

.Graduation project.
Master of architecture, Tilburg

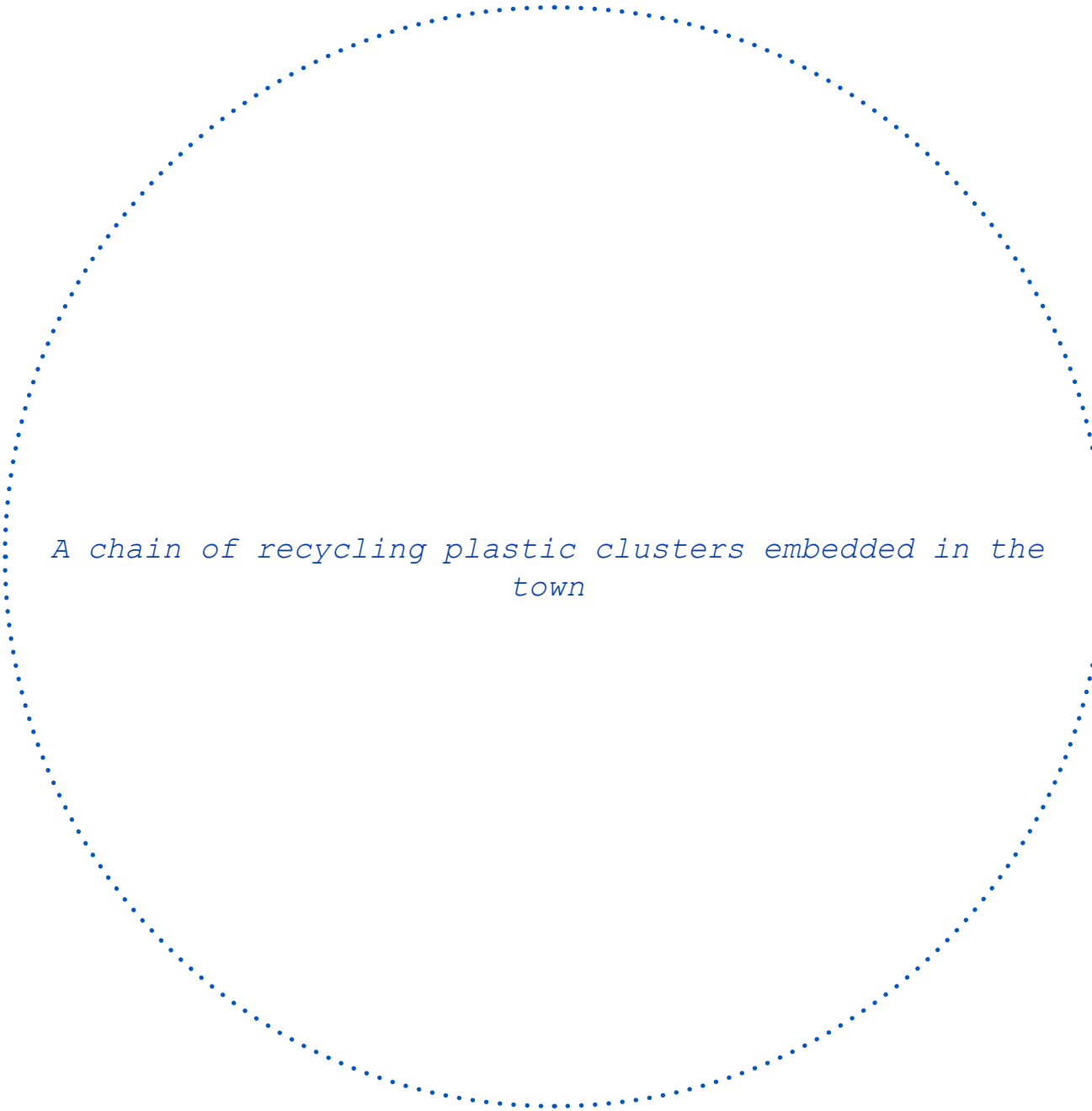
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[..]In these cities, urban development policy usually reacted with a considerable delay of several years to ongoing shrinking processes and structural change. What triggered off the development of new strategies of urban development policy was most of all the fact that problems of shrinking developed into crises: lasting failures with reestablishing industry and trade, a high degree of unemployment and the ongoing emigration of inhabitants, as well as increasing financial bottlenecks for the municipalities. I.e. one became aware that problems were developing into crises, and this resulted in a new way of discussing and dealing with problems.

Keim, K.-D. (Hrsg.) 2001: Regenerierung schrumpfender Städte - zur Umbaudebatte in Ostdeutschland.- REGIO transfer

Hypothesis :

Creating a chain of recycling plastic clusters as a magnet tool to reset urban activities in response to the issue of shops vacancies in declining towns, in the context of Heerlen.

Methodology :

It started from Picking up a study case in the Netherlands where a lot of shrinking towns are located, Heerlen turned out to be the town with the highest amount of vacancies. The methodology was based on interviews with the inhabitants living in the town, and research by design which led to the concept and design approach. To bring the identity of Heerlen back and make it alive once again!

Relevance :

"To provide meaningful architecture is not to parody history but to articulate it" - Daniel Libeskind .Awakening towns to reuse the unused is a call to stakeholders to rethink about the identity of towns and their future. It's a call for architects and urbanists to rethink about the identity of places and buildings and to use their resources wisely and carefully.

Keywords :

Network, clusters, reuse, unused, recycle, vacancy, revitalize, shrinkage, identity, industry, education, tourism, border towns, plastic waste, recycling, town center.

*“ Residents of shrinking areas were on average
happier than those in growing ones”*

Ellis Delken

Awakening Heerlen, A chain of recycling plastic clusters embedded in the town.

I have a story to tell you - a story of an overrated areas where a 3 million people are every week moving to, a story of approximately 54% of people worldwide now living in places that are booming, offering better conditions and more opportunities¹. Meanwhile, other underrated areas are gradually fading, undergoing dramatic social and economic changes, ensuing to a lifeless environment.

In Europe 22% of EU citizens currently live in small cities may lose more than 10% of their population by 2050, and 42% of EU citizens currently live in large cities, their population may increase by more than 10%².

My story is about the future of towns, the future of places used to be amidst large cities and villages. Today, some if not all of them are holding their last breathe, waiting for a glare hope!

As many other shrinking towns aching silently in this disclaiming world. Heerlen is one of them. Located in the most shrinking area in the Netherlands. In the south of the region of Limburg i, and sharing its border with the city of Aachen, in Germany. It has as well the highest amount of shops vacancy in the Netherlands. After years of encountering, the town as well as its inhabitants decided to surrender and settle for what they already have. In a usual day, While I'm walking by the town center allies, I'm frustrated, I'm surprised. 1 out of 3 stores is vacant, where public space is unvalued and education is underrated and where youngsters are barely noticed. What would shake Heerlen and awake it from its lethargy? probably resetting urban activities and revitalizing its vacant shops?!

Shrinkage may be considered as a healthy change, where urban and rural areas are shuffled and developed to find their own balance. However when shrinkage is affecting the amount of population and the economic growth of certain regions it becomes a challenge. Declining towns are particularly undertaking economic decline where symptomatic factors such as vacant retail - vacant buildings pop up, less job opportunities, youngsters immigration, and low rate in education.

In order to find alternative solution to deal with the issue of shrinkage and the retail vacancy - Involving the municipality together with the inhabitants of the town of Heerlen will be one of the first steps - Linking history to the current situation (vacancy) and enhancing the existing qualities of Heerlen will be the support to develop the concept of the project.

Due to the high amount of vacant retail laying in the town center of Heerlen, recreating alternative program into these spaces to revive the center once again will be the goal of this project. Bringing education as a weakness and industry as strength of Heerlen together is a strategy to ensure a bright future for Heerlen as well as other declining towns aching around the world.

To dig more into Heerlen let's start from the beginning of the 19s century, where Heerlen had a great start with the opening of the coal mines, young people had jobs, and a cheerful life. The town was evolving together with the amount of its inhabitants. People were attached to their religion as well as to their work in the coal mines, until the beginning of 1970 where the government decided to close the coal mines, reasoning in finding a better resources - Gas resources.

1. <https://www.un.org/development/desa/en/news/population/world-urbanization-prospects.html>

2. <https://ec.europa.eu/jrc/en/facts4eufuture/future-of-cities/urban-populations>

the sudden event of the closure of the mines took place and led to a chock for the inhabitants of Heerlen which resulted in a break down in different level including educational, cultural but also economical. During the break down a lot of young people flew the town and the amount of 100.000 inhabitants that was living at that time in Heerlen slowly dropped to 67.000 inhabitants³.

During the coal mines industry, the Koninklijk⁴, known as DSM company was also founded during the coal mines period in 1902 in Heerlen and where they still have their headquarters. At the time of the mines closure (during the beginning of the 70s) DSM continued its flourishing and slowly changing from a polluted chemical company to a sustainable company producing bio-plastic.

Back then DSM was mainly focusing on producing chemicals, eventually the company decides to switch its focus into innovation and sustainability by starting to sell recycled plastic, bio-plastic granulate but also advice other companies on the know how to recycle their own products .DSM is a worldwide leading company nowadays, with more than 50 offices around the world. Although it is part of the history of Heerlen, it is barely linked to it.

With the challenge of shrinkage that Heerlen is experiencing for years that has led to shops and housing vacancy has left the town soulless and lifeless.

On that note, what event could shake Heerlen to revive its center and make its inhabitants become active once again ? How could vacant shops be revitalized and create regional, national and international impact? Answering these questions are even complex for the municipality of Heerlen who is already aware of the situation. Solving this puzzle has to start from the inhabitants on what they think of the situation and what are their ideal solutions.

3 days of surveys led to many conclusions, where about 60% of them expressed the need of meeting spaces, 30% didn't care at all and are already excluding themselves from the participation. The rest want to help but have no idea on how to do so! What about the history of Heerlen and where its fully potential lies? The potential remain in its industrial history, as well as its strategic location - a border town, closed by many international airports within one hour drive from its center.

Linking industry to urban activities would save Heerlen from the shrinkage therefore it is importantly to rethink urban activities through the use of vacant shops to attract tourists, students to the town but also involve inhabitants in different activities and pushing them to make Heerlen a better place.

For that Heerlen needs a sustainable strategy merging industry and education by replacing commercial standard activities in the town center with a sustainable innovative industry on small scale and linking it to bigger industries. *By Creating a chain of recycling plastic clusters as a magnet tool to reset urban activities in response to the issue of shops vacancies.*

As previously mentioned DSM is a leading company in producing bio-plastic which would provide an opportunity for Heerlen to set a recycling plastic clusters chain in the town throughout it DSM could promote on an educational level its sustainability plan to a wide range of people but also to raise the awareness of recycling plastic in a time where it's been used intensely and carelessly with a production of 448 million in 2015 and which is expected to double in 2050⁵.

These recycling clusters are an architectural call to flatten the curve of This harming plastic pollution causing a lot of pressure on our environment.

If we imagine for a few minutes this embedded wireless recycling plastic chain growing progressively from the inner town passing by the periphery and then breaking through other towns and Cities! Marvelous!

The idea of recycling plastic clusters is based on the combination of multiple vacant shops in the town center where in each building a specific activity takes place, combined with others to form one complete entity in a journey taking you through the process of recycling plastic.

The chain is starting from the reception (building A) of the clusters chain, a small building on one level located in the beginning of the shopping street of Heerlen, the reception building marks the start of the itinerary in which the inhabitants, tourists, students who are interested in joining workshops for recycling plastic, research lab, or even visit the clusters could register in there and get their tickets. The space is based on self-service where people can browse by themselves and get information or buy tickets for the journey.

3. <http://theprotocity.com/parkstad-limburg-coping-with-shrinkage-for-better-or-worse/>

4. Koninklijk : is an honorary title given to certain companies and non-profit organisations in the Netherlands.

5. <https://www.nationalgeographic.com/environment/habitats/plastic-pollution/>

The second stop is the storage building B), located in a quiet street, composed of 2 floors and where the recycling process starts, from collecting the plastic waste around the neighborhood (houses, shops, public spaces) to store the waste, sorting it out, washing it and then distributing it to the rest of the chain. It's sort of a storage gallery where people could visit and see different types of plastic and how it is been proceeded.

Passing by the third step, the workshop and the research lab (building C) is composed of two vacant shops and an extension of the back. This building play a big role within the chain, it' s a space meant for creation, and production where people could come to work inside the workshop to design and create products and objects made out of recycled plastic by using self-made recycling plastic machines, and then recycling it by themselves in a safe way. There is also a possibility to take courses and to attended lectures inside the workshops building. On the other side of the building, the research lab is set, a space accessible to students and experts, a playground for them to do different experimentation and research on plastic by using different machines and techniques,

It's directly connected to the workshop but also to the conference room where experts in recycling plastic could be invited to share their knowledge and expertise.

The next destination would be the gallery (building D), another vacant shop laying in the corner of the street, the building has 2 floors, the exhibition space is on the ground floor with a double height, where artists could exhibit their sculpture and arts made out of recycled plastic, and where products made of plastic are sold. The last 2 floors are intended for artists accommodations.

Last but not least is the hostel and meeting space (building E). Located in the heart of the main shopping street, the hostel is specifically designed for people who are interested in participation in the workshop for several weeks to attend courses or conferences in relation to the topic of recycling plastic and innovation. The building has also a meeting space where people from other clusters would meet and discuss ideas.

Right on the bottom of the building is a surprise, a small café connected to a courtyard shared by other shops and housing, a cozy space where people would come and get some coffee.

Our last stop is the library and meeting spaces(building F). The journey inside the clusters ends in the library where people could sit enjoy readings about recycling plastic, innovation or simply get some knowledge about the topic, very special space with a double height create a serene place for the readers. The first and second floors are intended for meeting spaces for people that are working inside the clusters, they could meet ,discuss new ideas and improvements inside the chain.

All the 6 buildings fall under 7 architectural principles, that are mainly related to reviving vacant shops and solve issues concerning light by adding patios, voids, and double heights, issues in relation to the size of the space by extending some parts or removing others, organizing served space to ensure a smooth circulation inside these types of buildings.

The architectural principles focus on the materiality as well where in all the buildings facades are made out of honeycomb polycarbonate sheets and translucent plastic frame made out of polyethylene,to create a coherent recycling plastic chain clusters.

The flash back into the history of Heerlen took me back to its industrial period. make it alive by introducing the 3.0 industry which is the plastic recycling chain industry embedded in its center. This is a soft response for the current situation the town is facing with the shrinkage and the amount of shop vacancy present, to shake it and awake it to stand up for its potential, for its identity!

This project is a combination of multiple topics that I tried to tackle in a clear and convincing way " shrinkage of towns" " challenge of shops vacancy despites the shrinkage " and the issue of plastic that our planet is suffering deadly from, topics that are in my opinion being forgotten lately.

This project taught me how architecture could bring the best out of any situation, that architecture is a beautiful change letting you seek wisely solutions to social/historical or even political challenges that could be solved by design!

It taught me as well that architecture is a enjoyable dangerous labyrinth playground, where you should carefully pick up the best from it, and enjoy it's taste!

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<https://www.norcalcompactors.net/processes-stages-benefits-plastic-recycling/>

.Experts.

Sandra Poelman : Urban designer expert in reviving vacant areas : Consulting her to help me for strategies to revive the center of Heerlen - as she already did a similar project in one of the neighborhoods in Eindhoven.

Bart the zwart : Architect expert in retail and shops, my consulting session with him helped me to understand more about the way vacant shops can be used, the relation between stakeholders and real estates but also giving reference on the reuse of vacant shops.

Roy Vissers : Expert in Sustainability in plastic (project leader of sustainability in DSM , my meeting with him was more about getting to know DSM better and how it would be possible to relate DSM to my project.

Ronald Rietveld : Architect expert in vacant buildings, consulting him to get to know more about vacancies in the Netherlands.

Manon Souren : strategic advisor in the municipality of Heerlen, my meeting with her was about the future programs that the municipality is taking to solve the project of vacancy in Heerlen, I also discussed with her my project and its potential in Heerlen.

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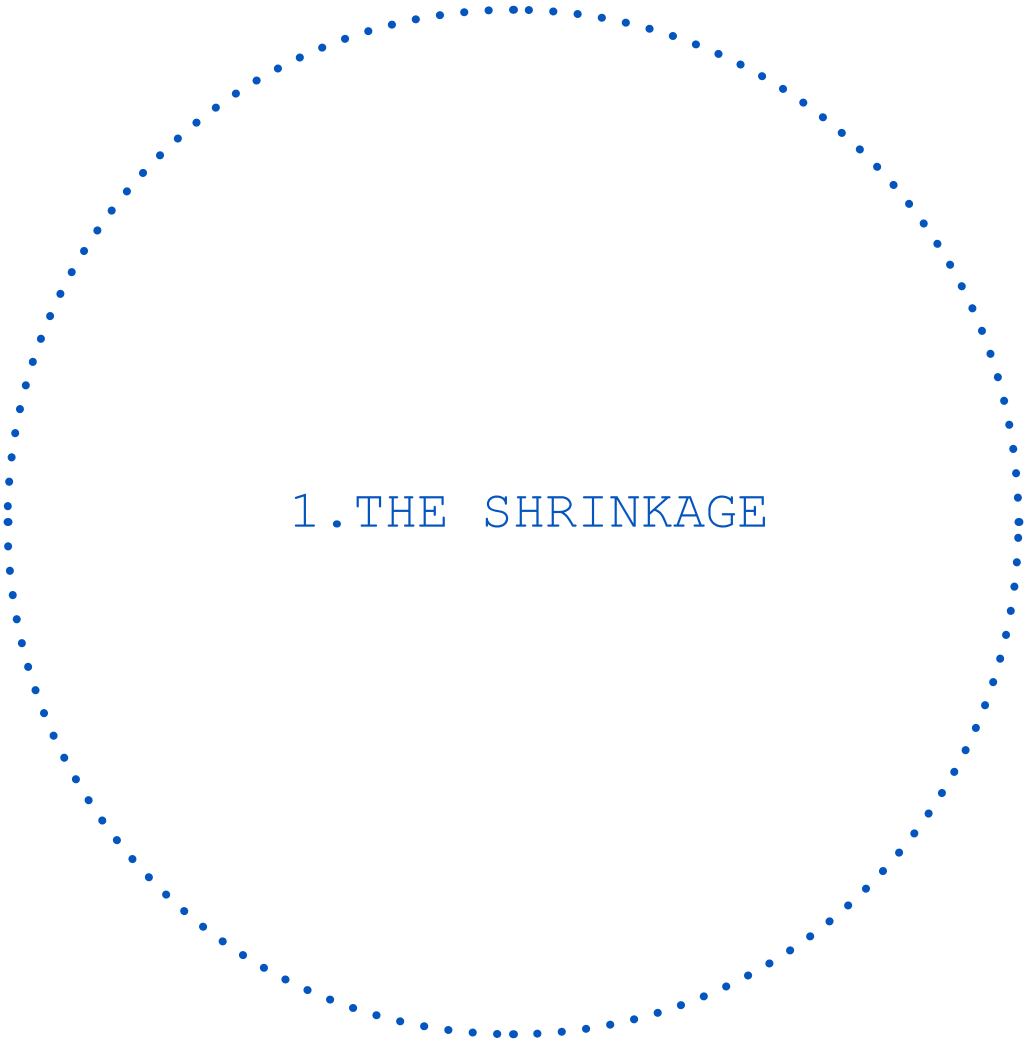
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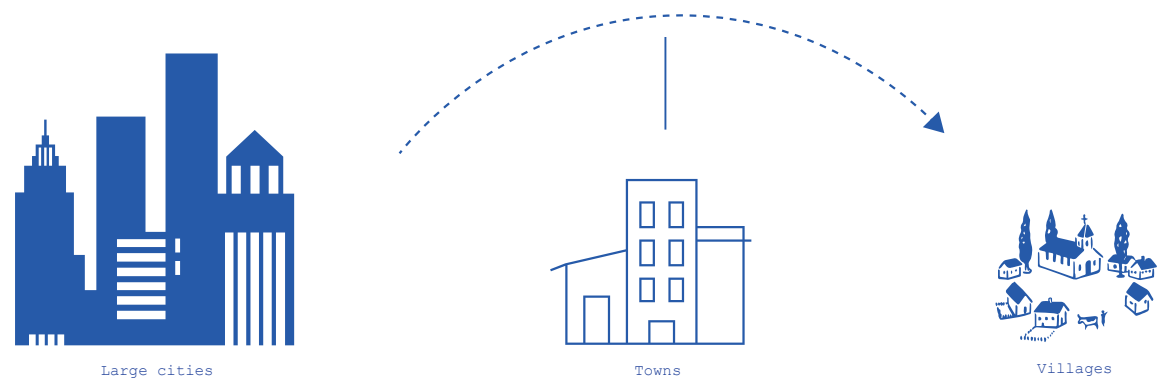
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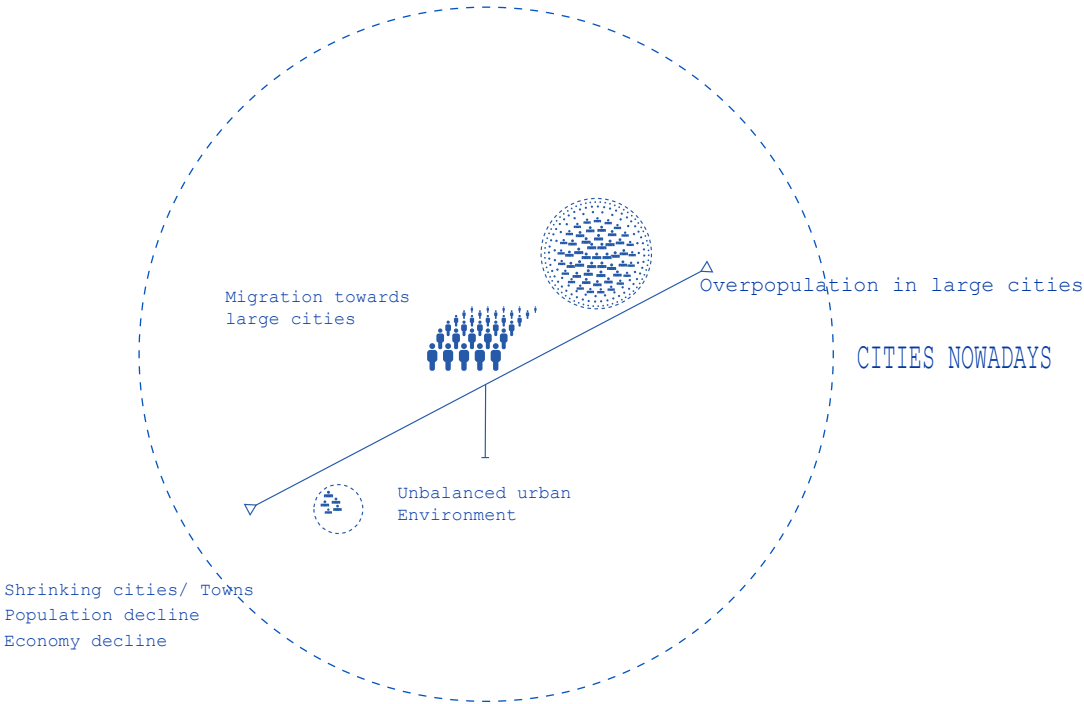
The shrinkage

Town/city

A city that is a large town, inhabited place of greater size, population. Whereas town is a compactly settled area usually larger than a village but smaller than a city. Towns are the bridge between urban and rural areas, they have their own effect, role, and identity. However, Resulting from the high concentration of people in large cities, towns are barely getting attentions from authorities.



Migration between Cities/ towns/ villages



The shrinkage

Definition

A city that during a period of time and without any perspective in the short term of reversing this trend, is significantly continuing losing population either for emigration or by natural causes.

Aspects

Industrialization -----> post-industry has lead to shrinkage

Aging population -----> Young generation is leaving the small towns towards bigger cities

Economic decline -----> Investors & entrepreneurs moved to prosper cities

Population decline -----> Less job opportunities, less activities.

Segregation -----> Neglected parts of different counties especially the ones located in the border of the county.

Infrastructure -----> Poor infrastructure leading to unattractive towns

Cases of shrinking cities

China: Fularji

Is an industrial town in the northernmost of province of China. Is was mostly developed during 1950. When the factories, colleges and workers hosing were built. Quiet and lonely town in the middle of nowhere, most of the people in Social structure.

Town’s life was centered around factories



Life



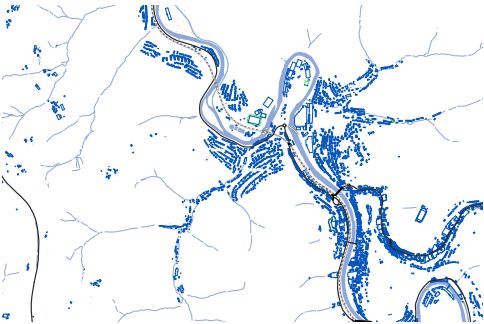
Town center of Fularji, China



Germany: Altena , 18,544 population

Represents the challenges of very many formerly prosperous industrial cities in Europe which have lost out in the global competition for markets and jobs. Altena’s history as a metal producing and processing town stretches back over several hundred years.

Closing factories and unemployment are one of the main factors for Altena shrinkage.

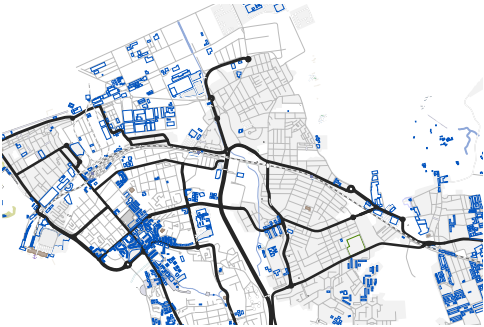


Town center of Altena, Germany



The quality of life could be improved with existing resources and in ways that are sustainable. Related to the history of the town
Portugal :Barreiro 78,764 population

The factor of industrialization always play a key role in shrinking towns



Town center of Bareiro, Portugal



Located on the southern bank of the Tejo River, shows the second-largest population loss in relative terms of the nation’s shrinking cities between 1991 and 2011. Until 1950, the city’s industry was outstanding, with the operation of railways and the chemical industry. The main cause for population displacement has been linked to the abrupt closure of its industries.

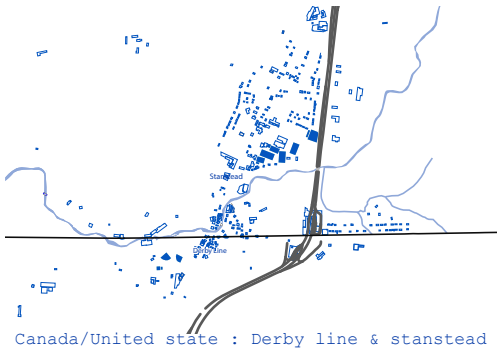
Education is also one of the factors leading to towns shrinkage

Cases of shrinking cities

United state/ Canada : Derby line, vermont, stanstead

The towns of Derby Line, Vermont and Stanstead, operated more or less as one town. Derby Line's sewage gets treated in Canada. They share a water system, pumped from Canadian wells, stored in an American reservoir. **They share emergency services.**

Sharing, Co-creating, Collaboration



Denmark: horsens 57,517 population

Jutland south of the town of Lønstrup, balance Denmark through relocation of government job, Better Balance II' plan to generate growth outside the capital.

Introducing a new politic around shrinking towns.



Spreading public functions



Denmark : Horsens



Australia: Mount Isa 21,998 population

Is a mining community in Queensland. Due to collapses in the metal market the mining became uneconomic and employment declined from 64% in 1954 to 10% in 2001. In order to create employment and keep the city viable, the city focused on **de-veloping and selling technical innovations in the field of mining**

Restoring identity Using history, to recreate



Introducing innovation, to reactivate the town



Sources

Cities for people Jan Gehl:

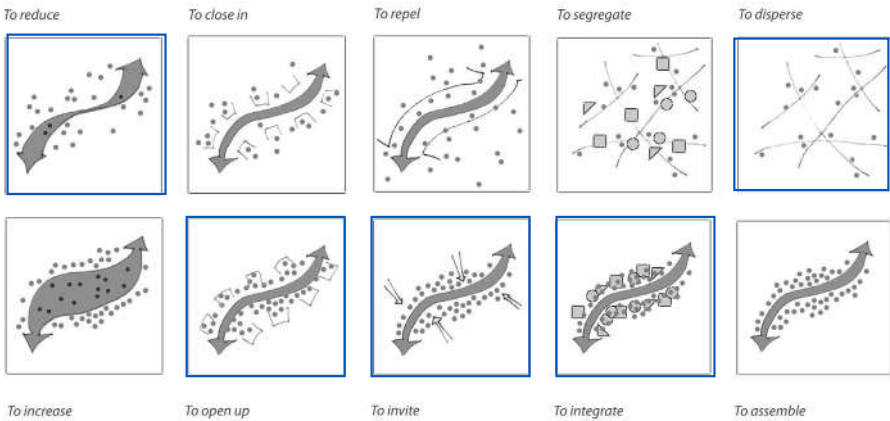
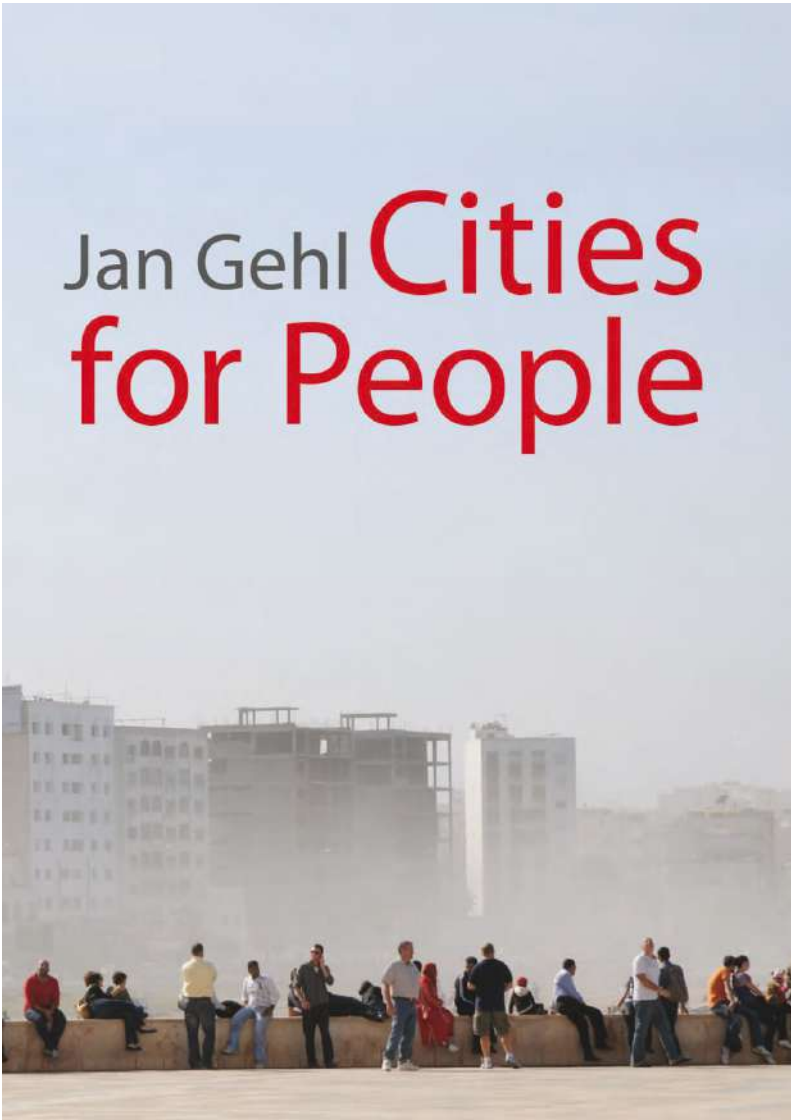
Necessary activities under all conditions : going to work or school, waiting for the bus, bringing goods to customers. These activities take place under all conditions .

Optional activities : recreational, optional activities, optional activities that people may like, walking down the promenade, standing up to get a good look at the city, sitting down to enjoy the view

---> If outdoor conditions make walking and recreating impossible [...] if conditions are tolerable, the extent of necessary activities grows.

Low buildings are in keeping with the human horizontal sensory apparatus, but high buildings are not. Turning torso livingness in the city is not limited to quantity, the lively city is a relative concept [...] it is not numbers, crowds, and city size that matters but the sense that city space is inviting and popular that creates a meaningful place.

The lively city needs a combination of good inviting city space and a certain critical mass of people who want to use it.



Protection	<div>PROTECTION AGAINST TRAFFIC AND ACCIDENTS — FEELING SAFE</div> <div>Protection for pedestrians Eliminating fear of traffic</div>	<div>PROTECTION AGAINST CRIME AND VIOLENCE — FEELING SECURE</div> <div>Lively public realm Eyes on the street Overlapping functions day and night Good lighting</div>	<div>PROTECTION AGAINST UNPLEASANT SENSORY EXPERIENCES</div> <div>Wind Rain/snow Cold/heat Pollution Dust, noise, glare</div>
Comfort	<div>OPPORTUNITIES TO WALK</div> <div>Room for walking No obstacles Good surfaces Accessibility for everyone Interesting facades</div>	<div>OPPORTUNITIES TO STAND/STAY</div> <div>Edge effect/ attractive zones for standing/staying Supports for standing</div>	<div>OPPORTUNITIES TO SIT</div> <div>Zones for sitting Utilizing advantages: view, sun, people Good places to sit Benches for resting</div>
	<div>OPPORTUNITIES TO SEE</div> <div>Reasonable viewing distances Unhindered sightlines Interesting views Lighting (when dark)</div>	<div>OPPORTUNITIES TO TALK AND LISTEN</div> <div>Low noise levels Street furniture that provides "talkscapes"</div>	<div>OPPORTUNITIES FOR PLAY AND EXERCISE</div> <div>Invitations for creativity, physical activity, exercise and play By day and night In summer and winter</div>
Delight	<div>SCALE</div> <div>Buildings and spaces designed to human scale</div>	<div>OPPORTUNITIES TO ENJOY THE POSITIVE ASPECTS OF CLIMATE</div> <div>Sun/shade Heat/coolness Breeze</div>	<div>POSITIVE SENSORY EXPERIENCES</div> <div>Good design and detailing Good materials Fine views Trees, plants, water</div>

Sources



Based on principles of non-growth:

SMALLER CAN ALSO MEAN MORE SUSTAINABLE

De Antistad [The Anti-City] Hermans (2016) introduces the term "building down" with 7 principles :

.An orientation to the future. : Openings for growing smaller in a qualitative way.
Necessary to create new rituals. :

.Building down : new opportunities in a non-growth context

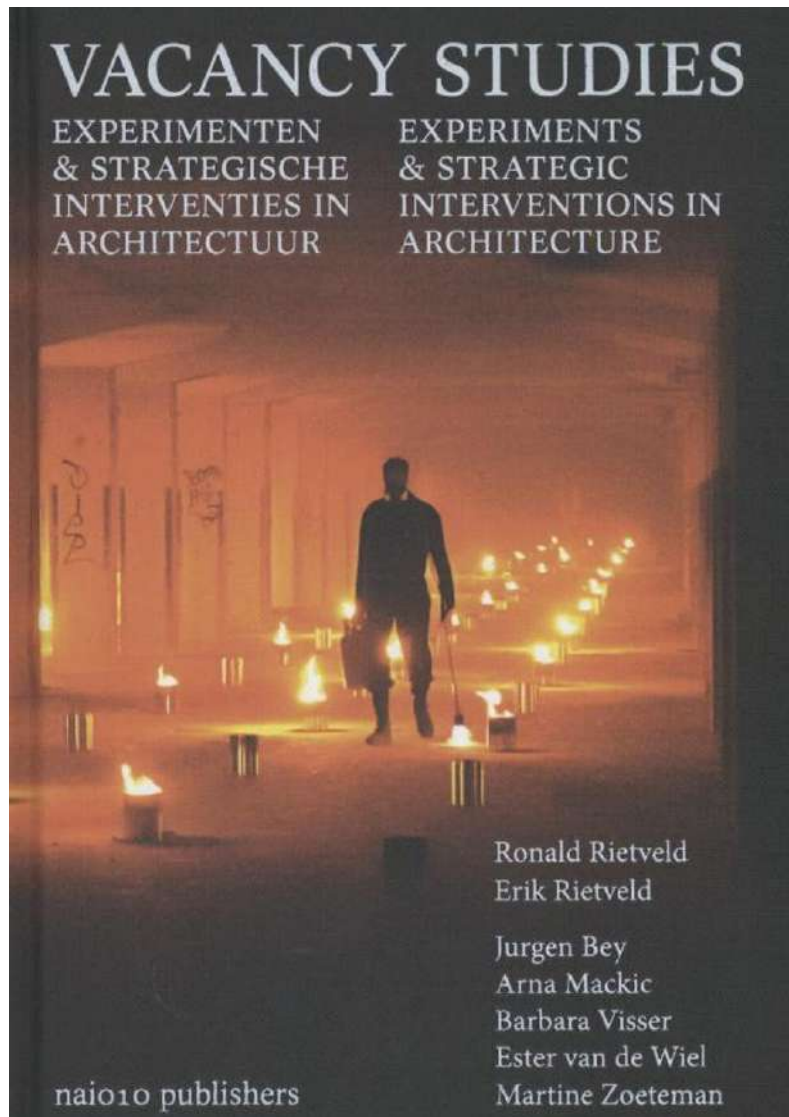
.Participation : residents are co-owners in the quest to design the future of their living environment.

