

# DOMUS Leo





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Sited in the Liège city center, this contribution proposes an urban winery that blends terroir fragments across the Blue Banana, exploring protection regulations that can build upon the knowledge, tradition, and novel techniques of winemaking.

Closely related to the idea of protectionism, and dictated by various regulation policies, wine production and its associated terroir are currently tied to the soil, and, therefore, to a greater rural territory. This contribution posits that due to climate change and technological advancement, the political notion of the “terroir”—as a spatial and conceptual entity that has shaped viticulture—will be revisited in the near future, introducing a new set of qualities and architectural ideas related to wine production.

A belief in the winery’s urban potential drives an attempt to go beyond protectionism by bringing wine production within the architecture of the city, at a moment when Europe—the birthplace of the Old World Wine—must reimagine the future of viticulture.



The Netherlands is internationally recognized as one of the world's largest food exporters due to its excellent connectivity throughout Europe and is home to world-class research institutions. It is—in effect—feeding the world. Driven by the anticipation for a renewable future, the country's journey towards optimization, sustainability, and health requires a paradigm shift in the food industry.

As the COVID-19 pandemic has reshaped the retail market in unprecedented ways, consumers shifted around lifestyle and value. This demanded new spatial configurations of the supermarket, transitioning between a pre-COVID-19 and a post-COVID-19 society. Resting within its etymology—where “super” alludes to supremacy concerning size, quality, and quantity, while “market” refers to trading in goods of value—the supermarket, selling food and household goods, first originated in the 19th century with the novel concept of a self-serve store. As a platform of recurring successful innovations, their profits increased during the COVID-19 pandemic, underscoring that supermarkets are now an essential service - representing a new civic presence.

The collective project on the spatial implications of the food industry in the Netherlands and beyond seeks to redesign the supermarket—currently occupying the most densely used square meters in a city—to implement developments within the meticulously designed sales floor via craft, reshoring, protectionism, automation, and extinction—for an immersive consumer experience—and the concealed back of house through the notions of tastemaking, scarcity, sensorialism, inclusivity, and trade—associated with the product's supply chain—ensuring a frictionless future for shoppers.

These ten contributions explore the architectural and urban design possibilities within the future of the food industry across sites within the Blue Banana—the European Megalopolis—transporting products and radiating back to the Albert Heijn shelves in Delft. They collectively form a project for the design of a future supermarket on the current site of the Albert Heijn XL on Martinus Nijhofflaan in Delft. These contributions provide modifications in the supply chain, product distribution, and store planning, in relation to the products,

their associated building types, and their extensive territories. The collective design of this Albert Heijn XL will raise issues of scenography, product flow, human interaction, digital technology, and consumer experience, in an attempt to address the future of the food industry.

At a time when the world is pulling through the COVID-19 pandemic, faced anew with the impending environmental crisis, the collective project raises questions about the ever-changing relation of architecture and the food industry in the Netherlands and beyond.







Figure 1  
Free trade vs. protectionism, as depicted on a political poster from the British Liberal Party.  
[https://en.wikipedia.org/wiki/Protectionism#/media/File:Free\\_Trade\\_and\\_Protection.jpg](https://en.wikipedia.org/wiki/Protectionism#/media/File:Free_Trade_and_Protection.jpg)

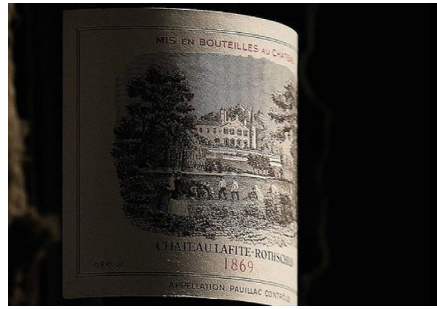


Figure 4  
CHATEAU LAFITE Label, 1869.  
<https://www.beautifullife.info/industrial-design/top-10-expensive-bottles-wine-world/>



Figure 7  
Wine blending bottles.  
<http://www.winelabny.com/workshops/2017/2/19/wine-blending>



Figure 2  
Dionysos in a vineyard. Attic black-figure amphora.  
[https://en.wikipedia.org/wiki/File:Dionysos\\_vineyard\\_MNE\\_Villa\\_Giulia\\_106463.jpg](https://en.wikipedia.org/wiki/File:Dionysos_vineyard_MNE_Villa_Giulia_106463.jpg)



Figure 5  
Levasseur Map of the Department de la Gironde (Bordeaux Wine Region)  
[https://commons.wikimedia.org/wiki/File:1852\\_Levasseur\\_Map\\_of\\_the\\_Department\\_de\\_la\\_Gironde\\_\(Bordeaux\\_Wine Region\)\\_-Geographicus\\_-\\_Gironde-levasseur-1852.jpg](https://commons.wikimedia.org/wiki/File:1852_Levasseur_Map_of_the_Department_de_la_Gironde_(Bordeaux_Wine_Region)_-Geographicus_-_Gironde-levasseur-1852.jpg)



Figure 8  
Old Wine World vs. New Wine World Map.  
<https://vinodelvida.com/best-wine-varieties/old-vs-new-world-wine-explained/>



Figure 3  
Wine bottles dating back to the 18th century, with specified designations of origins. CHATEAU LAFITE 1787.  
<https://www.beautifullife.info/industrial-design/top-10-expensive-bottles-wine-world/>



Figure 6  
Burgundy Bourgogne Wine Map "LA CÔTE DE NUITS" by Larmat, 1953.  
<https://www.antiquemapsandprints.com/categories/maps-by-cartographer/larmat-louis/product/burgundy-bourgogne-wine-map-la-cote-de-nuits-vineyards-vignobles-larmat-1953?product=P-6-012616~P-6-012616>



Figure 9  
Cabernet Sauvignon ampelography.  
[https://fr.wikipedia.org/wiki/C%C3%A9page#cite\\_note-BoursiquotThisPAV99-1](https://fr.wikipedia.org/wiki/C%C3%A9page#cite_note-BoursiquotThisPAV99-1)



The notion of protectionism refers to governmental policies that regulate and restrict international trade in order to promote domestic industries. With historic preservation of national heritage, a listed building cannot be significantly altered, and in a similar way, protectionist policies may be implemented to improve economic activity by taxing imports. This helps shield a domestic economy but can also assure safety, quality, or cultural concerns.

Protectionism in the food industry has been closely related to viticulture and its associated architecture, grapevine, and terroir since time immemorial. Terroir refers to the climate, soil type, geomorphology, policies, and human knowledge that form a key ingredient in wine production, protecting wine provenances par excellence. From geographic indications, label approval, and quality control to architectural terms “châteaux” and “domaine,” protectionism regulates wine appellation, provenance, and classification across the world. It dictates prominent grape varieties per site and climate, while at the same time designating the origins of high-end wine with a crucial impact on production.

Looking to a post-pandemic society and its consequent economic decline, food protectionism is an issue threatening the harvest. Countries within the European Union have taken varying stands, with Italians responding to the pandemic by eschewing high-quality “made-in-Italy” wines and products in favor of more mundane, imported products for their home-cooked food. On the contrary, in the powerful agricultural lobby of France, food protectionism is rising with the government supporting products with controlled designations of origin while limiting imports for greater financial independence—and the French public support the effort in terms of trust and availability.<sup>1</sup> At the same time, artisanal winemakers took the hardest hit during the pandemic owing to the almost year-long closure of restaurants—their major supply chain network. In contrast, larger commercial wine estates saw an income increase from supermarkets and convenience stores.

Protectionist rhetoric around food within the EU is wavering, either turning it into an extravagant luxury or an accessible, trusted, and secure solution. The art of vinification is also becoming a rural spectacle for the sake

of wine tourism, while climate change and technological advancements are altering viticulture and its associated terroir, enabling new provenances for the future production of wine. Terroir has always been the key ingredient to wine production—a tool to identify, document, and protect the world’s best wines. From ancient Greece, where winemakers would stamp the vineyard region on amphorae or vessels, to the classic and renowned protected French appellations—with controlled designations of origin—such as the Bordeaux Médoc and Bourgogne Rouge. Before 1850, grape origins were only specified for the finest wines in France, and the famous Féret wine guide only listed a few estates claiming to be châteaux. This changed when the balance of power between the wine estates and the merchants shifted towards a free market system.<sup>2</sup> The French term “château” is most commonly used in Bordeaux to describe a country house or a castle, whereas the term “domaine” describes a territory or empire, typically associated with Burgundy’s wineries. Originally, a château was the residence of the lord of the manor—a fine country house of nobility often with fortifications to imitate a distinctively French medieval castle with identifiable architectural features such as round towers with a conical roof, steeply pitched hipped or gabled roofs, tall chimneys with a decorative cap, multiple dormers, round arch entryways, an abundance of quatrefoil decorative elements, balustraded terraces, and moats.<sup>3</sup>

Particularly in Bordeaux, a château goes beyond the winery’s architectural structure, referring to a wine exclusively produced in the château’s vineyards, only accepting grapes from the estate where they are grown—a site-specific terroir. Instead of producing wine from an identical appellation, a Burgundy domaine—an estate originally owned by the church—uses grapes from different terroirs and vineyard plots scattered around the winery, slightly contradicting the geographical specificity. It is, however, customary for any wine-producing estate, since the nineteenth century, to prefix its name with château or domaine.<sup>4</sup>

Closely related to the idea of protectionism, and similarly dictated by various regulatory policies, wine production and its associated terroir are currently tied to soil and, therefore, to a greater rural territory and its analogous

designated wine provenance. As climate change is altering viticulture and terroir, researchers claim that the world wine map is about to change—and radically so. Global warming and ecological destruction will gradually convert the renowned terroir of the south to a far from ideal setting for wine growing, urging the belief that the future of wine production will lie in the north. Rising temperatures have already forced the big players in the \$290 billion per year global wine industry to cast their eyes over northern climates and consider planting vineyards in regions other than the popular terroirs of the Mediterranean, Australia, or California.<sup>5</sup>

At the same time, the anticipated 25 to 73% loss of wine areas in existing terroirs—including Bordeaux and Tuscany—will put water resources and wildlife conservation on a collision course with the wine industry. The *pandas or pinot* dilemma will become the epicenter of the discourse between conservationists and wine growers as the hunt for cooler places to grow wine threatens the home of sensitive animal populations.<sup>6</sup> Future generations may not be able to enjoy the same style of Bordeaux wine that was protected and produced during the twentieth and twenty-first centuries, instead they must explore the opportunities to use wineries as incubators for new wine provenances;<sup>7</sup> responding to a new type of demand, and thus production, will prove crucial.

At a time when the notion of terroir is being questioned, the future of wine production lies not in protectionism but in reassembling famous and unknown terroir fragments from different European countries. In an attempt to explicate the cultivation of yet-unimagined terroirs, we must revisit *ampelography* (from the Greek *ampelos* meaning vine), and study grape varieties, their description, and their classification. This problem brings into question the ideas of blend and *cépage*—the grape variety of a cultivated wine characterized by a genome with distinct phenotypical and biological attributes. As a grape variety—a set of related vines that may differ from each other—multiplies, genetic and epigenetic grape variations that occur during cycles will determine the future of wine production.

In 1997, ampelographers proved that Cabernet Sauvignon grapes originated from a cross between Sauvignon Blanc

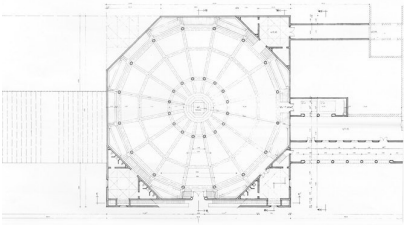


Figure 10  
Château Lafite Rothschild Cellar drawing.  
<https://www.archilovers.com/projects/70263/chateau-lafite-rothschild.html>

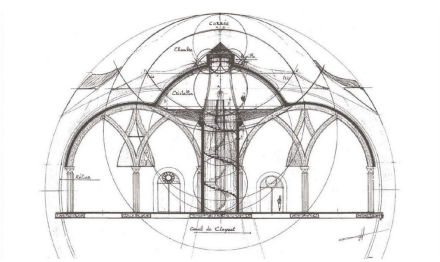


Figure 4  
Section of Château Romanin.



Figure 11  
Château Lafite Rothschild Cellar photograph.  
<https://www.archilovers.com/projects/70263/chateau-lafite-rothschild.html>

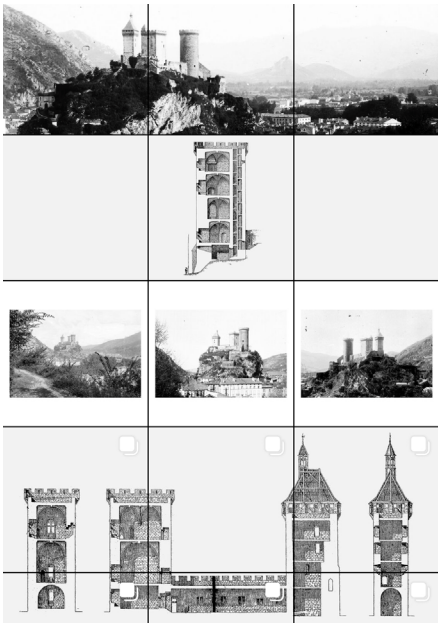


Figure 5  
Medieval French Castle drawings and images.  
Château de Foix, Ariège, France.  
Atlas of Places, Instagram



Figure 12  
Château Lafite Rothschild vineyards view.  
<https://www.archilovers.com/projects/70263/chateau-lafite-rothschild.html>

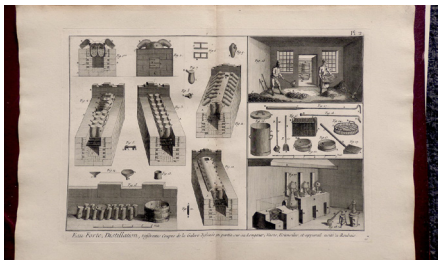


Figure 6  
Distillery Drawings.

and Cabernet Franc, rather than its own *Vitis* species as was formerly thought. Contemporary genetic research on the sequencing of the vine genome enables the understanding of the origins of grape varieties and whether they are a parent, a cross, or a hybrid (calling into question previous classifications), while it also facilitates the invention of the next high-end wine.<sup>8</sup> When they are not spontaneous field mixtures, crosses and hybrids are mostly bred with specific intentions, either to create a grape with better pest or disease resistance, or to improve characteristics such as flavor, color, or yield. Particularly in times of ecological destruction, crossed grape varieties are important to naturally counter fungi and diseases, enhancing the grape's resistance without the need for earth-contaminating pesticides.

As a grape can link to several wine varieties, grapes with resistant genes could form the basis for special wine blends, created by mixing parent, cross, and/or hybrid grapes through the process of vinification. Grapes like Argaman—a cross between the Portuguese Souzão grape and the Mediterranean Carignan variety—were developed by researchers in Israel to give a more vivid color to red wine blends (first used to make inexpensive blended wines). However, Argaman and other cross grapes are now vinified by several producers across the world to make high quality varietal bottlings. This paradigm shift, subverting the ecological destruction and the ambiguous protectionist rhetoric of our times, is making the distinction between winery and vineyard possible.

New World wines from regions other than Europe, North Africa, or the Middle East that have adopted Old World wine-making practices have engendered an unprecedented growth in wine tourism across several continents, with most travelers eager to experience their wine in new ways.<sup>9</sup> Vineyards are considered icons of a country's culture, history, and heritage, and are often located in more scenic regions, hence the link between wine and tourism intensifying over the last decade, with revenue from wine tourism increasing by 10 to 15% between 2013 and 2016, reaching a total of \$22 billion.<sup>10</sup> In a world where wine tourism is turning into a rural spectacle, it is crucial that production moves closer to wine lovers to deepen the connection between food, place, and people. If a wine is a way to taste the identity of a rural territory, how would a city wine encapsulate urban culture?

Viticulture is now taking a shift beyond protectionism as leading wine growers are summoned across the world to break down the barriers of wine. Although there is nothing wrong with a 2005 Bordeaux vintage, there remains more to be explored that could make a wine rare and precious. The finest wines of the coming years will not be the aged ones that used to be worth waiting for, and their delicate taste will not be associated with one, sole terroir—instead, it will be the result of blended terroir fragments. As wine-drinking becomes more democratized and fluid, we will stop drinking wines purchased by our parents and start buying wines to be consumed by our children. Hence, we will eventually make wines that are more accessible in their youth and cherish wines that are more immediately accessible.<sup>11</sup>

Due to climate change and technological advancement, the political notion of terroir—as a spatial and conceptual phenomenon shaping viticulture, dictating production, trade, taste, economy, and commerce around the world—will be revisited, introducing a new set of qualities and architectural ideas related to wine production. A holistic definition of terroir, as an alliance between politicians and food producers, would link products to a place, time, and a traditional production technique, creating products with guaranteed standards to achieve certification. Subject to certain codified regulations, similar to those guiding architectural heritage and preservation, the protected gastronomic products in question would inherit a cultural value, echoing the aspirations of contemporary architects.

Locavore and farm-to-table movements are rising while protectionism within the EU oscillates between safe familiarity and extravagant luxury—in both cases, strategies for adapting to the post-pandemic world are urgently needed. The promising entry of blends in the high-end wine market, along with an emerging dislocation of wineries and their associated terroir, are the first steps towards the creation of a new-age wine. In times dictated by ecological destruction, urbanization, and technological advancement, special wine blends will determine the future of wine production. Wine is a cultural artefact, and in rethinking the connection between food and identity, now more than ever, the winery should become an urban building type.

#### Endnotes:

1. "Covid-19 and protectionism in the food chain: An a-la-carte approach to EU rules?," Food Navigator, accessed August 5, 2021, <https://www.foodnavigator.com/Article/2020/04/15/Coronavirus-protectionism-and-food-security#>.
2. First came the wine classification of 1855, establishing the reputation of 61 estates in Médoc and Graves, and 28 wines from Sauternes and Barsac. In 1857, France introduced its first trademark law stipulating that a distinctive feature (such as a château, abbaye, clos, or mas) should be added to the wine estate's traditional name. The commercial success of wines mentioning "château" prompted all estates in the Médoc to adopt it.
3. "Chateausque Style 1860 - 1910", Pennsylvania Historical & Museum Commission, accessed August 17, 2021, <http://www.phmc.state.pa.us/portal/communities/architecture/styles/chateausque.html>
4. "Why is it Château in Bordeaux and Domaine in Burgundy?."
5. "Climate Change Will Radically Alter World Wine Map," Wine Searcher, accessed June 27, 2021, <https://www.wine-searcher.com/m/2013/04/climate-change-will-radically-alter-world-wine-map>.
6. See note 5.
7. "Dirty Little Secret about the Soil, Terroir and Climate of Bordeaux," The Wine Cellar Insider, accessed June 27, 2021, <https://www.thewinecellarinsider.com/wine-topics/dirty-little-secret-soil-terroir-bordeaux/>.
8. Jean-Michel Boursiquot and Patrice This, "Essay on the definition of the grape variety", *Progrès Agricole et Viticole*, vol. 116, no 17, 1999, p. 359-361.
9. "Old World vs. New World", Verve Wine, accessed August 16, 2021, <https://vervewine.com/blogs/the-blog/old-world-vs-new-world-everything-you-need-to-know>
10. "Surge in Wine Tourism Brings Huge Opportunities", Wine Industry Advisor, accessed August 17, 2021, <https://wineindustryadvisor.com/2018/01/19/wine-tourism-brings-opportunities>
11. "A Wine Worth Waiting For," New York Times, accessed July 15, 2021, <https://www.nytimes.com/2021/07/15/dining/drinks/2005-bordeaux.html?action=click&module=Features&pgtype=Homepage>.









## The Blue Banana

The Blue Banana—a term coined in 1989 by a group of French geographers—is a name used to describe a European corridor of almost continuous urbanization. Home to 110 million people, the corridor contains metropolitan areas, industrial sites, and major economic centers, stretching all the way from Manchester to Milan, connecting the Irish Sea to the Mediterranean.

Ten contributions speculate upon the spatial implications of the food industry across the Blue Banana—the European Megalopolis—responding to the specificity of the sites, while, at the same time, providing modifications throughout the supply chain in relation to their respective products that radiate back to the supermarket shelves in Delft.





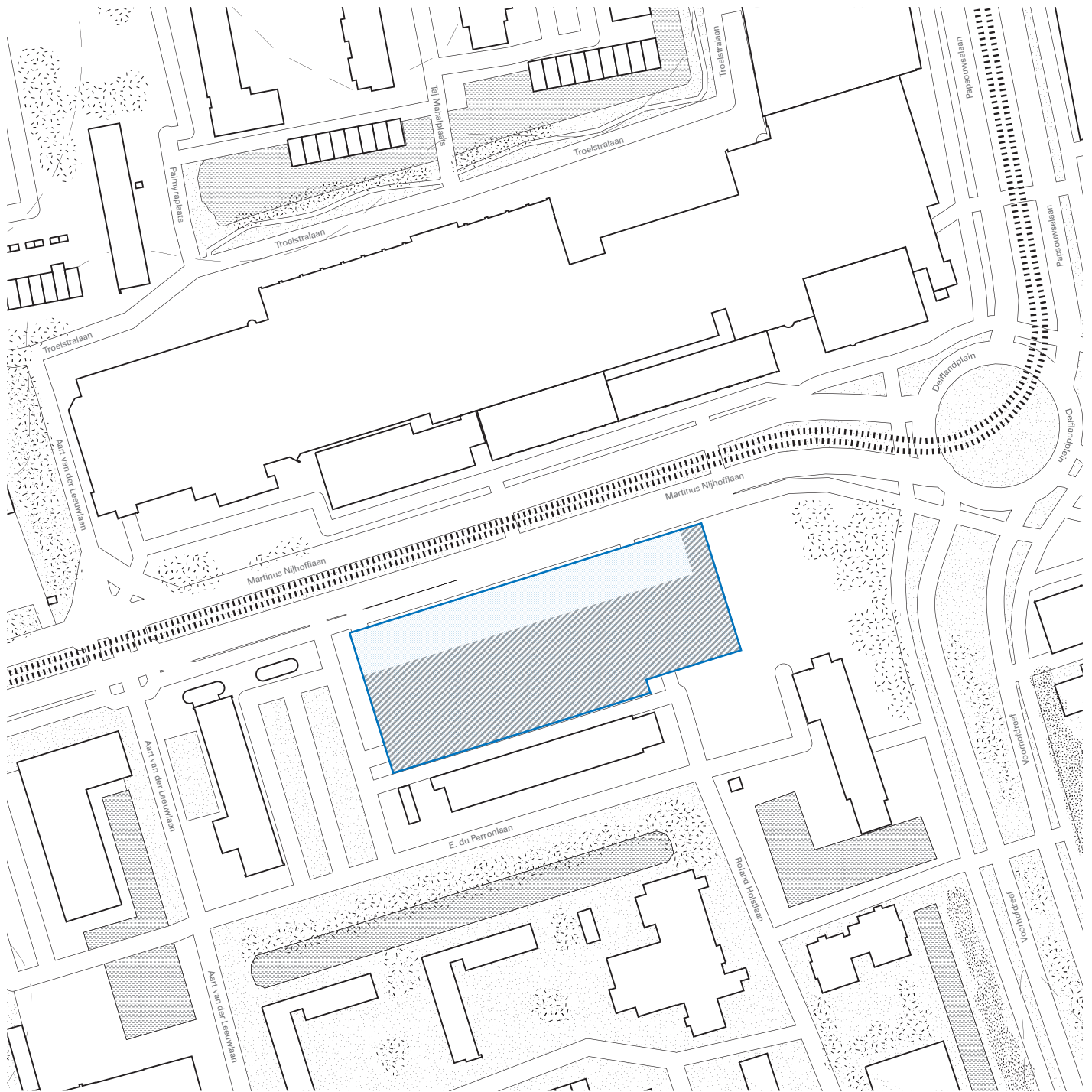
- 1 Lab Oratory
- 2 Whole Milk
- 3 Pink is Not a Color
- 4 The Tastemaking Estate

- 5 Aardket
- 6 Sensorium
- 7 Domus Leo
- 8 Food Utility Network

- 9 Fresh Forword
- 10 Crafted with Care
- 11 Albert

## Albert Heijn XL

The collective project for the design of a future supermarket is located on the current site of the Albert Heijn XL on Martinus Nijhofflaan in Delft. Amidst a densifying residential area, with a variety of stores on the ground floor and social housing above, multicultural demography, proximity to the parking garage, and excellent connectivity to road infrastructure and public transport, the location of the Albert Heijn XL provides the opportunity to reciprocate with its adjacent and peripheral territory.





The collective research—focused on the food industry in the Netherlands and beyond—commenced with the typological analysis of a supermarket. Analysing a local Albert Heijn, it examined the relation between products, their associated building types, and territories, from raw materials to supermarket shelves.

*While a supermarket operates within a highly efficient tailored space, how do design decisions vary between intervening in an existing canal house and a purpose-built suburban supermarket?*

*Transitioning from the mimicry of local markets to promotions on digital screens, what role does scenography play in the design of a supermarket's storefront?*

*How does the prediction of supply and demand through data-driven decision-making and automation affect the organization, product distribution, and design within supermarkets and the ever-changing future of retail?*

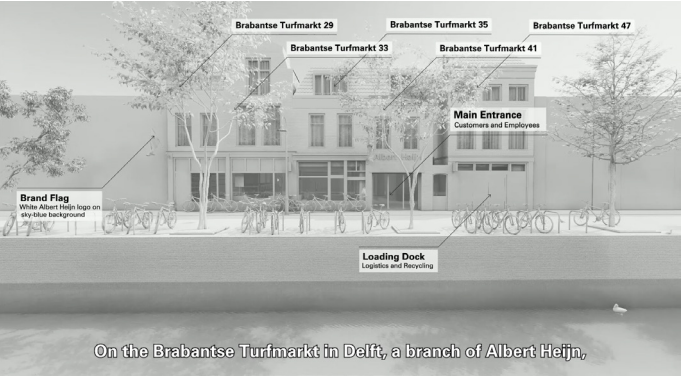
*How does the incorporation of a supermarket reciprocate with its adjacent and peripheral demography, real estate, and territory and in turn affect land appreciation?*

*How does the design of the layout of the concealed back of house relate to the meticulously designed sales floor?*

*With a constant flow of products, what spatial consequences are posed by the standardized packaging sizes, product distribution, and store planning on the supply chain of a supermarket?*

*With ever-increasing reliance on e-commerce and perpetually improving digital experiences, what will the future hold for supermarkets in the Netherlands?*

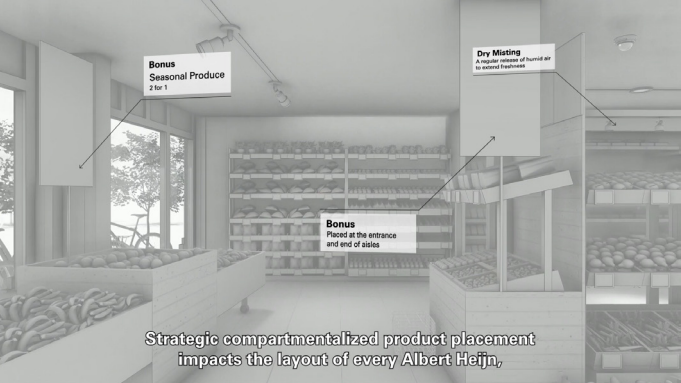
The annotated analysis of Albert Heijn reveals the dichotomy within the functioning of a supermarket, between the meticulously designed sales floor for an immersive consumer experience and the concealed back of house associated with the product's supply chain.



