

# welcome to im\_factory

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## im\_factory, A Space Where Waste Finds New Value

im\_factory, a space where consumed and discarded PET bottles are treated and go out into the world with new value. Currently, waste is being discharged at a level that human beings cannot handle to maintain sustainability; in addition, after COVID-19, the plastic crisis caused by delivery and courier services has been added, so the problem has become serious.

The world is suffering from an increase in plastic waste, and China, which used to import waste, has stopped importing it since January 2018. Waste that had nowhere to go was left piled up, and we tried to build a waste disposal plant to solve this problem,

but this is also not easy as it is an archetypically unpleasant facility. Until now, conflicts in the region over waste disposal plants continue, and the linear economy in which people consume and throw away waste cannot be free from this waste problem.

Ultimately, we need a transition to a circular economy that makes the waste we consume usable again. At im\_factory, we are carrying out a reformation process that turns discarded PET bottles into r-PET flakes, and you can see the process of adding new value to waste. We designed this space to let people know that waste can be money, and recycling can be play.

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# Factory,

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## But Not Only

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## Factory

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im\_factory  
you have never  
seen before.

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We're not just showing you a factory. We want to introduce you to a new culture and civilization that adults have not experienced, but that is essential for children.

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# Philosophy

Create a world where waste becomes money and recycling becomes play

Waste is a precious resource that can be reused as recycled materials, and it is a by-product of consumption that we must take responsibility for. The best solution for the waste problem is to let people know that it isn't useless, it has value, and continuously give them the opportunity to understand it.

To this end, SuperBin incorporates design-based cultural content into the 4th industrial technology to shift people's perception of waste and change their behavior. Because we have an obligation to pass on a healthy environment and the right culture to our children.



# Core values

## Concerns and interests for the environment leads to the right action towards the planet

### Achieve the transition to a circular economy

We aim to transition from a linear economy where what we consume ends up as waste, but to a circular economy that achieves materialization through recycling from consumption. Through these efforts, SuperBin aims to reduce waste emissions and build the foundation for a sustainable future.



### We practice symbiosis with life

We create a community where diversity of life is protected and so the earth also. In addition, it plays a role in raising the awareness of the symbiotic relationship in our society. Maintaining symbiosis and balance is the role of our generation for the future.



# Architecture

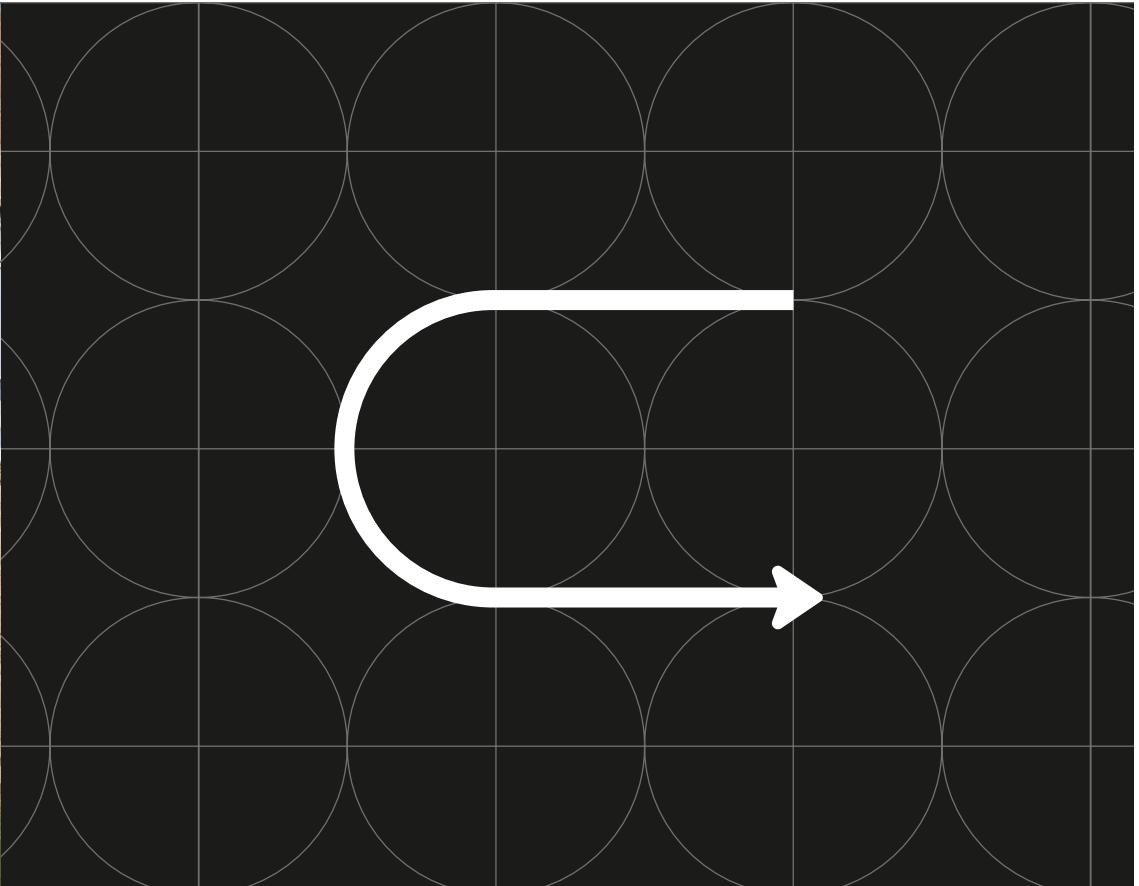
## A U-shaped curve that expresses the meaning that discarded things come in and add new value

Located in Woojeong-eup, Hwaseong-si, Gyeonggi-do, im\_factory is designed to arrange a series of long processes in a U-shape so that you can see the incoming and outgoing resources from the outside at the same time, you can view the factory from the internal center with ease.

