



Jože Gregorič
Waste management
company
Snaga Ljubljana

On our way
to sustainable society



UK

GERMANY

POLAND

EU

FRANCE

AUSTRIA

HUNGARY

ITALY

SLOVENIA

SPAIN

About Slovenia
Slovenia is the only country in Europe that combines the Alps, the Karst, Mediterranean, and the Pannonian Plain.





Facts about Slovenia

20,273 km²
in area

a population of
two million

Maribor,
Slovenia's
second-largest
city, is home to
the oldest vine in
the world

European
basketball
champions 2017



Public company Snaga,
the largest waste
management company
in Slovenia

**The
public
company
Snaga**

AREA SERVED

CITY OF LJUBLJANA AND TEN MUNICIPALITIES IN THE VICINITY

YEAR OF
ESTABLISHMENT

1920

TURNOVER
35 MIO

OWNERSHIP

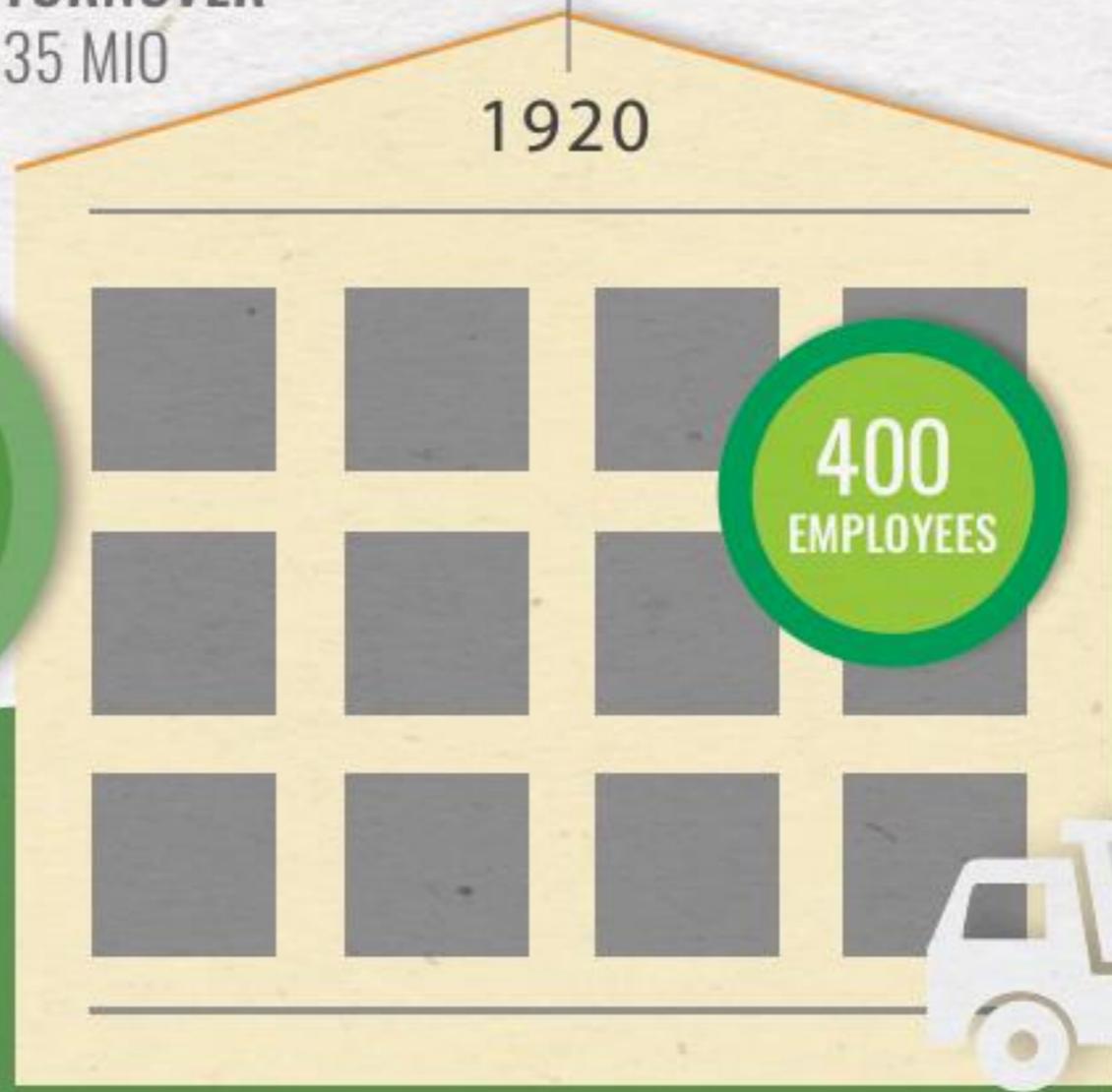
CITY OF LJUBLJANA AND SIX
NEARBY MUNICIPALITIES

**NUMBER
OF BINS**
138.686

**400
EMPLOYEES**

**390.438
RESIDENTS**

**153.378
HOUSEHOLDS**



COLLECTION AND WASTE REMOVAL

The
public
company
Snaga





Waste collection system in Ljubljana

Ljubljana began with separate collection in 2002. In 2006 Snaga started collecting BIO waste at the doorstep for all households (82% of them incl).



Waste
collection

Ecological
collection
sites



After successfully introduced door-to-door collection in 2013, Snaga lowered the frequency of collection for residual waste and introduced the collection of recyclables.



Waste
collection

Door to door
collection



IMPROVEMENT OF WASTE COLLECTION SYSTEM

35,000 bins for packaging (240-litre) and 19,000 bins for paper (240-litre)

8000 bins for packaging (1100-litre) and 500 bins for paper (1100-litre)

2,5 million EUR

Less common removal of residual waste.

May 2012 – April 2013

Separating and collecting waste more convenient and simple

64
underground
collection
units for
effective
and eye-
friendly
waste
disposal in
the City
centre.

Almost 8.000
bins of all
sizes and for
all five types
of waste
were
replaced by
underground
units.



Waste
collection

Waste
collection
centres



We are
doing great!

In 2016 we
separately
collect 66%
of waste!





