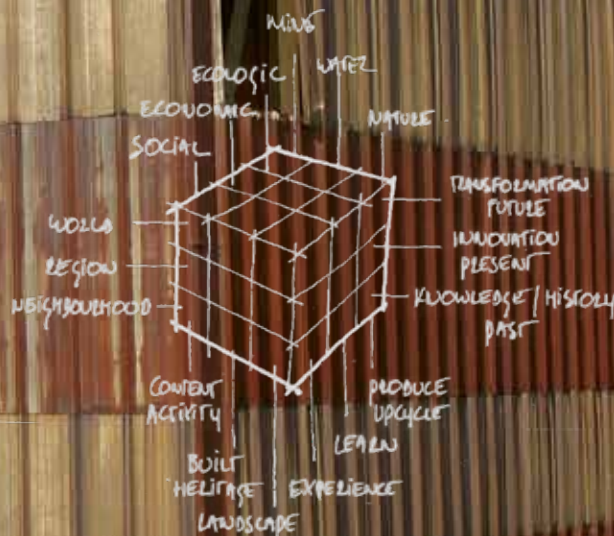


TRIAGE²

THE BERINGEN COAL PREPARATION PLANT,
TOWARDS A NEW BEGINNING



AN INVESTIGATION INTO
A FUTURE-PROOF REDEVELOPMENT

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4 DECEMBER 2021

DISCLAIMER

The content of this TRIAGE² report lists the contractor's insights and recommendations and is not binding on the be-MINE company in any way whatsoever. Nor do these reflect the views or the policy of the companies be-MINE or LRM.

TRIAGE² is the result of an independent consultancy assignment carried out by the transit_LAB CVSO (cooperative company with social purpose) and a supporting team of in-house experts.

READER'S GUIDE

This dossier is the result of a short-term study (in July and August 2021) by CVSO transit_LAB on behalf of the be-MINE company. Transit_LAB is acquainted with coal preparation plants and has experience in redeveloping collieries in Limburg and abroad. And be-MINE would like to deepen and support the operationalisation of the concept of be-NATURE (see Appendix 1).

Part 1 presents the essence of the investigation: what exactly is the Beringen coal preparation plant and how can this building be treated with respect in terms of its heritage value and the impact it has on the future? The be-MINE company develops a new narrative with the concept 'be-NATURE' as a starting point.

Moreover, certain sample projects are discussed and, then finally, a new management structure is explored.

Part 2 presents the details of the site survey in relationship to refining technology. Also described is the essential relationship of be-NATURE with be-MINE PIT and the Kolenspoor (a regional development concept interlinking all former coalmines). The benchmarks and sources of inspiration are also explained. Finally, the base of support among Limburg stakeholders – associations committed to the mining heritage – is discussed.

Part 3 repeats the main recommendations that became clear in the course of the investigation.

EXECUTIVE SUMMARY

This building is a challenge, stubborn but fantastic.

The Beringen coal preparation plant has been a protected heritage site in its entirety – the building and contents – since 1994. However, there were delays over the years in the renovation due to the many factors that were affected.

After the restoration of the Coal Preparation Plant 2 and 4 buildings, be-MINE NV presented a new idea for Coal Preparation Plants 1 and 3: be-NATURE. It is a concept that places parts 1 and 3 of the coal preparation plant at the juncture between heritage, nature, and Kolenspoor. In the present study, we take up the concept of be-NATURE, explore and delve further, and place it within the broad international perspective that it embodies. The investigation naturally went beyond Coal Preparation Plants 1 and 3 because of the essential interaction with the colliery, Beringen mining settlement, surrounding Mijnstreek (mining region), and the world in general. And more than that, there is the potential success of be-NATURE.

This report brings together a realistic, aspirational, and bold perspective. The investigation is based on both a heritage and future-oriented approach.

Based on a comprehensive mapping of the entire coal preparation process as it still exists in the coal preparation plant and a description of the technology, we set out a narrative about experience, learning, investigation, and production driven by a future-oriented perspective of regenerative materials, sustainable use of raw materials, and respect for nature.

The Beringen coal preparation plant can be upgraded to help set the future Limburg narrative of the Kolenspoor. In fact, it has the potential for tremendous appeal. The be-NATURE concept is a valuable starting point. Indeed, the linking of heritage, nature, and the Kolenspoor is an inspiring opportunity.

The coal preparation plant perfectly embodies the regional history to put the area on the world map:

- as the main place of remembrance for the Limburg collieries and the social, technical, and scientific ingenuity of mining and all that it entailed.
- as the bearer of a world-class heritage programme that values and reflects the Limburg mining heritage from Beringen to Eisden.
- where contemporary knowledge, science, and exchange with the neighbourhood and the world are part of the vision and daily practice.
- with a visitor centre and starting point for the Kolenspoor, the central development project of the province.
- as an eye-catcher and partner for be-MINE PIT (the new experience center that will replace the existing mining museum).
- as a home to a knowledge, action, and campaign centre with respect to the refinement of materials and the climate challenge.
- as an exciting, adventurous, and educational tourist destination.

This means that the essential technology preserved in the coal preparation plants must be respected, thus laying the foundation for a future-oriented narrative. The process of coal refining must be updated in terms of its technical and social value in the world of raw materials and the materials economy.

The challenge is to create a structure in which all stakeholders who want to contribute are invited to participate. Specifically, a foundation or cooperative is needed that is professionally developed, such that it has a long-term mission, large base of support, and chance of flourishing economically. It can then take on its mission and prosper.



TABLE OF CONTENTS

001 / THE ESSENTIALS	9
1. MAPPING	9
The coal preparation plant is a whole	9
Three future-proof technologies	13
Recommendation	19
2. NARRATIVE	25
Like a Rubik's Cube, a multifaceted narrative and broad programming	25
In a totally new planning context: quality and a base of support are key	31
Benchmarks and inspiration	35
3. MANAGEMENT STRUCTURE, FROM PRIVATE INTEREST TO STEWARD OWNERSHIP	37
The be-MINE company, the current reality versus the new level of ambition	37
A new business model: steward ownership	39
Towards the be-MINE Foundation or cooperative company, supported by stakeholders	41
002 / THE ESSENTIALS EXPLAINED AND THE INSPIRATION	45
1. MAPPING THE COAL PREPARATION PLANT: THE RESEARCH	45
2. BE-MINE PIT AND THE KOLENSPOOR, THE IMMEDIATE ALLIES	58
3. BENCHMARKS AND INSPIRATION	61
Coal, a scientific touch, and a nod to nature and flora	61
Nature, the signboard explored through science and art	63
Foreign examples	69
4. Base of support from heritage and miners associations	84
003/ THE RECOMMENDATIONS, SUMMARISED	87
APPENDICES	89
Appendix 1: collage of images of be-NATURE as presented in June 2021	91
Appendix 2: be-MINE / be-NATURE / be-MINE PIT active at all relevant scales	94
Appendix 3: press release of be-MINE dated 11 September 2021	96
Appendix 4: the transit_LAB mission	98
Appendix 5: bibliography and sources	99
COLOPHON	100
[photo left: slurry screens in CPP 3]	

Foreword:

The coal preparation plant is a listed building. It is part of a much larger heritage protection programme from 1993 and 1994 encompassing the entire mining heritage areas of Limburg and Flanders. The attendant policy decisions stipulate that the Beringen colliery must be preserved as completely as possible.

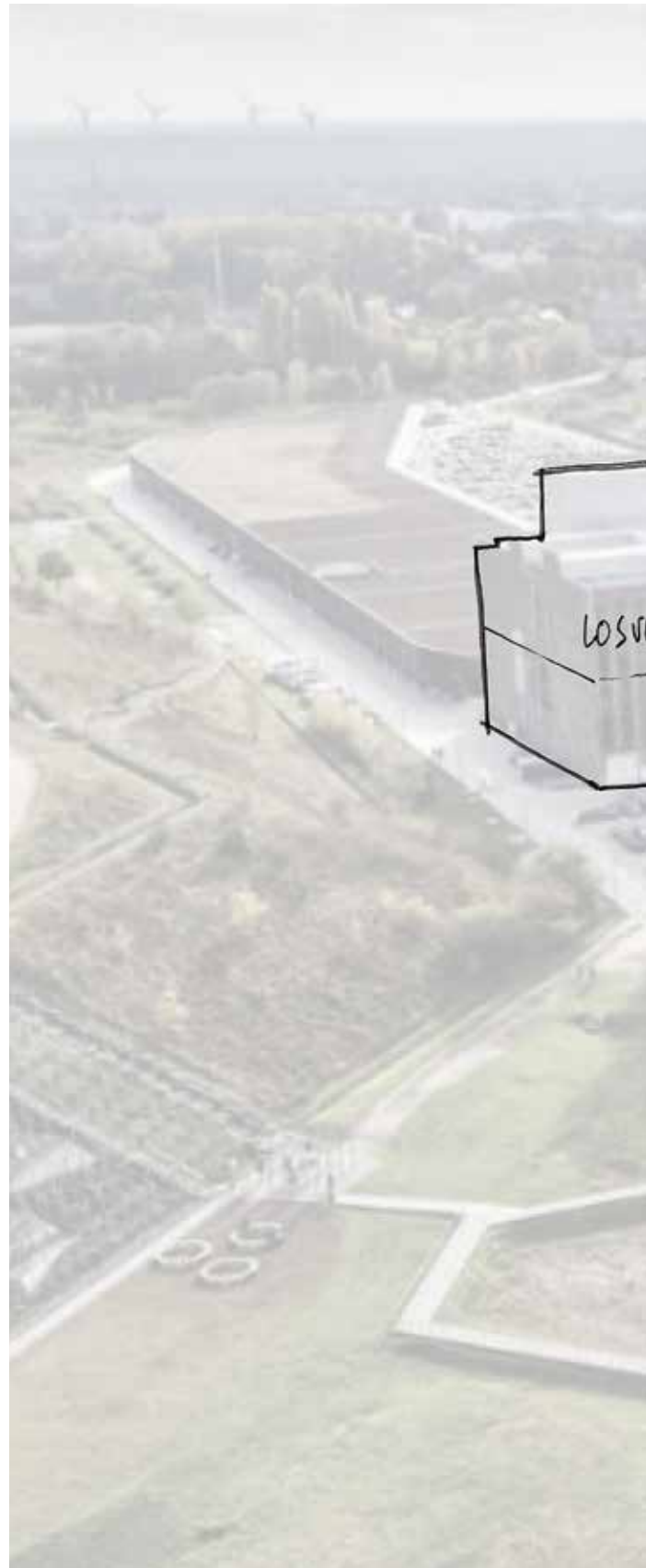
The motivation for protecting the coal preparation plant in the year 1994 is obvious. We quote from the heritage values memorandum for Coal Preparation Plants 1 and 3¹:

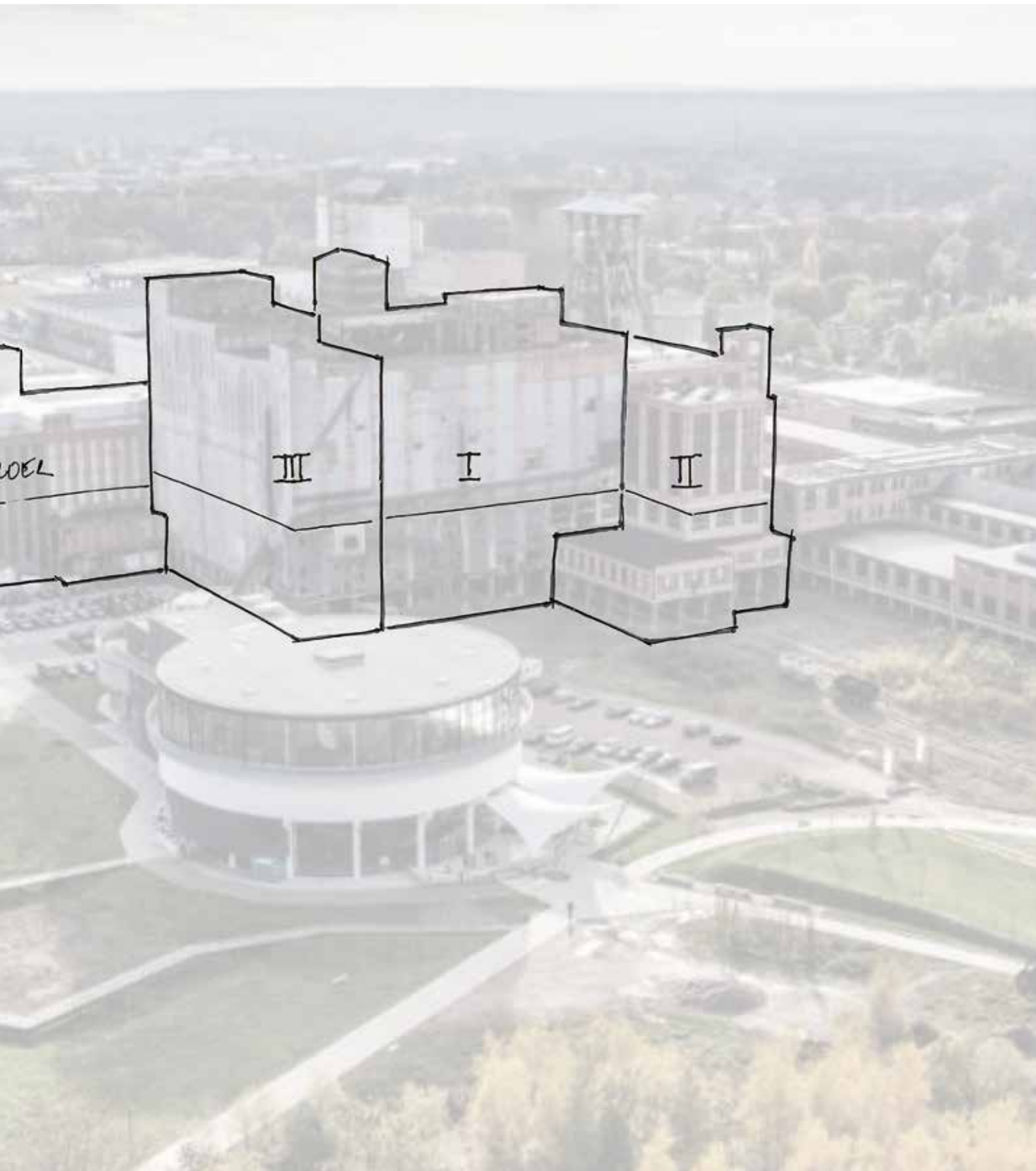
... "The coal preparation plant was nominated for protection as a monument because of its representativeness, age, degree of completeness of buildings and installations, architectural and technological value of the alterations, state of preservation, compactness, clarity, presence of complementary activities, and the presence and location of the spoil tips"

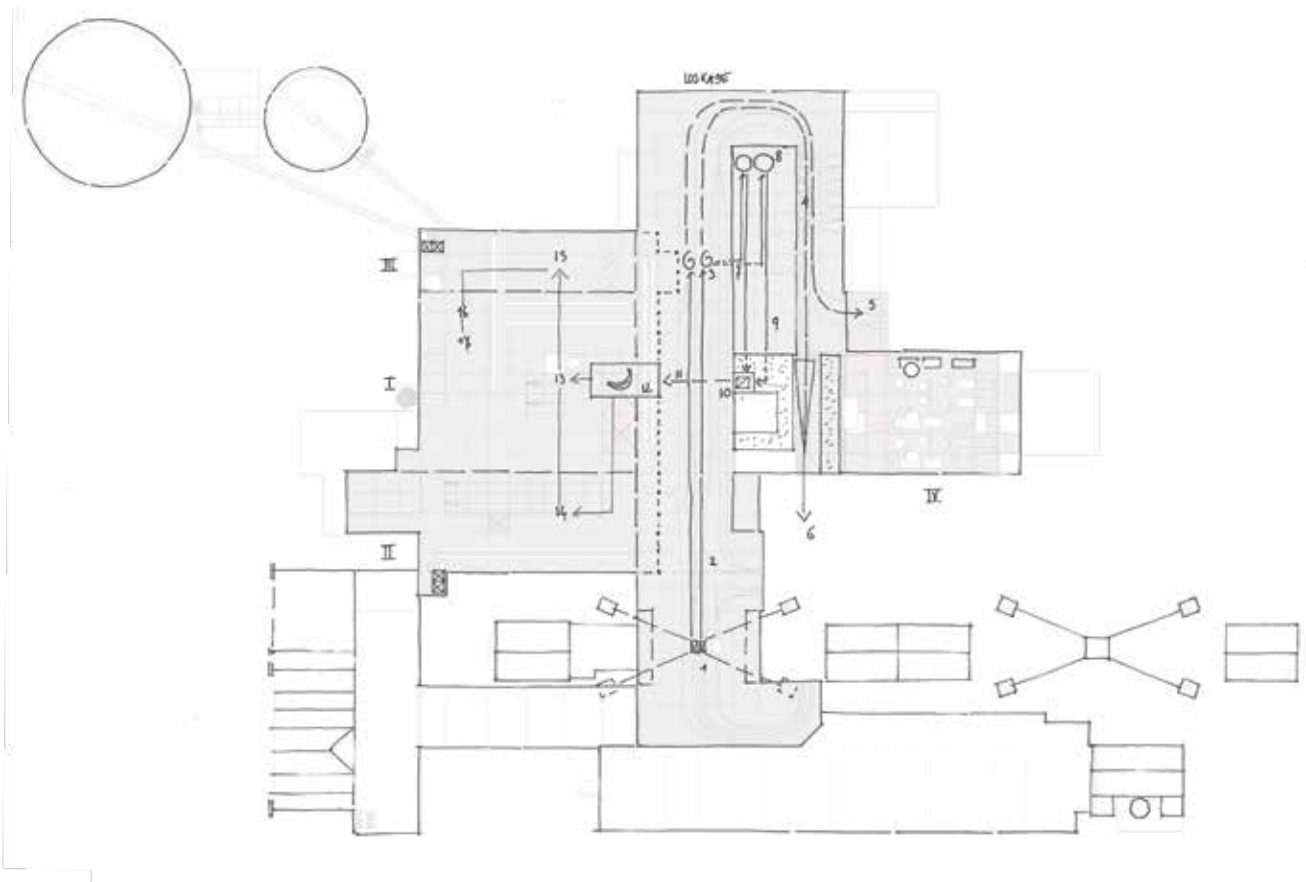
The content of the dossier, submitted to the Royal Commission for Monuments and Sites (KCML) for advice on 27 April 1989, lists the following additional argument: "

- ...
- In this respect, technical equipment and architecture are inseparably linked. Machines, tools, and other equipment are an integral part of the colliery as a business. They illustrate the working of the colliery and have value in terms of industrial archaeology in general.
- ... "

¹ This paragraph is taken from the memorandum of the Flemish Agency for Immoveable Heritage as input into the investigation of the Flemish Government Architect, Leo Van Broeck, in 2019 who, as intendant, sought a solution to the impasse that had arisen after the public enquiry concerning the partial removal of protection and who made it clear that the building is perceived as extremely valuable by heritage experts at home and abroad and by the general public.







starting at the unloading platform (level 15.00), we can schematically represent and spatially situate the entire coal preparation process

- 1_ shaft 2 - lift brings coal carts to the unloading platform (15.75)
- 2_ narrow gauge goes to tipping unit
- 3_ tippers - coal carts rotate, coal falls on conveyor belts on the lower floor (10.30)
- 4_ reloading - some carts are refilled with stones and go to the underground
- 5_ passerelle goes to shaft 1
- 6_ passerelle goes to shaft 2
- 7_ screen (level 10.30)
- 8_ jaw crushers - all coal was reduced to a 80 mm fraction
- 9_ transport to elevator
- 10_ vertical elevator for the raw coal
- 11_ conveyor belt from elevator to 'feed' at 46.00
- 12_ dormer structure with 'banana screen' (40.00) - the banana screen is the heart of the process. This installation screens and crushes up to 50 mm. Then the raw coal is separated into 0 - 10 mm & 10 - 50 mm
- 13_ CPP 1 - fraction 10 - 50 mm - drew boy
- 14_ CPP 2 - fraction 1-10 mm - pulsation process
- 15_ CPP 3 - fraction 0 - 1 mm - flotation process
- 16_ vacuum drum filters
- 17_ thermal drying

1. MAPPING

THE COAL PREPARATION PLANT IS A WHOLE

A visit to the building in February 2021² showed that 30 years of standstill after the mine closure did relatively little fundamental damage to the coal preparation plant complex. The transit_LAB investigation in July 2021 shows that all technical installations still exist and the production process is still fully visible. Moreover, the mapping the installations made it undeniably clear that all parts of the coal preparation plant are a single unit. The numbers Coal Preparation Plants 1 to 4 do not indicate duplicate processes, but are parts that are inextricably linked together. Moreover, the entry of the raw coal to the preparation plants 1, 2, and 3 at the highest point is the banana screen that supplies the entire process. It is not possible to separate parts because they are so called complex and opaque. Trying to dissect the entirety into separate parts would make it impossible to understand the coal treatment process. More bluntly put: demolishing a single part would denigrate the fundamental existence of the entirety and investments made in the other parts (unloading platform, CPP 2 and 4).

The refinement process is very logical and is located almost entirely in the upper levels of the building. In the site survey, transit_LAB found that the machinery was in relatively good condition. Admittedly, the building was broken into a lot since it was closed, which resulted in almost all copper cables being stolen. However, very little destruction occurred.³

This refutes the claim that the Coal Preparation Plant 1 “is an organised industrial ruin, physically dilapidated, but above all crammed and defaced: the plant has taken on a life of its own and taken over the building...”⁴

Moreover, the reality is contrary to such opinions and discussions circulating about Coal Preparation Plant 1.⁵

After the unloading platform, the raw coal is sorted into 0 - 80 mm and +80 mm fractions. If necessary, the fractions are broken down further into 80 mm pieces. Furthermore:

- The fraction larger than 80 mm is washed in coal preparation plant 4.
- The 0 to 80 mm fraction is lifted vertically to the highest point, the banana screen.
- In this space (the construction above CPP 1), the coal is sorted and crushed into 0 - 50 mm fractions and, after being sorted in the banana screen, is divided as follows:
 - The 10 to 50 mm fraction goes to CPP 1: heavy liquid technology.
 - The 1 to 10 mm fraction goes to CPP 2: pulsation technology.
 - The 0 to 1 mm fraction goes to CPP 3: flotation technology.
- The flotation technology continues in CPP 1 with the vacuum drum filters and thermal drying.

The preparation plant was a circular and integrated production system ahead of its time.