While most factories have a straight production line that runs from warehousing to shipment, im\_factory has a starting and ending point in one place. It's not just a gesture to make the building looks splendid, it's a circular economy that SuperBin wants to design.

## The main motif of im\_factory

Under the mission of creating an environment where various lives can have a symbiotic relationship through a recycling business, 'circulation' and 'symbiosis' are the core value pursued by SuperBin. The U-shaped curve was born based on the motifs of these two value. It represents the circulation of resources, in which abandoned things come in and add new value, and the meaning of this is not only for people but also for animals and nature together.



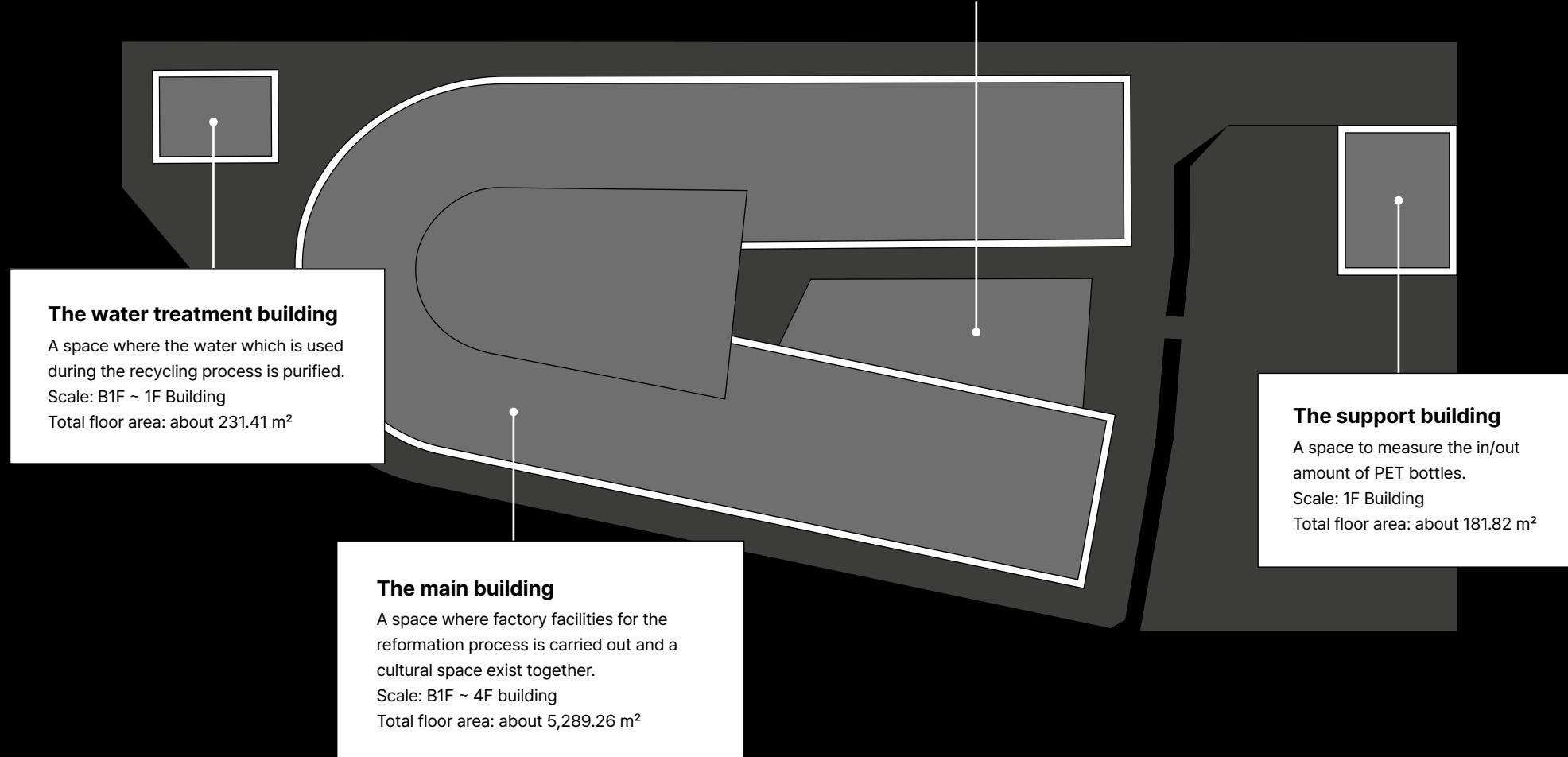
# Space

**A factory but not only factory, including the main building, the water treatment building, and the support building, that contains culture**

im\_factory consists of three buildings on a land area of about 9,917.36 m<sup>2</sup>. It occupies the largest area and has the main building where the core work is carried out, the water treatment building, and the support building.

## A small forest embraced by a factory

A forest that has given new life to trees that were in danger of being destroyed due to the renovation of an apartment complex; We call it the little forest embraced by the factory.



# Contents

**A new experience where the boundaries between the factory and a cultural space disappear**

im\_factory is a factory where the reformation process takes place and there is a cultural space to let people know about these processes in an easy and fun way.

Cultural Space

The Main Building	
4F	A space to think about the meaning of symbiosis Cafe / Book Lounge / Point Shop / Temporary shelter for abandoned dogs
3F	A space to discover the new value of waste Exhibition Hall / Plastic Laboratory
2F	A space to observe the recycling process of PET bottles Integrated Operations Room / Meeting Room
1F	A space that adds new value to discarded PET bottles Factory Equipment
The Support Building	
The Water Treatment Building	

Factory Operating Space



# Smart Factory

02

## Operation Space

im\_factory  
you have never  
seen before.