.Experimentation : The shrinking environment is a place for new opportunities to be developed to experiment with.

. What he calls 'soft' planning : communication , self-organization and cultural interventions having more effect on urban development

.Unspectacular: The change manifests itself in small things and forces us to reflect on identity.

Sources



The book is helpful to know about the vacancies around The Netherlands.

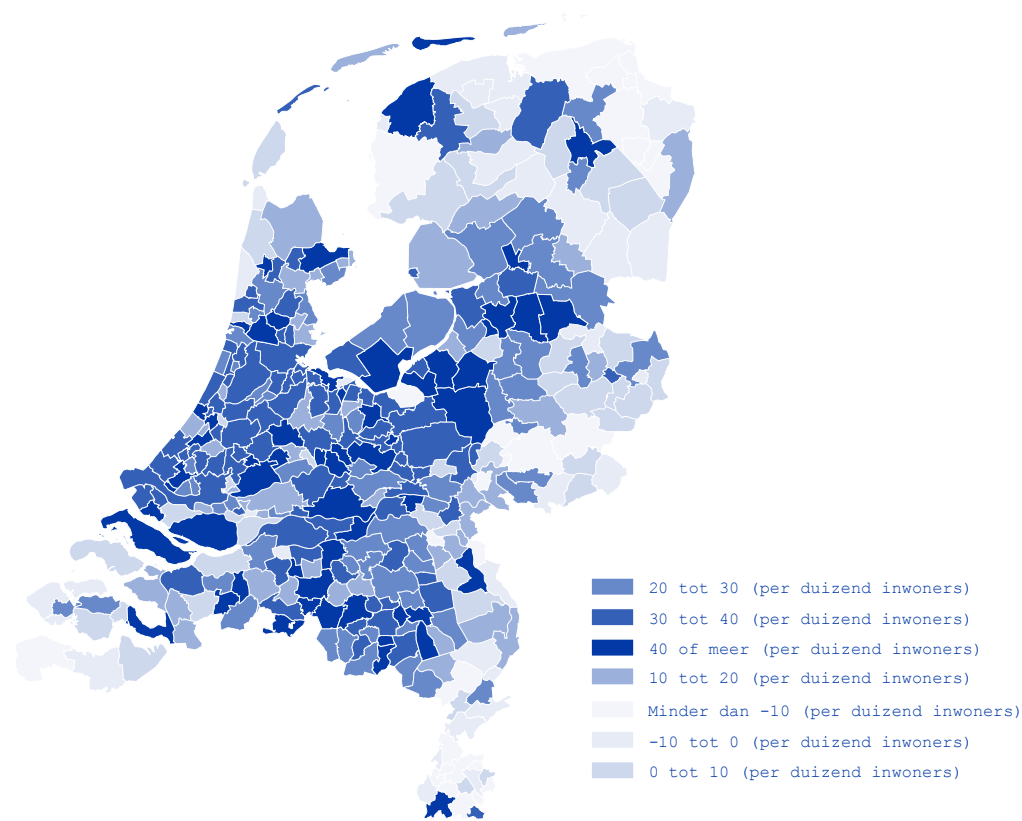
How different vacant buildings are being analyzed and different solutions are proposed to solve this problem in The Netherlands.



Shrinkage in the Netherlands

Shrinkage in the Netherlands

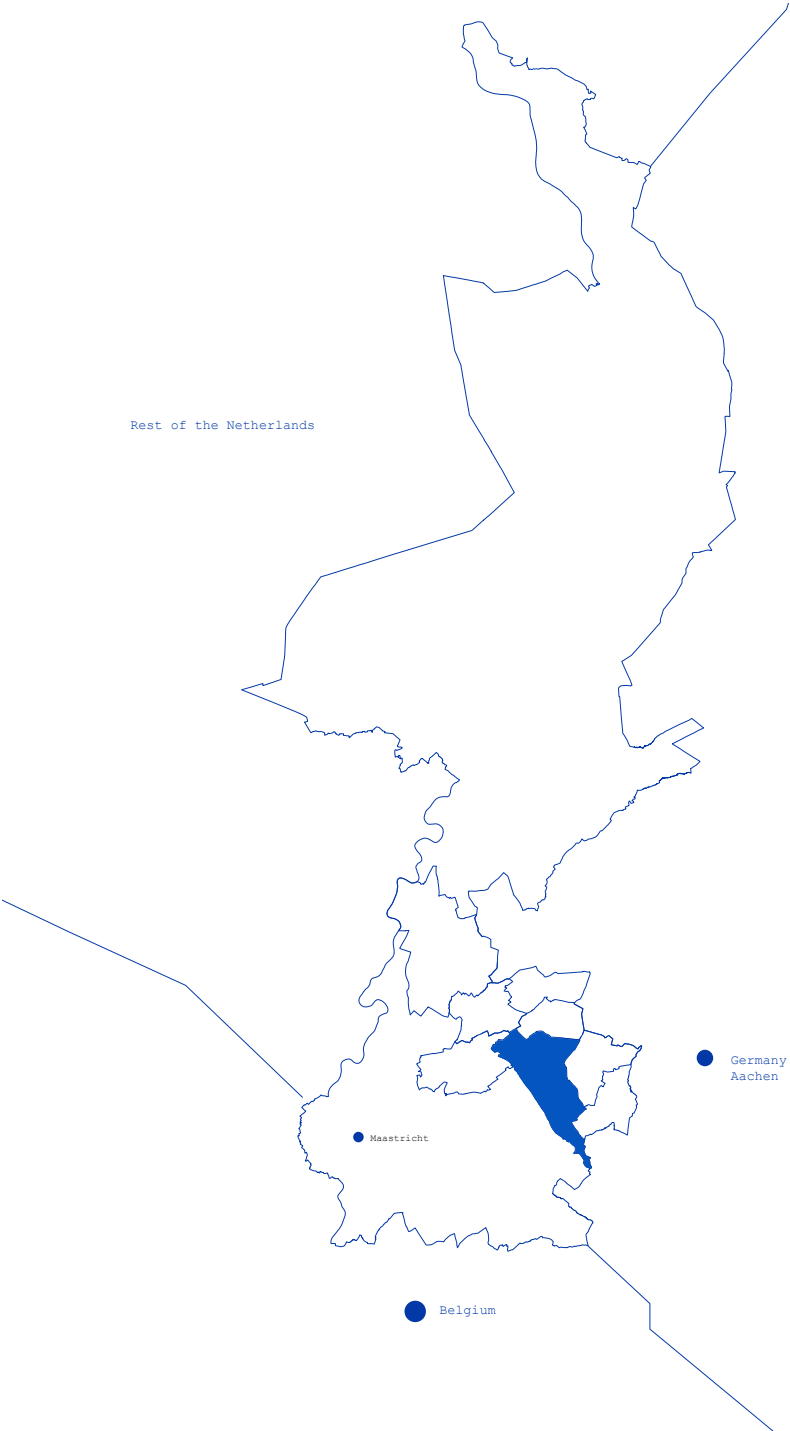
Netherlands as many western European countries is facing shrinkage in its different region especially the ones on the border where limburg represents the highest amount of shrinkage.



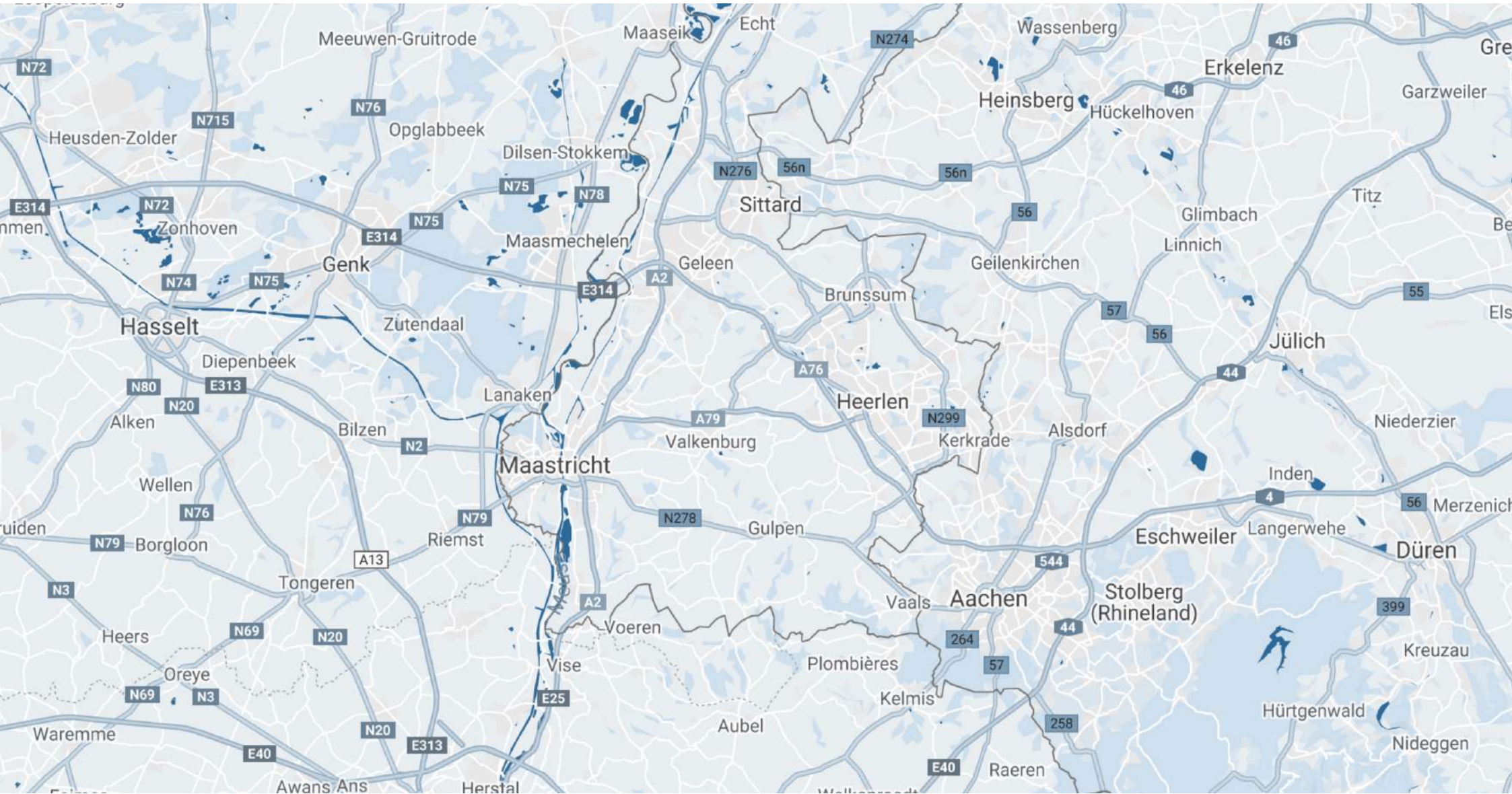
Shrinkage in the Netherlands

Limburg

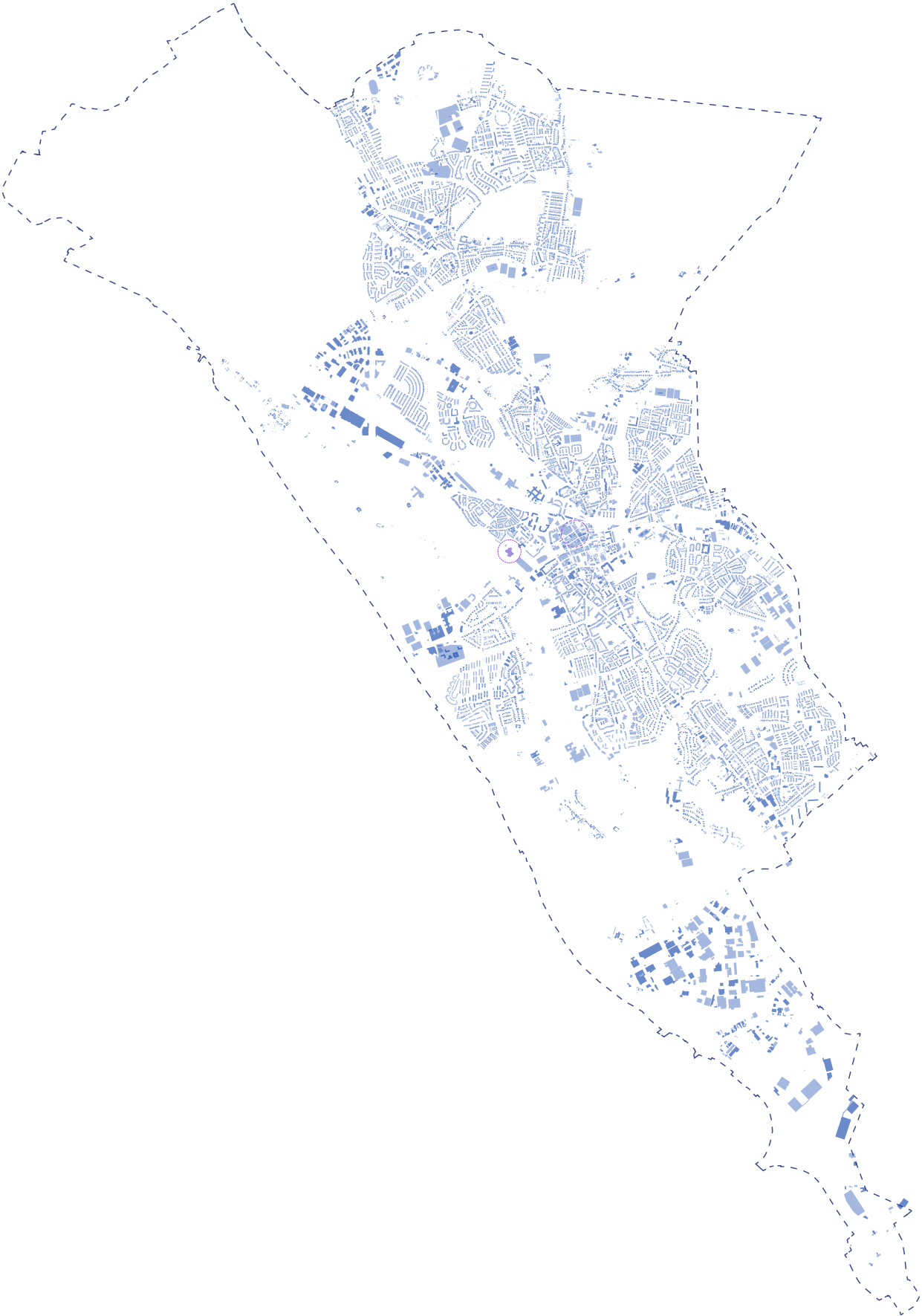
Parkstad consists of seven municipalities in the former Eastern Mining Region: Beekdaelen, Brunssum, Heerlen, Kerkrade, Landgraaf, Simpelveld and Voerendaal. These seven municipalities are characterized by mine closures in the 70s of the last century.



Heerlen



Municipality of Heerlen



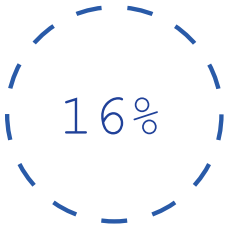
Vacancies in Heerlen

Why Heerlen ?

Heerlen is considered one of the shrinking towns with the highest vacant retail and population loss compared to the rest of shrinking towns in The Netherlands.

Heerlen 16%

- Den Helder 13%
- Delfzijl 12%
- Terneuzen 10%
- Assen 9%
- Hilversum 6%



Pictures of the location



Urban landscape in the town center



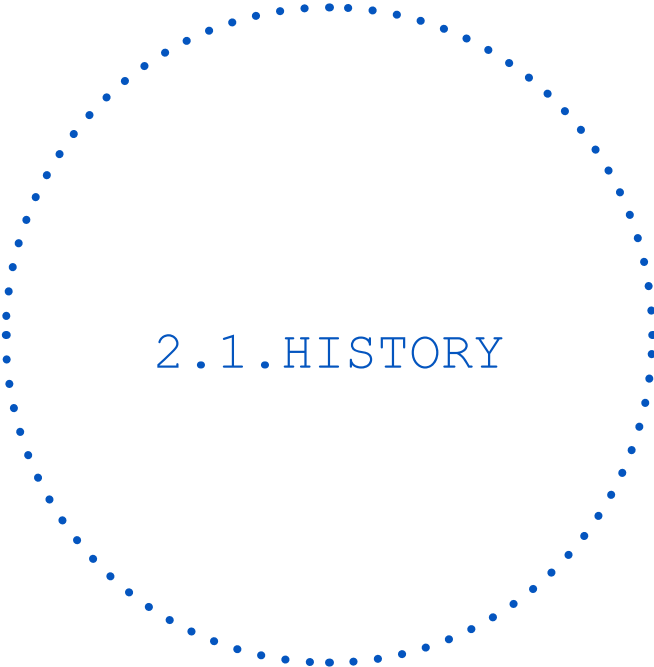
Urban landscape in the town(train station)



Empty fields around the city



Historical buildings (church in the town)



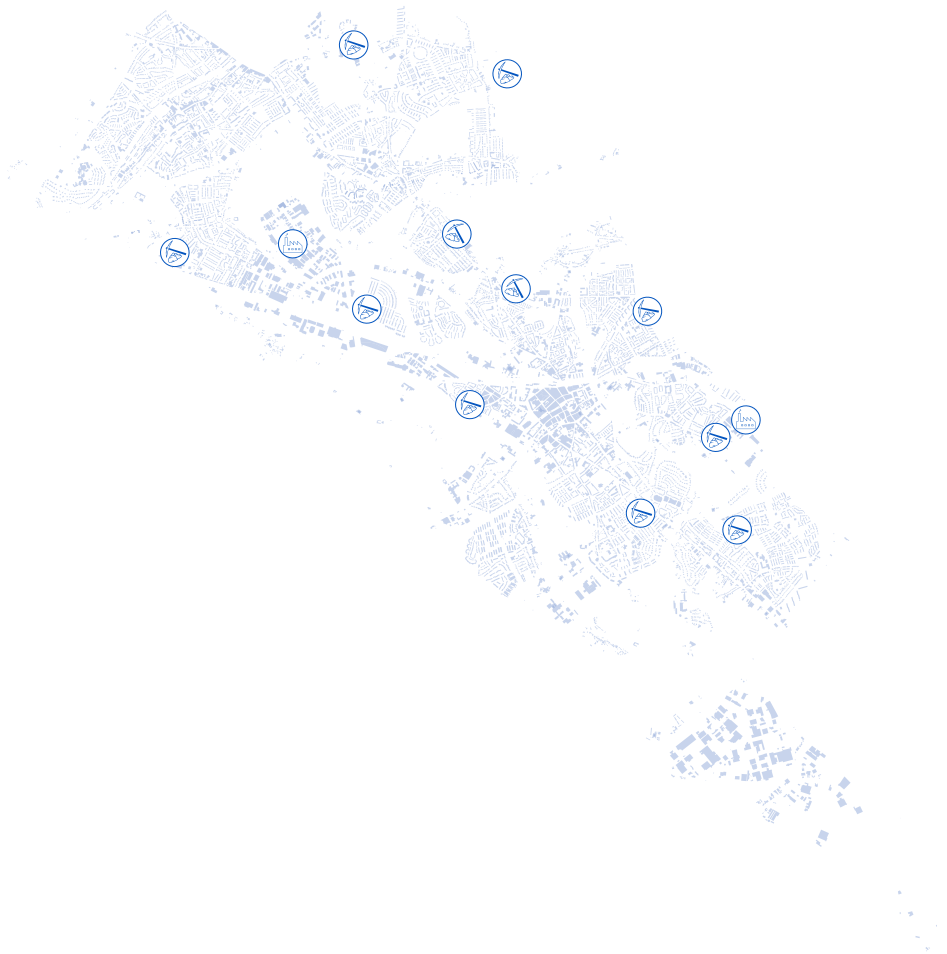
History of Heerlen



Roman Bath, Heerlen museum.

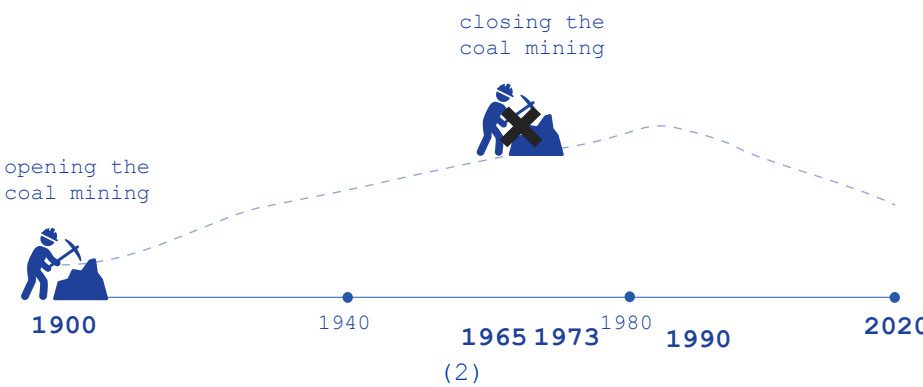
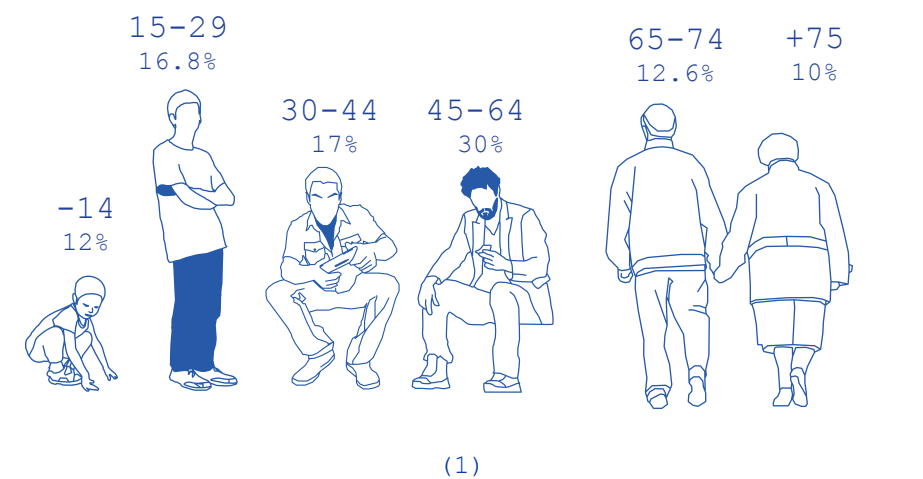
The oldest stone building in the Netherlands is located in Heerlen. This honor is due to the local Roman bathhouse, as scientific research proves. It was built between 63 and 73 AD. In addition, the surrounding site of the bathhouse, Corvallis, was more important than previously believed.

History of Heerlen



Industrial and mining areas around Heerlen in the 19s

The population now & then



The population

(1) Current amount of inhabitants 86. 906 (2019) ,expected to decrease to 64.000 in 2050.

(2) Amount of population during the industrial period.

Culture



Shunck, building transformed from a clothing department to a cultural center

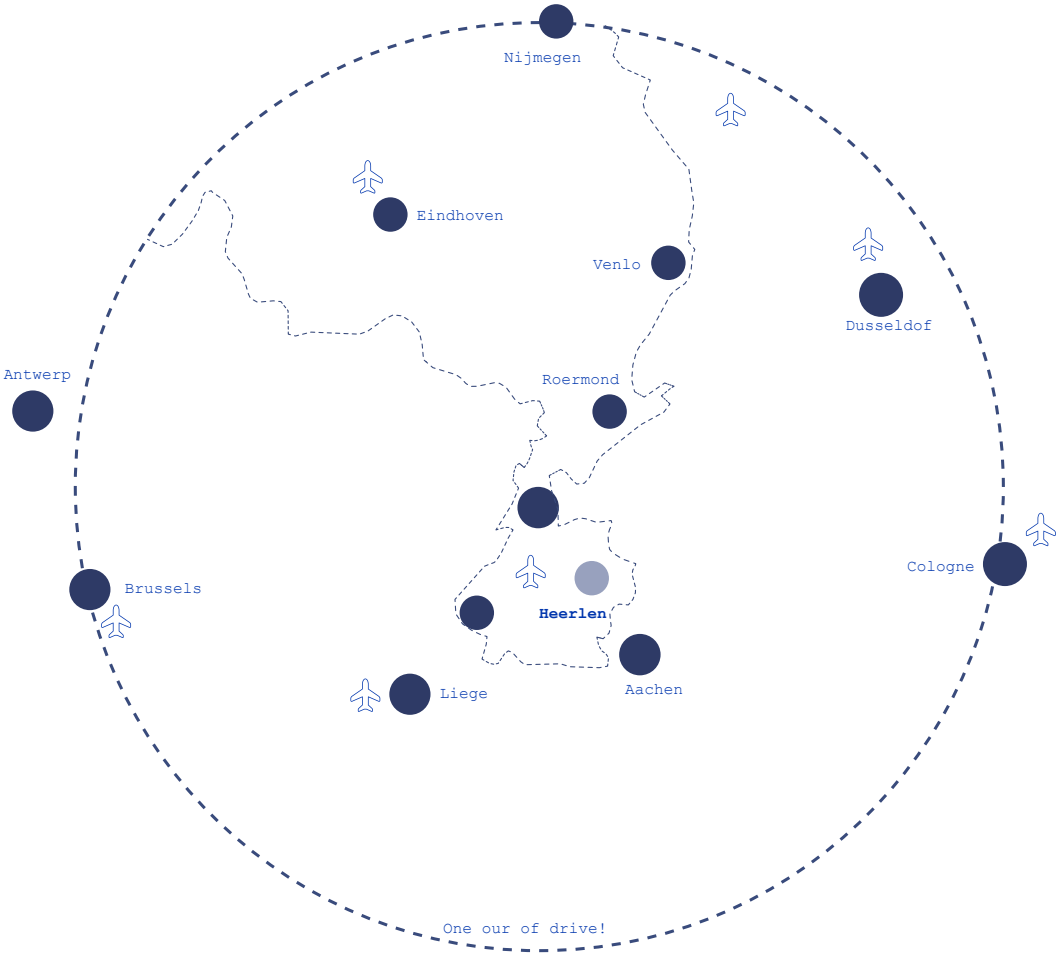
culture

Music Festivals

From 2013, Heerlen decided to support the urban life-style of the people of the Park by using murals on (mostly vacant) buildings.



Proximity



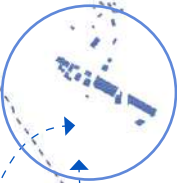
Heerlen is closed by 1h to a lot of important and international airports that are part of the circle above.

Tourists

German tourists



Commercial area



Belgian tourists



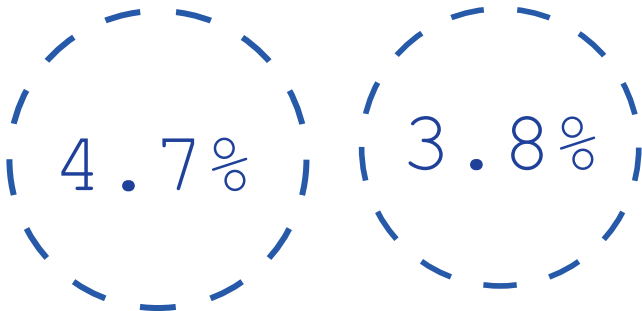
Most of German and Belgian tourists come to the region of Limburg and specifically to Heerlen, to shop (see the arrows above). Germans come often to shops during the weekend since most of their shops are closed on Sundays.



Society

Unemployment

Unemployment in the Netherlands
vs in Heerlen



Crime

Heerlen as many shrinking towns
is facing a lot of crime and
drug use.



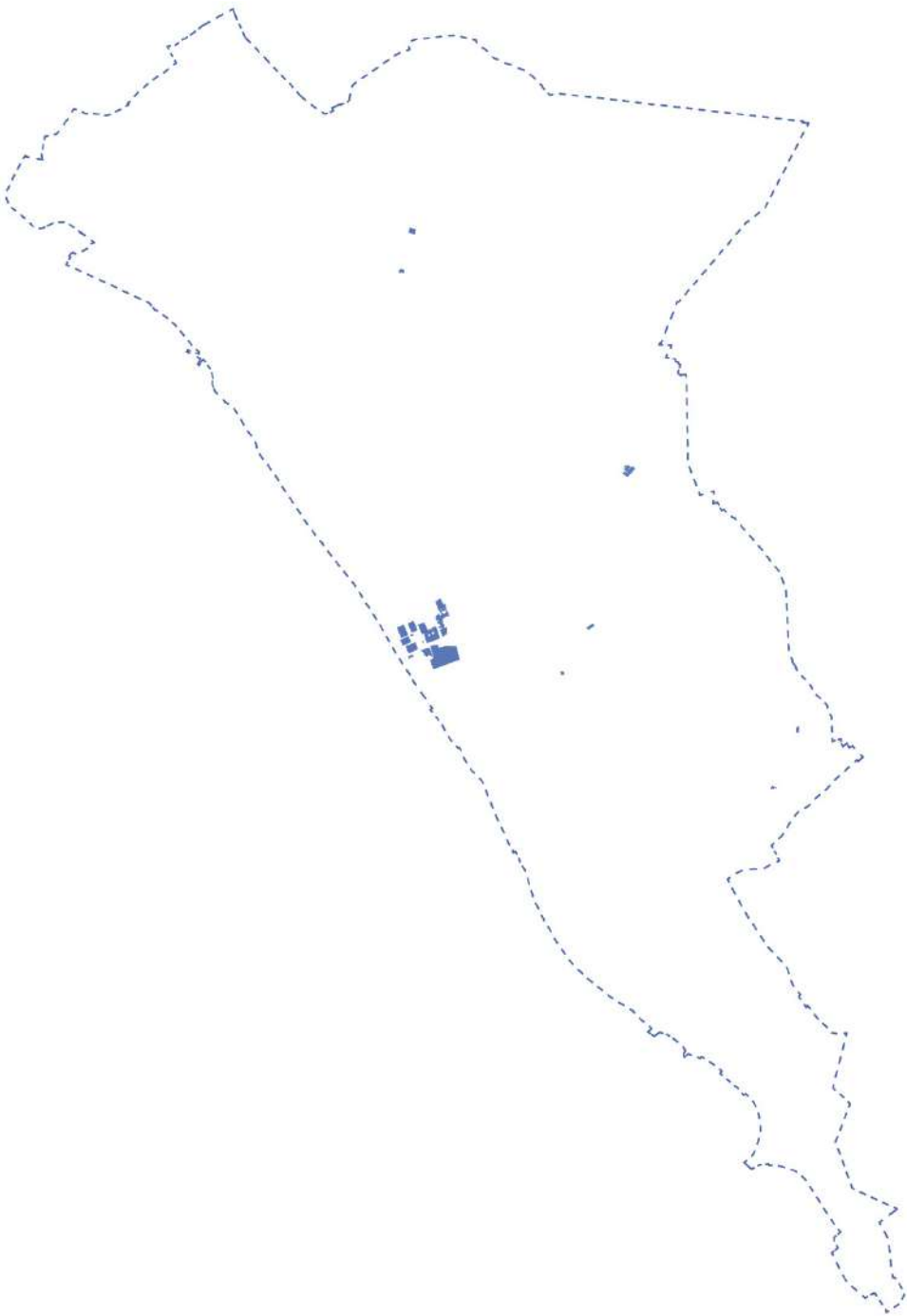
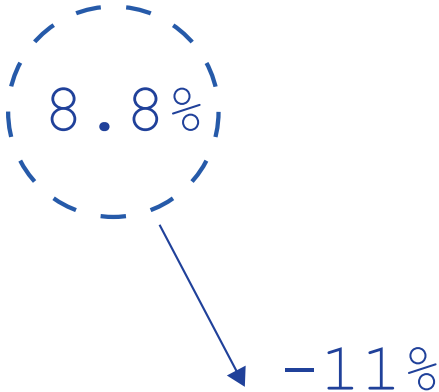
Education opproximity



Education in Heerlen

Education

Students leaving schools are expected to drop by -11% in 2030.



Education in Heerlen



Is a high school for gymnasium, atheneum, havo and mavo.



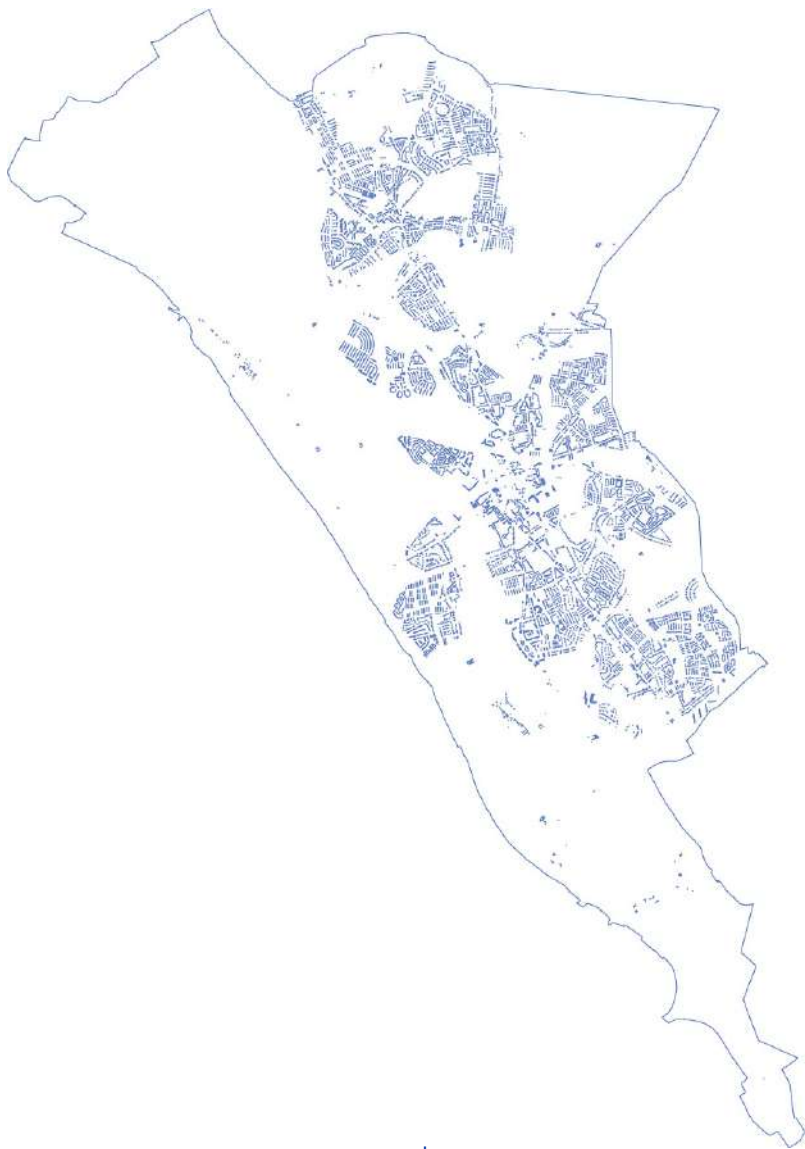
Located in the heart of Europe, focusing on three core activities: education for students, research for companies and institutes, and training courses and study programs for professionals.

