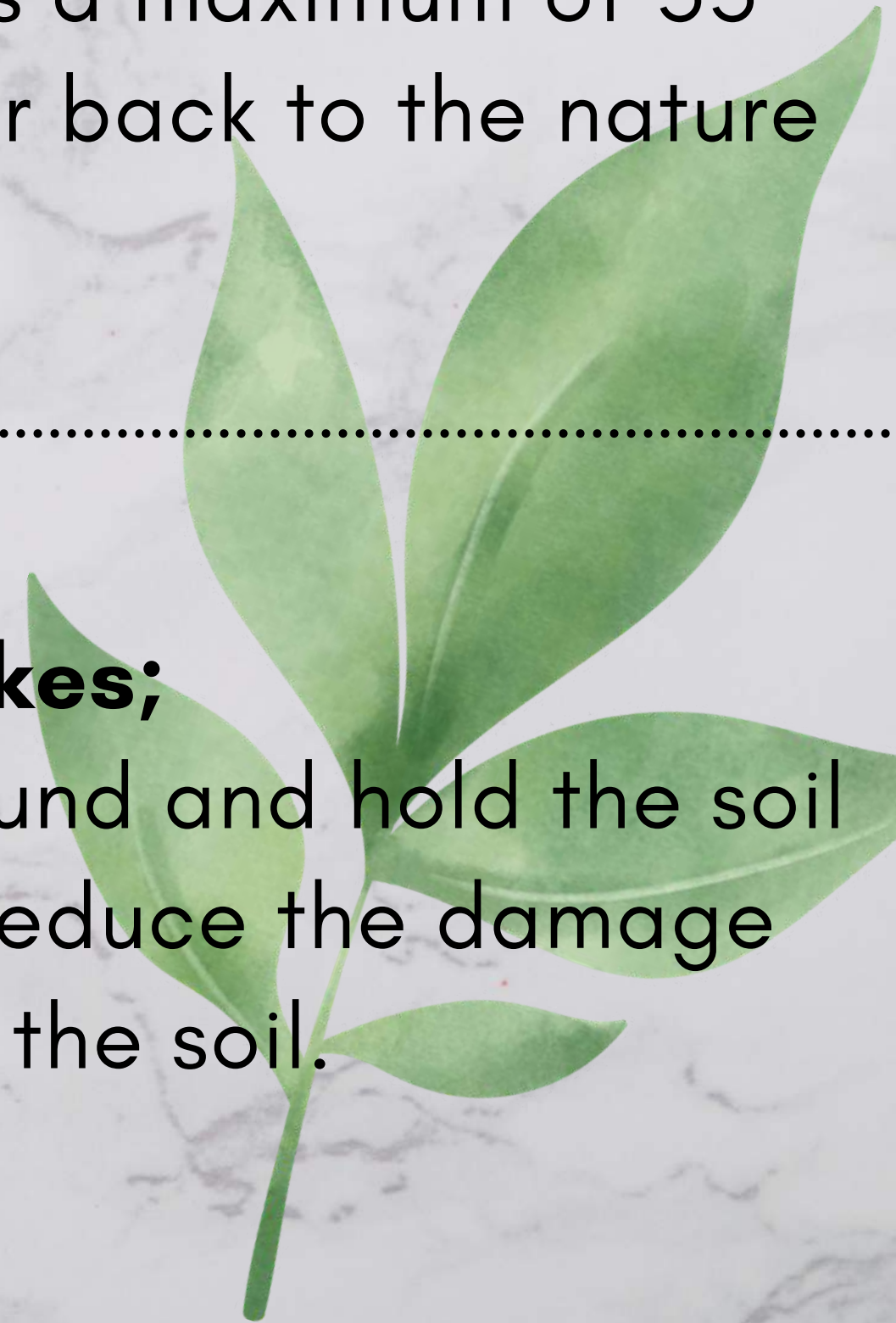
Trees save water;

In areas where water is scarce, tree shades slow down evaporation. Even a newly planted tree needs a maximum of 55 liters of water per week and releases this water back to the nature as groundwater.

4

Trees protect from earthquakes;

Tree roots extend several meters below the ground and hold the soil together. Trees planted close to settlements reduce the damage caused by earthquakes by keeping the soil.