Smart factory that reforms PET bottles is operated accurately and efficiently through the accumulation of artificial intelligence technology, automation systems, and big data.

# Factory Equipment

The main building 1F

**Factory equipment required for making r-PET flakes from consumed and discarded PET bottles in daily life**

## Korea's first high-quality r-PET Flake production factory

Quality is controlled through strict standards from the collection stage to the final production. We have a high-quality r-PET Flake production process that can be used as raw materials for long fibers and bottles.

## Smart factory with 4th industrial technology

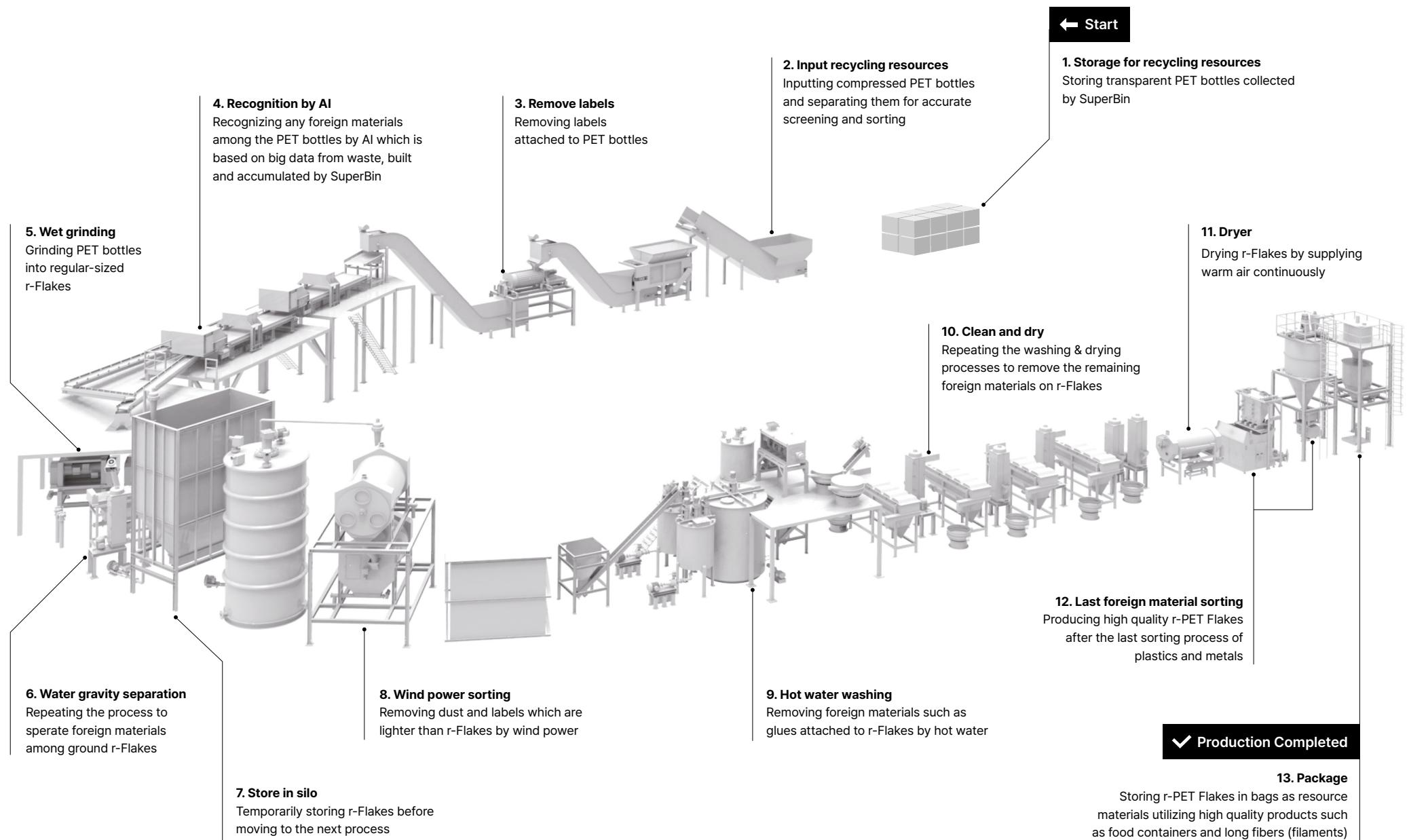
Using artificial intelligence technology, we select PET bottles that can be reformed into recycled materials. The digitalized automated system allows us to monitor processes in real time to operate and control them efficiently. We accumulate big data collected through sorting technology and use it to improve process efficiency and production quality.

\*r-PET Flake: A piece of PET bottle that has been shredded and reformed as recycled material.