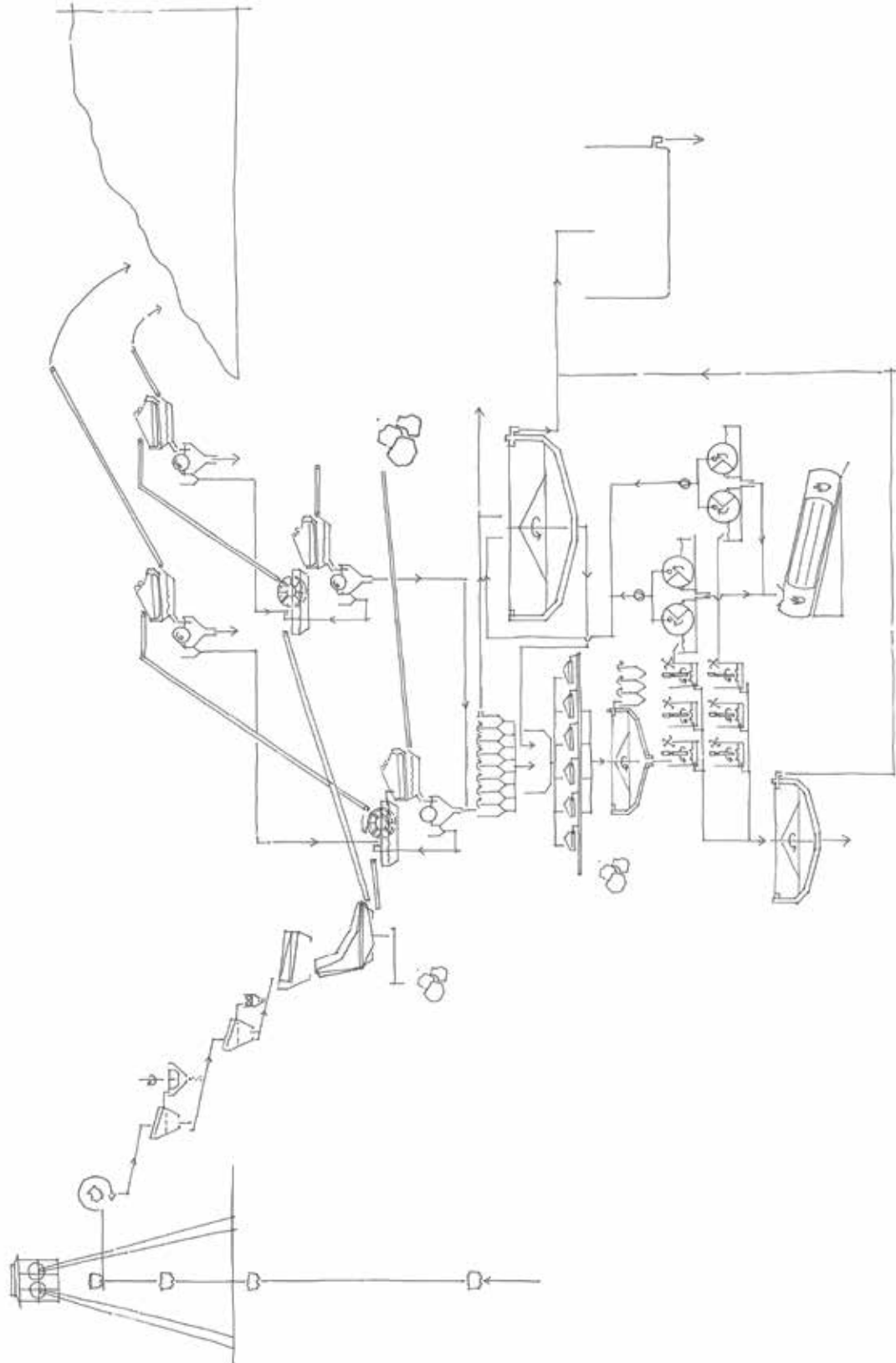
² In February 2021, be-MINE management accompanied an investigatory visit requested by the non-profit Het Vervolg/COALFACE. Het Vervolg/COALFACE is a 'knowledge centre', 'action centre', and 'policy influencer' in the Mijnstreek (mining region). The central proposition is that heritage is a raw material for the future.

³ This is also confirmed in the report titled 'Management Plan for the Beringen "Kleine Heide" Colliery Site, foundation document', dated October 2019 and authored by Koplamp Architects.

⁴ Quote from second opinion architect on behalf of the be-MINE company in March 2021.

⁵ It should be noted that the recommendations and notes of the Flemish Agency for Immoveable Heritage and the Flemish Government Architect of 2019 have a life of their own and are often unjustly cited. They repeat and refer to each other but do not correspond with reality.

PFD, the process flow diagram



In Part 2 (mapping the coal preparation plant: the investigation), the whole process is described in detail and technically.

This process outlines the nucleus of the future narrative.

The process flow diagram (PFD), is shown here. It is a somewhat simplified 'as built' diagram of the entire Coal Preparation Plants 1 & 3. This can serve to assess what should be retained or removed.

It is important to keep the following scheme generally in mind.

	PURPOSE OF THE REFINEMENT PROCESS	RELEVANT INSTALLATIONS
UNLOADING PLATFORM	<ul style="list-style-type: none"> • Unloading mine carts • Sorting into 80 mm fractions • Breaking into 80 mm fractions • Conveying to CPP 4 and banana screen in CPP 1 	<ul style="list-style-type: none"> • Tipping system • Drum and vibrating screens • Picking belt • Jaw crusher • Elevator to banana screen
BANANA SCREEN	<ul style="list-style-type: none"> • Sorting into 50 mm fractions • Breaking oversize into 50 mm fractions • Sorting fractions into <ul style="list-style-type: none"> - 10 – 50 mm - 0 – 10 mm 	<ul style="list-style-type: none"> • Screen • Crusher • Feeder / divider • Banana screen
CPP 4	Preparation +80	Drew boy
CPP 1	Preparation 10 – 50 mm	<ul style="list-style-type: none"> • Drew boy • Coal screens • Stone screens • Magnetite recovery filters
CPP 2	Preparation 1 – 10 mm <ul style="list-style-type: none"> • Centrifuge drying • Spitzkast slurry water catch basin 	<ul style="list-style-type: none"> • JIG - pulsation • Schwing Sieb Centrifuge
CPP 3	Preparation 0 – 1 mm	<ul style="list-style-type: none"> • Slurry screens with funnels • Thickeners • Flotation batteries
CPP 1	<ul style="list-style-type: none"> • Filtering output coal concentrate CPP 3 • Thermal drying 0 - 1 filter cake • Circulated water 	<ul style="list-style-type: none"> • Vacuum drum filters • Thermal dryers • Pump house
SPITZKASTS	<ul style="list-style-type: none"> • Process water recovery • Slurry recovery 	
THICKENERS	<ul style="list-style-type: none"> • Process water recovery • Slurry recovery 	
BUNKERS	Washed coal storage	



THREE FUTURE-PROOF TECHNOLOGIES

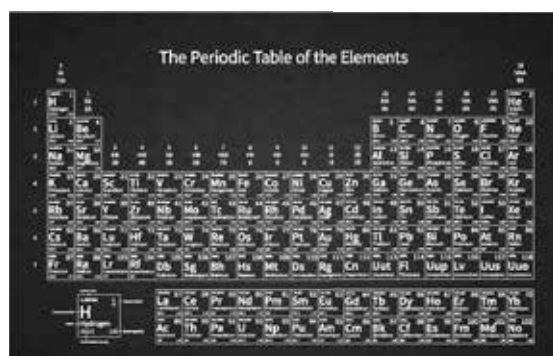
There are three refinement technologies in the Beringen coal preparation plant. They differ from each other not only because they rely on different physical and/or chemical processes, but also because they serve to produce different end products. The preservation of the three technologies is important, not only for industrial heritage purposes, but because they are also contemporary and can help people realise and convey the importance of minerals and materials in everyday life.

'Most elements can only be made ready for use with a refining or upgrading process.

But these methods are also being increasingly used to treat waste, both household and industrial. The challenge is to purify and separate our waste into its original form and to stop dumping and incinerating it. Preserving and explaining these processes will help promote awareness of raw materials scarcity, recycling, and the future materials economy.

Describing the coal preparation plant can also help question mining as it is practised worldwide today: destruction of nature, slavery, and irresponsible profiteering at the expense of future generations.'

Etienne Schouterden



"Why is coal refining technology important?"

The technology of the coal preparation plant seems to belong to the distant past. But that is far from the truth.

Such technology is relevant today and in the future for the refining of raw materials and waste products.

A world without raw materials means:

- without coal: no coke, no steel... so, no windmills*
- without graphite: no electric motors... so, no windmills*
- without copper: no power lines...*
- without lead: no plumbing, no batteries...*
- without tungsten: no light bulbs, no touch screens...*
- without gold, silver: no jewellery...*
- ... "*

Etienne Schouterden

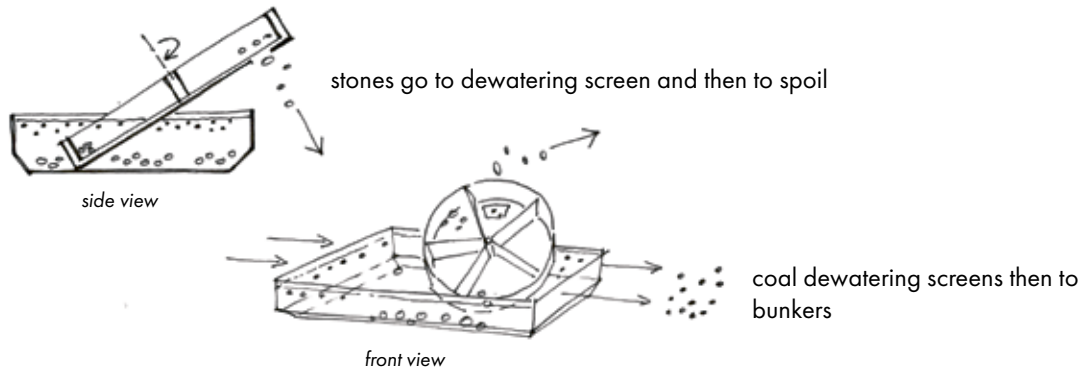
[photo left: thickener in CPP 3]



[photo top: permanent magnet for magnetite recovery]
[photo left: draw boy]
[photo bottom: pulsation battery]



A/ THE HEAVY LIQUID TECHNOLOGY



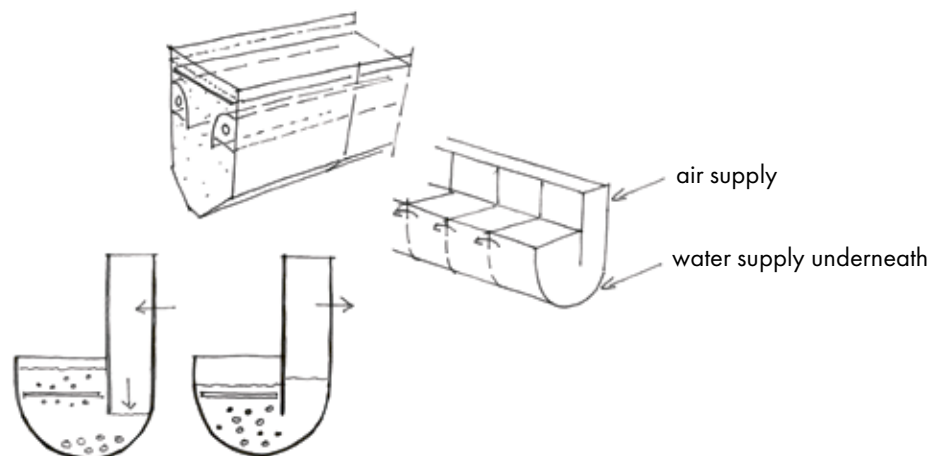
This technique is usually used to separate larger parts: +10 mm.

In this installation, also called the 'Drew boy', the 10 to 50 mm fraction is washed in Coal Preparation Plant 1 in Beringen and the +80 mm in Coal Preparation Plant 4. The heavy liquid technology increases the density of the water. This is done by adding fine magnetite/iron filings (smaller than 0.1 mm) to the water.

The density of pure water is 1 (1 kg per litre). Coal 1.3 (1 litre weighs 1.3 kg).

Pure coal floats at a density of 1.3, so stones sink to the bottom of the bath. An inclined turntable scoops the stones out of the mass at the bottom. The coal floats. The stones and coal are dewatered over a (separate) screen where the magnetite is removed using pure water. This (expensive) magnetite is recovered using a permanent magnet.

B/ THE PULSATION TECHNOLOGY



Pulsation or 'jigging' is used to separate small fractions of raw materials, i.e. fractions from 1 to 10 mm.

In a water tank with a screen, water is added under the screen and air is blown under the screen at the same time in an adjustable rhythm. The matter to be separated is added to the screen deck. The rising water and pulsated air bring the coal to the top, so the stones remain on the screen bed. The coal then floats away with the flowing water and the stones are removed with a bucket chain. This is the 'apparent density' technique because the density of the water is increased to 1.3.



[photo above: slurry screen]
[photo left: flotation battery]
[photo bottom: flotation battery]

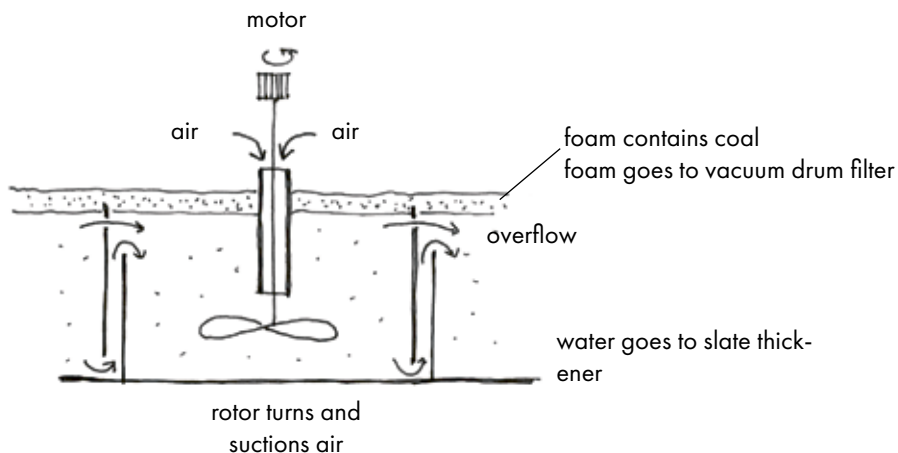
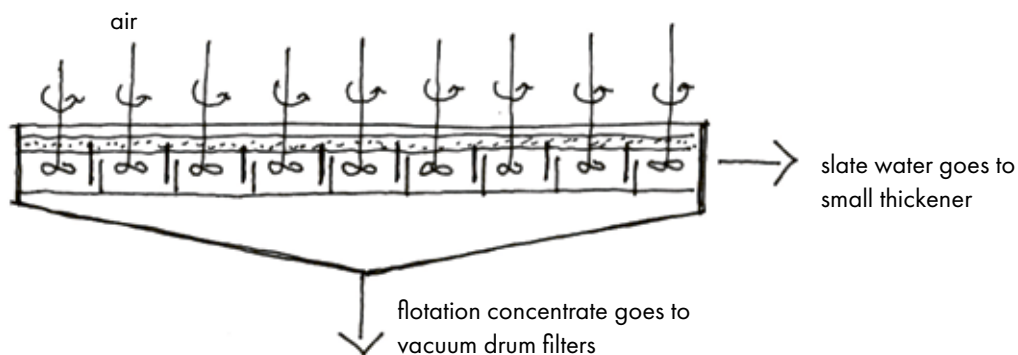


C/ THE FLOTATION TECHNOLOGY

Flotation is used to treat the ultrafine fraction, also known as slurry: 0 to 1 mm. This technique allows the extraction of coal from the slurry up to 10 μm fractions. This physico-chemical process treats ultrafine material with water.

To achieve sufficient capacity, the flotation battery contains 8 to 10 chambers with a stirrer-aerator. One battery in Beringen can handle approximately 150 m³/hour. Or, given the influence of density, this corresponds to approximately 18 tonnes/hour of fine material. The six batteries present in Coal Preparation Plant 3 have a combined capacity of approximately 108 tonnes/hour.

Heating oil was added as a 'collector' in Beringen to make the coal particles hydrophobic. The 'frother' or 'foamer' was a long carbon chain with an alcohol group, i.e. MIBC or methyl isobutyl carbinol. These chemicals are used not only in the coal sector, but also in many other ore processes, e.g. for copper, zinc, gold, silver, lead, tungsten, etc



The combination 'serious' and 'adventurous', leisure-oriented activities and projects within the spaces of the coal preparation plant should be possible. There is plenty of space and it is the most adventurous setting imaginable. The use of intelligent routing and the existing structure – that may need to be modified – will allow the project to be packed with appealing and even commercially oriented sub-projects. Transit_LAB has leads in preparation.

During the assignment, transit_LAB met entrepreneurs who came up with concepts, such as the following:

- A 'green tech hub' – a development and campaign centre for the materials and climate challenges as a global showcase. Transit_LAB is conducting – under an NDA – an exploratory discussion on this with an international group.*
 - Vertical farming in the spaces that become available. This is an internationally emerging trend and Beringen can become a hotspot for it.*
 - A controlled form of urban exploring in the interim and growth phase of the project, partly to raise the profile of the place and make it international.*
 - A centre for skydiving, freediving, and static lines for parachutists, all achievable with the existing steel grids and bays. Target group: professionals and recreational users.*
 - A haunted house, whether or not with as theme technology and/or mining themed. Target group: recreational users of all ages.*
-

RECOMMENDATION

The recommendation and conclusion from the site survey is:
"The entire process should be preserved as completely as possible."

Indeed:

- The coal preparation plant has a clear and integral process that works as a single unit, such that the building cannot be partially demolished.
- The presence of the entire process is unique and a wonderful opportunity. As a minimum, the public should be given access to the machinery via a 'walking tour'.
- A representative number of machines should be preserved, but not restored in detail.
- Parts can be removed to create 'viewing spaces' that promote the new narrative.

This does not mean that every single object must be preserved. We do not want to 'freeze' the building in time. The coal preparation plant has always been 'in flux' and 'being modernised'. We want to maximum its reuse related to a new narrative. The essence of retention in this case is to 'make a lot of space available'. Because this will free up a lot of useful space.

Further research could identify and map the most important parts of the technical process into sections to be retained or respected within the holistic entirety of the building. This automatically creates an orderly structure in the building and logical connections can be created. At the same time, it will become clear that a lot of space will become available to set up new functional units, large and small, and which of those spaces (or entire floors) can be 'de-pitted' for this purpose without affecting the overall coal preparation process.

Machinery and installations should be preserved as much as possible within a realistic vision and an appropriate plan. However, not all of these should be restored in detail. It is possible to preserve and conserve the current condition of these objects (partially dilapidated) while still indicating how they function. It still needs to be investigated whether it is conceivable or relevant that some machinery can be shown 'in operation'.

There are some installations containing 'multiple' functional parts: flotation batteries, pulsation machinery, vacuum filters, draw boys, etc. The 'multiple' will sometimes enhance the narrative, while in other cases the need for surface area for new functional units will predominate. A nuanced and cautious approach is recommended based on the potential repurposing of spaces. A balance must be found between industrial-archaeological, spatial-functional, architectural, and financial considerations. That is the essential task of 'design research' that Flemish Government Architect Leo Van Broeck repeatedly refers in his 2019 recommendations.

Many installations will be 'less important' to preserve based on this approach: conveyor belts, bucket chains, pipe systems, Redler chain conveyors, etc.

Certain plants may be given a new combined purpose:

- Spitzkasts and/or thickeners can be used for the new water management needed for new plantings. No plant growth without water.
- Bunkers, Spitzkasts, and thickeners can be used as presentation rooms, meeting rooms, galleries, etc.
- The structure that houses the banana screen is the ideal viewing and experiential platform above the coal preparation plant and surrounding area. Moreover, at this point, you stand eye-to-eye with the headframe.
- Several lifts can be restored to support internal circulation of foot traffic.

Technical installations can be a fantastic backdrop for other functional units: presentation and gallery space, offices, catering, venues, etc. These can also be adventure and explorer trails that respond to audience-oriented purposes.



“Project ‘The Lowline in New York’ contains an underground and thriving park created with new solar technologies. It has intensively supervised horticulture technology. At the same time, it has created a strongly involved community and is a great success with the public.”

[info & images: www.thelowline.org]



Concerning the preservation of essential machinery

The following installations and machines must remain to be representative of a coal preparation plant (as part of the protected heritage):

On the unloading platform

- The entire screening plant (number 2) including the jaw crushers.
- The (remainder of) the conveyor unit to the highest level.
- The bunkers for the blown/reloaded fractions and the corresponding narrow gauge bundles.

In Coal Preparation Plant 1

- The banana screen, including the sifting, crushing, and distributing equipment above it.
- The Drew boys: at least 1 drew boy with a dewatering screen for coal and the same for stones and with the recovery magnets for the magnetite.
- Four vacuum drum filters with vacuum pump.
- The dryer with combustion boiler.
- The pump rooms with rush Spitzkasts
- The bunkers

In Coal Preparation Plant 3

- The flotation batteries (preferably 6, but at least 3 aligned with each other)
- The thickener with the slurry screens and the associated divider system.
- The Redler conveyor belt to Coal Preparation Plant 2
- The small water tower building on the roof, including the pipe systems.

Supporting and still to be investigated:

- Connections, conveyor belts, and, to a limited extent, pipes.

Concerning the be-NATURE concept design

The mapping of the coal preparation plant clearly indicates that it would be wrong to lower the building from 40 to 26 metres for be-NATURE. And regarding the 'de-pitting'⁶ – also suggested by the Flemish Government Architect in 2019 for Coal Preparation Plant 1 – it is clear that this is only possible (even desirable) in the spaces that do not house essential contents, primarily the level below 26 metres. In the level above 26 metres, light in the building is certainly not a problem. In the level below 26 metres, artistic and design research must find creative solutions: opening up the outer walls, light shafts, and innovative artificial light integrated into the experiential and artistic additions.

Concerning be-MINE PIT⁷

We advocate a careful and coordinated design of the routing and direction of the still unrealised be-MINE PIT. The plan is not yet in progress as of mid-2021. So there is a unique window of opportunity to steer the final outcome.

- The routing needs to be adjusted because having two public-oriented attractions next to each other is not desirable. be-MINE PIT should become part of a bigger narrative. However, the concept in itself can be retained. It must be adjusted to fully align with the be-NATURE umbrella concept.
- Nonetheless, the management and operation of be-MINE PIT is fundamental. It does not make sense to the public to have two systems running separately next to each other. For more about this, see the section on management structure. The entire site must be managed in a contemporary manner based on public-friendliness, accessibility, and international appeal. This will never succeed should there be structural conflicts built into the public operation.

⁶ The concept design of be-NATURE, June 2021, states that all machinery be removed to leave only the columns and beams, and restore the machinery to a limited extent and create a no-go zone.

⁷ be-MINE PIT is the experience centre based on the mining past that at a minimum depicts the 'path of the miner' for visitors. It is a continuation and upgrade of the current mining museum attraction.

DESIGN RESEARCH

Design research explores the thresholds to pass and opportunities of a complex challenge. It does through the creation and discussion of different scenarios so that a multitude of stakeholders can participate and contribute. The result is a final design or project that has a large base of support and has weighed up and/or incorporated all possible desiderata and opportunities. It is an innovative research approach for creative customisation with a focus on the user.

This approach to complex challenges is strongly promoted by the Flemish Government Architect.

Useful literature on the subject:

<https://www.rekenkamer.nl/over-de-algemene-rekenkamer/werkwijze/innovatie/design-audit-studio/ontwerpend-onderzoek>

Finally:

- Declassification is not required to realise a creative project in the coal preparation plant. Simple environmental permits can be used within the framework of a development plan. So it is also possible to 'quickly' switch in an interplay between the redevelopment project and the city government. But there must be a common vision and action plan.
- The first activity to be carried out in Coal Preparation Plants 1 and 3 is the clean up (remove dust, loose stones, coal residues, loose machinery parts). This provides an overview, insight, and security. The neglect since the closure contributes greatly to the negative perception of the spatial volume and its potential.
- At the same time, it is advisable to anticipate now the possible conflict between: 1) be-NATURE with an entrance for a considerable visitor flow of pedestrians and cyclists on the side of Stationsstraat and, 2) the plan to build more than 300 housing units on Houtpark. Here, choices are best made based on a vision of the future use of space. We would like to remind of the extremely elegant solution proposed by the Flemish Government Architect in 2019: transfer the building rights of the be-MINE developers and contractors to another zone in the city of Beringen.
- It is possible that the recommendations formulated above will lead to a higher cost price than the investment of 10 million euros excluding VAT budgeted by the be-MINE company. This study cannot comment here because the design and financing are still being developed. But in our opinion, a budget overrun when considering 10 million euros is to be expected and does not have to be a problem when offset by higher added value and revenue.