- Economics and Management
- Management and Law
- Health Care
- Education and Society
- Arts
- Language and Communication
- Engineering and Construction
- Life

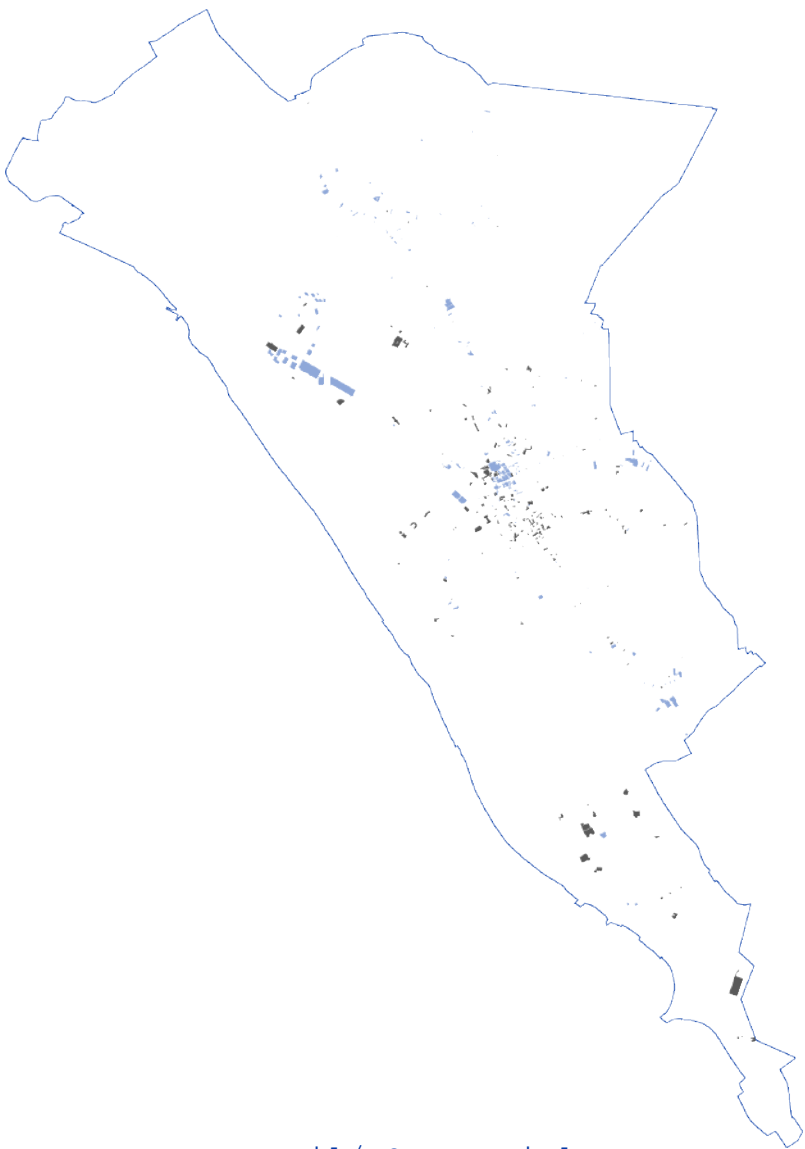


Offer a wide and modern range of training courses in the region (merged with ROC college).

Density



Housing



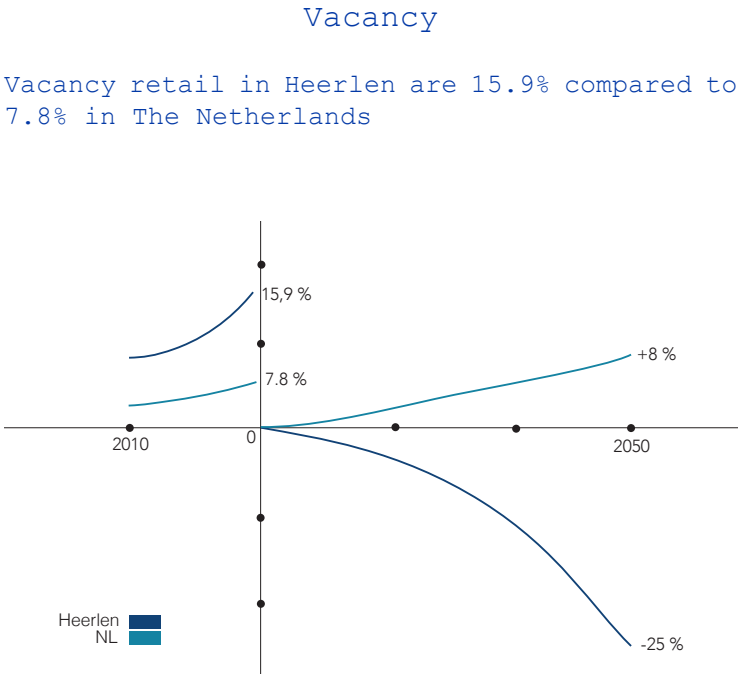
Retail/ Commercial



Some vacancies around Heerlen

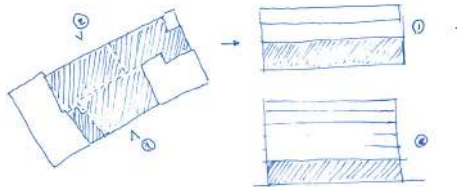
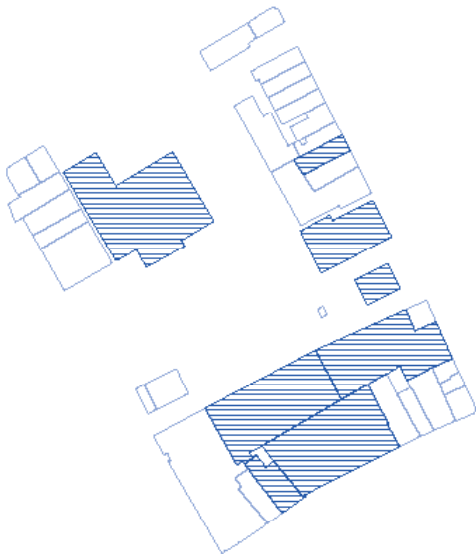


Vacancies around Heerlen

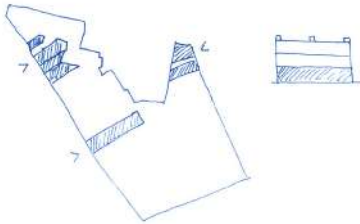



Vacant shops around the town center, according to CBS there are 315 out of 1521 sale point.

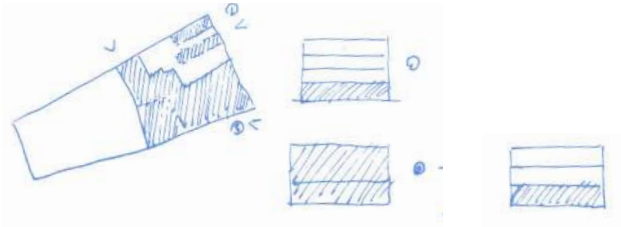
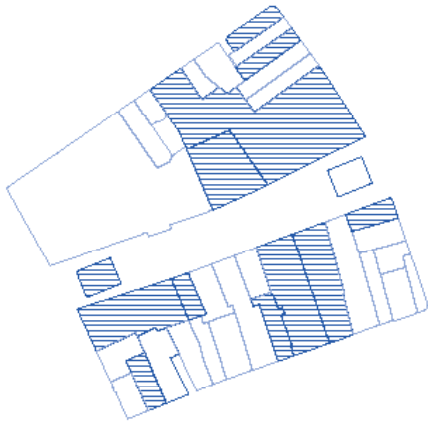
Vacancies around Heerlen



- . Housing building
- . Ground floor for retail, only
- . Facing the promenade. +2/+6 floors.
- . Large spaces



- . Row houses style
- . Housing buildings
- . Ground floor +2
- . Narrow spaces

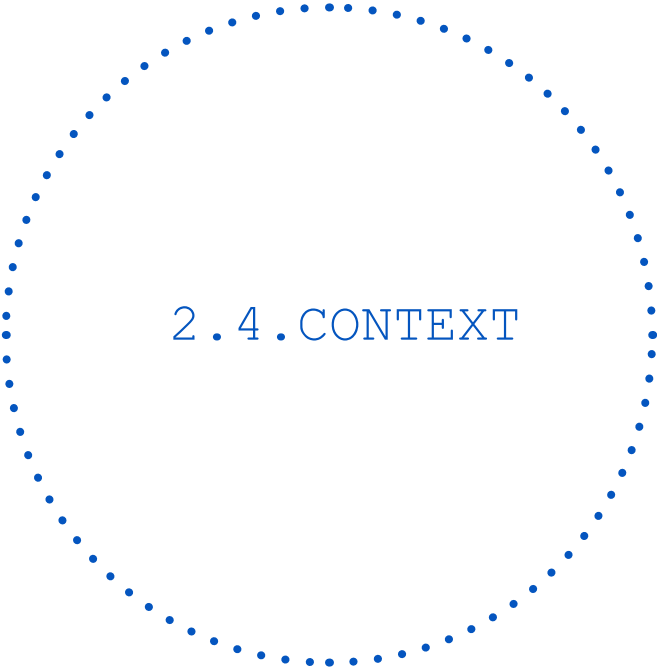


- . Some are located in front of the promenade some in narrow street
- . Style of row houses
- . One of the building was completely for a clothes retail chain
- . Small buildings, narrow street





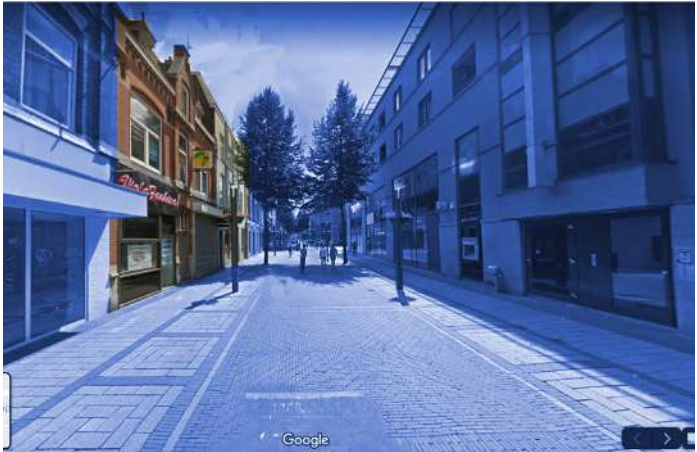
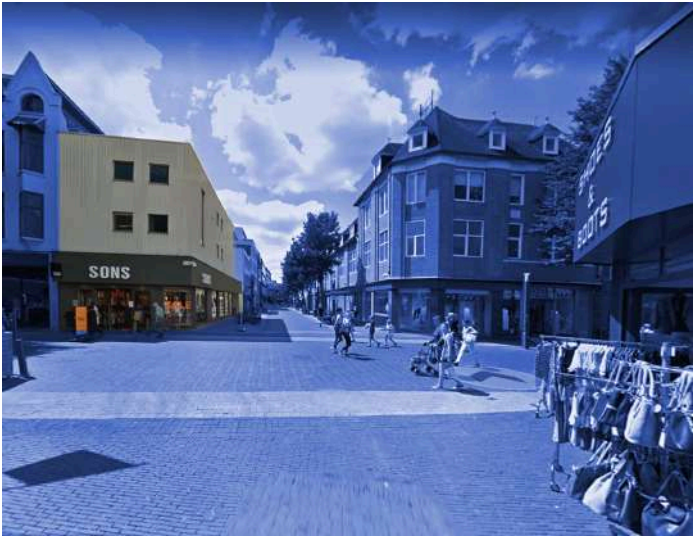
Survey_ what do you want this place to be ?



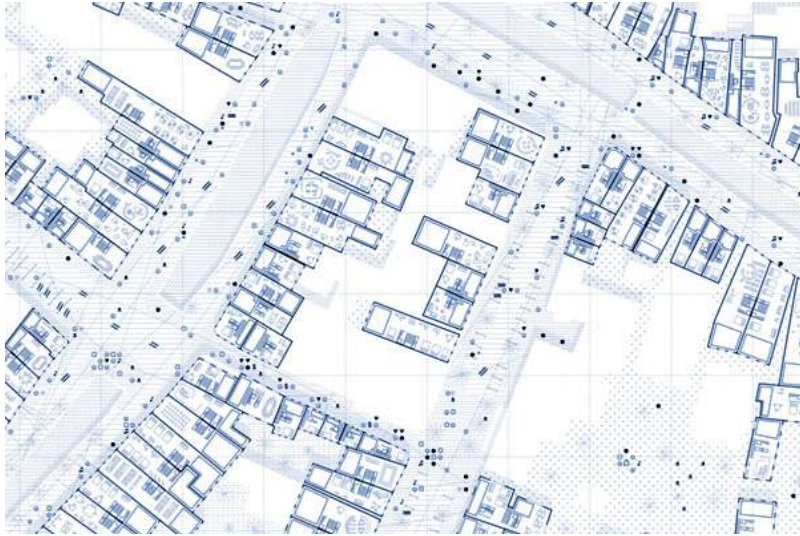
Around Heerlen



Pictures of some vacant shops around
Heerlen

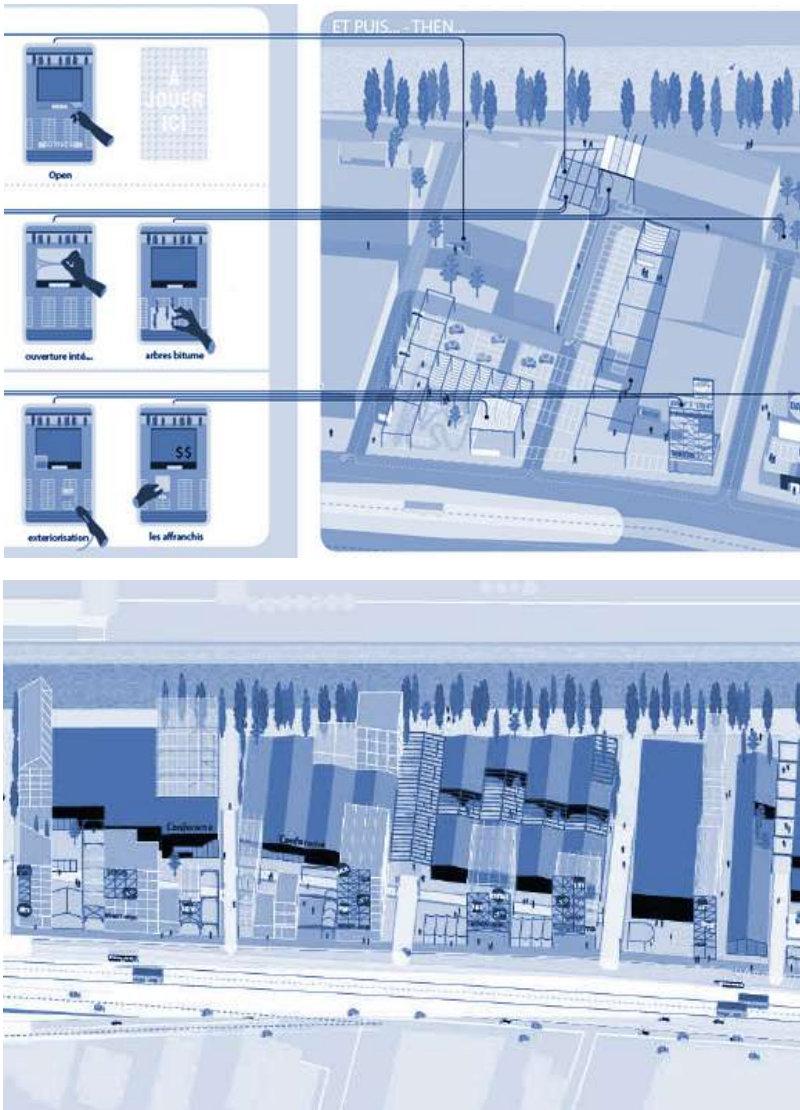


References



The models offered by the sharing economy clearly define an alternative and more resilient pattern for the re-qualification of these areas. The sharing of the space is a useful tool to create the condition for start-ups, co-workings, and other programs. The peer-to-peer economies represent as well an instrument to tackle the need of new accommodation for tourists, during the year in which Leeuwarden will be the European Capital of Culture and in the following ones.

References



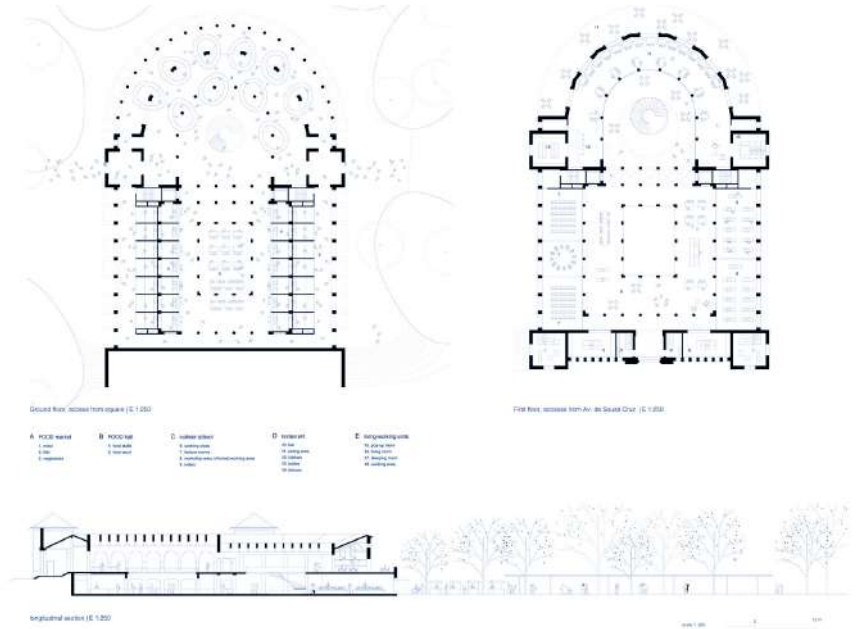
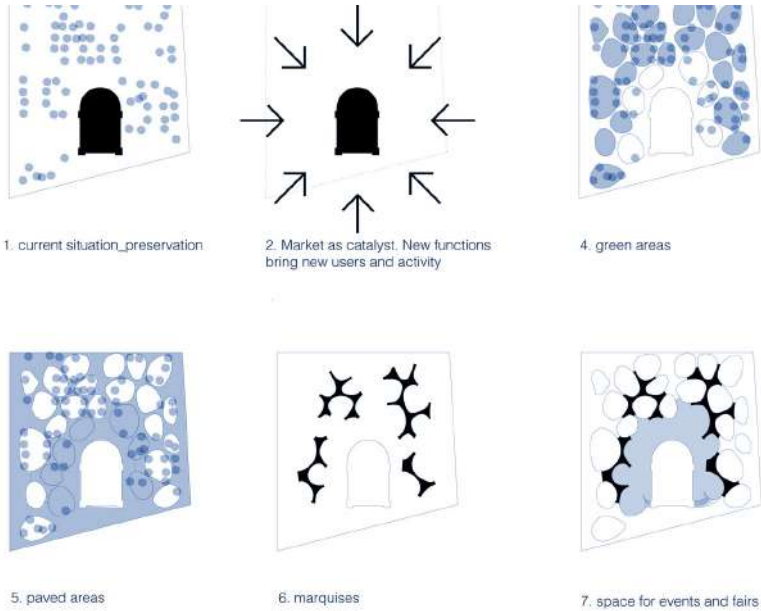
The purpose of our proposal is to develop the commercial activity of this area, benefiting from the attractiveness of the major retailers, already established here, while associating them progressively to smaller activities, able to arouse new uses, different from the usual two-way trip.

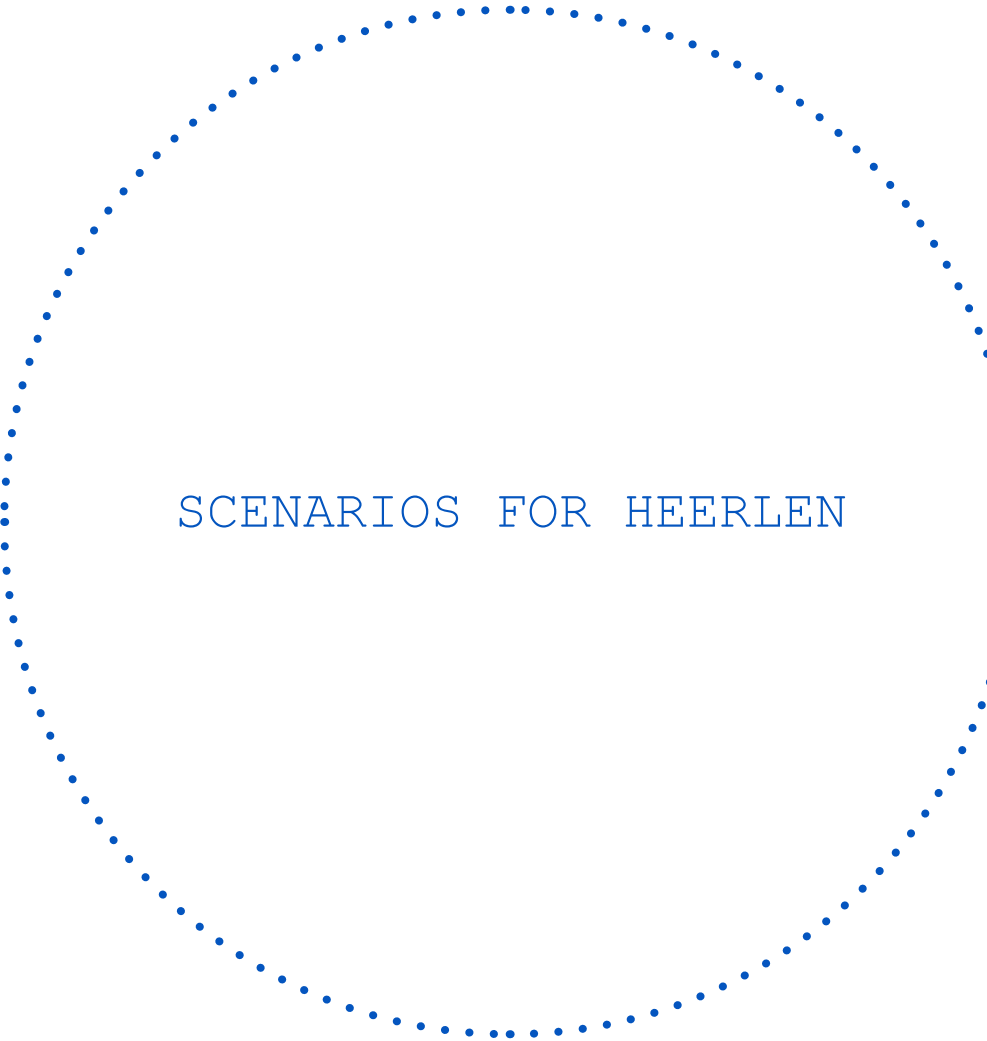


References



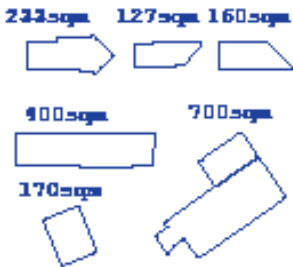
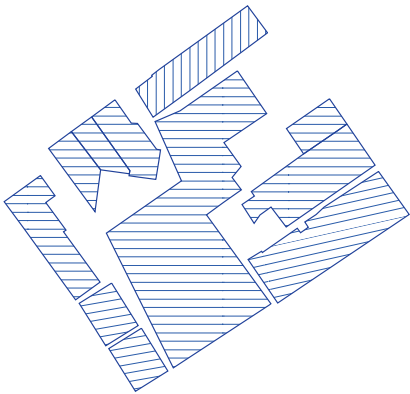
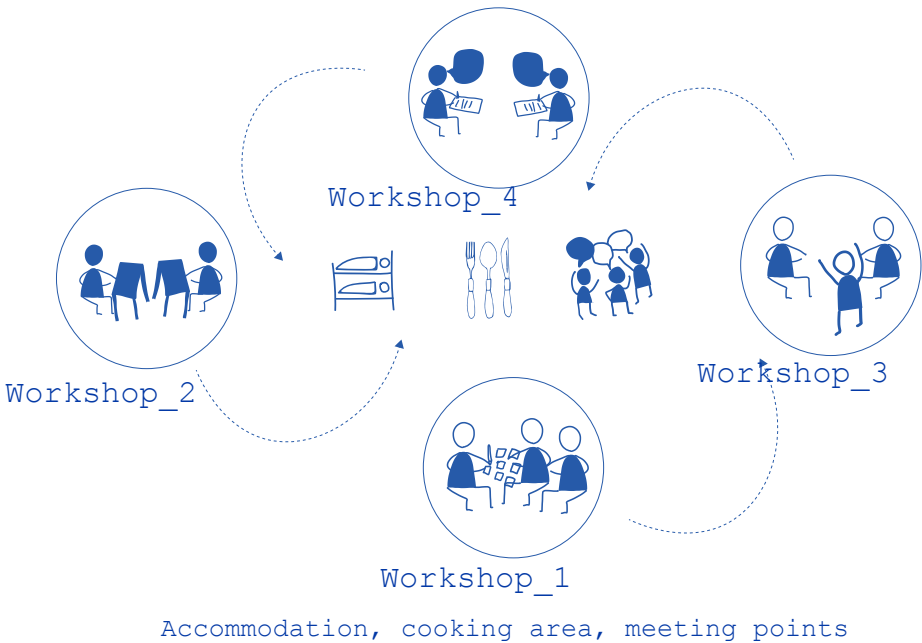
As for the interior of the building, the challenge of the post-industrial city, and in particular the city of Torrelavega, lies in finding new opportunities and in integrating new uses for underutilized but emblematic buildings, such as the Mercado Nacional de Ganados.





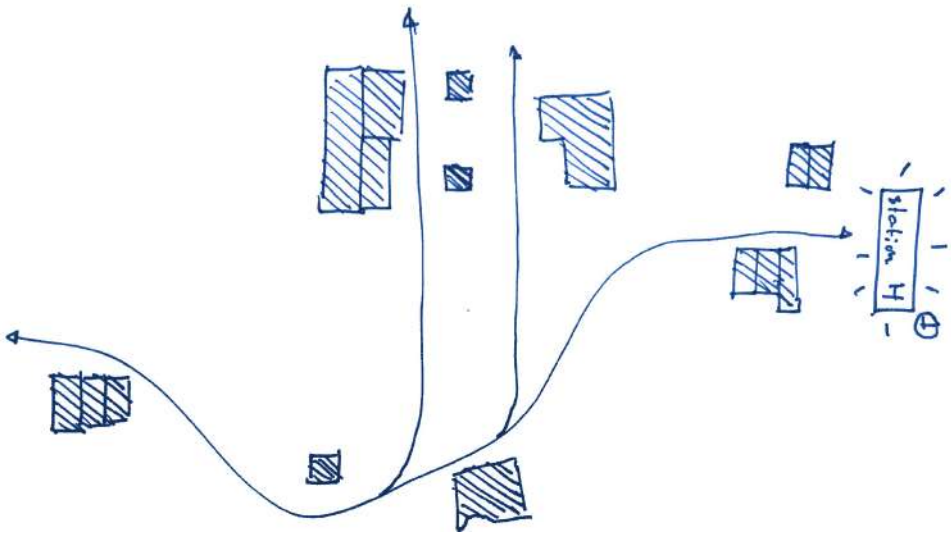


Explanation

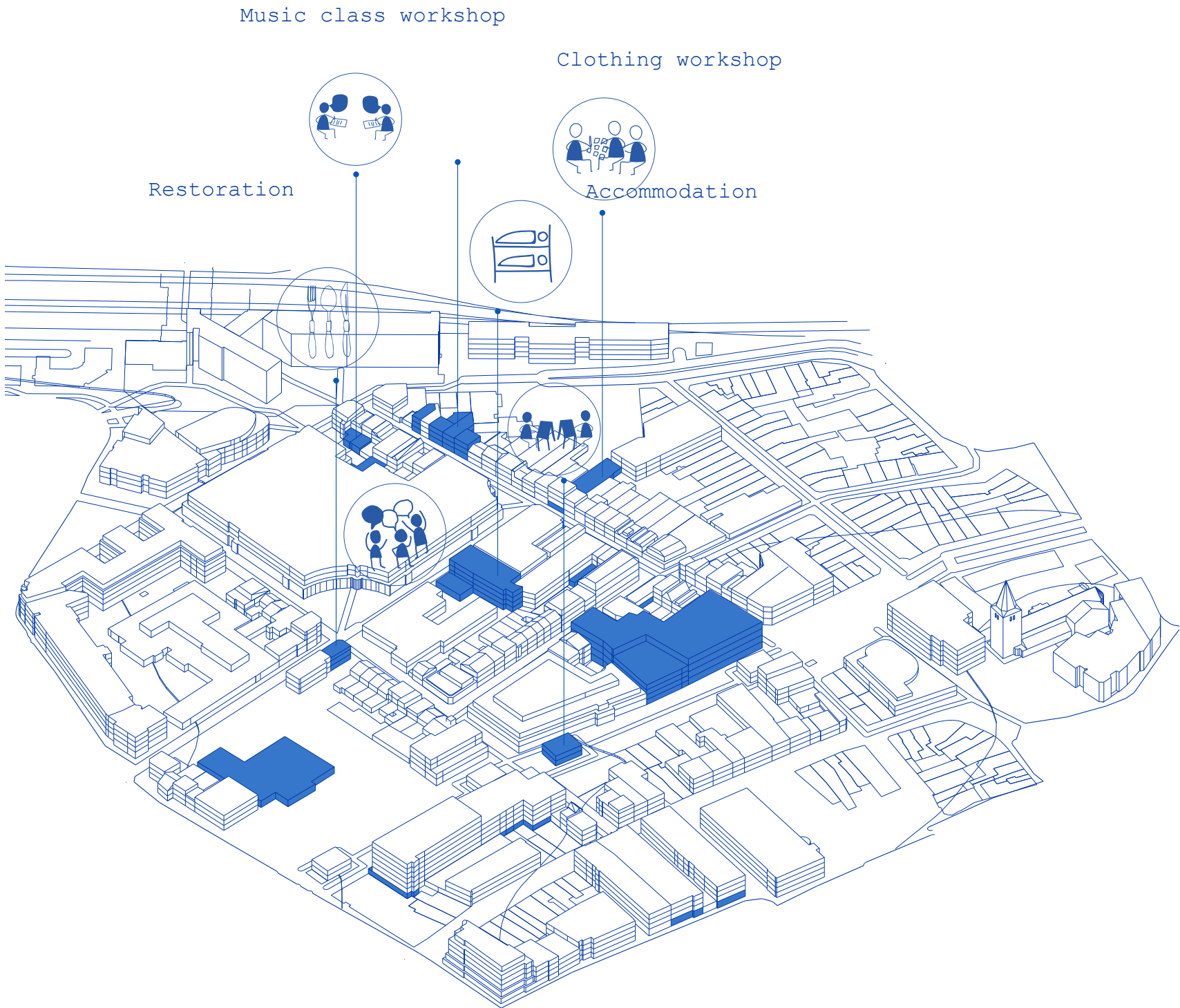


Pieces of puzzle forming one building

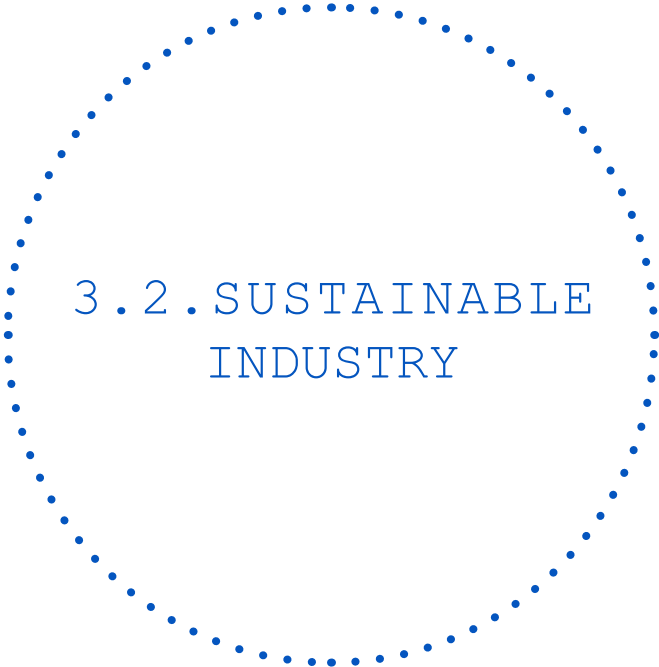
sqm of different shops ground floor area



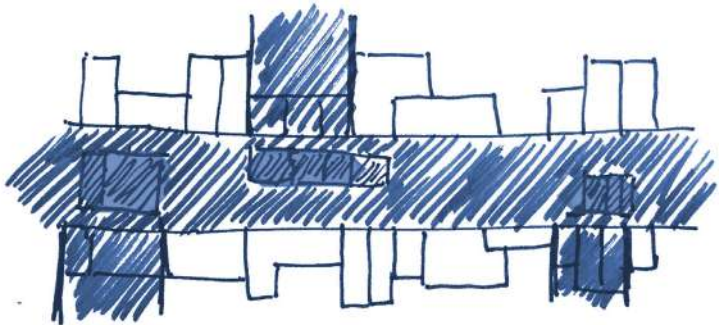
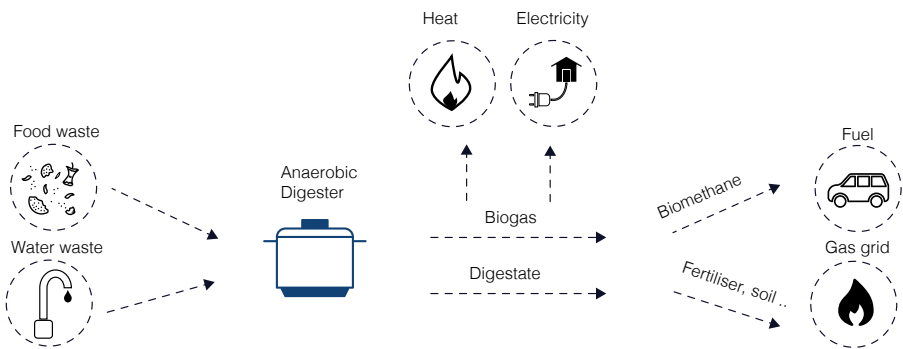
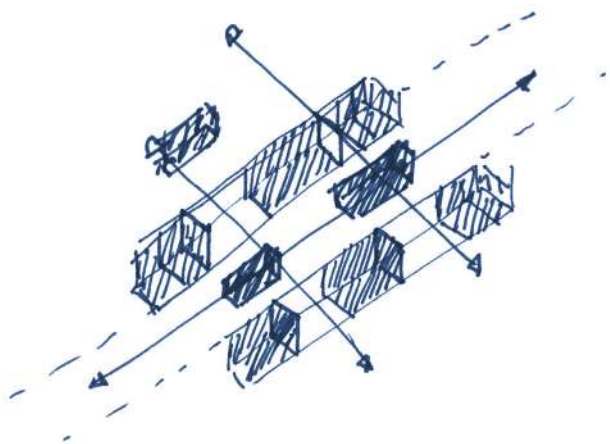
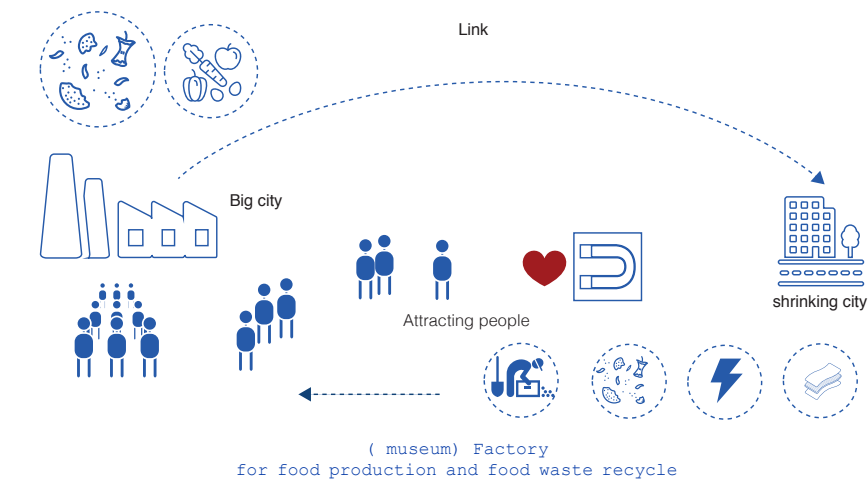
Explanation



Axonometric view of the different functions



Explanation

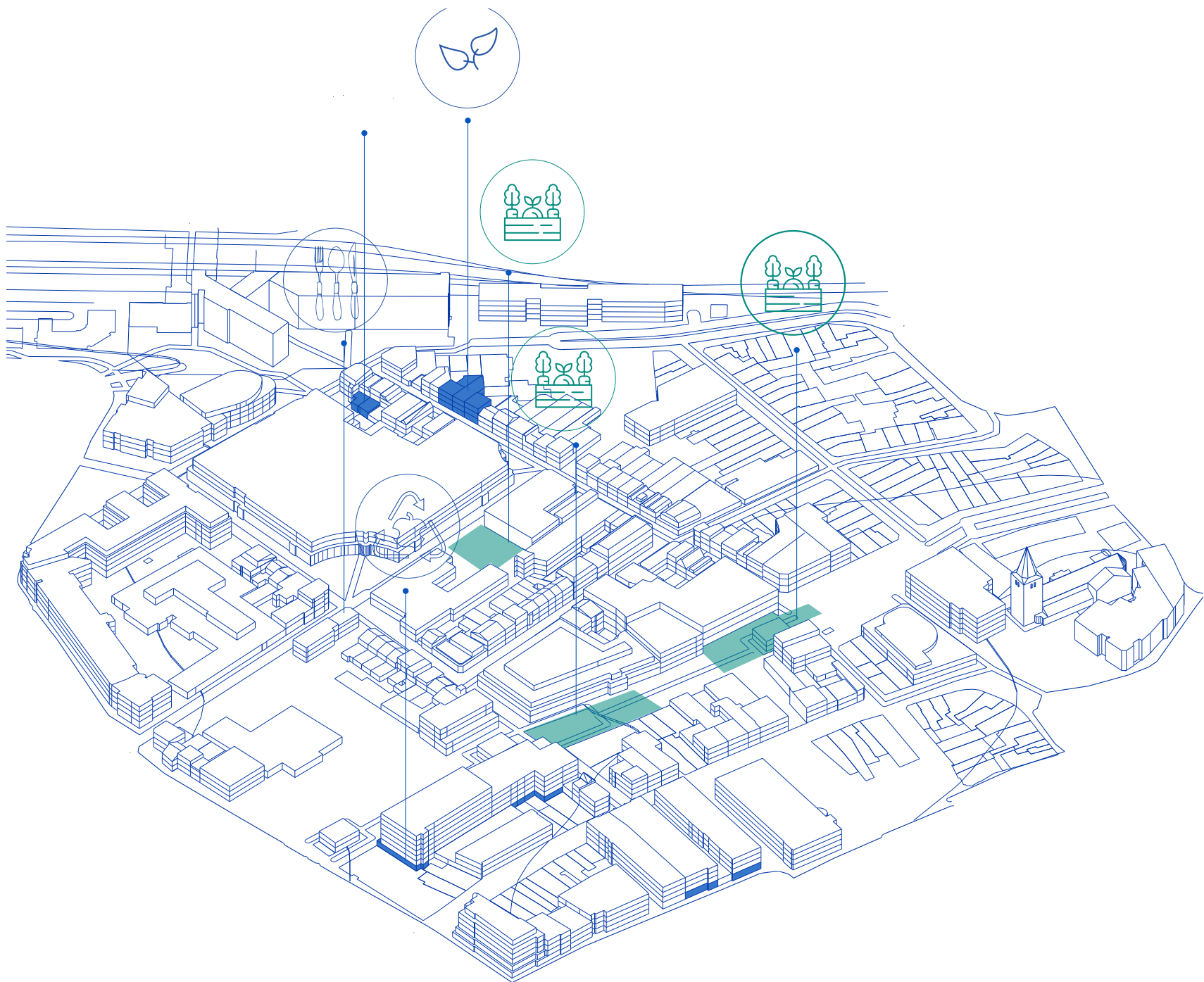


concept :

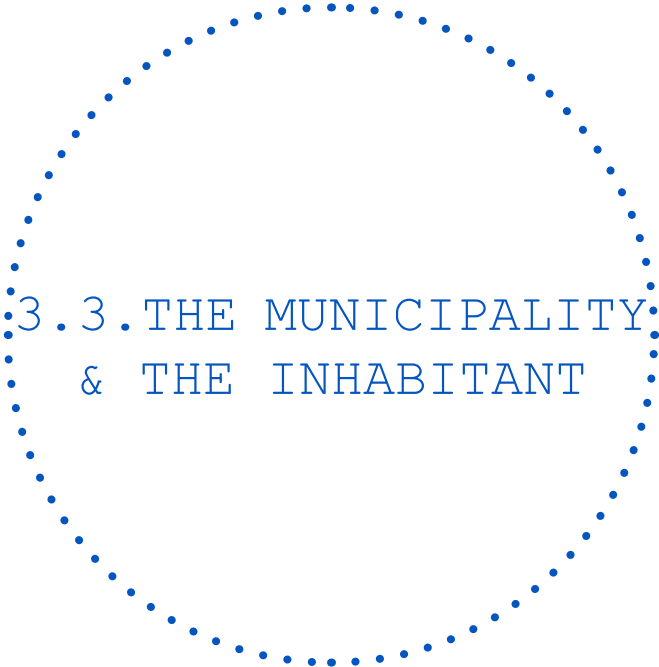
Focus 2

Playing with public space, and vacant shops.