Trees reduce violence;

In areas with arid neighborhoods and houses that do not see green, more violence cases were detected compared to neighborhoods with green areas. Woodland and green areas also reduce the level of fear in people.



**CRIME RATE IN
THE CITY I
DESIGNED**

5

An aerial night view of a futuristic city. The scene is dominated by numerous wind turbines of varying sizes, some of which are illuminated from below, creating a glowing effect. The city is filled with modern buildings, many of which have glowing facades or are lit up from within. The streets are illuminated with streetlights, and there are some vehicles visible on the roads. The overall atmosphere is one of a vibrant, technologically advanced urban environment.

HOSPITAL

AWESOME

I used Maple and Pine trees as the tree type. I have used the Maple tree type in general.

Because;

MAPLE TREE (*Acer negundo*)

Not much affected by air pollution so the urban road afforestation and highway can be used in afforestation.

Some pine tree and cones can trap dirty particles in the air with their sticky leaves.

60% , of the city I designed is divided into trees and forests. There are an average of 30,000 trees in the city I designed.





**I built a ferris wheel to
watch the beautiful city**







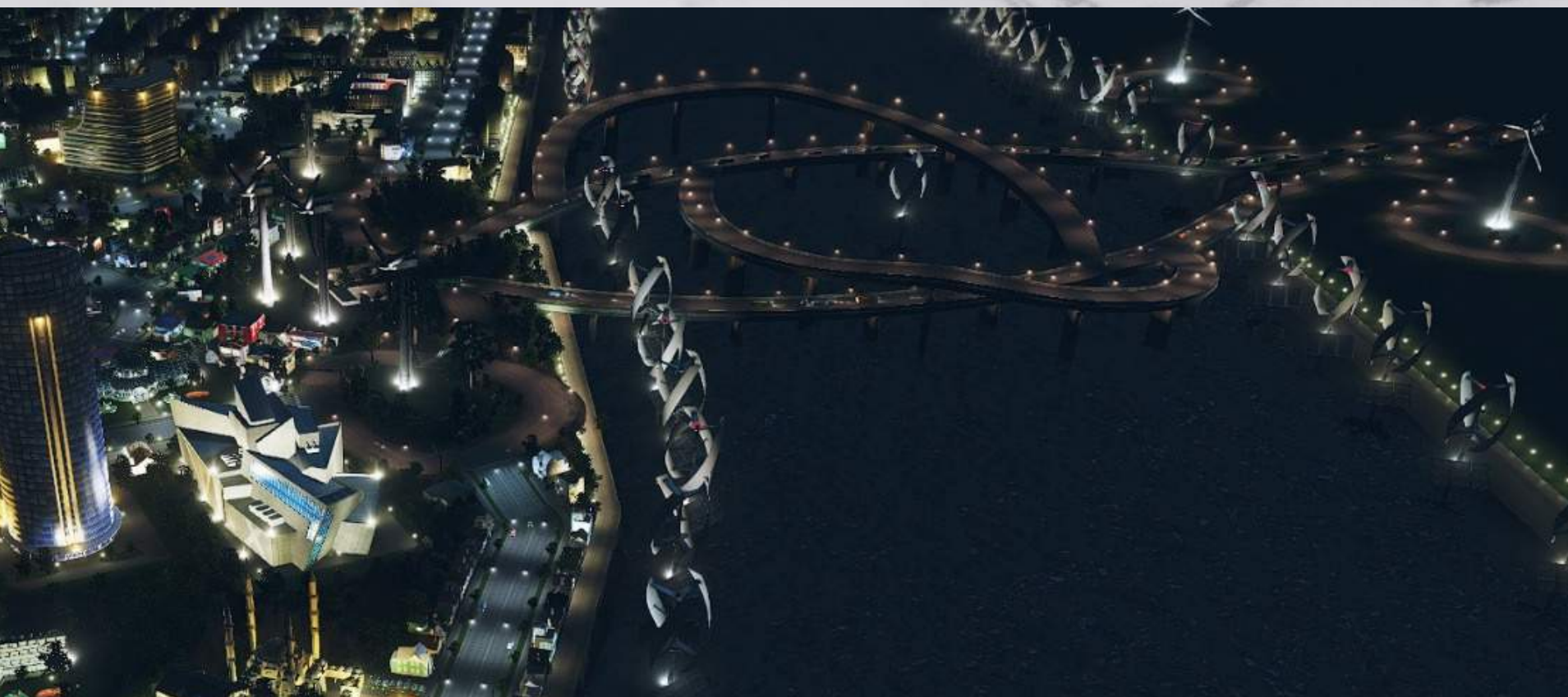
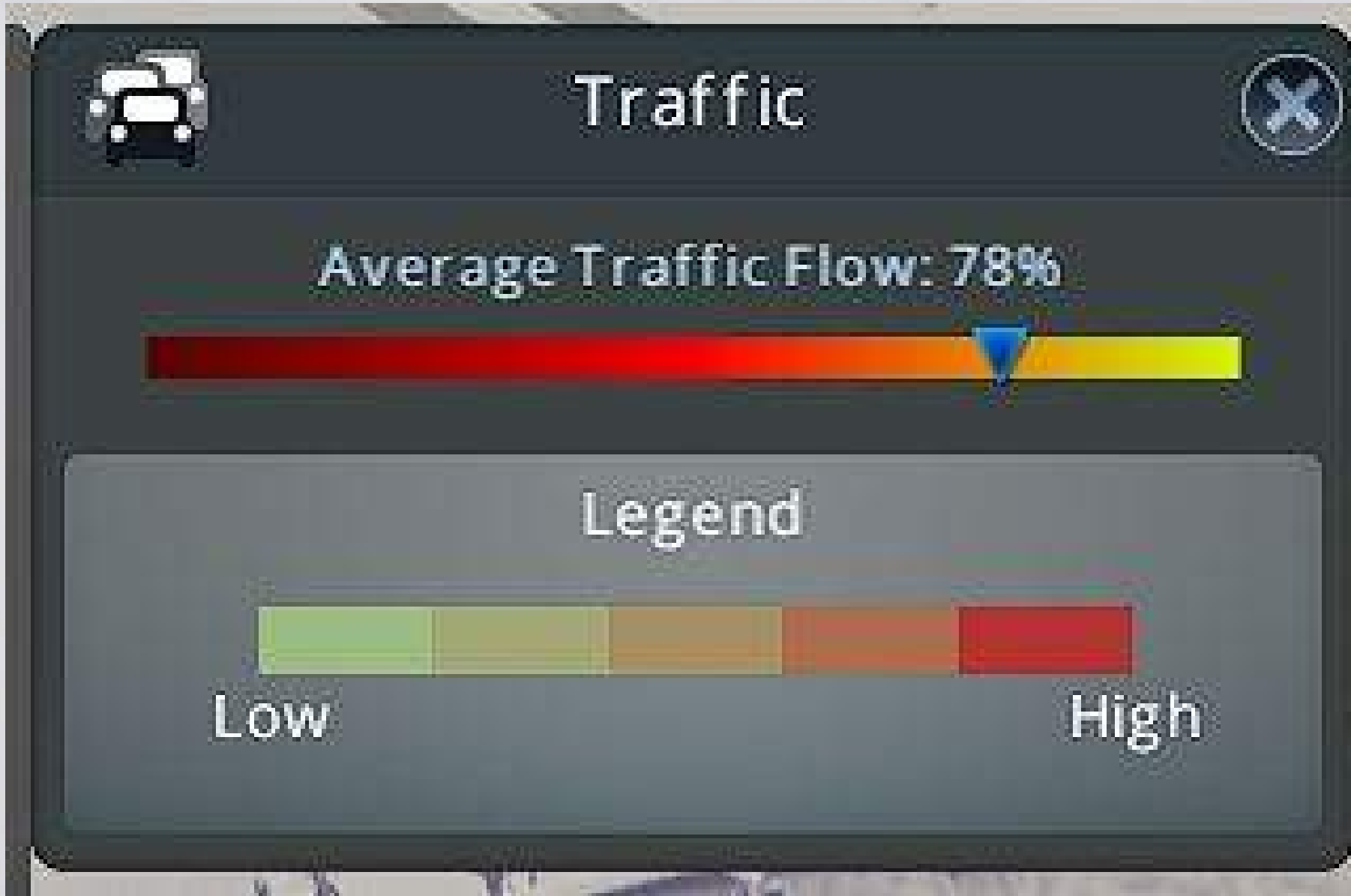
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NOISE POLLUTION RATE IN MY DESIGN

Trees reduce the noise level by up to 10 decibels. This is a fairly high sound ratio. The noise decreasing by 10 decibels may be enough to prevent the person from being disturbed by the noise.