1



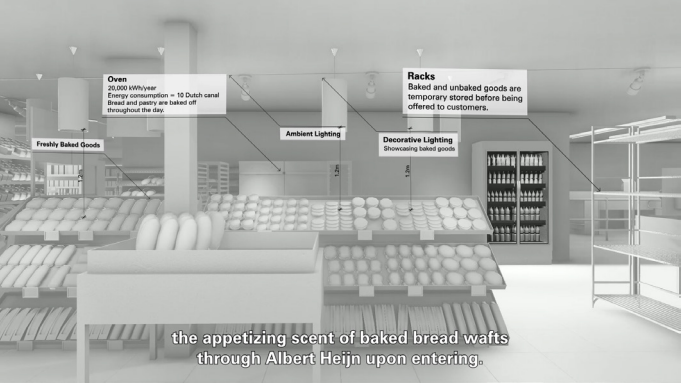
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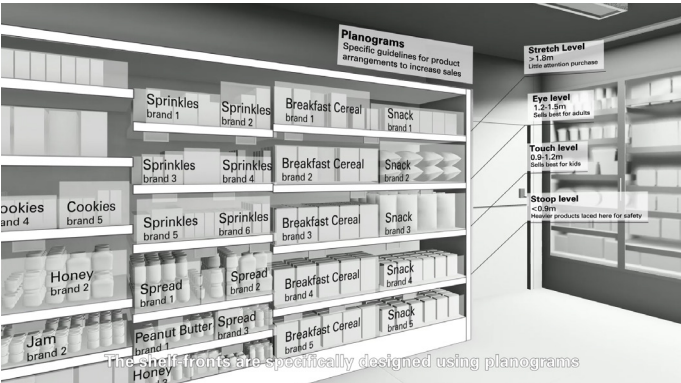
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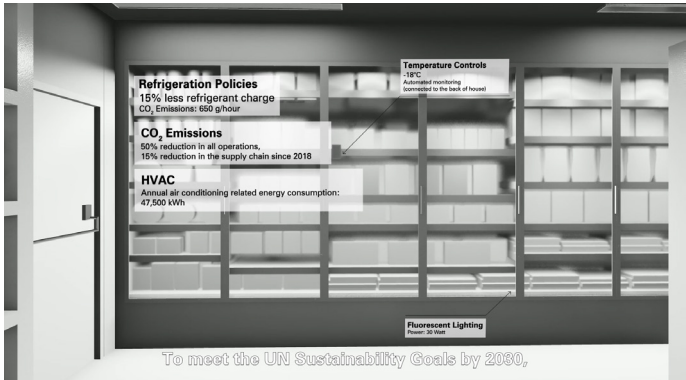


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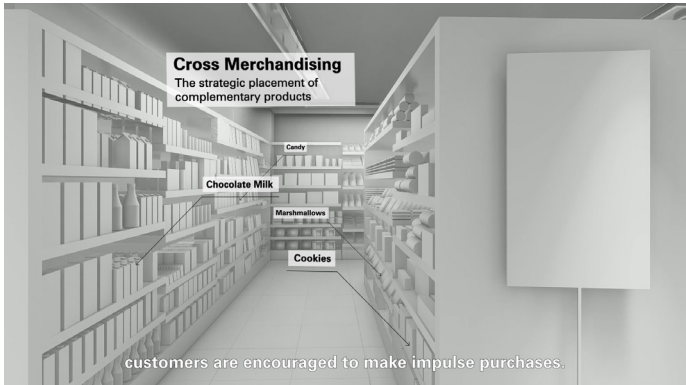




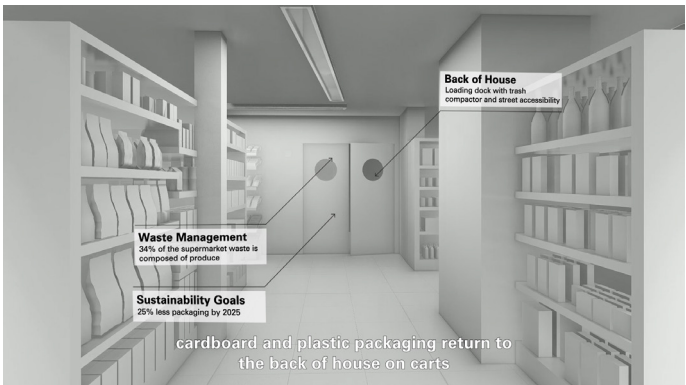
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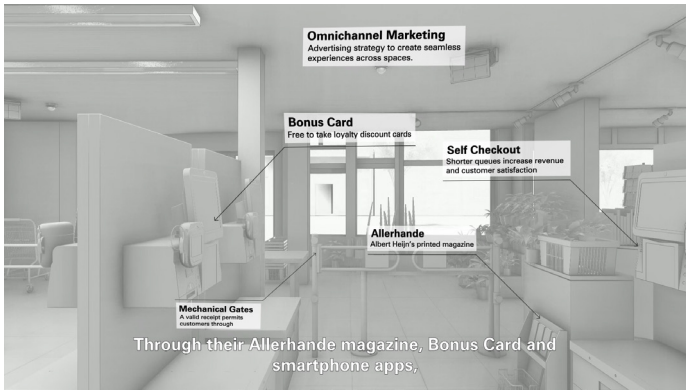
8



9



10



11

- 1 Facade
- 2 Fresh Produce
- 3 Fresh Produce
- 4 Bakery

- 5 Bakery
- 6 Condiments and Spreads
- 7 Refrigerated Section
- 8 Back of House

- 9 Confections
- 10 Loading Dock
- 11 Point of Sale









The Supermarket Reconstructed.



On reshoring- The packaging of essential dairy products is designed to accentuate the animal producer for conscious consumers.





On trade- The dynamic provenance of potatoes is put on display.



On tastemaking- A view across a sampling section, shows a promotional display of a new, tasty, and easy-to-prepare cake mix.





On inclusivity- A complimentary cornucopia of luxurious essentials optimized for all citizens is amplified by its placement within the premium top

shelves of the supermarket.



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On sensorialism- The supermarket's scenography is amplified for the adoration of pineberries.





On scarcity- The boundless display of endangered food showcases the possibilities of GMOs to reverse the impending food scarcity.





On craft- The gondola—or end cap—aisle offers an escape from the design of standardized aisles with a display-within-a-display for craft chocolates.



On automation- An automated pizza-making machine showcases the spectacle of proliferating digital technology in the supermarket.





On extinction- The ambient display of seafood refrigeration showcases the highly controlled and technified aquaponic shrimp farm designed to

resolve fish extinction.



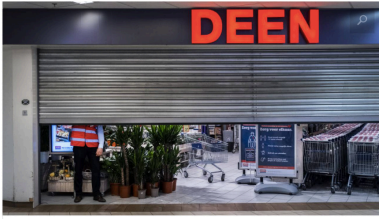








## Na Edah, Konmar, Super de Boer en C1000 verdwijnt ook Deen uit straatbeeld



Een Deen-filiaal sluit vroeg vanwege coronamaatregelen, oktober 2020. [NIP](#)

## DE GROENE AMSTERDAMMER

Working conditions in distribution centers

### 'It feels like living in captivity'

The situation on the shop floor in the distribution centers of large supermarkets is still very bad. But now migrant workers can no longer take it; they are revolting. 'I really hope this can change something.'

Sylvana van den Brak and Simone Peak  
25 August 2021 - appeared in no. 34



NEWS

## Packaging-free webshop Pieter Pot raises 9 million

The packaging-free online supermarket Pieter Pot has raised 9 million euros in investments. With this, the Rotterdam-based company wants to expand to other countries in Western Europe in the coming years.

Editorial December 7, 2021, 05:00

## Flash delivery the future? At least Jumbo doesn't want to miss the boat



A Gorillas Flash Deliveryman. [APF](#)

Listen to  
30:53

## Working in a distribution center: 'I feel like a monkey doing the same trick over and over'

**Working in distribution centers** The distribution centers in the Netherlands are largely dependent for their staff on employment agencies, which provide flexible and cheap workers from Eastern European countries. What is it like for them to work in halls like this? 'I don't know how much longer I can last.'

Martin Kuiper & Mark Middle January 7, 2022 Reading time 6 minutes



Voorpagina Amsterdam Nederland Wereld Kunst & Media

## Albert Heijn ziet af van bouw in de Lutkemeerpolder

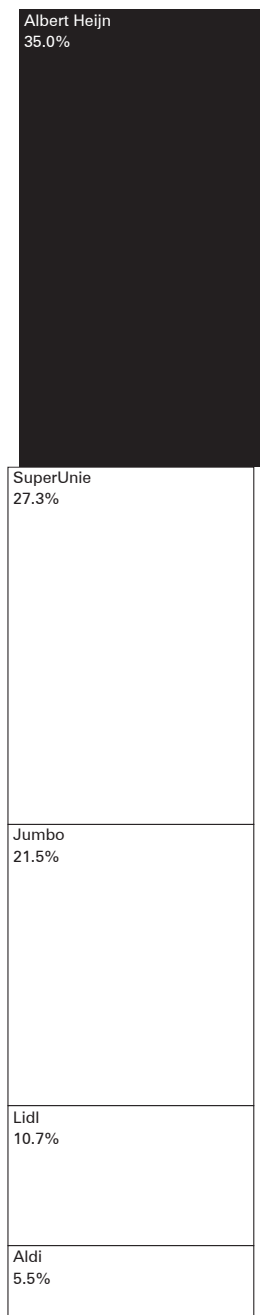
Albert Heijn ziet af van de bouw van een distributiecentrum in de Lutkemeerpolder. Tegen de plannen wordt al maanden fel geïnteresserd door activisten, waarbij zelfs verschillende AH-supermarkten in Amsterdam werden dichtgelijmd.

Bart van Zoelen 26 november 2021, 13:50

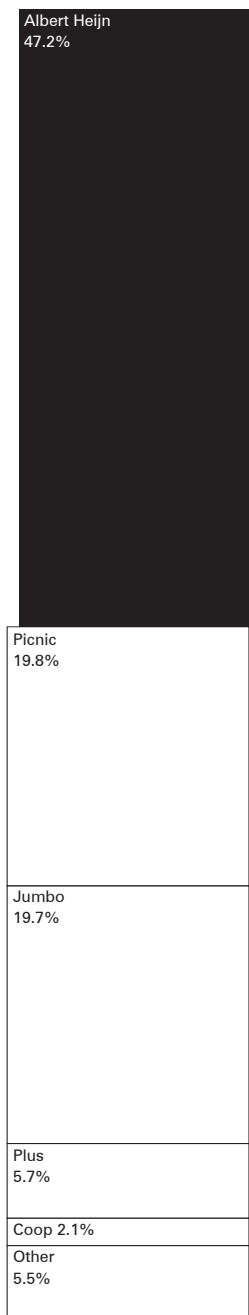
Recent headlines describe the supermarket and its distribution network in the Netherlands as a highly competitive sector, with questionable

working conditions, while unregulated competitors are set out to disrupt the market.





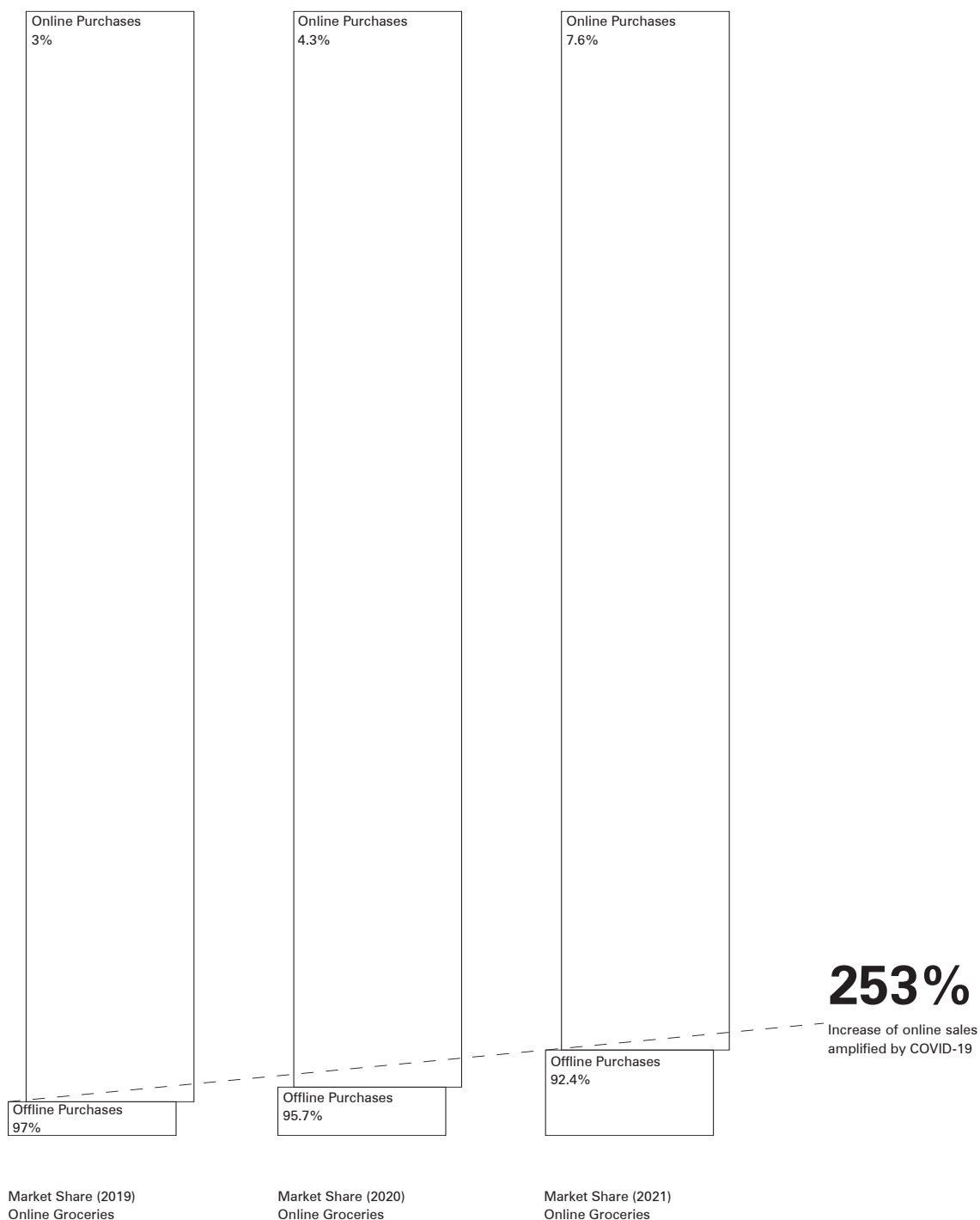
Market Share (2020)  
Supermarkets



Market Share (2020)  
Online Groceries

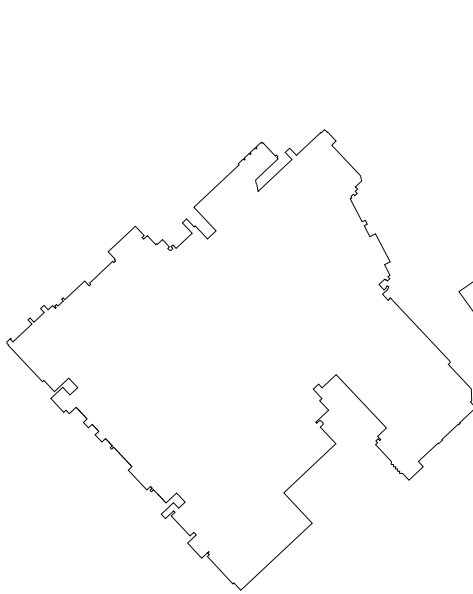
The “supermarket war” in the Netherlands, has led to a consolidation of companies and a seemingly oligopolized landscape of grocers, in

which Albert Heijn has the greatest market share in both physical and digital stores.

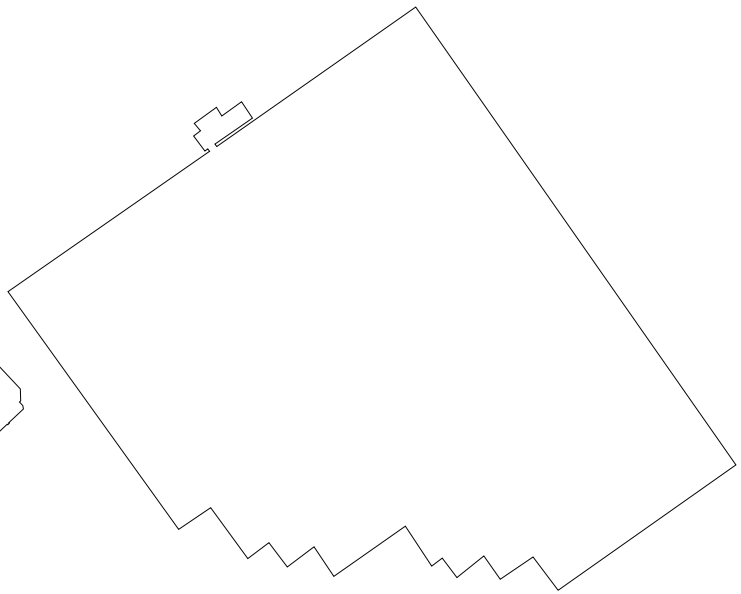


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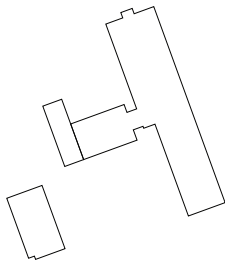
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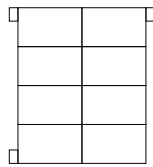
Royal Flora Holland  
Aalsmeer  
433,000 m<sup>2</sup>



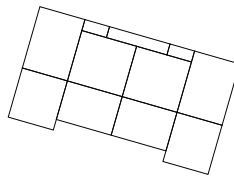
Royal Pride Holland BV  
Wieringermeer  
1,010,000 m<sup>2</sup>



Ahold-Delhaize DC  
Delfgauw  
62,750 m<sup>2</sup>



Coolblue DC  
Tilburg  
90,000 m<sup>2</sup>



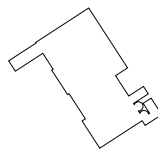
Zalando  
Bleijswijk  
140,000 m<sup>2</sup>



Amazon  
Heerlen  
9,000 m<sup>2</sup>



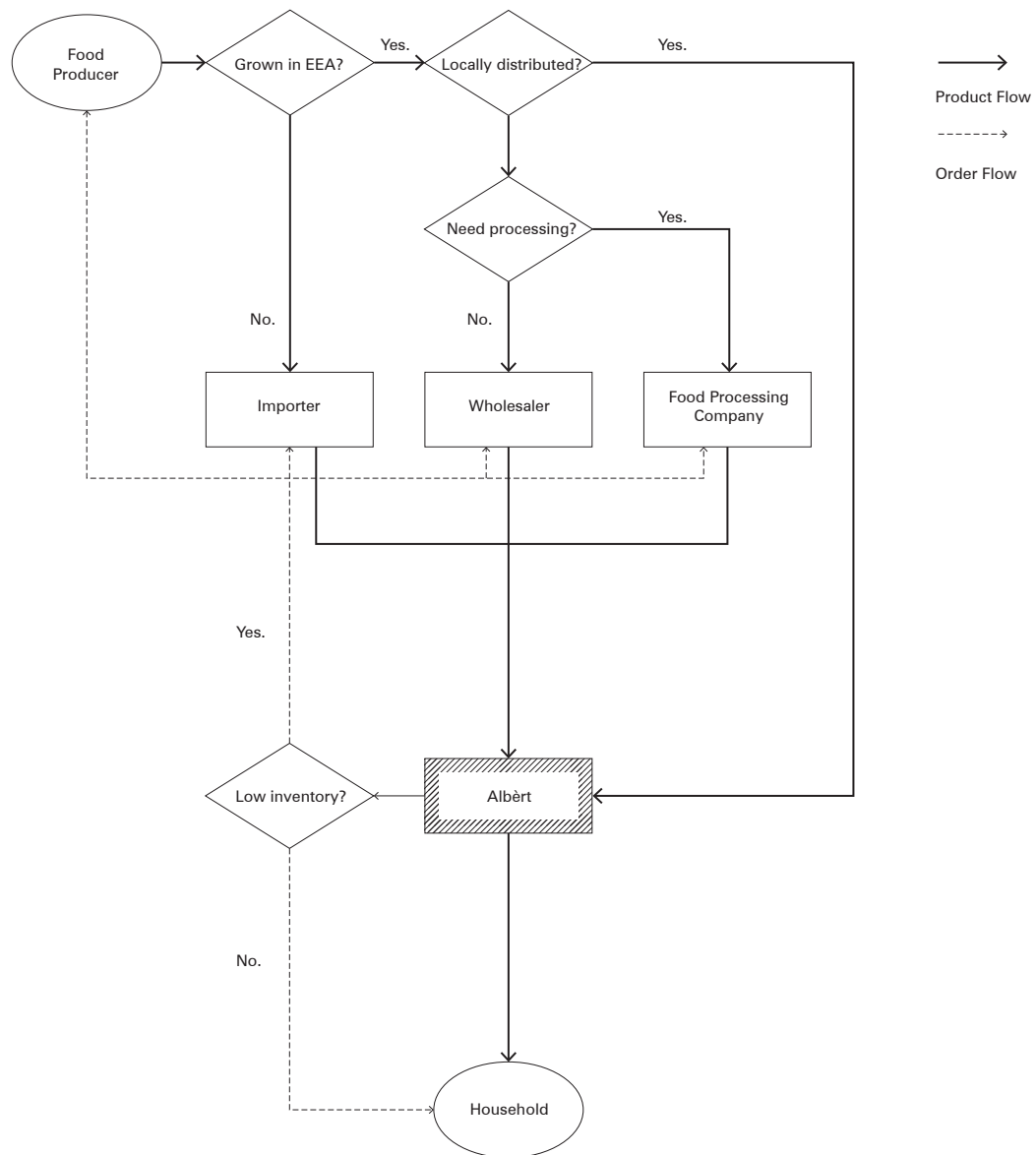
Albèrt  
Delft  
18,600 m<sup>2</sup>



IKEA  
Delft  
40,000 m<sup>2</sup>

The concealed back of house extends to the peripheries of the Dutch urban areas, taking upon a variety of spatial dimensions, accommodating different

quantities of workers, and serving a range of regions.



Producers and suppliers respond to complex market dynamics through just-in-time production, relying on automation, logistics, and infrastructure

within the Blue Banana, allowing supermarkets to optimize their stocking to shopper's demand.



Employees keep track of just-in-time arrivals of products, while their prices are informed by market conditions and proximity.

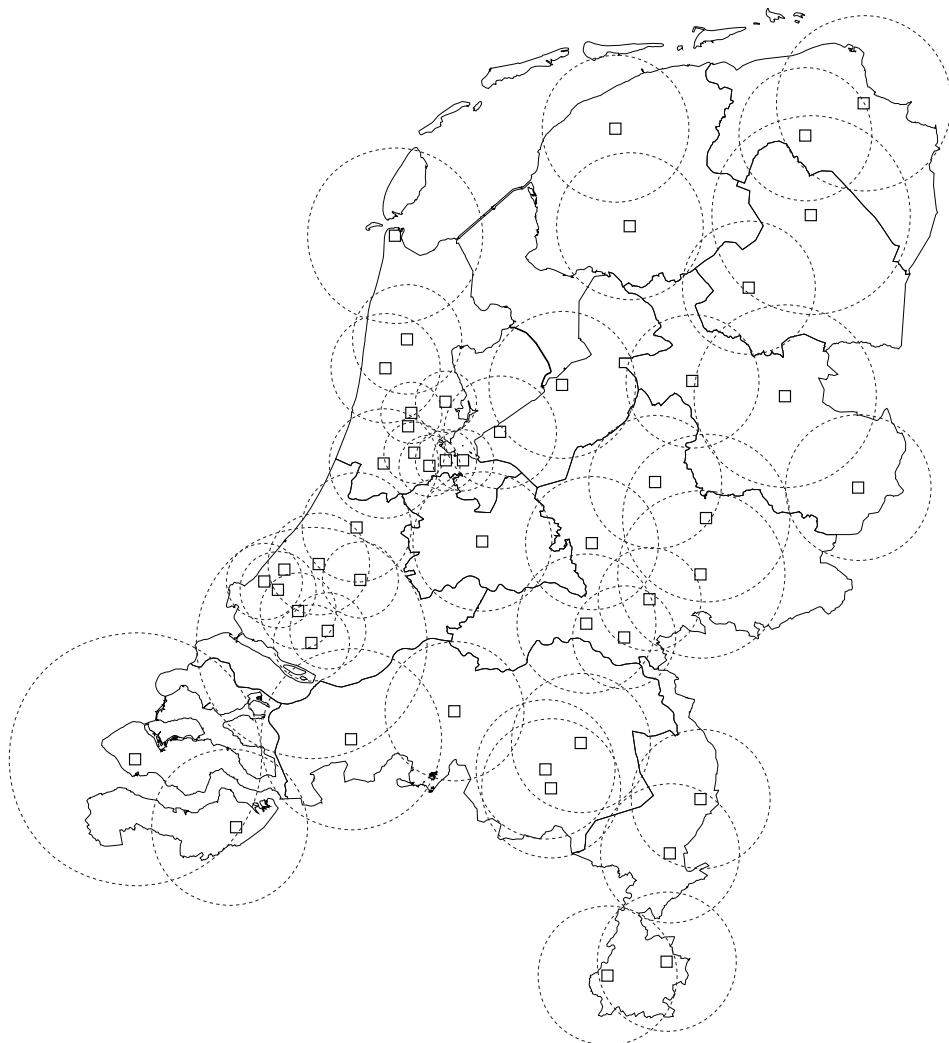
- National Distribution Center
- National Refrigeration Center
- Regional Distribution/Refrigeration Center
- x Home Shopper Distribution Center



In an effort to break open the centralized and concealed distribution network of the supermarket, the role of the distribution centers is shifted to

large-scale supermarkets such as Albert Heijn XL—now Albèrt—with a floor area of at least two thousand square meters,

ready to serve a larger region through e-commerce.





The number of supermarkets and their siting are regulated through municipal planning, leading to an even distribution over Delft's urban expansion areas.

Delft's historic center, however, exhibits a high density of supermarkets and speed delivery hubs, responding to valuable shoppers in their proximity.

This informs the future distribution of Albèrt and smaller-footprint Albèrtjes.

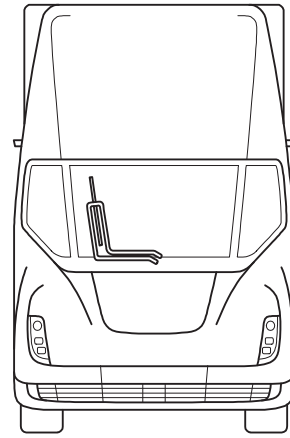
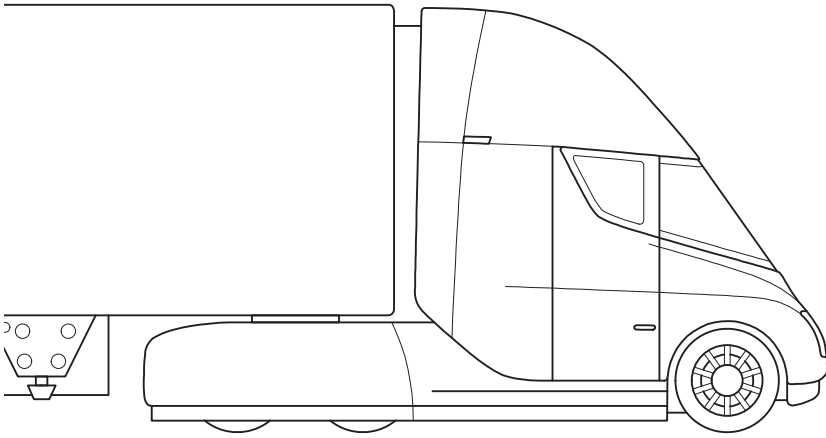




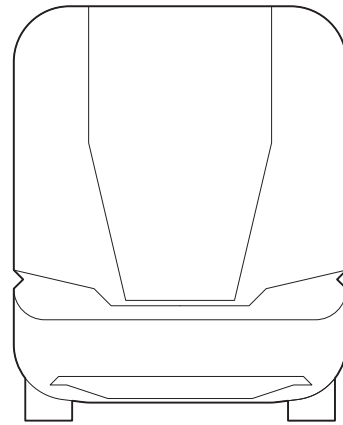
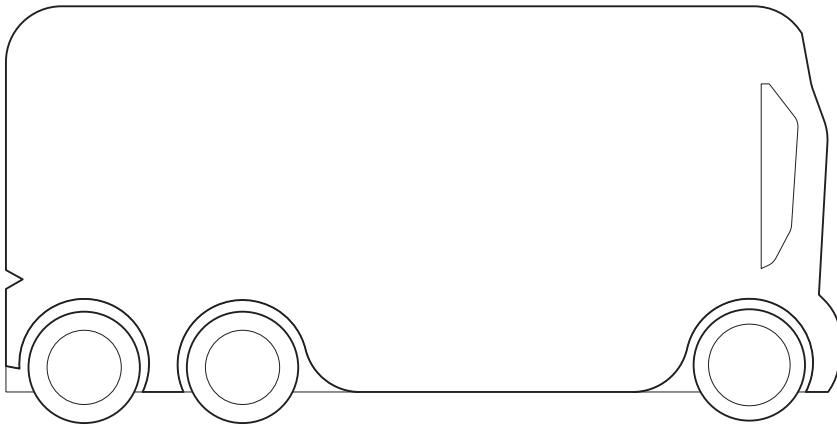
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The essential products in these multiple Albèrtje stores within each city are fed by the distribution centers integrated within each Albèrt, while also having

products directly sourced from local suppliers within the city, with the choice of having fine quality products and essential goods at the same place.