Explanation



Axonometric view of the different functions



Explanation

Old initiatives :

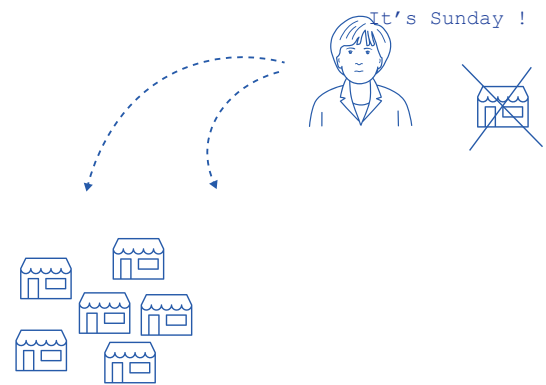
Closed many schools, and built one with all different levels
Tried to speak to higher education schools (universities) ---> failed
Tried to create network between Germany and Belgium
-----> failed

Future initiatives :

Talk to the shops owners to collaborate and find solutions for the issue
Have a brainstorming session with creative people to come up with solution for vacancy

Future plans :

Add two more museums
Demolish some buildings
Create parks
Add more housing

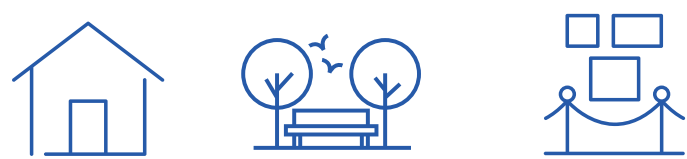


German's shops are closed on Sundays ---> A business opportunity for Heerlen.

Explanation



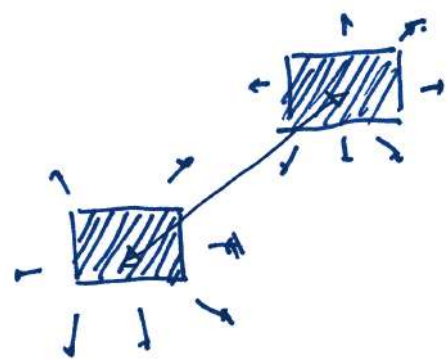
Cinema that will be transformed to a museum



Providing more housing, green, and museums

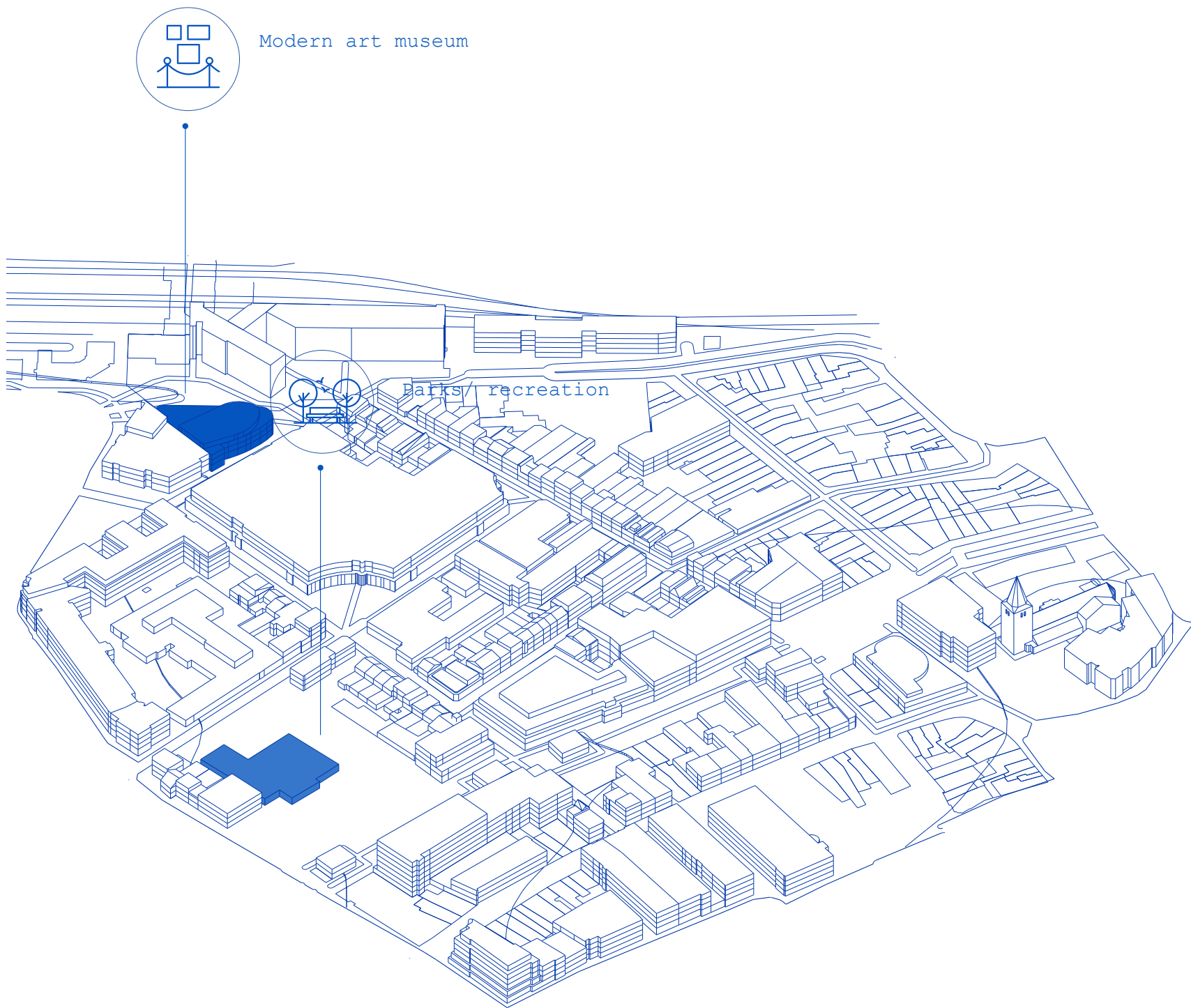


Recreational area

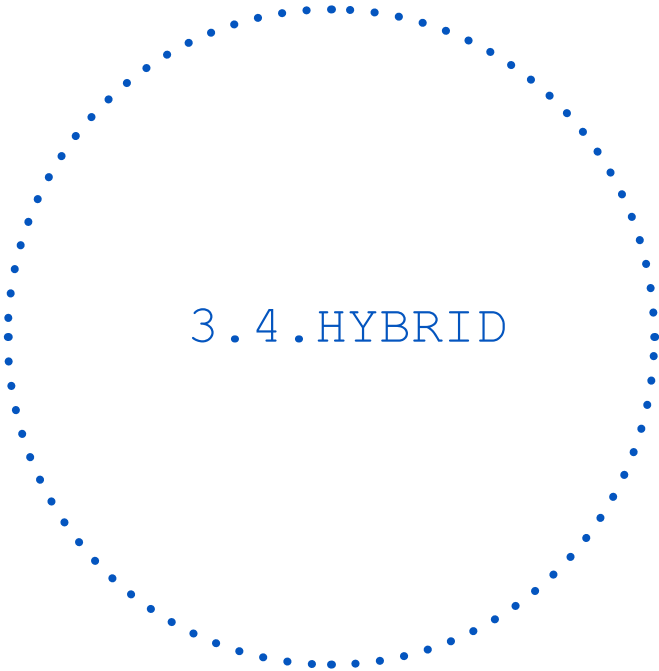


squeezing all the function into one building

Explanation

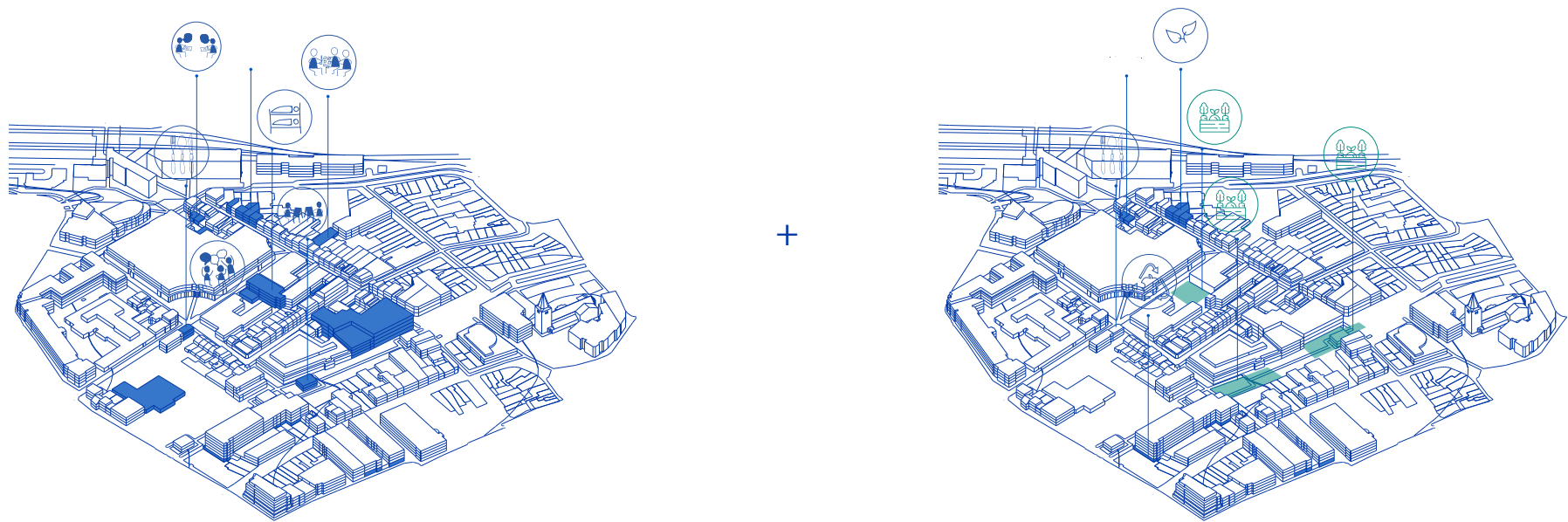


Axonometric view of the different functions



Explanation

Concept : Educative/ cultural program
Concept : Renewing the industrial aspects, enhancing nature

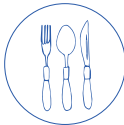


The combination of the 2 strategies.

Explanation



Accomodation



Food/ restauration



Cooking workshops/ recycling food waste /
production of bio product



Harvesting fruit/vegetables

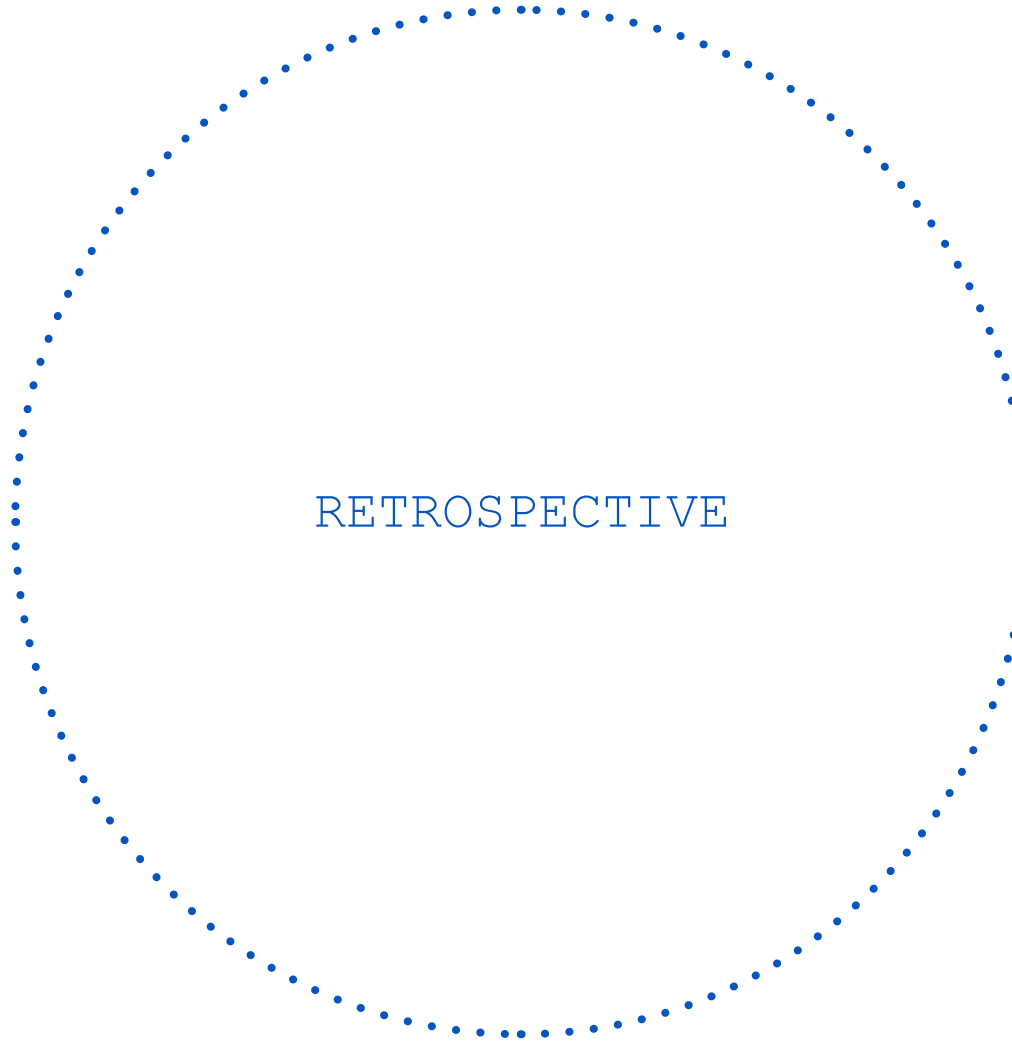


Bio store

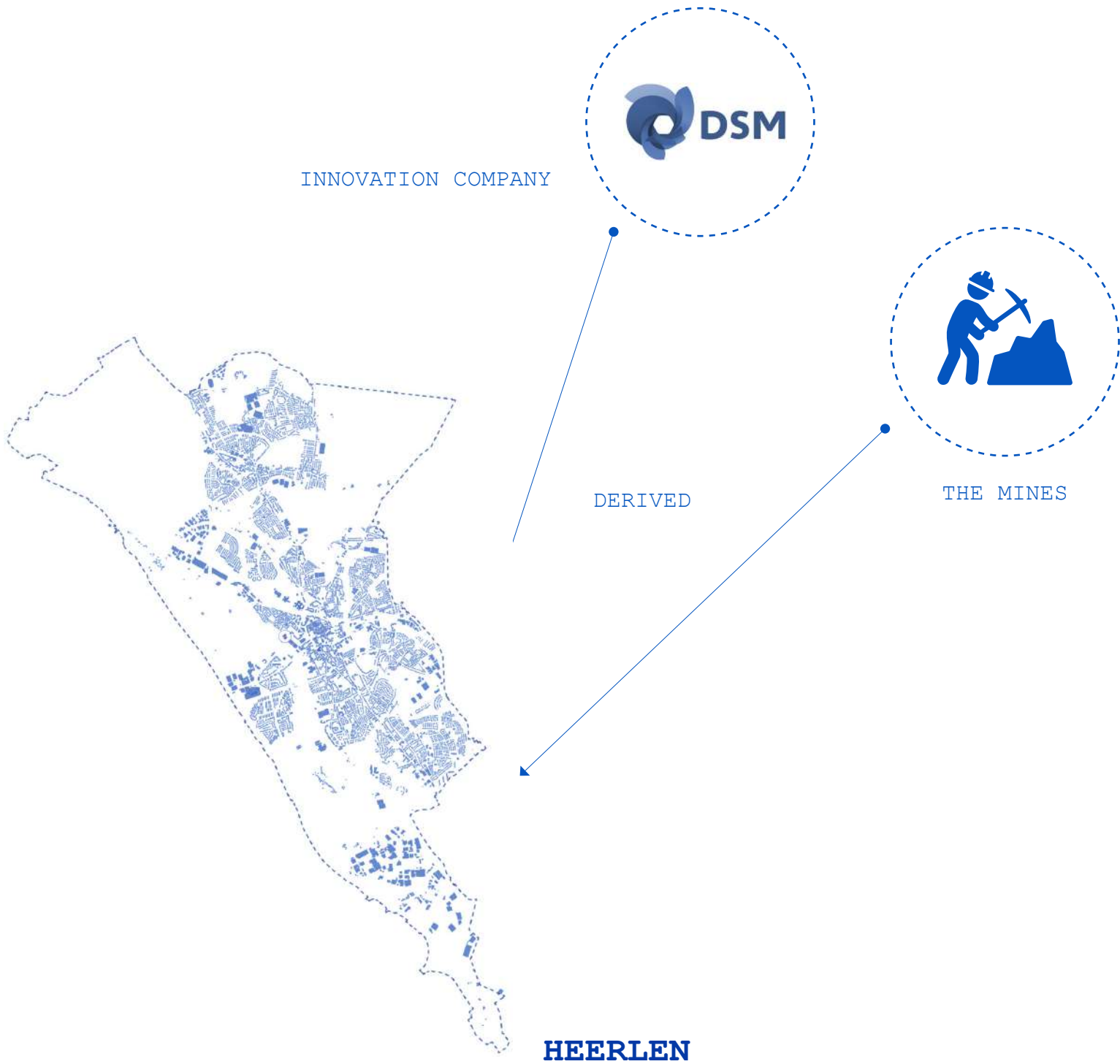


The ecofactory





THE STRATEGY, starts from the history



Who is DSM ?

DSM is a global purpose-led, science-based company specializing in Nutrition, Health & Sustainable Living.

Established in 1902 by the Dutch government to mine coal reserves in the Southern Province of Limburg. Science-based solutions in health, nutrition and sustainable living.

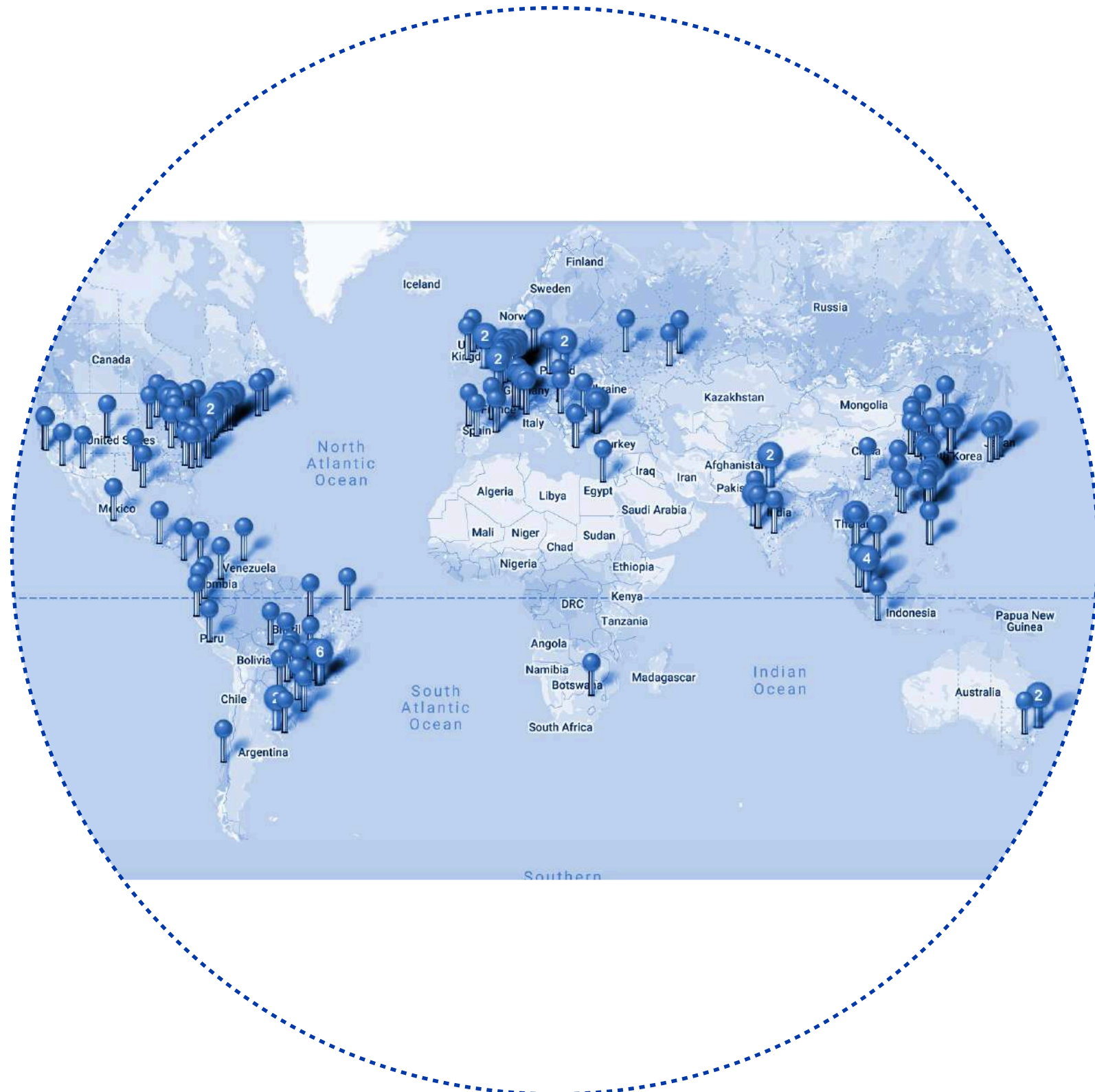


Who is DSM ?

"When we sat down with Anglo-Saxon investors 10 years ago, people were still convinced that you were either focused on making a profit or improving the world," he recalls. "You really couldn't do both." Now DSM proves that this can go together. Everything the company does is aligned with the UN Sustainable Development Goals (SDGs)"

Feike Sijbesma - Former CEO and Chairman of the Managing Board of DSM

DSM around the world



the recycling plastic chain & DSM

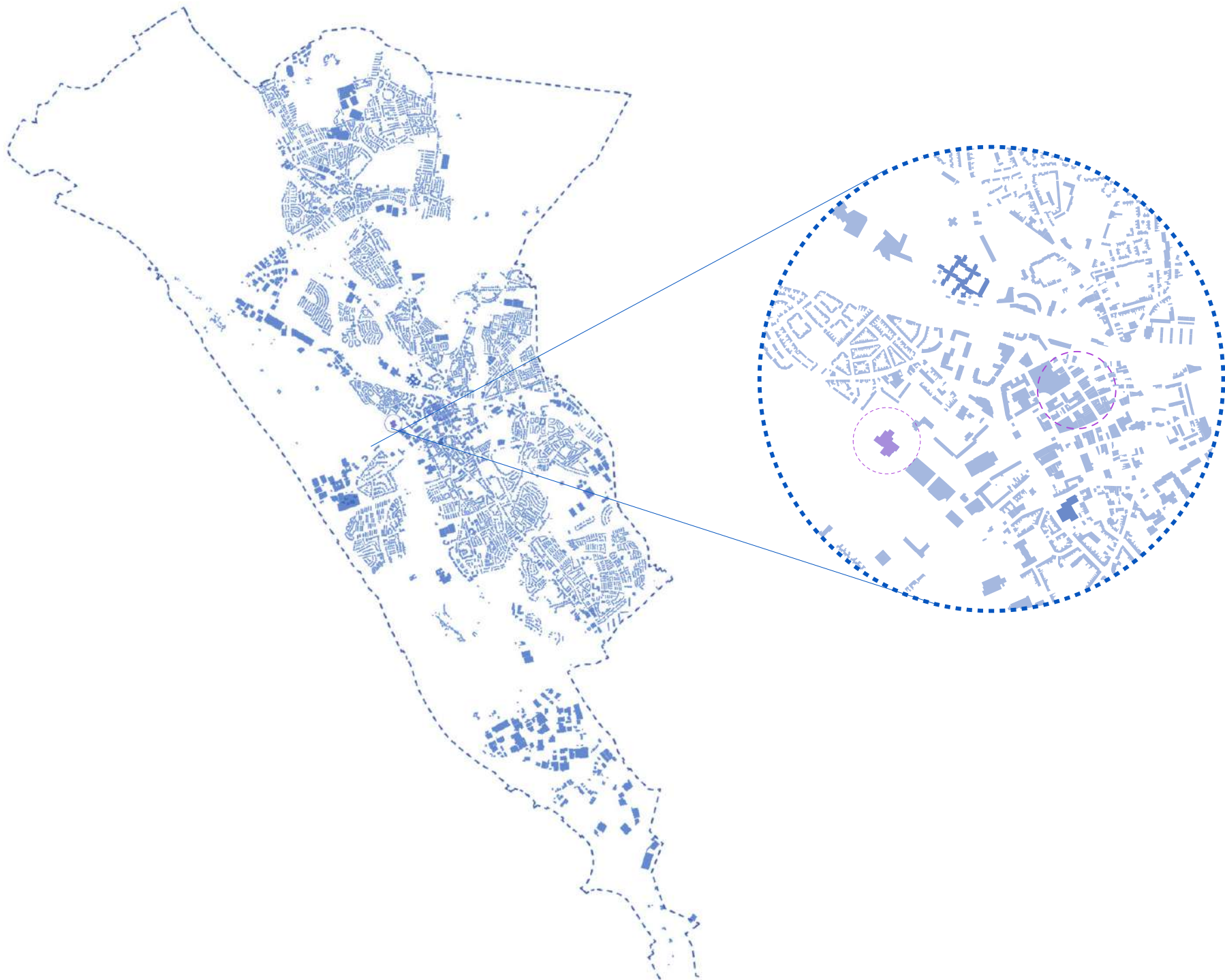
Jeff Turner : Corporate Vice-President in sustainability --- next target.

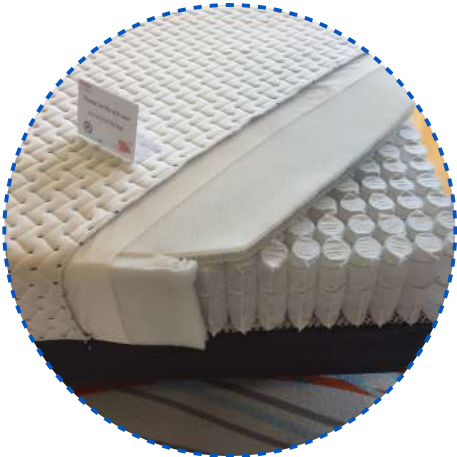


Roy Vissers : Project leader in sustainability in DSM

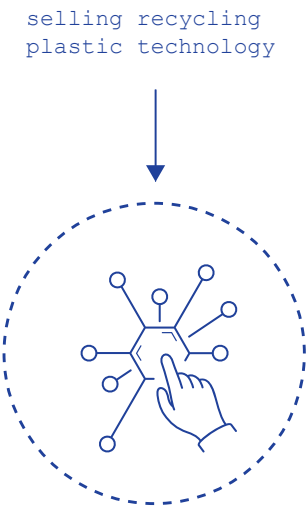
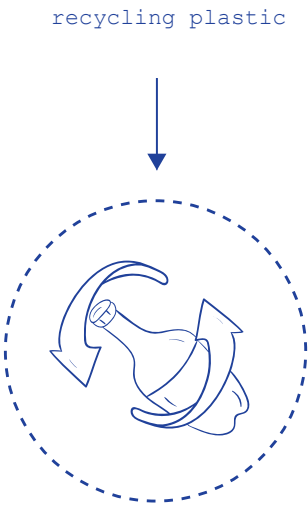
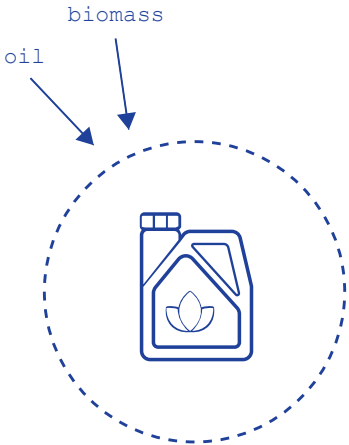


DSM HEADQUARTER



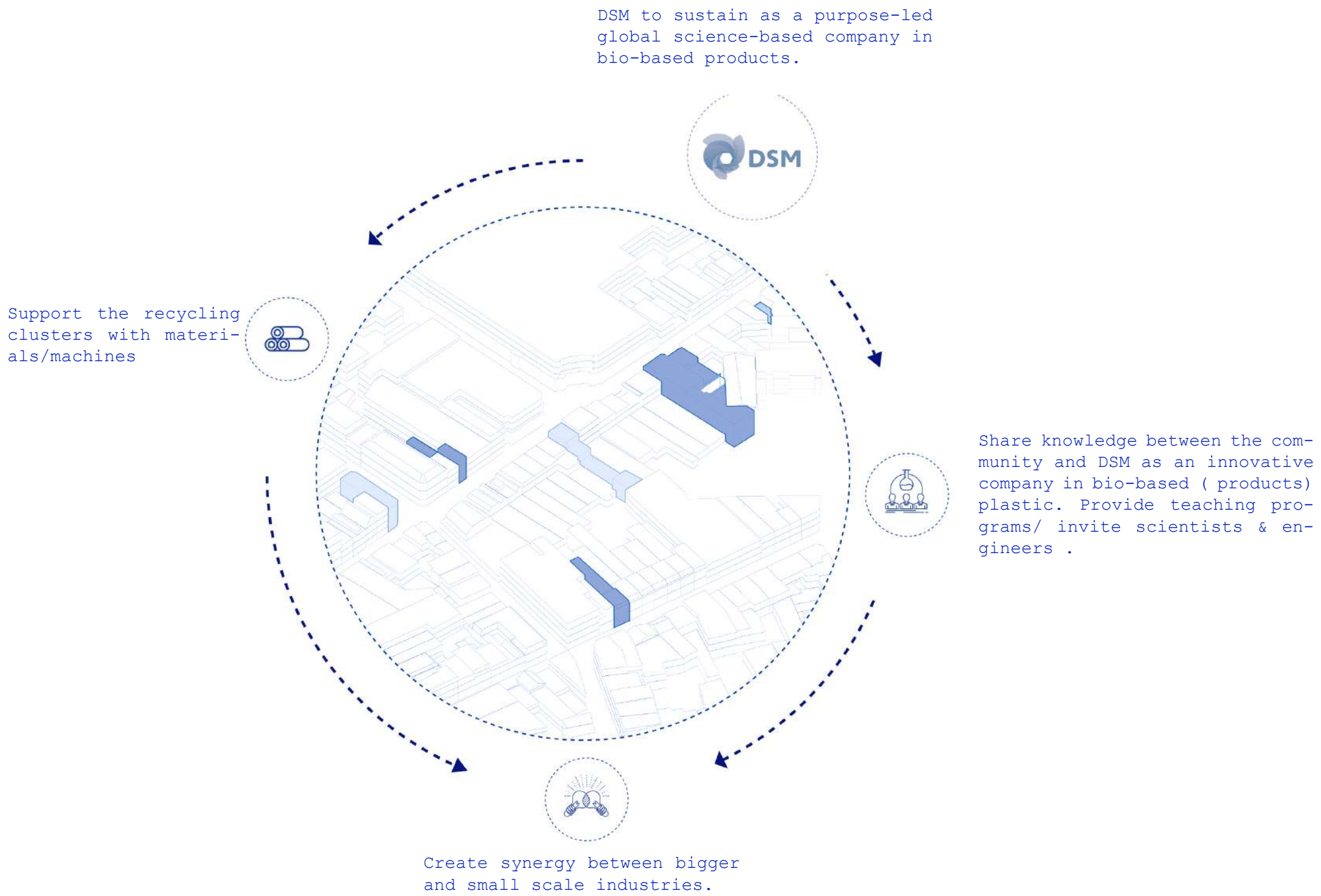


INSIDE DSM



DSM expertise

DSM & THE IMPACT ON THE CLUSTERS



TYPES OF PLASTIC



Polypropylene found in ce-
real boxes, plastic bottles
tops, chips bags.



Polyethylene terephthalate
: found in water bottles,
packaging, pop bottles.



High density polyethylene
found in milk bottles, toys,
some plastic bags, oil bot-
tles.



Low density polyethylene
found in groceries bags.