# Detailed Process

The main building 1F



# Integrated Operation Room

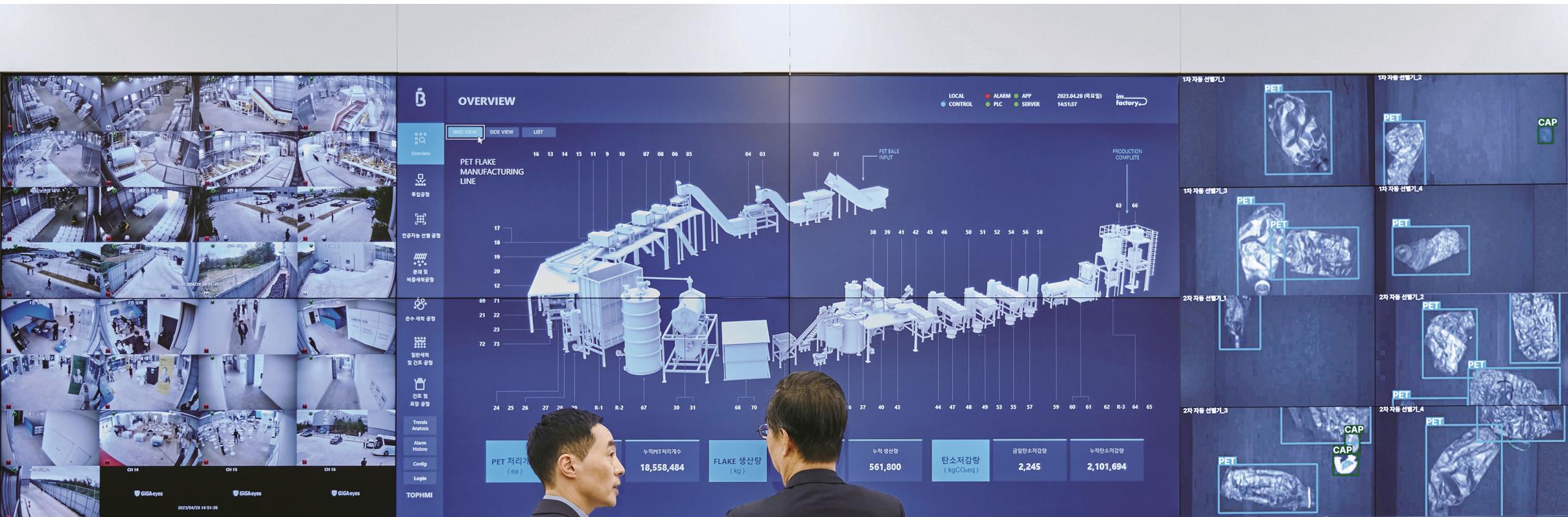
The main building 2F

A space where you can see the entire process at a glance

A centrally located large screen allows real-time monitoring of machine operation throughout the entire process, and a long, horizontally arranged window allows operators to check their status.

Integrated control system capable of real-time data collection and automatic control

Through the sensors applied to all process facilities, it is possible to obtain resource data through the process, and to check and maintain the condition using the automatic control system. Based on the secured facility data, we can check the carbon reduction effect along with understanding the production status of the product.



# The Support Building

## A space to measure the in/out amount of PET bottles

A weigher system is installed to measure the in/out volume of PET bottles which are raw materials, and accurately records and manages weigher data through a computer in the support building.



# The Water Treatment Building

## A space where the water which is used during the recycling process is purified

The water which is used for cleaning PET bottles is strictly managed and treated to meet the effluent water quality standards of the Korean Ministry of Environment. In addition, water that is purified is reused for the process to minimize the amount of water used.

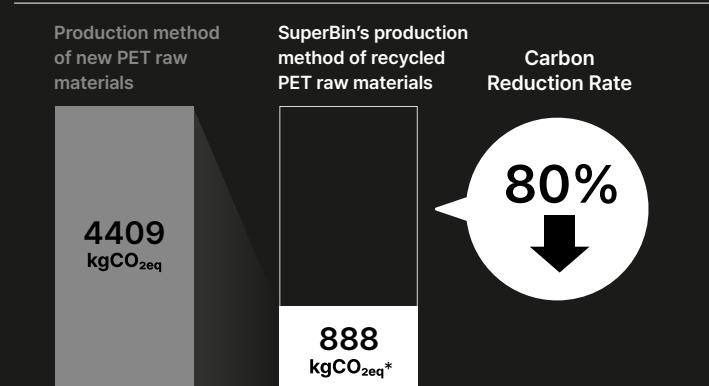


# Effect of Greenhouse gas emissions reduction by SuperBin's PET bottles

533 Trees

( Based on pine trees with forest substitution effect per 1 ton of PET raw material production )

## Carbon emissions by PET raw material production method



SuperBin's production method of recycled PET raw materials has a 80% carbon reduction effect compared to the existing production method of new PET raw materials and this is calculated by a forest substitution effect\*\*, which is equivalent to the amount of carbon absorbed by 533 pine trees in one year.

\* Amount of greenhouse gas emissions (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride) converted into carbon dioxide, a representative greenhouse gas.

\*\* The forest substitution effect is calculated by converting the amount of carbon dioxide reduction into the amount of carbon dioxide absorbed by one domestic pine tree in one year, representing how many trees are necessary to reduce the amount of carbon dioxide and it was calculated according to the results of the National Institute of Forest Sciences' study on the amount of carbon absorption of major forest tree species.



## Space

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# Exhibition Hall

The main building 3F

**A space that shows how abandoned things go out into the world with new value throughout im\_factory**

## Intro Exhibition

Waste is no longer just a problem for human society, but a problem that threatens the entire ecosystem. Waste, which has a huge impact on climate change and the climate crisis, can be solved by producers and consumers of waste. However, we convey the message that, in a linear economy of consumption and discarding, we cannot be free from the problem of waste, and we must move towards a circular economy where the products we consume can be recycled and reproduced.

## Factory Equipment Display

With a panoramic view of the factory facilities on the first floor, you can see how our facilities differ from existing waste facilities. SuperBin's unique waste management approach is used to collect and sort recyclable resources. As the selected PET bottles enter im\_factory and are converted into r-PET Flakes, you can see the process from discarded waste to recycled materials.