Why should you retain the coal preparation plant - with machinery - in its entirety?

Because the machinery and its ingenious operation are the reason for the existence of this building... or more precisely, of 'the ensemble of buildings' because the banana screen divided and organised the transport and processing of the raw coal to the various spaces... it worked as a single unit, and because the machinery and their operation reveals a lot of 'narratives' for and about the future, about raw materials, nature and water, narratives that can be experienced, that will trigger research and new production initiatives, narratives that are regenerative and can continue to put this region on the map and inspire.

Why would you miss this opportunity?

Because it is an expensive operation? You can't know today what it might bring tomorrow... One thing is certain: if you stop it now, it has no tomorrow. So why not just clean it up, make it presentable, and, with a small but committed team, unravel the opportunities so you can then, very specifically, equip the building for multiple uses?

I know, 'design for uncertainty' and 'classic project development' are diametrically opposed because the one considers a distant future and the other wants to finish in the short term. It is to be admired that the be-MINE company wants to realise this site completely and successfully. But, would it not be unique to deliver this building as an 'invitation'? be-MINE can make the entirety windtight and watertight, clean it up inside, and then hand it over to a 'foundation'. Everyone is free to contribute to that foundation and stay involved in future work and operations... who knows what the future will bring.

Peggy Winkels, architect, team transit_LAB and UHasselt lecturer

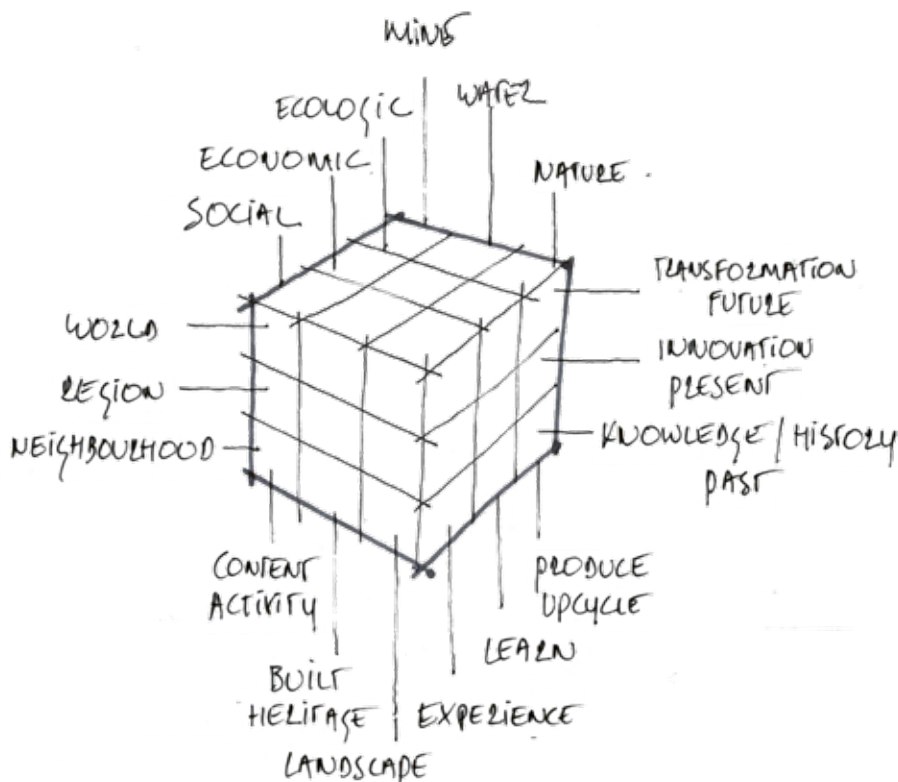
2. NARRATIVE

LIKE A RUBIK'S CUBE, A MULTIFACETED NARRATIVE AND BROAD PROGRAMMING

The be-MINE/LRM decision to link the coal preparation plant with heritage, nature, and the Kolenspoor requires a new narrative for the site that is future-proof and meaningful both today and tomorrow.

Heritage and nature (and the Kolenspoor) are essential building blocks. The Kolenspoor framework project coalesces the vision for the entire region. The be-MINE ambition is to be the 'gateway' for the Kolenspoor and to give something back to the public.

We use the image of the Rubik's Cube to represent the different perspectives of the be-NATURE narrative. Namely, it is a 3D puzzle and brainteaser symbolising the multi-layered narrative of the Beringen coal preparation plant. Moreover, it continues to provoke cross-fertilisation and innovation. The proposal is to graft the new narrative and resulting programming onto particular principles and themes that are relevant in the world today.



A non-exhaustive list of the elements of the new narrative are: refining / raw materials – nature – water / past – present – future / internationalisation / action on all scales / developing sustainability.

MINING / NATURE / WATER

These three concepts are essential to understanding the Beringen site and together tell the story of the coal preparation plant, both locally and universally.

- **MINING** (raw materials) reveals the story of the colliery at the site in all of its social, technical, spatial narratives. Moreover, it is also globally relevant: raw materials, sustainability, geosphere, and so on... as well as social impact and conditions, architecture, post mining, and reconversion, etc.
- **NATURE** (climate) refers to the choice of the repurposing theme in Beringen, but also for the great challenge of our world in terms of re-naturalisation, biodiversity, sustainable development, a new appreciation of nature and the repositioning of agriculture: the biosphere. And, also how nature takes over the spoil tips and colliery sites, here and elsewhere. How nature is a source for leisure activities as well as regenerative and experimental agriculture. Numerous international artists open up new perspectives on nature.
- **WATER** (life): coal treatment is not possible without water, but water is also the source of life and will be needed on site if be-NATURE is to succeed. At the same time, it is a universal and challenging theme to relate to the climate challenges here and in the world: the hydrosphere. In Beringen, this is already relevant: swimming pool, TODI diving centre, water tower building, water collectors, cooling towers, water towers.

MINING / NATURE / WATER are still used as catch-all terms today, but represent the central challenge of interpretation, public activities, and future research. They offer a (broad) focus, social relevance at all levels, and a framework for endless creativity.

REFINING

The purpose of the coal preparation plant is to refine coal.

- Today, coal is on the defensive because it has a negative image in Europe where this energy source is gradually being phased out. Nevertheless, world production is still above 7 billion tonnes per year as of 2021. The topics carbon footprint and decarbonisation are very relevant. The recent IPCC report (August 2021) reaffirms the urgent need for action. Beringen can be a starting point for developing the narrative. It can attract the world's attention and perhaps even become a juncture for the social debate on energy transition.
- Refinement technology, in which the Limburg collieries were once world leaders, is highly topical today. All raw materials, precious and rare metals, and waste materials are purified with it and related technology and prepared for use and reuse. Starting points could be: making accessible material cycles, recycling, and research and development to a broad public and at the same time serving as a meeting place for scientists and artists working on this theme.

This scenario is fascinating and unique and is not presented in any colliery museum anywhere in the world. The 'refining' theme includes the possible updating of the coal preparation plant and its technical heritage. This technology, which has been almost completely preserved in Beringen, carries within itself the nucleus of the future-oriented programme.

PAST – PRESENT – FUTURE

Heritage is public wealth and a raw material to build on. We need to know the past in order to understand the present and make conscious choices for the future. We will ensure constant renewal and upgrading by also housing features at this heritage site that look to a meaningful and sustainable future. Society continues to change. Rapid change and knowledge are becoming more and more important. So, be-NATURE can be much more than just pleasant scenery. It can also be the accommodation, the 'place to be', where knowledge, innovation, and ingenuity continue to grow and be communicated to the public and distant outside world. This is best done in an environment that builds on a fluid line between past, present, and future.

AT THE JUNCTURE OF THE FOUR WINDS

Mining and raw materials have a very global dimension. Today, Asia, Africa, and South America are the main places where raw materials are extracted or plundered. Canadian, North American, Australian, South African, and Chinese capital groups lead this 'dance' around the globe. Ecological and social conditions are often extremely problematic. Awareness-raising and regulatory action are urgently needed.

The EU, the cradle of technology, is considering a relevant policy. Beringen is located in Brussels (as seen from the rest of the world) and as such is the perfect place to manifest itself within this theme.

ACTIVE AT ALL SCALES: SITE, NEIGHBOURHOOD, CITY, REGION, NATIONAL, INTERNATIONAL

Based on the ambition to be meaningful as the Kolenspoor gateway, be-MINE, and be-NATURE must offer a substantive programme and a presence that is relevant on all of the mentioned scale levels. In other words: an outreach strategy; participating in development plans of Beringen-Mijn and the city; setting the tone in the substantive development of the Kolenspoor path and label; conducting exhibitions and other activities with mining regions and other regions, etc.

POSITIONING AS A DEVELOPER OF SUSTAINABILITY, E³

The future demands initiative that balances economy, ecology, and emotion (the social factor). In itself, this is an open door. But who will present the message to the general public? The be-NATURE project offers an excellent opportunity to be a project that harmonises these factors and promotes them in its programming of exhibitions, events, and commercial and non-commercial offerings.

Of course, the proposed narrative, depicted in the Rubik's Cube, must be concretised. be-NATURE (and by extension be-MINE PIT) will have to have a substantive programme that is characterised by dynamism, constant renewal, and customer service.

The basis is a tour around the machinery, a publicly accessible route that takes you from the unloading platform to the tower (the banana screen) and the plants. The best walking route of this tour must be researched further: it can be single path or multiple paths, it can be signposted or directed via a junction system, etc. In the coal preparation plant, this equates to wandering, discovering, learning and, in a certain phase of the development, 'urban exploring': unravelling the mystery. Moreover, adventure and relaxation in a special setting is self-evident. Everything that is possible outside at be-MINE is possible within the coal preparation plant because it is covered 24/7, e.g. walking, sports, cycling, etc.

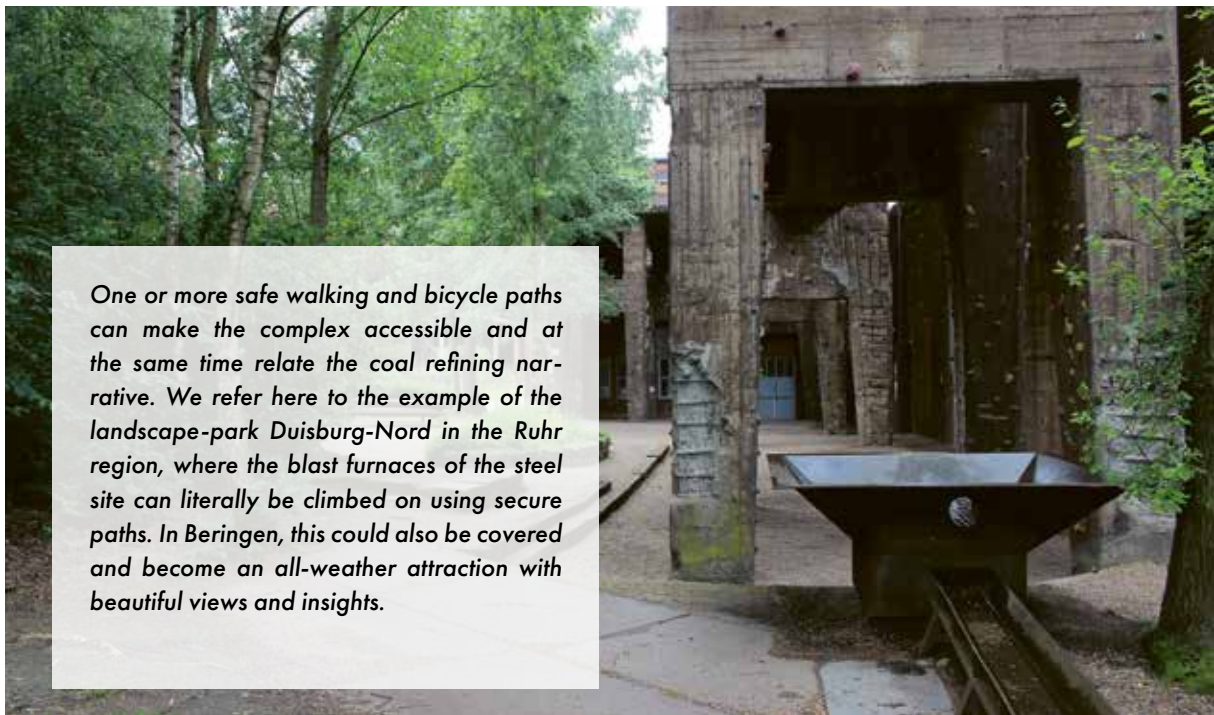
So, we recommend opting for multiple paths:

- functional (point A to B), educational – museums, adventurous, etc.
- reuse of existing elements such as the lifts and existing staircases, possibly the conveyor belts could be used to move people, etc
- water circuits that are made visible, but are also functional for be-NATURE or the water management of the entire site. The powerful pumping systems and basins can be reused.

Practical design research should indicate the best access system. Indeed, why not find inspiration in the practical and convenient system of cycling and walking junction system, which makes the entire coal preparation plant complex orderly and accessible, and which is very user-friendly and sustainably 'low tech', drawing the 'Limburg experience' from the outside to the inside? In any case, we recommend an accessibility concept where the visitor finds their own way around and discover the desired interpretation and explanation.

It is also quite important to connect to the traffic circulation plan of the entire colliery site and, when extended, to the route signposting of the Kolenspoor.

The coal preparation plant can contain an entrance area, a visitor centre, that is created for the entire site and the Limburg Kolenspoor. Combining all of this intelligently will in itself create a strong attraction and rest area where people converge. To this end, combining the element NATURE (as well as science) with HERITAGE is a potential success formula.



STORYLINES.

A multitude of storylines can be developed in the coal preparation plant: direct and indirect scenarios.
An initial non-exhaustive overview:

DIRECT SCENARIOS AND PROGRAMME THEMES

- Raw materials – scarcity – refining – recycling
- Geology – plants – nature
- Water – scarcity – global warming
- Innovation – technical ingenuity
- Blending chemistry and physics
- ...

INDIRECT SCENARIOS AND PROGRAMME THEMES

- The colliery site – the Beringen-Mijn neighbourhood as a special heritage site
- The people – the heritage – the landscape / past, present, and future
- Nature nearby in the coal preparation plant, public garden, parks, spoil tips, valley of the Black Brook (zwarte Beek), etc.
- Business in this biotope: the leisure economy, ethnic businesses (Stationsstraat), new agriculture, etc.
- ...

All these storylines fed by the narrative (cf. the Rubik's Cube) are in themselves a source of activity, temporary or permanent. But above all, they make it possible to enter into and develop temporary or permanent partnerships.

The direct stories are dynamic in nature and lead to:

- Partnerships with universities, research institutes, companies, and so on, in the fields of physics and chemistry, building materials, architecture, geo-sourcing, materials economy, urban mining, etc.
- Connection to funding based on 'innovation', economy, European programmes, etc.
- An 'earnings model' based on economic activities that enable permanent operation and reinvestment.
- New economic activities and new companies setting up shop in this special area.

Translated into:

- An educational offering for various target groups (school trips, companies, general public), even for universities both home and abroad. Refining technology is the future!
- An artistic programme and art-culture-science crossover inside and outside, artists-in-residence.
- A permanent set-up, but especially temporary exhibitions... publications, study days... in a permanent location for branding reasons, but permanently focused on temporary events.
- The creation of an 'organisation/institute' focused on the processing of raw materials and waste products.
- The reserved spaces (shell) to house a 'refining lab' and innovative initiatives in materials research.

The indirect stories lead to the experiential attractions – the realised investments – at the colliery site and in the surrounding area:

- be-MINE PIT, the experience of the story and path of the miners, social history, colliery buildings, etc.
- The leisure activities: sports – climbing – cycling – mountain biking, games – the adventure mountain, water – swimming at Sportoase, water – diving at TODI... all receive a common branding and are embedded in the larger narrative.⁸

At Beringen, starting with the coal preparation plant as a point of orientation and interpretation, fantastic thematic routes and regional narratives can be built that provide the region with a strong image and sufficient critical mass. The following is a diagram showing how – based on content – the points of attraction in the region can be interconnected to shape an attractive narrative. Beringen is always the 'gateway'. But, naturally, you can always board the Kolenspoor at any 'stop'.

THEME	DEPARTURE	STOPS / BOARDING POINT	TERMINUS
Nature	Beringen – coal preparation plant	Zwartberg La Biomista Station As national park	Ecotron Eisdén National Park
Industrial history	Beringen – be-MINE PIT	ZLDR Air factory	THOR Park & Mine Depot
Social history	Beringen – be-MINE PIT	Waterschei Mine Depot	Eisdén Mine Worker's House
Artistic development	Beringen coal preparation plant	ZIGURAT Zolder C-MINE, design & expos	La Biomista
Spoil tips	Beringen – adventure mountain	ZIGURAT Waterschei spoil tip walking route	Eisdén Terhills
Sustainable development	Beringen coal preparation plant	Greenville Centre of Cleantech	THOR Park Waterschei, Energyville

Proposal: combine a knowledge and enterprise park with the Kolenspoor visitor centre

The creation of a dedicated knowledge and enterprise park in the coal preparation plants (1, 2 and 3), a 'green-tech zone', to be built in the freed-up spaces after the route that will be preserved is complete. We should focus this 'centre' on the materials economy, refining of raw materials, waste, and research and development, and so on. This will involve laboratories, meeting rooms, offices, company offices, exhibition space, etc. Seen from this perspective, the entire Beringen colliery site is both the setting and the playing field for activities. These activities can be on a global scale.

The public attraction with the spaces containing the nature experience, art, catering and meeting, and the dispatching and information centre in the Kolenspoor in the Coal Preparation Plant 1 zone below 26 metres. The business park should be housed in the space above and interconnected with the visitors' walking route and facilities. The particular challenge we face here is the presence or absence of daylight. Naturally, it will be essential to include this as a part of the 'design research'.⁹

Be-NATURE / the coal preparation plant will have a major impact on be-MINE PIT and the Kolenspoor framework project. Our recommendation based on the information before us and timeline associated with the realisation of the be-MINE PIT project is:

- A warm invitation to be-NATURE and be-MINE PIT to harmonise this 'master plan' with each other's needs and then coordinate the programming. This requires a holistic design that intercommunicates between the two entities.
- A strong recommendation: organise harmonisation and collaboration between the Kolenspoor (also re-launched by the provincial government in 2021) and be-NATURE.

⁹ The Flemish Government Architect's report of 2019 also very emphatically and repeatedly calls for conducting design research: juxtaposing different visions, proposals, and creative thoughts and challenging these ideas to arrive at a supported solution.

IN A TOTALLY NEW PLANNING CONTEXT: QUALITY AND A BASE OF SUPPORT ARE KEY

The concept of 'circularity' is becoming increasingly prominent in the evolution of contemporary spatial planning practice. Today, this is certainly a societal duty in the light of the global climate challenge. At the same time, it is becoming a quality label that 'must be achieved'. The fact that the Beringen city government took the advice of the Flemish Government Architect to heart is a historic step whose benefits can be enormous. Accordingly, it set up a 'Quality Panel' office comprising external and committed experts to guide the desired developments in Beringen. The office will also help 'co-produce' the work. The Quality Panel as the 'director of projects' should not be deemed an obstacle to be overcome by property developers and people and companies with direct ambitions for the region. On the contrary, it is an 'invitation' to help build a new and circular city.

A panel discussion published in the magazine *Ruimte* in May 2021 elicited the following quote by Jan Zaman.¹⁰

"If you combine the objective of circular area development with the modernistic view of the city and its partition into functional units, such as a regional plan, we are not going to make it. If you take a broad view of the factors that influence production processes and move towards a circular society where we get the best out of our workers, people, land, and buildings, then the task must take place everywhere – and that is paradoxical and contradictory. At the same time, you will need more space. The traditional habit of sorting requires more space than disposing of everything in the incinerator. More space will also be required for ground issues and social purposes. This begs the question: "what do we need?" I believe this makes it interesting on different levels' – business, architecture, urban planning, development, etc. – because the same paradox emerges at all those levels. If you do things the traditional way, you always run up against the principle of circularity. When you consider the circular economy, it automatically takes you to the question, "what are the limits?" The interesting thing is that we don't really have an answer at any level. We know it's not what we've been doing for the last decade. But if we want to give a proper answer to all these things at the same time, we're going to have to create something new... 'a new business model, a new way of dealing with space.'"

Furthermore:

"In my experience, we absolutely must look at the region differently. We must focus on the existing opportunities that we can build further on. Creating a design – 'the big gesture' – is not the most important need.

In most cases, extremely little knowledge is available and neither is the right attitude with respect to routes, buildings, and processes. The first step is to survey the terrain. We need to understand the process in a particular area. This will allow you to rate things that may at first glance look bad, but play a role in the process and could be a source of inspiration. In light of this, developers and urban planning experts still have quite some work to do."

It is no exaggeration to say that the planning context for the coal preparation plant, and more broadly for be-MINE and Beringen-Mijn, has changed dramatically. This is the root of the resistance to and public awareness of the declassification of the coal preparation plant. We can speak of a paradigm shift, a different reality, and a different way of looking at reality. This culminated in the establishment of the Quality Panel and what it consists of.¹¹ The catalyst was the action – the letters of objection against the declassification of the coal preparation plant – and subsequent follow-up. The situation before that was a rigorous project development. The current master plan and underlying financing plan is strongly commercially based. For Coal Preparation Plants 1 and 3, it is very important that we rely more on co-creation and co-production.

It is useful to remember some pivotal moments in recent history. You could say that a new planning practice emerged 'organically'.

¹⁰ Jan Zaman works at the Flemish Government Department of the Environment.

¹¹ The draft be-MINE design to finally reallocate Coal Preparation Plants 1 and 3 instead of demolishing them can also be seen as a sign of this provided that be-MINE commits itself collegially and voluntarily to this new way of working.



STEPS	EFFECTS
Objections	- Involvement of a many organisations - Increased awareness of be-MINE and the CPP dossier
Minister's decision on an alternative handling of the dossier	Minister's order to Flemish Government Architect to draw up report
Preparation of report based on, inter alia, stakeholders' interviews	Substantiated report in September 2019
Minister's decision to freeze full declassification	Time to determine new approach (be-MINE, Het Vervolg, city of Beringen, LRM, etc.)
City of Beringen decision to appoint a manager and establish a Quality Panel	...

The pivotal moment, steps, and effects

Mat Steyvers, supervisor of participation projects for cities, municipalities, and social organisations and member of the working group of transit_LAB, states that the new context consists of different levels and factors:

The changing broad planning context

The evolution of a colliery, coal preparation plant, and be-MINE, including their future, is the subject of political and public polemic. Previously, the people in Flanders did not know or hardly knew these existed, whereas the situation today is that the entire complex including the coal preparation plant is now considered a known or well-known project, both politically and publicly. In brief, a foundation of awareness has been laid down for the colliery complex, whereas previously there was none. Communication and raising awareness within the public and political circles can certainly build on this for the coal preparation plant.