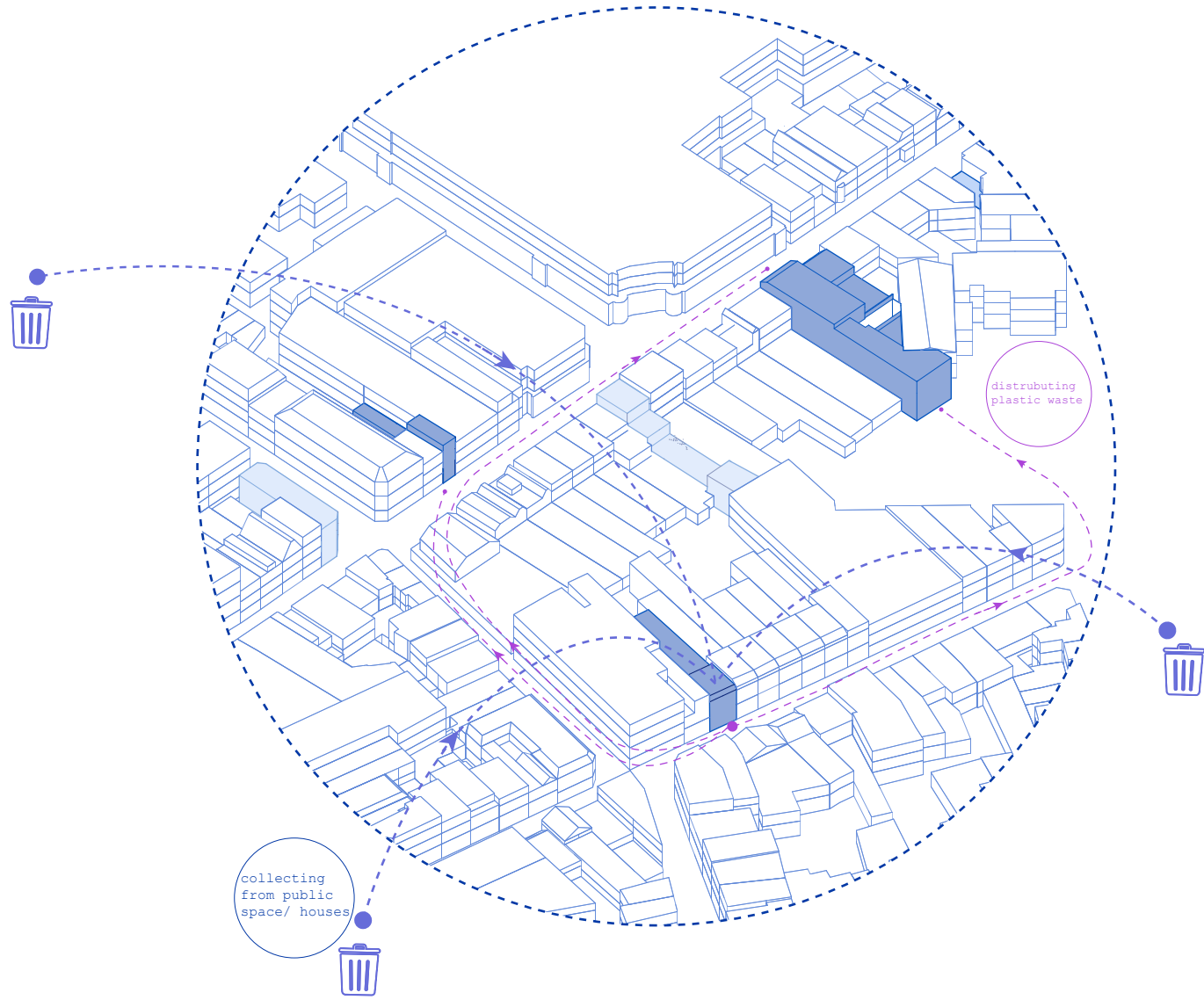
Different machines for recycling the plastic



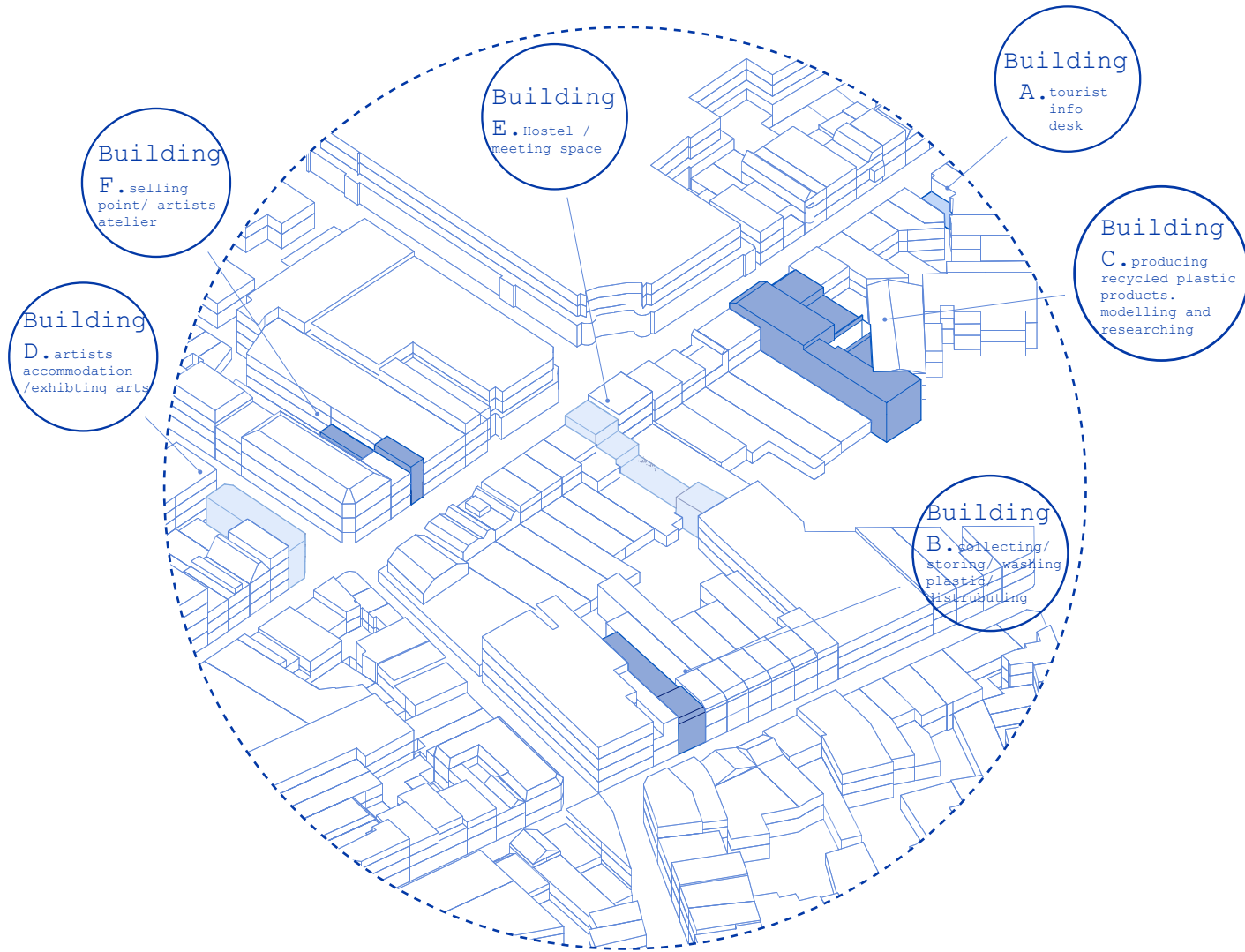
A start up called precious plastic started in the Netherlands to provide people with drawing of plastic recycling machines that they can assemble my themselves and created from metal waste and other materials in a very safe way. The advantage of these machines you can also update them depending on your needs.



THE RECYCLING PROCESS INSIDE THE CLUSTERS



Plastic waste collection & distribution

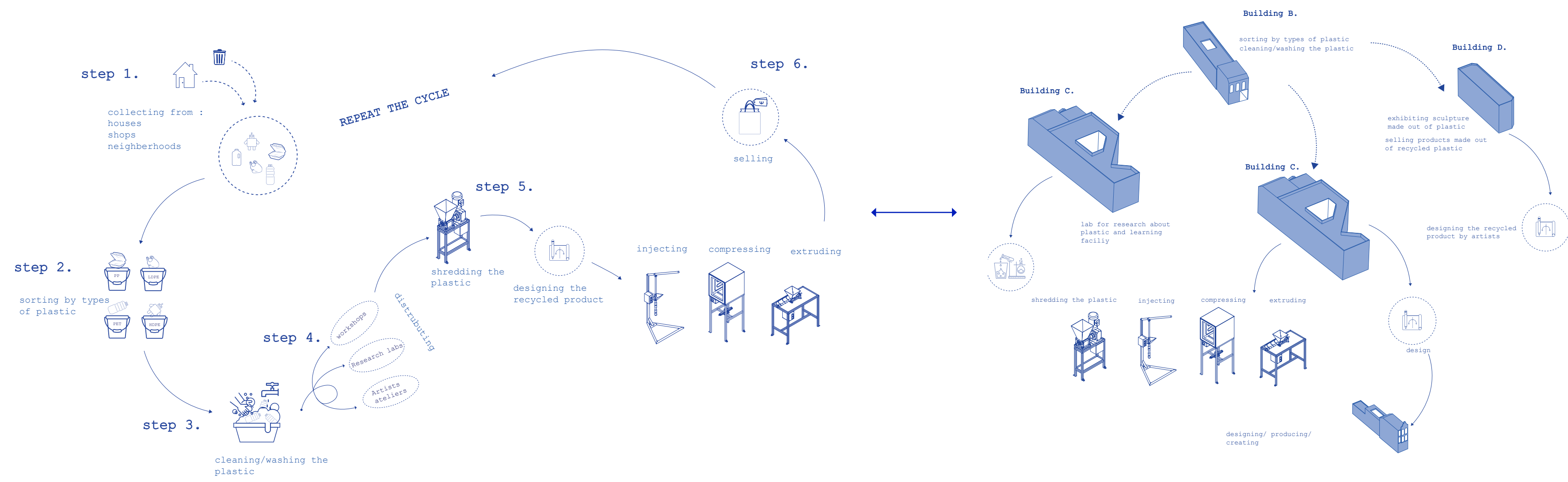


Plastic waste moving in the clusters

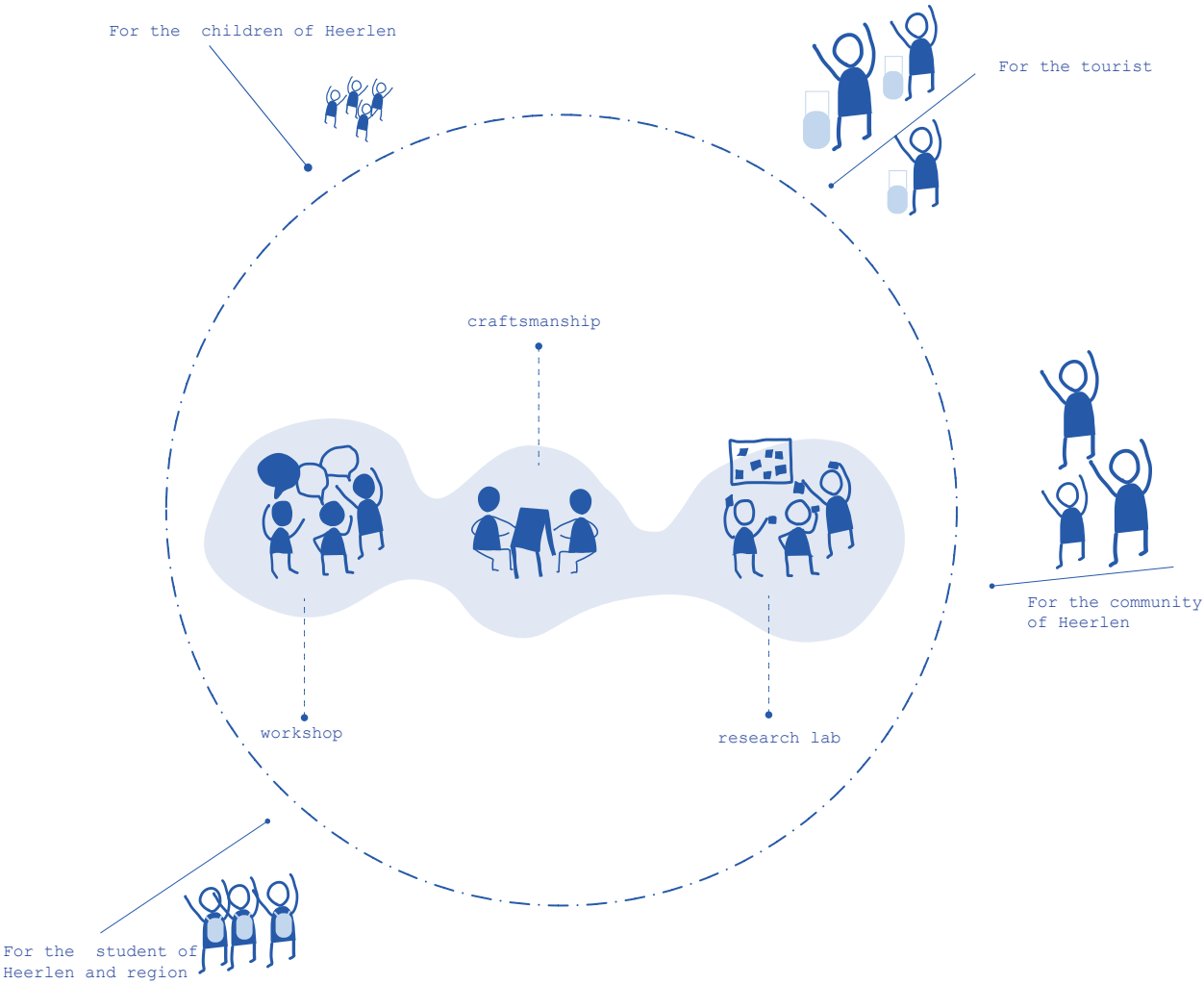


Area of my intervention

THE RECYCLING PROCESS INSIDE THE CLUSTERS



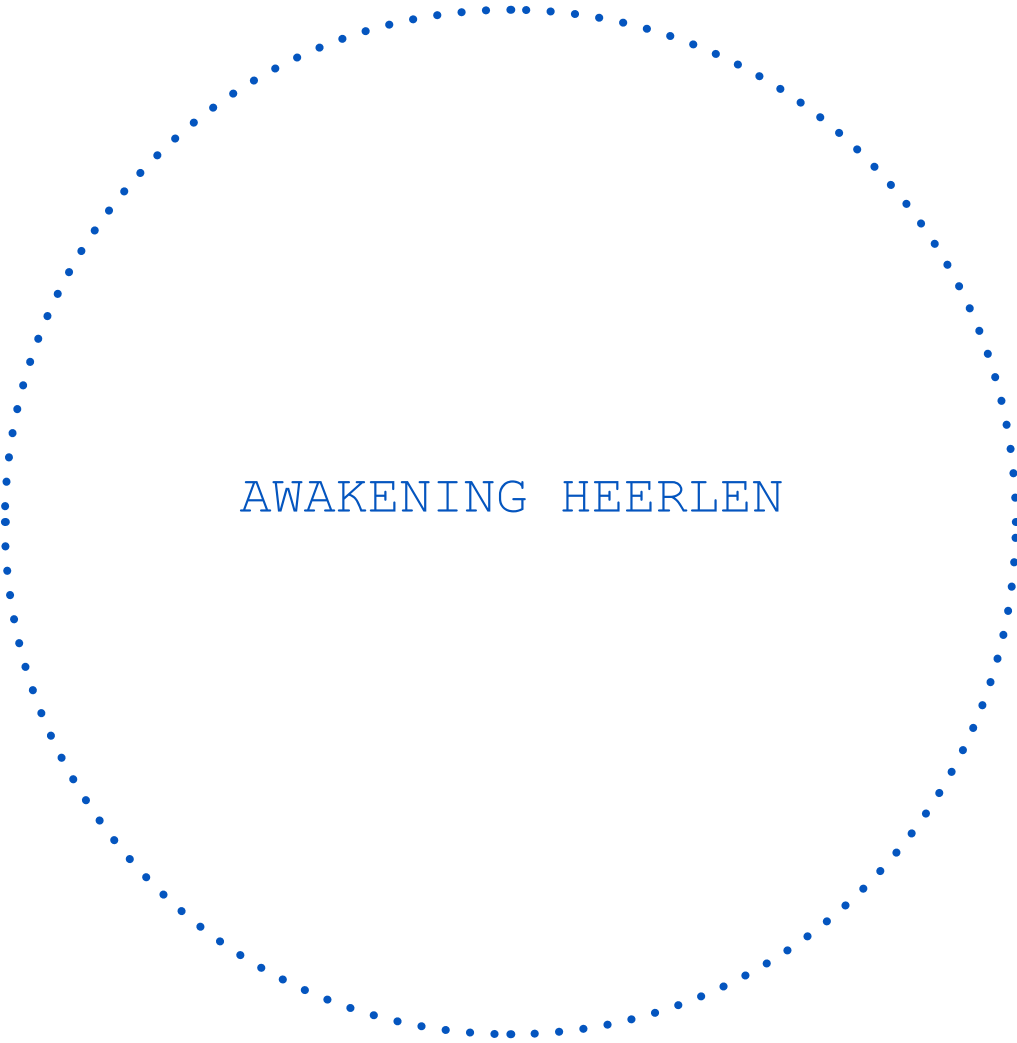
EDUCATION INSIDE THE CLUSTERS

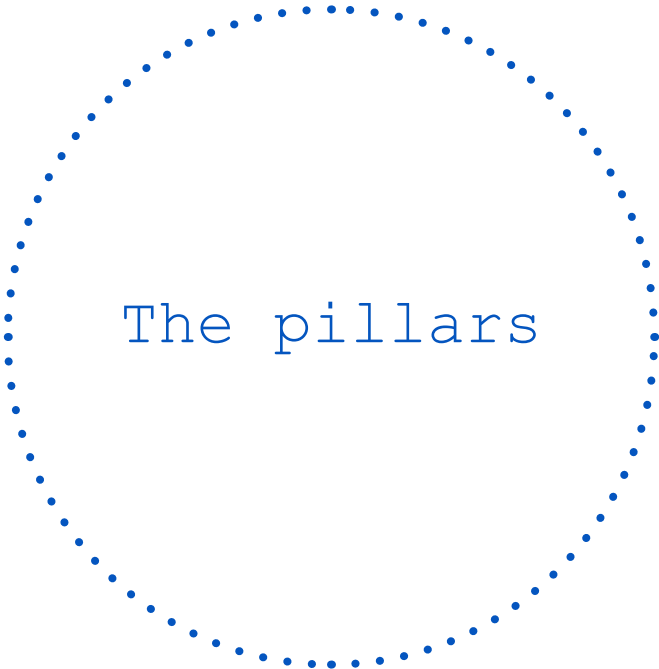


The teaching program is intended specifically for the of Heerlen. However to enlarge the network students from other regions of Netherlands/ abroad could also be part of the program.

The learning part of the program it's aim is to engage the community in recycling and the awareness of the danger that the plastic is causing to our planet.

It's also an opportunity to make Heerlen a hub for learning and innovation.

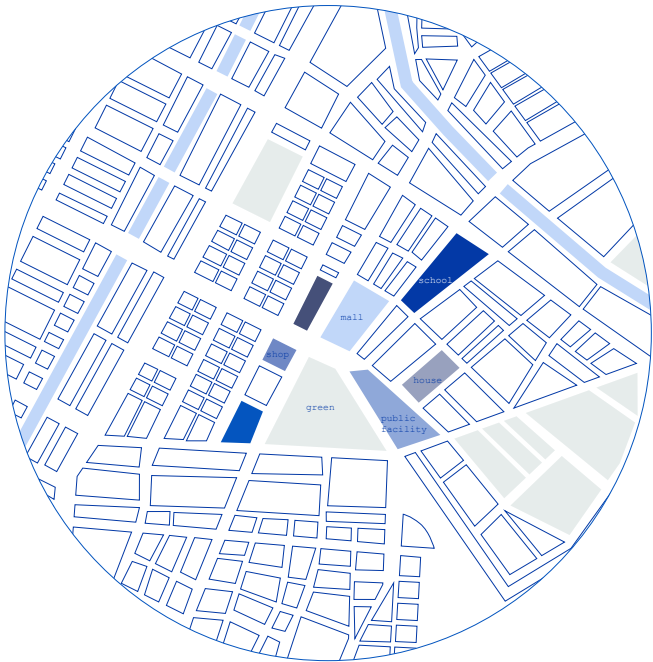




Rule n.1

Changing the shopping experience :

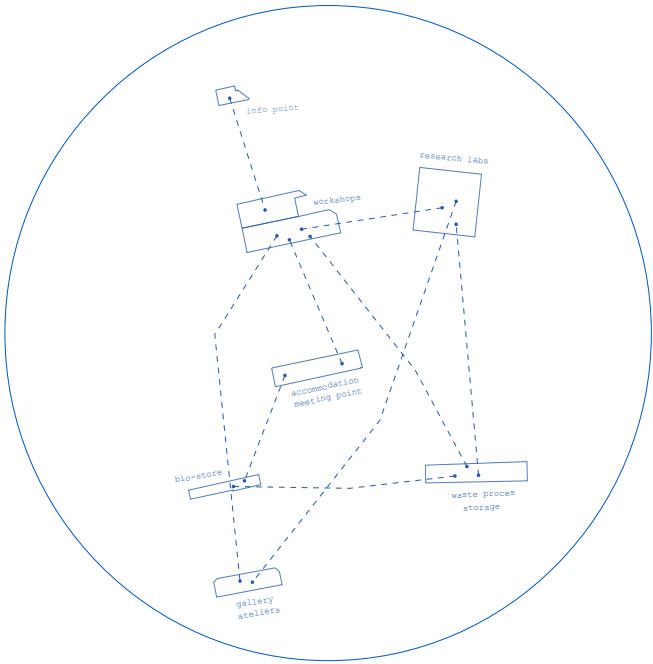
Mixing the shopping experience with public functions, cultural/ educative little business connected to a bigger industry.



Rule n.2

Changing the shopping experience :

Wireless network.
An open loop towards a wider futuristic network.
a journey through the urban fabric of the town.



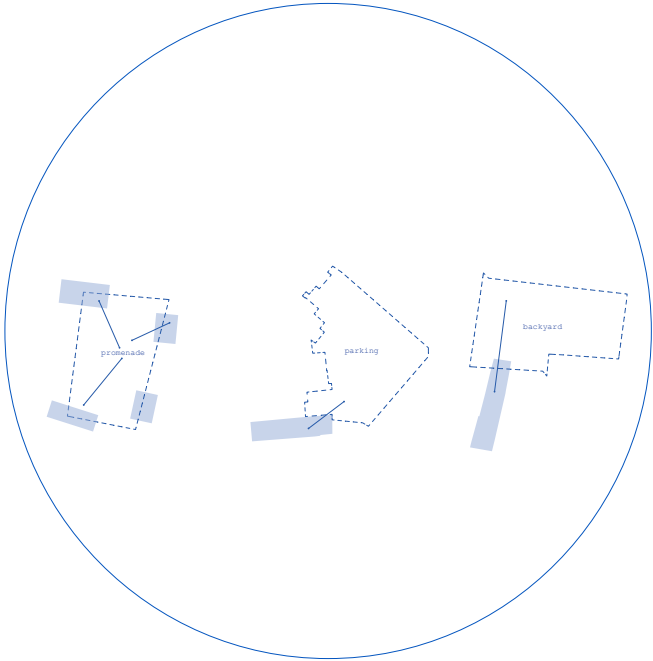
Rule n.3

Creating out of a wireless network one entity.
Different locations for one space.



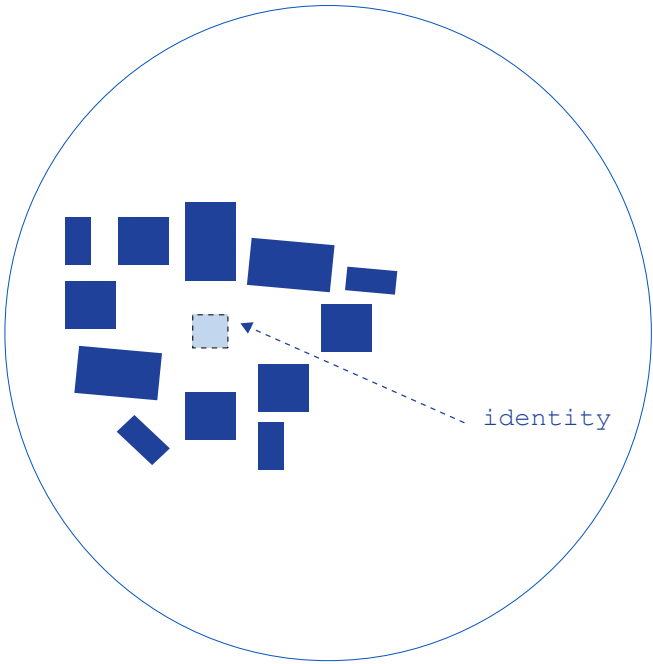
Rule n.4

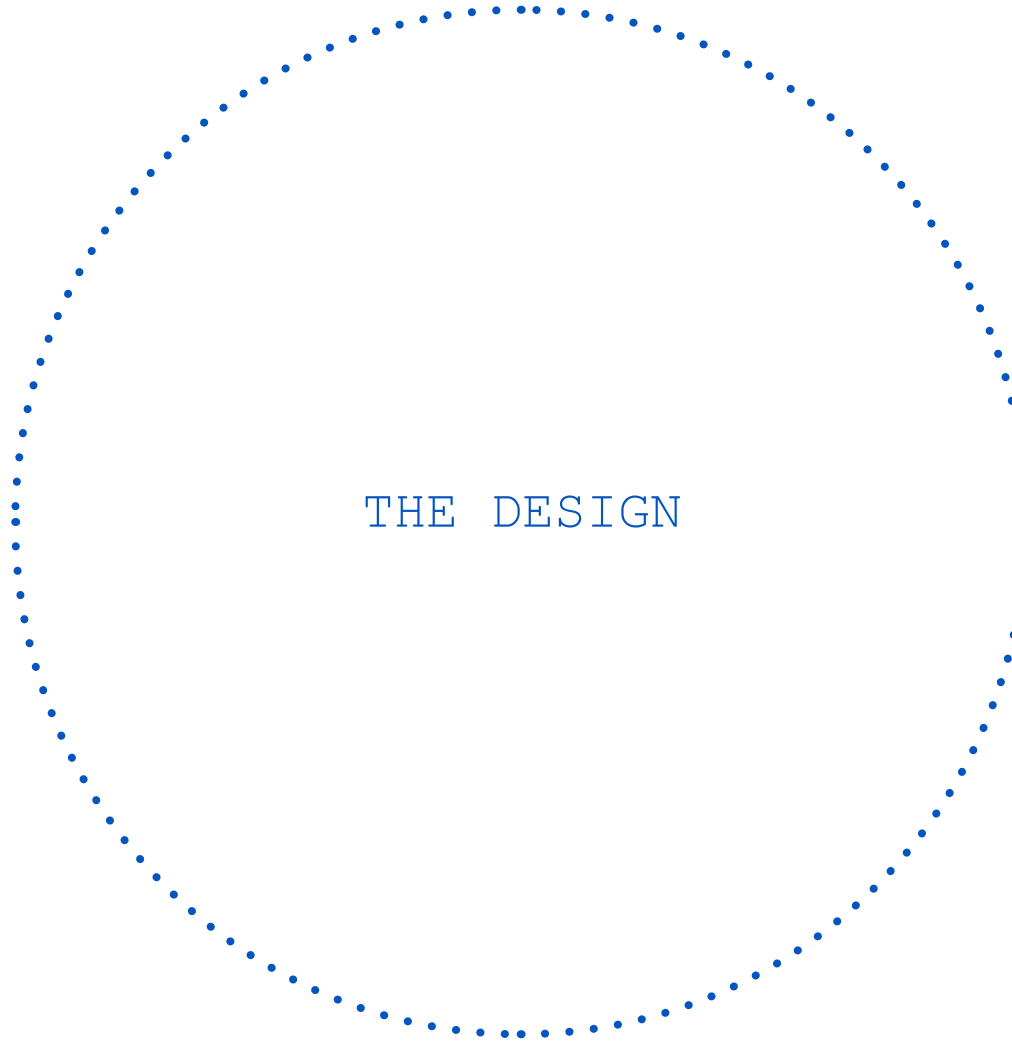
Connecting urban voids with the vacant retail.
Connecting backyards.