# Plastic Laboratory

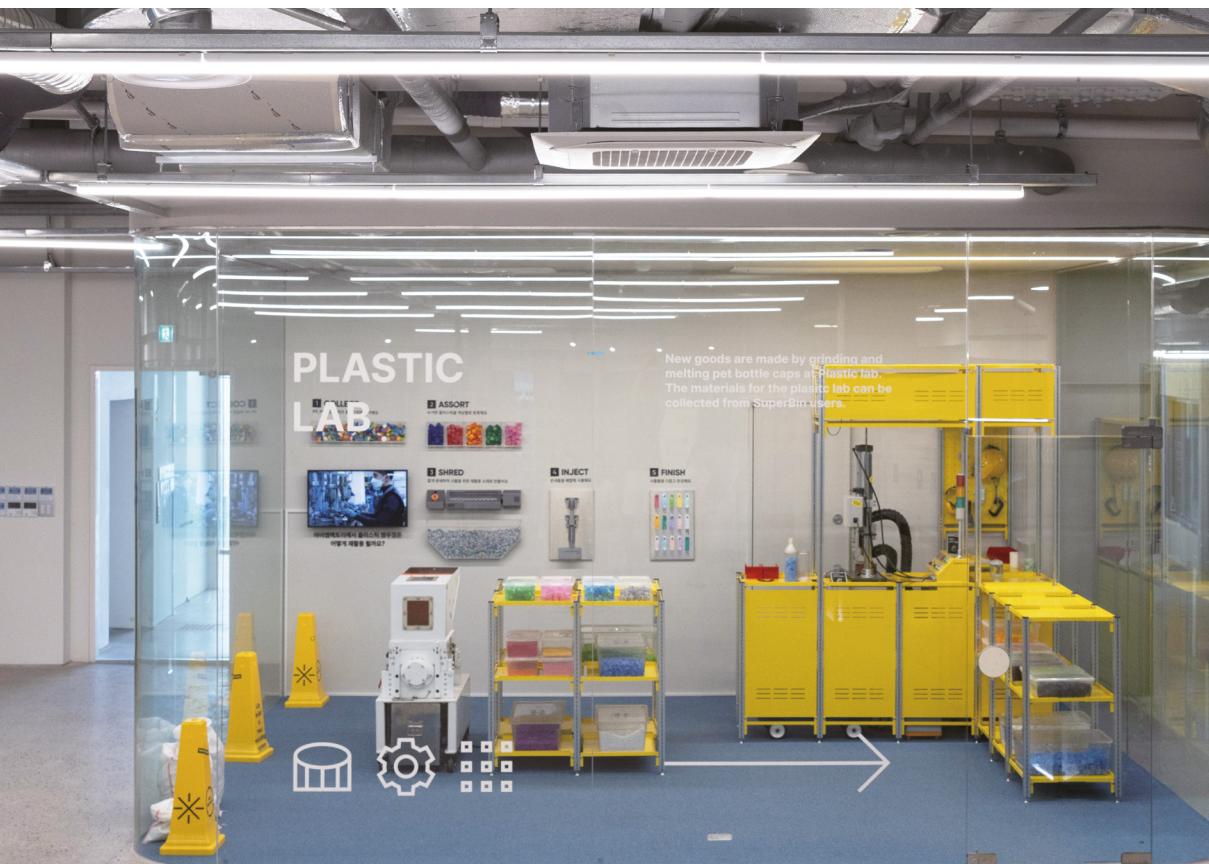
The main building 3F

## A laboratory where waste plastics are melted and injected to create new products

The PET bottle is mainly composed of a body part, a lid, and a label. The body, which comprises the largest part, is materialized into flakes, and the labels are discarded. The last remaining lid is made of PP and PE, which is a different plastic to the body, but we utilize this and turn it into a new product.

## Plastic lid (HDPE) recycling process

1. Collect and sort discarded plastic lids.
2. Clean the selected plastic lids and sort them by color.
3. Grind the sorted lids by color.
4. Inject the crushed plastic into the mold in various color combinations.
5. If you organize the injection part well, you will have a product with a unique design.



# Point Shop

The main building 4F

A space where you can use points to purchase upcycled goods from SuperBin

**A small action that cares about the environment, upcycling goods shop**

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# Book Lounge

The main building 4F

**A space that finds the meaning of symbiosis through books that talk about the diversity of the environment and life**

## SuperBin's message through the book

In the categories of exhibited books, you can get a glimpse of SuperBin's interests. About 30 magazines and books are available for various subjects such as waste, climate crisis, organic animals, and the coexistence of life, and indirectly convey the message that SuperBin wants to deliver.

## Lighting and chair cushions added meaning to the space

The lighting made through the products of \*beachcombing and the chair cushions made of eco-friendly vegan leather that is easy to be degraded add meaning to the space.

\*Beachcombing: The act of picking up garbage left on the beach



From the JEJU sea series (2023)  
Upcycling works by a third Auer artist  
Lee Hye-seon, who adds new uses to  
abandoned buoys and fishing gear.