Familiarity and interest

A consequence of the pivotal change is the increased awareness that we are dealing with the largest (post) industrial complex in Belgium. Great interest has been generated within various disciplines, sectors, and interest groups. Today, the whole colliery complex is increasingly perceived as a potential rather than a problem. The new image transcends the idea of a 'problematic' coal preparation plant. There is a realisation that the whole colliery complex should be approached in a much more integrated way. The problem has become a tremendous opportunity! This is the context in which the initiative of the city of Beringen to set up a Quality Panel should be seen.

The establishment and content of the Quality Panel as the main culmination of the pivotal change

The Minister's decision to commission the Flemish Government Architect; the subsequent Flemish Government Architect's report; the Minister's decision to freeze declassification; the decision by the city of Beringen to set up a Quality Panel/ the content of the Quality Panel's task/ the discussions between be-MINE and Het Vervolg/COALFACE/ the request by be-MINE to start negotiations/ the task for transit_LAB... led to a new planning approach, in which the Quality Panel can/must play a central role.

The role of the city of Beringen as quality controller

The fact that the city government opted to establish a Quality Panel proves that it considers the development of the entire industrial complex (or rather, the post-industrial development of the industrial complex) to be exceedingly important. The Quality Panel will be a learning experience for the city: experience gained by the city (managers and the administration) will lead to a leap in quality rather than a decline in the selection and assessment of future projects. Naturally, the granting of licenses is key. In its advisory and licensing role, the city is in a rather weak position. This is gradually reversing today. Nevertheless, raising local public and political awareness about this issue is now more important than ever.

The emergence of a new timing

As long as the Quality Panel exists, be-MINE will have to take into account the discussions within and advice to the city government. Of course, the operation of be-MINE will continue to evolve and be communicated to the public.

Shifts in ownership, relationships, roles, actors – mind shifts

The relationship between be-MINE and the Quality Panel is very important. be-MINE and LRM, acting as legal owners in a kind of *carte blanche* situation where they had 'the empire to themselves', have received a 'slap on the wrist' for their reactions to the notices of objection and their follow-up. These relationships will not cease to exist. So, it is important for be-MINE to consider the attitude and expectation it wants to take when working with the Quality Panel. Ideally, be-MINE and all stakeholders and parties involved – local residents, businesses, institutional management, etc. at and around the colliery site – should be very pleased with the arrival of the Quality Panel. Indeed, the mindsets and relationships between parties involved are likely to change.

Relationships between formality and informality will shift and change. Be-MINE's initiative to sit down with Het Vervolg/COALFACE and stakeholders should be seen in that context.

The project gets a platform.

This project fits into a social trend in urban planning. Sooner or later, this project will have a platform at seminars, colloquia, etc. with its narrative positioned somewhere between success and failure, trial and error. Perhaps the city government, Quality Panel, and be-MINE should get together today and say: 'Failure is not an option', even or perhaps especially right now when it is still unclear what the outcome of success, failure, and everything in between will look like.

Making something your own.

Even though be-MINE/LRM is and remains the legal owner, its 'ownership' today is 'registered' in a completely different place. The new situation will lead to a mind shift within be-MINE.

Nobody can claim mental ownership of the new situation. In my opinion, this is an improvement on the situation where, in the past, developers thought that legal ownership equated to mental ownership. The mental ownership of the next phase of development of the Beringen colliery will be a shared mental ownership: developer, city government (political and administrative), Quality Panel, associations including Het Vervolg, and the general public. This is what the Quality Panel will need to monitor and encourage. Eventually, shared mental ownership must be anchored in the administrative and/or new legal structure that takes long-term responsibility for the colliery and coal preparation plant. Life must go on when the property developers have departed the terrain.

BENCHMARKS AND INSPIRATION

This study took ample time to bring together information from meaningful and purposeful examples.

That artistic and scientific research makes sense is proven by how inspiration is elicited by: Arne Quinze, Koen Vanmechelen, Menno Schilthuizen, Olafur Eliassen, Daan Roozegaarde, de Ecotron at Terhills, Stefan Elsen, The Lowline. These are scientific or artistic practices that explore the future and connect nature and city, nature and heritage, nature and climate.

Examples of reused industrial heritage are also important for Beringen. Because this helps to focus the level of ambition. And especially because lessons can be learned that create a 'reason to visit' Beringen, Limburg, Flanders.

The transit_LAB Top 8 finalists for projects reusing industrial heritage that were completed in the vicinity of Flanders are:

- Zollverein in Essen-Katernberg (Ruhr Region, Germany)
- Duisburg-Nord Landscape Park in Duisburg-Meiderich (Ruhr region, Germany)
- Völklinger Hütte / Völklingen Ironworks (Saarland, Germany)
- Rammelsberg Museum and Besucherbergwerk (Goslar, Germany)
- BELVAL, Esch-sur-Alzette (Grand Duchy of Luxembourg)
- Erlebnisort Reden, Landsweiler-Reden (Saarland, Germany)
- Vitkovice, Ostrava (Czech Republic)
- Textile Museum, Tilburg (The Netherlands)

These benchmarks are explained in detail in Part 2.

We draw the following lessons from the 8 successful examples:

- Long-term vision and planning are paramount.
- Investment and operation/management originating from the same legal structure.
- Industrial heritage as an unconditionally preserved asset.
- Non-profit as the supporting structure but operated as an independent enterprise.
- Legal structure: foundation or company with social purpose.
- The backing of a strong base of support among governments, both local and supra-local.
- Strong engagement with the neighbourhood and area development around the project.
- Supra-regional ambition is essential to success.
- Involvement of and space for creative entrepreneurs can be found everywhere.
- Industrial culture is a key catch-all term that is gradually being explored.
- A combination of industrial heritage and nature is a constant almost everywhere.
- Involvement or integration of knowledge centres.
- Enrichment of the environment and broader economic interest.
- Collaboration, collaboration, collaboration.



3. MANAGEMENT STRUCTURE, FROM PRIVATE INTEREST TO STEWARD OWNERSHIP

A future-oriented plan requires a future-oriented structure: steward ownership.

THE BE-MINE COMPANY, THE CURRENT REALITY VERSUS THE NEW LEVEL OF AMBITION

Ever since its inception, be-MINE has been a project that implements local to regional ambitions. This is inspired on two fronts: 1) the business model, 2) the be-MINE company master plan and the 'playing field' where the developers search the opportunities for the redevelopment of the former colliery.

In a nutshell, the business model looks for those 'repurposing' opportunities within the realm of the traditional focus of developers: Living, Working, and Shopping. It has worked, as evidenced by the successful shopping strip, be-MINE Boulevard, and housing units (new construction), swimming pool (new construction), diving and climbing centre (repurposed), Velotril bicycle project, and offices in the main building (repurposed)¹². Negotiations have also been ongoing with the province for some time now about the implementation of be-MINE PIT. To this end, the provincial government has developed a master plan, gathered the necessary resources, and will be the largest 'acquirer' of acreage from the be-MINE company.

Until today, the be-MINE business model could be deemed traditional: 'customers' are sought, preferably buyers, for parcels of ground to be newly built on or restored by be-MINE and its construction contractors THV Mijnbouw. The restorations will be subsidised by a long-term agreement with the Flemish government. But the bottom line is and remains: sales. Moreover, for the public domain, they are working towards being acquired by the city government. The ownership structure of the Beringen colliery site is gradually becoming a patchwork of owners and a legal 'business' tangle.

In essence, the be-MINE company sees itself as a 'temporary operation'. The original outlook was 10 years. This will be exceeded, but there is no long-term vision for the structural use of the site. Nor has there been any commitment in recent years to the local development of Beringen-Mijn, which is nevertheless part of the unique monumental character of the mining settlement.

This will change radically with the decision to implement a project in the coal preparation plant with different objectives and dynamics. The be-MINE company should work together with the city government and the most important possible co-investors such as Flanders, the province of Limburg (be-MINE PIT and the Kolenspoor), the city of Beringen, and the LRM company. The intention being to consider a future management structure that takes into account the uniqueness, challenges, and important historical value of the site.

[photo left: Vitkovice Ostrava]

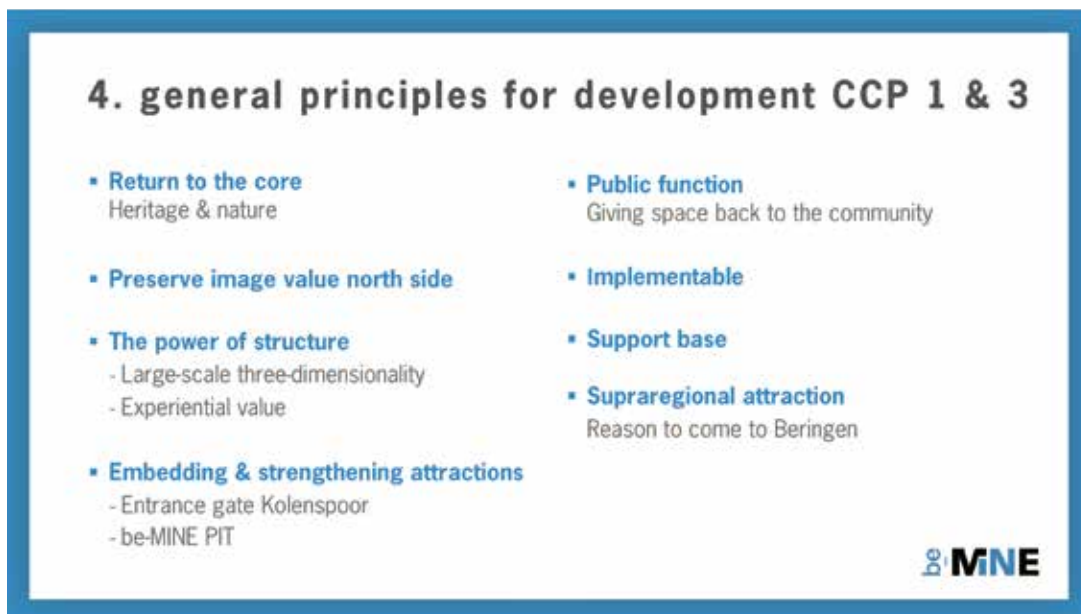
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This list is purely and not intended to be exhaustive.

THE NEW LEVEL OF AMBITION POINTS THE WAY

The be-MINE company has rightly set the bar high in its quest to develop the final part of the repurposing of the Beringen colliery. The be-MINE company aims to develop – with respect for the soul, the history, the character – a suitable supra-regional and ambitious holistic solution for Coal Preparation Plants 1 and 3. It will do so in consultation with stakeholders, including heritage associations, sector federations, government, and ex-miners.

The value proposition in the company presentation given to Flemish Minister Matthias Diependaele on 2 June 2021 states: “A UNIQUE MIX OF HERITAGE AND NATURE, AS GATEWAY TO THE LIMBURG KOLENSPOOR.” Today, the be-MINE company estimates it will cost 10 million euros excluding VAT to realise the concept design they proposed (see Appendix 1).



[screenshot from the draft presentation to the Flemish government dated 02/06/2021]

Starting now, the level of ambition will be:

- International, because we want to compare well against first-rate examples: Zollverein, Duisburg-Nord Landscape Park, and others.
- The intention is to give the site a 'reason to visit', a *raison d'être*, that goes far beyond the current visitor stream of local consumers and day-trippers (who we want to remain loyal).
- They want to connect with the heritage site (the refining of coal) and 'return and grow towards nature'.
- The 'power of the structure' must be capitalised on for its great experiential value and large-scale three-dimensionality. The coal preparation plant is the largest most valuable, industrial archaeological building in Flanders.
- It should gain recognition and a base of support from both the local and heritage communities.
- It should be the gateway to the Kolenspoor. The Kolenspoor project links Central Limburg with the Mijnstreek (mining region) and should re-establish all of the repurposed collieries on the tourist, cultural, and economic fronts. It offers Limburg the best chance of ever making an impact at the international level. be-MINE as the gateway to this goal implies a high level of ambition.

So, this level of ambition calls for totally new positioning, which in turn implies, among other things:

- A strong commitment at the Flemish policy level that goes beyond the provision of restoration subsidies. Flanders must involve itself in the substance and be committed in the long term.

- A coordination of efforts with and by the organisations at the different policy levels: city of Beringen, Limburg province, Flemish government, each with their executive agencies and structures (such as Tourism Flanders and Tourism Limburg, Provincial Centre for Cultural Heritage, etc.)
- Linking up with Federal and European science policies.
- Rethinking and repositioning planned projects, such as be-MINE PIT and possibly even abandoning the intention of building a residential area at Houtpark.
- Establishing a stakeholder management that not only coordinates policy levels, but also includes:
 - an outreach organisation and collaboration with the local community around Beringen-Mijn.
 - collaboration with the heritage community and encouragement of a collaboration between the heritage and mining associations from Beringen to Eisden.
 - invest in a plan with the other collieries along the Kolenspoor, so that the Kolenspoor concept does not remain a dead letter and truly strings together the pearls of the Mijnstreek (mining region).
 - steadily building an international network.¹³
- Create an economic dynamic that is structurally embedded in a strong new (legal) structure that allows for the long-term management of the heritage site (coal preparation plant and by extension the entire Beringen colliery) and leads to the new narrative.
- Define economic profitability in the long term with targets set at 20 and 30 years.

A NEW BUSINESS MODEL: STEWARD OWNERSHIP

Inspiration flows from new visions that are developed in this changing world under the influence of the need to take action to realise sustainability, social balance, as a counterweight to climate change, the excesses of globalisation, etc. More and more entrepreneurs and enterprising people want to put their money where their mouth is.

OUR SEARCH LEADS US TO THE CONCEPT OF STEWARD OWNERSHIP

Steward ownership shifts business operations from value extraction and short-term thinking to stewardship¹⁴, independence, and long-term goals. Steward ownership structurally changes who is in control in companies and what motivates decisions. Steward ownership is created by taking the relationship between power/money and the achievement of goals seriously and translating it into structures. Steward ownership is a powerful tool for economic change.

Steward ownership utilises the entrepreneurial and profit-driven concept of a company, but focuses on products and services that deliver social value. The model has directors who focus on the long-term goal of the company. This replaces the traditional shareholder and financially driven management practice of seeking short-term goals. This model has existed for over a century in the form of trusts, foundations, or cooperatives. These have all redefined 'ownership' and base it on two principles:

- Self-governance: control remains within the company and with the people connected to its management, operation, and mission. And the company cannot be bought or sold because it is controlled by the 'trust'.
- Profit serves the goal: value generated by these companies cannot be privatised. On the contrary, profits serve the mission of the company and are reinvested in the company, stakeholders, or donated to related causes. Investors and founders are fairly compensated with capped returns/dividends

¹³ Relevant international networks here could be: ERIH, ICOMOS, Coal Regions in Transition, EURACOM, etc.

¹⁴ Steward ownership, or stewardship, is a term derived from Christian and ecological politics that means: responsibly dealing with the 'creation'. Today, this refers to the environment and ensuring that future generations inherit a liveable world.

AND THE ASSOCIATIONS - STAKEHOLDERS

The future of the coal preparation plant – and by extension, the future of the mining museum / be-MINE PIT and regional coordination through the Kolenspoor – is a particularly sensitive issue within the 'associations'.

Transit_LAB consulted the associations in July – August 2021, both on an individual and collective basis. Individually, it is important to give everyone the chance to freely express an opinion. Collectively, it is important because dialogue provides an insight into the tension surrounding an issue. Conclusion: the coal preparation plant has a base of support in the region, but the be-NATURE concept less so. But it will not be rejected when it is given more depth and ensures that the coal treatment process is fully preserved. The associations are also explicitly prepared to cooperate and to ensure that the offering developed in Beringen is followed up on in the rest of the Mijnstreek (mining region).

In Part 2, the full text of the position of the 'united associations' is published in paragraph 4.

Steward ownership represents a viable alternative to the familiar shareholder-driven business. Accordingly, the addressing of fundamental structural deficiencies in our system rearranges goals and encourages different decision-making in the corporate DNA. By doing so, it has the power to transform economies and economic projects.

Many global industrial players are successful using these principles. These include BOSCH, Zeiss, Mozilla, Carlsberg, TÜVRheinland, IKEA, ROLEX, TRIODOS BANK, TATA, and others... as well as dozens of start-ups, especially in the sphere of ecology or sustainable economy. Moreover, there is a whole world of cooperatives that have proven over an extremely long period of time that stable and long-term developments can be successful when based on the perspective of social goals and long-term missions.¹⁵

TOWARDS THE BE-MINE FOUNDATION OR COOPERATIVE COMPANY, SUPPORTED BY STAKEHOLDERS¹⁶

New principles must be accepted. All parties involved, companies be-MINE and LRM, city government, province, Flemish government, and external stakeholders must agree to this or decide who wants to continue operating with a long-term perspective. Only then can a business plan, financial business plan, and action plan be drawn up.¹⁷

The principles:

- Ideally, the structure for guiding, managing, tourism marketing, and running be-NATURE and be-MINE PIT should be integrated into one structure. This brings clarity. This also makes it possible to present a single public-oriented tourism project to the outside world in Beringen-Mijn. This is a single operation with an internal management and programming, including an open collaboration with the other colliery sites.
- The heritage stakeholders and the miners' associations should be included in the structure in a formula to be worked out.
- This new structure must be given a viable starting point. Specifically, it still needs to be determined which profit centres will be in the current be-MINE company or within the new structure. In other words, the new management and operating structure must be able to generate its own turnover and profit from economic activities.
- The new structure will be based on a 'contribution model'¹⁸: stakeholders, founders, shareholders, governments according to their participation in their 'contribution': one-off or recurring, financial, materials, or with 'knowledge and labour'. For example:
 - Governments can subsidise the operation on a continuous basis. In particular, the city government should become a structural partner. Furthermore, the province of Limburg and Flemish and federal governments can also provide subsidy lines or nominative grants.
 - Projects can be submitted to the EU on a continuous base (based on content, e.g. the European Green Deal).
 - Governments can second or integrate staff within the structure for specific activities (content writing staff, receptionists, maintenance, etc.)
 - Property can be contributed by the Mijnen and LRM companies at socially determined value or of a symbolic nature.
 - Budgets can be reoriented, e.g. funds set aside for the demolition of the coal preparation plant can be contributed as working capital.
 - Based on these principles, companies and investors to be attracted must also be invited or allowed to participate.
 - etc.

¹⁵ Transit_LAB, the party commissioning this study, has also transformed itself in 2021 into a CVSO, a cooperative company with social purpose, so it could explicitly focus on its objectives, 'innovation and social added value'. But there is more: there are contacts with international forums that put steward ownership into practice.

¹⁶ There is a non-profit organisation called be-MINE Beheer. However, its scope and tasks are too limited.

¹⁷ The drafting of a business plan is not part of this assignment and can only commence once it is known who will commit to the future of the endeavour.

¹⁸ Contribution stands for a socio-economic operating model intended to bring about social innovations that focus on the next era. This assumes that institutions, companies, and individuals primarily want to use their activities to contribute to society and the earth. In this case, it means investing together.

The BPA points the way. (Article 6.1)

“The urban development zone contains the old and now largely protected mine buildings. For reasons of protection, an appropriate repurposing must be determined for the complex. This is why the entire area has been included in the draft regional plan amendment as an 'urban development zone'. This zone forms the core of the BPA. The development of this zone will determine the eventual appearance of the entire colliery site. The restoration and conservation works also play an important role in this.

The following requirements are imposed on the use of the complex:

- *It must be used in accordance with the dignity of the building and its local and regional (historical and industrial) significance.*
- *The zoning as a whole must be of sufficient size to accommodate the building complex in a meaningful way. The desired implementation is presented in a total concept, but can be built in phases.*
- *The main purposes for this zone are tourism, recreation (day and residential recreation), and culture. Additional purposes are permitted when these support the main purposes and remain subordinate to them. Such additional purposes include: retail, residential, services, office, public utility, community facilities, traffic, and transport.”*

The BPA, the spatial legal framework in force since 2001, points the way. A single overall concept design for the entire building complex must be elaborated and moved towards. This requires a clear vision of the building/monument (namely, the industrial-technical heritage) must be the starting point, which must serve as a structuring and inspirational framework for the repurposing (spatially, intrinsically, programmatically, etc.).

Confirmation from the advice of the Flemish Government Architect.

The 2019 advisory note from the Flemish Government Architect Leo van Broeck discusses a solution for the coal preparation plant found via a consensus sought among stakeholders, further design research, co-production or co-creation, and the setting up of a long-term management structure under the guidance of 'independent' expertise. This advice also points in the direction of what is described here. In the meantime, the city government has set up the 'Quality Panel' with broadly recruited independent experts. The challenge of designing a management structure is best taken up at this level, both because critical reflection is needed and because of the need to find a base of support in Beringen, Limburg, and Flanders.

Space is needed

- There are some spaces that will probably not be used in the tourism project with respect to the heritage items reserved for the realisation of be-MINE PIT and planned to be used by the Province of Limburg via a ground lease agreement. The rentability of spaces to external parties is an income factor affecting the viability of the entire endeavour. The pressure to further privatise spaces by the be-MINE company is a threat.
- After the ground lease is signed with the province, we should also consider the possibility of organising an 'assignment', additional ground lease, or concession between the province and the new operating structure.
- The transit_LAB vision of the coal preparation plant advocates for not only the total preservation of the plants and spaces, but, in particular, for the use of the coal preparation plant as a home for innovative companies and initiatives that work towards 'refining' and sustainability. It must be possible to reach commercial agreements based on the new structure with potential parties, so that this also contributes to the viability of the entire project and its surroundings.

So, we put forward three proposals/steps:

Step – 1:

The city government draws up the list of stakeholders who, according to their position and possibilities, can contribute to and participate in the new structure, provisionally called the be-MINE Foundation. This list will be drawn up, possibly in collaboration with LRM (in its role as the Limburg development company, its historical responsibility with regard to the Mijnstreek (mining region), and as owner of the buildings in Beringen), but not with the be-MINE company as their vested interests are too direct and private.

Step – 2:

A 'formation task' is formulated to work out the appropriate structure, share ownership, and action plan with the designated stakeholders according to the principles of steward ownership described above.

This formation task leads to stakeholder engagement, not 'backseat driving'. The only parties who may participate are those who make investments (in the broad sense).

Step – 3:

A memorandum of understanding will be drawn up that lists and documents the responsibilities that the be-MINE company will (still) take on at the Beringen-Mijn site based on the company's current ambition and aspiration to remain involved in future development and management. This could entail the renegotiating the assignment and contract including the building rights at the terrain and the addenda to the long-term agreement. So, the end of the be-MINE company mission will be properly framed and become part of the starting position for the new be-MINE foundation.

Step – 4:

The creation of a new legal structure with a long-term mission of at least 50 years. This structure takes into account what is not yet finished and manages of the entire Beringen-Mijn site!



002 / THE ESSENTIALS EXPLAINED AND THE INSPIRATION

1. MAPPING THE COAL PREPARATION PLANT: THE RESEARCH

In July 2021, after studying the available survey plans, transit_LAB carried out an intensive site survey at the Beringen coal preparation plant¹⁹.

The transit_LAB approach: reconstructing the process of coal treatment to identify the essentials of the plant and building. This makes it possible to make a judicious selection of machinery, interconnections, and spatial volumes.

For transit_LAB and the miners' and heritage organisations, knowledge of the current situation is a prerequisite for discussing the future: preserving and unlocking the heritage value of the protected property and also creating space for new contemporary purposes. The feeling and the hypothesis of transit_LAB was – and the study confirms it – that by preserving the essence, a lot of space will be freed up and at the same time a credible heritage policy can be pursued.