Rule n.5

Bring the identity back of the town/ city









Scale : 1:1000



Area of my intervention



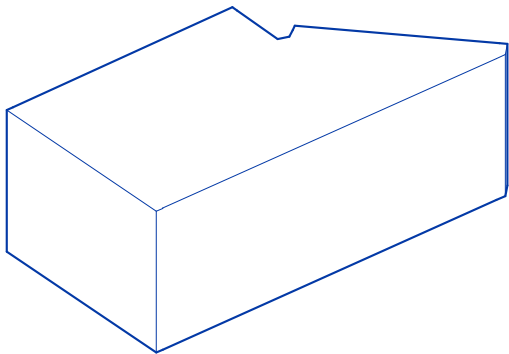
Building A



.Location of the building A



Facade of the building A

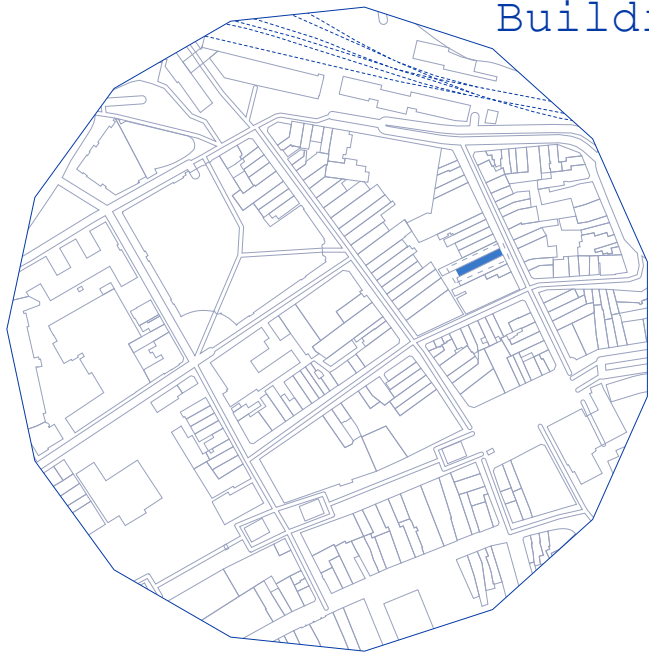


.Existing volume of the building A



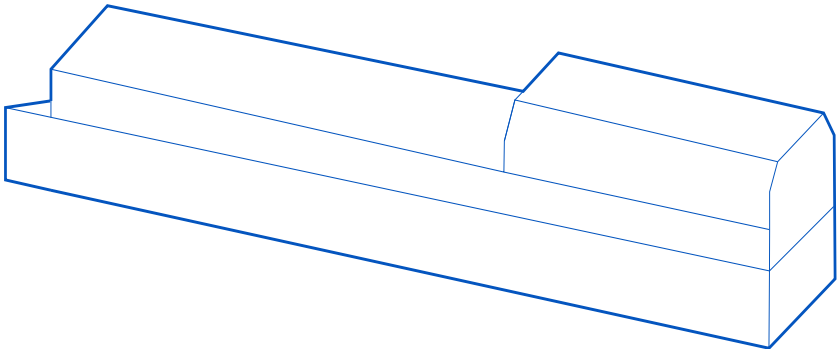
the building A

Building B



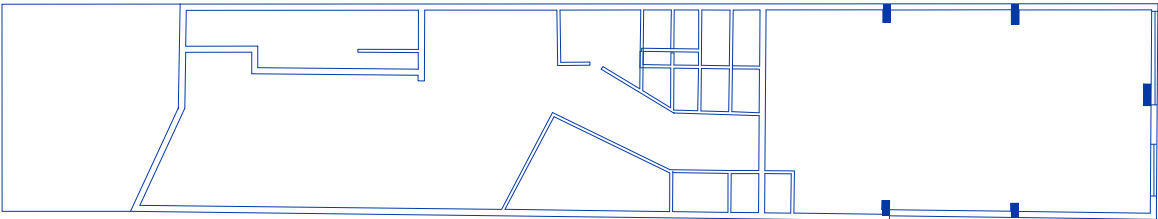
.inside the building B

.Location of the building A



.Facade of the building B

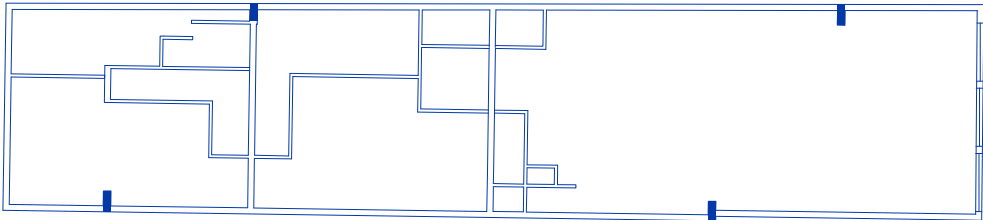
.Existing volume of the building A



.Existing ground floor plan

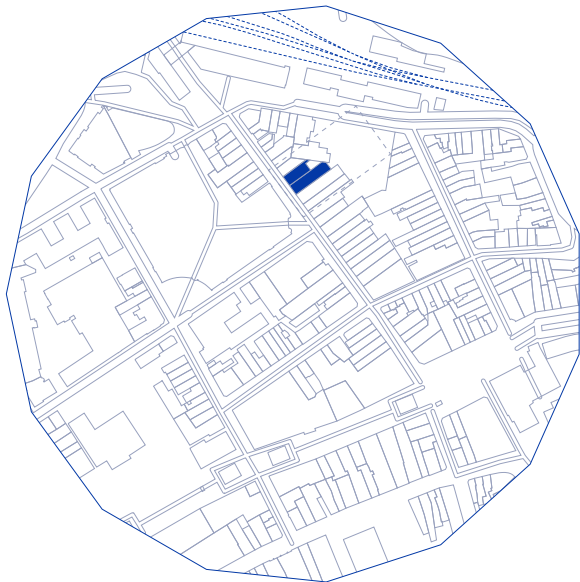


.Inside the building B



.Existing first floor plan

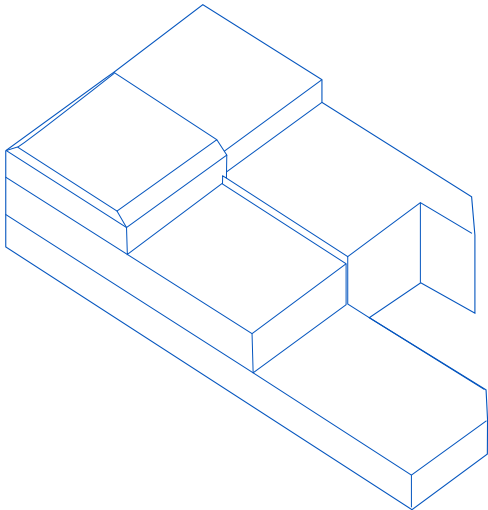
Building C



.Location of the buildings



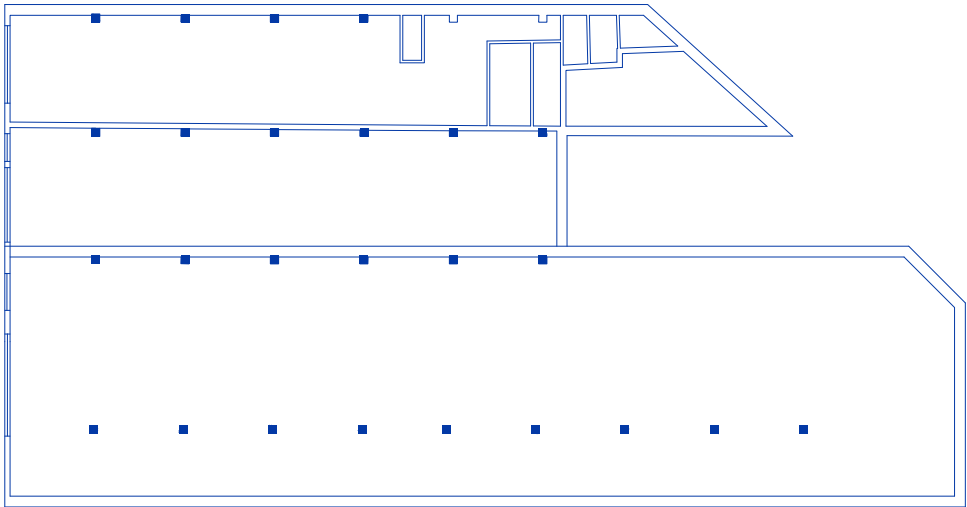
.Facades of the buildings



.Existing volume of the buildings



.Inside the building C1

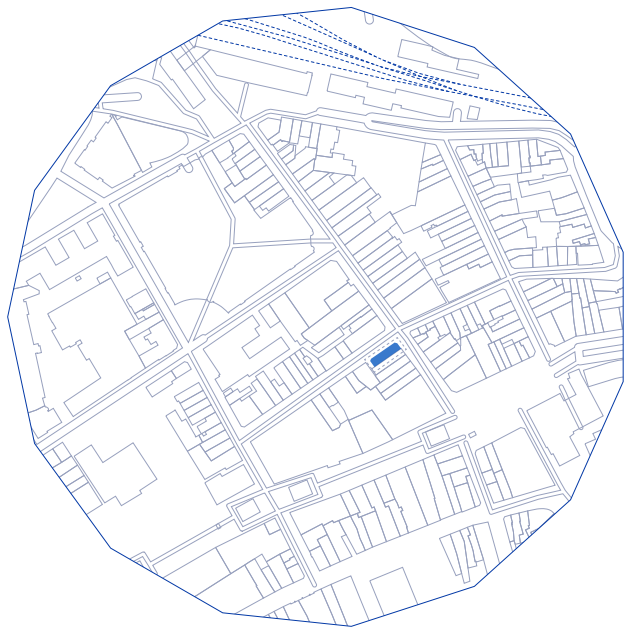


.Existing ground floor plan

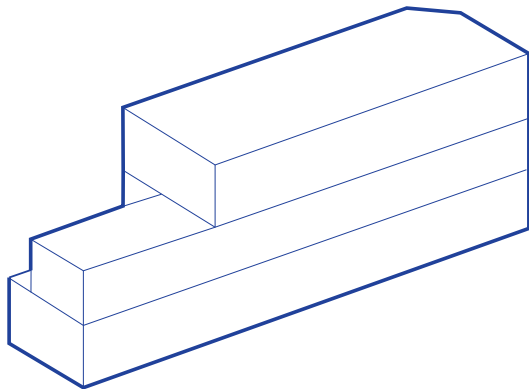


.Inside the building C1

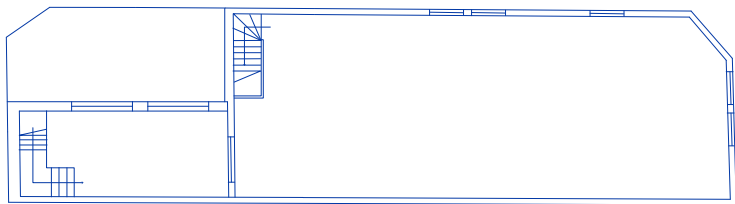
Building D



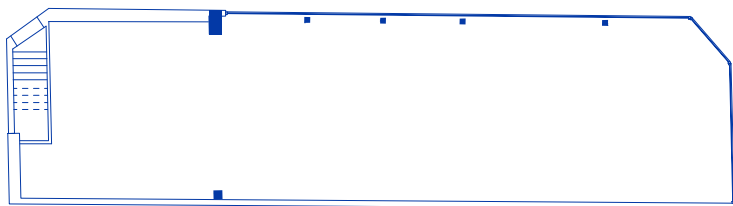
.Location of the buildings



.Existing volume of the buildings



.Existing ground floor plan



.Facades of the buildings

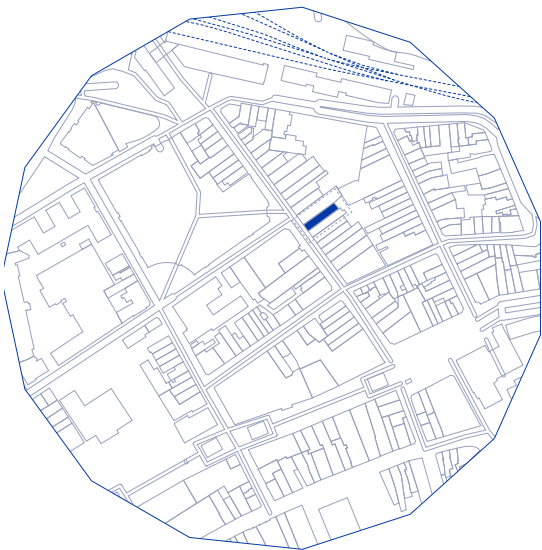


.Detail

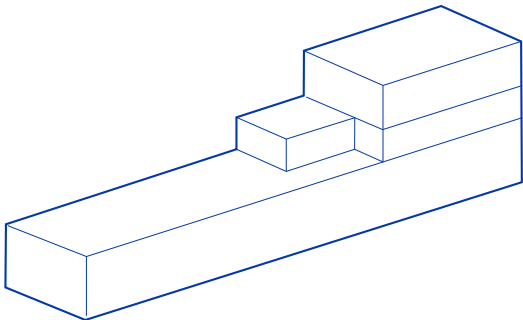


.Facades of the buildings

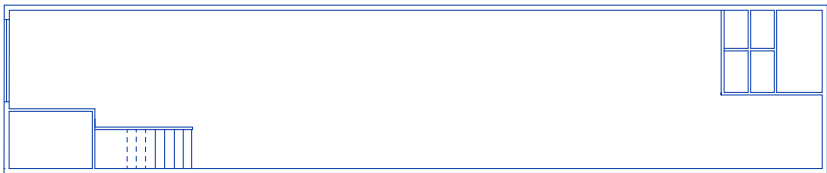
Building E



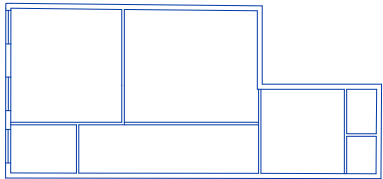
.Location of the buildings



.Existing volume of the buildings



.Existing ground floor plan



.existing second floor plan



.Facades of the building



.Inside the building



.Inside the building

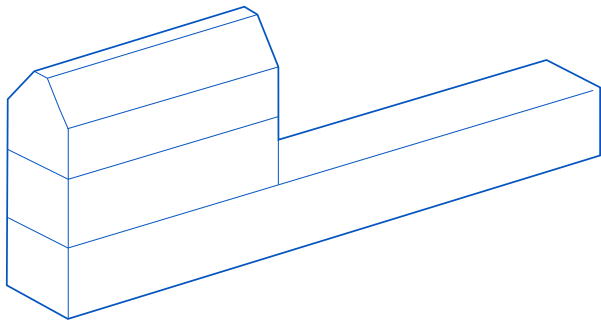
Building F



.Location of the buildings



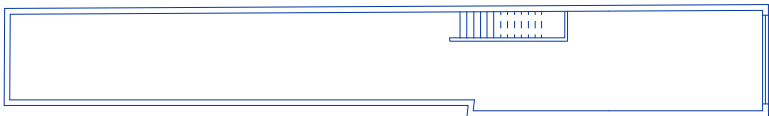
.Facades of the building



.Existing volume of the buildings



.Inside the building



.Existing ground floor plan

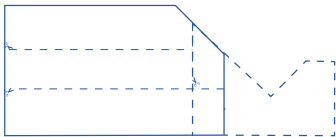


.Inside the building

Architectural intervention



Building B
The architectural interventions are based on pushing part of the facade, demolishing walls from the back. Adding stairs and division walls



Building C1 The architectural interventions are based removing division walls, floors to have a double height for the workshops

Building C2 :
A complete new building attached to C1



Building E The architectural interventions are based on pushing the facade to the inside and incline it.

Adding an extra space in the back to connect it with the courtyard.



Building F The architectural interventions are based on extending the facade to the outside and doing some intervention inside the building.

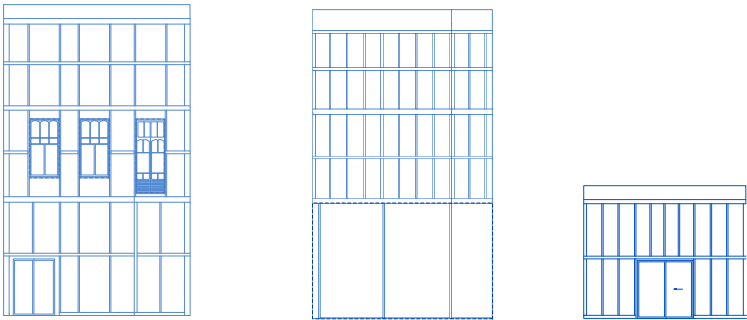
Architectural principles : spaces

Reception	Workshop + research lab	Hostel	Library	Gallery	Storage

Architectural principles : facades

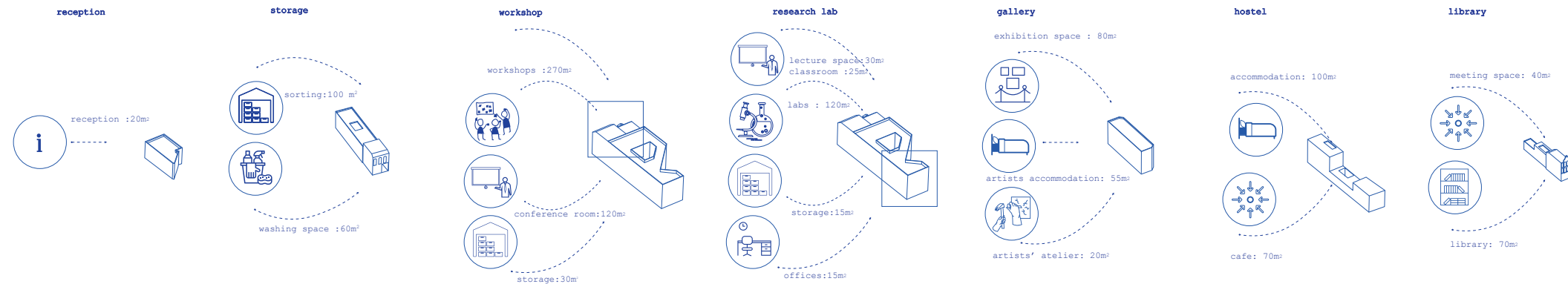


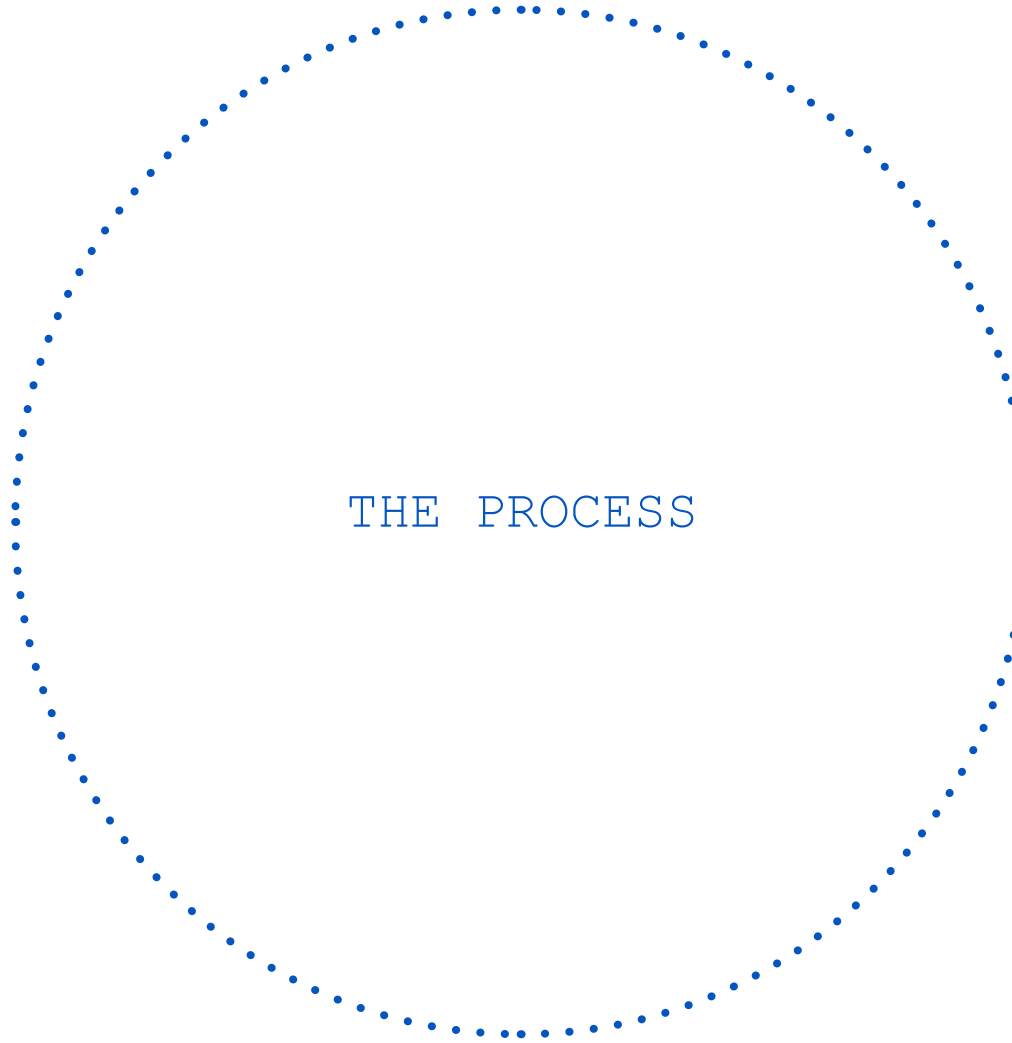
Keeping the old part, to maintain the character of the town center.

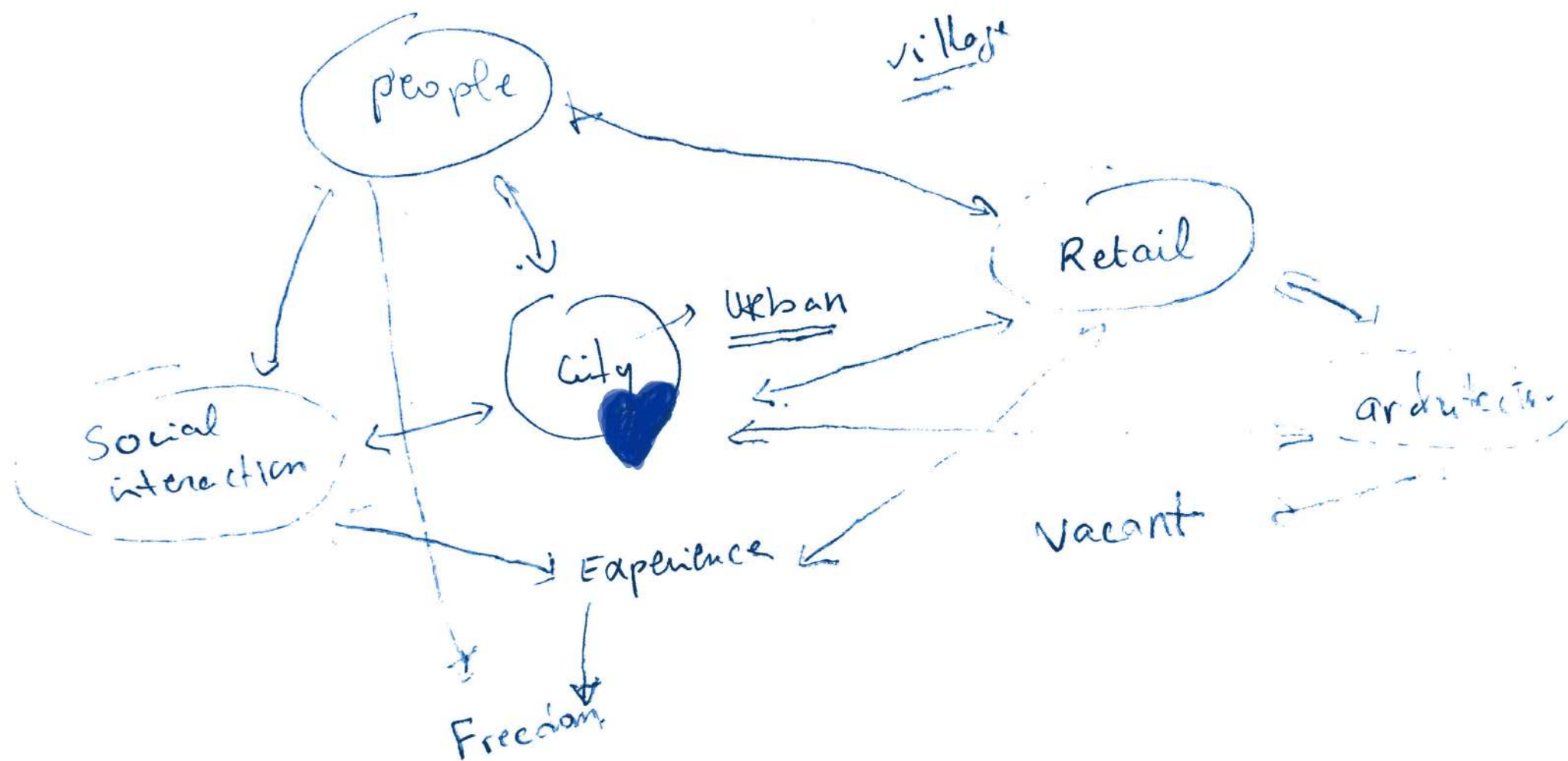


Replacing a low quality facades, run down old shop facades.

THE PROGRAM







Early brainstorming idea about my topic

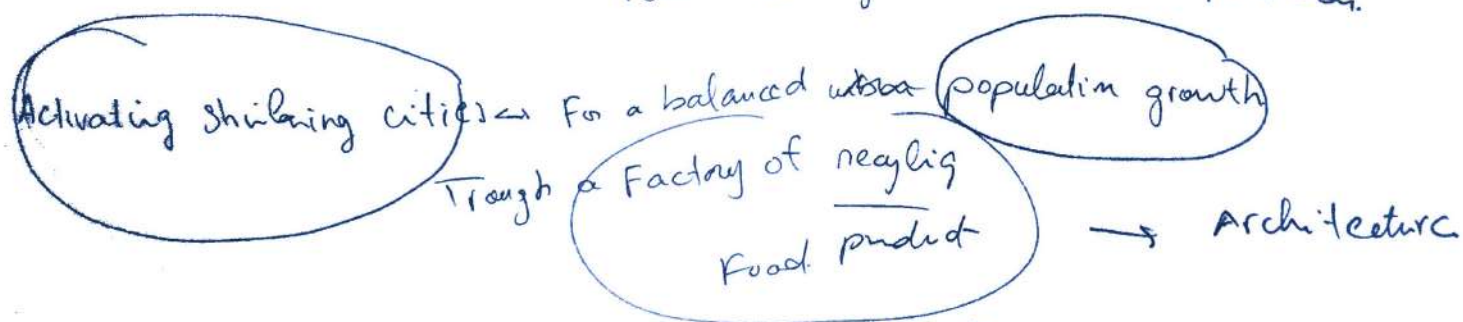
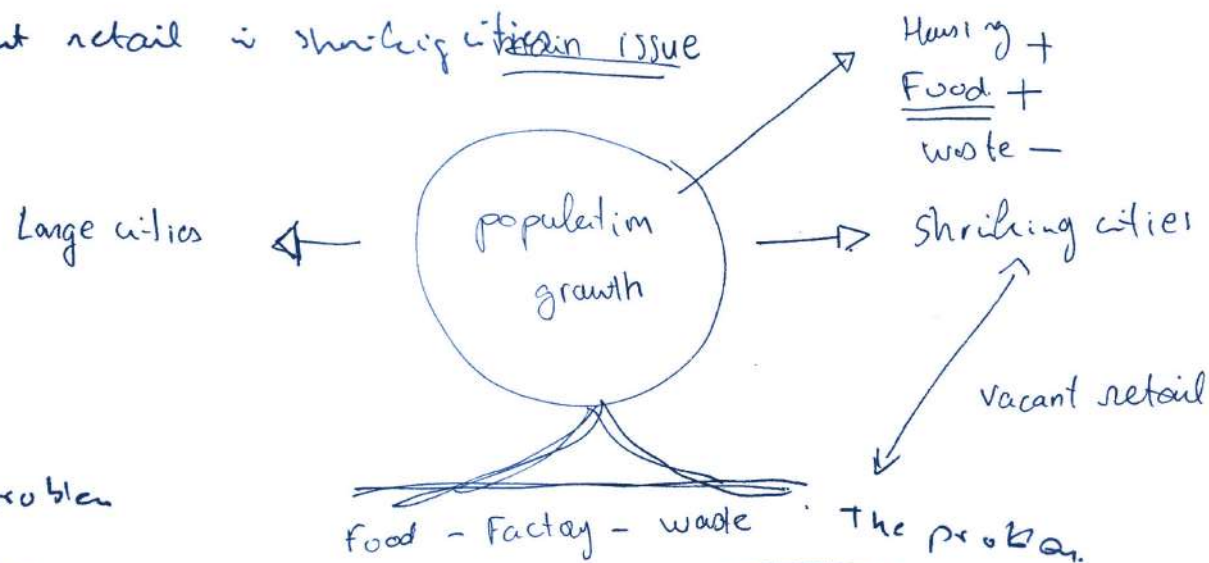
How can we re-activate shrinking cities - in an overpopulation era?

How can we attract overpopulation to shrinking areas, for a balanced urban environment?

Food hub in shrinking cities

activating vacant retail in shrinking cities urban issue

Provision points



more people

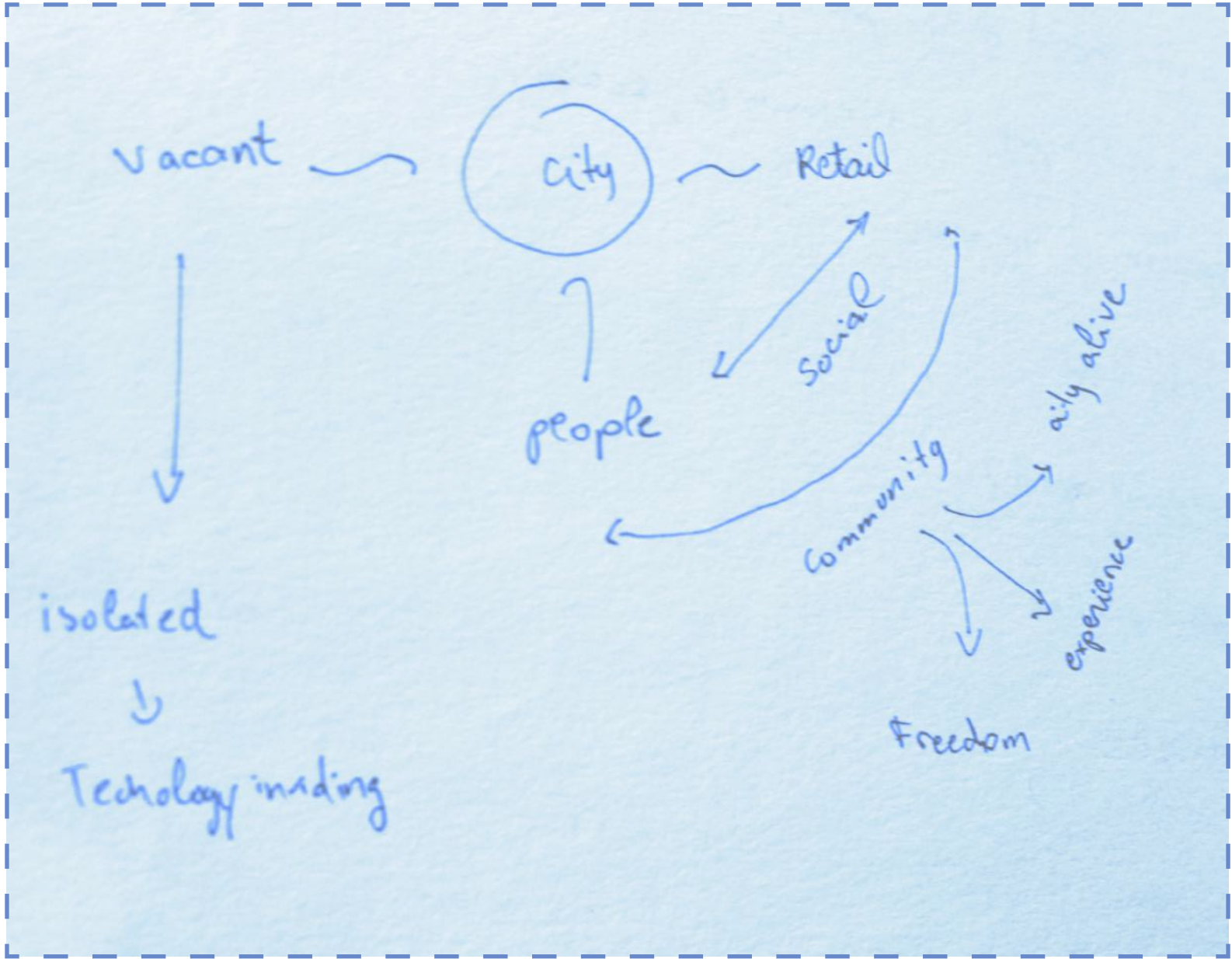
space

business

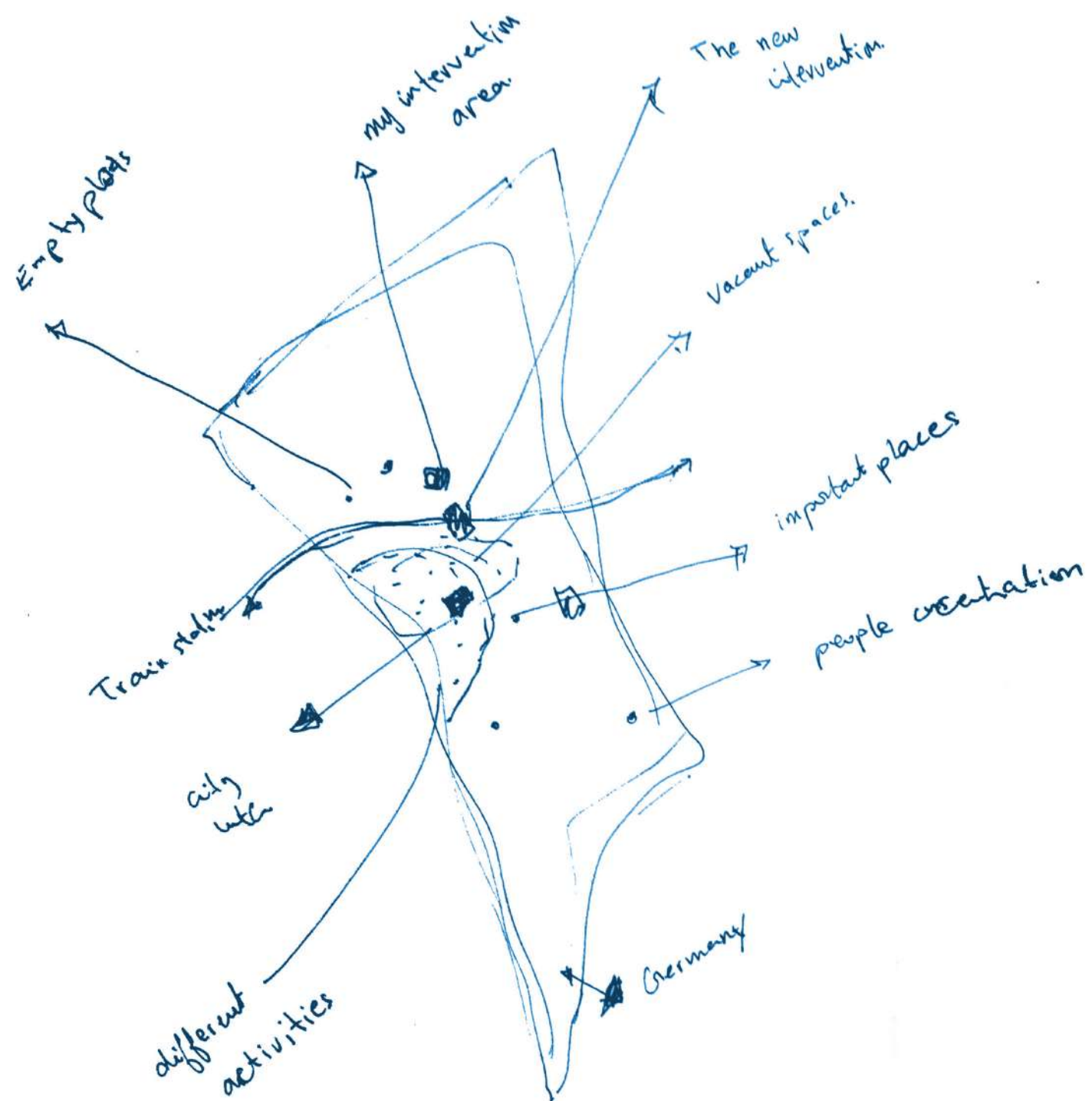
architecture as a factor of a growing population

↓ magnet tool of growing to shrinking cities

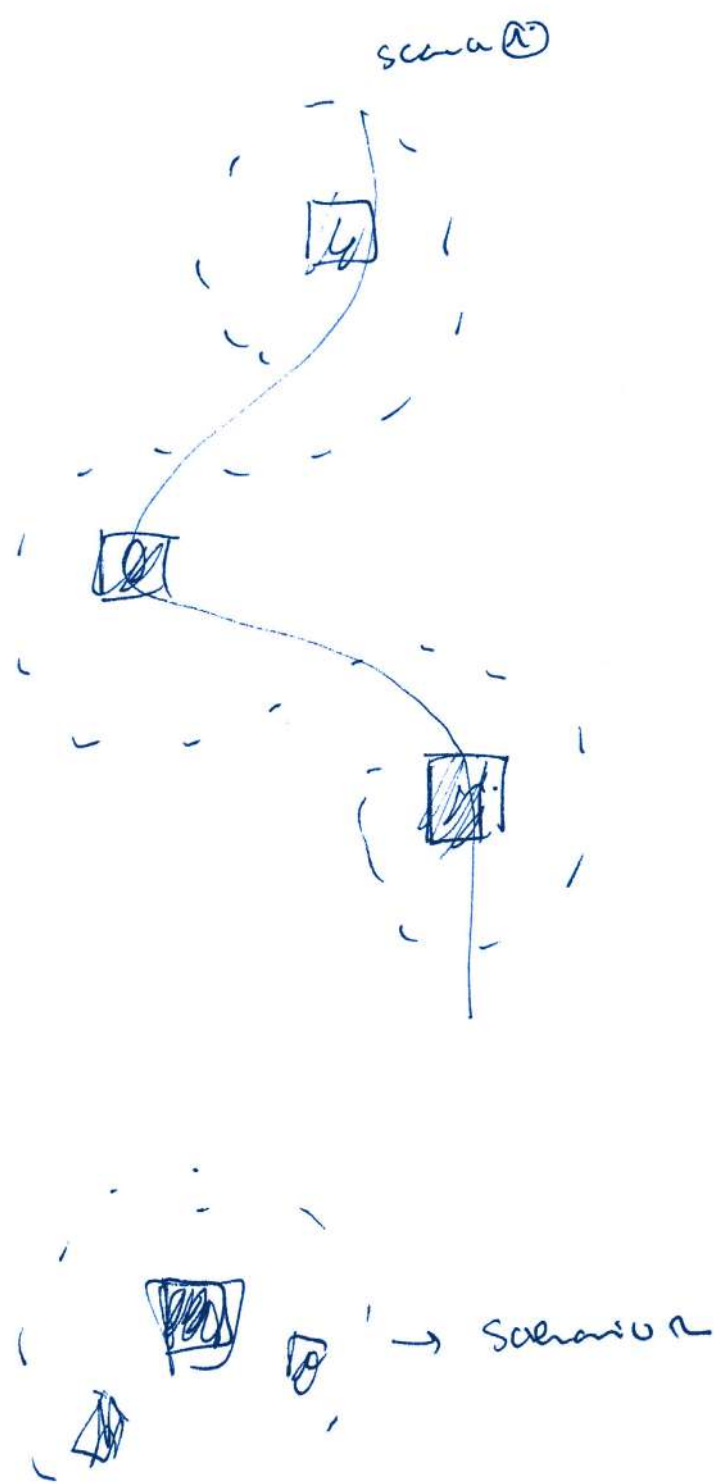
Early brainstorming idea about my topic



Early brainstorming idea about my topic



what Heerlen needs ?

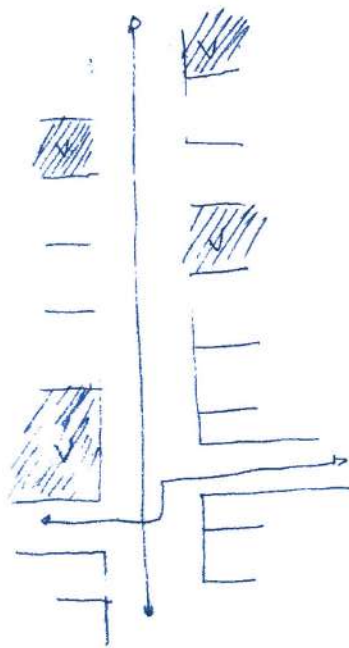


First concept sketches

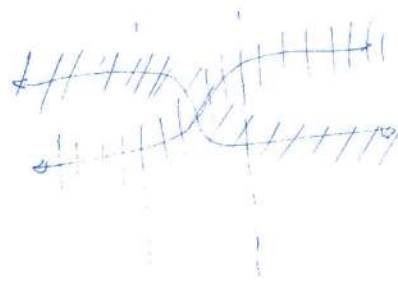
why this Topic?

why it's urgent?

1. global issue
2. happening especially in the developed countries
3. Aging Society
4. Economical shift
 - E-commerce
 - unemployment
5. effect urban centers / social interaction
6. decrease of experience on a human scale
7. Architecture & Economy binded together



linear experience → alternative?

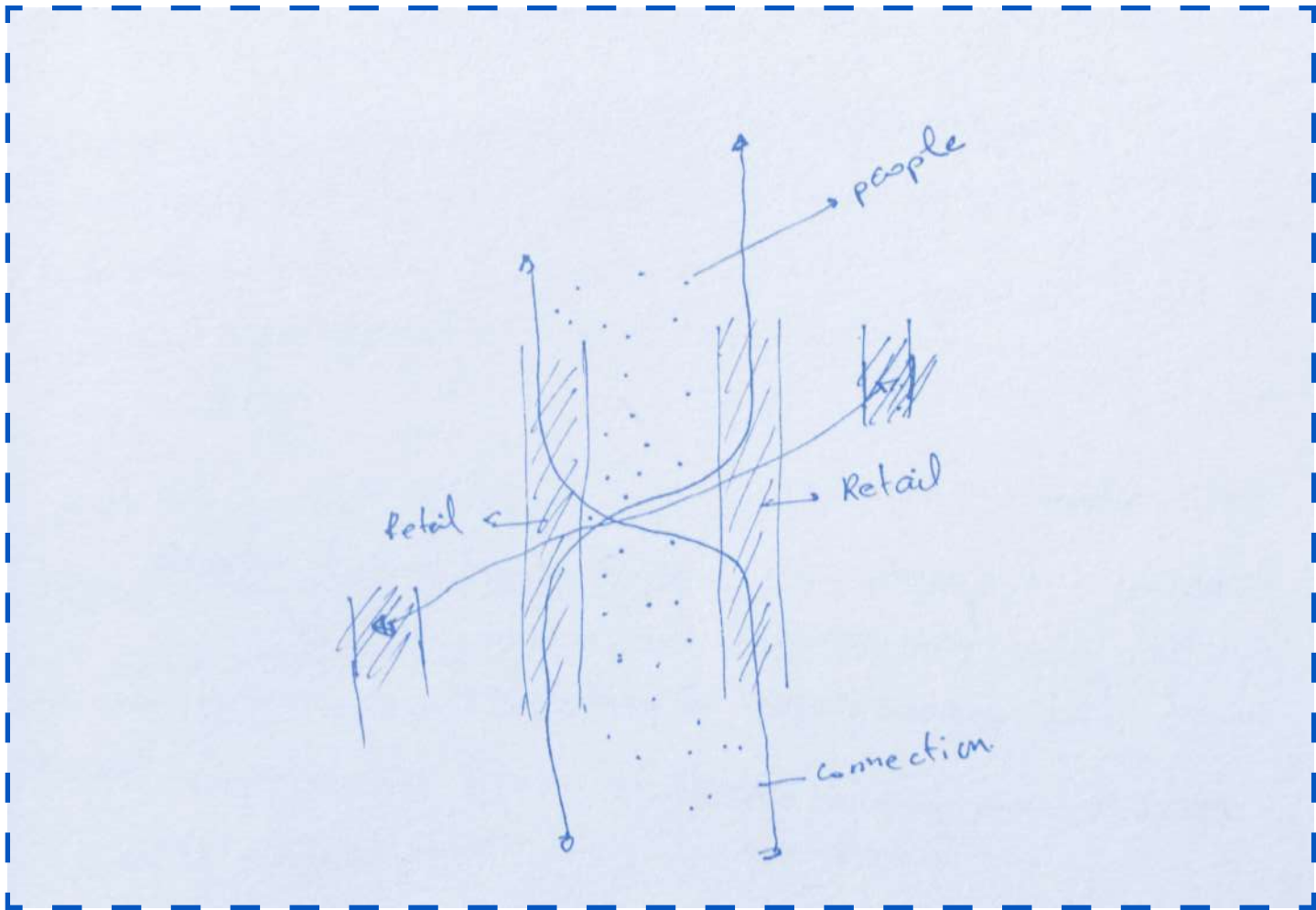


* Retail definition

museum, Bookstore → Retail?

Time relevant than money*

First concept sketches



First concept sketches

Question DSM:

- 1 Do you use / add other wasted materials?
- 2 How it's produced / manufactured?
- 3 How do you call the plastic?
- 4 - would DSM be interested in sharing process with other fields?
where the ^{bio}plastic is being produced?
do have it ready?