Ljubljana is an EU capital with the largest share of recycled waste



LONDON



LJUBLJANA



PARIS



BRUSSELS



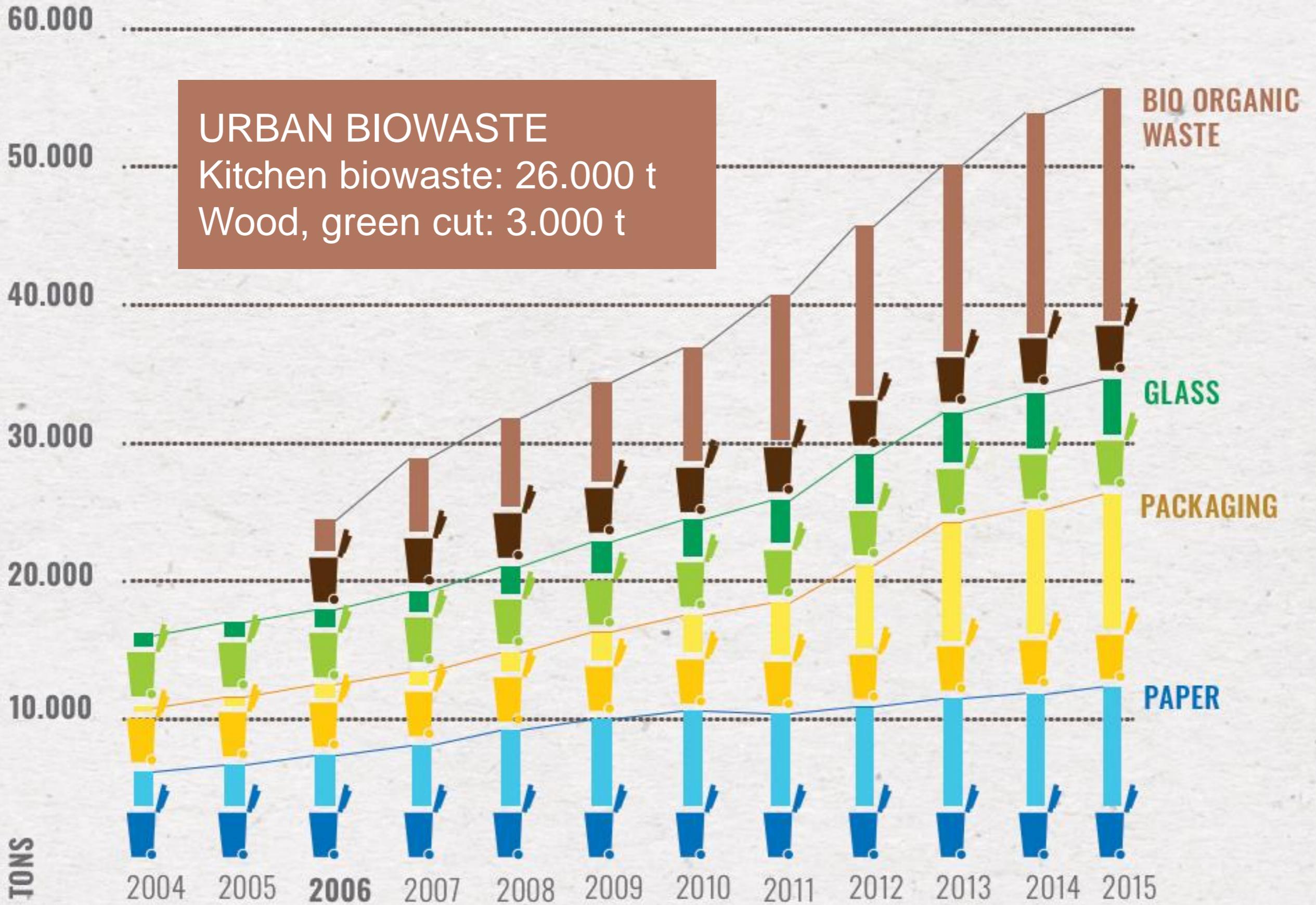
BERLIN



ROME

2015 analysis made by independent research institutes from Copenhagen and Munich commissioned by the European Commission showed that Ljubljana achieved **the highest share of separately collected waste**. According to the study, Ljubljana ranked among top three ten times and in the final scale took the first place, followed by Tallinn and Helsinki.





180 KG

170 KG

160 KG

140 KG

120 KG

100 KG

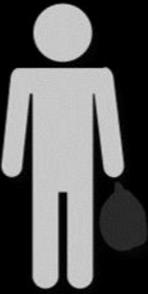
80 KG

60 KG

40 KG

20 KG

Quantity
of separately
collected
waste
(per person)



2004

2006

2008

2010

2012

2014

2015



120.000

100.000

80.000

60.000

40.000

20.000

Quantity of residual waste



2004

2005

2006

2007

2008

2009

2010

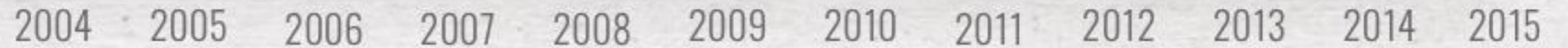
2011

2012

2013

2014

2015



In ten years the amount of separately collected waste has grown from **16 to 145 kg per capita.**

SEPARATELY COLLECTED
WASTE



Key ingredients for Ljubljana's successful results were the introduction of door-to-door collection and well managed communication strategy



LJUBLJANA,
PRVA
EVROPSKA
**ZERO
WASTE**
PRESTOLNICA
snaga

Vsak od nas letno zavrže 86 kg hrane.
Each of us throws away 86 kg of food per year.
snaga

Vsak od nas letno povzroči 270 kg komunalnih odpadkov.
Each of us produces 270 kg of waste per year.
snaga



Fee/charge system

How do we calculate the cost users pay to Snaga?

We use the PAYT system. The cost is calculated depending on the size of the bin for residual waste and bin for biological waste; we take the monthly frequency of bin emptying.



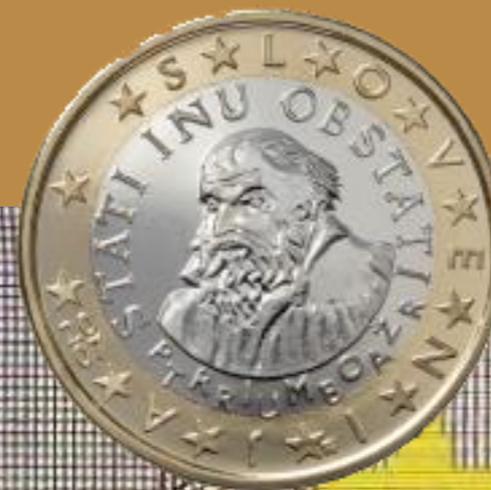
© BCE ECB EZB EKT EKP 2002

An average invoice on a household is 8 € per month.



