



...creating a circular economy

Circular Economy in Amsterdam and Helsinki – Exchanging best practices

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Forefront circular economy solutions for construction and infrastructure sectors

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Introduction GBN Groep

- Founded in 1998
- Nationwide coverage (30 locations)
- > 50 employees

Area's of expertise

- Circular materials corridor
- Soil Recycling & Landmass coordination
- Asphalt Recycling
- EoL Concrete Recycling
- Railway stone Recycling
- Immobilisation
- Artificial Grass Recycling



Vision

GBN Group works on a daily basis on **achieving circular objectives** and **creating a circular economy**.

Our company's **mission** is to **reduce Earth Overshoot day** by **making materials circular** one by one.



Why ?

GBN recognizes that the earth is **out-of-balance** by the **over-consumption** of our society.

As a society we have to work on a **circular** and **sustainable economy** in order to **balance** the earth.

Our mission is to eliminate **Earth Overshoot Day**.



January



February



March



April



May



June



July



August



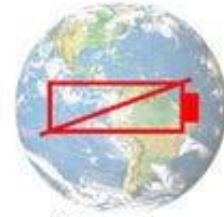
September



October



November



December

How ?

With its **practical knowledge**, GBN Groep contributes to the **closure of these chains**.

This requires **cooperation** at all levels and throughout the **entire chain**.

With the **development** of the 'Circular Raw Materials Corridor', **materials** are **coordinated** with each other.