Freight-truck



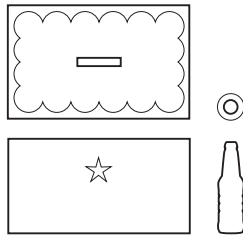
Albert truck

By distributing the supply chain from centralized warehouses to large supermarkets in the vicinity, electric semi-trucks with shorter roundtrips take

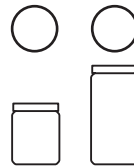
care of transport between producers, supermarkets, and homes.



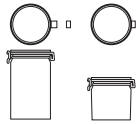
PET Bottle 1.5 l



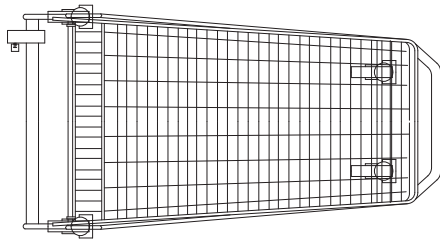
Crate and Glass Bottle, 33 cl



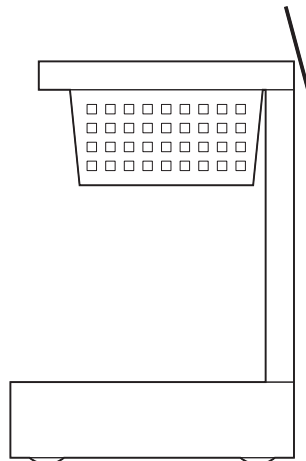
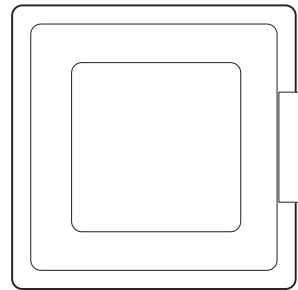
Albèrt Smart Cart



Pieter Pot Reusable Glass Jars, various volumes



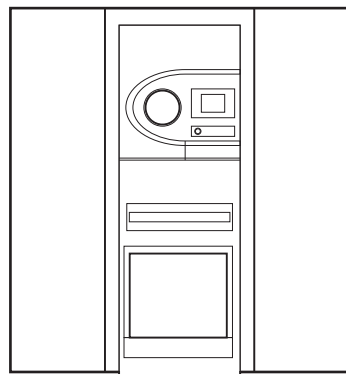
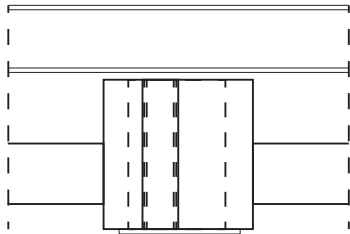
Supermarket shopping  
cart and shopping basket



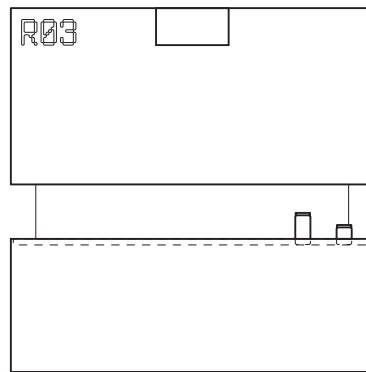
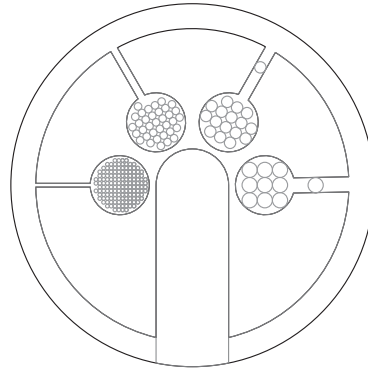
Albèrt Smart Cart

To eliminate single-use packaging and optimize logistic processes, a unified container-deposit system is introduced, limiting the variety of product

dimensions in Albèrt. Displays on the smart cart and supermarket hosts guide shoppers in finding their products.

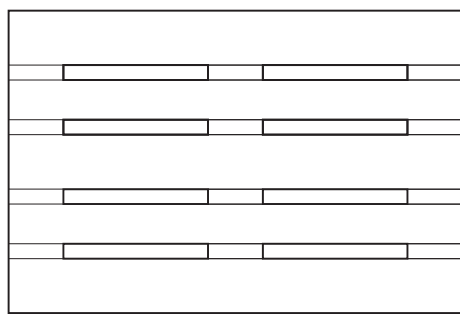


Container-deposit  
machine

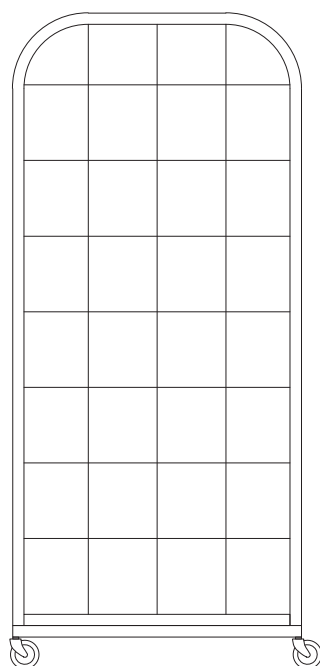
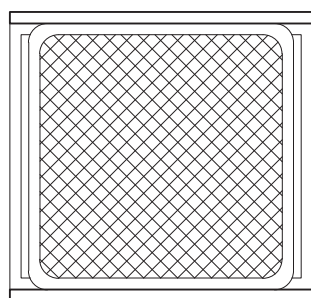


Albèrt Container Return  
Point

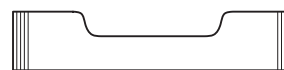
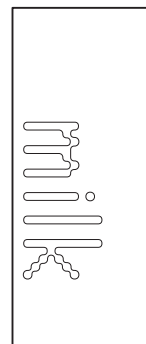
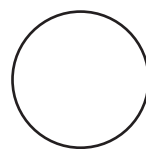
Albèrt's container deposit system utilizes the shopper's existing familiarity with return points for used bottles and crates.



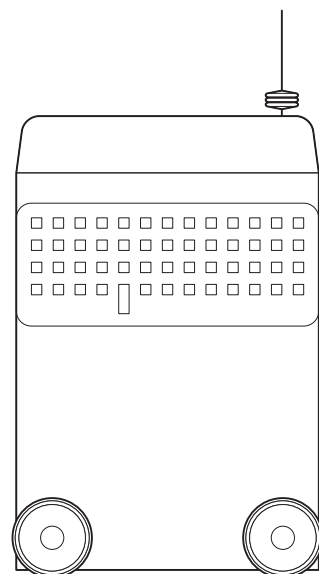
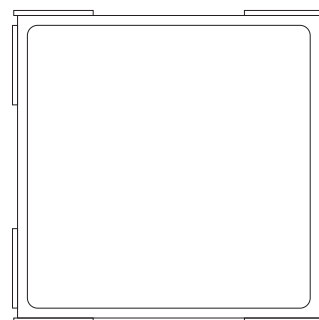
EPAL-Pallet



Stocking Cart



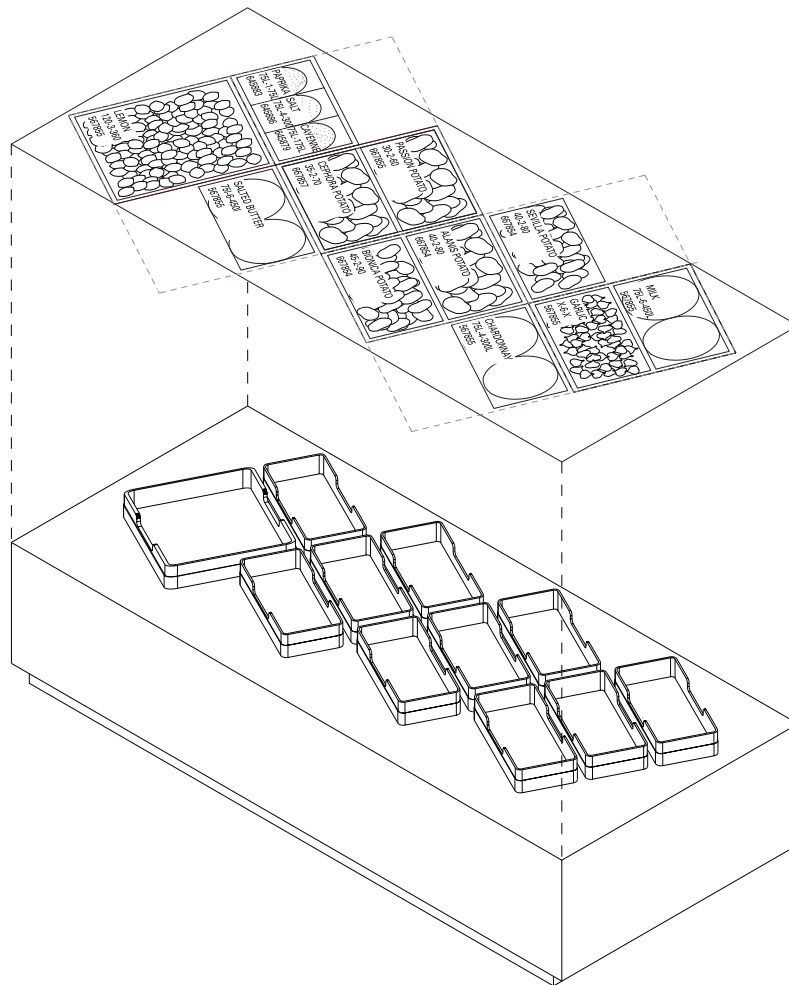
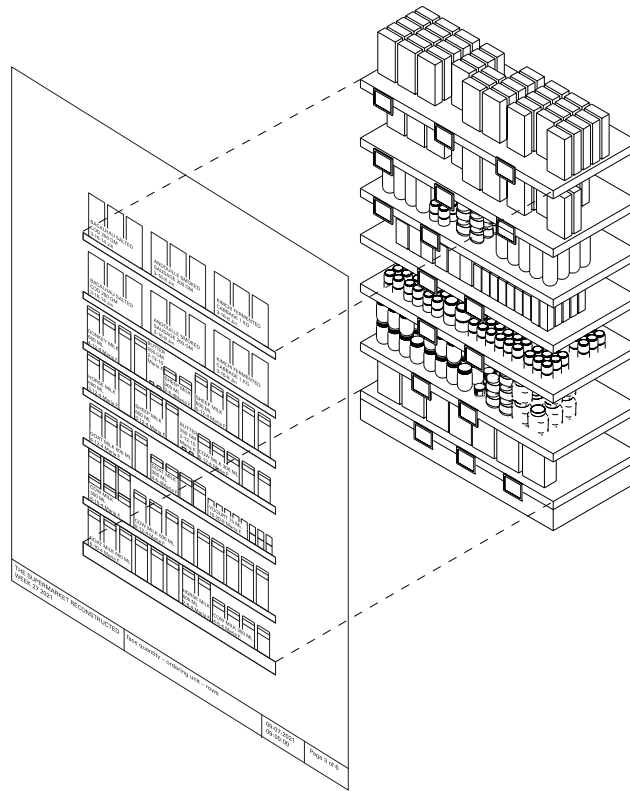
Albèrt Bulk Containers and Crates



Ocado Robot

Albèrt's automatized warehouse, making use of Ocado robots, considers legacy dimensions based on the

EPALpallet, by adhering to an 80 x 80 cm grid.



Planograms are an elevational system to optimize the relation between shoppers and the grocer's shelves, in order to maximize sales and minimize

wasted space. By introducing a flexible automatized stocking system, the planogram is transformed into a planar organization, in which the retail

experience can be dynamically adjusted to market conditions and seasonality.



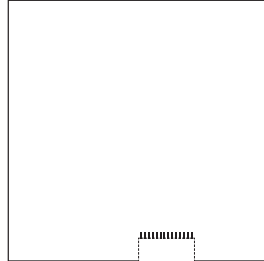
1970  
Thermal printed price label with  
European Article Number and unit  
price  
120 x 100 mm



Self-service store with checkout counters  
~170 m<sup>2</sup>



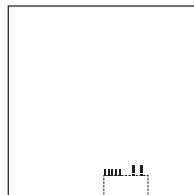
1936  
Self adhesive price label  
21 x 12 mm



Hypermarket with checkout counters  
~6000 m<sup>2</sup>



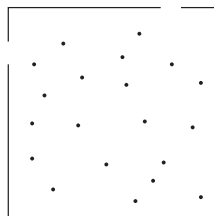
2020  
Electronic Shelf labeling system with  
dynamic display  
70 x 36 mm



Modern Supermarket with  
omi-channel checkouts  
~3000 m<sup>2</sup>



2030  
NFC tag embedded in the crate  
Ø3 mm



2030  
Albèrt with smart carts  
Ø3 mm

The introduction of the fixed price—  
attached to a product through a  
sticker—has allowed the grocer to  
develop into self-service stores,

informing the architectural type  
of the supermarket. Technological  
developments such as thermal printing,  
e-ink, NFC tags, and computer vision

reintroduce dynamic pricing while  
offering novel spatial solutions for the  
supermarket, such as the elimination of  
the physical check-out point.

1. Adrian VBHill, Ben Croxford, Teresa Domenech, Birgit Hausleitner, Adrian Vickery Hill, Han Meyer, Alexandre Orban, Víctor Muñoz Sanz, Fabio Vanin and Josie Warden, *Foundries of the Future: a Guide to 21st Century Cities of Making*, ed. Adrian VBHill, (Delft: TU Delft Open, 2020), 20.

A history of manufacturing and its relationship to the city.

2. Bill Bryson, *At Home: A Short History of Private Life* (Doubleday, 2010).

The introduction of cold storage via ice blocks to the food industry.

3. Bright and Werkend Landschape, "Black Boxes ", *Bright*, (Design & Development: LAVA Amsterdam, 2017), Accessed August 19, 2021, <https://bright.coop/black-boxes/>

An observation of the industrial spaces and infrastructure that operate between the production and consumption of food.

4. Diana Holland, "From Land to Mouth: Interview with Brewster Kneen", *Share International*, accessed August 15, 2021, [https://www.share-international.org/archives/economics/ec\\_dhfromland.htm](https://www.share-international.org/archives/economics/ec_dhfromland.htm)

An interview discussing a book critiquing the corporate food industry with a call for local farming practices.

5. "Disruption & Uncertainty: The State of Grocery Retail 2021", *McKinsey & Company* (March, 2021).

An interview with the CEO of Ahold Delhaize about the financial positioning of supermarkets after COVID-19.

6. Executive Summary: Global Status of Commercialized Biotech/ GM Crops 2011, *International Service for the Acquisition of Agri-biotech Applications*, 2011

Global statistics and trends on the use of biotech/GM crops.

7. Frank Viviano, "This Tiny Country Feeds The World", *National Geographic*. (September, 2017).

An overview of the food industry in the Netherlands addressing production, research, and export.

8. Franziska Bollerey, *Setting the Stage for Modernity: Cafés, Hotels, Restaurants, Places of Pleasure and Leisure* (Jovis Verlag GmbH, 2019).

An analysis of the representations and scenographies to discuss the dichotomies of dining culture.

9. Ignite2X, "The Rise of Artisanal Brands," *Ignite2X*, published July 18, 2019, <https://www.ignite2x.com/rise-artisanal-brands/>

Research and projections on the sale of artisanal brands by a marketing firm.

10. Lia Ryerson, "12 Foods That Might Soon Be Extinct," *World Economic Forum*, published February 22, 2018, <https://www.weforum.org/agenda/2018/02/12-of-your-favorite-foods-that-might-be-going-extinct-soon>.

A list of foods in danger of extinction due to climate change and market demands.

11. Lia Ryerson, "Bigger Hauls, Fewer Choices: How the Pandemic Has Changed Our Grocery Shopping Habits Forever," *The Washington Post*, September 1, 2020.

An article cataloguing new market trends in the American supermarket after COVID-19.

12. Marcus Case and Ember Smith, "Automation From Farm to Table: Technology's Impact on the Food Industry," *Brookings*, November 23, 2020.

An article bringing up the incorporation of automation in different parts of the food industry along with its potential impacts on policy and labor.

13. Marten Kuijpers and Ludo Groen, "Automated Landscapes and the Human Dream of Relentlessness," *Strelka Mag*, March 3, 2020.

An article about large automated production spaces in the Netherlands and their effects on people and land.

14. Melissa Repko, "Grocery Shoppers Trade Up From Dried Beans and Rice to Premium Foods as Covide Cases Rise," *CNBC*, November 12, 2020.

American market trends toward higher quality groceries after COVID-19.

15. Michelle Dunne and Angela Wright, *Local and Artisan Food: A Case For Supermarket Space?* (11th Annual Tourism and Hospitality Research in Ireland Conference (THRIC), 2015).

A literary and market study on the possibility of the placement of local and artisan foods in Irish supermarkets.

16. Nicola Twilley, "The Coldscape: From the Tank Farm to the Sushi Coffin." *Cabinet*, published 2012, <https://www.cabinetmagazine.org/issues/47/twilley.php>

The history and development of various refrigerated storage related to the food industry.

17. "Off the Table," ed. Anne Riley Moffat, *Bloomberg Businessweek*, August 23, 2021.

Four human-interest stories about the impacts of rising food costs after COVID-19.

18. Peter Del Tredici, "The Flora of the Future", in *Projective Ecologies*, ed. Chris Reed and Nina-Marie Lister (New York: Actar D, Harvard Graduate School of Design, 2014).

An article claiming the significance of biodiversity in urban areas.

19. Peter Wyeth, "Modernist Cooks!" *The Modernist*, #38 Kitchen.

A recount of Grete Schütte-Lihotsky and the design of the Frankfurt Kitchen.

20. Sylvana van den Braak and Simone Peek, "'It Feels Like Living in Captivity,'" *De Groene Amsterdammer*, #34 (August 25, 2021). Translated by Google Translate from 'Het voelt als leven in gevangenschap'.



An article on the changing working conditions at Albert Heijn distribution centers after COVID-19.

21. Matthijs Van Sterkenburg, "The Power of Prediction: How AholdDelhaize is Using Data and AI to Provide More Personalised Shopping Experiences," *Microsoft Pulse*, accessed August 10, 2021, <https://pulse.microsoft.com/en/transform-en/retail-en/fa2-the-power-of-prediction-how-aholddelhaize-is-using-data-and-ai-to-provide-more-personalised-shopping-experiences/>

A case study on the use of Microsoft's data and AI technology for Albert Heijn.

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A Business and Consumer Studies thesis from Wageningen University on the communication versus actual sustainability at Dutch supermarkets.

23. Timothy Morton, *Ecology Without Nature: Rethinking Environmental Aesthetics*, (Harvard University Press, 2007).

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24. David Wallace-Wells, "What Happens When All the Bugs Die?", *New York Magazine*, July 31, 2021.

An interview with Dave Goulson about *Silent Earth*, a book on insects and the possibility of extinction they face.

25. Zachary Stieber, "GMOs, A Global Debate: South Africa, Top GMO-Producer in Africa", *The Epoch Times* (October 19, 2013).

An article on the connection between GM crops and pest control and the opposing views and policies surrounding the use of GM crops in South Africa.







Supermarket is a collective project on the spatial implications of the food industry in the Netherlands and beyond, redesigning this now considered essential architecture to entail a paradigm shift in its journey towards optimization, sustainability, and health consciousness. It imagines a future supermarket that integrates retail experiences with distribution, supply chains, and product display to ensure a frictionless future for conscious consumers; while, at the same time, creating a new civic presence for the city and its residents.

The envisioned supply chain for the future supermarket commences with the Blue Banana, enhancing the position of the Netherlands— one of the world’s largest food exporters and home to world-class research institutions—in this urbanized trade corridor. From Genoa to Delft, and from the supermarket’s back of house to the sales floor, Supermarket addresses multifaceted aspects of the food industry— scarcity, trade, inclusivity, sensorialism, tastemaking, craft, reshoring, protectionism, automation, and extinction—through ten architectural and urban design contributions.

Ten products, along with their associated building types and territories demonstrate how a modified food distribution network converges at the future supermarket—Albèrt—on Martinus Nijhofflaan in Delft. Albèrt seeks to display products and their supply chain by integrating the once stand-alone and distant distribution center with an automated Ocado grid system, asserting itself as the generator of a just-in-time production system—thereby disrupting the seriality of infinite supermarket aisles. With all Albèrt supermarkets operating as distribution centers for multiscalar Ahold Delhaize branches—such as Albert Heijn and Albertje—the supply chain, and its resultant territories, are condensed and reconfigured.

Albèrt offers an omni-channel consumer experience in both physical and digital forms. It reflects on the traditional supermarket’s backstory, effectuating sustainability goals throughout a reimagined supply chain. The supermarket assures optimization in unison with the country’s circular economy by implementing reusable

packaging for all Albèrt products, extending shelf-life from data-driven decision making, offering digitized scanners informing conscious consumers of product particularities, and by providing dynamic pricing for food security.

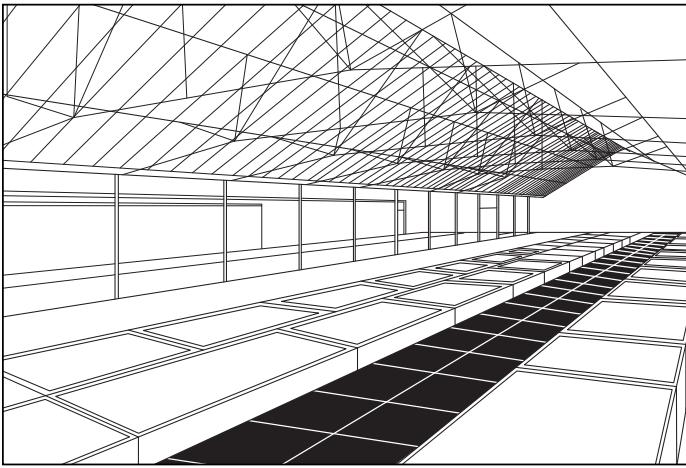
Along with a flexible open-plan allowing various iterations of product displays to maximize profits and render a unique shopping experience, Albèrt’s business models are diversified, generating revenues from branded products staged in shop-in-shops and electric car-sharing facilities to encourage consumer traffic.

The supermarket—previously conceived as a destination— incorporates a pathway to meet the constant movement of divergent consumers with the conjunction of fast-paced pick-up zones—promoting cycling, delivery, and e-commerce— and slow-paced demonstration zones offering novel tasting experiences along with the green public spaces on the periphery. Albèrt demonstrates an innovative retail experience beyond the technology of the new integrated distribution center, extending its perimeter toward the Delft city center to establish a new civic presence.





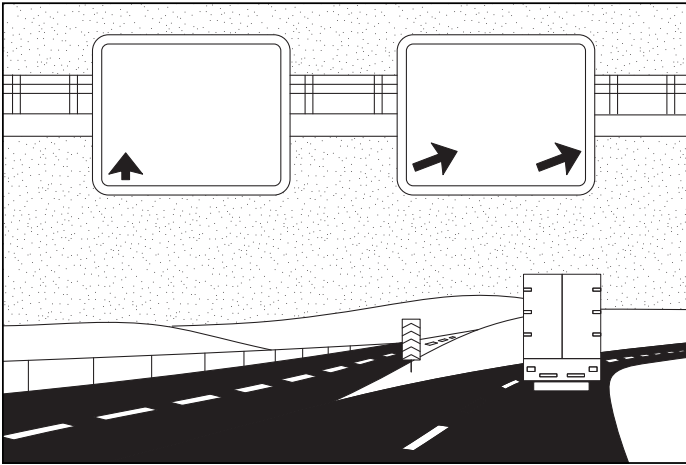




The Netherlands is internationally recognized as one of the world's largest food exporters due to its excellent connectivity throughout Europe. Home to world-class research institutions, it is—in effect—feeding the world. However, food production and consumption are responsible for around 25% of the total emission of greenhouse gases and for 60% of the terrestrial loss of variation in plant and animal species. When it comes to the food industry, the country's journey towards optimization, sustainability, and health requires a paradigm shift.



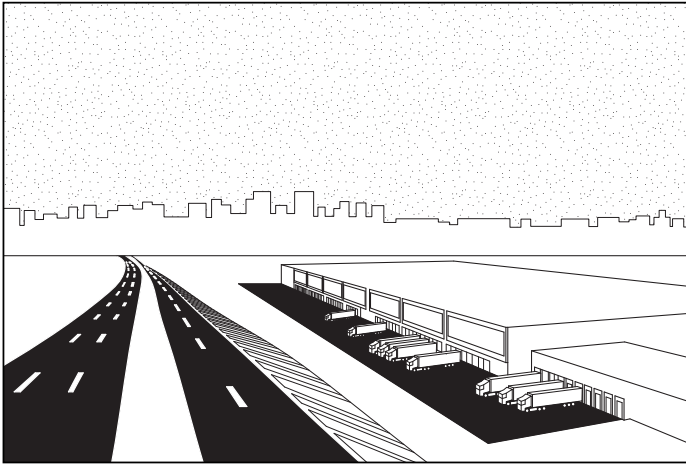
Ten architectural and urban design contributions sited within the Blue Banana—a European corridor of almost continuous urbanization—originating from supermarket products, <<<redesign the future supermarket of 2030.



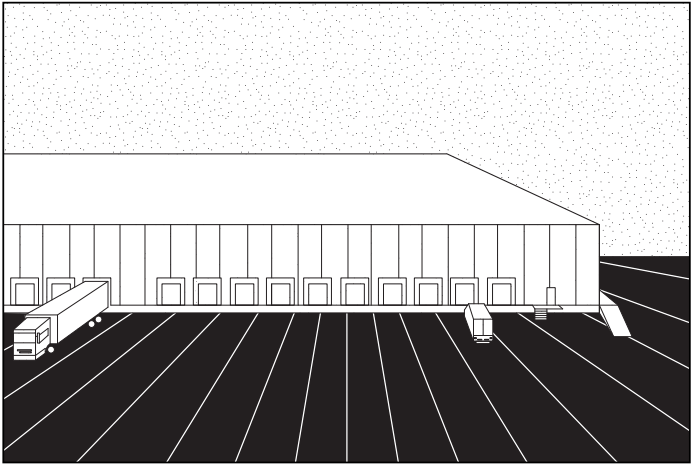
A continuous supply of products and materials, to and from the current supermarket, is made possible through a vast network of roads, rails, and waterways, connecting it to various infrastructural nodes and European trade routes within the Blue Banana.



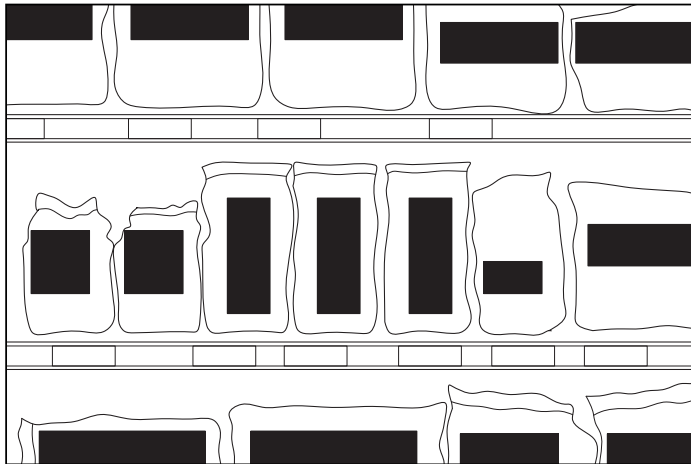
Supermarkets occupy the most densely used square meters in a city. Resting within its etymology—where «super» alludes to supremacy concerning size, quality, and quantity, while «market» refers to trading in goods of value—the supermarket, selling food and household goods, first originated in the 19th century with the novel concept of a self-serve store.



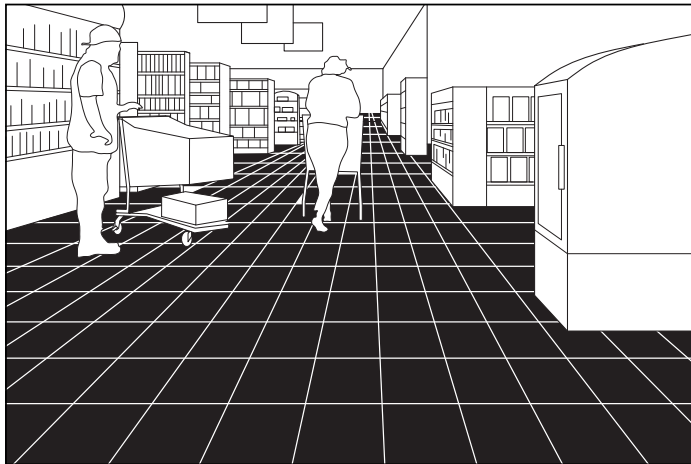
These ten contributions provide modifications to the supply chain, product distribution, and store planning, in relation to the products, their associated building types, and their extensive territories through a vast network of transportation nodes.