In December 2014 and 2015 we proved that separate waste collection pays off.

Due to the increased share of separately collected waste and consequently smaller share of landfilled waste Snaga at end of 2014 to all of its users issued a credit note equivalent to the December invoice and at end of December 2015 reduced the payment of December's invoice for 60%.



The Regional Waste Management Centre (RCERO) Ljubljana

The biggest Cohesion fund and
environmental project in Slovenia

Regional Waste Management Centre
process biodegradable waste and
residual waste of more than 50
Slovenian municipalities that represent
one third of the country's population.





The new area for the disposal of non-hazardous waste has been in regular operation since September 2009.



The waste water treatment facility was opened in July 2010.



The construction of the main facilities was finished in November 2015.

RCERO Ljubljana is Slovenia's biggest cohesion fund environment project and the best example of regional cooperation, which has brought together the biggest number of municipalities.



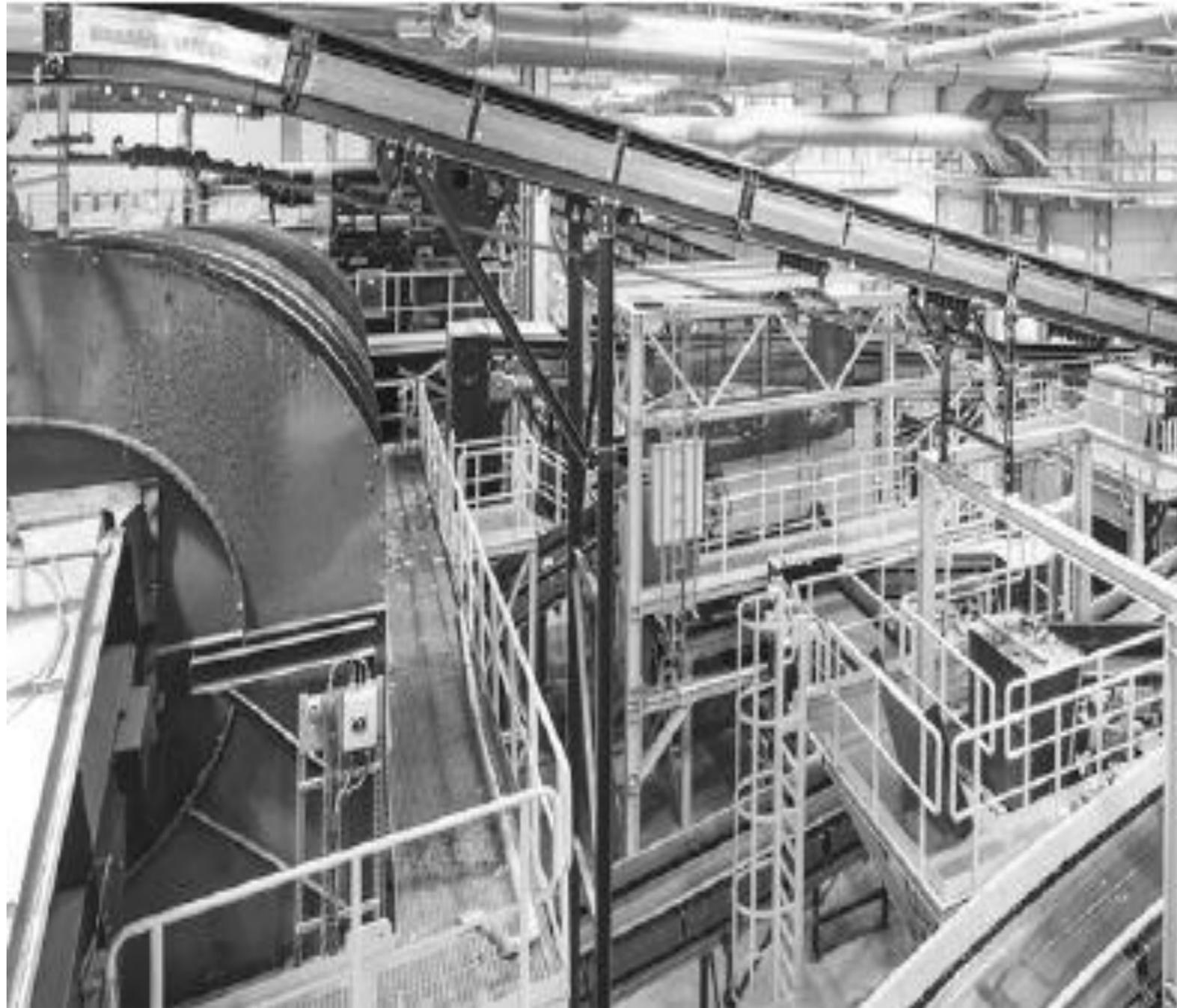
Mechanical-biological facilities for waste processing

1. Treatment of mixed household **residual waste** and waste from small businesses, service activities, etc.; 150,000 t/year.
1. Treatment of separately collected **biodegradable household waste**; 21,000 t/year.



60,000 tons of solid fuel from waste of different calorific values, 35,000 tons of digestate, 6,000 tons of wood, 7,000 tons of compost following the treatment of separately collected organic biodegradable waste, 25,000 tons of sorted secondary raw materials, 17,000 MWh of electric energy and 36,000 MWh of heat energy from biogas produced in the process.





Mechanical treatment of waste produces recyclable materials and materials used to produce solid fuel.

After treatment, only 4.9 per cent of residual waste is disposed at the Barje landfill.