DSM:

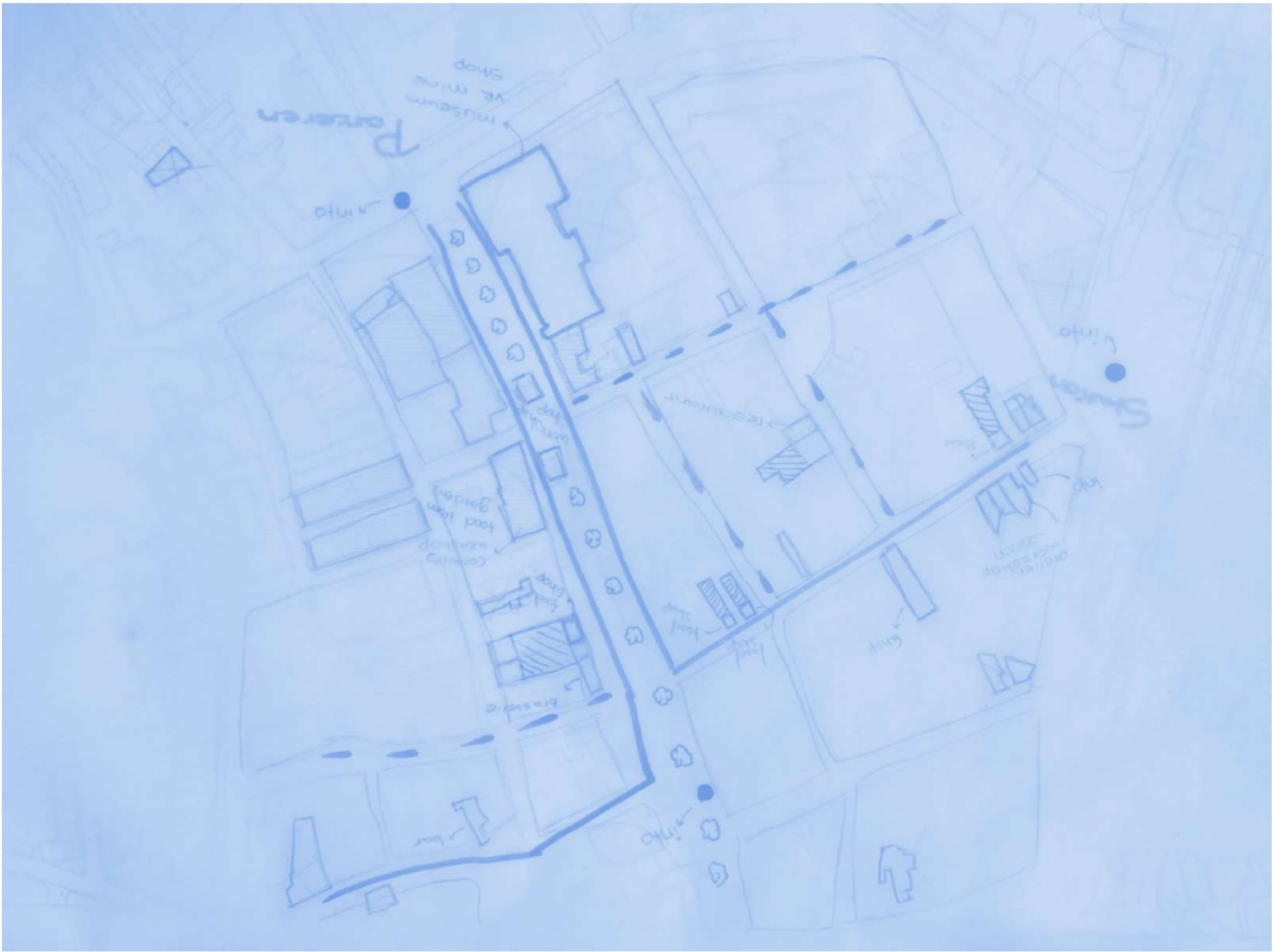
- 1 / add other wasted materials / products to it?
- 2 produced / manufactured?
- 3 do you call the plastic?
- 4 DSM be interested in sharing it's sustainability with other fields?
where the ^{bio}plastic is being produced? How long does it take to have it ready?
your clients?

Meeting with DSM



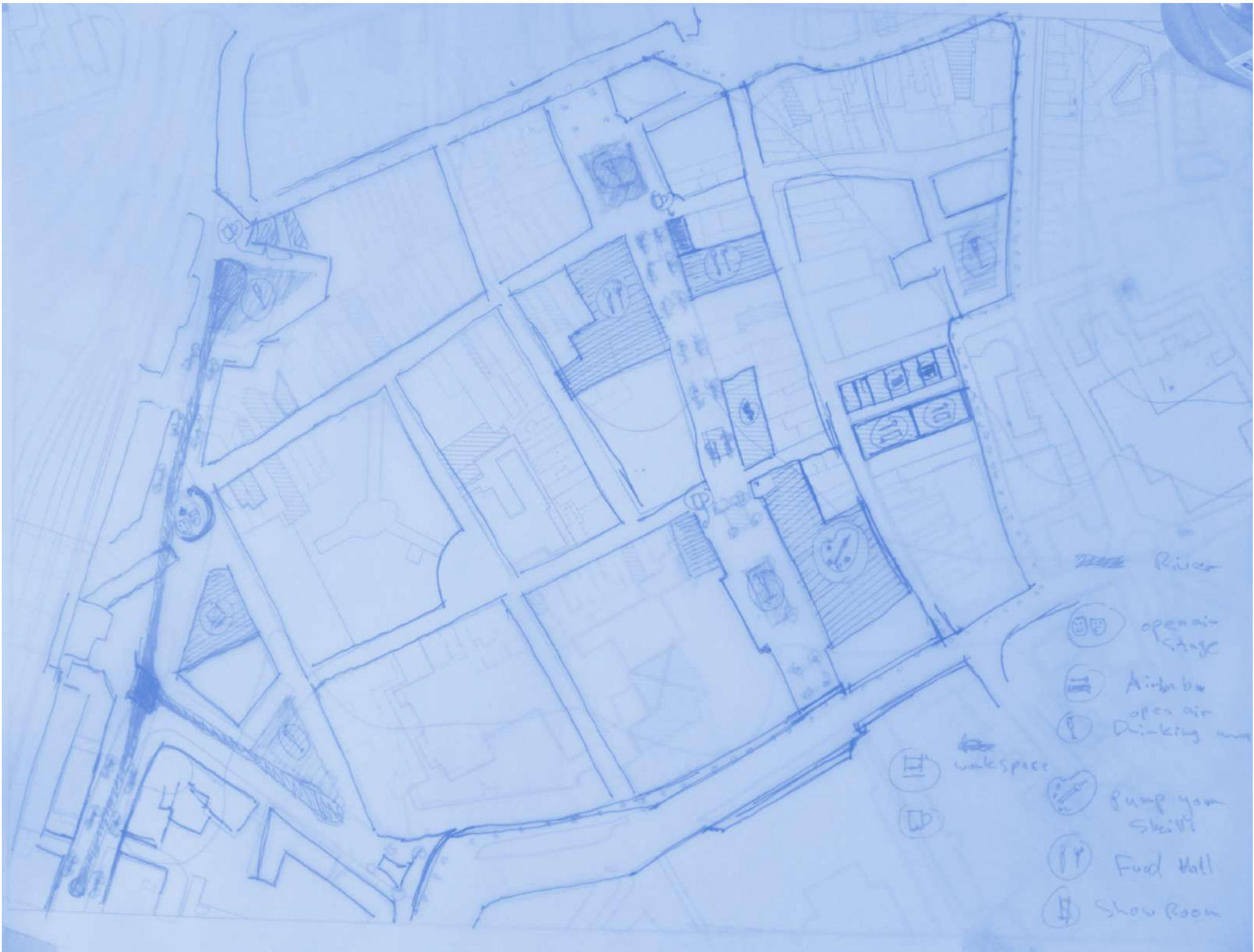
Developping the concept of the chain

Option 1



The food road concept

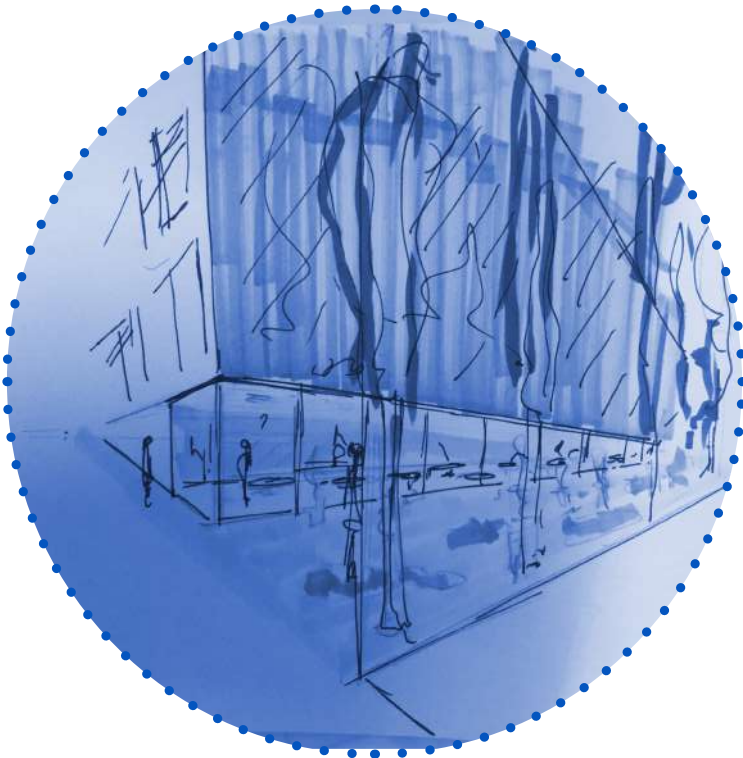
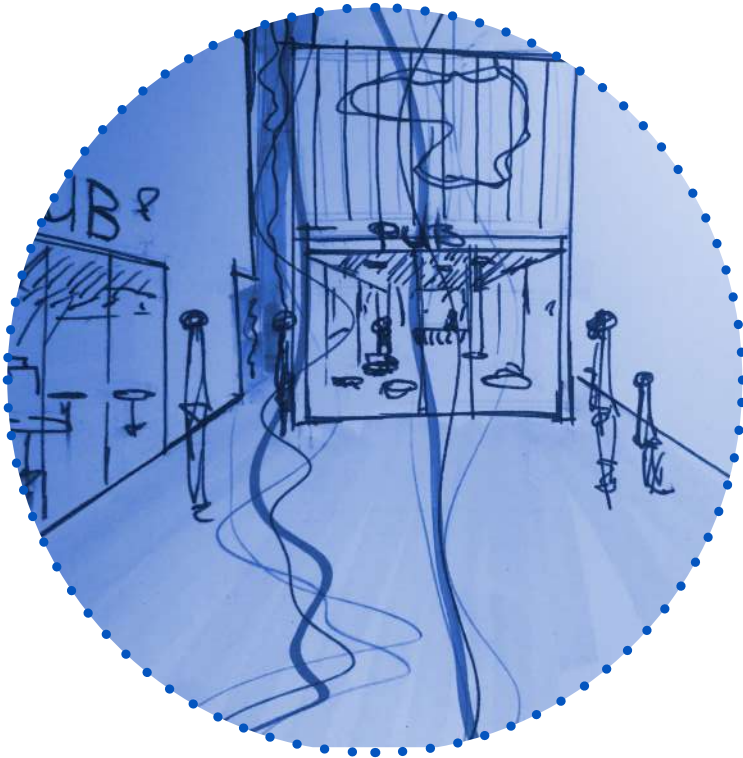
Option 2



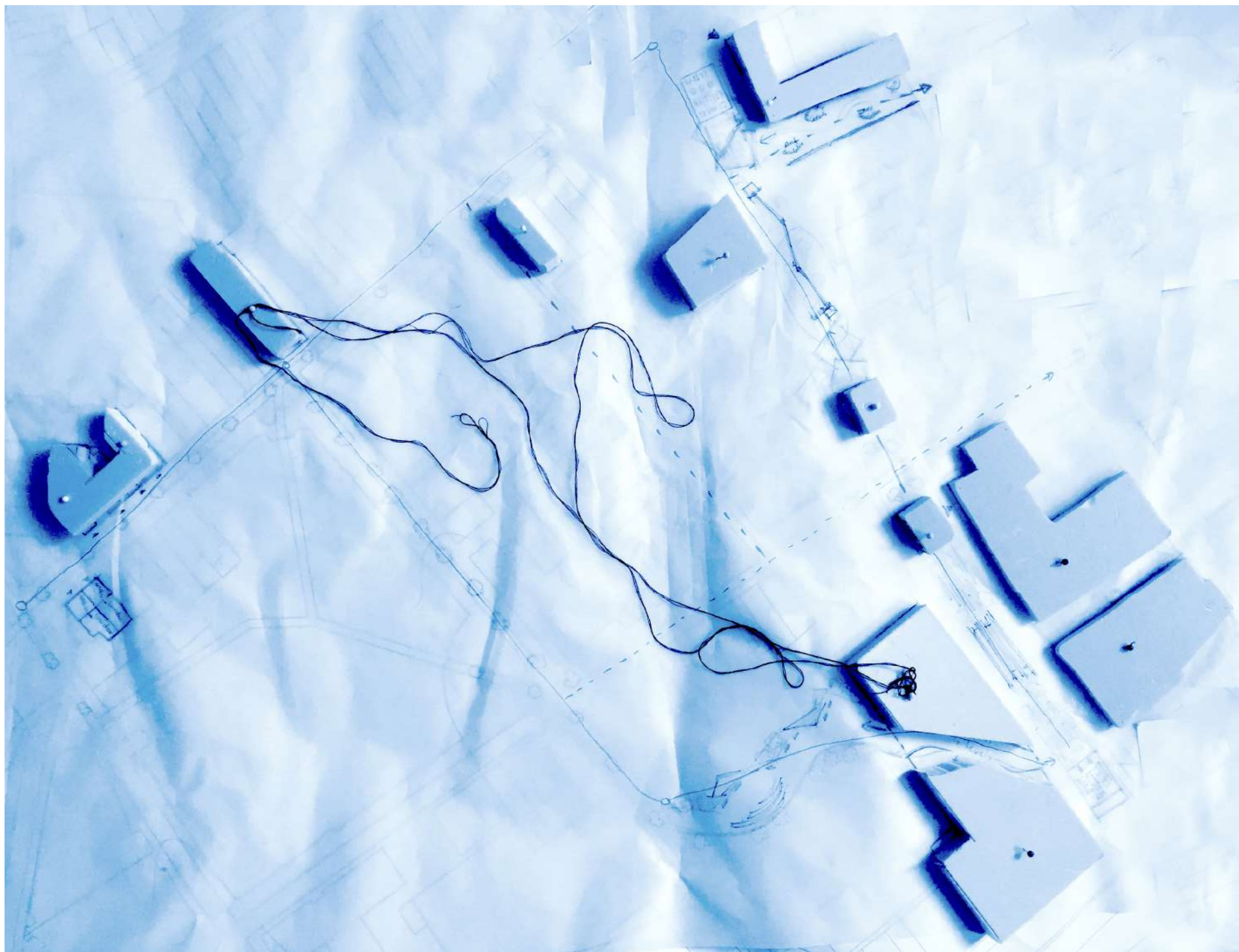
The social activities concept

[illegible]

.116.



Plastic industry concept



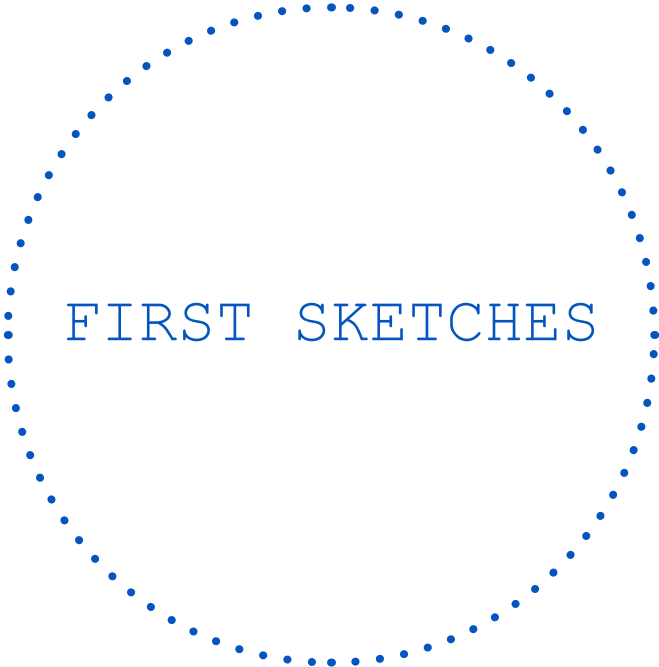
Early model of the concept

Summary of the winter school

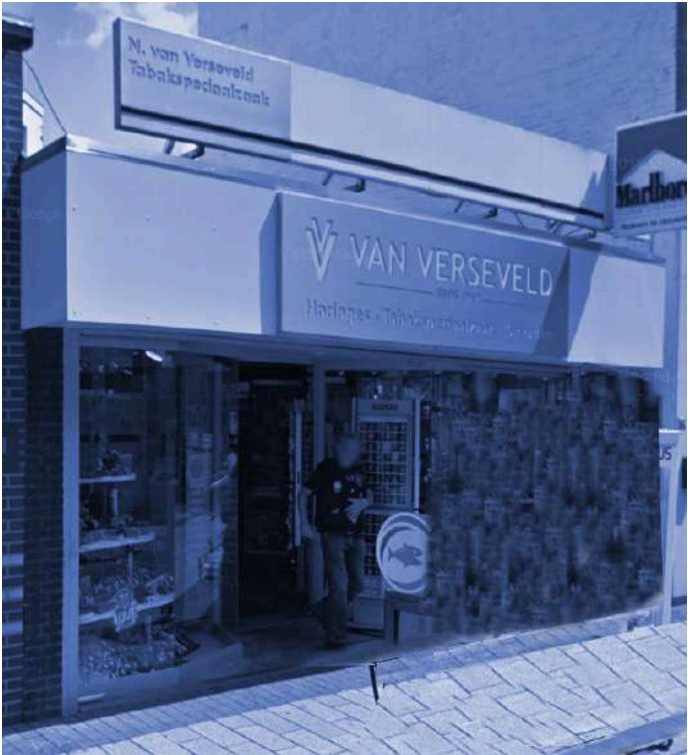


The winter school activity was a great moment for me and my project to explore new insights and paths for my project.

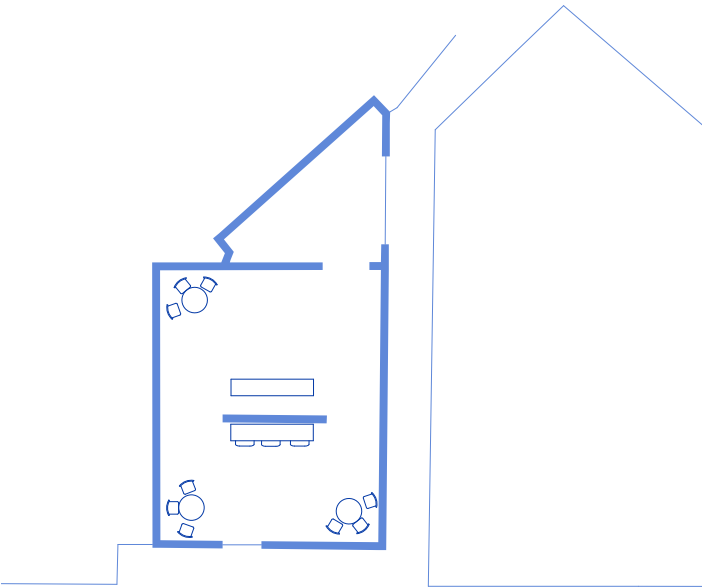
Thanks to my team, I end up coming with better ideas that helped me to take my project to the next step.



Vacant shop one story
height.



.STOP 1

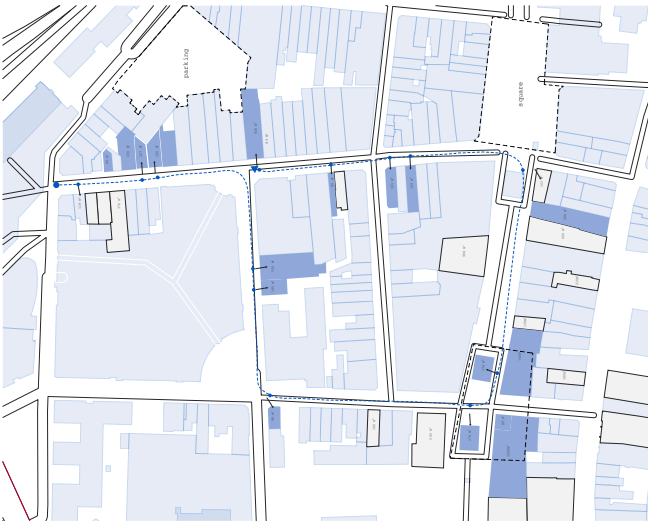


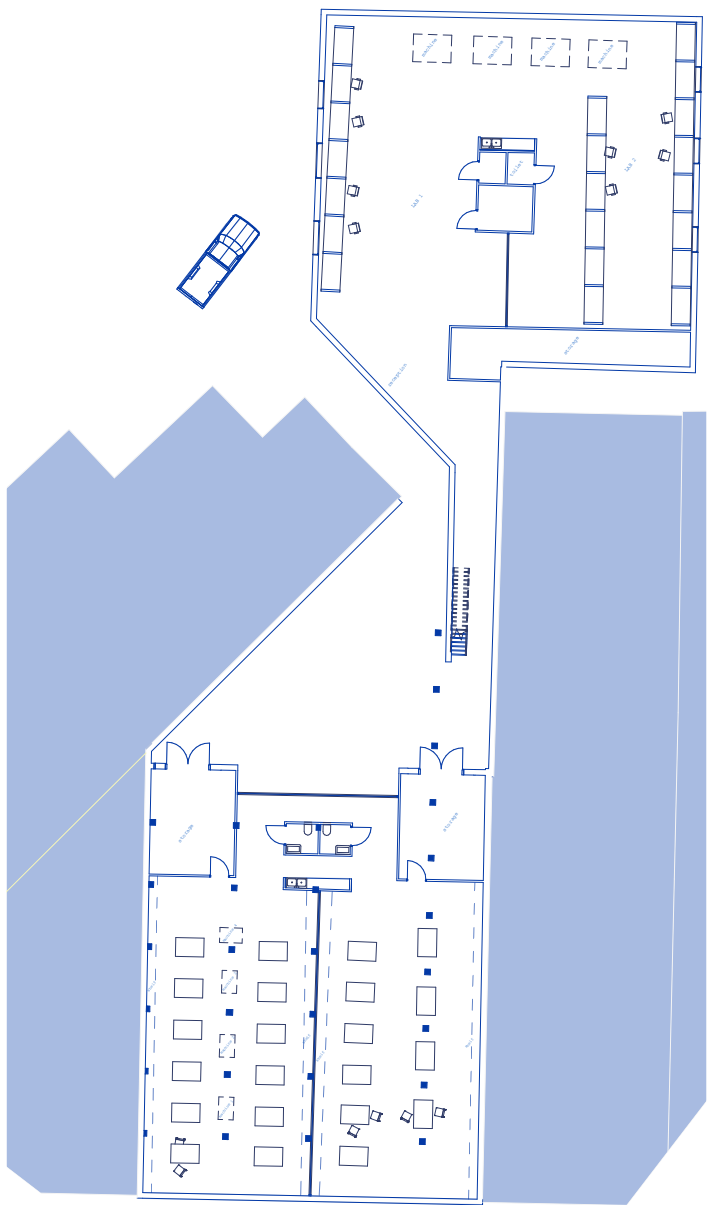
. info point/ tourist information

vacant shops under a res-
idential building

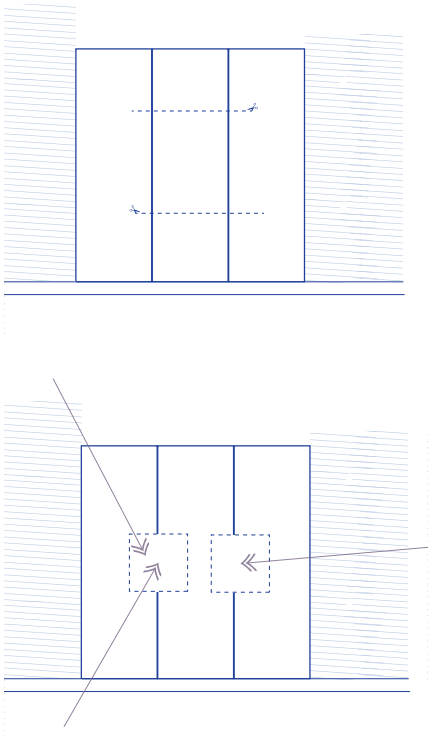


.STOP 2

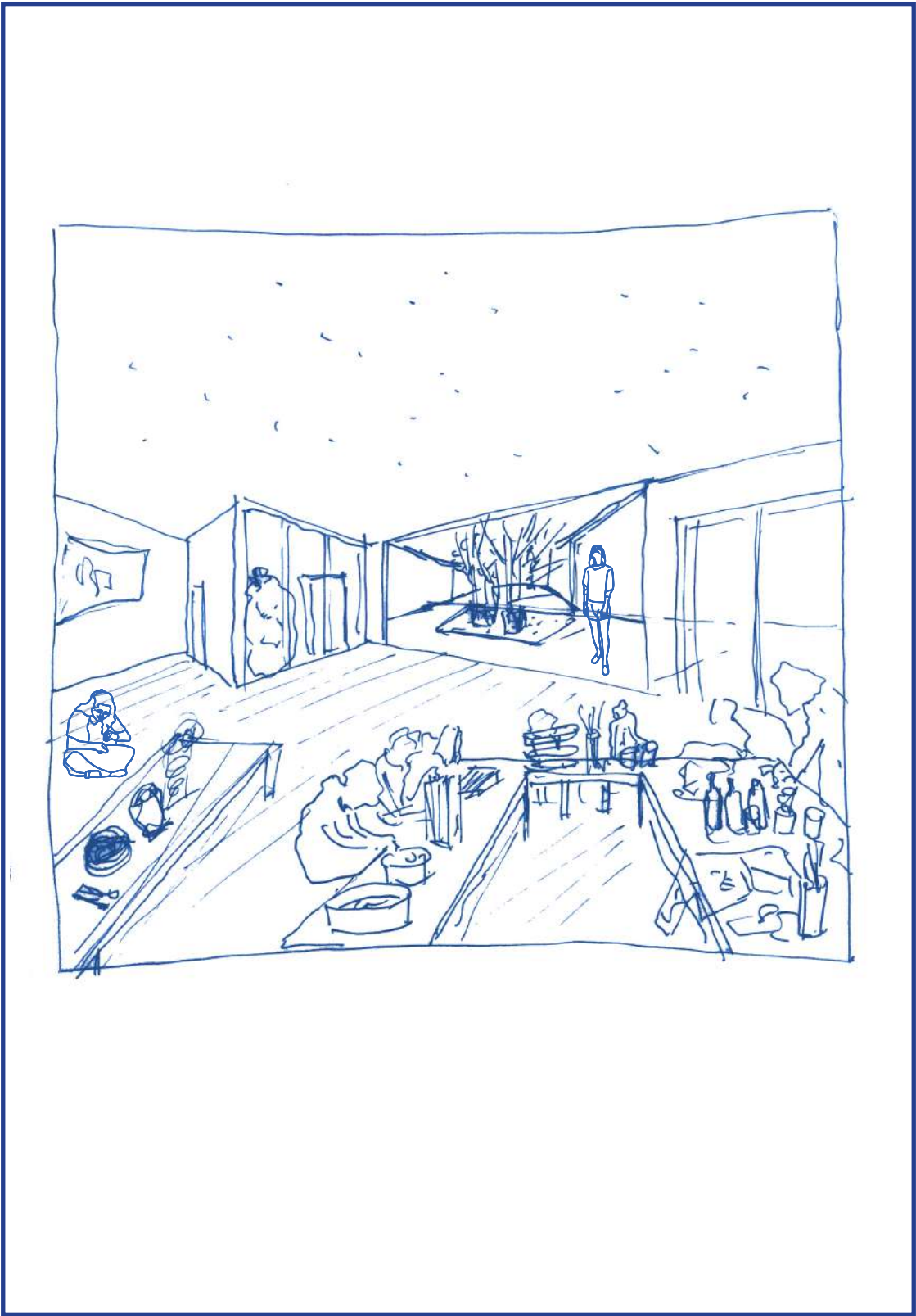




. Plastic & bio- products workshops



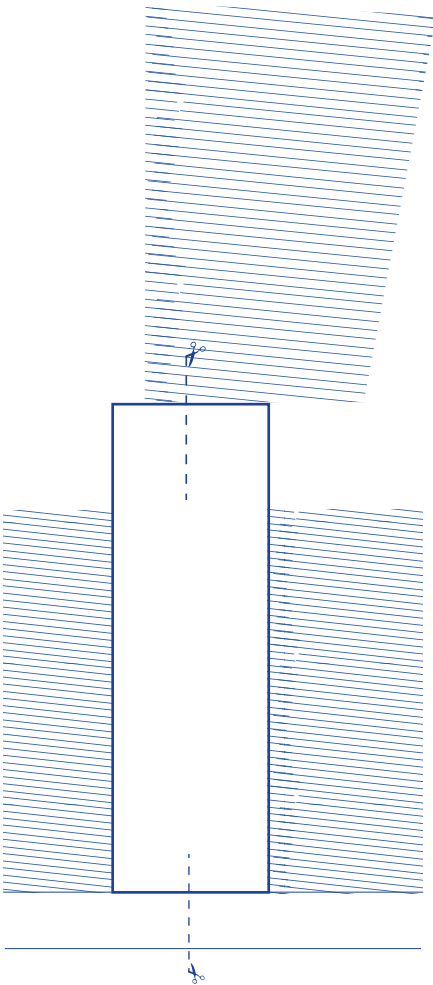
Combining vacant shops next to each others into one space / bringing more light.



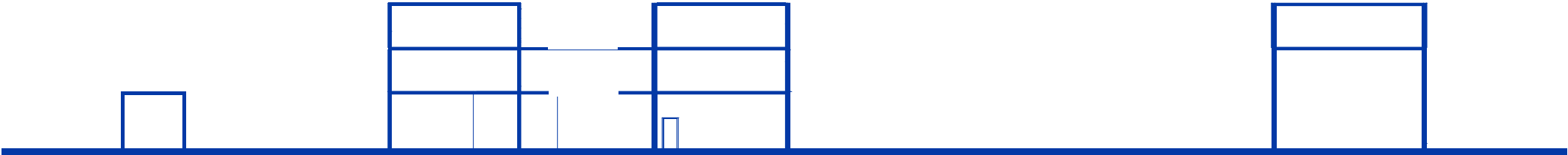
Vacant shops under a residential building

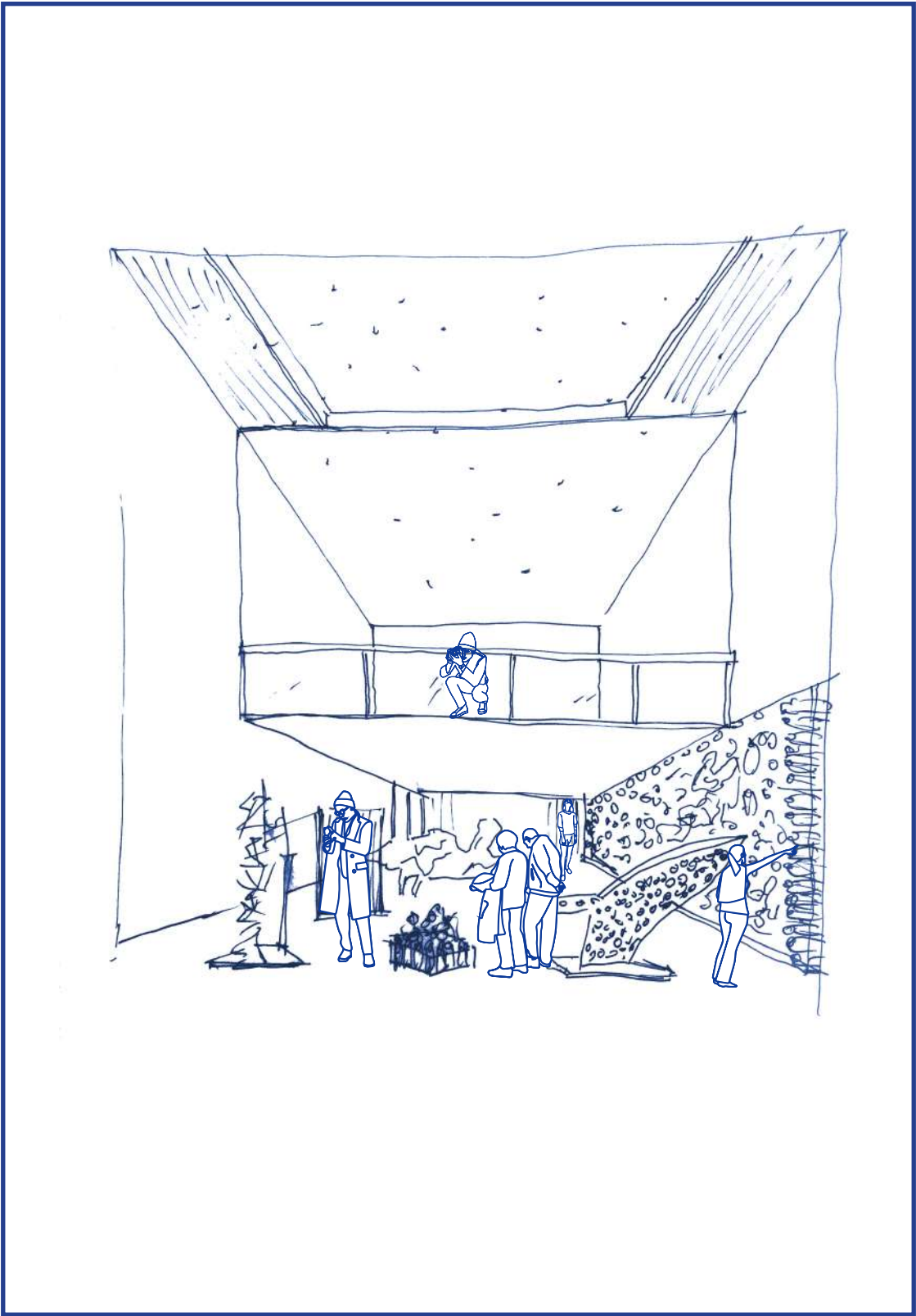


.STOP 3



Shop standing alone connected to a big square



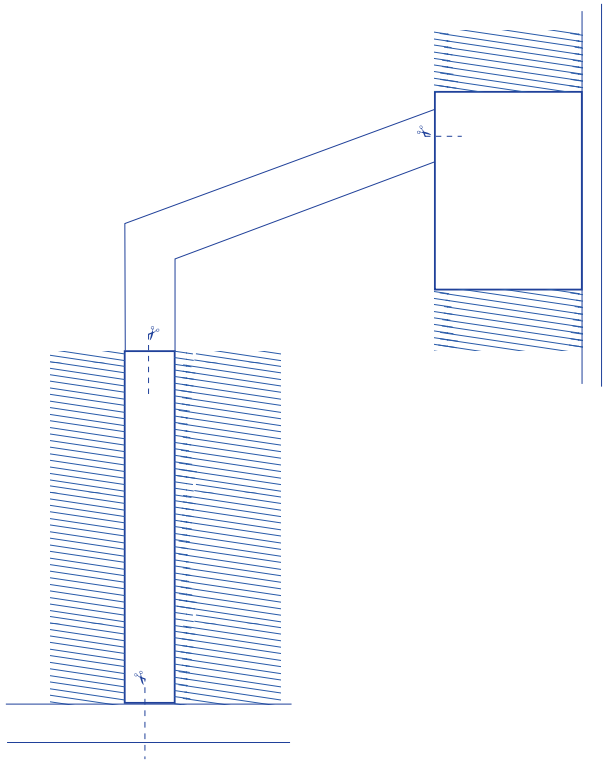


Vacant shops in a modern
high building.