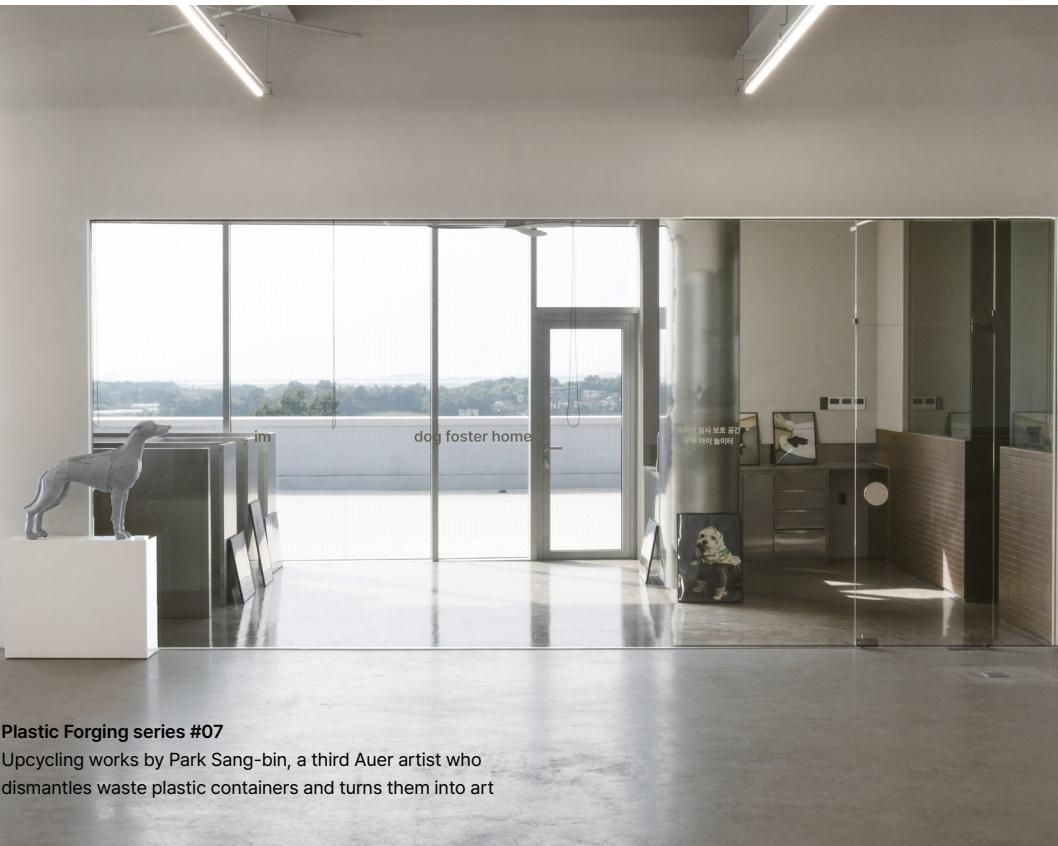
# Temporary shelter for abandoned dogs

The main building 4F

## A temporary shelter created to protect abandoned animals

### A space to protect precious lives

During the time when a pet's enrollment into the family each year, nearly half of those abandoned pets die prematurely. The main reason for the high mortality rate is the lack of safe and clean spaces for abandoned animals to stay until they find their new home. We focused on this and decided to create a temporary shelter for abandoned dogs to help save lives.



Plastic Forging series #07

Upcycling works by Park Sang-bin, a third Auer artist who dismantles waste plastic containers and turns them into art

# Cafe

The main building 4F

## A zero-waste café that practices coexistence through fair trade

### A Fairtrade café that ensures that people get paid for their work

To this day, there are still socially disadvantaged and marginalized people somewhere who work without being treated fairly. The most representative market in which labor is exploited is the field in which coffee beans are produced. At im\_factory Café, we provide coffee with fair trade beans from 'Coffeea', which talks about coexistence by providing fair compensation for the quality of coffee and the quality of life of the workers and the producers in the production area.



If you are  
interested in  
SuperBin

# Pay attention to waste

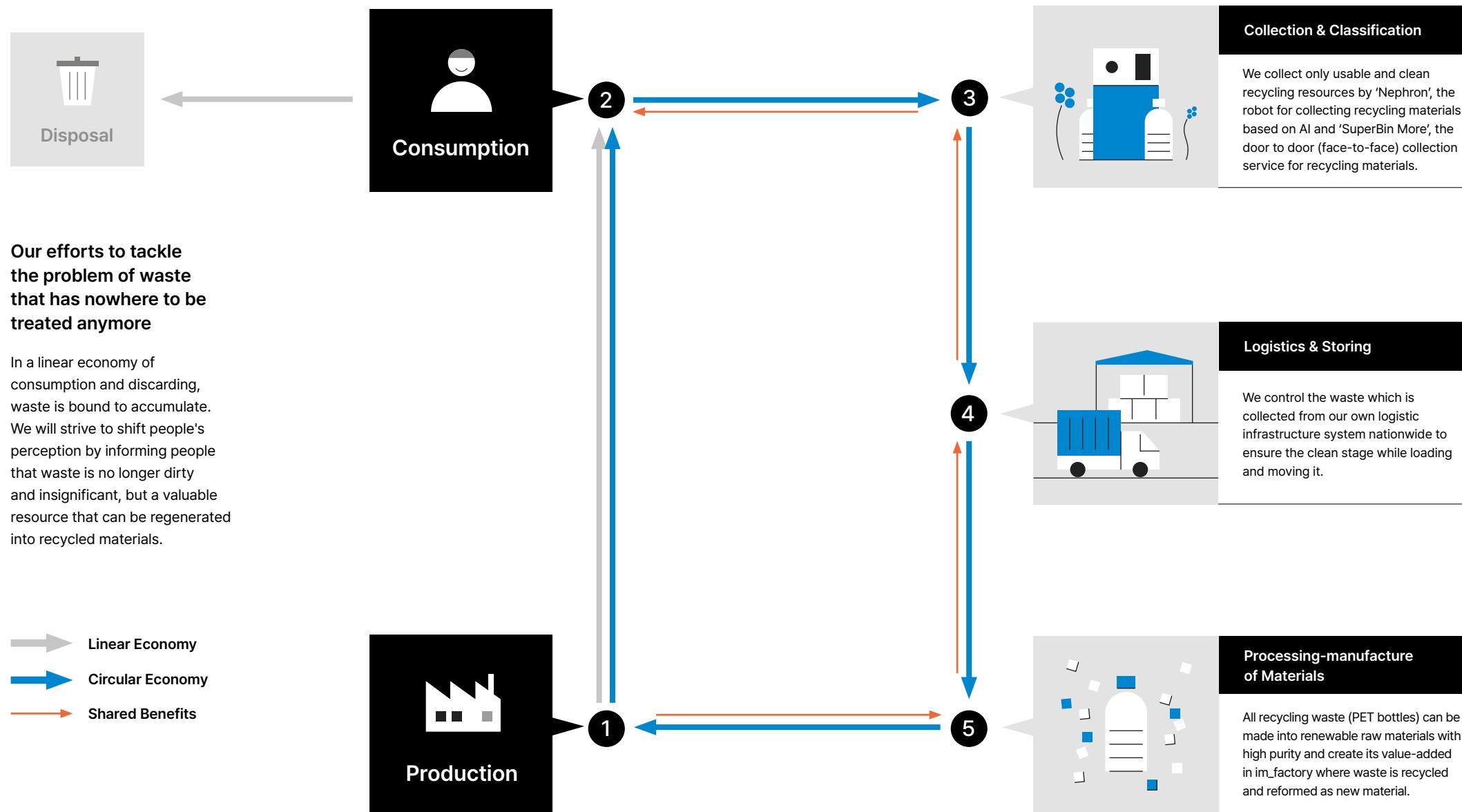
**Our thoughts on the countless amounts of waste that is consumed and discarded in our daily lives**