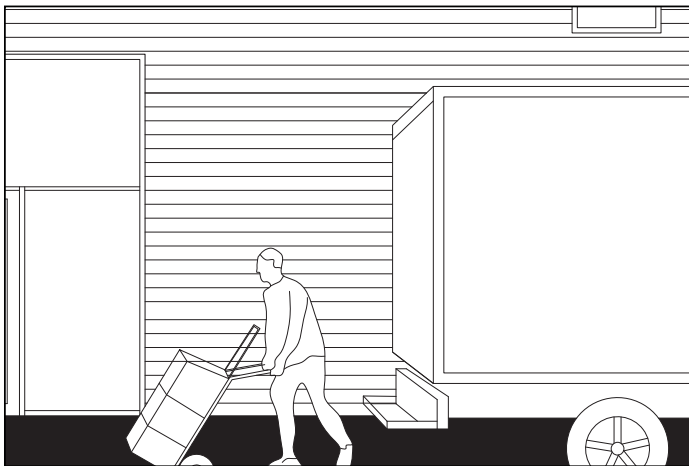
For this purpose, distribution centers currently serve as the epicenter, exploring the resultant spatial characteristics, and linking these ten contributions with the future supermarket.



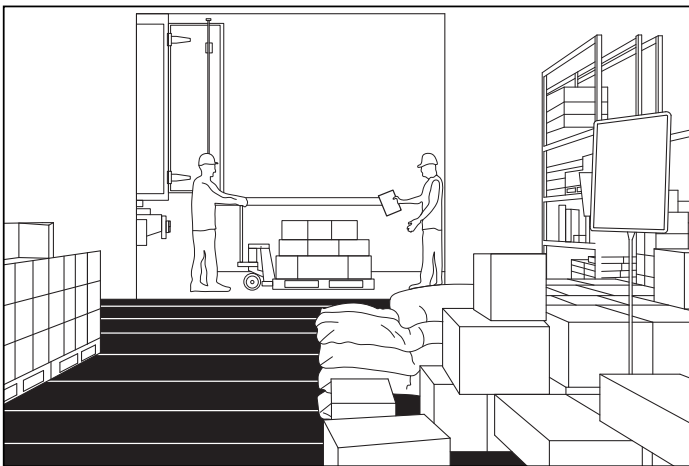
Fixed prices that originated in order to accelerate grocery sales had a huge impact on consumer experience. From standardization of price tags to uniformity of products, and from barcodes to electronic shelf labeling, the improved logistics, shorter employee training periods, a monitored supply system, and efficient shelf organization.



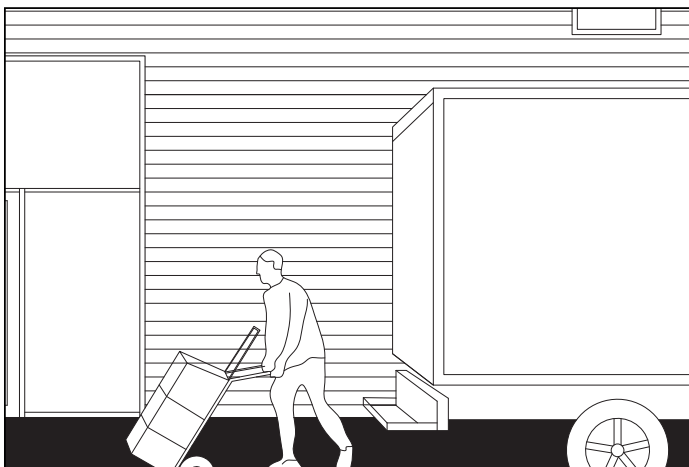
As the COVID-19 pandemic has reshaped the retail market in unprecedented ways, consumers shift around lifestyle and value. Its profits increased up to 40% and physical stores overflowed with people seeking to maintain a sense of normalcy, underscoring it as an essential service, one that represents a new civic presence. This demands new spatial configurations of a supermarket transitioning between a pre-COVID-19 and a post-COVID-19 society.



Home delivery and e-commerce businesses grew up to 5 times faster than before the pandemic, giving rise to an online distribution center that offers the convenience of a digital supermarket.



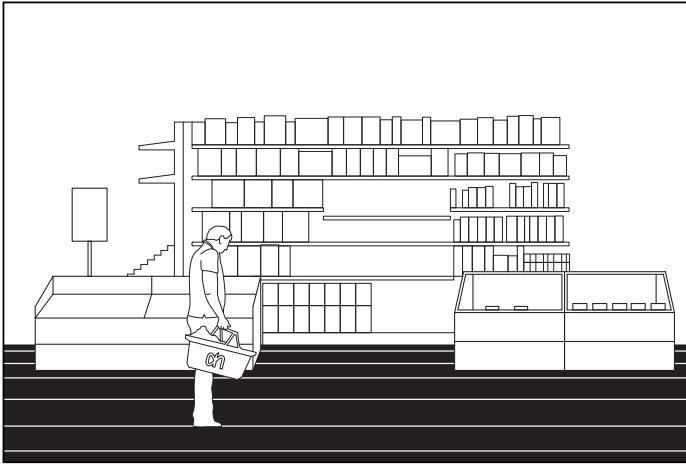
The supermarket analysis reveals its functional logic through the concealed back of house that is associated with the product's supply chain. Regarded as the employee's domain, the back of house is concerned with product flow, supply, and demand through data-driven decision-making, standardized packaging sizes, and product distribution via tastemaking, scarcity, sensorialism, inclusivity, trade, and biodiversity.



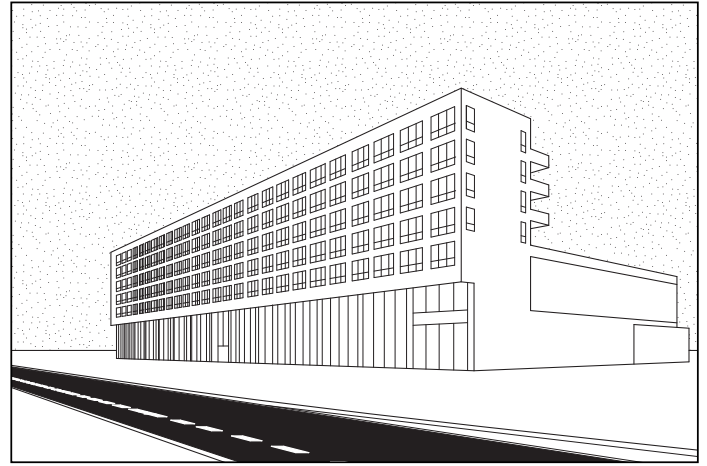
Home delivery and e-commerce businesses grew up to 5 times faster than before the pandemic, giving rise to an online distribution center that offers the convenience of a digital supermarket.



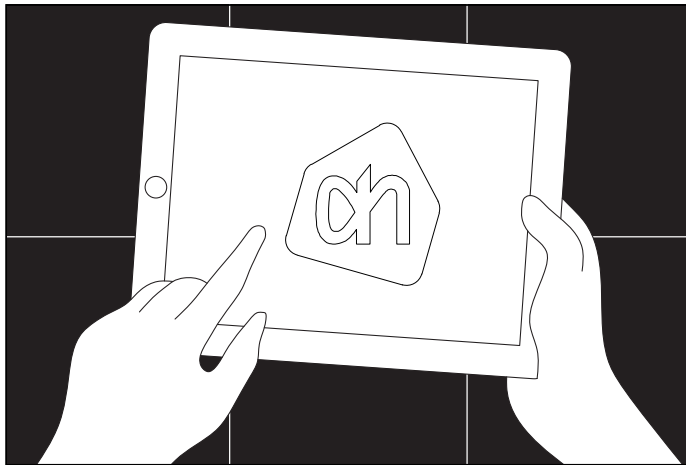
The supermarket analysis reveals its functional logic through the concealed back of house that is associated with the product's supply chain. Regarded as the employee's domain, the back of house is concerned with product flow, supply, and demand through data-driven decision-making, standardized packaging sizes, and product distribution via tastemaking, scarcity, sensorialism, inclusivity, trade, and biodiversity.



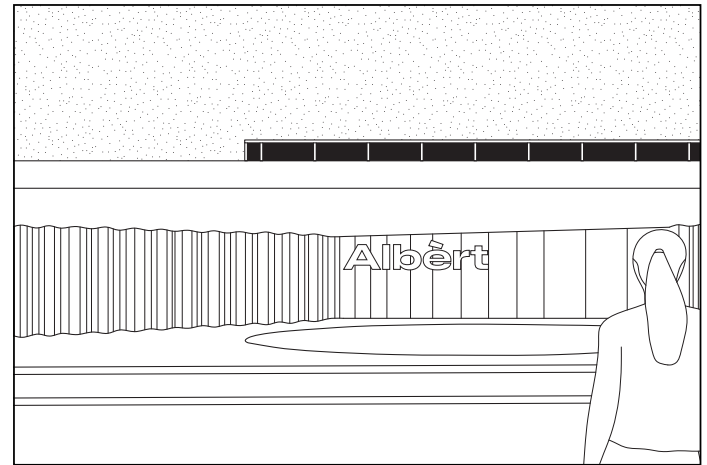
Secondly, the meticulously designed sales floor provides an immersive consumer experience. The sales floor raises issues of scenography, human interaction, digital technology, and the organization of supermarkets within the ever-changing future of retail through the notions of craft, reshoring, protectionism, automation, and extinction.



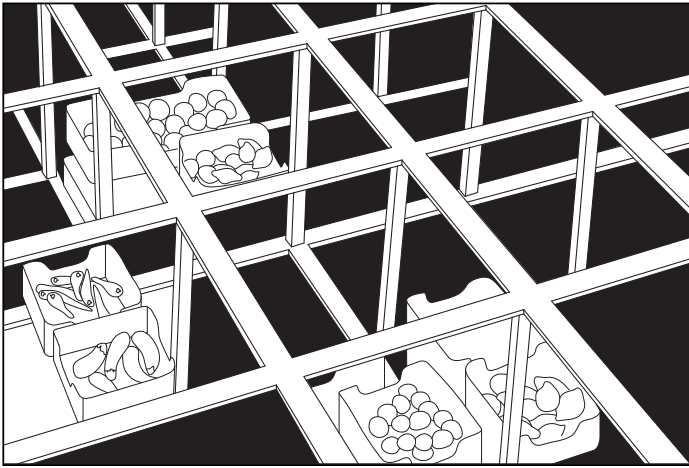
The collective project on the spatial implications of the food industry in the Netherlands and beyond redesigns a future supermarket on the current site of the Albert Heijn XL on Martinus Nijhofflaan in Delft, implementing developments on the sales floor and the back of house ensuring a frictionless future for shoppers.



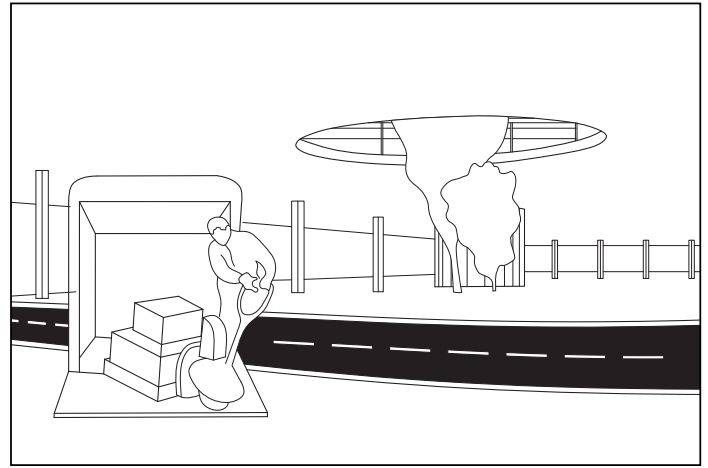
Situated in a densifying expansion area of Delft, a forecasted demography of (international) students, families, and elderly will make use of this supermarket and its e-commerce services.



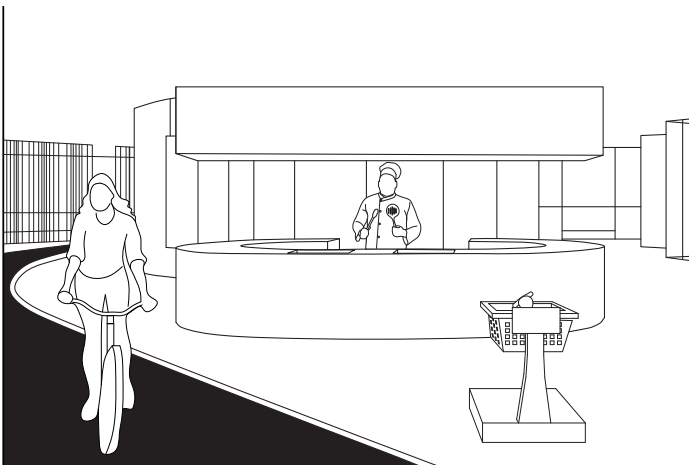
Responding to technical, environmental, and societal demands from the Blue Banana's urbanized corridor to the new Albèrt, and from the supermarket's back of house to the sales floor, new spatial propositions redefine the future supermarket of 2030.



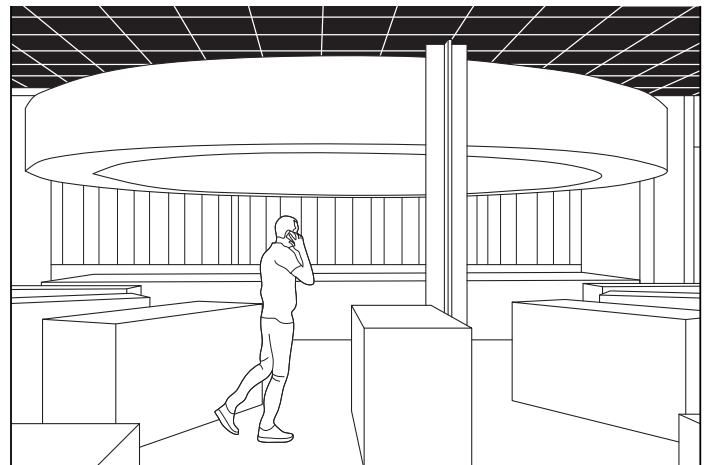
The reimagined supermarket—Albèrt—seeks to display both the product and its supply chain, in turn, the sales floor and the back of house, by integrating the distribution center with an automated Ocado grid system, asserting itself as the generator of a just-in-time production system.



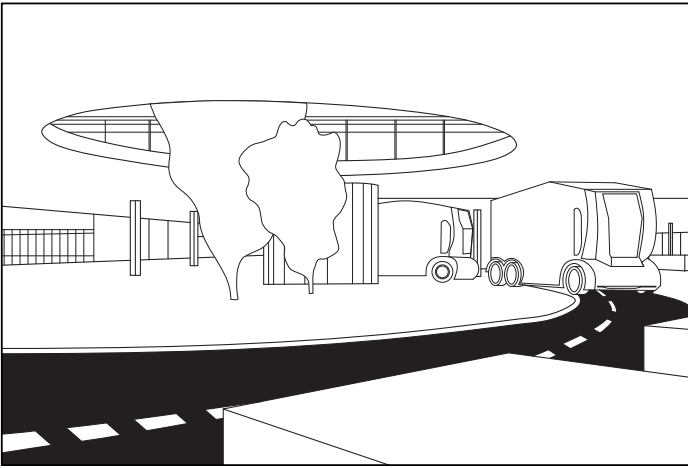
With all Albèrt supermarkets functioning as distribution centers for multi-scale Ahold Delhaize branches—such as Albert Heijn and Albèrtje—the supply chain, and its resultant territories are condensed and redefined. Product distribution within each network thus densifies within smaller radii, becoming open to more local suppliers frequenting small-batch deliveries, while also providing proximity to consumers in the city.



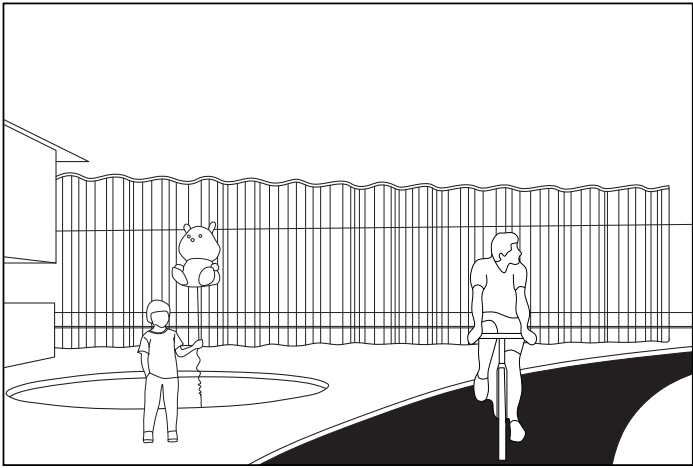
The storefront of the supermarket moves beyond blocked-off rows of checkout lanes and security gates to designated slow-paced zones with product demonstrations, workshops, and exclusive shops that entice consumers into the supermarket.



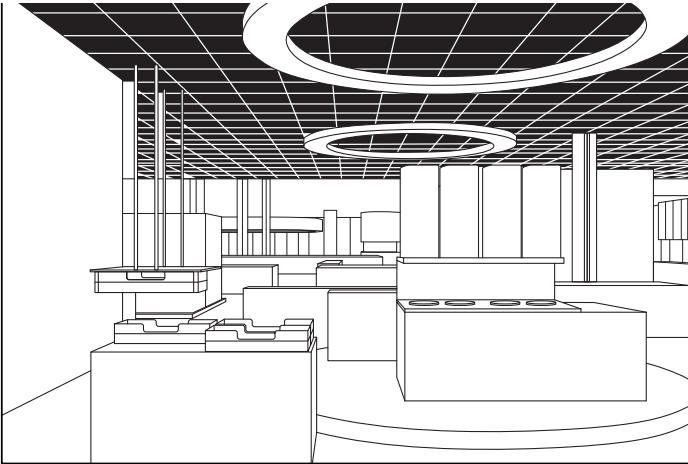
The automated Ocado system in the distribution center above allows for the diversion of labor in the supermarket towards hospitality and social interaction through various host stands—strategically placed to encounter pedestrian flows—offering a tailored shopping experience.



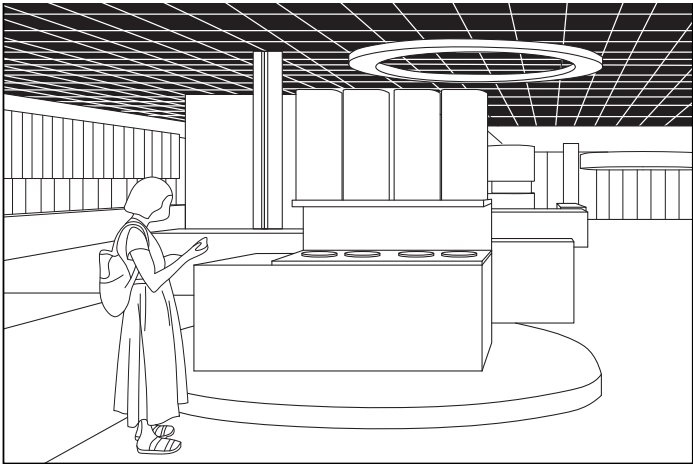
The relationship between the supermarket and the city changes with a modified transitional system that showcases the dynamic loading dock and its functioning on the sales floor, diverts private vehicular flow, e-trucks, and car-sharing services towards the Albèrt parking on the site, and promotes cyclists by providing access on the sales floor through the incorporation of a pathway for fast-paced pick-up zones with an increase in delivery and e-commerce.



The supermarket provides several entrances—strategically located near high traffic zones—to move away from a one-directional circulation path to a multi-directional circulation pattern within the organic layout of the facade that is designed in response to the surrounding context.

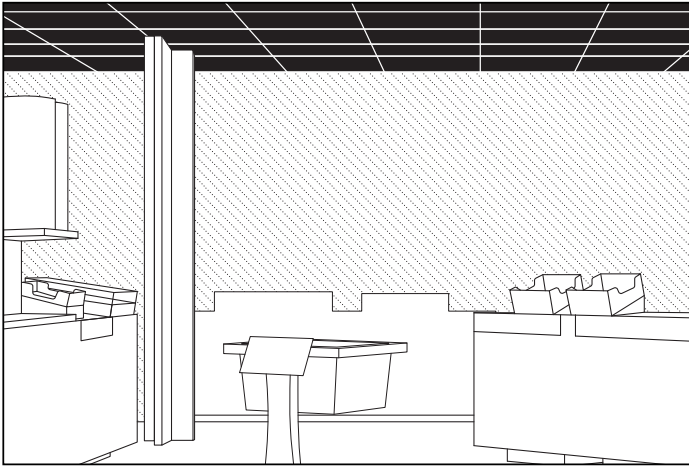


The supermarket is reorganized according to the central high yield automated distribution center within a static grid ceiling that offers dynamic robotic movements, allowing various iterations of product displays in reaction to seasonality and specialties, to render an open floor plan shopping experience.

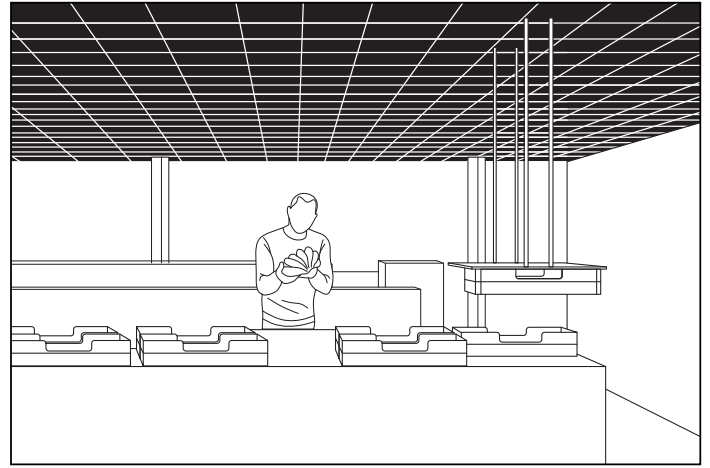


Stores will continue to use planograms, working on existing principles of increasing sales. From bulk shelves to fresh produce crates, shelving systems within the open plan generate new episodic formats of planograms, while accommodating changes in circulation with the incorporation of electronic signage to guide the consumers.

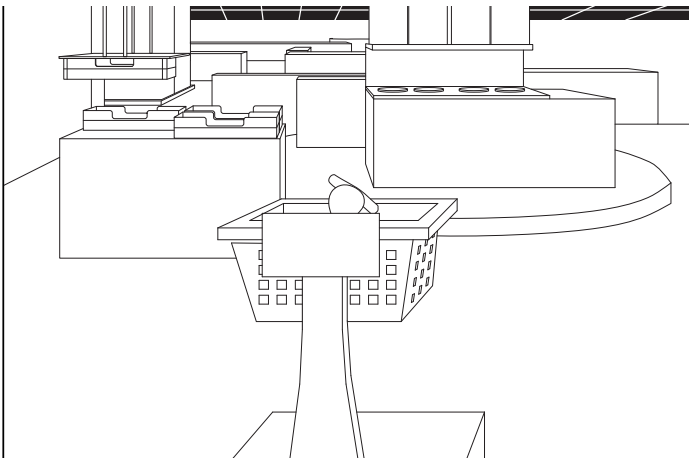




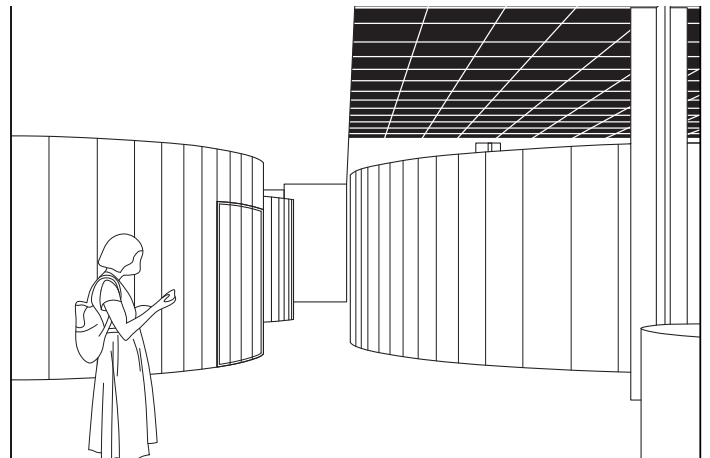
Responding to the supermarket's visibility of the supply chain, vertical experiential walk-in refrigerators represent the ripening rooms and recreate the conditions of refrigerated trucks to extend the distribution center to the sales floor with a convenient product flow, allowing consumers to momentarily enter the varied environments of the food supply chain.



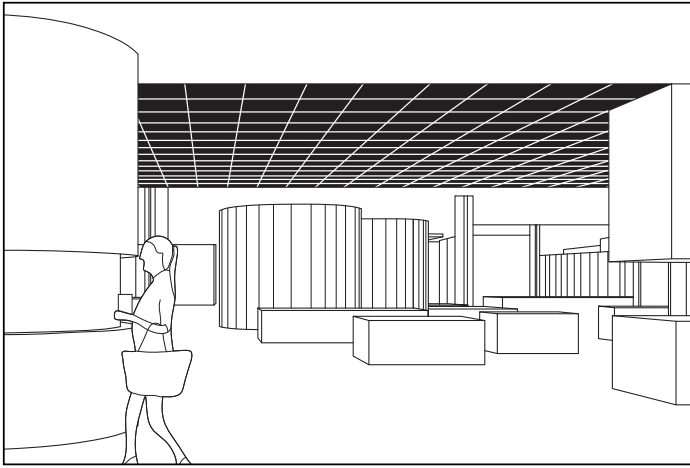
All new shelves, carts, packaging, and delivery methods work within the 800mm x 800mm grid to ensure full standardization within the supply chain system starting from the cargo pallet itself.



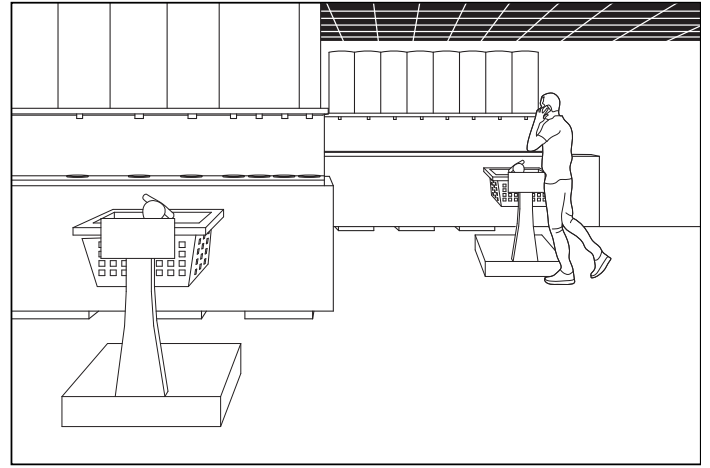
Once an item is delivered, the screen on the smart cart displays other useful items, or the next item on the shopping list while still incorporating key supermarket sales concepts and experiences like cross-merchandising and impulse buys.



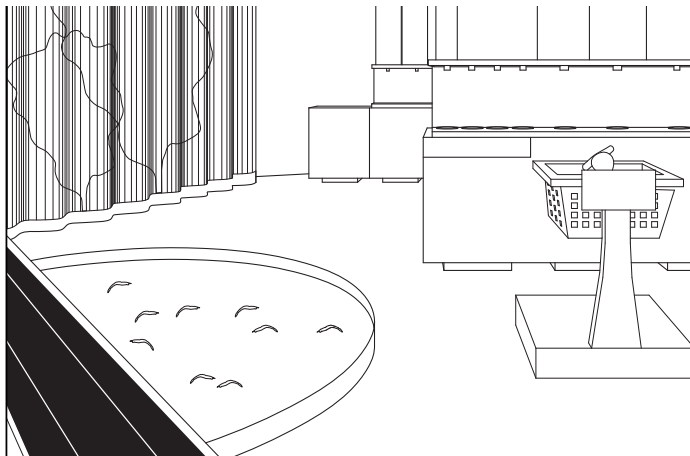
Business models and real-estate strategies—introduced through independent areas defined for peripheral store-in-stores—promote collaborations with exclusive brands and local entrepreneurs by bringing in highly curated experiences, catering to the experimental and diverse tastes of Delft residents.