**TRAFFIC FLUIDITY
IN MY DESIGN**







Water

Water Availability

Sewage Treatment

Water consumption: 180,320 m³/week
 Water pumping capacity: 960,000 m³/week

Sewage production: 178,528 m³/week
 Sewage draining capacity: 1,320,000 m³/week

Legend

Water Facilities Active Inactive

Sewage Facilities Active Inactive

Buildings

- Water & Sewage
- Water only & No sewage
- No water & no sewage

Citizen Happiness

Residential Happiness - 90%

Commercial Happiness - 71%

Office Happiness - 89%

Industrial Happiness - 98%

Legend

Unhappy Happy













Health

Healthcare | Deathcare | Childcare | Eldercare

Healthcare Availability

Sick citizens: 179 | Heal capacity: 2,100

Average Health - 81%

Legend

Health	Low	High
Efficiency	Low	High
Buildings	Active	Inactive

Health

Healthcare Deathcare Childcare **Eldercare**

Average Health - 83%

Seniors: 3009 Sick seniors: 31

Average life span: 76 years

Legend

Health Low  High

Efficiency Low  High

Buildings  Active  Inactive

ELDERCARE



Health

Healthcare Deathcare **Childcare** Eldercare

Average Health - 80%

Children and teens: 2206 Sick children and teens: 31

Birth rate: 65 / week

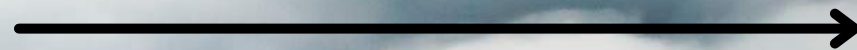
Legend

Health Low  High

Efficiency Low  High

Buildings  Active  Inactive

CHILDCARE









If you ask why I use solar energy;

Adana is a very hot city, so solar power plants are the most ideal to meet the energy needs of this city.

Solar power plants are power plants that convert energy particles from sunlight into electrical energy. Power plants use solar cells similar to calculators but in large sizes. Solar cells are photovoltaic. They turn the rays of the sun on them into electricity.

Household solar energy solar panels can generate up to 10 kW of electrical energy per hour. In case of sunbathing for 1 hour a day, it produces 10000 Watt, or 10 kW, of electricity. If 7 hours of average insolation is taken as basis, 70 kW of electricity will be produced.

I used 6 Solar Energy Fields in the city I designed.

As you can see, when designing my city, I also used wind farms and advanced wind turbines (in the water).

Because;

Wind power or wind energy is the use of wind to provide mechanical power through wind turbines to turn electric generators for electrical power. Wind power is a popular sustainable, renewable source of power that has a much smaller impact on the environment compared to burning fossil fuels.

A single wind turbine can meet the annual electricity needs of an average of 350 homes. Modern turbines have capacities ranging from 660 kilowatts to 2.4, and they operate at an average capacity of 30 percent.

I used 17 wind turbines and 40 advanced wind turbines (in water) in my design.

 **Electricity** 

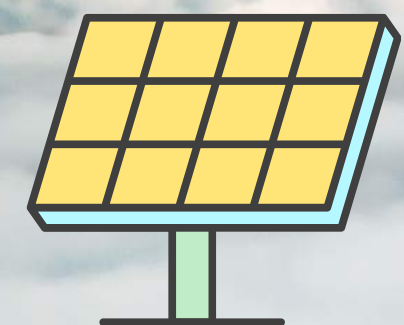
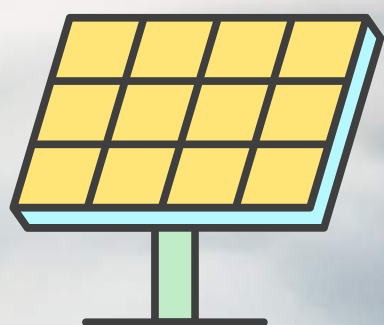
Electricity Availability



Electricity consumption: 170 MW
Electricity production: 1,926 MW

Legend

Power Plants	 Active	 Inactive
Buildings	 Connected	 Disconnected





YEAR
2030

Team Members



**MISRA
EROĞLU**

OWNER OF CITY
DESIGN
AND
WRITER



**LEYLANAZ
ZINAL**

WRITER



**MUHAMMED
LALA**

WRITER

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