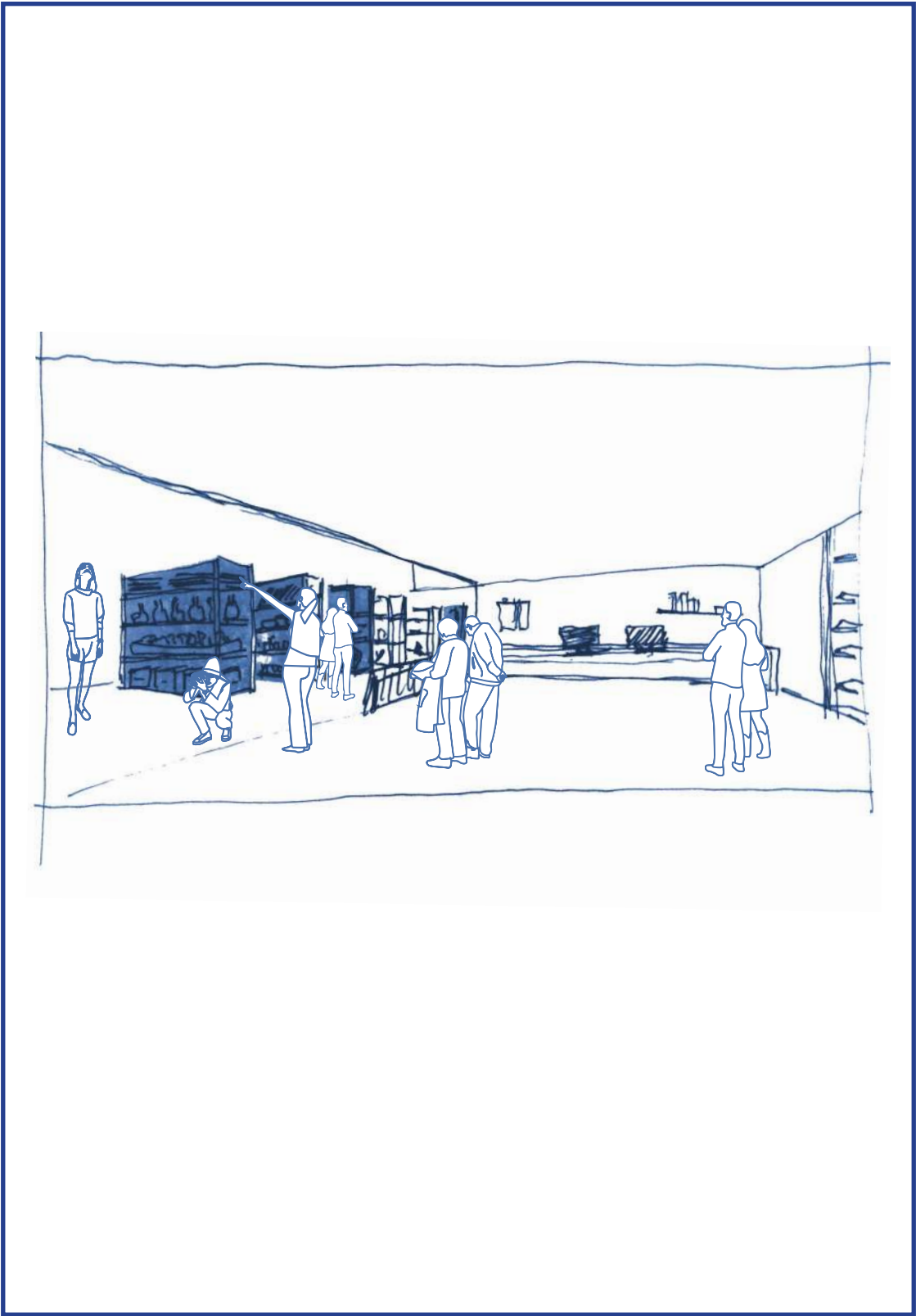
an existing storage.



.STOP 4



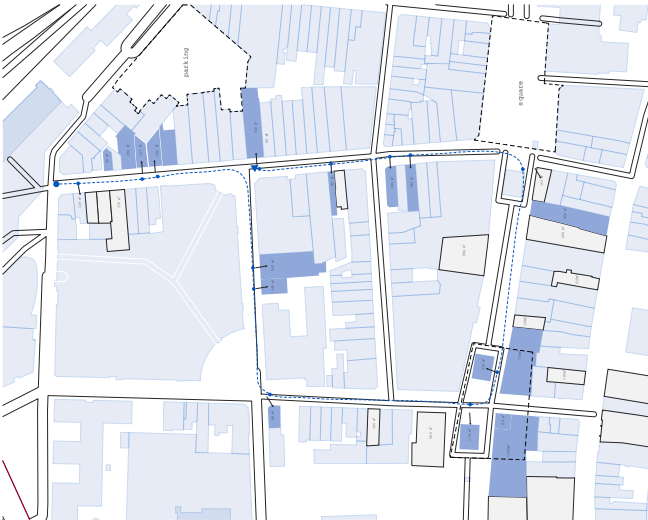
Vacant shop in a narrow/ dark street
Possibility of connection with other
vacant shops.

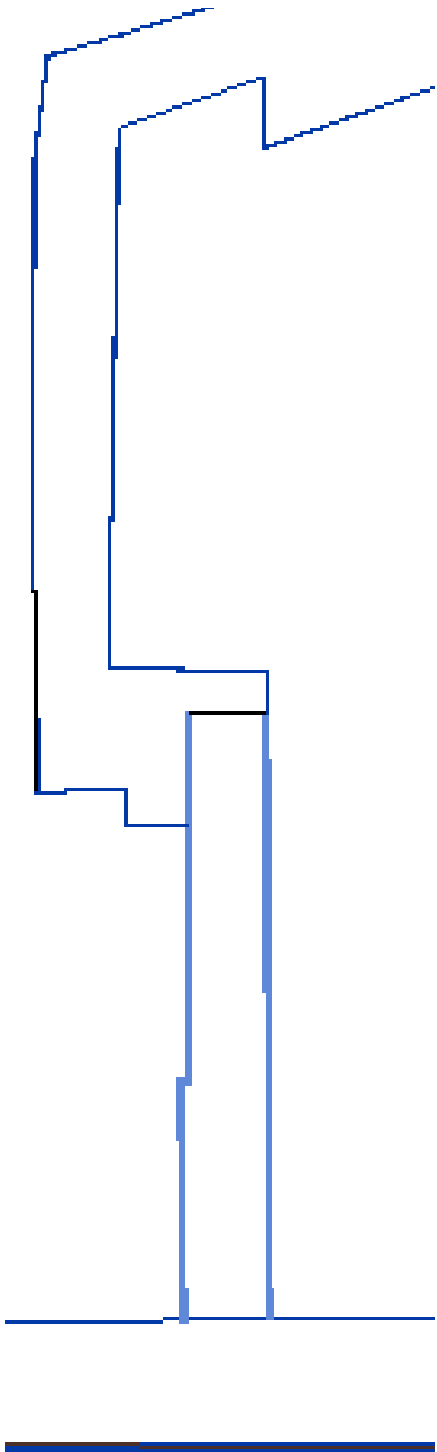


Vacant shop under a resi-
dential building

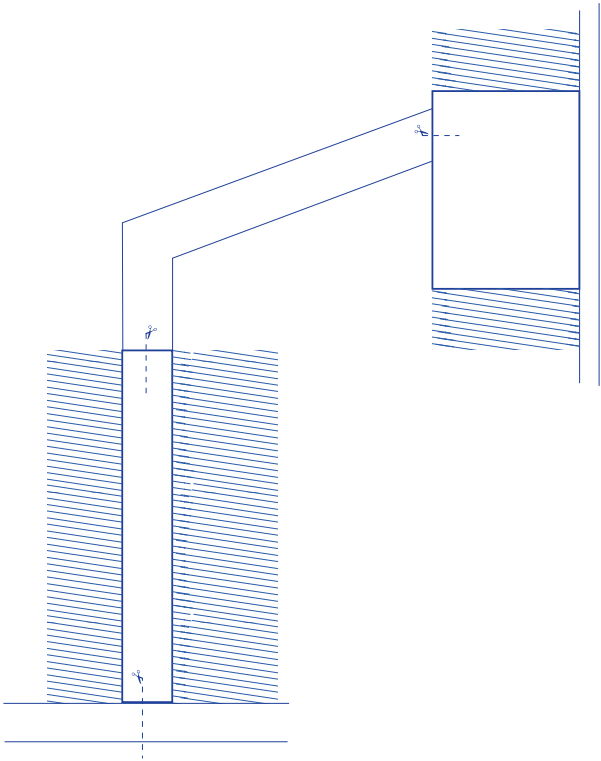


.STOP 5





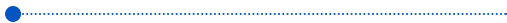
. Passage / open air shop



Connect narrow vacant shops to other vacant space creating a passage/ a void to allow more accessibility to the vacant of the shops.

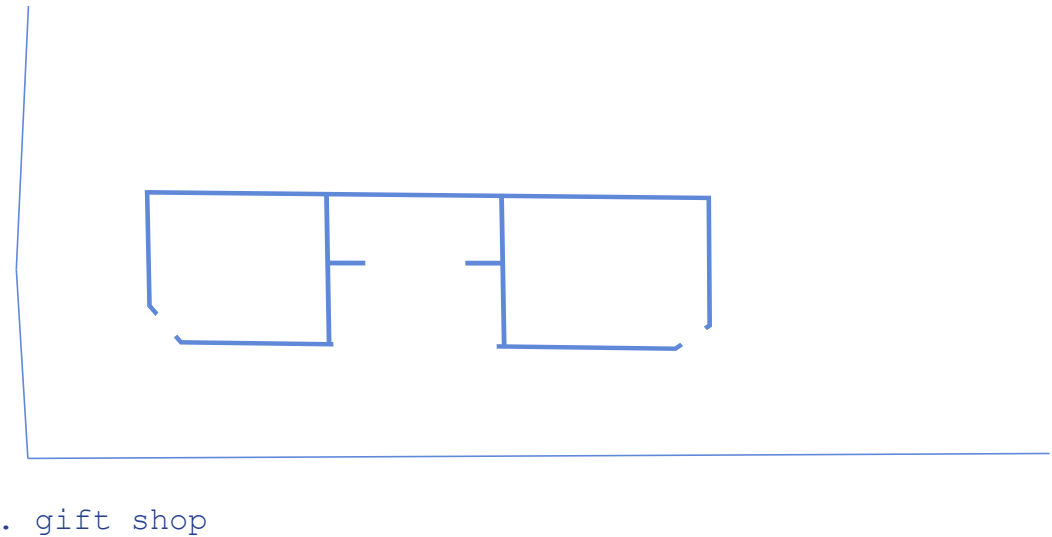
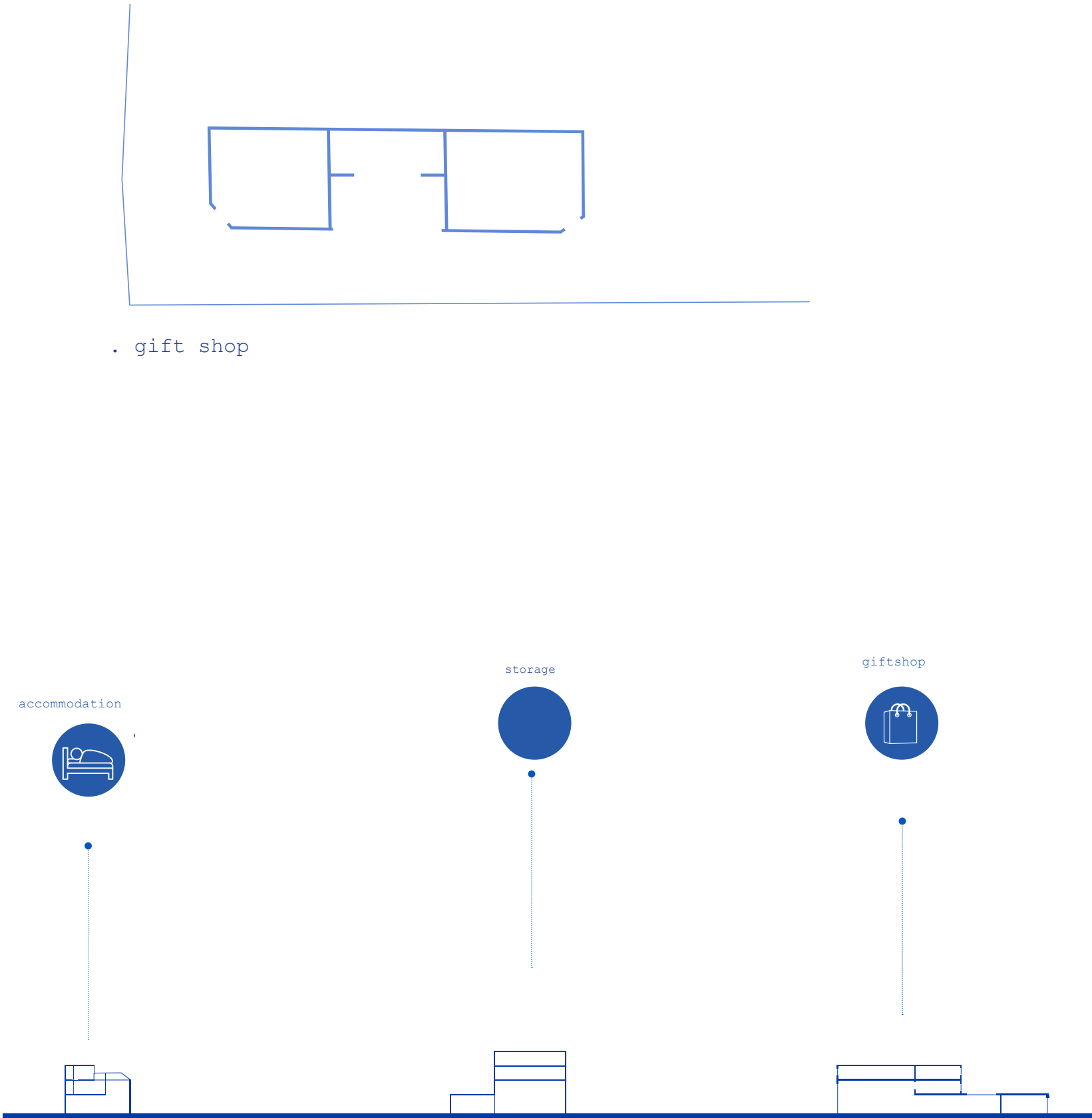


Vacant shops under a res-
idential building



.STOP 6





Vacant shop standing in
the middle of a promenade

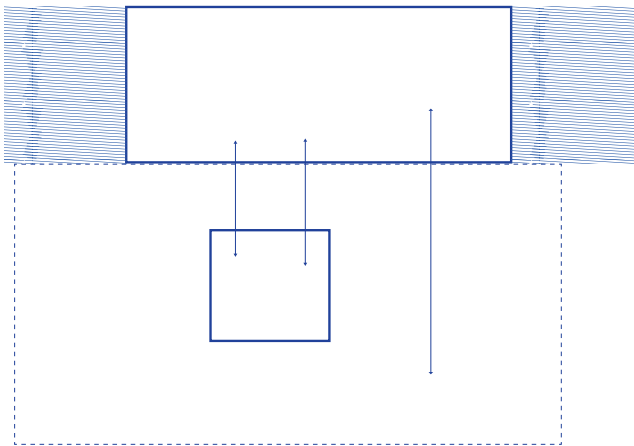


Vacant shops under a res-
idential building



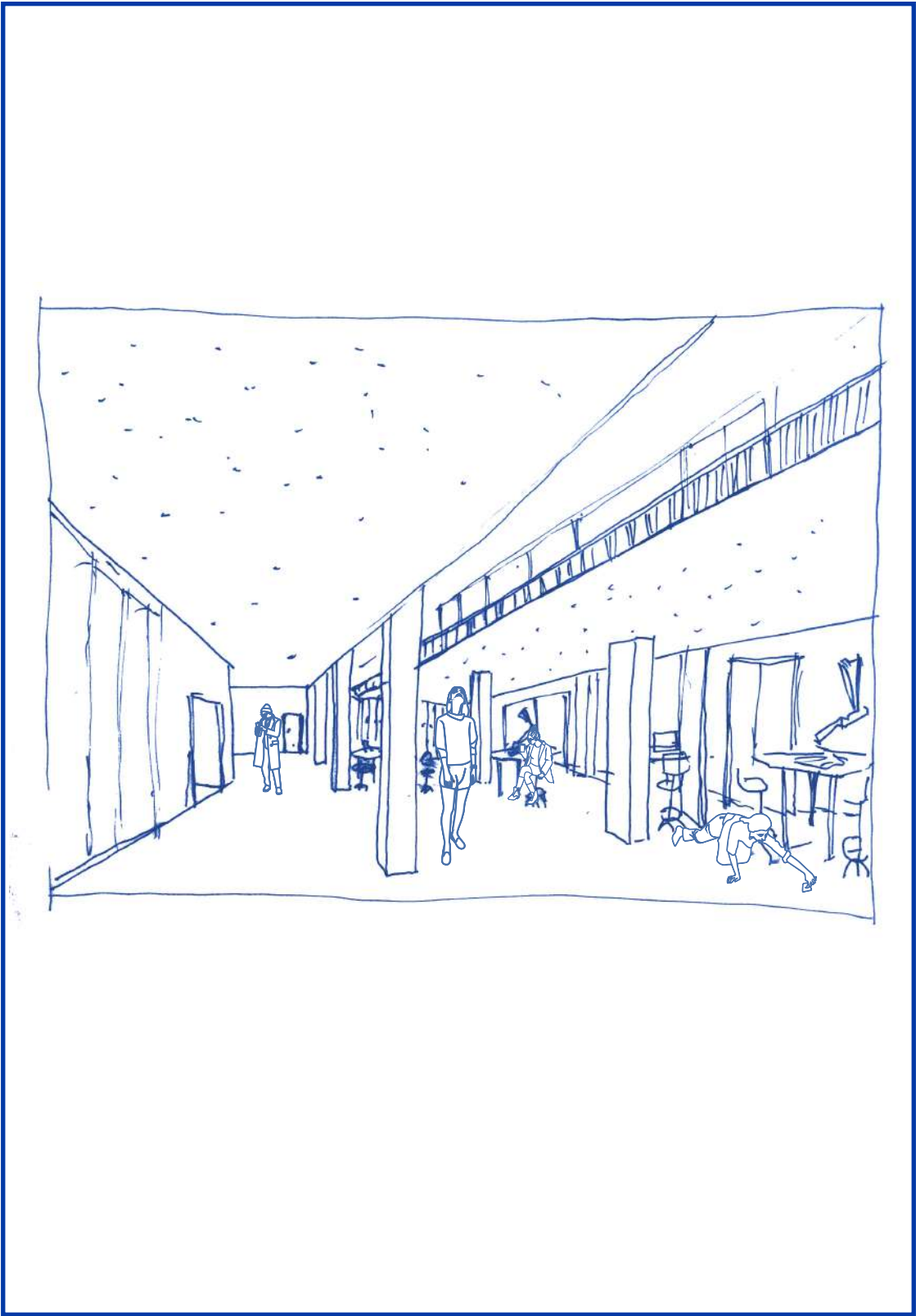
.STOP 7

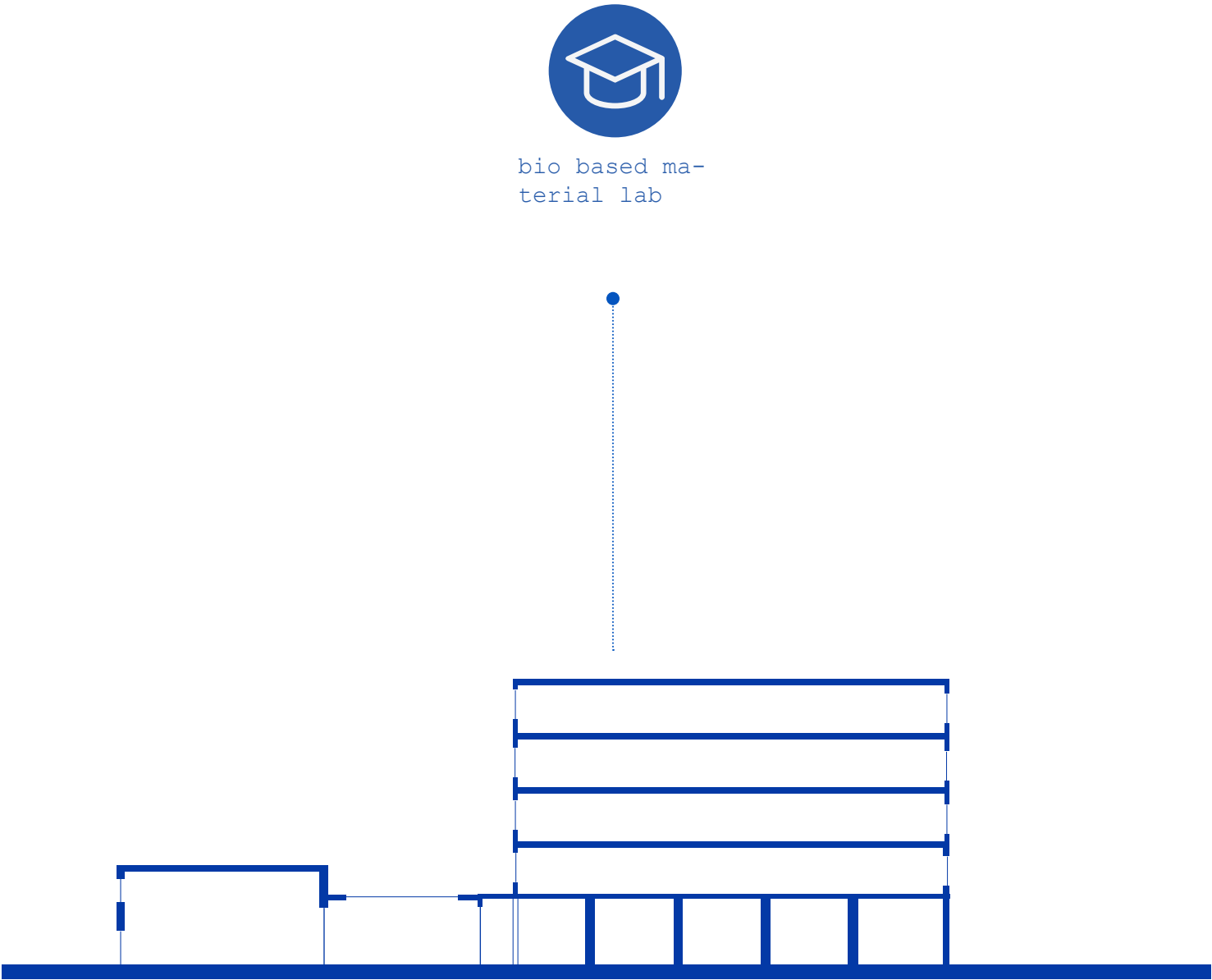


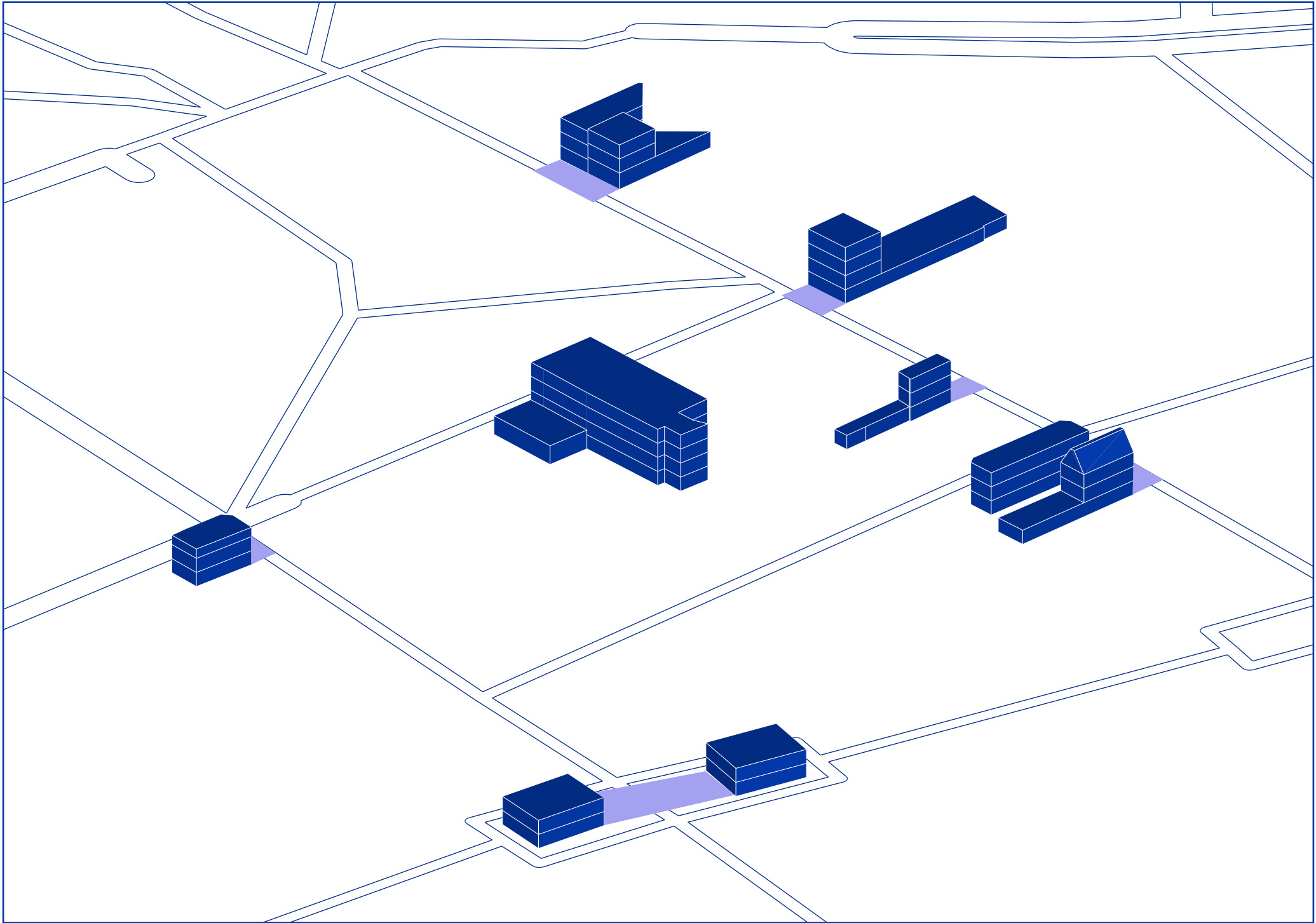


. bio-based materials - recycling plastic lab

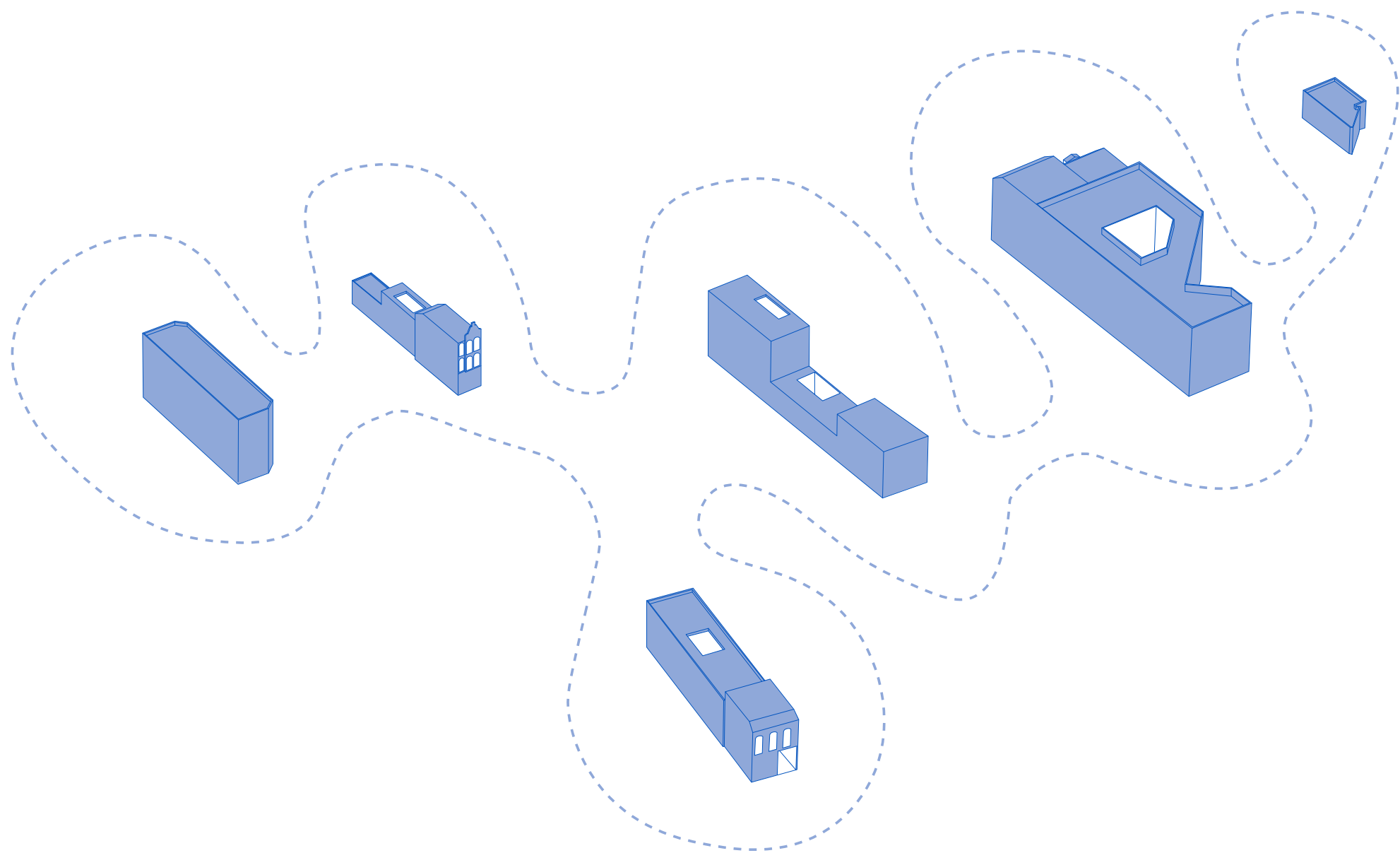
Vacant shops under a residential building.
Extending the space to the public area
Connecting it with another vacant shops.





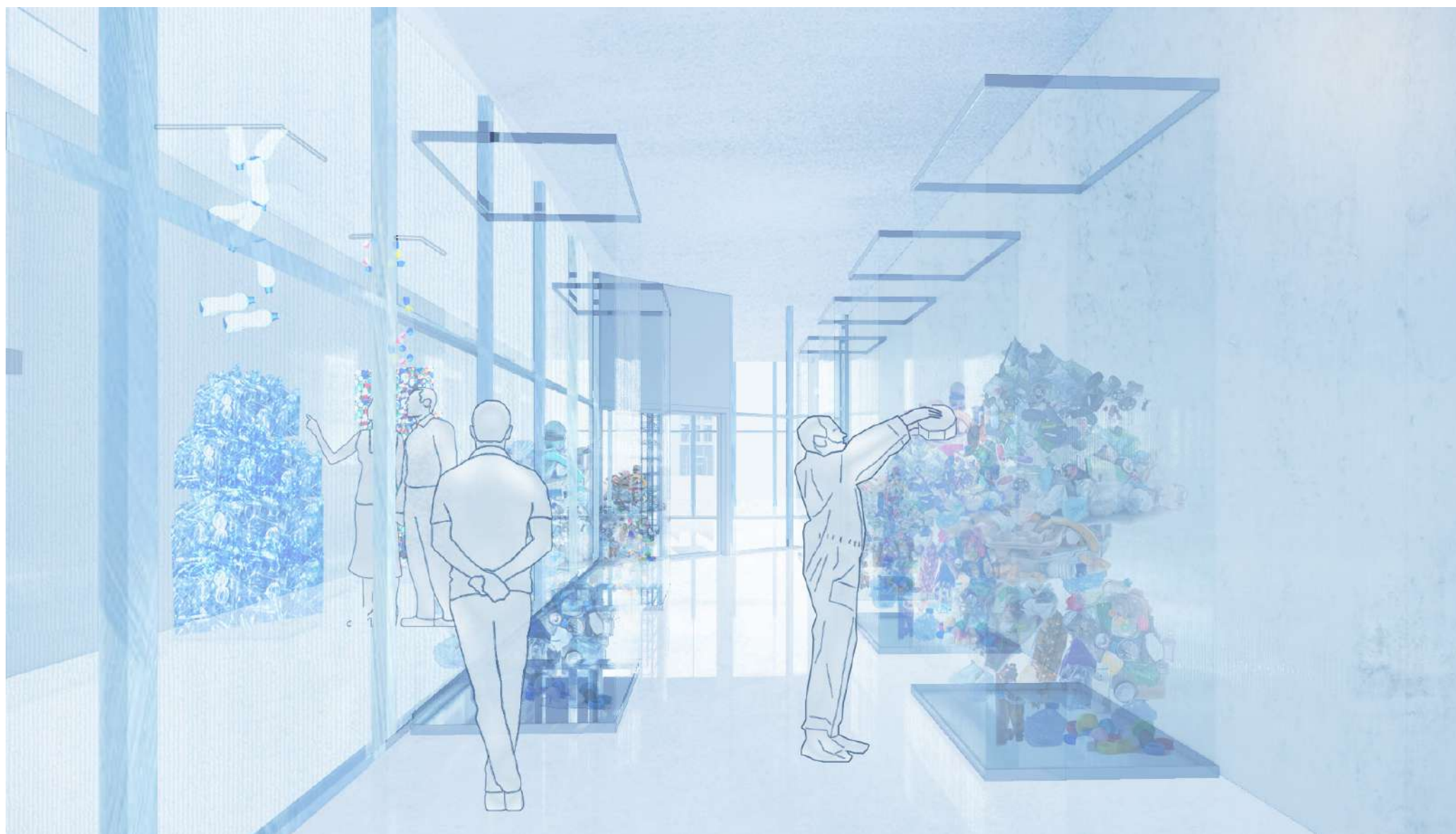








View from the reception



View from the plastic waste aquarium



View from the drying space



View from the workshop



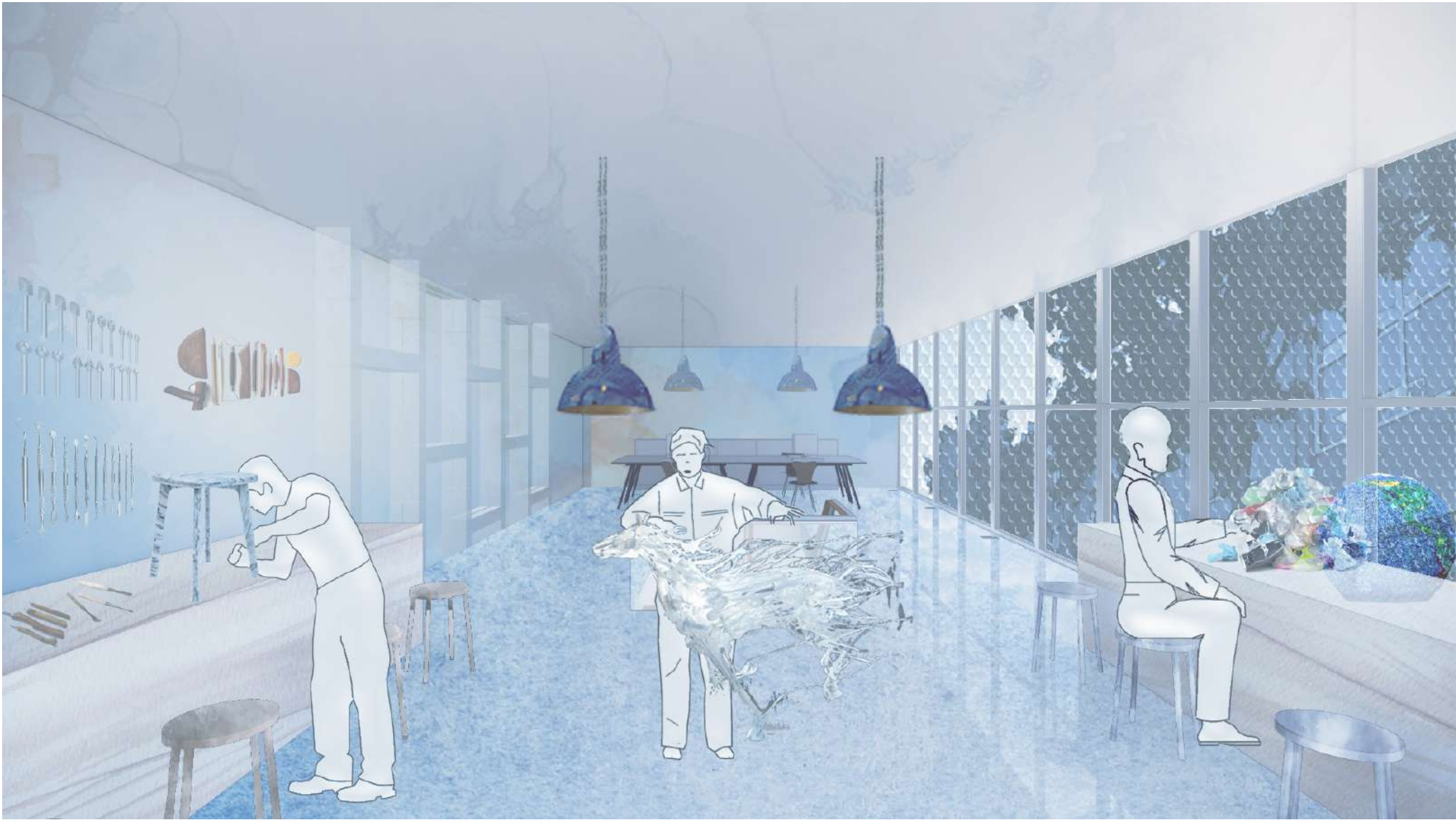
View from the cafeteria



View from the research lab



View from the gallery



View from the artists workshop



View from the hostel entrance



View from the hostel cafe terrace



View from the library entrance



View from the back of the library