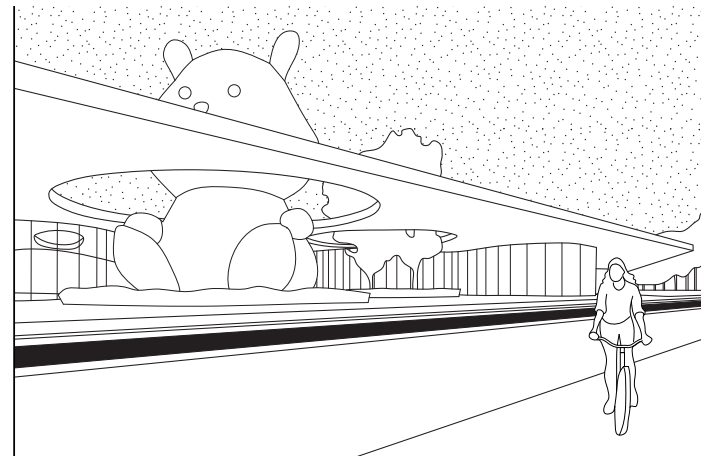
The future supermarket addresses sustainability goals through a reimagined supply chain with reusable packaging for all Albèrt products that are collected, cleaned, and redistributed on site in various return points, cleaning stations, and end-cap gondolas respectively, that remain scattered throughout the sales floor.



Smart carts with digitized scanners react to the particularities of the product on the shelf with information on the provenance of products for conscious consumers. Electronic displays are connected to expiration dates, supply, and demand through dynamic pricing monitored by data-driven decision-making.



As an essential service, the supermarket's design incorporates several public green zones amidst the sales floor to entice the consumers to spend more time inside, while at the same time providing a healthier working environment, through biodiverse farming solutions, integrated agriculture strategies, and a green roofscape.



Albèrt offers a new retail experience open to Delft by putting both the product and its supply chain on display. A flexible open plan within and beyond the high yield automated distribution center—now a part of the supermarket—extends its perimeter towards the city and its residents, establishing a new civic presence.







The introduction of fast-paced zones in the supermarket spreads along the bike lane, featuring a demonstration kitchen and pick-up points.





Live shrimps and small-batch milk deliveries demonstrate freshness and reusable packaging within a just-in-time production system.





Permaculture as a new farming method  
inside the supermarket boosts biodi-  
versity and rewards the cultivation of  
GMOs





View of the automated Ocado grid system and the distribution center on the ceiling from the concierge desk on the sales floor.



The smart cart eliminates the boundaries of the supermarket's sales floor while dynamic pricing

and digitalized labels inform the consumers about the product's supply chain and provenance.





Dynamic robotic movement above the open sales floor allows for various iterations of product displays, according to seasonality, discounts, and specialties.



Free food is no longer shameful, facing the luxury products of the Hermès store-in-a-store.



The walk-in refrigerator extends the distribution center to the sales floor, offering a momentary experience in the

varied environments of the food supply chain.





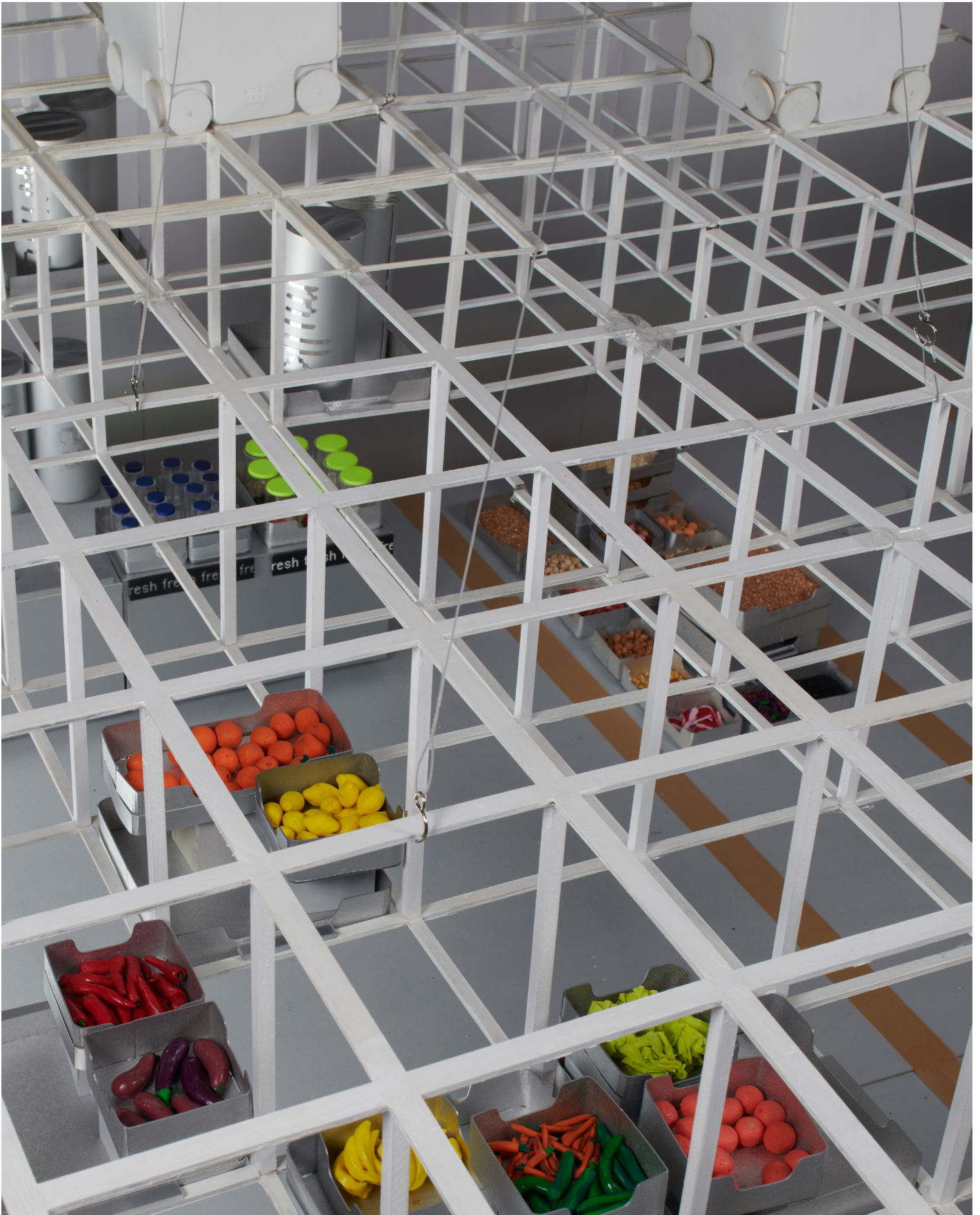
A wine bar next to an automat restaurant are part of the slow-paced zones of the supermarket, introducing a novel

tasting experience next to a public green terrace.





Beyond the internal core, Albèrt offers an innovative retail experience, opening up the supermarket's perimeter towards the city.



View of the loading dock on the sales floor from the automated distribution center on the ceiling.



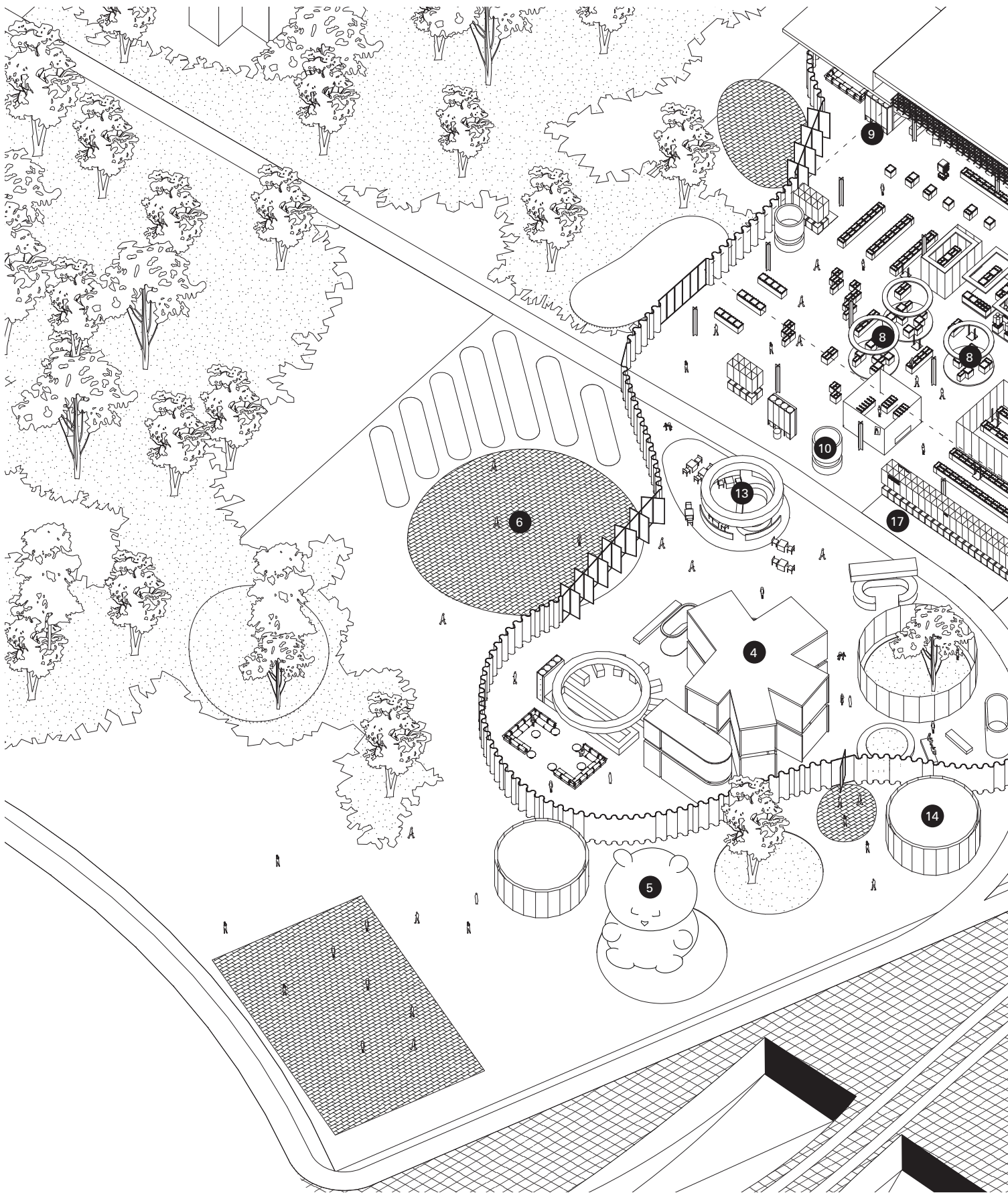


A green roofscape amidst the residential neighborhood, provides a healthy working and living environment.





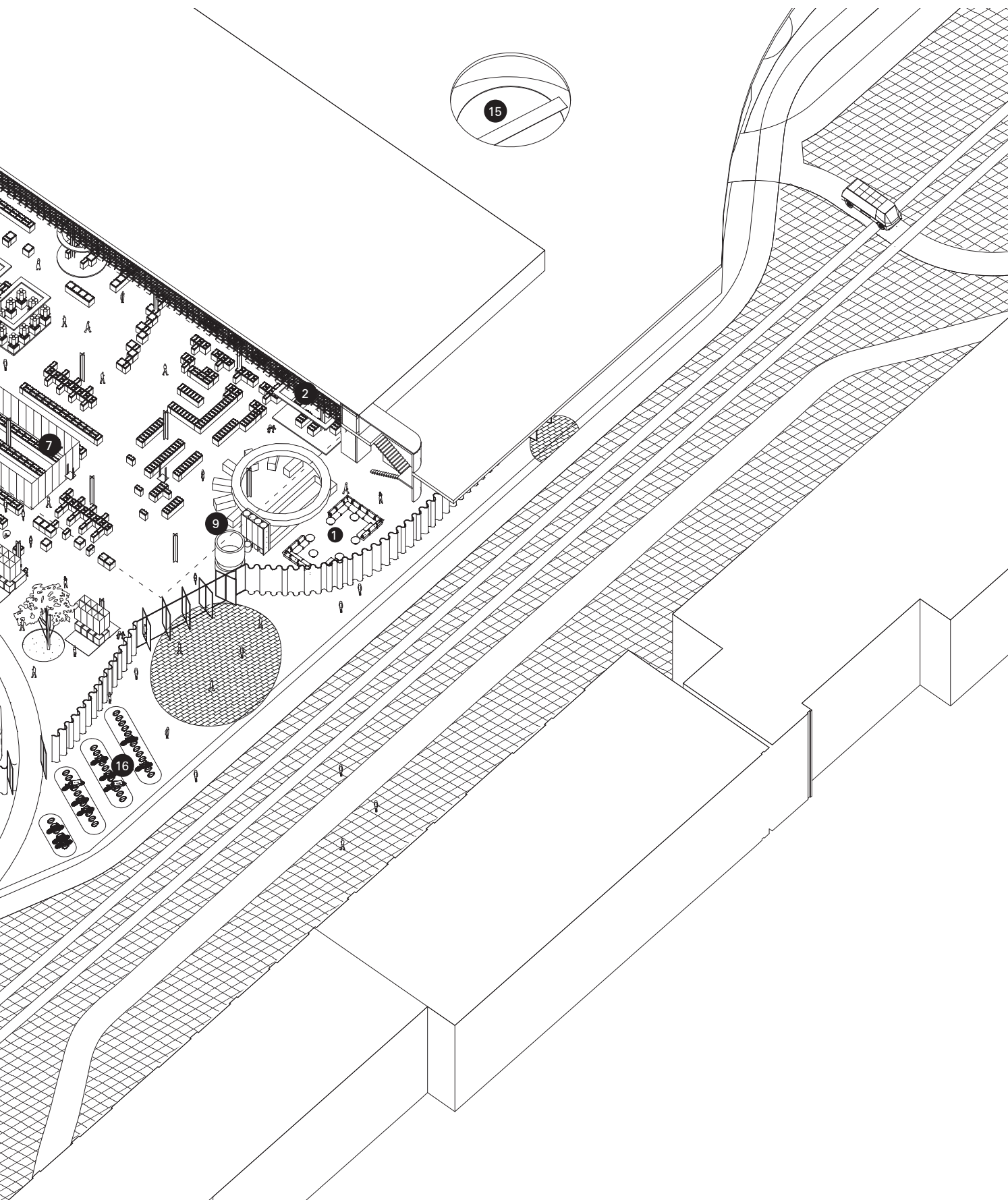




A cut-out axonometric exposing the blurred boundaries between the supermarket, the landscape, and the city of Delft.

- 1 Concierge
- 2 Automated Ocado grid
- 3 Vertical circulation core
- 4 Kindergarten

- 5 Sculpture of Albert's mascot
- 6 Entrance
- 7 Refrigerated area
- 8 Specialty displays

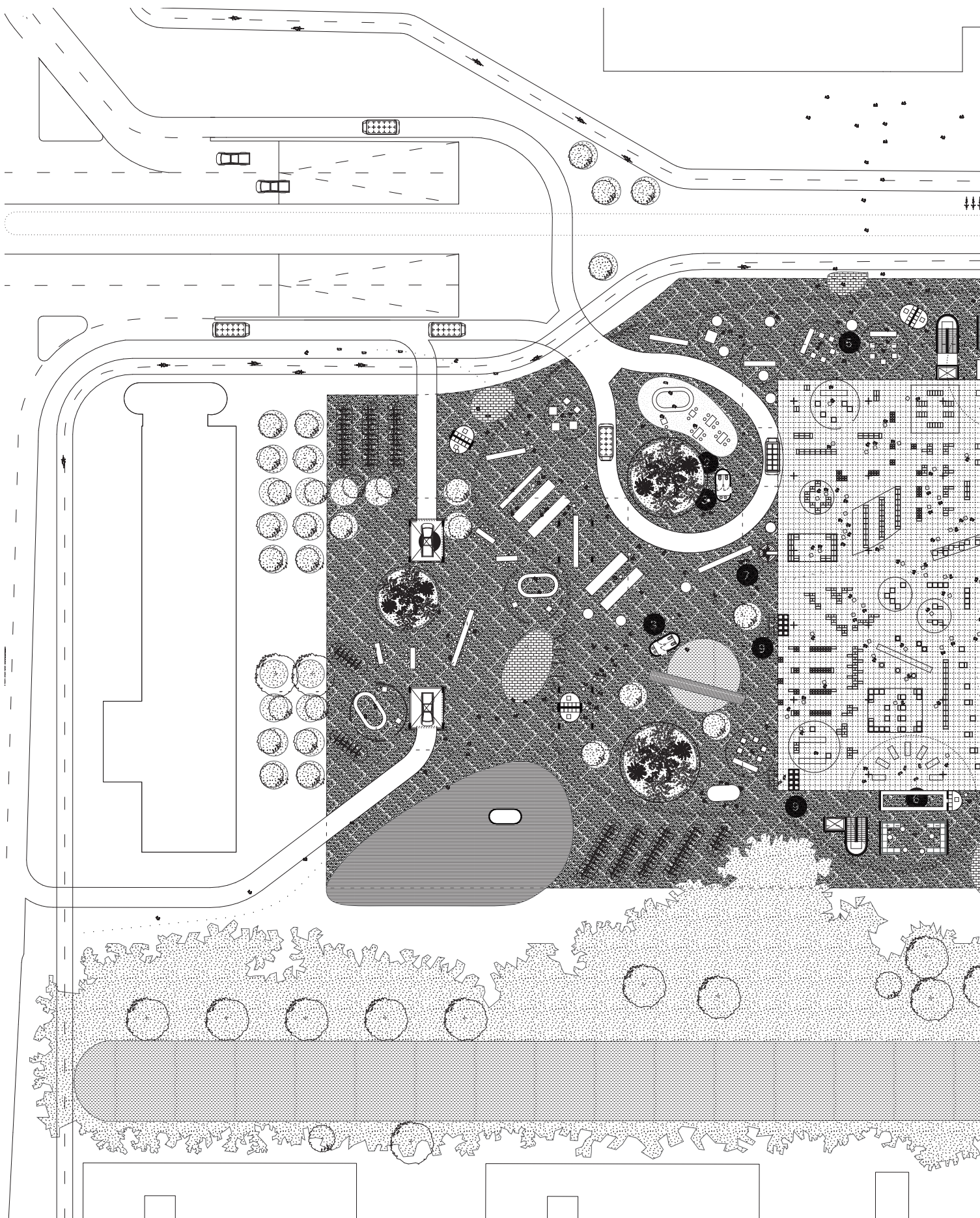


9 Smart cart station  
 10 Return points  
 11 Pick up points  
 12 Cycle track

13 Demonstration kitchen  
 14 Shop-in-shops  
 15 Shrimp pond  
 16 Bicycle parking

17 Automat

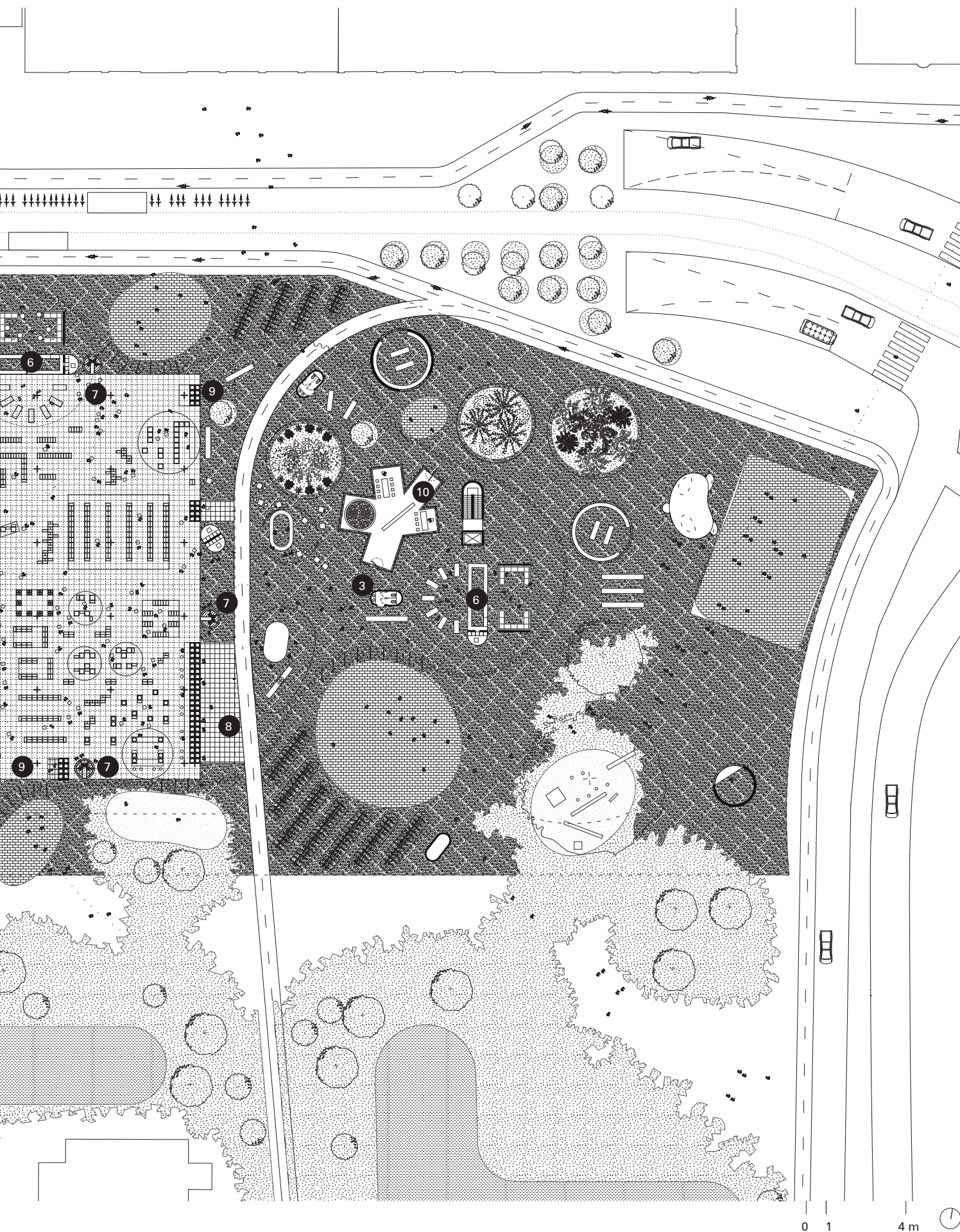


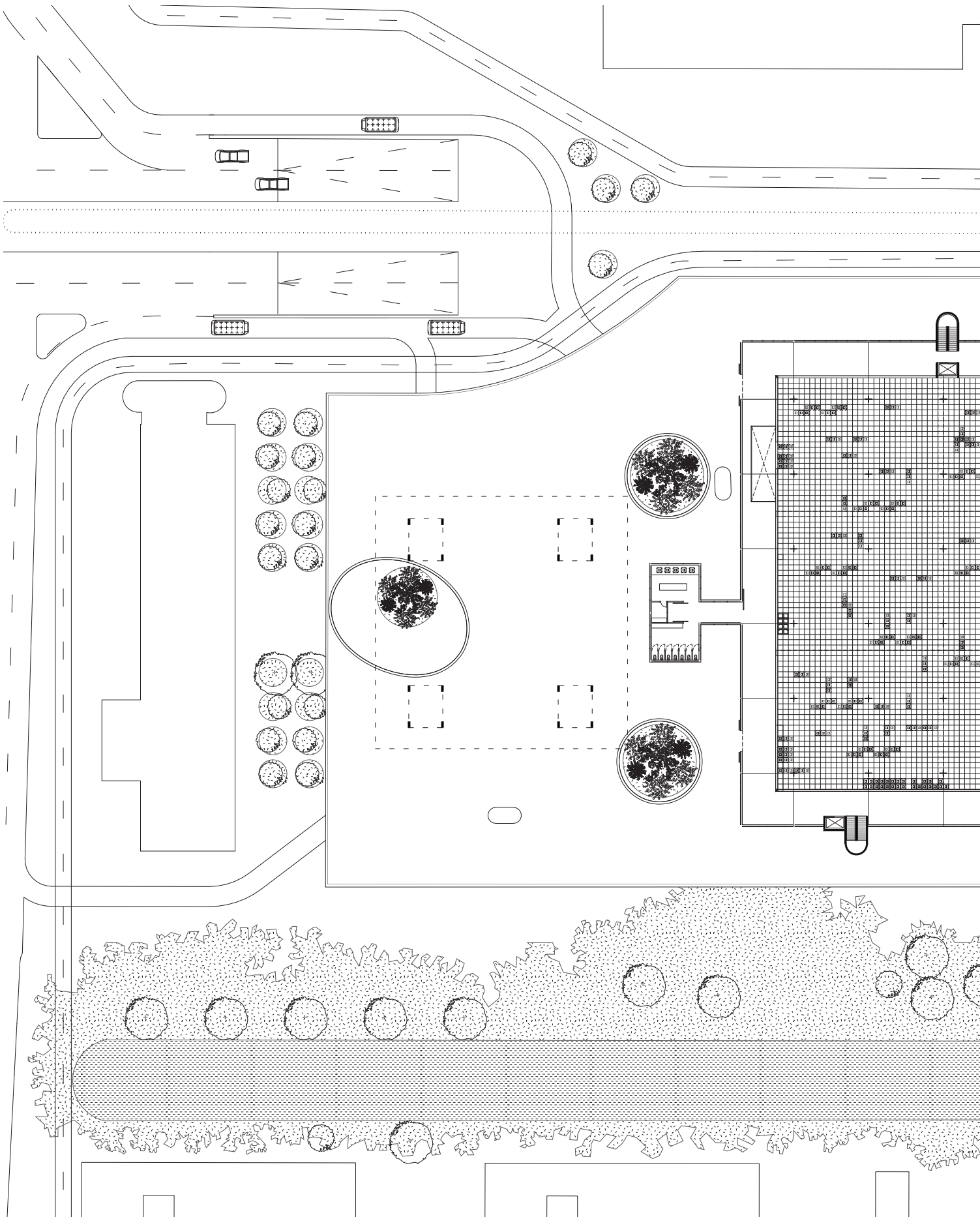


Albert offers a new retail experience with a flexible open plan within and beyond the high yield automated distribution center to display both

the product and its supply chain. The supermarket is organized in three different zones, consisting of the central high yield core, the interior

periphery of the glass facade, and the outdoor facilities covered by the cantilevered roof.