We are discharging about 35 million tons of waste every day, and resources are constantly being depleted; under such a situation, the linear economic system, which consists of " extraction of resources → production → consumption → disposal," is an inefficient system that makes limited resources difficult to be reused and a method that destroys the environment.

In order to alleviate the problem of waste, which is not only affecting humanity but also the entire ecosystem, it is now essential to transition to a circular economy.



# Dreaming of a circular economy



# Waste becomes a new culture

Our activities through cultural content which emphasizes recycling resource and campaign-type projects



## Experiential and educational content of recycling resources for students

An experiential educational program where students, who are potential consumers of the future, can learn about recycling and learn about the importance of the environment. e.g. SuperBin Rookie



## The stronghold of waste culture, im\_factory

A complex culture space where you can experience recycling as play through exhibitions, education, and experiences, and see the process of turning recycling resources into recycled materials.

## Project-based play culture content of waste

An awareness change campaign that shares the fun and educational effects of a circular economy in a short time and experiences its value. e.g. Super Cube, Waste Series



## Anyone can participate in an environmental plogging campaigns

In the form of a new concept of running culture, a waste pick-up campaign with many people who want to participate in environmental activities. e.g. plogging



# SuperBin's r-PET Flake

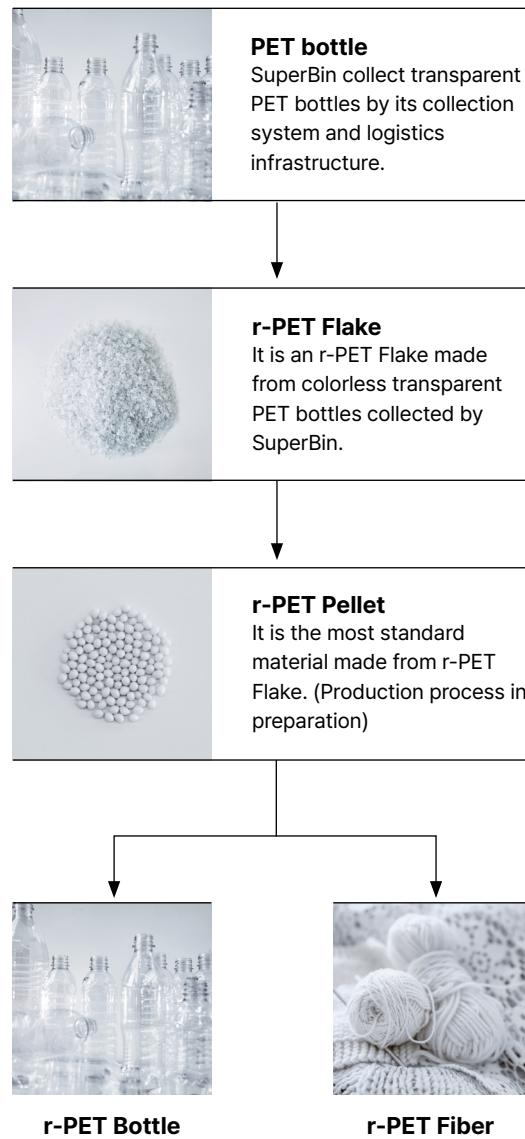
**The first step which gives new life to PET to become r-PET Flake**

The PET bottles collected through SuperBin's collection service are sorted by artificial intelligence, then crushed, washed, and dried to become high-quality r-PET Flake, which is used as a recycled raw material.

r-PET Flake produced by SuperBin has been confirmed to meet the standards for food contact substances of the FDA (US Food and Drug Administration) and EFSA (European Food Safety Authority) through global test and analysis organizations and is an important material for PET bottles and long fibers.



CU - 1226899  
(Certified by Control Union)



im  
factory

수퍼빈(주) | 아이엠팩토리

# SuperBin's History

2015

- Established SuperBin Co., Ltd
- Registered as a public technology commercialization company certified by the Ministry of Science, ICT and Future Planning
- Acquired KAIST's AI "Deep Learning" Technology
- Received seed investment (Mirae Holdings Co., Ltd.)

2016

- Released prototypes of Nephron CP and Nephron G
- Operated a pilot project for Nephron CP in Gwacheon City

2017

- Won the grand prize at the Contest of Future Growth Engine Challenge Demo Day held by the Ministry of Science, ICT and Future Planning (Prime Minister's Prize)
- Launched the "SupBox" culture center
- Selected as First Penguin by Korea Credit Guarantee Fund
- Registered a patent for the technology of "Complex object recognition system and method based on artificial neural network analysis"
- Participated in Seoul Metropolitan City's IoT demonstration and received the highest evaluation (operating Nephron and SupBox in Seoul Children's Grand Park)
- Won the Grand Prize at the 11th Korea Excellent Patent Awards

2018

- Accredited by Korea Technology Finance Corporation as a venture enterprise
- Selected as an innovative enterprise by the Ministry of Economy and Finance
- Won the "National Amazing Innovation Award (Hyeoksinui Minjok Paransang)"
- Received a Series A round investment (KRW 2 billion / Humax Co. Ltd.)