An important reason for this approach is that the existing historical (structural) notes on the coal preparation plant are not written from the perspective of its content, purpose, and the raison d'être for the plant, but rather from the perspective of an architectural assessment. In the case of the coal preparation plant, this does not lead to insight, but rather to a detailed and fragmented approach. An overview is needed to see the essence, which allows choices to be made.

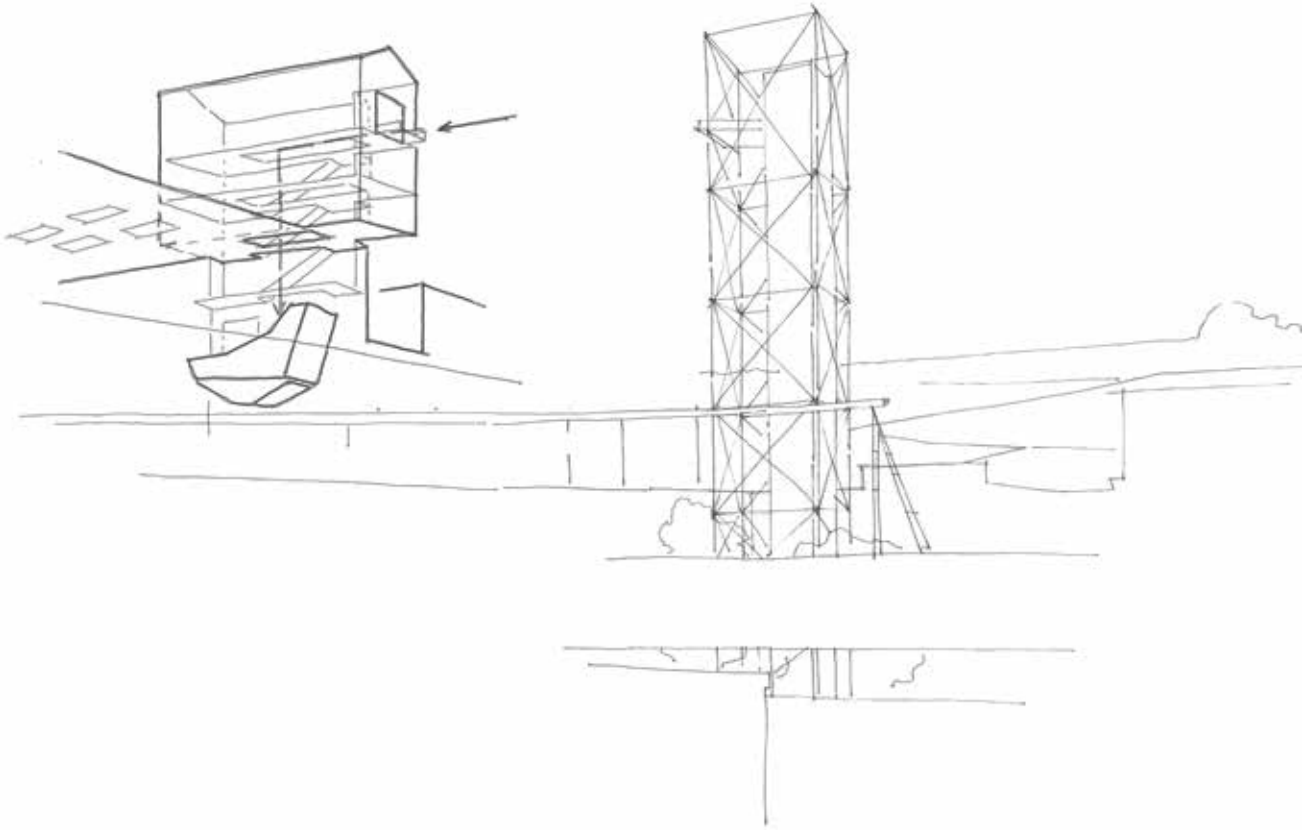
For this reason, transit_LAB decided to visualise the process: to reconstruct the 'path of the coal' and 'path of the water'. This is the only way we can get to the essence of the company itself: the mining and preparation of coal for use.

This chapter describes the coal treatment in Beringen. Where and how does the coal enter the plant and how does the process continue? What happens to the coal, stones, and water?

Moreover, an experienced technical draftsman was commissioned to redraw this process in a process flow diagram (PFD). In addition to the PFD, an estimation of the re-usable area becomes possible by drawing a projection of spatial volumes. In subsequent phases, the PFD and spatial volume study can be projected onto the existing architectural measurements of the coal preparation plant. In parallel, ideas and proposals for new uses must be formulated and weighed up. **It is only at this point that the new architecture will make sense and a truly new image of the future can be created that reflects the heritage.**

This is how the protected heritage – spatial volume and content – can be respected in a future-proof plan.

¹⁹ Between 2004 and 2021, various measurements were made of the main part of the coal preparation plant by Koplamp Architecten, ARAT, and others. Other preliminary studies (3D scans) and cost calculations have also been carried out. Moreover, a lot of plan materials exist in the mining museum archives.



THE PATH OF THE COAL OR 'THE STORY OF A UNIQUE REFINERY'

'Deep mining' is the extraction of coal from deep mines. It is not easy bringing 6 million tonnes of clean coal from the depths onto the market every year. In the early years, coal was largely mined manually. This means that the most immediately marketable coal was brought to the surface. However, as demand increased and production mechanised, the mass of material extracted was a mixture of coal, slate, and different types of stone. Coal mixes can be sold, but not the stone mixes. So, obtaining pure coal means that the mixes had to go through a refinement process. The four Beringen coal preparation plants, which are all part of one plant, were custom-designed for this purpose and continuously adjusted and improved. Indeed, everything was constantly evolving, just like society. And Beringen was in a way 'special' because many different end products were produced: coal to generate electricity, coking coal to make steel, coal for heating, and low-ash coal for the electrode industry.

After the mine carts were 'tipped' or unloaded, the mass was sorted into 80 mm fractions and the excess might or might not be broken up in the 'jaw crushers'. One could choose: +80 grain or refining into a larger grain. The jaw crusher is a rotating conical rotor with ribs that rotates in a static housing that also has ribs. The gap between stator and rotor is about 80 mm. At a later stage, the installations in coal preparation plant 4 were built so that a grain greater than 80 mm (80+ coal) could be produced.

The 0 to 80 mm fraction is transported to 'crude bunkers' (i.e. untreated mass). From there, it was conveyed via an elevator, vertically to the 'banana screen' at the highest point of the plant. The 'banana screen' is de facto supply and heart of the entire installation in coal preparation plants units 1, 2, and 3. This banana screen typifies the silhouette of the building from the different viewpoints outside the colliery. It is also the highest accessible point.²⁰

The supply part of this installation has been dismantled, but the principle can still be discerned. A sieve (50 mm), a crusher (50+ mm), and a distribution chute were installed above the banana screen. The name 'banana screen' is derived from the typical shape of the machine. In fact, it is a fairly recent technology. This type of screening system was first introduced in industry in the mid-1970s.

The first slope, the upper section, is steep with elongated openings that are quite large and provide rapid evacuation of the 0 - 10 mm fractions. The second and third slopes are less steep and have shorter openings. In principle, all 0 - 10 mm fractions are sieved off here. This is how the raw coal can be separated dry and effectively into the 0 - 10 mm fractions that go to Coal Preparation Plant 2 and the 10 - 50 mm fractions for Coal Preparation Plant 1.

However, in Beringen, there must have been a problem with this screen. Perhaps there were still too many 0 - 10 mm raw coal in the 10 - 50 mm fractions, which meant that Coal Preparation Plant 1 could not have worked properly. Two possible reasons: either the calculation of the screen surface was wrong or they wanted increase capacity (more tonnes per hour). So, the third section of the dry screen was transformed into a wet screen.

The dry sorting through the banana screen of the 0 - 10 mm raw coal went to Coal Preparation Plant 2 with a conveyor belt. And the wet sorting of the 0 - 10 mm fraction from the 0 - 50 mm fraction is conveyed by a heavy pump via a pump tank to Coal Preparation Plant 2.

The oversized pieces from the banana screen, the 10 - 50 mm fractions, is then transported on two conveyor belts to Coal Preparation Plant 1 for refining.

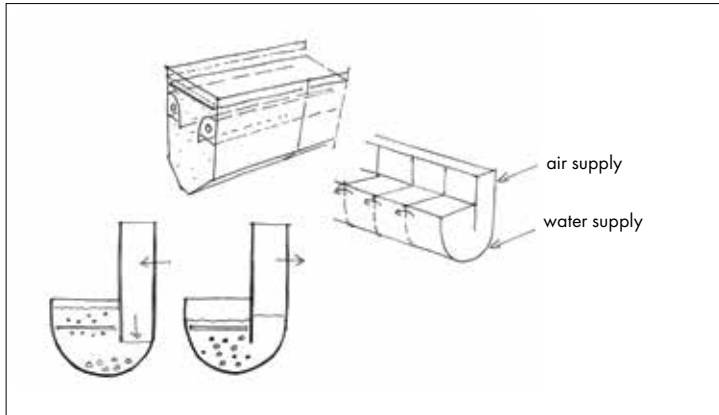
²⁰ The typical 'chapel-like' shape that protrudes from the roof is not only essential to understanding the process, but also provides fine opportunities to create a (secure) viewpoint above the site and its surroundings.



pulsation



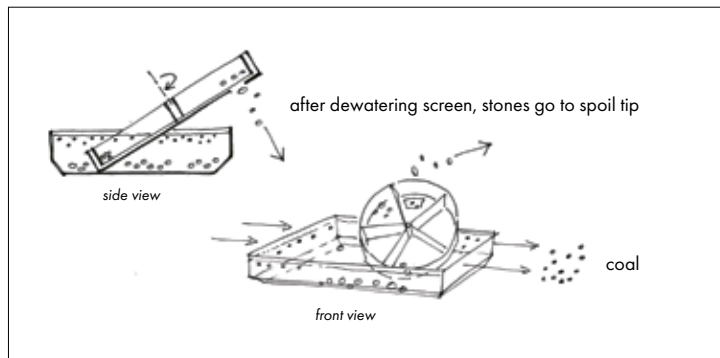
drew boy



pulsation

The 0 - 10 mm raw coal is separated in Coal Preparation Plant 2 using pulsation technology. This generates an 'apparent density'. The combination of an air pulse per time unit of about one second and the flow of water under the screen forces the raw coal mass to float, such that the lighter fraction (the coal) floats relatively quickly with the water flow to the end of the pulsing machine. The specific gravity of the stones is twice that of the coal so it floats less than the pure coal. The heavier pieces, the stones and mixes, are conveyed from under the pulsation machinery by bucket chains. After screening, the coal is centrifuged to obtain as low a moisture content as possible. The goal was to achieve a moisture level less than 10%. The residual ash of the coal had to be less than 7% so that it was acceptable to be sold as coking coal²¹. The mix (an intermediate product containing coal and slate) was disposed of separately and served as fuel for electricity generating stations.

The wash water from the 0 - 10 mm pulsation machinery that was transported to the Spitzkasts or to a thickener also carried with it some of the 0 to 1 mm fraction of the raw coal.



draw boy

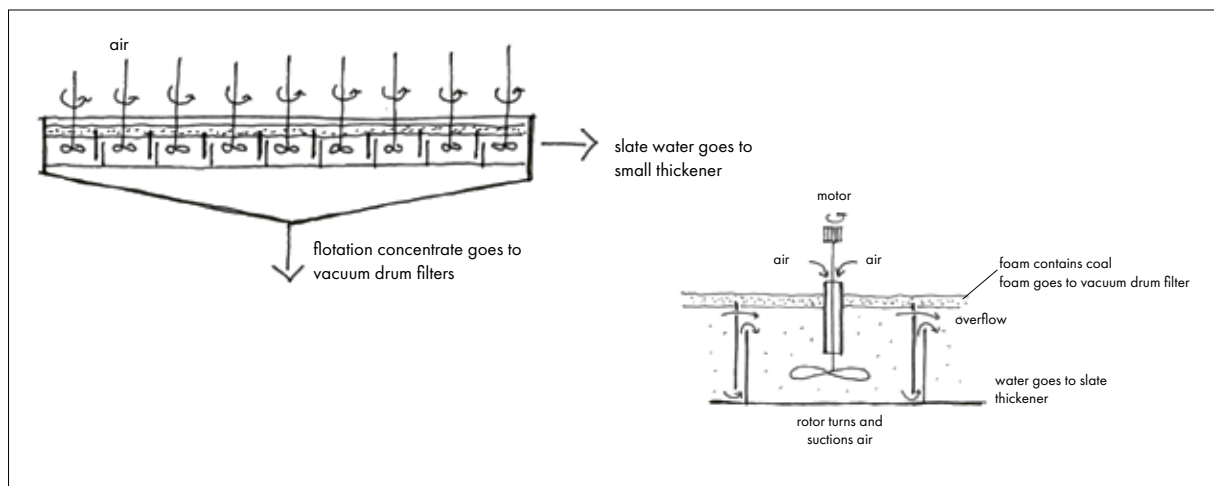
The 10 - 50 mm raw coal from the banana screen is transported in Coal Preparation Plant 1 to two draw boys. A draw boy, of which a larger version can be found in Coal Preparation Plant 4 for the 80+ fraction, separates the coal from the stones based on an 'absolute generated density'. This absolute generated density is obtained by suspending magnetite or fine iron oxide of <math><100 \mu\text{m}</math> (i.e. 0.1 mm) in water. The magnetite does not dissolve and is so fine that it continues to float in water. You can create a 'heavy liquid' depending on the quantity added. So, you can control the density. In the draw boy, an inclined disc with 'carriers' rotates in a bath of liquid with the desired density. The lighter coals float and the magnetite and water are removed through a sieve with a water rinse. The same happens with the stone fraction. It is removed by the rotating disc from the bottom of the heavy liquid and also transported to a dewatering screen. The



magnetite is recovered from the water with recuperators (rotating magnetic drums) and reused in the process. The slurry water then goes to Coal Preparation Plant 3 via the Spitzkasts and/or thickeners. Slurry water contains coals and pebbles smaller than 1 mm.

The Spitzkasts are a sequence of concrete silos. The water to be treated flows from one silo to another and back into the circuit as circulation or process water in the various plants via a pump tank at the end of the Spitzkasts. The sediment from the Spitzkasts is pumped to Coal Preparation Plant 3. Part of the overflow from the Spitzkasts is purified in a thickener. The addition of a flocculant²² splits the slurry water into: 1) clear water that is pumped to the small water tower building (cistern) on the roof of Coal Preparation Plant 3, 2) a sunken (slurry) fraction that is pumped to Coal Preparation Plant 3.

Coal Preparation Plant 3 is the installation for the 0 to 1 mm fraction. The slurry flowing under the Spitzkasts and the large thickener enters a distribution chute that feeds six screens. These screens ensure that only the right fraction enters the flotation unit. The oversize fractions from the slurry screens goes back to Coal Preparation Plant 2 (1 - 10 mm) via a Redler chain conveyor. The outlet of the screens flows via a thickener to the flotation unit in Coal Preparation Plant 3.



flotation

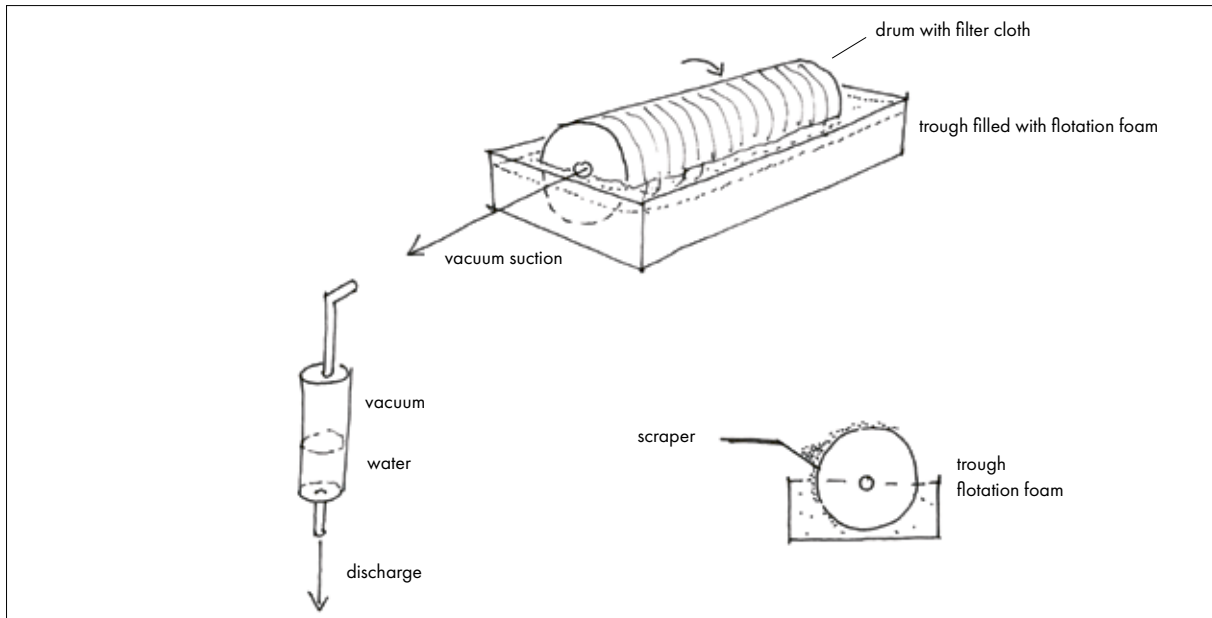
Flotation, unlike in Coal Preparation Plants 1 and 2, is a physicochemical process where the 0 - 1 mm mix of coal and stones are separated. MIBC (methyl isobutyl carbinol) and heating oil are added to the thickener (the slurry). MIBC is a foamer and heating oil makes the coal more hydrophobic (water repellent). The flotation unit consists of a long divided tank with stirrers that mix the slurry, heating oil, MIBC, and suctioned air into a stable foam. The hydrogenated coal 'sticks' to that foam. A skimmer removes the stable foam layer containing the pure coal, which is conveyed to Coal Preparation Plant 1 to the vacuum-drum filters that further dewater the coal.

The hydrophilic stones are left in the flotation tanks. These pass through the end of the six flotation batteries into the slate thickener. In the slate thickener, water will once again be purified by adding flocculant and pumped back to the small water tower building on top of Coal Preparation Plant 3. The settled sediment/slate is conveyed to the settling tanks outside.

[photo left: flotation]



vacuum drum filter



vacuum drum filter

The four vacuum drum filters receive the coal containing the foam layer from the flotation unit together with a flocculant inside the filter feed trough in which the drum rotates. When the drum in the trough comes into contact with the slurry water, a vacuum pump suctions the coal against the filter cloth and the water toward a filtrate pump. As soon as the drum surfaces again above the water, it continues to dry and, before it is returned to the freshly supplied slurry water, the dried coal cake falls through a scraper into the discharge chain that leads to the thermal drying unit, also in Coal Preparation Plant 1. The filtrate water is returned to the large thickener.

The filtered coal from the flotation unit has too much moisture, about 22%, so it cannot be mixed with other coal. So, thermal drying occurs so that the filter cake (i.e. coal) ends up in a long, slowly rotating mixing drum where hot air passes through the falling coal particles. The 22% moisture is reduced to 10% so that the fine coal can then be sold as a high-quality coke product. The thermal dryers ran on mine gas and heating oil.

Conclusion: everything in the coal preparation plant is connected and cannot be understood without the entirety and interconnections. Nonetheless, a lot of space can be made available by removing superfluous items, such as conveyor belts. After the initial clean up, the essentials become visible, which can then be preserved and made the most of. The bunkers and Spitzkasts must also be treated meaningfully. Water is essential to the entirety. So, this also needs attention.

THE CIRCULATION WATER: WATER IN A CLOSED CIRCUIT

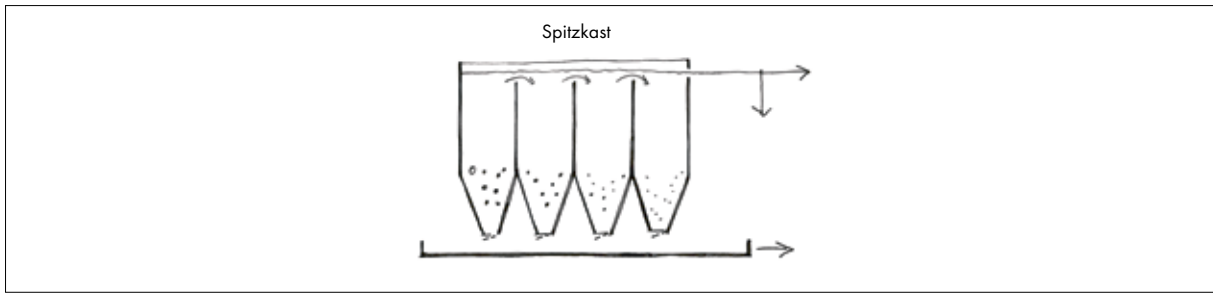
The circulation water or water circuit ensured that the four coal preparation plants received the required quantities of water. A coal refinery requires between 1 and 1.5 m³ of water per tonne of material to be treated. So, a capacity of 1,000 tonnes per hour requires 1,000 to 1,500 m³ of water in the circulation loop. This water is continuously recycled, specifically, collected, purified, and reused. It must be purified as much as possible. Which is why there are Spitzkasts and different thickeners in Coal Preparation Plants 1 and 2. The most visible thickeners are the buildings in which the TODI diving centre as realised today. There are also thickeners in Coal Preparation Plant 3. The wash water from the different plants was conveyed across the Spitzkasts and thickeners to remove the 'floating' substances: clay, pebbles, fine coal particles.



Spitzkasts



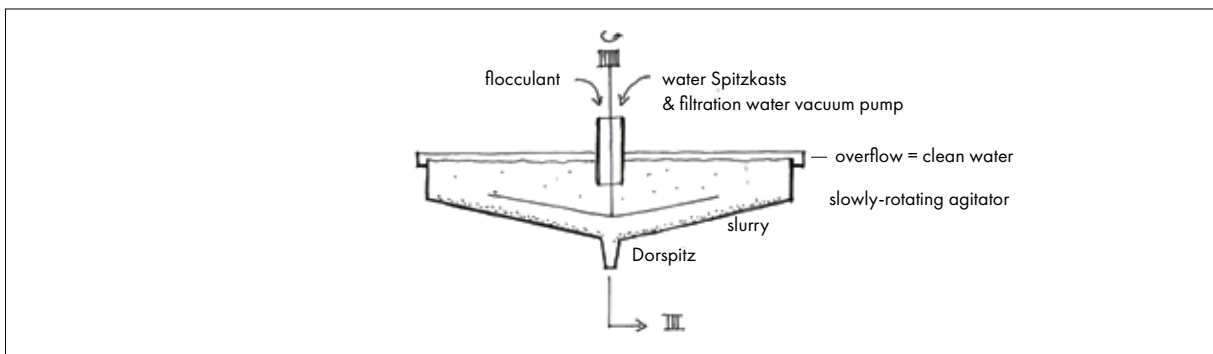
thickener



Spitzkasts

The Spitzkasts are the oldest form of water treatment. They are successive concrete silos through which water flows from one silo to the next. The heaviest and largest particles sink in the first silo, lighter and finer material in the second, and so on, until the finest light material settles in the last silo. The overflow still contains ultrafine particles. The sediment (the underflow) travels via manually or automatically controlled taps in a concrete drain trough to a pump tank from where this mass of sediment is pumped to the separation in Coal Preparation Plant 3 to the feed of the flotation unit where the finest material is treated.