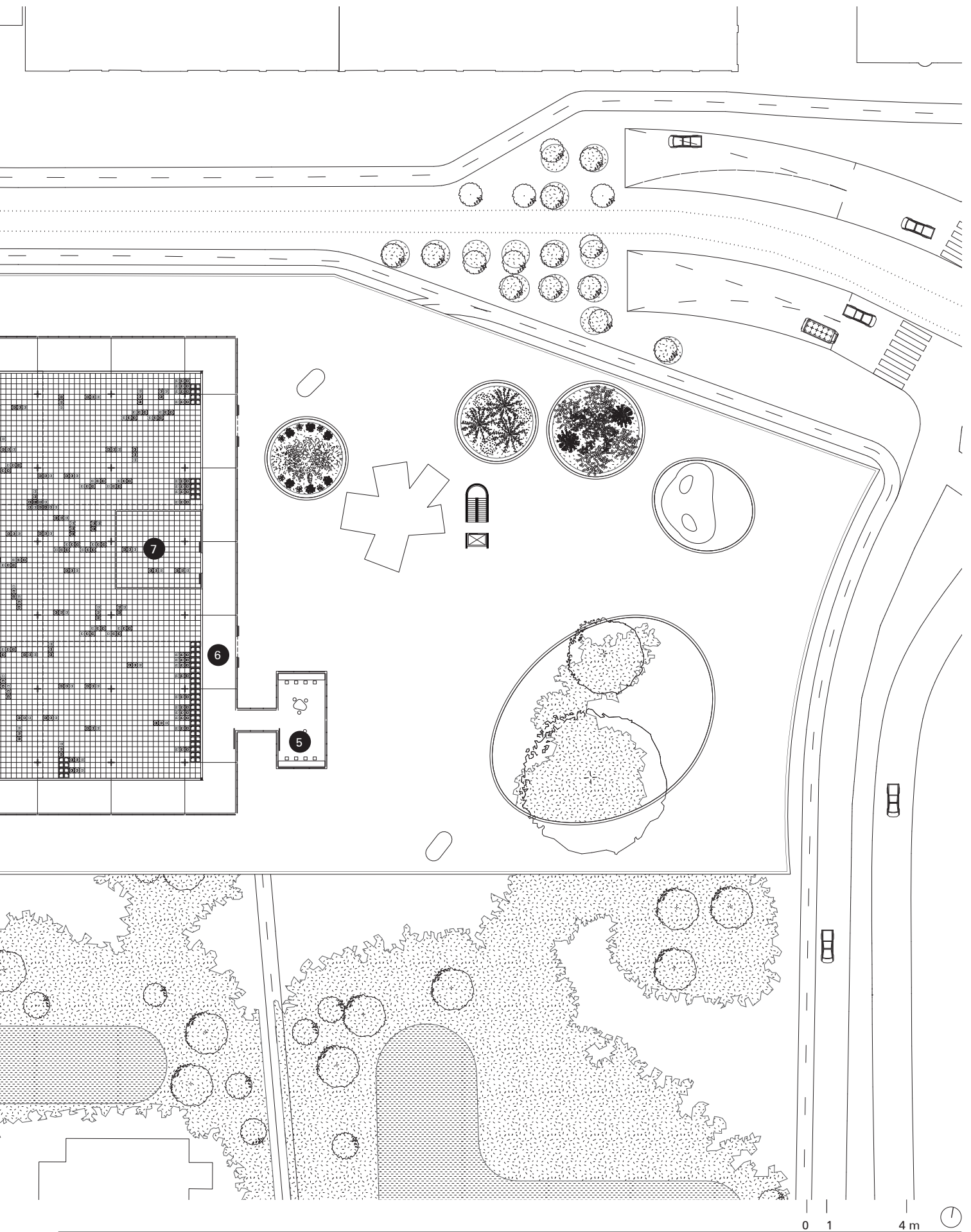




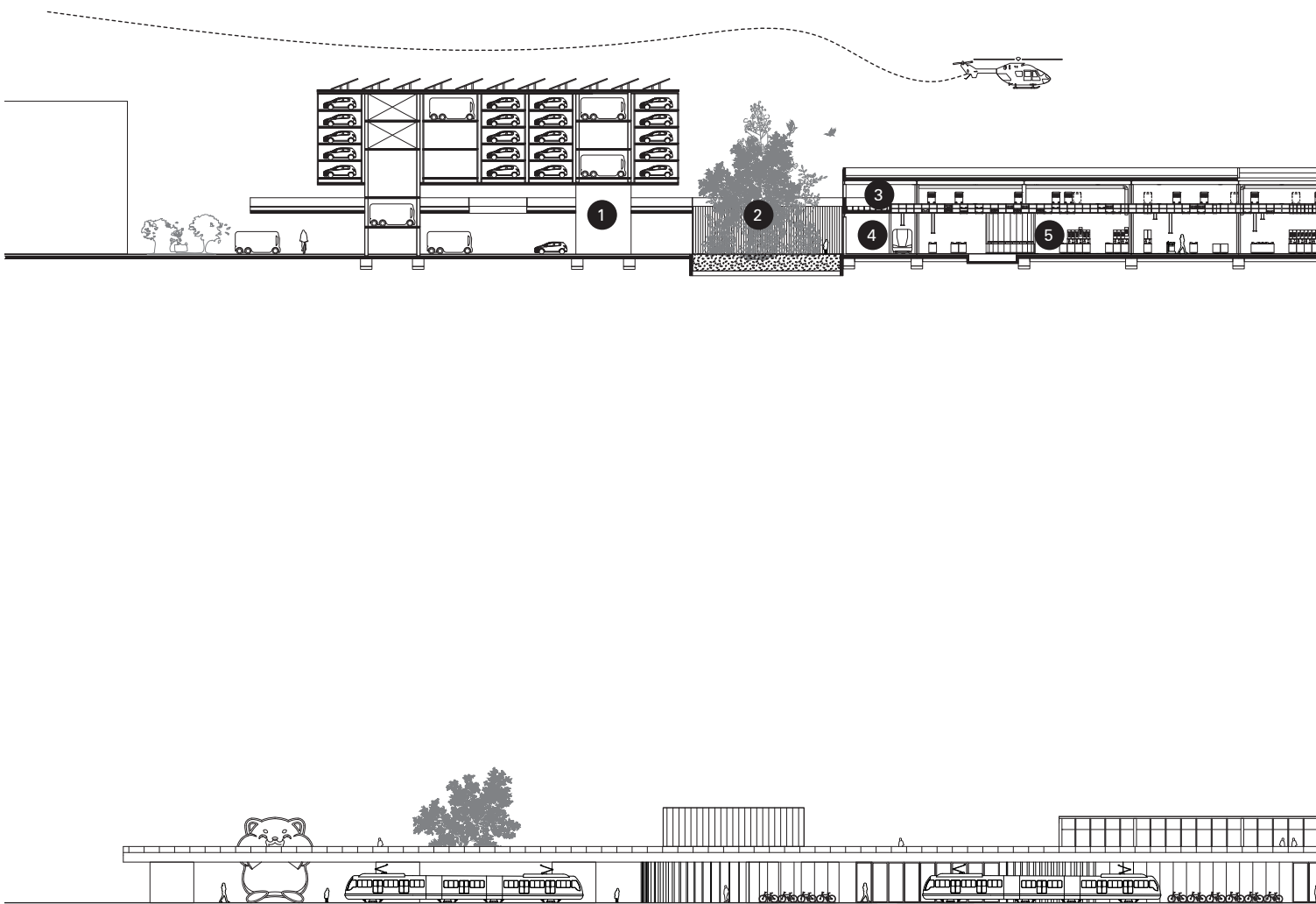
The back of house operates as a distribution center above the sales floor, consisting of the automated Ocado system in the static grid ceiling

core that offers dynamic robotic movements.



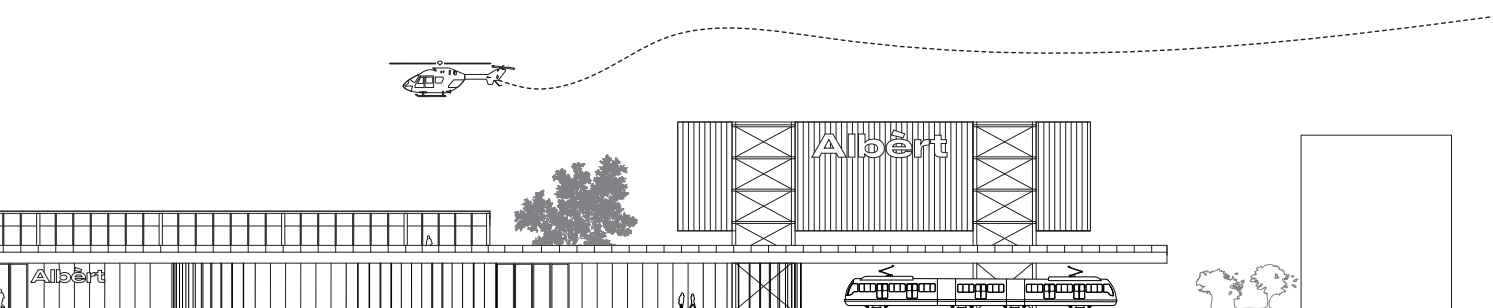


- |                        |                        |
|------------------------|------------------------|
| 1 Maintenance point    | 5 Offices              |
| 2 Toilets              | 6 Perimeter for humans |
| 3 Automated Ocado grid | 7 Refrigerated area    |
| 4 Vertical core        |                        |

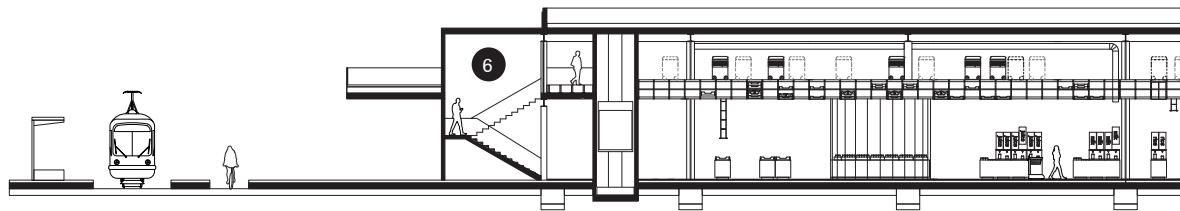
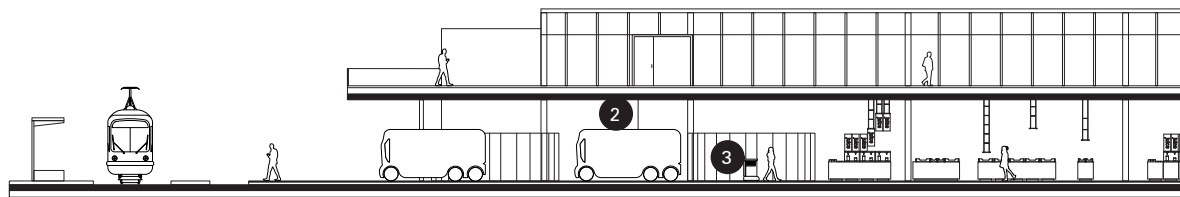
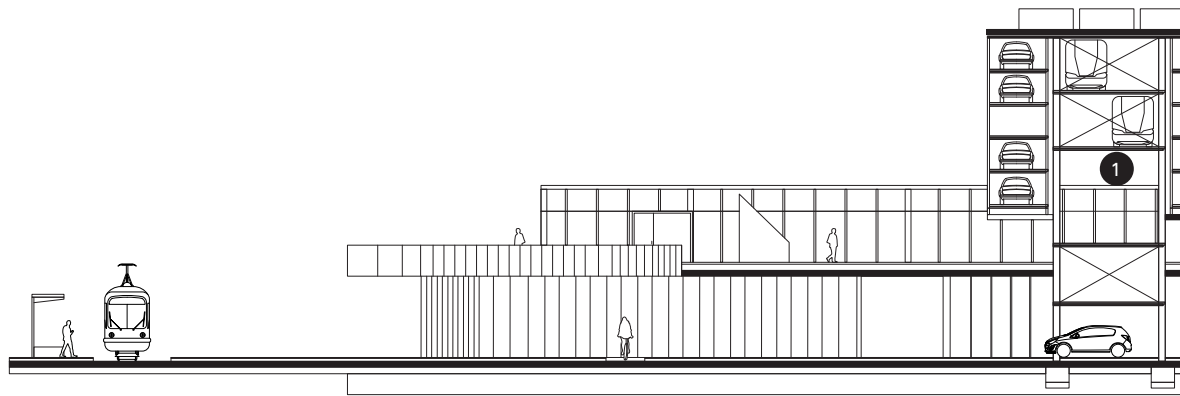


The reimagined relationship between the supermarket's sales floor and back of house is vertical, juxtaposed with the additional Albèrt car-sharing facilities

and parking on the site that caters to the supermarket's customers, e-trucks, and the neighborhood's needs.



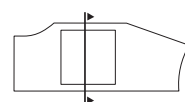
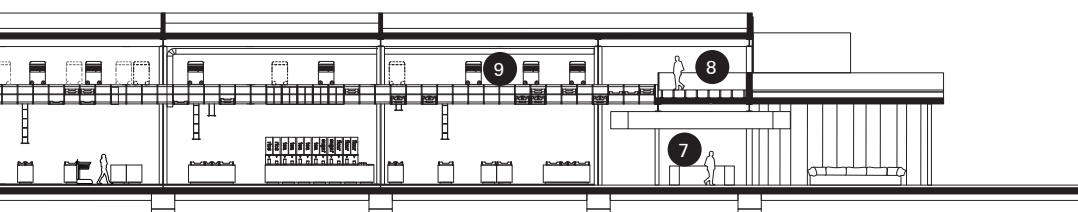
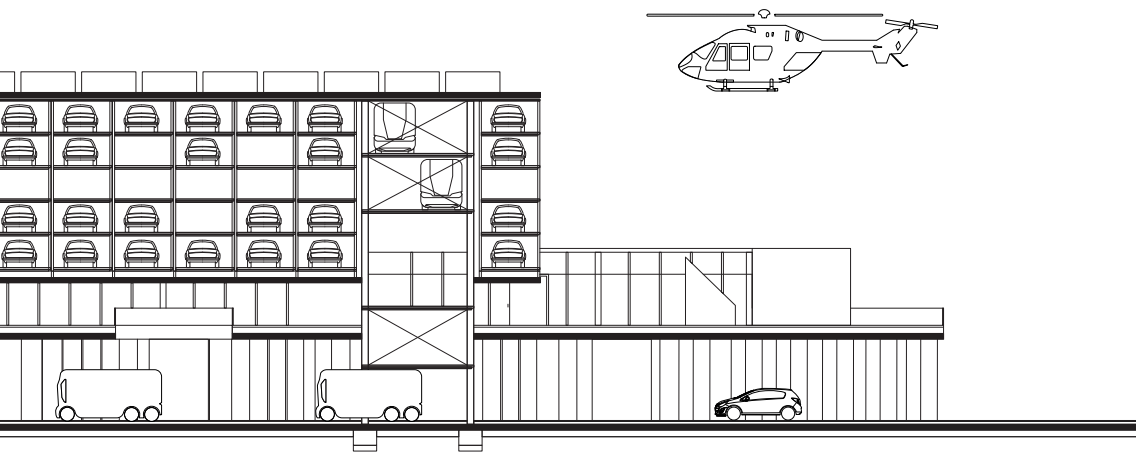
- 1 Maintenance point
- 2 Toilets
- 3 Automated Ocado grid
- 4 Vertical core



The organization of the building around the central high yield distribution center allows for various iterations of product displays on the sales floor, disrupting

the infinite seriality of the supermarket aisles.



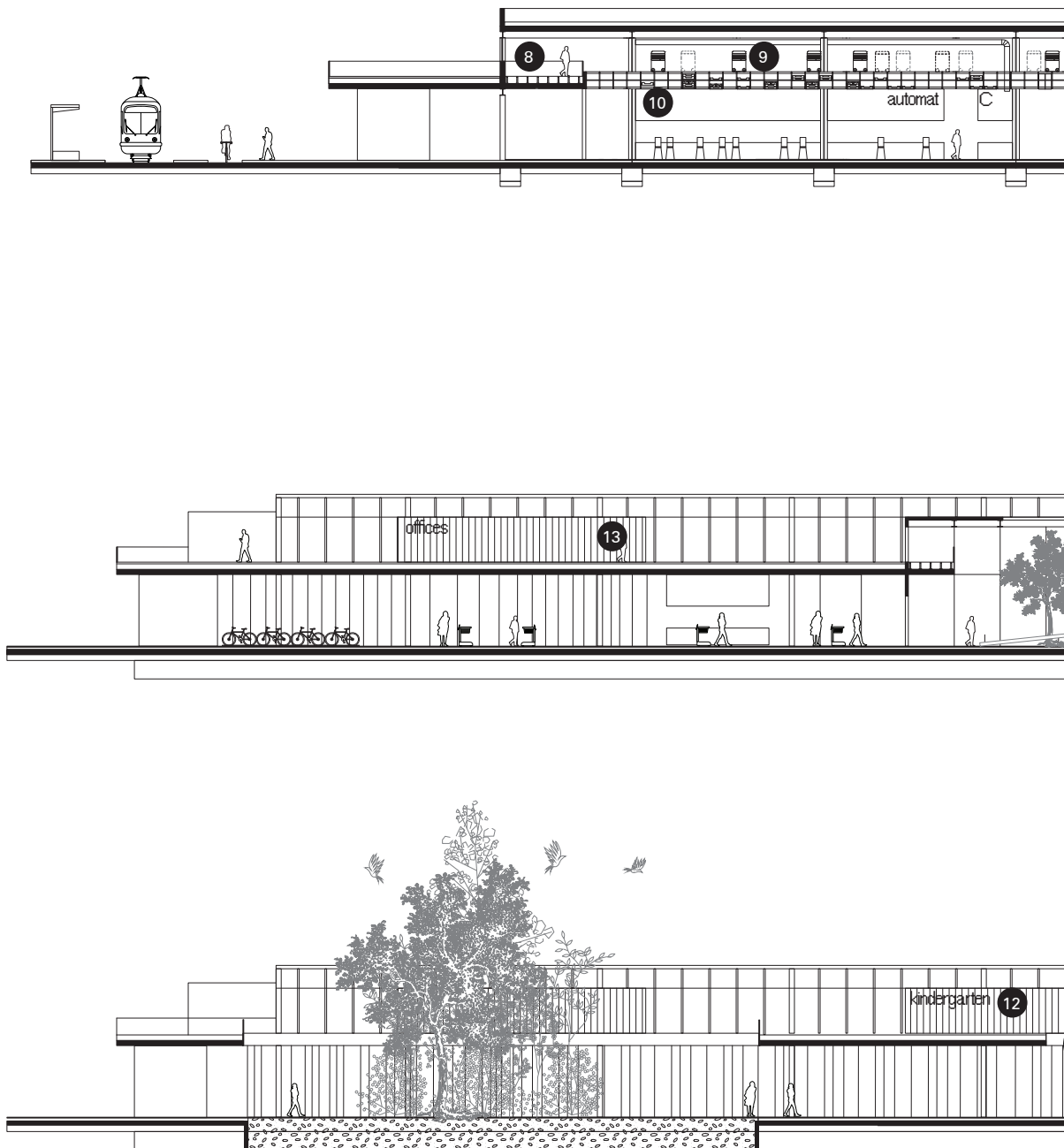


0 2.5 10 m

- 1 Automated parking
- 2 Loading dock
- 3 Shop-in-shop
- 4 Shrimp pond

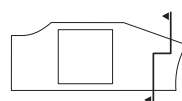
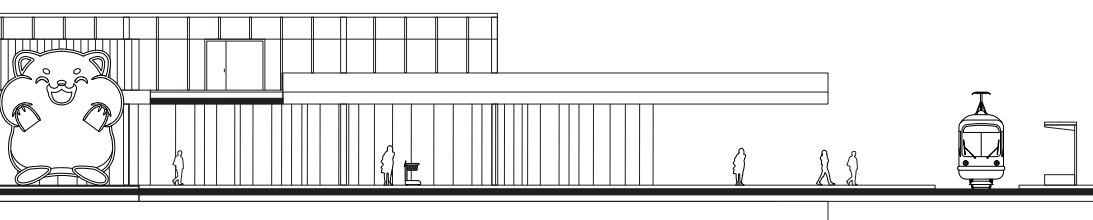
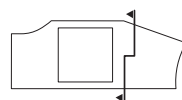
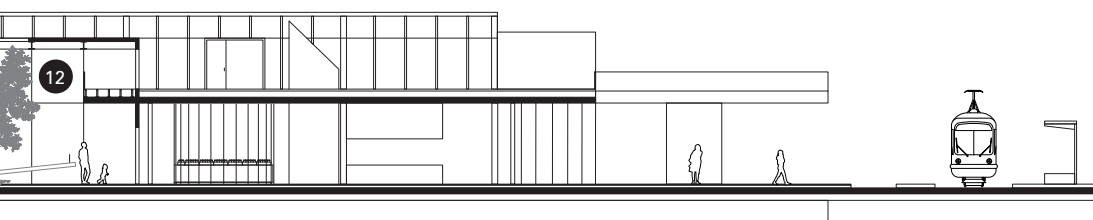
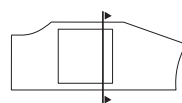
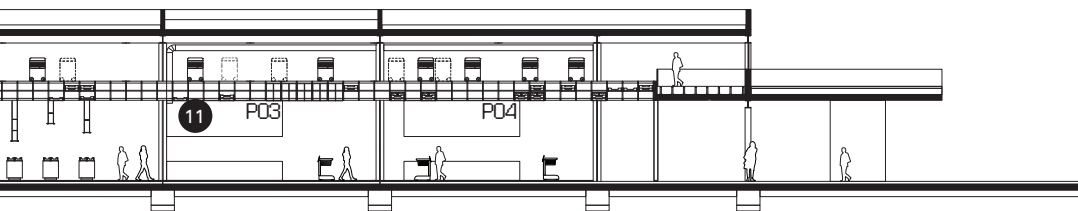
- 5 Maintenance point
- 6 Vertical core
- 7 Concierge
- 8 Perimeter for humans

- 9 Automated Ocado grid



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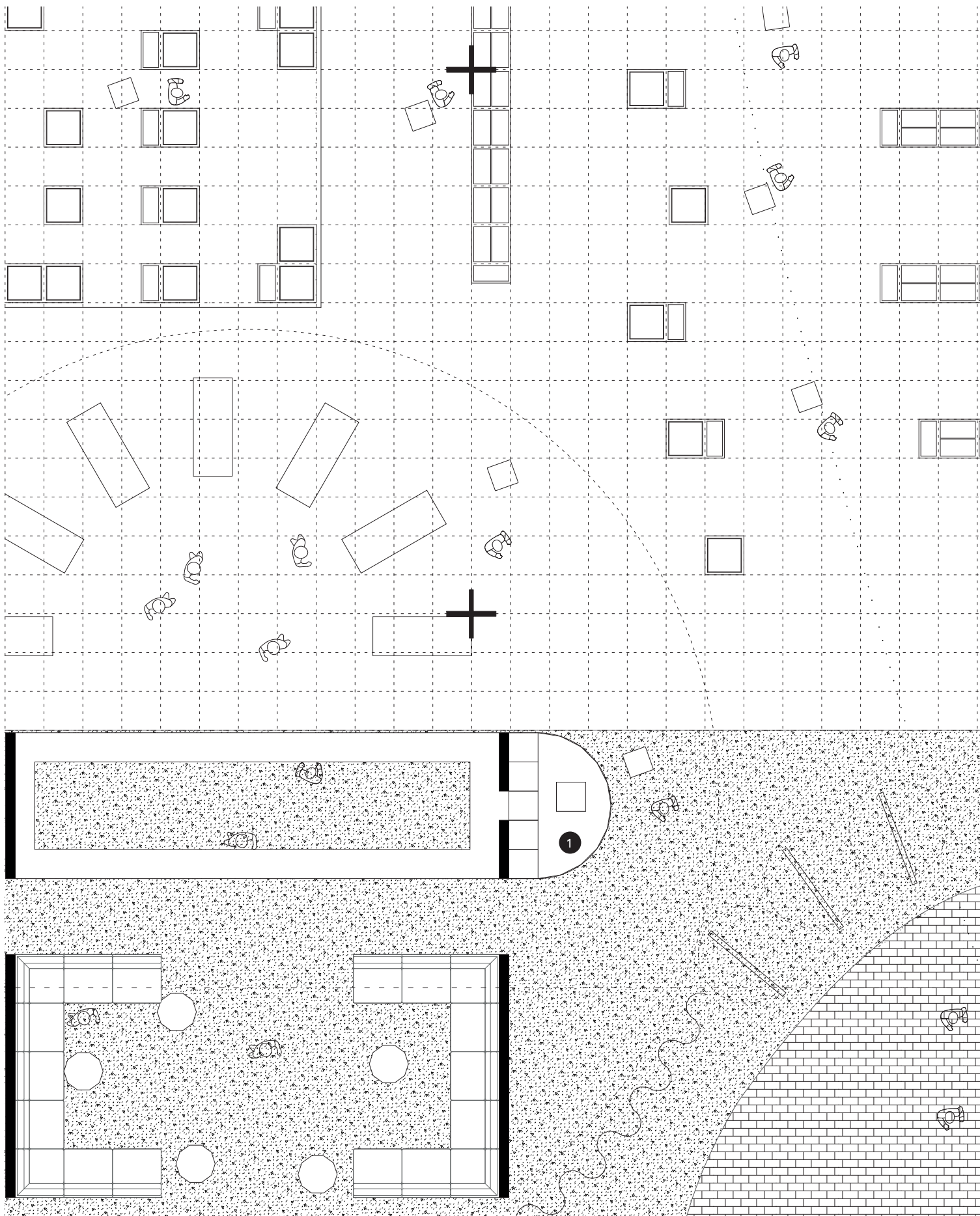


0 2.5 10 m

- 1 Automated parking
- 2 Loading dock
- 3 Shop in shop
- 4 Shrimp pond

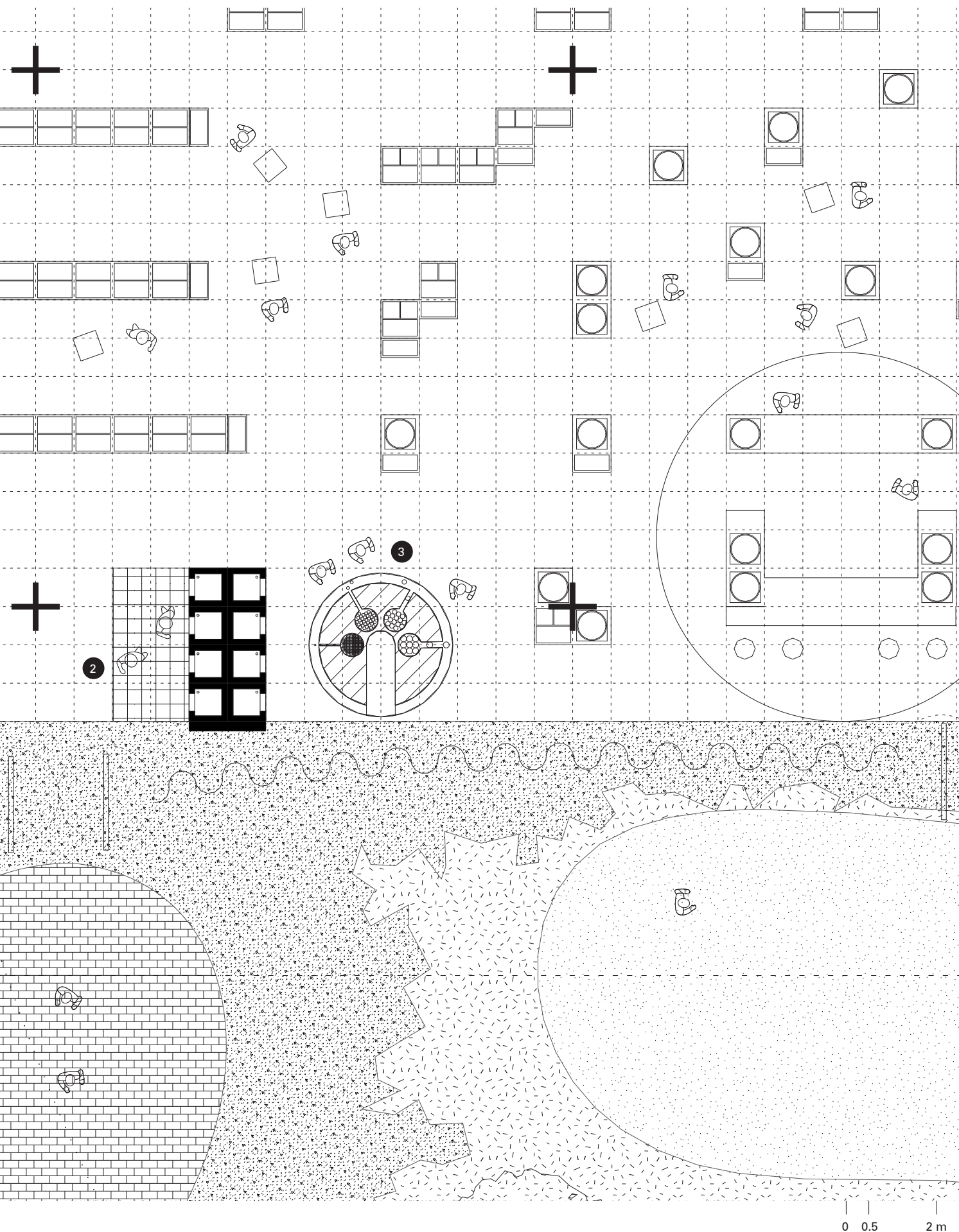
- 5 Maintenance point
- 6 Vertical core
- 7 Host
- 8 Perimeter for humans

- 9 Automated ceiling
- 10 Automat
- 11 Pick up points
- 12 Kindergarten

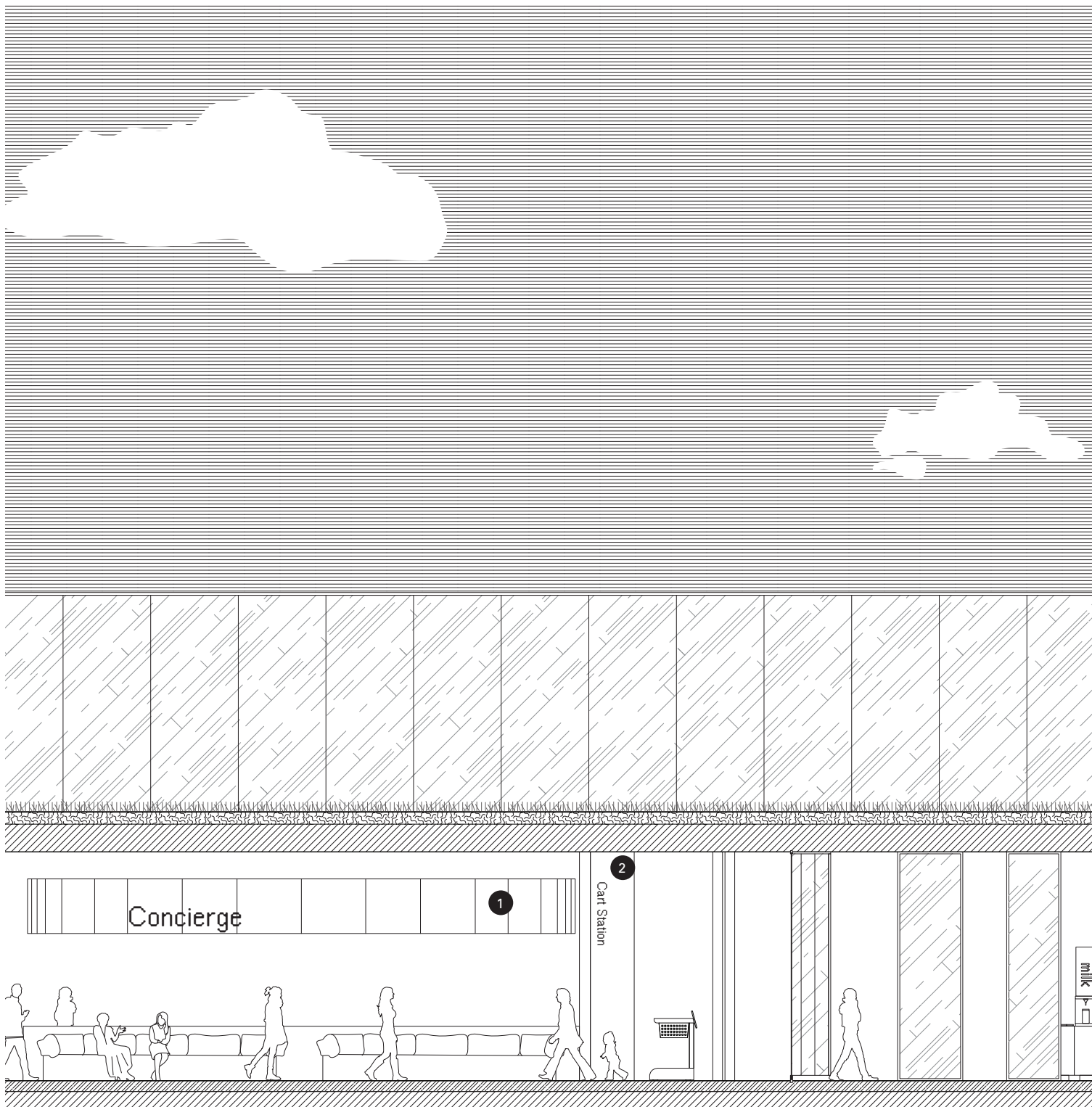


The dynamic robotic movements allow for the reconfiguration of the supermarket shelves in reaction to seasonality and specialties, rendering a

unique shopping experience.