4.9%

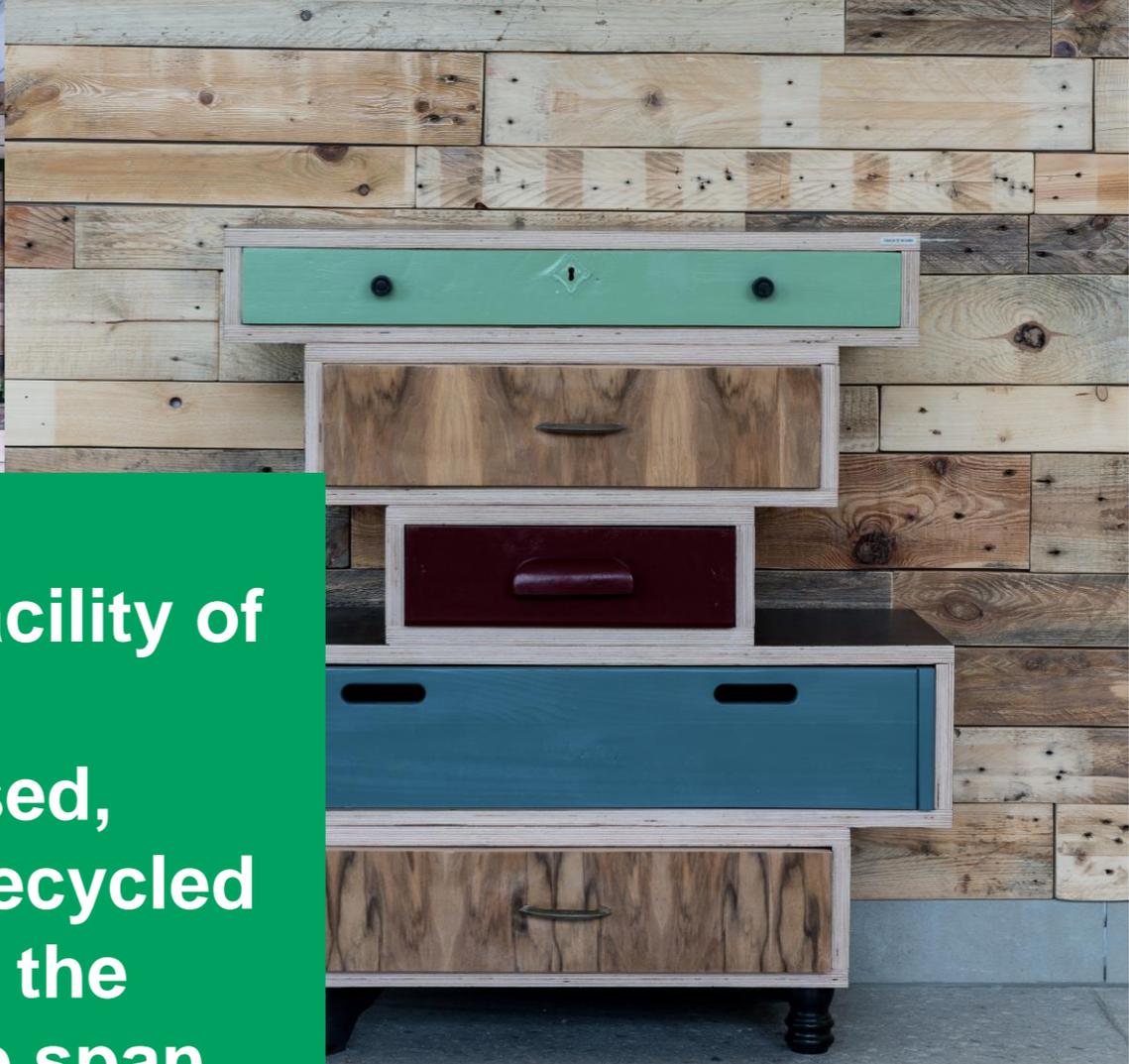
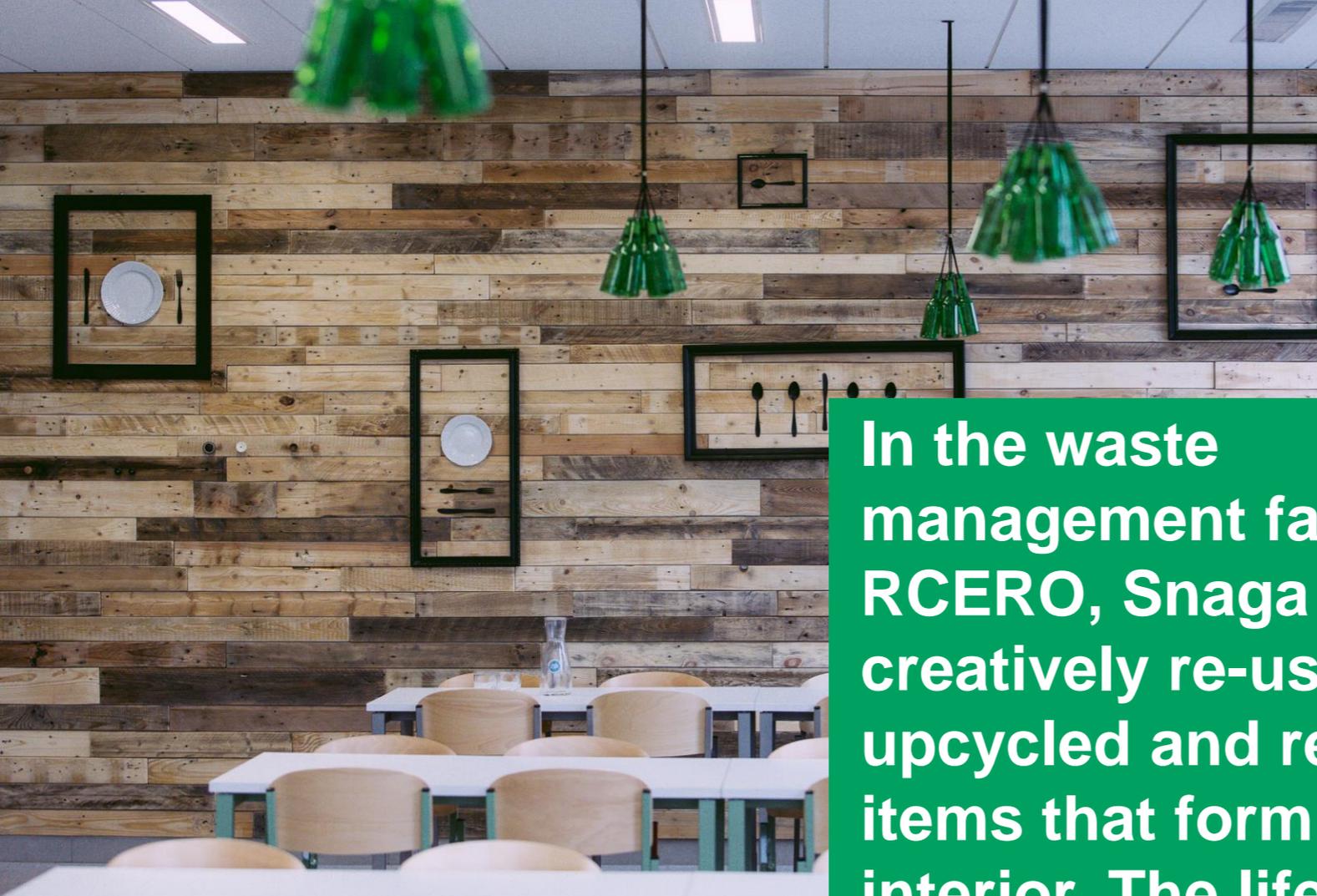


Biological treatment of biowaste relies on the processes that occur spontaneously in nature, but are accelerated in the plant and take place without the presence of oxygen. Compost is produced from biowaste through the process of anaerobic fermentation.