Some of the overflow from the Spitzkasts is immediately reused as process water and some ends up in a circulation water pump tank with three large bypass water pumps. They partly feed the large thickener to once again make clear wash water. These pumps are also used to deliver the right amount of circulation water everywhere.

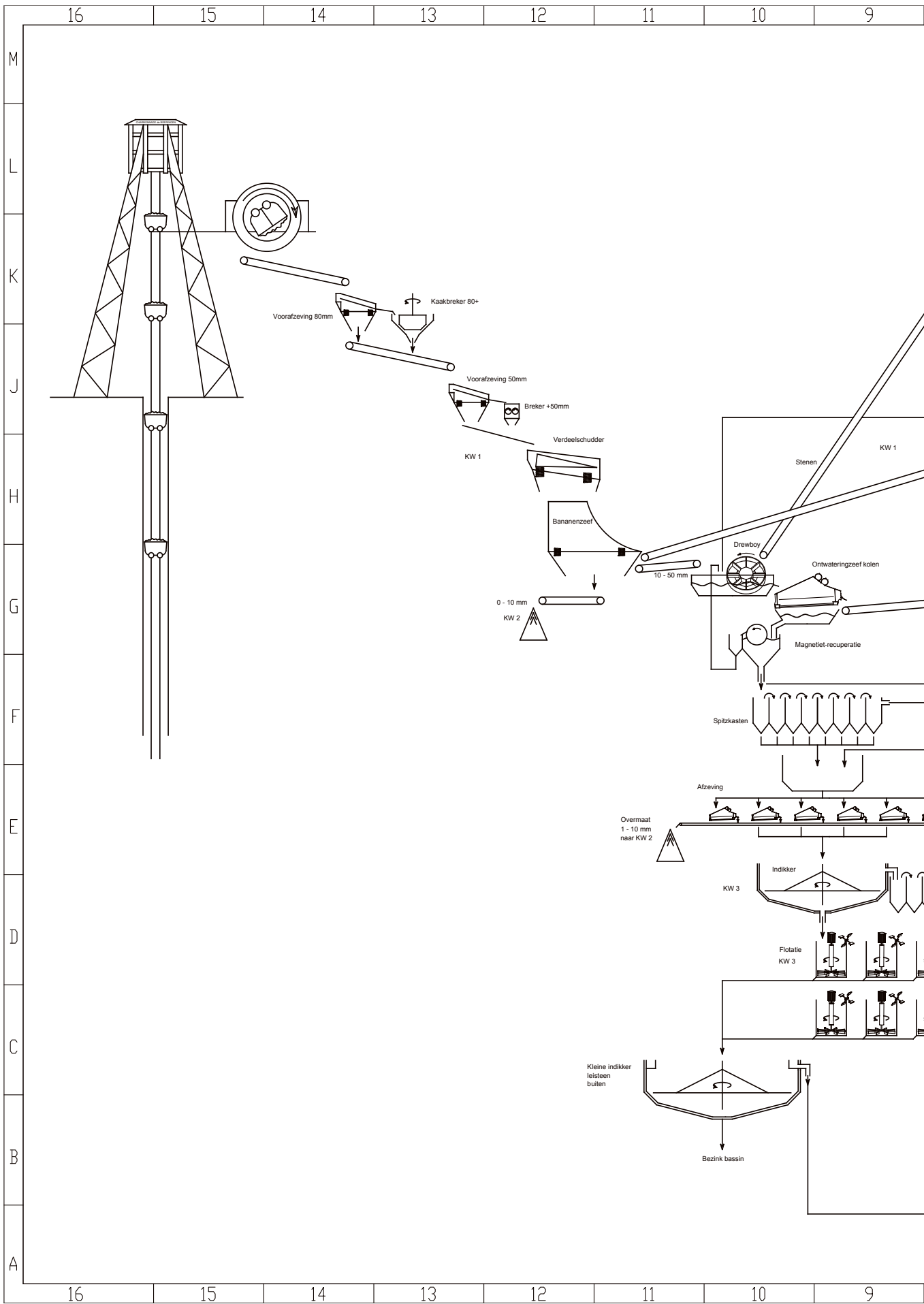


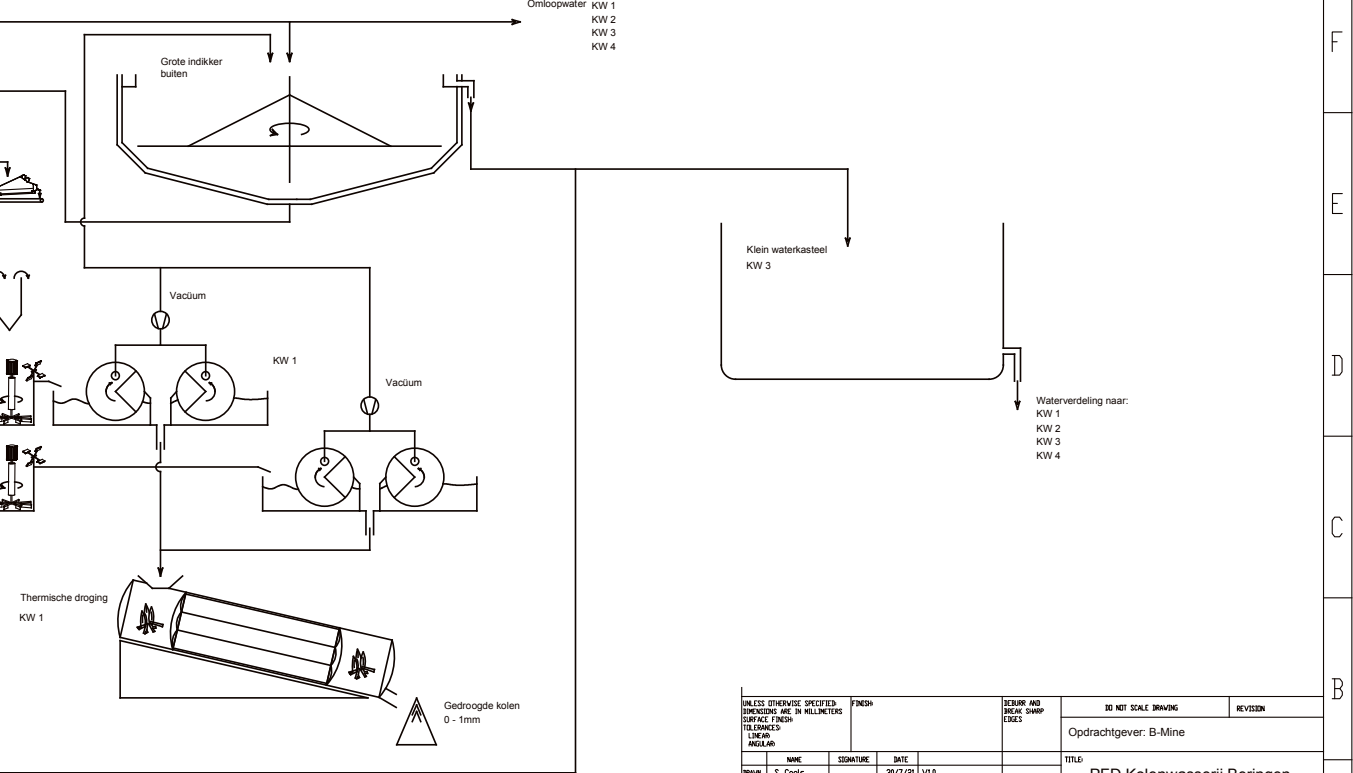
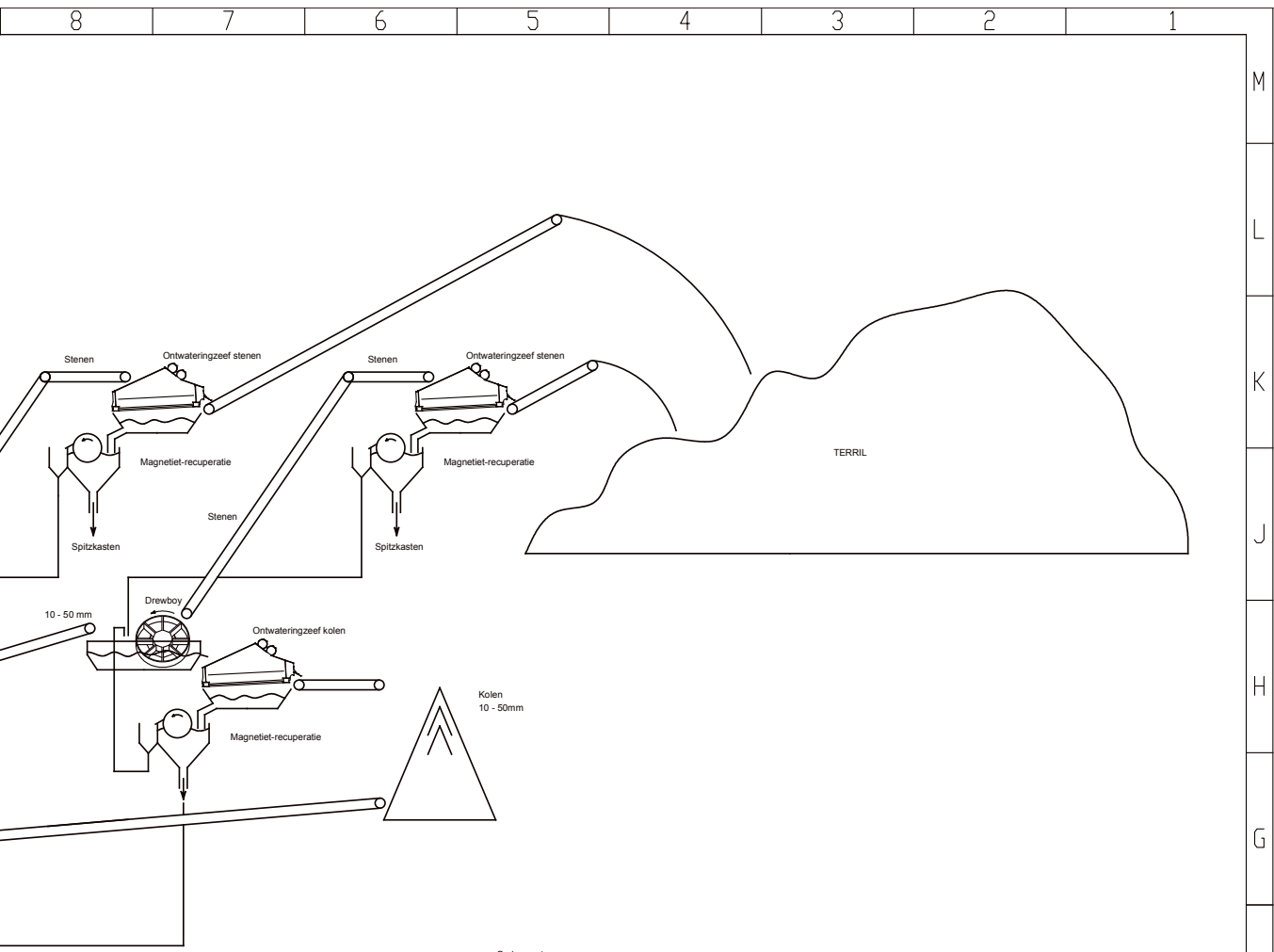
thickener

The thickeners are a more recent technology. These are the typical round concrete tubs with one central feed point, one overflow over the entire circumference on the outside, and one drain point centrally located underneath. This system is easier to operate and the end product is better and constant. The addition of a flocculant (polyacrylates) in the thickeners cleans the water that is pumped to: the small water tower building, a concrete cistern on the roof of Coal Preparation Plant 3. The sediment fraction from the large thickener is pumped to Coal Preparation Plant 3.

The slate water from the flotation unit enters a separate and smaller thickener and is purified by adding a chemical flocculant. The sediment is sent to a sedimentation basin at the foot of the spoil tip and the purified water returns to the circuit via a water basin – the small water tower building – on top of Coal Preparation Plant 3.

So, the entire system ensures that a maximum of water is being recovered for re-use.





UNLESS OTHERWISE SPECIFIED FINISH		SECUR AND PRECISE SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
DIMENSIONS ARE IN MILLIMETRES				Opdrachtgever: B-Mine			
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2. BE-MINE PIT AND THE KOLENSPOOR, THE IMMEDIATE ALLIES

BE-MINE PIT, THE INDISPENSABLE LINK IN THE CHAIN

Part 1 already argued for an integration and/or coordination of the expected visitor flows of the be-MINE PIT and be-NATURE. This must occur not only from a practical and management perspective, but also based on a choice for a deeper and new narrative. From the perspective of providing a complete public offering in Beringen, it is best to consult and coordinate the content and design with the be-MINE PIT project, including the following points needing attention or suggestions:

- The reception and part of the narrative in the most spectacular space: the coal preparation plant.
- A central starting nexus that refers to both the experiential attraction, mine history (PIT), and to the coal preparation plant, the garden city, the spoil tip, the Kolenspoor, and the Mijnstreek (mining region). By analogy with what has happened in the Ruhr region at the main anchor points of the region, a 'visitor centre' is needed to explain and make everything accessible to the public.
- But it must also direct the narrative: the path of the miner and the path of the coal. This is how the story can be told in its entirety.

In the words of a member of the transit_LAB think tank: "This is a great opportunity. We need to turn be-MINE PIT around and make the coal preparation plant the heart of the site."



THE KOLENSPOOR... QUO VADIS?

The Kolenspoor will be the central strategic project for Limburg and the Mijnstreek (mining region) for the next decade. The concept was already promoted in the 1990s by the Streekplatform Mijnstreek (mining region platform). And this continues to live on as the 'connecting' project in the region. The be-NATURE project and the entire Beringen colliery site aspire to be a gateway to this goal.

The mission of the Kolenspoor project is published: "to spatially connect the mining region from Beringen to Maasmechelen to put the area on the map as an innovative, hospitable, and sustainable region with international appeal that can once again experience its unique heritage. This makes the Kolenspoor the 'spark' for local and innovative entrepreneurship and public-private cooperation."

Moreover, the Kolenspoor wants to work on:

- The mining region as an internationally appealing region with a unique identity.
- The mining region as an accessible & economically strong region where it is good to live.
- A green and climate-neutral region.
- A sustainably connected Central Limburg.

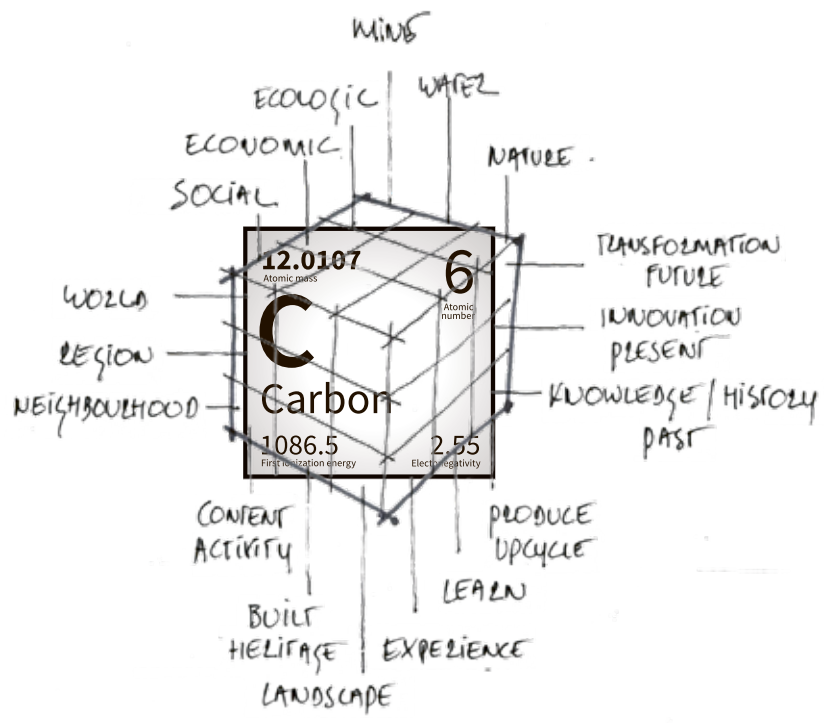
The project will take action or facilitate action on the following issues:

- The Kolenspoor as an innovative mobility network.
- The Kolenspoor as a green economic network.
- The Kolenspoor as a space to meet and experience with attention to heritage.

The province's priorities are:

- Create an innovative and sustainable bicycle highway as a backbone.
- Create a Kolenspoor brand, an umbrella narrative based on the DNA of the region.
- Facilitate collaboration by helping projects to earn a quality label.

These points must absolutely be explored further and more thoroughly from the Beringen perspective. The starting position of the Kolenspoor project, summarised above, reads like an invitation to be-MINE to live up to its ambitions and 'aim high'. The coal preparation plant can help set the tone and become the central project in the Kolenspoor. This will make it a flagship project like those in the Ruhr region, Zollverein and Duisburg-Nord Landscape Park. This aspiration must be reflected in the design, implementation, and strategic and daily management of the Beringen colliery site. By definition, it implies long-term commitment and engagement. The decisions that will be taken in 2021 and 2022 about the coal preparation plant and about be-MINE PIT will determine the chances of success for both the Kolenspoor and the Beringen site.



3. BENCHMARKS AND INSPIRATION

COAL, A SCIENTIFIC TOUCH, AND A NOD TO NATURE AND FLORA

The element C, carbon, is number six in Mendeliev's table. The atomic number indicates how many protons are present in the nucleus of the atom.

Carbon/coal originated 150 to 300 million years ago in the carboniferous era. Limburg had very lush forests and ferns in that era. We can find the traces of these today in fossils contained in slate in the spoil tips. Landslides and volcanic activity caused nature to be covered by sediment, sandstone, and slate. The pressure and temperature hundreds of metres deep formed coal in Limburg, which André Dumont discovered in As (a Limburg village) region on the night of 1 to 2 August 1901.

The steps in the carbonisation process are: 1/ plants, 2/ peat (Limburg), 3/ lignite (Aachen), 4/ coal, 5/ anthracite, 6/ graphite, 7/ diamond.

Manual extraction had to make way for mechanical mining, which resulted in reduced quality. The high demand for quality and quantity required the extracted product to be refined or purified. And that is the origin of the coal preparation plants. Water, absolute and apparent density, and physicochemical treatments were used to improve and stabilise the quality.

The same happened to the other elements of Mendeliev's table. Ores must be purified before these can be used to make high-end products.

Chlorophyll, the vital essence of plants and thus that of nature, becomes coal.

Burning (coal) creates CO². We want to avoid that, and rightly so. So we close the collieries. But some form of combustion will always be needed. And CO² will not disappear. The challenge of the future is to do something creative with our CO².



[photo: impression of nature in the Carboniferous era]



Arne Quinze - 'My secret garden' - 2021



Koen Vanmechelen - La Biomista [© 2018 Photo by Kris Vervaeke]

NATURE, THE SIGNBOARD EXPLORED THROUGH SCIENCE AND ART

The report refers several times to 'design research' for the coal preparation plant. The be-NATURE concept requires further research because **building a 'decor' with plants in the open structure of the 'de-pitted' parts of the building is an insufficient foundation for a sustainable project.**

Without pretending to make definitive statements and not claiming an exhaustive list, we provide here some starting points for the further research and development of meaningful relationships to underpin the catch-all term 'nature'.

Nature at the colliery: love at second sight.²³

Today, NATURE is the most tangible of the three themes (MINING, NATURE, and WATER) in Limburg. Which is why we develop the project from the perspective of the 'nature' narrative. It also allows for 'surprises' because the combination of 'mining heritage' and 'nature' is not obvious at first sight. But 'love at second sight' can also be deeper than expected. In the coal preparation plant, nature will be introduced that 'takes over' the entry approach and part of the building. This will connect it with nature outside. This will not only be an experience space aimed at the general public, practical as a new access point to the entire experiential package of the site (be-MINE-PIT, sports and exercise, leisure, etc.). And, it is also a statement in itself aimed at the global challenge of saving the climate together.

The new nature also underpins the new story of be-MINE and the Kolenspoor: 'Central Limburg was conquered by nature a century ago. Today nature is reclaiming the old industrial areas.'

Limburg already distinguishes itself with Belgium's first national park, the Hoge Kempen. And this also applies to the De Wijers in the Lage Kempen region. The valleys bring structure to the mining region and are today being redeveloped as a valuable nature reserve of Euroregional importance. Captivating land development projects in collaboration with the Flemish Land Agency in the valley of the Zwarte Beek (mainly Beringen) and the Mangelbeek (mainly Heusden-Zolder) will come to fruition in the next few years and underpin the desirability of synergy between man, city-village, and nature. The fusion of nature, heritage, and sustainable economic activity is an important theme. be-NATURE can become a place of significance if we find a connection. The public garden in front of and in the coal preparation plant can have a narrative embedded that takes on the ambassadorial role and makes it the place to meet.

Arne Quinze, Belgian conceptual artist, has been investigating the (disrupted) relationship between nature and city for years. Nature back to the city and the garden as a deep source of energy and inspiration offers up a strong and international story.

"If only we could build our cities as balanced as the natural ecosystem... Then our cities would be much more humane." Arne Quinze continues to combat the greyness and dullness of the environments we live in. "Driven by the power of nature, I am driven by the urge to guide our cities to a better future. Since my birth in 1971, man has destroyed more than 30% of the world's flora and fauna. To stop this terrible process, we must make our living environment more humane and greener."

Koen Vanmechelen is a contemporary Belgian conceptual artist. He began his career in the early 1990s. Biocultural diversity is central to his work. Vanmechelen collaborates on this theme worldwide with scientists from different disciplines and has established several 'foundations'. His home base is the Zwartberg colliery where La Biomista, meaning literally the mix of life, as an evolving work of art gives new life and meaning to the mine director's park. Vanmechelen's themes are of a universal social nature: diversity, human rights, and so on. Zwartberg will be a breeding ground and meeting place for new ideas, creations, collaborations... and an ideal match for Beringen.

²³ Love at second sight / Liebe auf den zweiten Blick is the title of a photo book by Karl Ganser about the 10-year IBA Emscher Park campaign in the Ruhr region. It is also a well-known slogan in IBA Emscher Park that summarises the beauty and future of the industrial area. Karl Ganser was the director of IBA Emscher Park that took a reconversion approach to the Ruhr region, which is now a global reference point.



Daan Roosegaarde - Waterlicht [image by www.studio Roosegaarde.net]



ZIGURAT - Stefan Elsen - www.zigurat.be



The lowline (New York) - www.thelowline.org

Menno Schilthuizen is a Dutch evolutionary biologist, ecologist, and permanent scientist at Naturalis Biodiversity Centre in Leiden and professor of trait evolution and biodiversity at Leiden University. He notes that urbanisation drives the evolution of nature and animals. Indeed, in the future, three-quarters of humanity will live in cities and urban environments will take up more and more space. Much of the rest of the earth's surface is needed for agriculture, so nature is migrating to the city. And when nature moves into the city, evolution takes a different turn. Urban animals become bolder and more resourceful, and weeds in the street develop a type of seed of their own. Thanks to evolutionary adaptation taking place at speeds Darwin would not have dreamed of, man and urban nature are becoming more and more in tune and a new chapter in the evolution of life on earth is beginning. Unfortunately, it is a chapter in which much biodiversity will disappear. However, brand new species of animals and plants will also see the light of day.