- 1 Concierge
- 2 Pick up points
- 3 Returning point



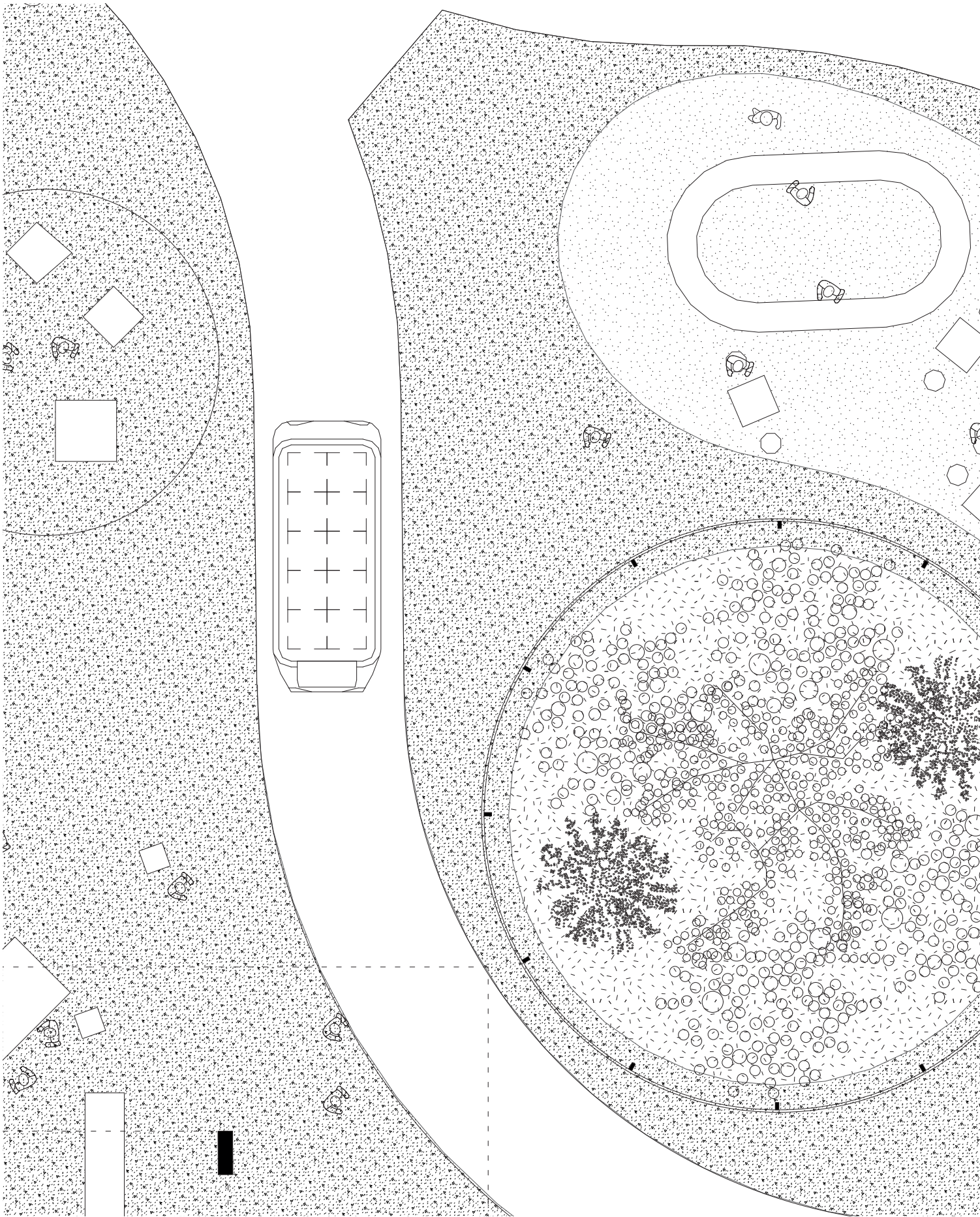
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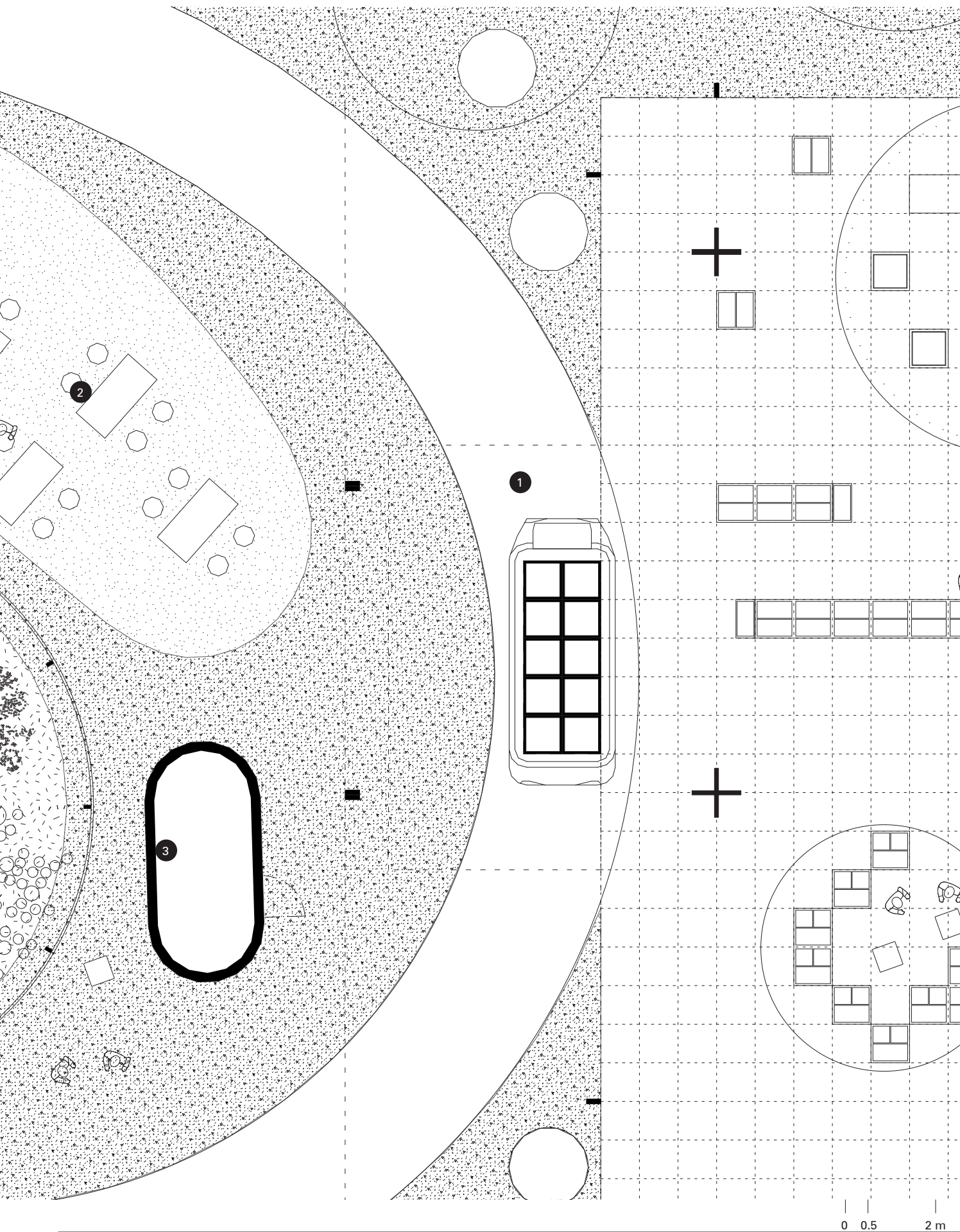


- 1 Host
- 2 Cart station

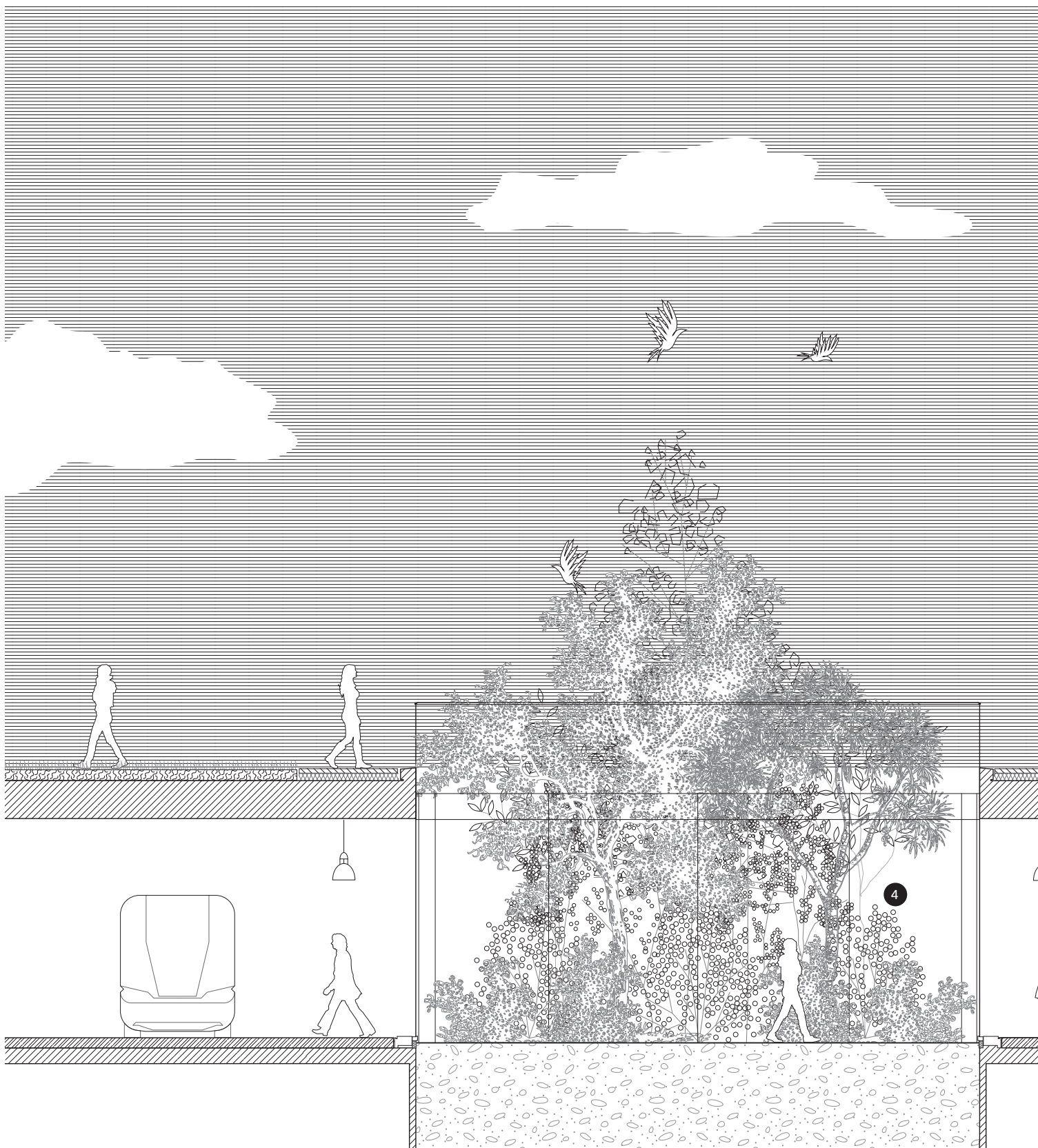




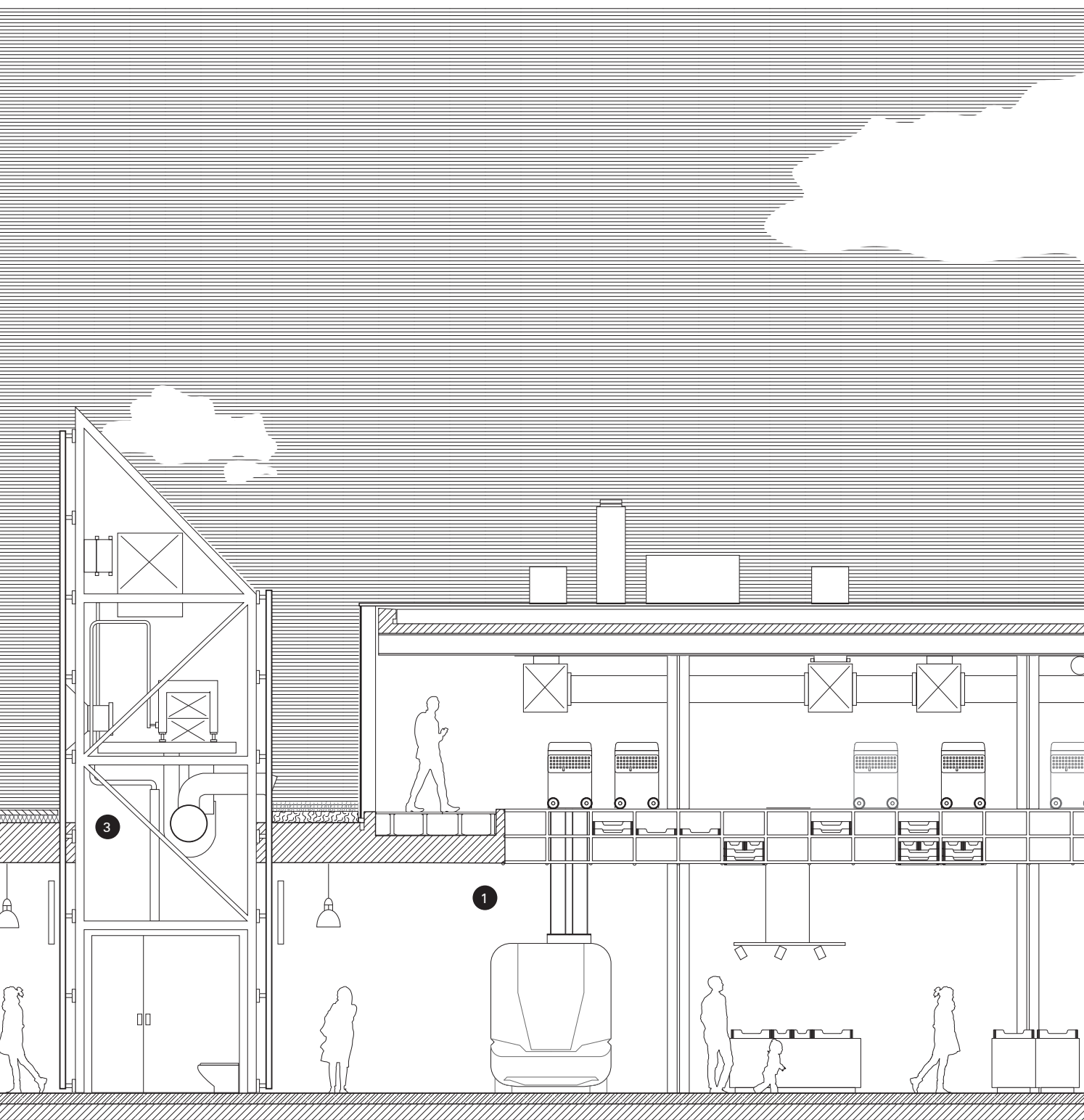
A ritual of loading and unloading is experienced on the sales floor, exposing the supermarket's supply chain to the conscious consumers.



- 1 Loading dock
- 2 Bar
- 3 Structural core and HVAC
- 4 Permaculture

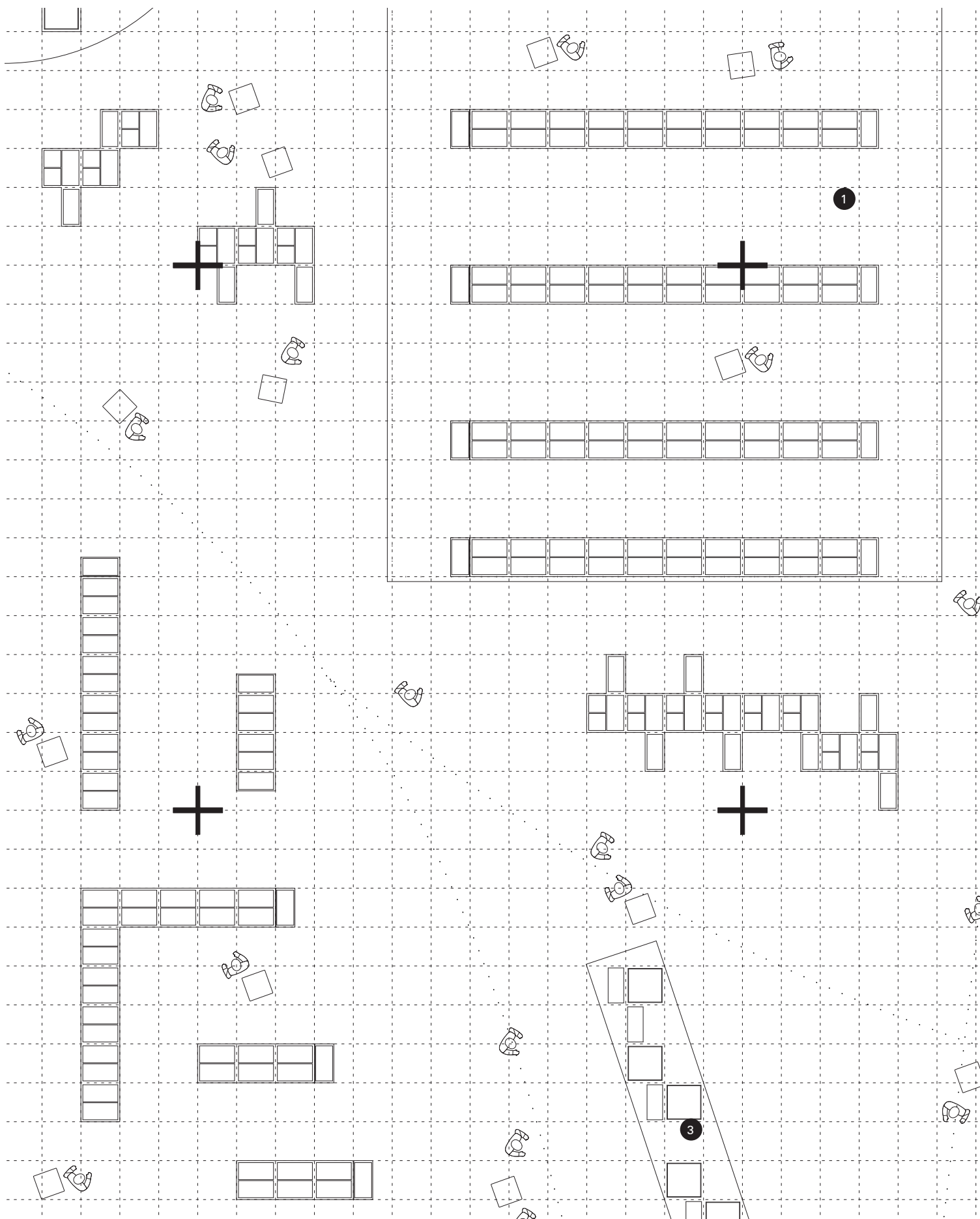


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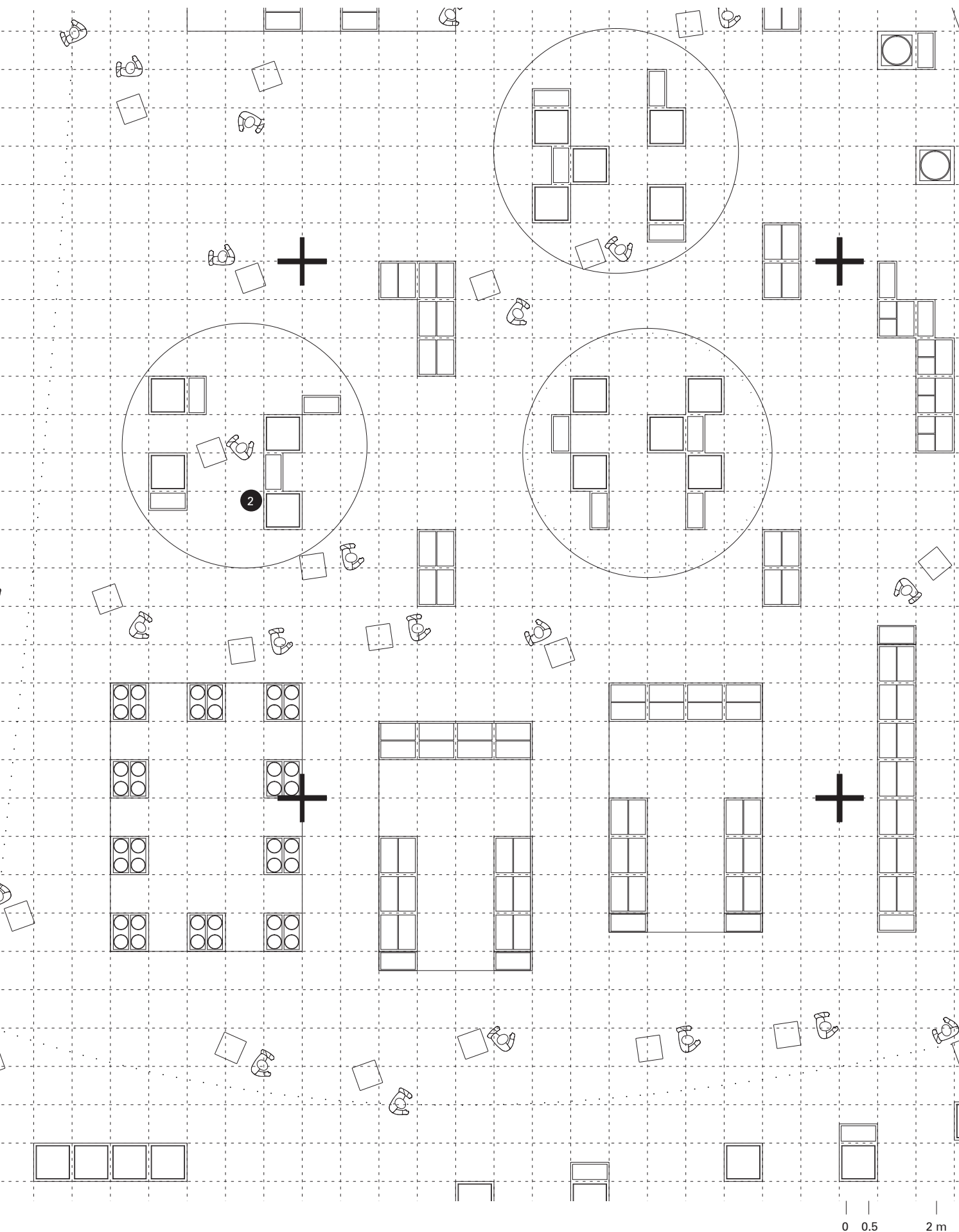
0 0.5 2 m