Areas of Expertise

**Circular raw materials
corridor**

**Soil Recycling & Landmass
coordination**

Asphalt Recycling

EoL Concrete Recycling

Railway stone Recycling

Immobilisation

Artificial Grass Recycling



Circular raw materials corridor

Materialinventory



Materialcalendar



Hub



Chain director

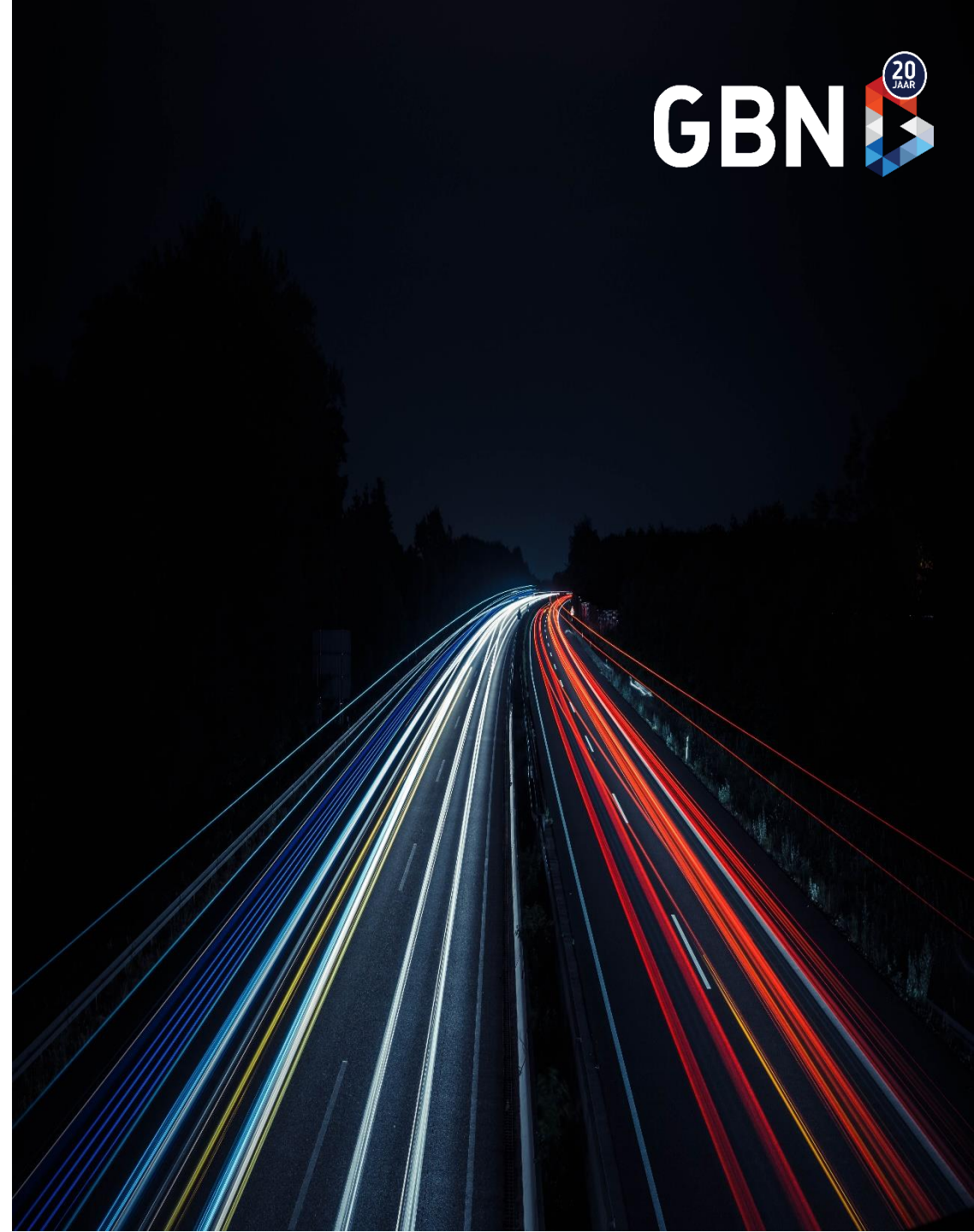


Materials Inventory

In order to fine-tune the various flows, it is necessary to have an overview of the various materials and products within the projects.

To this end, GBN makes a materials inventory. With this tool we make an overview of the available materials and products per project.