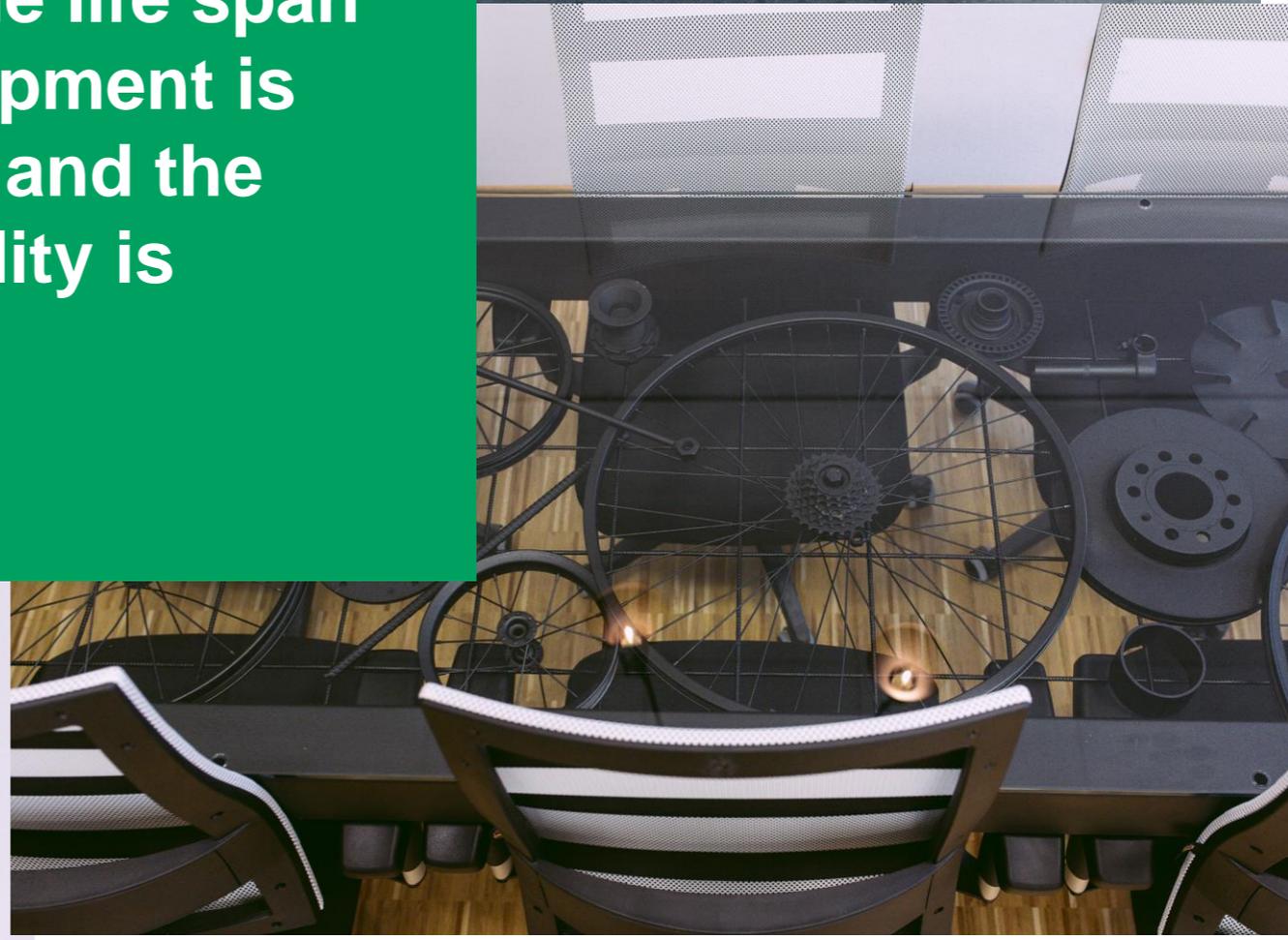
Large quantities of gas produced during fermentation is captured and used to produce electricity and heat.



By using the superior technology in RCERO Ljubljana, we achieved the highest possible quality of the produced compost, which can be used on agricultural lands.