Industriekultur – Industrienatur, a research and presentation route through the Ruhr region. Plants and animals have reclaimed the deserted industrial areas of the Ruhr region and appear to have formed a completely new landscape with a mix of native life and exotic flora, often brought about by ores or coal transports. Attractions, such as the Duisburg-Nord Landscape Park and thematic explorations, allow people to explore this topic and further investigate it as a 'new wealth for the region'.

The Ecotron in Maasmechelen at TERHILLS, the Eisden colliery site, is a unique, high-tech research centre in which Hasselt University, together with international partners, studies the effects of climate change on our nature. This mirrored research centre consists of thirteen high-tech ecosystem chambers in which the climate of the future can be simulated. The Ecotron is the final piece in the development of the Field Research Centre, Hasselt University's scientific base for international top-level research on biodiversity, nature management and development. When be-NATURE and TERHILLS-ecotron come together, the Kolenspoor will be charged with a new narrative.

ZIGURAT is the (proposed) brainchild of artist and former miner Stefan Elsen. The idea is to create a space at the top of the spoil tip in Zolder that serves as a place for observing nature and reflecting on the link between heritage, nature, and the future.

The Lowline is a plan to use innovative solar technology to illuminate a historic trolley terminal on New York City's Lower East Side. The vision, already successfully tested, is a magnificent underground park, providing a wonderful excursion and cultural attraction in one of the world's most dense, exciting urban environments. The project succeeded in creating a fertile garden in a space without daylight. The space became a cultural hotspot at the same time.

The Dutch artist **Daan Roosegaarde**²⁴ is one of the most innovative artists in the past decade. His sculptures and installations, created in collaboration with a team of engineers and designers, aim to create better conditions in cities and make difficult areas habitable again by rethinking processes and upgrading urban structures. The core of Roosegaarde's practice is 'beauty', which stands for both 'purity' and 'beauty'. This has led to some of his most popular public projects: 1) Waterlicht (a virtual flood that demonstrates the power of water); 2) Smog Free Project (a large outdoor air purifier that turns smog into jewellery); and 3) Smart Highway (an interactive road that charges all day and lights up at night). Roosegaarde is an artist, entrepreneur, inventor, and designer who thoroughly researches and manipulates the relationship between nature, the environment, art, and heritage.

His project URBAN SUN, which is a finalist in the 'world changing ideas' category of FastCompany in the USA, is a work of art that not only transforms public spaces with the creation of artificial light, but also, through the composition of that light, purifies these spaces, even in the open air with the coronavirus.



Daan Roosegaarde - 'Grow' [image by www.studioroose.com]



Olafur Eliasson

The GROW project, presented at the Dubai World Expo, is a tribute to the beauty of agriculture. A 'dreamscape' of red and blue light waves flow across a huge field. It is inspired by scientific findings on the stimulating influence of light on plant growth. Most of the time, we are not aware of the large areas of the earth that feed us. GROW highlights the importance of innovation in agriculture. How can lighting technology contribute to more sustainable plant growth? How can we make the farmer a hero again? GROW is an international award-winning work.

Olafur Eliasson²⁵, Copenhagen and Berlin, goodwill ambassador for the UN Development Programme Renewable Energy and Climate Action, works deeply on the theme of climate change, has his work in museums and public spaces worldwide. He investigates the relationship between nature, climate change, and the quality of life on the earth. He collaborates with engineers, architects, geologists... as well as with children, the front runners in climate awareness today.



FOREIGN EXAMPLES

The projects selected have all been visited by transit_LAB staff in recent months and years.

Some have been observed for decades. We recommend that those who will decide on the proposals in this report and/or on the approach and fate of the coal preparation plant should visit and study these examples.

VÖLKLINGER HÜTTE / VÖLKLINGEN IRONWORKS (SAARLAND, GERMANY)

Original purpose

Iron and steel production

Current purpose

European Centre for Art and Industrial Culture

Heritage site, exhibition centre, UNESCO World Heritage site

Ferrodrom Science Centre

Website

www.voelklinger-huette.org/en/

Relevance

Extensive and exemplary industrial heritage site, almost completely preserved, located in a region with relatively few other tourist and heritage attractions. Has enjoyed UNESCO World Heritage status since 1984. This was a great stimulus for the promotion of this previously little-known heritage property. Thoroughly guided tours in various languages and tailored to different visitor - target - groups.

Added value: the presentation of prestigious temporary exhibitions (often unrelated to industrial culture) aimed at a large audience. Other exhibitions and events focusing on industrial culture are also organised.

It also presents itself with Ferrodrom, a science centre, and as an 'ideas laboratory'.

The town of Volklingen has taken a rather simple approach to opening up the site with footpaths through the industrial site that are enriched at certain points by relatively small exhibitions that explain the site and its history.

Structure

The site is run by a gGMBH, a gemeinnützige Gesellschaft mit beschränkter Haftung, the German variant of a non-profit company/social enterprise. In this case, non-profit means: with the aim of looking after the 'commons'.

The administrators are the state ministers, senior officials, and the mayor.

The task is the development of the site, public cooperation, scientific-artistic and educational substantiation of the concept of 'Industrial Culture' and programming and publishing.

Core concepts

Non-profit management and operation / industrial culture / long-term mission with political support / science – art – education / the 'commons' as a starting point



DUISBURG-NORD LANDSCAPE PARK IN DUISBURG-MEIDERICH (RUHR REGION, GERMANY)

Original purpose

Thyssen blast furnaces

Current purpose

- Park area with active and passive recreation
- Large event hall and open-air concerts
- Sports: climbing and diving in industrial objects

Website

www.landschaftspark.de

Relevance

Duisburg-Nord Landscape Park has been in existence for 28 years and was a top project within IBA Emscher Park (Internationale Bau-Ausstellung/International Architecture Exhibition), and a pioneer in its genre in every respect. The integrated approach was unique at the time: preservation of industrial heritage (partial soil remediation) and Renaturing... (giving nature back its development opportunities).

The vision of landscape architect 'Latz & Partners' was given an exemplary opportunity here.

It is remarkable that (safe) routes up to the top of a blast furnace superstructure can be explored individually or in groups day and night. There are opportunities for sports at various locations, tailored to (and grafted onto) the heritage (e.g. 'rock climbing' on the walls of former ore and coal bunkers, diving in the water-filled gas holder)... Spaces both large ('Blower Hall') and small (e.g. the Pump House) accommodate cultural events.

It is also noteworthy that the project was started by repurposing the demolition and sanitation budget in 1985 as the starting capital for the landscape park.

It is completely free of charge and is quite actively used by the locals as a meeting point. Moreover, it is a hub for art and culture and a quite striking and colourful illuminated object that helps set the ambience and image of the entire region. The park attracts over one million visitors annually.

Structure

It is a public park managed by the City of Duisburg.

Core concepts

Public park / managed by the city government / used demolition budget for constructive and visionary project.





ZOLLVEREIN IN ESSEN-KATERNBERG (RUHR REGION, GERMANY)

Original purpose

Colliery and coking plant, built as a rationalisation mine in 1932, closed in 1986.

Current purpose

- Ruhr museum
- Tourist information centre: Ruhr Visitor Centre
- Red Dot Design Centre
- Folkwang University of the Arts
- Venue for events and exhibitions
- Accommodates a variety of companies in the broad cultural sphere

Website

www.zollverein.de/en

Relevance

Overall, the quality of the reuse of the coal preparation plant as the RUHRMUSEUM is the best imaginable achievement of its kind. Its strengths include the beautiful balance in the coal preparation plant between careful preservation (of the technical infrastructure) and the introduction of new materials aimed at the museum experience.

The redesigned coal preparation plant is the provisional end point and crowning achievement of thirty years of phased development. The 'IBA Emscher Park' (1989-1999) played a crucial role and served as the cradle, a decade later, for the redesign of the coal preparation plant.

The Ruhr Museum, located in the coal preparation plant and initiated by the state government of North Rhine-Westphalia, is a well-structured museum that looks back at the past from the present and then links back to the present and future from that past. One or more ambitious temporary exhibitions every year.

Zollverein is a 'gateway' and a so-called 'Anchor Point' (well-equipped regional landmark and attraction) for optimal exploration of the rich industrial heritage in the region. The UNESCO World Heritage status since 2001 provided an additional incentive: optimisation of the quality of many parts of Zollverein, great media exposure, networking, and central meeting point. It also acted as the main site of the Ruhr Region European Capital of Culture 2011.

Also important are the long-term (more than 20 years) and concrete start-up initiatives towards this prestigious end result. Zollverein accommodated and still accommodates various temporary and semi-permanent initiatives and companies.

Equally important from a creative point of view is the coking plant: space for walking exploration of the impressive technologies, and at the same time space for experimental exhibitions and elements, such as a summer swimming pool and winter ice rink in the industrial setting.

Zollverein is also a magnet for economic activity. It accommodates 130 companies and hosts high-level conferences all the time.

Structure

Zollverein is run by a foundation with the task of preserving and developing its heritage. Strong backers of the foundation include the Federal Government of Germany, the State Government of North Rhine-Westphalia, the City of Essen, and the RAG Foundation.

Core concepts

Foundation / development and long-term operation / co-production of governments, cultural and scientific institutions, and foundations / accommodation of businesses

[photo left © Bart Vanacker]



RAMMELSBERG MUSEUM AND BESUCHERBERGWERK (GOSLAR, GERMANY)

Original purpose

Copper, lead, zinc, and iron mine

Started a thousand years ago, large-scale since the Middle Ages, industrial since 1930

Current purpose

Museum, heritage site, exhibition centre

UNESCO world heritage site

Website

www.rammelsberg.de/en/

www.welterbeimharz.de/en/world-heritage-harz

Relevance

The main merit of Rammelsberg Ore Mine is the careful and complete preservation of the buildings and facilities for handling the ore. These installations dating from the 1930s (built by the famous architects Schupp and Kremmer, also designers of Zollverein in Essen) are explained by guides during tours, supported by short and animated films that visualise the complex technical processes along the way. After a ride in an open lift above an inclined area, the visit starts at the top (headframe, unloading platform) and descends floor by floor to the level of the thickeners, partly opened up to free up space, which was used for high-quality temporary exhibitions.

Rammelsberg is a superb example showing the preservation of technical installations.

Moreover, there are numerous other free visitor (power station, historical museum, mineralogical collection, etc.) and guided tours possible: 1) the underground so-called 'Roeder galleries' where giant wooden wheels in the mountain witness how mine lifts were activated with hydraulic power; 2) underground mine tours by train; 3) to 'Rathstiefste' galleries dating back to the twelfth century... that evoke the mining and working conditions in the Middle Ages.

Important for the promotion and attraction of Rammelberg is its location only 2.5 kilometres from the old town of Goslar, which together with the mine is part of the UNESCO World Heritage site. Moreover, Goslar lies at the foot of the Harz Mountains, which are not only one of the most beautiful nature reserves in Europe, but also unusually rich in mining heritage. So, Rammelsberg is not alone...

Structure

A foundation established in 2002 by the Goslar city government and expanded to include regional partners in 2010 (regional administration, water company, and regional museum foundation). The foundation's mission is the networking of all cultural institutions, the opening up of sites, knowledge exchange, and collaboration.

Keywords

Regional collaboration and networking / preservation of installations and creation of additional exhibition space



BELVAL, ESCH-SUR-ALZETTE (GRAND DUCHY OF LUXEMBOURG)

Original purpose

Blast furnace site, steel production, originally (since 1911) ARBED, and ultimately owned by Arcelor-Mittal.

Current purpose

Cité des Sciences, University of Luxembourg
New residential area and commercial centre

Website

www.fonds-belval.lu

Relevance

Esch-Belval is a new residential area west of the city of Esch-sur-Alzette. Centrally grouped between and around the relics of an old steelworks are the new buildings of the 'Cité des Sciences' along with shops, restaurants, and residential units. A very lively site due to the presence of students with accompanying facilities (restaurants, auditoriums, administration, etc.).

The extensive implementation was initiated by the Luxembourg-Cultural Capital of Europe at the end of the 1990s. A visitors' and heritage centre was set up in one of the old industrial buildings (the 'Massenoire'). The old blast furnace can be 'climbed on' using a staircase with about 200 steps and offers a wide view of the surroundings.

Structure

A foundation with government and private organisations.

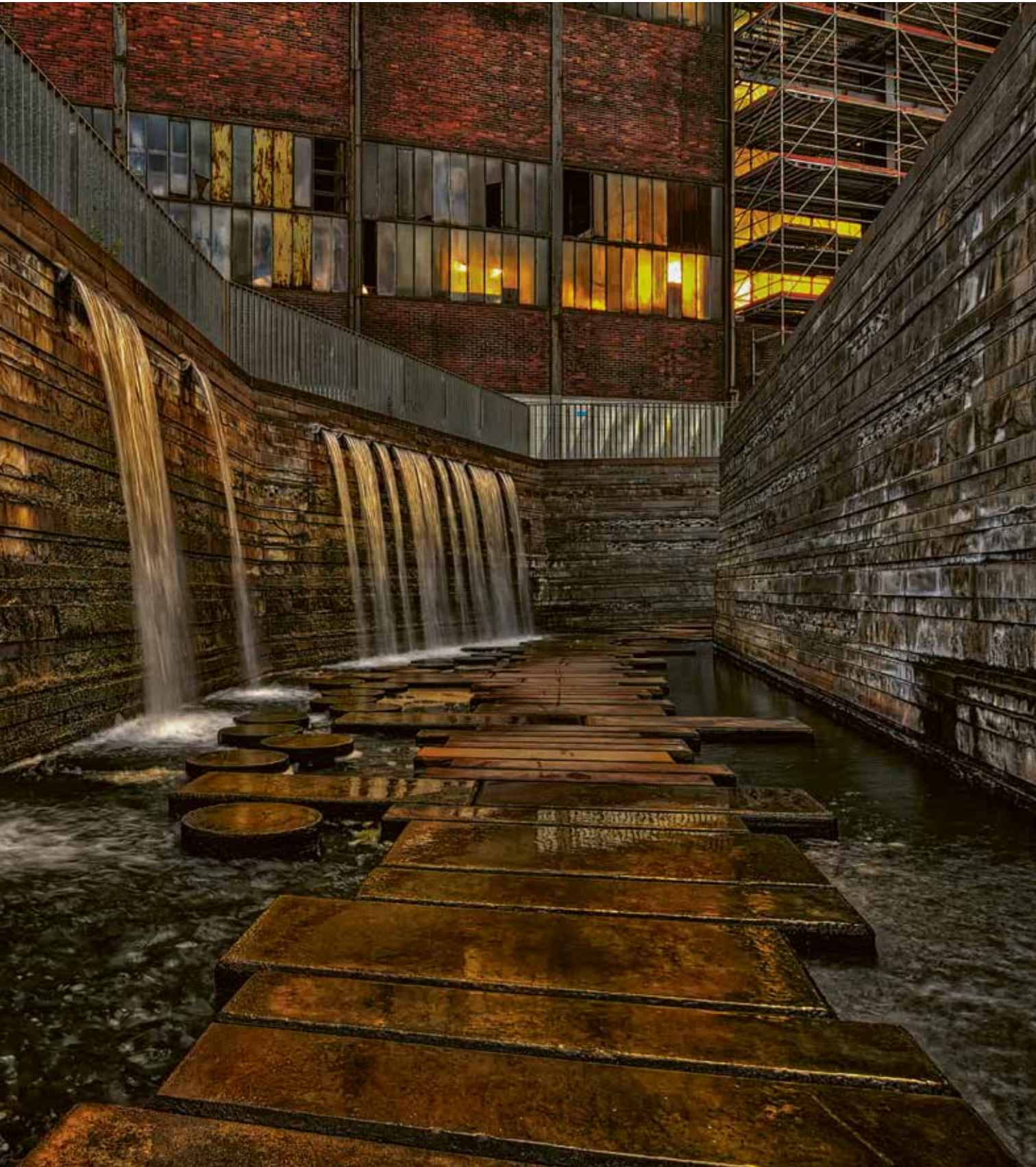
Founded in 2002 as a public-sector company and designated as a 'contractor' in charge of preparing and implementing government initiatives on Belval's industrial wasteland (including Cité des Sciences). All projects are organised like public investments and start from international design contests or idea competitions.

In 2015, the mission of 'Fonds Belval' was extended to the management and operation of the entire site.

Keywords

Integration in the city / attracting knowledge centres (university) / design and idea competitions / development and long-term management in one.





ERLEBNISORT REDEN, LANDSWEILER-REDEN (SAARLAND, GERMANY)

Original purpose

Colliery, closed in 1997

Current purpose

- 'Wasserpark' ('water park'), cultural infrastructure
- Tourist information office
- Bio-documentation centre
- Gondwana prehistory adventure centre

Website

www.erlebnisort-reden.de

Relevance

From 1430 onwards, coal was mined locally. The modern operation (Reden mine) lasted from 1856 to 1997. The coal preparation plant was integrated in a quite original way into a water park. Parts of it were preserved almost completely with other parts only preserving the impressive steel skeleton. Footpaths run over and under the coal preparation plant, partly along water reservoirs in which underground water (32 °C) is collected, and partly for the power supply for the various buildings on site. Some paths are used by the 'Institut für Landeskunde im Saarland' and the Saarland Archaeological Service. The successive water basins have different uses: collection of rainwater, geothermal water supply, incubator of rare aquatic plants, etc.

The bleak environment in the years after the closure of the Reden mine was transformed into a unique ecological ensemble, in which the water features play a crucial role. Erlebnisort Reden is also known for its annual music and arts festival 'SR 3-SommerAlm'.

The 'Gondwana' or Prehistory museum at the foot of the spoil tip is a public attraction. The extensive spoil tip terrain also attracts many visitors. It has been laid out as a pedestrian hiking area and is topped off with a banquet hall.

The Reden Water Park cannot be considered separate from other mining heritage sites in the area, and especially not from the natural landscape in the surrounding area. This 'Landschaft der Industriekultur Nord' with its high nature value is being developed as a regional park: 2,500 hectares Spread over five municipalities.

Structure

Since 2001, the project has been led by the 'Landesgesellschaft Industriekultur Saar GMBH' in coordination with the RAG mining company, which set up a soil remediation programme for the site immediately after the mine closed in 1997. Open workshops were used to work out the entire concept and then immediately implement it.

Keywords

Collaboration between mining company and new development company / Industrial culture / Landscape park / practical and public use of the available water



VITKOVICE, OSTRAVA (CZECH REPUBLIC)

Original purpose

Colliery (with coal preparation plant) from 1828 to 1998 and blast furnace.
Part of the steel site, the rolling mill is still in operation.

Current purpose

Event location both inside a revalued gas holder and for large-scale outdoor events
Convention centre, educational science park, mining museum
Space for creative entrepreneurs

Website

www.dolnivitkovice.cz/en/

Relevance

This impressive complex, which is still undergoing expansion, is the initiative of the local entrepreneurial head of the eponymous steel company, Jan Svetlik, who in 2007 established a fellowship for the implementation of revitalisation projects in the industrial heritage of the city of Ostrava. This is a kind of foundation, in which the local government also participates. The goal of the fellowship is to create and operate a unique and supra-regional educational, cultural, and social centre. To date, 80 million euros has been invested with a mix of EU funds, national subsidies, and private capital. The eye catcher is Bolt Tower, a cafeteria at the top of the blast furnace, named after the world-famous athlete Hussain Bolt.

Moreover, the gas holder has been transformed into an impressive convention centre and several machine halls that house two science parks that are very popular with schools.

In the outdoor area, under the aegis of the blast furnace, there is an open-air stage for Colours of Ostrava, one of the biggest music festivals in the Czech Republic.

Vitkovice is the second-largest tourist destination in the country after Prague (1.5 million visitors per year!), while several buildings remain untouched: the headframe, the coal preparation plant...

Starting at Vitkovice, you can also visit the mining museum, Park Landek, which is only a few kilometres away.

The whole project is architecturally coordinated by Jozef Pleskot and his AP studio, one of the most renowned designers in the Czech Republic.

The area is freely accessible and gradually blends in with the surrounding city.

Structure

Foundation, not for profit, although commercially operated.

The investments are made based on a public-private partnership and sponsored by dozens of corporations, the most significant being ArcelorMittal and the Ostrava Public Transport Company, but also SKODA.

Keywords to take to Beringen

Foundation / long-term vision / repurpose the existing / co-investment public and private / supra-regional ambition / investment and operation in one structure



TEXTILE MUSEUM, TILBURG (THE NETHERLANDS)

Original purpose

Textile factory

Current purpose

Textile Museum and lab

Website

textielmuseum.nl/en/

Relevance

The Tilburg Textile Museum is special because it is the only place in the world where design, art, fashion, heritage, and innovation in the field of textiles come together.

The museum and its collection is a foundation for strongly promoting new economic opportunities by bringing designers and developers together and by being the innovation hub for the sector in the supporting TextielLab. The institution operates based on its strong vision, which is socially oriented towards promoting sustainability and social responsibility and 'inclusiveness' locally and globally. (Textiles are one of the most polluting economic sectors throughout the world.) Investments are made in a local circular hub (recycling of textiles and local job creation), a sustainable factory, and neighbourhood-oriented projects. Moreover, the museum is one of the strongholds in steering the urban renewal and area development of the historic working-class neighbourhood where it is located.

They always work within the triangle: artist, museum, and community. And the target groups are both traditional visitors and international industrial players (e.g. Renault) who come to work on innovative textile products in the living laboratory in the middle of the museum environment. Their key slogan is 'cultural heritage as driver of change'.

Structure

Textiellab is a part of Tilburg's urban museum structure. It receives almost 5 million euros in subsidies annually and generates the same amount from running the TextielLab.

Keywords to take to Beringen

Own income from a diverse operation / being an innovator / engagement in the world and the neighbourhood

4. BASE OF SUPPORT FROM HERITAGE AND MINERS ASSOCIATIONS

It is absolutely a boon that the be-MINE and LRM companies are seeking support for the new be-NATURE project. Consultations with a multitude of heritage and miners associations in Limburg and beyond show that this new openness is appreciated by all of the stakeholders. Creating or earning support for the present project seems feasible. Of course, its success depends on the continued communication and search for the best approach to this unique heritage that is the last coal preparation plant in Limburg. Further design research is needed.

As an estimate of the base of support for be-NATURE – as it was known in the summer of 2021 – we refer to two 'sources':

- First, the viewpoint of a group of heritage and miners associations in the Mijnstreek (mining region) based on a joint consultation on 9 August 2021. The list of associations was updated on 26/11/2021 for accuracy.
- Second, the positioning of certain other associations: the Mining Museum and Friends of the Beringen Mining Museum and some interest groups at the Flemish level. These associations communicated their position directly to the be-MINE company. To this end, we refer to the 11/9/2021 press release issued by the be-MINE company on the day the project be-NATURE was presented to the public on the occasion of their 10-year celebration. This press release is included in this document as Appendix 3.

For the sake of completeness, it should be mentioned here that, up to the publication date of this report, no opinion or advice has been received from the Quality Panel of the City of Beringen.

Advice and position of the miners' and heritage associations on the be-NATURE proposal as a new purpose for the Beringen coal preparation plant.

In a joint consultation on 9/8/2021, the associations were shown a presentation: 'be-MINE, the final chapter' and discussed the following advice, which was provided to transitLAB within the scope of their study assignment for the be-MINE company.