This inventory provides sufficient information per flow to achieve coordination between the projects.



Materials calendar

Once inventories have been made of the projects within the region or cluster, these are put in time.

We do this with a materials calendar.

This materials calendar gives us insight into which flows are released from which projects at which times and can be linked to the demand from other projects.

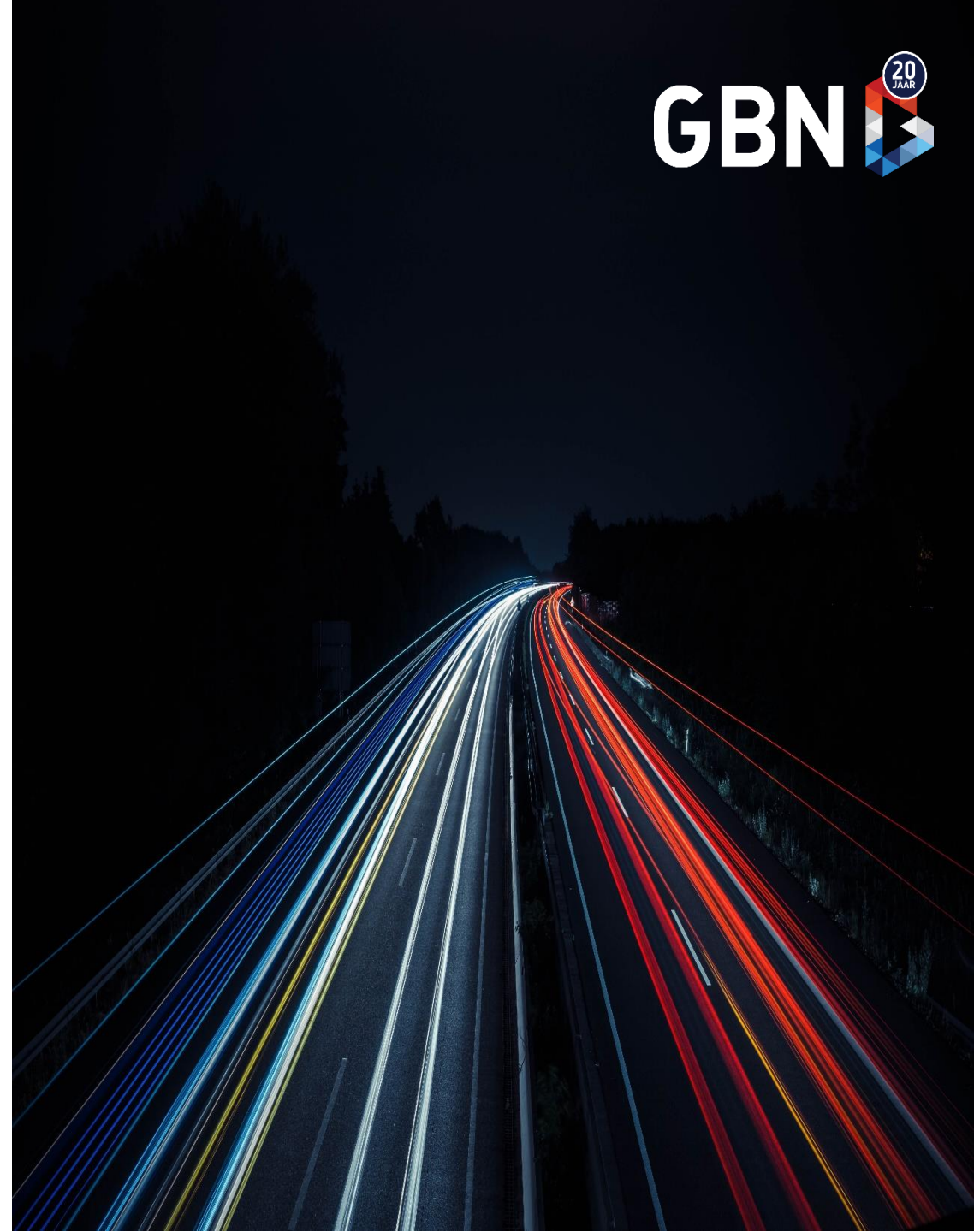
The aim is to bring about an exchange materials and products between different projects.