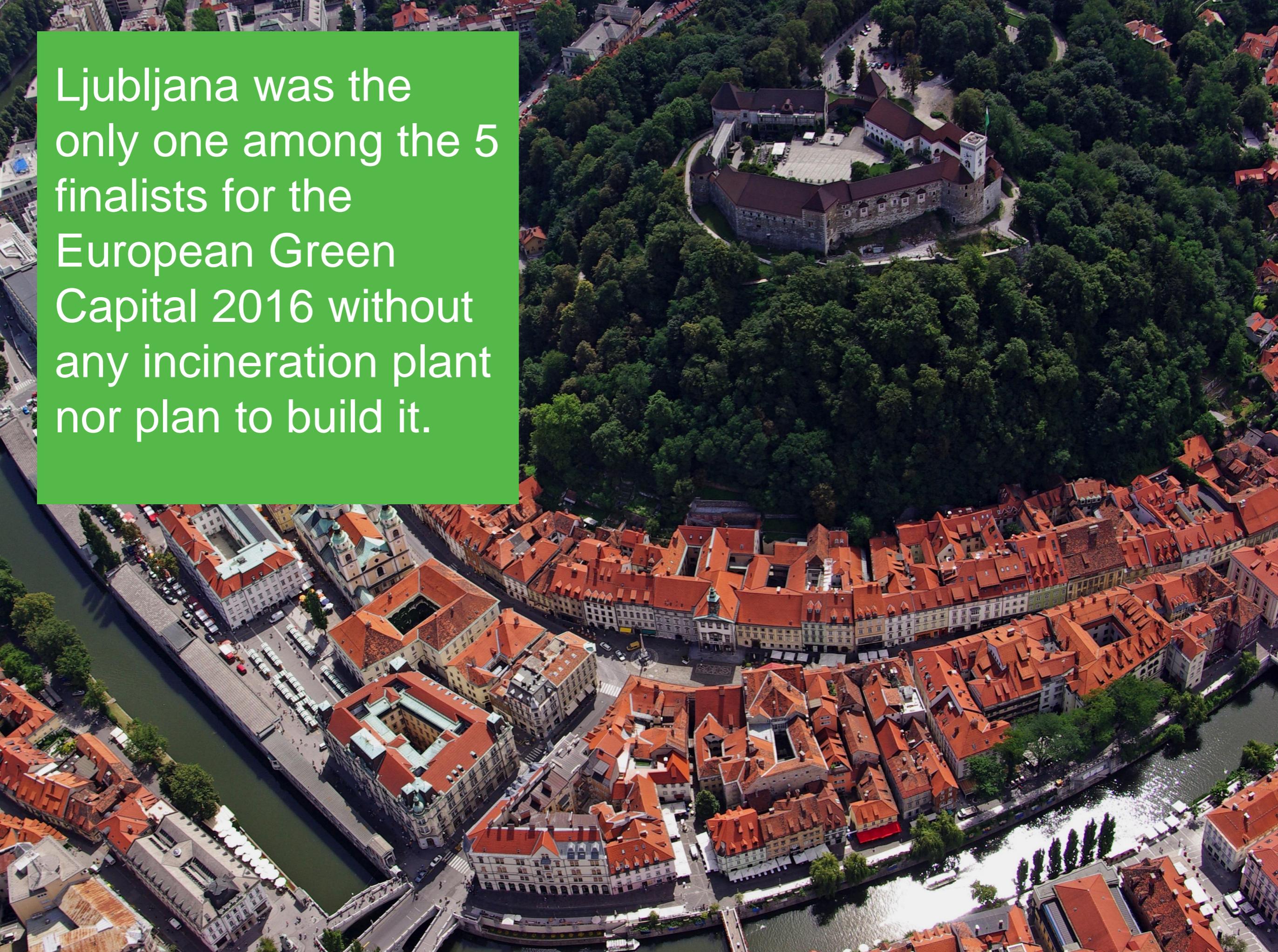
In the waste management facility of RCERO, Snaga creatively re-used, upcycled and recycled items that form the interior. The life span of the equipment is prolonged and the sustainability is achieved.





How to turn disadvantages
into advantages?

Ljubljana was the only one among the 5 finalists for the European Green Capital 2016 without any incineration plant nor plan to build it.





**First European capital
to move towards**

ZERO WASTE

LJUBLJANA

winner 2016



EUROPEAN
GREEN CAPITAL

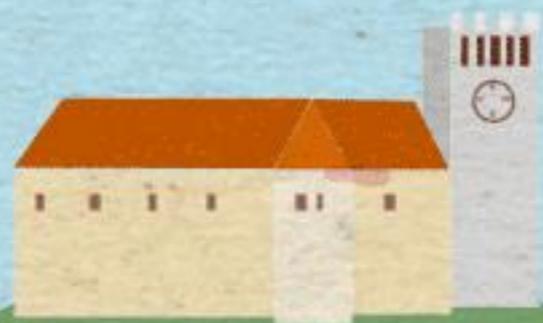
*An initiative of the
European Commission*



What does Zero waste strategy actually mean?

The local community is strengthening the first three priorities in waste management and introducing **Re-design.**

The future?



ZW goals until 2025

- Raising the recycling rate to **75%**.
- Reduce the annual amount of **residual waste** per inhabitant from 117 to **60 kilo**.
- Decrease the amount of **landfilled waste** to **30 kilo** per inhabitant.

**Vsak od nas letno
zavrže 82 kg hrane.**

Each of us throws away
82 kg of food per year.





Communication



Make an impact on the behaviour and values of citizens in the direction of adopting the philosophy of reuse and waste prevention in their everyday life.

In the past ten years Snaga has successfully educated citizens on how to recycle everyday items.

In 2013 Snaga decides to move up the waste hierarchy from recycling to actively promoting reuse and waste prevention.

Because we have power and because we have responsibility.



CSR campaign
Get Used To Reuse

Addressing citizens with the help of the music, a video manifesto, workshops and urban interventions.

Encourage a sustainable attitude towards things, taking rational shopping decisions and giving value to all those things that money cannot buy.





CSR campaign
**Raise Your Voice Against
Food Waste**

Food waste: our aim is to change the relation and perception of food so that it will again become an important value and thus reduce food waste.

A different approach

The initiative addresses the problem of food waste by giving voice to dustbins.

**IF WE'RE ON
THE STREETS,
IT DOESN'T MEAN
WE'RE HUNGRY.**

**RAISE YOUR VOICE AGAINST
FOOD WASTE.**

www.snaga.si/en



ČE SMO
NA ULICI,
ŠE NE POMENI,
DA SMO LAČNE.

NAJ HRANA
POSTANE
VREDNOTA.

LAČNE SMO
SPREMEMB

STRAN PA NE
BOMO METAL!

ČE SMO NA ULICI,
ŠE NE POMENI,
DA SMO LAČNE!

STRAN PA NE
BOMO METAL!

GLAS
NI HRANI

ZATO GLASNO OPIZARJAJTE NA
ZAVIČE

Dustbins protesting in the city centre,
in parks, in all Ljubljana's markets,
at local community events ...



CSR campaign
**Responsible and ethical
consumerism**

Snagazin



THE MAGAZINE FOR A BETTER LIFESTYLE



**FASHION STORY:
SOMETHING OLD, SOMETHING OF
GRANDMA'S, SOMETHING FAIR**

**THE SECRETS
OF THE BEST
FOOD**

**WOULD YOU BUY A
PRODUCT WITH A "MADE
IN SWEATSHOP" LABEL?**

**In Ljubljana we
play a vital role in
helping achieve
sustainable society
and more
responsible
consumerism.**

That aroma from your coffee – is it money?

Coffee is the world's second most valuable traded commodity, behind only petroleum, generating a profit of 50 billion dollars per year. The profits are in large part taken by corporations, while coffee farmers barely make a living. Because of the unrealistic production quotas they have to fill, they are usually forced to take their children to the coffee plantations. Together with their parents, children have to carry heavy loads and are exposed to extreme heat and the bites of spiders and snakes.