1. It is plus that LRM and be-MINE are looking for a form of continuation of the Beringen coal preparation plant. It is also positive that be-MINE is finally providing a substantive proposal for the coal preparation plants. In this light, it fulfils the minimum requirement for retaining the spatial volumes in the coal preparation plants. This proves that the public's efforts to preserve the coal preparation plant were and remain meaningful. And, of course, the miners' and heritage organisations see that nature is important today and in the future, in Limburg and in the world. So, there is no objection to the word 'be-NATURE' as an eye-catcher, whereas the content is more important than the name. Consultation between all parties involved is required regarding the content. HOWEVER...

2. Beringen has always been destined to be the central museum site of the mining region since even before it was protected as a heritage site. Moreover, the meeting's attendants regret that no project has yet been drawn up for the coal preparation plant that truly pertains to the origins of the building and the installations that are part of the production process.

3. The associations are satisfied that a study of the content and operation of the coal preparation plant is being carried out by transitLAB on behalf of be-MINE. The findings of this report and the response of be-MINE, LRM, and the ministers involved are awaited with interest.

4. It is a 'coal preparation plant' and the place par excellence where tourists could have a truly original experience. That part of the 'narrative' must be retained and elaborated!

5. An artificial garden as a separate attraction and 'backdrop' does not arouse any enthusiasm at this time. But it seems possible the design can be improved such that the history and original operation of the coal preparation plant is preserved and continues to be seen. The associations request that they be consulted regarding the design. However, there are doubts as to whether it is technically realistic to install a flourishing garden in this building (although the associations are not opposed to sensible experiments, such as vertical agricultural cultivation in vacant spaces in the building).

6. It is also pointed out that nature is already growing today at the foot of the building: the Valley of The Black Brook (Zwarte Beek, a top nature reserve), spoil tip, and garden district. It would be better to let the 'nature' transition from there to the colliery and make a connection with the 'greater' nature. So nature is an interesting theme, but the coal preparation plant has much more potential than this design suggests.

7. The associations do not agree with the dismantling of all of the installations. That would eradicate the recognition value. Coal Preparation Plant 1 contains installations that are as important as the rest of the building. Moreover, Coal Preparation Plant 1 is the central starting point of the treatment process. It must be possible to retain some of the installations. The question of whether and to what extent these should be restored must also be addressed

8. There are also questions about the project's 'earnings model'. There are doubts that this project can 'pay for itself' in the sense of sustaining itself in the long run. So far, LRM and contractors have only shown their interest in 'return driven' projects. What is the vision for the future in these endeavours? Who will take on the long-term commitment here?

9. Be-MINE PIT is inextricably linked to the approach used for Coal Preparation Plants 1 and 3. Both the unloading hall and Coal Preparation Plant 2 border on the be-NATURE sites. The associations do not understand why the two initiatives are not fully linked together. Integrating both and including an almost entire coal preparation plant would be a truly original attraction. This allows the narrative of the miners and the coal to be experienced in a unique fashion in the authentic rough industrial environment. We call upon be-MINE and involved administrations and politicians to investigate and implement this interconnection very quickly. Which is why the delay in implementing the be-MINE PIT may actually be an advantage. Now, we can still choose which direction to take.

10. The Kolenspoor: for whom and with what content?

The associations strongly urge collaboration between all bodies in the mining region that have some involvement with the Kolenspoor. It makes no sense to continue to separately manage and promote the different attractions of the colliery sites. A 'route' must be established that connects everything based on content, history, and a vision for the future. A part of the Kolenspoor should provide a narrative that connects the associations and voluntary organisations. Among other themes, it should highlight the 'miner profession and all associated achievements and challenges'. The voluntary organisations have already 'pre-invested' for decades in the Kolenspoor. This demands respect and involvement. The associations regret that volunteers' efforts have so far not been appreciated in the Kolenspoor and by the bodies managing the reconversion.

11. The Kolenspoor, be-MINE PIT, and coal preparation plant are interconnected: mutual coordination and content streamlining are priorities. The role of the municipal governments and province in this is important. But they really need to work together. If the Beringen colliery is to be the gateway for the region, the entire region must be mobilised for it. The heritage and mining associations are ready to collaborate constructively.

12. The continued existence of the coal preparation plant will continue to be monitored with great attention.

Genk, 9 August 2021 and confirmed on behalf of the commissioning party by the following associations on 26 November 2021

Citévolk Spreekt Beringen-Mijn; ETWIE – Technical and Scientific Heritage Expertise Centre; Het Vervolg NPO; KS vriendenkring; Mijndepot Waterschei – Mijn-Verleden Genk NPO; Mijnmuseum Beringen NPO; STEBO; Stichting Erfgoed Eisden; Vrienden van het Mijnmuseum Beringen.

Advisory note and position

For Het Vervolg NPO

Subject: preservation of the essence of the Beringen Kolenwasserijen (coal preparation plants)

Date: 23 September 2021

General:

- The coal preparation plants together form a single production installation for a variety of coal products. It is wrong to speak of four separate plants with the same purpose and purpose as if the same technology is used four times.
- Thus, it is impossible, from the perspective of the applicable protection decree of 1994 and in technical terms, for the coal preparation plant in Beringen to retain a representative narrative should one or more parts of the building be demolished or completely 'de-pitted'.

Concerning the possible de-pitting of CPP 1:

CPP 3 requires CCP 1 and vice versa.

CPPs 1, 2, and 4, sends fine material <1 mm to CPP 3 for refining with the flotation technique. The coal concentrate from CPP 3 is sent back to CPP 1 to be turned into a saleable end product by dewatering it with the 4 drum vacuum filters (in CPP 1) and then further drying the filter cake from the 4 filters in the thermal drying unit (in CPP 1). So these are all interconnected.

- CPP 4 refines 80+ mm
- CPP 1 refines 10/50 mm
- CPP 2 refines 1/10 mm
- CPP 3 refines all fine material from the three other plants.

Important remark: de-pitting is recommended for the lower levels of CPP 1 (where there are previously supporting technologies, such as conveyor belts, pipe systems, and parts of old incomplete plants), which frees up a lot of 'project space'.

Essential

The essence remains important. The following installations and machinery must remain to be representative of a coal preparation plant (as part of the protected heritage):

On the unloading platform

- The entire screening plant (number 2) including the jaw crushers.
- The (remainder of) the conveyor unit to the highest level.
- The bunkers for the blown/reloaded fractions and the corresponding narrow gauge bundles.

In Coal Preparation Plant 1

- The banana screen, including the sifting, crushing, and distributing equipment above it.
- The Drew boys: at least 1 drew boy with a dewatering screen for coal and the same for stones and with the recovery magnets for the magnetite.
- Four vacuum drum filters with vacuum pump.
 - The dryer with combustion boiler.
 - The pump rooms with rush Spitzkasts
 - The bunkers

In Coal Preparation Plant 3

- The flotation batteries (preferably 6, but at least 3 aligned with each other)
- The thickener with the slurry screens and the associated divider system.
- The Redler conveyor belt to Coal Preparation Plant 2
- The small water tower building on the roof, including the pipe systems.

Supporting and still to be investigated:

- Connections, conveyor belts, and, to a limited extent, pipes.

003 / THE RECOMMENDATIONS SUMMARISED

The approach taken to convert the coal preparation plant requires further research. This is best initiated based on a vision of the future: what role do we as a community see for this special place? The short-term transit_LAB study is a first step in this direction. The work is not finished. However, before 'finalising' designs and plans are made, it makes sense to use a 'compass': inventory, vision, aspiration, and action plan.

The transit_LAB recommendations as well as those of the 'associations – stakeholders' are an encouragement to those who take responsibility for the Beringen coal preparation plant. It is the most important 'heritage site' of the Mijnstreek (mining region). It is the only location that reflects the brutal industrial work that was done underground.

It is desirable that:

- further design research is carried out based on an understanding of the heritage values of the four coal preparation plants that constitute a single whole.
- Coal Preparation Plant 1 should not be demolished up to level 26 because the essential heritage is above that level. 'De-pitting' can be done below this level because there are mostly less essential and supporting installations there.
- the entire 'refining process' is on display in the repurposed space as well as that a lot of space is freed up for new purposes.
- the new management and operating structure be given enough 'breathing space' and that the real estate developers either make room or co-invest in a structure that is committed to a long-term plan and operation.
- this structure is not only focused on financial returns for shareholders, but on social returns in the long term.

We can now begin with:

- A study, networking, and formation of a new initiative will take time, but a start can be made immediately on cleaning up and securing Coal Preparation Plants 1 and 3.
- be-NATURE, be-MINE PIT, and the Kolenspoor can evolve towards collaboration and coordination with a view to achieving the maximum impact on the local and regional economy, and the image of Beringen-Mijn and the Mijnstreek (mining region).
- The concept of a 'green tech hub' with a focus on the new materials economy and refining technology can breathe new and meaningful life into the coal preparation plant and be combined with various endeavours aimed at learning, business, and recreation. The preparation of a practical plan can begin immediately.
- Associations have put forward many proposals that dare to be considered.

Of course, it is also about 'money': costs and revenues.

Money can be found for a new concept that positions Limburg, Flanders, and Belgium internationally in the fight against global warming and the search for a new society that seeks harmony between economy, ecology, and culture. Once there is a consensus and support for a new narrative, new business models and a business plan can be drawn up. Public bodies, such as the EU Green Deal, the Federal Government's Relay Fund, and special Limburg funds, seem ideal places to start for making the challenge ahead possible.

004 / APPENDICES



APPENDIX 1

collage of images of be-NATURE as presented in June 2021







APPENDIX 2

Be-MINE / be-NATURE / be-MINE PIT active at all relevant scales

If Beringen-Mijn wants to be the gateway for the Kolenspoor, and thus mean something in this respect, there must be some form of engagement with the outside world. It must be involved and relevant to all desired developments to which it can contribute: locally, regionally, nationally, and internationally.

- Local = the neighbourhood of Beringen-Mijn and the city of Beringen
- Regional = the Mijnstreek (mining region) and Limburg
- National = Flemish and federal
- International = the Euregion (BE, NL, DE), EU and, worldwide

What follows is a non-exhaustive, illustrative, potential approach for the different levels we are active in.

The neighbourhood

The Beringen-Mijn neighbourhood is changing. There are active associations and creative forces, and a distinctly culturally diverse context. New master plans are being drawn up²⁶ that will be communicated to the neighbourhood. This is best linked to the developments on be-MINE as a site and certainly to the future investments in be-MINE PIT and be-NATURE. New investments should not only generate business, but – if we are serious about giving something back to the community – also make Beringen-Mijn a 'home'. The vicinity should be able to embrace the new investments as an investment in themselves. Of course, this requires that engagement and participation be encouraged.

This needs to be worked out in more detail, but can include:

- Creating space for hyperlocal initiatives, such as birthday parties, family barbecues, etc.
- Grant free access (perhaps in exchange for taking responsibility).
- Engage local people for jobs, guides, ambassadorships, etc. in all possible forms and legal guises.
- Support neighbourhood parties and become a real presence.
- Facilitate small investments, take action in the event of emergencies, etc.
- Engage in the various planning processes that upgrade the neighbourhood.

The city

The City of Beringen is in the fastest growing municipality in Limburg and has an eye for creativity, innovation, spontaneous initiatives, and entrepreneurship. be-MINE and be-NATURE can strongly support that policy.

Just as an example:

- be-MINE and be-NATURE can support the city's communication policy as a pole of growth, not only by highlighting itself as an attraction, but also by promoting the city.
- the 'Lutgart site' in the city centre, where there is plenty of space for creative entrepreneurship with the temporary occupation of empty buildings. This is a temporary project that will only last until a definitive property plan is realised. be-MINE and the coal preparation plant have available space. So, a low-threshold initiative such as the Lutgart site can be followed up on and perhaps even perpetuated.

26

Commissioned by the city government, the STRAMIEN / cv-Endeavour-Vectris agencies drew up a master plan for Beringen-Mijn site intended to breathe new life into the cohesion in and around the site.

The region

The Mijnstreek (mining region) is a growing concept. Some 30 years after the mine closures, almost all mine buildings, protected or not, have been repurposed. And there the concept of the Kolenspoor continues to simmer. be-MINE wants to become the gateway to the Kolenspoor with be-NATURE.²⁷

be-NATURE gateway to the Mining Region and the Kolenspoor:

- ensures broad communication goes from the entire region to the outside world.
- establishes cooperation and coordination in the region between the municipalities, repurposed colliery sites, associations, etc.

The whole region will have to co-invest in the Kolenspoor: all municipalities involved, the province, and Flanders will contribute, and the associations²⁸ will be involved.

The province

Limburg wants to be a top tourism destination. It will succeed by developing and playing to its nature and continuing to invest in original and authentic attractions and marketing. The mining heritage is the real unique selling position of Limburg. This does not exist anywhere else in Flanders.

Beringen-Mijn is the largest and most accessible industrial heritage site in Flanders. Its appeal can only grow.

be-MINE and be-NATURE must respond to this and become a leading visitor site for Limburg.

Flanders

National relevance is evident. The largest industrial heritage site in Flanders and Belgium is located here.

be-MINE and be-NATURE are a national meeting place:

- where we receive guests from home and abroad.
- where we can showcase our country's industrial tradition and use it as a stepping stone for our own industrial policy.

International

Become an international partner for what is happening in the world in terms of museums and heritage sites. But the new narrative can also seek alignment with the EU Green Deal.

²⁷ The Kolenspoor is the connecting project that will link everything implemented at the colliery sites, symbolically and in image. And, also physically by implementing an innovative bicycle route from West to East.

²⁸ It should also be noted that the associations from Beringen to Maasmechelen that are the de facto pioneers of the preservation and accessibility of mining heritage have to this day only received very limited appreciation and support. The Kolenspoor will never achieve credibility (locally or internationally) unless these initiatives are embraced and given a valued role in the bigger picture.

APPENDIX 3

press release of be-MINE NV on 11/09/2021

Coal Preparation Plants 1 and 3 get second life at largest industrial heritage site in Flanders

be-NATURE principle harmonises coal preparation plants with Mother Nature

BERINGEN, Saturday 11 September 2021 - How do you give two dilapidated coal preparation plants a creative and socially responsible purpose? With this question in mind, developer the be-MINE company has spent the last few months working out a future scenario for the gigantic Coal Preparation Plants 1 and 3 at the former colliery site in Beringen. The answer? Be-NATURE, a restoration principle where local nature is introduced into part of the mining heritage in a controlled manner. This surprising interplay between nature and heritage - representing an investment of around 10 million euros - aims to attract more than 100,000 additional visitors to be-MINE each year.

With 100,000 m² of buildings, be-MINE is the **largest industrial heritage site in Flanders** and unique in Europe. Over the past 10 years, the former colliery site has undergone a real metamorphosis: it has developed into an attractive and economically valuable tourist/recreational site, with plenty of experiential and leisure opportunities, while respecting its heritage value.

However, there is still one important piece missing from this magnificent heritage puzzle, as Tom Vanham (LRM NV, Managing Director) knows: *“Coal Preparation Plants 1 and 3 have been empty since the mine closure. Over the years, they have become wild and dilapidated. Which is why it is crucial to breathe new life into these historic buildings.”*

be-NATURE principle

That is why be-MINE has been putting its heads together over the past few months with lots of heritage experts, sector organisations, heritage associations, ex-miners, and committed policymakers. The outcome? **The be-NATURE principle where industrial heritage and nature combine to form a unique mix.** *“We opted to completely preserve the pictorial value. We are preserving Coal Preparation Plant 3 in its entirety as a ‘showcase’ with the idea of using it in the future. The dilapidated outer walls will make way for temporary transparent walls. This gives you a view of the coal preparation plant from the spoil tip”,* says Jeroen Huysmans (be-MINE NV, Managing Director).

*“In Coal Preparation Plant 1, we return to the essence of the building: the power of the structure. We preserve the load-bearing skeleton of beams and columns and clear away unsafe floor sections and dilapidated installations. We are going for a light restoration of the outer walls on the north side to preserve the **pictorial and ensemble value**. This outer wall is supported by three carefully restored bays and we will carry out intensive repairs on the concrete and steel. Some of the remaining selected installations and the majority of the structure will be taken over in a controlled manner by the flourishing local nature around it. To allow local nature to flourish, the currently dark spaces will make way for a new transparent roof structure. We will make this spectacular symbiosis **publicly accessible to cyclists, pedestrians, and heritage enthusiasts** so that visitors can marvel at the essence of be-MINE: industrial heritage and nature at the foot of the Kolenspoor”,* explains Jeroen Huysmans.

Two activities will energise this new international eye-catcher in terms of programming. *“First, there will be a themed catering experience at the foot of the Kolenspoor, and second, an art gallery where art, industrial heritage, and nature are interwoven. This will be done together with private partners where the practical discussions needed are already underway, and it will complement what is currently available in Limburg. We intend to open in 2024”,* concluded Jeroen Huysmans.

“Showcase project in Europe”

*“Very few coal preparation plants have been preserved as heritage sites in Europe. So, there is hardly any experience when looking to repurpose such huge complexes. This means the Beringen coal preparation plant can become a **showcase project in Europe**. Architectural heritage is a non-renewable raw material. Everything dismantled or removed is lost forever. Searching for a new future is a **creative process that is based on respect for what we have,***

that strives for maximum reversibility. A repurposed use of the coal preparation plant preferably relates its narrative, but is also useful, sustainable, and creative. The approach to the Beringen coal preparation plant recently took on a particular dynamic and is at a turning point. So, to achieve this, a lot of parties must join forces NOW. The Flemish Association for Industrial Archaeology non-profit would like to cooperate”, says Hendrik Nelde (VVIA NPO, Director).

“Participatory trajectory”

“The most appealing heritage projects are realised when there is a **strong participatory process** with room for bottom-up participation. So, we were really charmed by the process that be-MINE has gone through to intensively involve the heritage sector. A **constructive dialogue** makes a great deal possible. Here too, be-MINE plays a role that can be seen as an **example for other projects in Flanders**”, says Matthias Francken (HERITA NPO, Managing Director).

Support from Flanders, Province of Limburg, and City of Beringen

Implementing an ambitious project requires specific resources. In total, we’re looking at an investment of around **10 million euros**. The **Flemish government** is already committed to **2 million euros** calculates Matthias Diependaele, Minister of Immovable Heritage: “Flanders has a lot of valuable heritage, but a site of this size and allure is rare. The **plans for the renaturing of Coal Preparation Plants 1 and 3 testify to creativity and social commitment**. Moreover, the initiators intend to cooperate with internationally renowned partners. So, we are counting on this concept attracting more than **100,000 additional visitors annually from home and abroad**, who consciously select the combination of industrial heritage and nature. This is how we increase the attractiveness of our region.”

Igor Philtjens, Commissioner for Tourism and Heritage, is also enthusiastic. “The symbiosis of pictorial preservation and the be-NATURE philosophy is ideal. In fact, the authenticity of the mining heritage on be-MINE is so strong that the experience can be realised without all kinds of major interventions. That is also our starting point for the realisation of the **be-MINE PIT mine experience centre**. We use the strength of the industrial heritage to create a unique experiential route through the monumental buildings. So, the visitor gets a lasting experience of the miners’ work and the impact of the mining industry on Limburg’s economic development and society. Its implementation will start soon. More than 30 years after its closure, the site is regaining its **grandeur as an economic hotspot for Beringen and, with the construction of the Kolenspoor, also for Limburg**. The Kolenspoor not only connects the leisure attractions in the former mining areas, but also connects two top tourist pastimes: cycling and heritage. This creates opportunities for new entrepreneurship and jobs in Limburg’s leisure economy.”

Mayor Thomas Vints is also very pleased with the current plans: “The city of Beringen has been working **10 years** with the be-MINE company on the repurposing of the former colliery site. Be-MINE will become a new urban district where you can live, go to school, and relax. The repurposing of the coal preparation plant was a difficult issue for quite a long time, which was also a concern to the people of Beringen. We are pleased that there’s now a concrete proposal on the table. I feel what is already happening on the site is a **marvellous finishing touch**.”

Associations also support be-NATURE

The European heritage association Europa Nostra sees this project as an additional asset for the preservation of heritage. “For Europa Nostra Belgium, the be-NATURE experience with public passage through Coal Preparation Plant 1 as a gateway to the Limburg Kolenspoor is a credible and attractive part of a design that reconciles Coal Preparation Plants 1 and 3 with the already approved redevelopment of Coal Preparation Plants 2 and 4 and the development of the be-MINE PIT experience centre”, says Paul Dujardin (Europa Nostra Belgium Chairman). “Obviously, some questions about the repurposing remain to be answered, but Europa Nostra Belgium is convinced that the proposed concept should be approved for further elaboration as soon as possible. There is no time to lose if we want to safeguard the most completely preserved mine in Limburg for the future.”

As chairman of the Beringen Monument Preservation working group, Stephan Put also appeals to all stakeholders in the dossier of the repurposing of Coal Preparation Plants 1 and 3: “Beringen Monument Preservation would be delighted if the momentum surrounding this project were to be seized for the continuation of a constructive debate and consultation on the repurposing of Coal Preparation Plants 1 and 3, as an integral part of the overall project for all of Coal Preparation Plants 1, 2, 3 and 4.”

Finally, Mijnmuseum NPO and Friends of the Beringen Mining Museum also endorse this positive account. “The be-NATURE project is a remarkably positive move towards integrating the remaining coal preparation plants into the entire be-MINE narrative”, says William Vanderheyden (Mijnmuseum NPO Chairman).

APPENDIX 4

the transit_LAB mission

The study content and service contract that the transit_LAB cooperative company with social purpose has entered into with the be-MINE company, to be executed in July and August 2021 lists the following desired results:

Inventory

- An inventory made of the contents of Coal Preparation Plants 1 and 3 (machinery, installations, and their mutual cohesion).
- This will occur based on site visits and the interpretation and supplementation of the existing documents (surveys, archives, plans) available from be-MINE.
- The goal is to contribute to the accessibility concept (routes and narrative) of be-NATURE, make informed choices about the preservation or removal of machines, and amass an archive.

The new narrative for Coal Preparation Plants 1 & 3

- To contribute to the narrative of the project, also within the broader context of be-MINE, Beringen-Mijn, the Mijnstreek, and the Kolenspoor.

Programming

- Develop a joint vision for the continued programming of 'be-NATURE' with a view to finding a long-term 'reason to visit' focused on both the local and international public.
- Provide relevant leads and proposals.

Benchmarking

- Conduct a hands-on international benchmark and acquire a critical understanding of the success factors needed to manage industrial revitalisations relevant to be-NATURE.
- To this end, transit_LAB will prepare focused study visits for to obtain best practices – where and which ones still to be discussed.

Networking

- Search for, reach out to, and connect with relevant stakeholders for the be-NATURE project and, if applicable, related themes and projects.

Communication and creating a base of support

- Support and build a base of support among heritage associations and sector organisations in Limburg and beyond.
- Support any publications in professional literature or own publications.
- Complete a participation process with the most important heritage associations to find a consensus with these actors about the advice given and about the be-NATURE project.

Public financing

- Provide support for further public funding of 'be-NATURE' (co-production), European crowd funding/pitch book
- Provide and connect with European heritage contacts, in particular, EU, EIB, ERDF, etc.

Develop a tailored management model

- Together with the commissioning party, search for a model and modus operandi for the future management of CPP 1 and 3: ownership structure, governance structure, operational management, and so on.

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COLOPHON

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THE COAL PROCESSING PLANT IS A WHOLE

OVERVIEW IS NEEDED
TO SEE **THE ESSENCE** AND
MAKE **CHOICES**