Hub

After the match has been made, transport has to be organized. And, if necessary, a period must be bridged in which the cargo has no place on either project.

In that case GBN organizes a hub where temporary storage is possible.



Chain director

Although an important part of these components can be supported by IT programmes, a chain director is needed who actively takes care of the matchmaking and the organization.

The chain director is an indispensable spider in the web, maintaining contacts between all parties involved and, as a broker, supporting financial and legal coordination.

GBN organizes all of the above components. At the same time, this approach is also open to input from third parties. If, for example, a materials inventory has already taken place, we will use it instead of repeating it ourselves.



Soil Recycling and landmass coordination

GBN is one of the three largest **soil banks** in The Netherlands. Exploiting over 28 **certified** locations and handling over **4 mio** tons per year



Asphalt Recycling

New green
asphalt products
using over 99%
recycled
materials



Railway Stone Recycling

With two **washing plants** in The Netherlands creating over 400.000 tons of **circular aggregates** for new railways, concrete and asphalt



EoL Concrete Recycling

Creating **circular concrete** reclaiming aggregates, sand and active fines

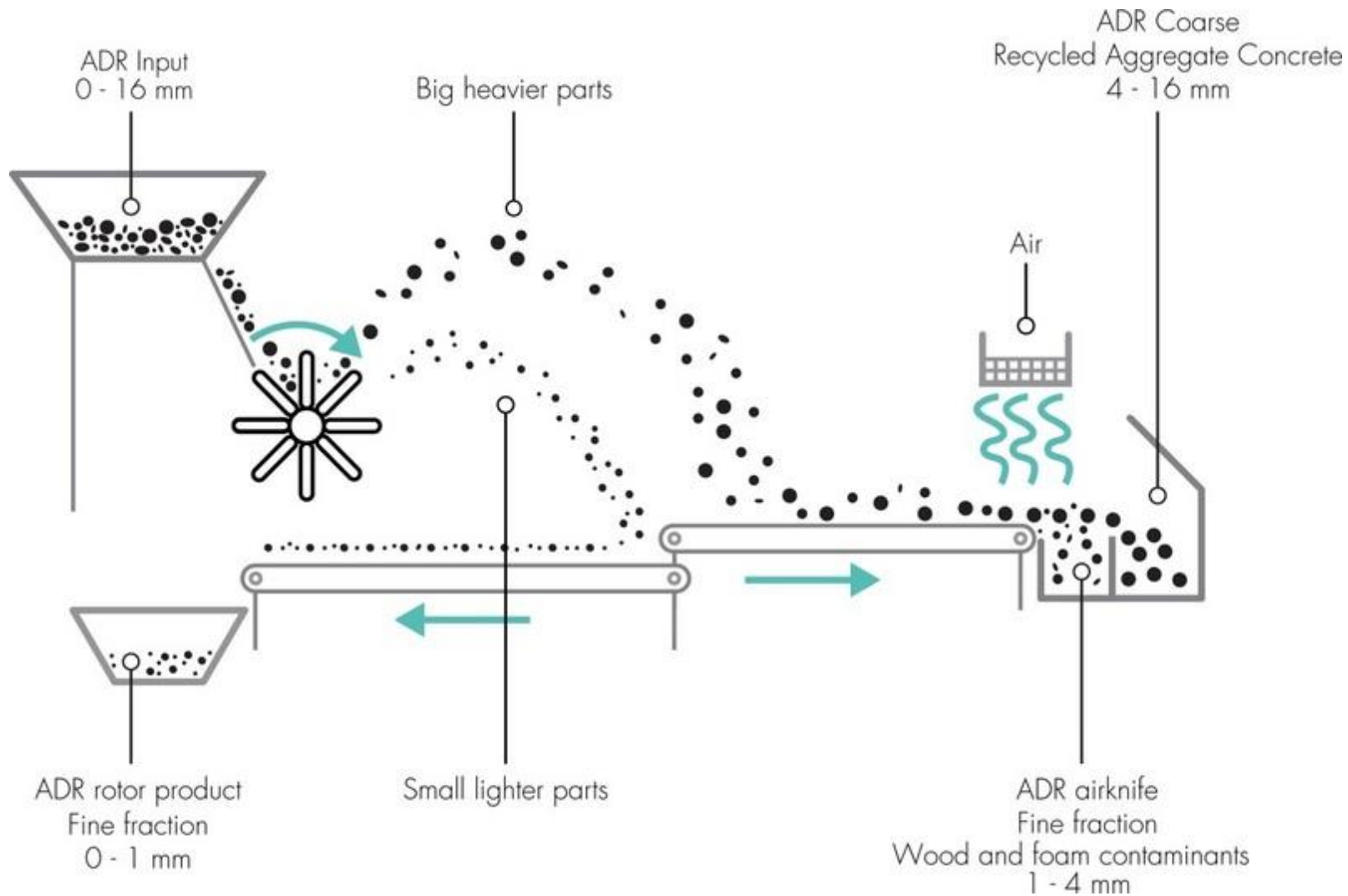