If you want to try a coffee that does not have the aroma of money, visit Café Čokl. Tine Čokl uses only fair trade and organic coffee that he personally roasts for the Slovenian market. Each cup of Arabica coffee from Ethiopia, Uganda, Mexico or Nicaragua is a unique experience.



Visit Café Čokl on Krekov trg 8 in Ljubljana.



All products in the photo are made in line with the principles of fair trade. This means that farmers were paid fairly for their work, women received the same pay as men and the products were not produced by child or forced labour.

You can find fair and quality food, cosmetics, toys and home goods in the fair trade shop 3 MUHE.

Fair trade shop 3 MUHE
Stari trg 30, 1000 Ljubljana
www.3muhe.si
www.facebook.com/3MUHE

3MUHE
PRAMIĀNA TRGOVINA
FAIR TRADE

Slovenia is a great destination for making a profit with cheap food

Aleš Kuhar DSc is an agrarian economist who for years has been warning that products entering the Slovenian market are of lower quality than those sold to markets abroad. The use of low-quality ingredients, different recipes and additional additives enables food producers to lower the costs of food. Another matter of great concern is that Slovenian consumers are paying the same or even a higher price for a product of lower quality than German consumers for the same but better-quality product. Being produced for a demanding European market, the product in Germany will be of higher quality. This should worry us.

You often draw attention to the low quality of products on our shelves. Why is this happening?

Food multinationals categorise Slovenia as a less demanding European market. This means that they ship products to our market that have been produced in low-end factories where the costs of production are lower. Manufacturers lower the costs by modifying recipes and by using fewer high-quality ingredients. What is worrying is that for the same cheap food that costs consumers in Belarus or Romania fifty cents, Slovenian consumers pay a euro and a half. In this way manufacturers and retailers are making higher profits and causing major damage to Slovenian



THIS IS NO ORDINARY PAPER

By now you must have noticed the peculiar characteristics of the paper used for this magazine. What you may not know, however, is that this paper was made from Japanese knotweed, one of world's worst invasive plant species.

The City of Ljubljana has been implementing a campaign to eradicate all invasive alien species. In 2016 an alliance of five partners was coordinated by the City of Ljubljana, which was successful in using Japanese knotweed as an alternative source of raw material in the papermaking process.

Snagazin is just one of many sustainable and innovative solutions to have emerged from Ljubljana's never-ending desire to continue improving the living environment for its residents and visitors. Instead of focusing on the consumption of natural resources, we support and encourage innovative solutions to be sought for a transition towards circular, resilient cities.



Would you buy a product with a “Made in Sweatshop” label?

In the Western world we believe that fair pay and a safe workplace are our essential rights. It is impossible to imagine that instead of sending our children to school or kindergarten we would have to send them to work in a factory, field or mine. At the same time we take for granted buying our children sneakers from popular sports brands that were made by children on the other side of the world, or finding clothes for 15 euros or even less. The truth is that these clothes can be so cheap precisely because the workers who make them are paid as little as a few cents per hour.

All sweatshops have three things in common - long hours that can reach up to 16 a day, low wages with which workers cannot even cover the cost of food for themselves or their family, and unsafe and unhealthy working conditions. Since between the end of one working day and the beginning of the next there is only a couple of hours, workers usually sleep on the factory floor. Countries where sweatshops are most common are the same you will find on your clothing labels - Bangladesh, India, Vietnam, Cambodia and China. More than 90% of sweatshop workers are women, who usually get laid off as soon as they get pregnant. Child labour is also very common in sweatshops, since children are a cheaper workforce than adults. In Asian sweatshops five-year-old children work from six in the morning until seven in the evening for 18 cents per day.

The wages of the workers are so low that by doubling their wages, the price of the product would increase by only 1.8 per cent. In Bangladesh, the world's second largest apparel exporter, workers earn two euros per day. In more than 5,000 sweatshops across Bangladesh around 3,5 million workers produce clothes for H&M, Zara and Gap.

After the collapse of the Rana Plaza factory building that killed 1,129 people, the monthly

wage of Bangladeshi workers increased to 60 euros. People work up to 16 hours a day, maternity leave for working mothers in factories is out of the question and trade unions are non-existent.

The non-profit organisation Humanitas is drawing attention to the ugly truth that is so different from the happy families portrayed in advertising - the fact that slavery didn't disappear, it just changed its form. Today according to numerous organizations, between 21 and 36 million people



“These clothes can be so cheap precisely because the workers who make them are paid as little as a few cents per hour.”



On our way to
circular economy

The background of the image is a room with walls covered in newspaper clippings. In the foreground, there are three black metal stools with newspaper seats. To the left and right, there are black metal rolling containers. A desk lamp is visible on the left side. The text is centered in a yellow box.

Circular economy is a new economical model that we can describe with a challenge: *“How to keep various resources in the production and consumption cycle as long as possible?”*

GOOD PRACTICE EXAMPLE

Hygienic paper made of multilayered cardboard packaging – circuit of closing material flows



We are using the most sustainable type of hygienic paper on market as of 2015, made of recycled milk and juice packaging.

Earlier, only 50% of the packaging was efficiently utilized (the rest went to incineration).

GOOD PRACTICE EXAMPLE

Center of Re-use and Repair
Cafe (Povšetova street 4)

The center consists of a shop, sewing room and workshop. In just two years, the number of sold items increased from 50 to 140 per day. The center opened in 2013 and presented jobs for less employable people.





Repair Cafe operates within the Center of Re-use and makes professionals, such as electrician or carpenter available for helping with repairing and transformation of the items.

GOOD PRACTICE EXAMPLE

Street cleaning with recycled water and
rainwater

Snaga is cleaning the city pavements with machines which recycle water and they are using a biodegradable detergent. For street rinsing Snaga uses mostly rainwater collected on the roofs of its building complex at Barje.



CHALLENGES AND PLANS

The use of compost, produced in RCERO Ljubljana on agricultural lands around the city.



By using the superior technology in RCERO Ljubljana, we achieved the highest possible quality of the produced compost, which can be used on agricultural lands.

CHALLENGES AND PLANS

Manufacturing scented candles from waste oil. The strategy for making funerary candles is being framed as well.