2019

- Selected as a startup representative participating in the 2019 MWC (Mobile World Congress)
- Received a Series A round investment (KRW 1 billion / TBT)
- Selected as a recipient of SK Group's 5th Social Progress Incentive
- Opened "Recycling Resource Warehouse" in Yeosu City
- Released mobile Nephron "SuperCube"
- Participated in the Global Impact Investment Conference (SOCAP19)
- Provided the SuperBin Rookie service to 7 schools under Seoul Metropolitan Office of Education
- Participated in the National Institute of Biological Resources Exhibition "Back to me after the Long journey - Participated in an exhibition of SK SOVAC (Social Value Connect)
- Opened "Waste Mart" in Seoul's Yeonnam-dong and "Waste Gallery" in Jeju City

2020

- Conducted KB Kookmin Bank's environment-friendly campaign
- Received a Series B round investment (KRW 14.1 billion / Fine Investment Corporation, P.E.F., Humax Co. Ltd., TBT, GS CALTEX, and Lotte Chemical)
- Conducted the collaboration project "Loop" with Lotte Chemical
- Provided consulting service on ESG resource circulation for Naver Green Factory
- Selected to participate in the Eco Delta Smart City project of Busan City
- Opened a SuperBin Waste Cafe in Osan City
- Ran SuperBin's 1st Plogging Campaign "Seujeupneun Daligi" (Waste-Picking and Jogging)

2021

- Selected as a participating enterprise for Anyang City's Green Smart City (building an infrastructure of 100 Nephrons in Anyang)
- Launched a new Nephron model (Basic PP) based on a project agreement to convert delivery containers into resources with Asan City and Woowa Bros.
- Won the Presidential Citation at the 3rd Korea Social Economy Fair
- Selected as the 5th Innovation Icon by Korea Credit Guarantee Fund

2022

- Received a Series B round investment (KRW 5.9 billion / TBT and SK Geocentric)
- Launched a new Nephron model (Basic)
- Released Jalte-stick, a PET-bottle label and ring cutter
- Won the Minister's Award for Korea's AI Startup 100 of the Ministry of Science and ICT
- Operated products in the Eco Delta Smart City in Busan City
- Conducted the 2nd and 3rd Plogging Campaign "Seujeupneun Daligi"
- Installed Nephrons at various locations, including Samsung Display plants, SK gas stations, and Lotte Group and its distributors

2023

- Signed an MOU to conduct a Green New Deal pilot project to build resource circulation infrastructure with Hwaseong City and SK Geo Centric
- Received a Series B Bridge round investment (KRW 18 billion / Korea Development Bank, IBKS & Hana Financial Investment Co. Ltd., TBT, and Korea Investment Partners)
- Nephron Basic P model designated as an innovative product by the Public Procurement Service
- Received the Ministry of SMEs and Startups (MSS) Award of 2022 GOOD DESIGN (GD) KOREA (Nephron Object) & recognized as a 2022 GOOD DESIGN (GD) KOREA (Nephron Basic) product
- Selected as a 2022 Environmental Technology Development Excellence Achievement by the Ministry of Environment (developing a high quality flake material process through a circular economy system based on digital technology)
- Construction of SuperBin im\_factory approved
- Signed business agreements with the Salvation Army of Korea and Chuncheon Self-Sufficiency Promotion Center, etc., for resource circulation projects

2024

- Started production of r-PET flakes at the im\_factory
- Collaborates with Gangseo Yangcheon Office of Education to give 'Carbon neutral + Ecological Education'
- Collaborates with SK ecoengineering to perform 'Recycling of PET bottles in construction sites'
- Participate in the ADB's 56th Annual Meeting
- Participate in the WCE (World Climate Industry EXPO)
- SuperBin & Guro-gu facilities management corporation, both companies make a business agreement for ESG management and social value sharing

- Superbin & Earth act organization, both companies make a business agreement for recycling resources collection and classification activity as bottle to bottle's materials
- Acquired GRS(Global Recycled Standard) certification(r-PET flake)
- Passed US FDA, European EFSA food contact material safety standard test
- Nextrise Awards 2023, INNOVATION PRIZE

2025

- Enews ESG Forum Tech Startup section GRAND PRIZE
- Carried out a feasibility study of Waste Recycling Facility in Panama City
- Collaborates with Samyang Packaging to utilize and expand the use of 'Recycled Materials for Food Containers'
- Collaborates with Changnyeong Office of Education to give 'Carbon neutral + Ecological Education'
- 'im\_factory' iF DESIGN AWARD 2024 Communication, Architecture Winner
- e-Circular Governance: Signing of Agreement for Electronic Waste Disposal Operations
- Received commendation from Hwaseong City Hall for labor-management culture
- Selected as Gyeonggi Impact Unicorn by Gyeonggi-do Social Impact Creators
- Signed MOU with Hwaseong Chamber of Commerce and Industry to promote circular economy
- Participated in 'Plastic Planet' exhibition at Ganghwa Natural History Museum
- Signed MOU with KECO to expand high-quality recycled plastic production
- Selected for carbon neutrality commercialization support program by KEITI
- Received a Pre-IPO round investment (KRW 16.5 billion / Korea Asset Management, Dongkuk Investment, Korea Investment & Securities, Double Capital, MYSIC, UTC Investment, Rising S Ventures, Mirae Science & Technology Holdings & IBK Venture Capital, Intops Investment)

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## im\_factory

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the tour**  
→



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