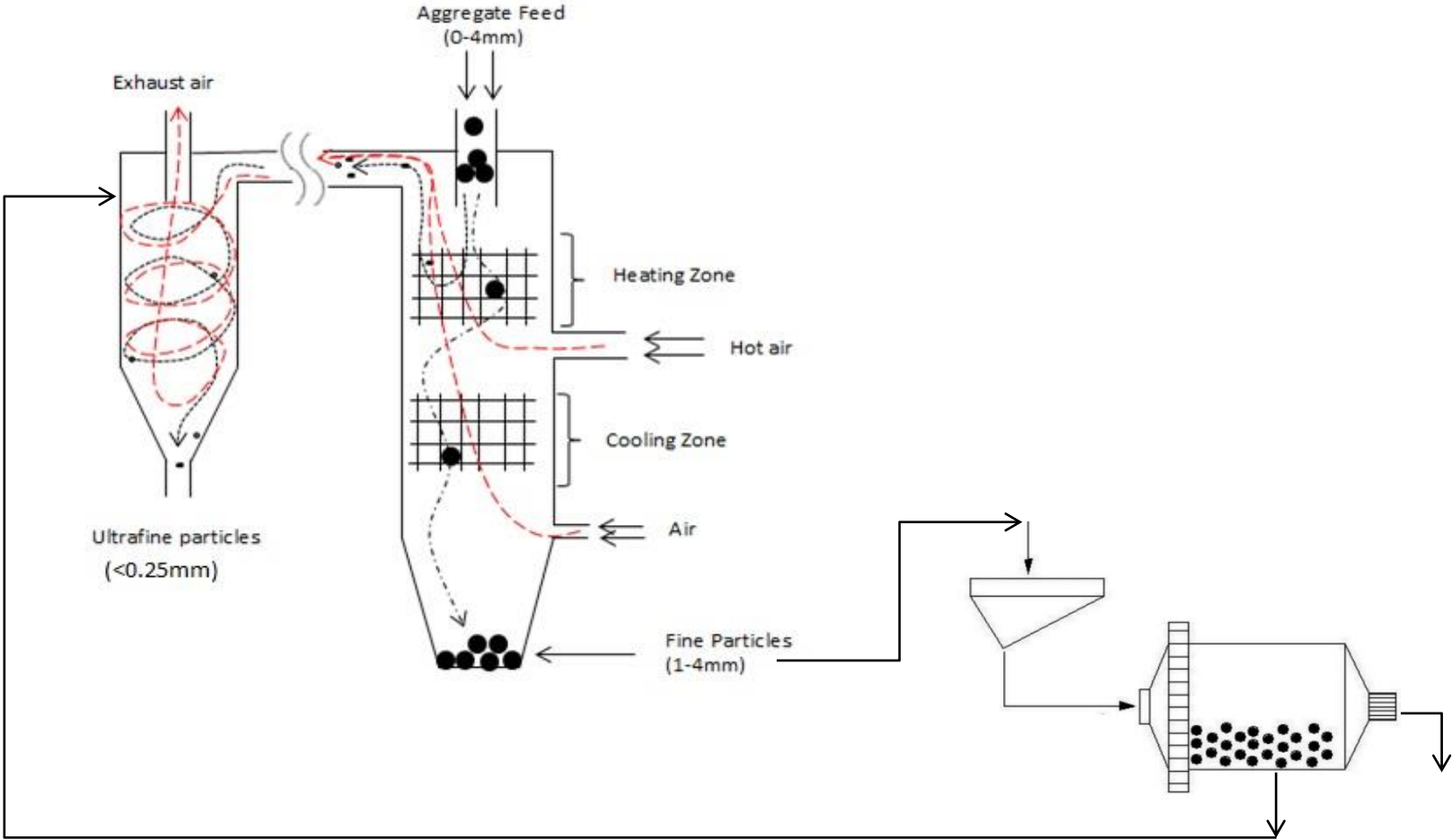
A company found by **GBN**
and **TU Delft** (Technical
University) developing
novel recycling
technologies for **complex**
building materials from
C&DW



EoL Concrete Recycling



EoL Concrete Recycling



H2020 project HISER, VEEP & ICEBERG

GBN participates in several **European research projects** in the field of concrete recycling. The main objective in **HISER**, **VEEP** and **ICEBERG** is to **develop** and **demonstrate** novel cost-effective holistic solutions (technological and non-technological) for a **higher recovery of raw materials** from ever more complex construction and demolition waste (C&DW) by considering **circular economy** approaches throughout the building value chain (from **End-of-Life Buildings** to new Buildings).



Concrete Agreement

Ambitions towards 2030

CO2: 49% CO2 reduction in 2030 (1990)

Circularity: 100% of all EoL concrete will be used in new concrete in 2030





Immobilization

Creating a 93%
**circular low grade
concrete** from
recycled materials
transforming into a
building product



GBN Artificial Grass Recycling

The situation

In several countries in Europe and beyond, there is an **urgent need** for **clean, safe and circular processing** of **end-of-life synthetic turf**.

A **large number of municipalities**, sports clubs and other organizations are looking for **ways to dispose** of worn out artificial grass in a **responsible manner**.