CHALLENGES AND PLANS

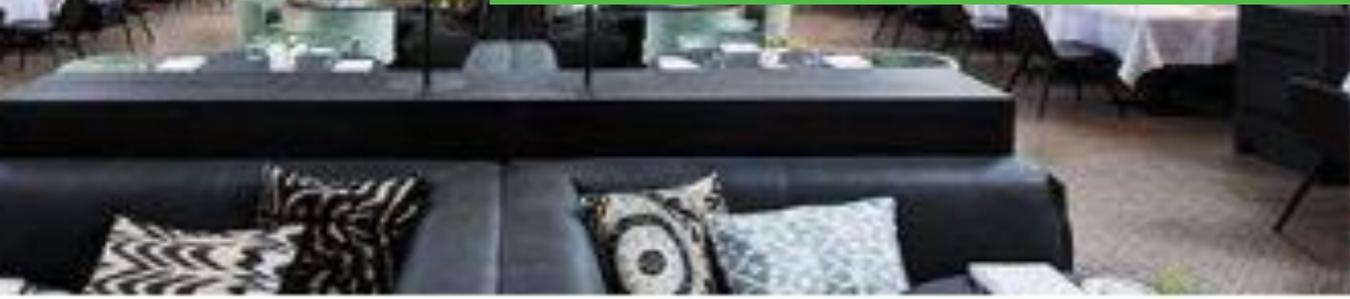
Opening of an alternative shopping center in the center of Ljubljana.

»Alternative shopping center« would enable a sustainable consumption experience: A first slovenian store without packaging, a rental service and a multipurpose cafe with local and fair trade offer.





The project would combine sustainable approach to waste and resource management, change consumption patterns and lifestyle, allow economical, environmental socially useful services in one place, it would encourage creativity, gender equality and green jobs.



CHALLENGES AND PLANS

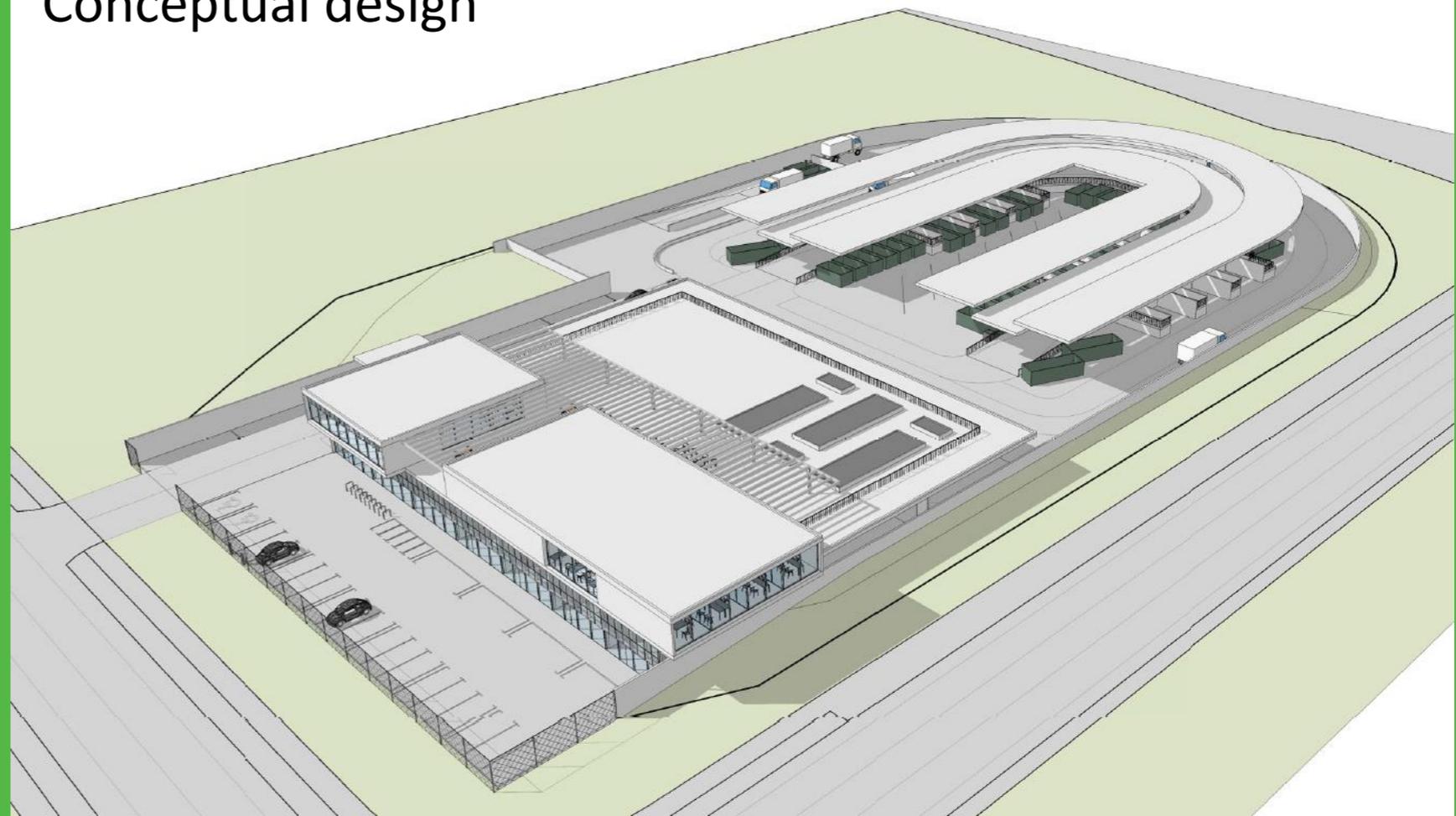
Build and open „Creapolis”,
Creating a better place

CREAPOLIS

- The collection center with warehouse for „waste“ for RE-USE, repair, up-cycling...
- Second hand shop with upcycled goods and occasional open air market

- Repair shops for furniture, electronic equipment, bikes, clothes
- Rental shop with used items
- Educational part (Academy for sustainable citizens, thematic courses, workshops, etc.)
- Meeting point at coffee bar served only local food and food from fair trade.

Conceptual design



**WE HAVE LEARNED HOW IMPORTANT
PATIENCE AND PERSISTENCE ARE.
OR LIKE EINSTEIN SAID ...**

**IT'S NOT THAT I'M SO SMART, IT'S JUST
THAT I STAY WITH PROBLEMS LONGER.**





www.snaga.si

www.mojiodpadki.si

www.ponovnauporaba.si



 /SnagaLjubljana

 /Snaga_reuse