The solution

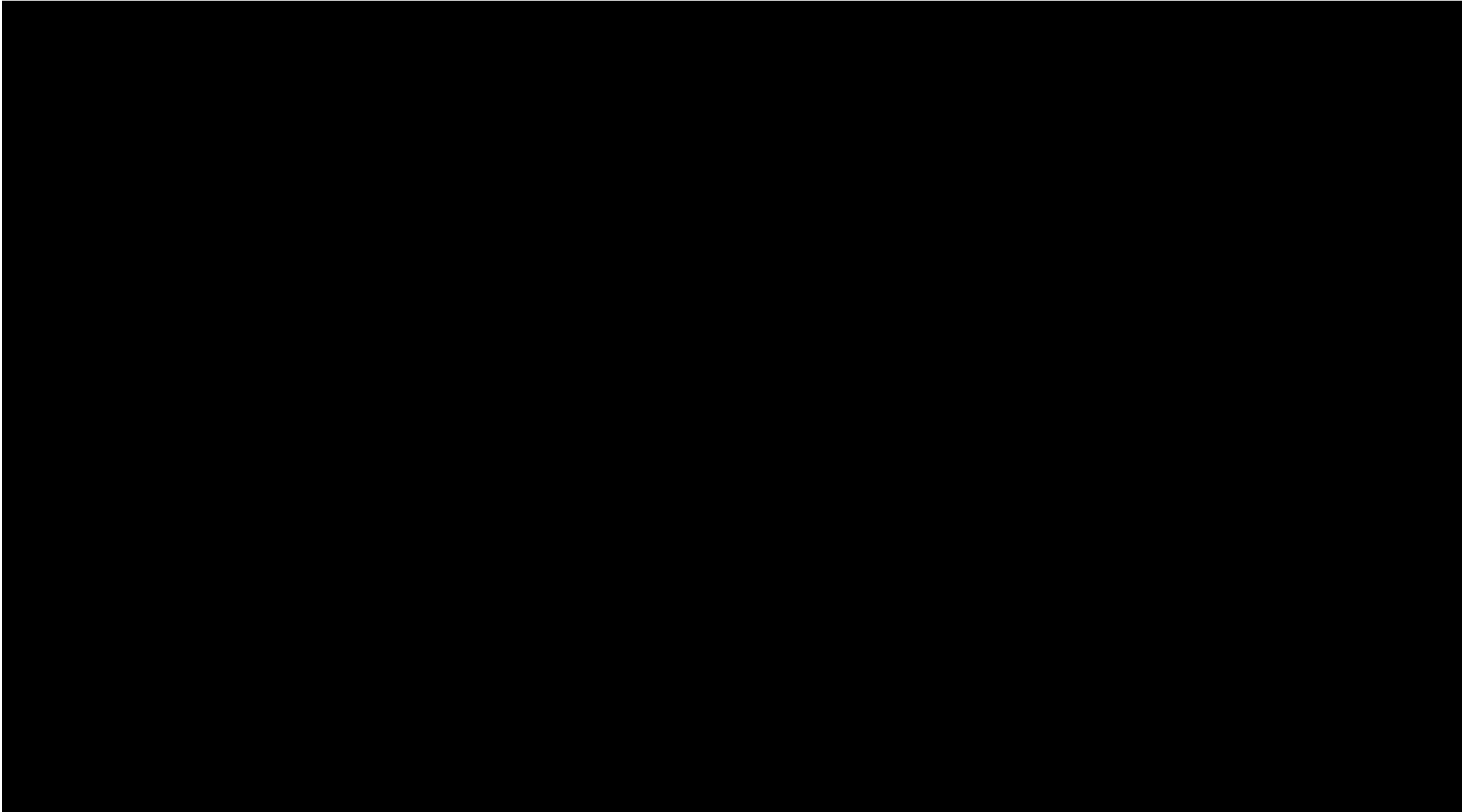
GBN Artificial Grass Recycling (AGR) offers the solution by **processing the structural** annual supply of **end-of-life artificial grass** into new, high-quality, **circular raw materials**.

The start is in the Netherlands: in January 2020, GBN AGR's **first innovative circular processing plant** **opened** its doors in the middle of the **circular cluster** of the Port of **Amsterdam**.

The factory was **completed** in **less than 1 year**.
From **idea to production!**



How we do it!



Certification and guaranteed circular recycling

This **recycling process** boasts a **unique innovation** certificate from the **Kiwa** institute.

As a result, **GBN AGR** can **guarantee**, and has set the **benchmark** for, circular recycling and a **consistent supply of high-quality**, circular raw materials.



LET'S
CREATE
A
CIRCULAR
ECONOMY
TOGHETER