- 1 Loading dock
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- 3 Structural core and HVAC
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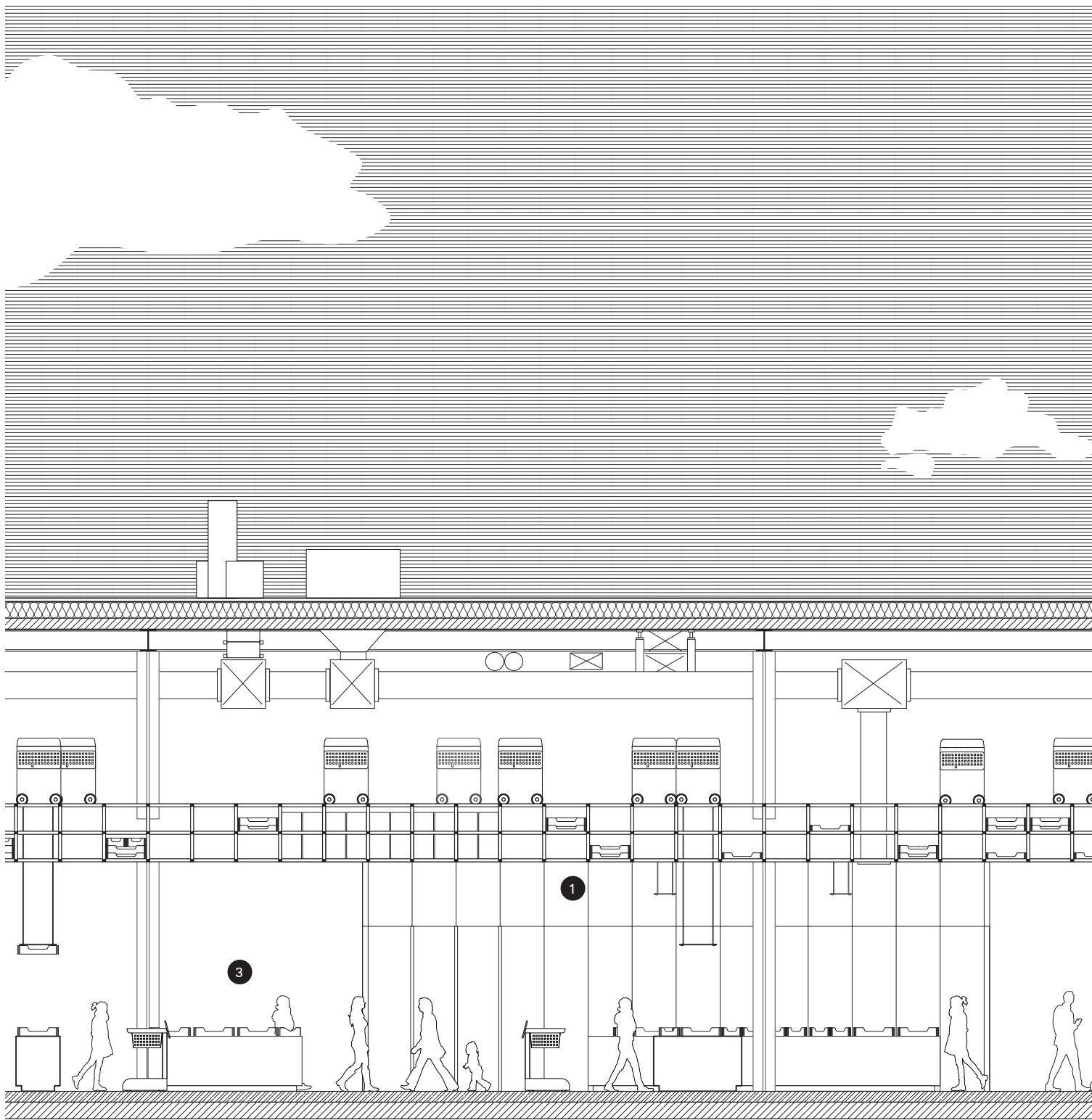
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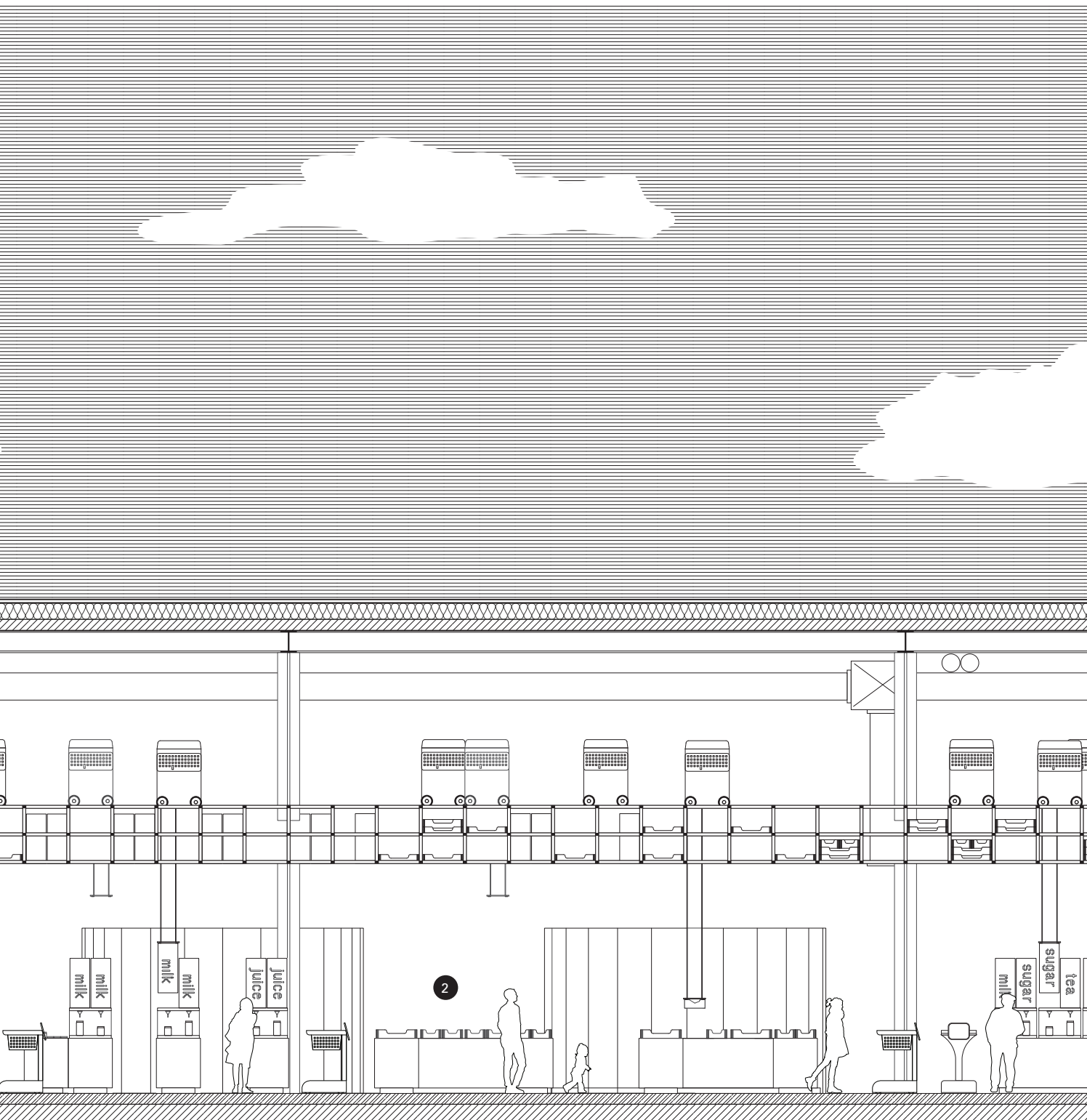
- 1 Refrigerated room
- 2 Seasonal products
- 3 Bonus





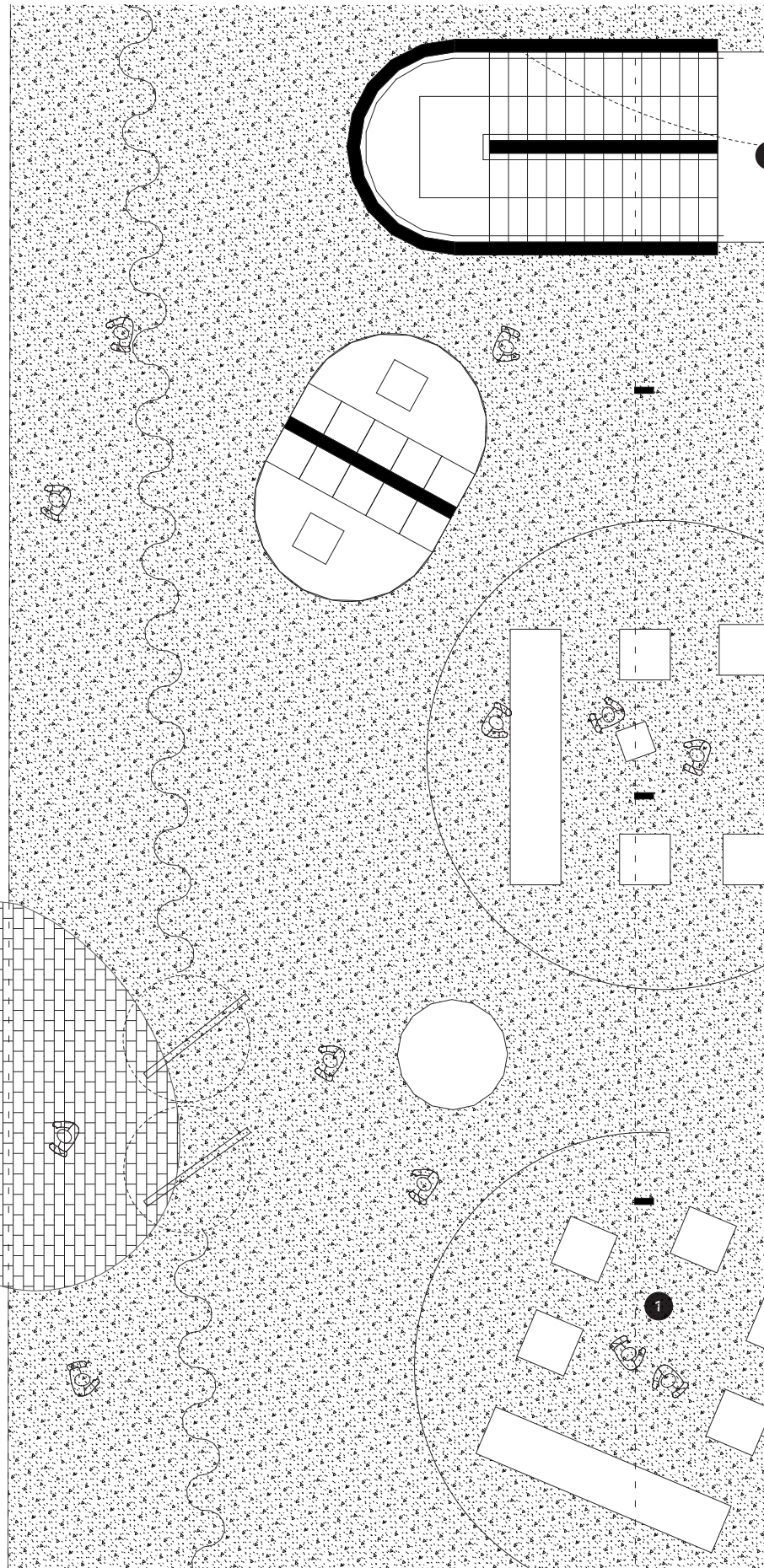
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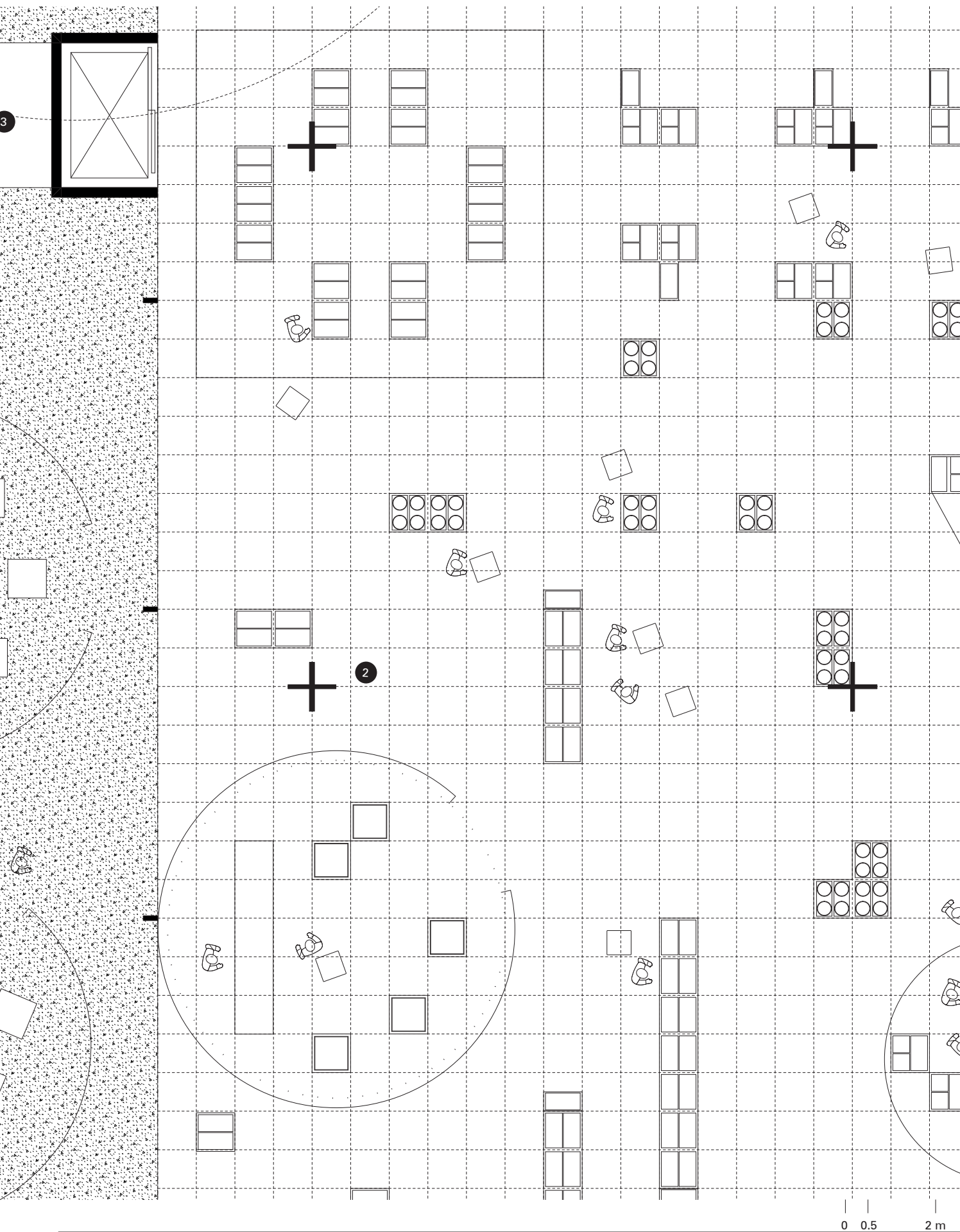


0 0.5 2 m

- 1 Refrigerated room
- 2 Seasonal products
- 3 Bonus



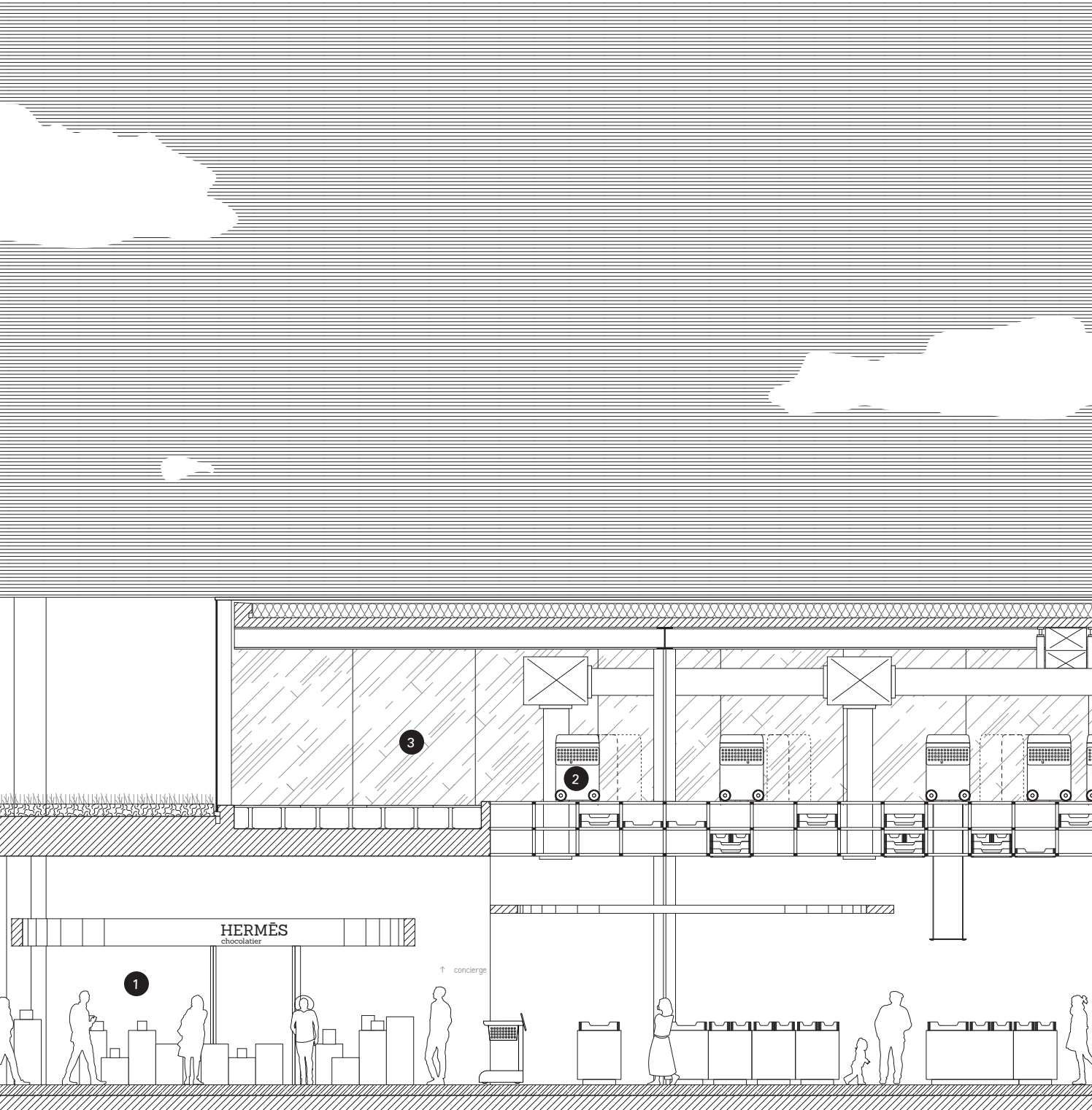
Independent areas are defined for peripheral store-in-stores, promoting collaborations with exclusive brands and local entrepreneurs.



- 1 Shop-in-shop
- 2 Sales floor
- 3 Vertical core
- 4 Loading dock

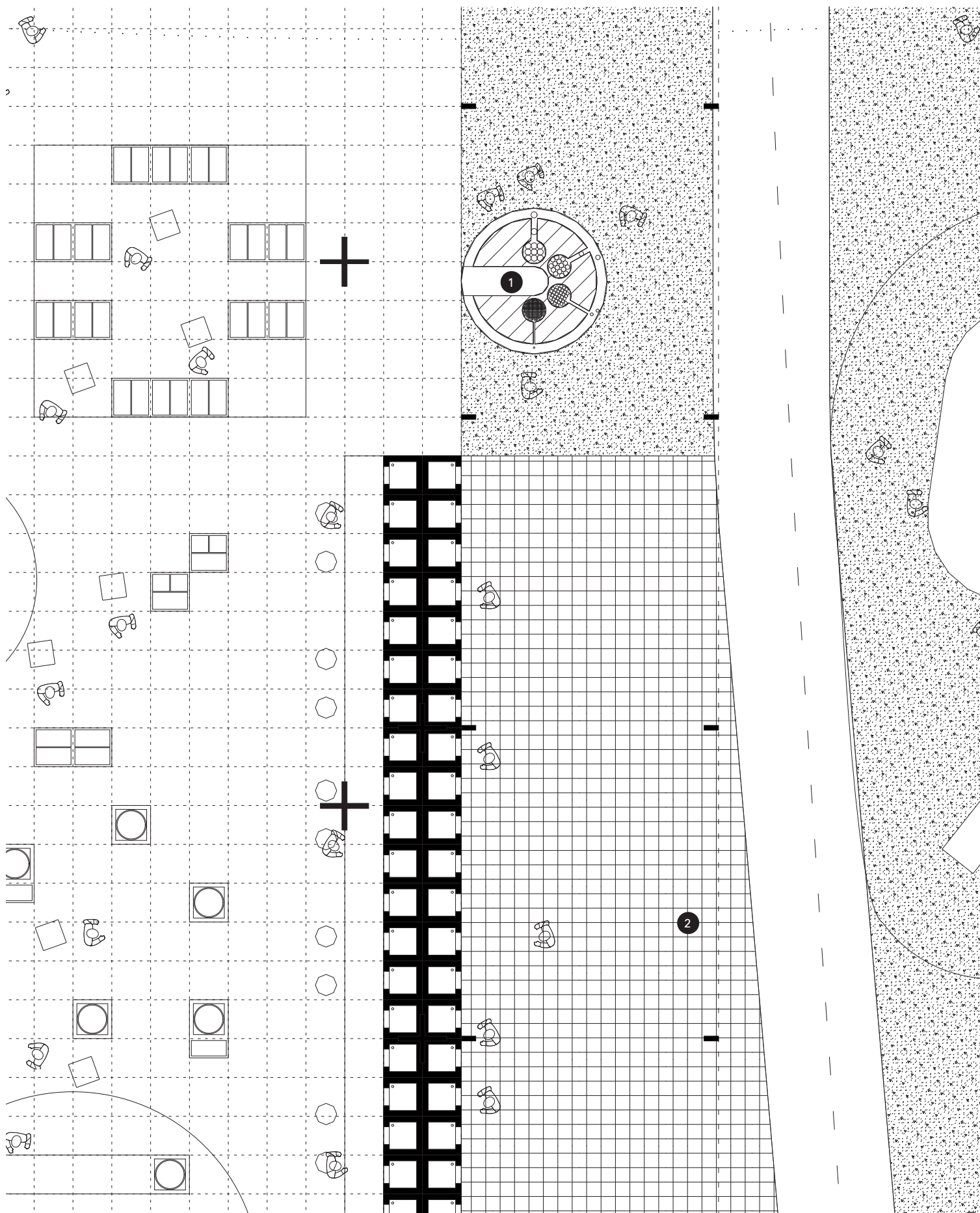


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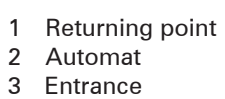
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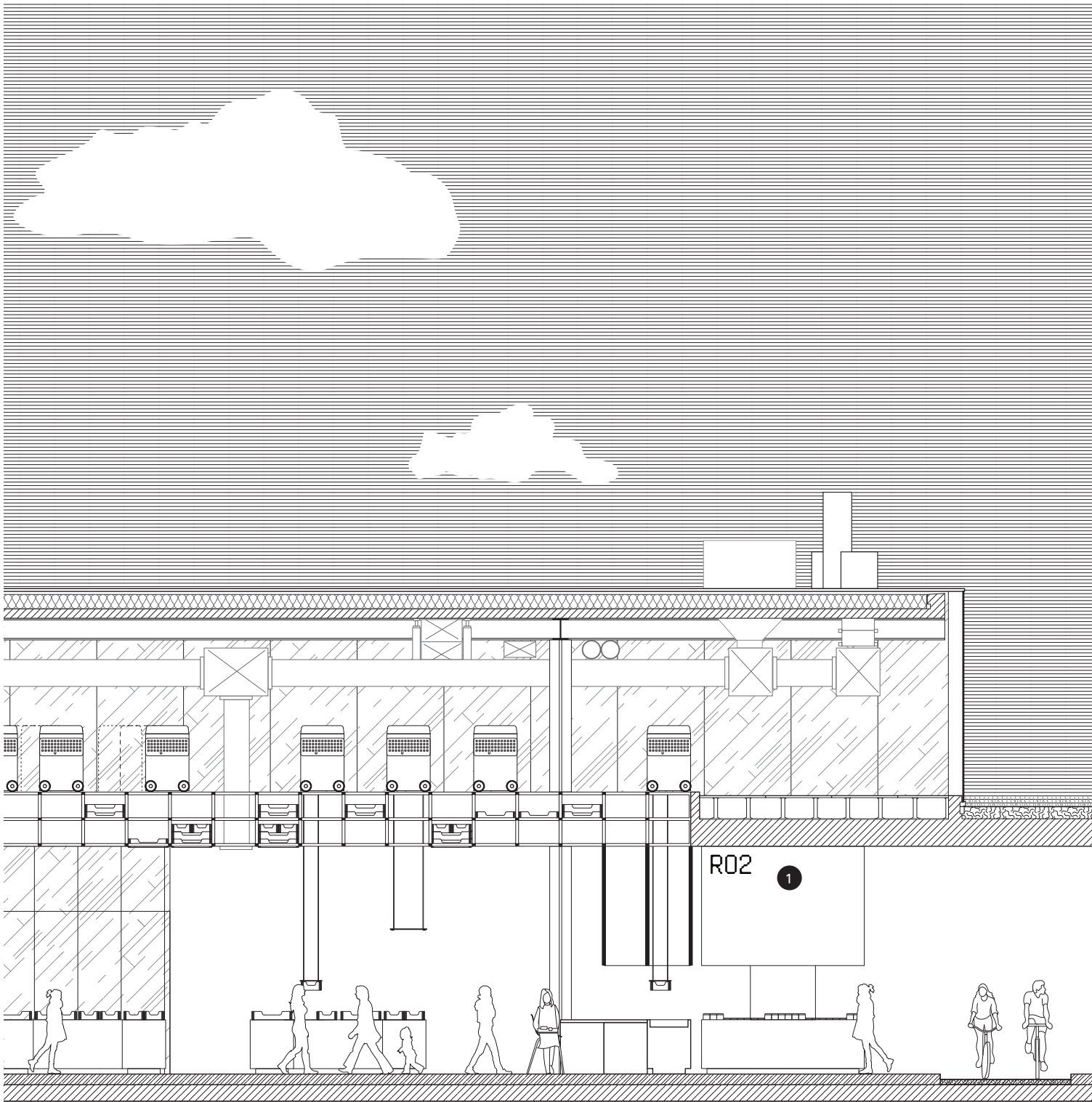




Designated slow-paced zones with product demonstrations, workshops, and exclusive shops are developed around the periphery of the

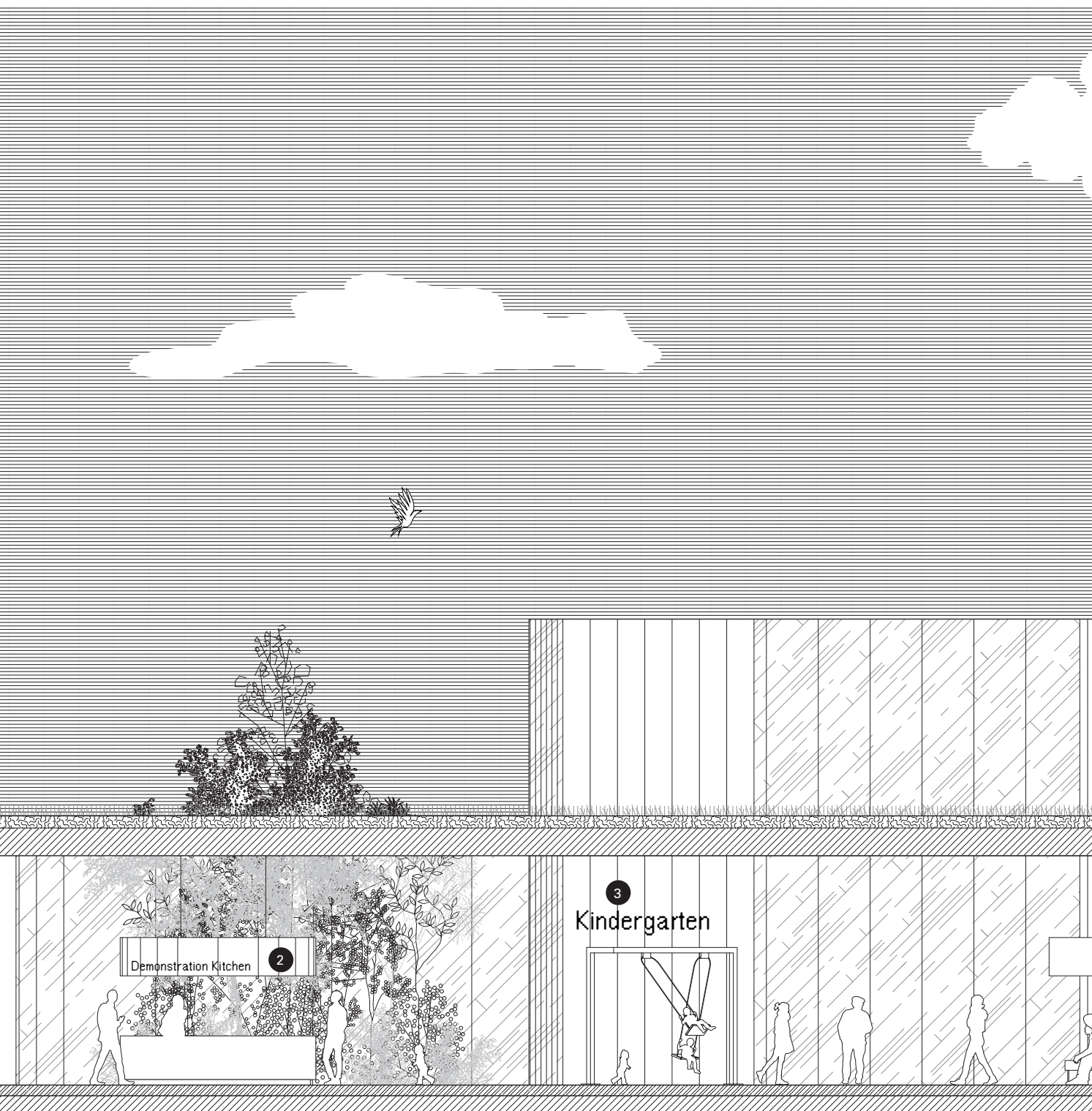
supermarket sales floor, in juxtaposition with fast-paced pick-up zones along the bike pathway to promote cyclists, delivery, and e-commerce.



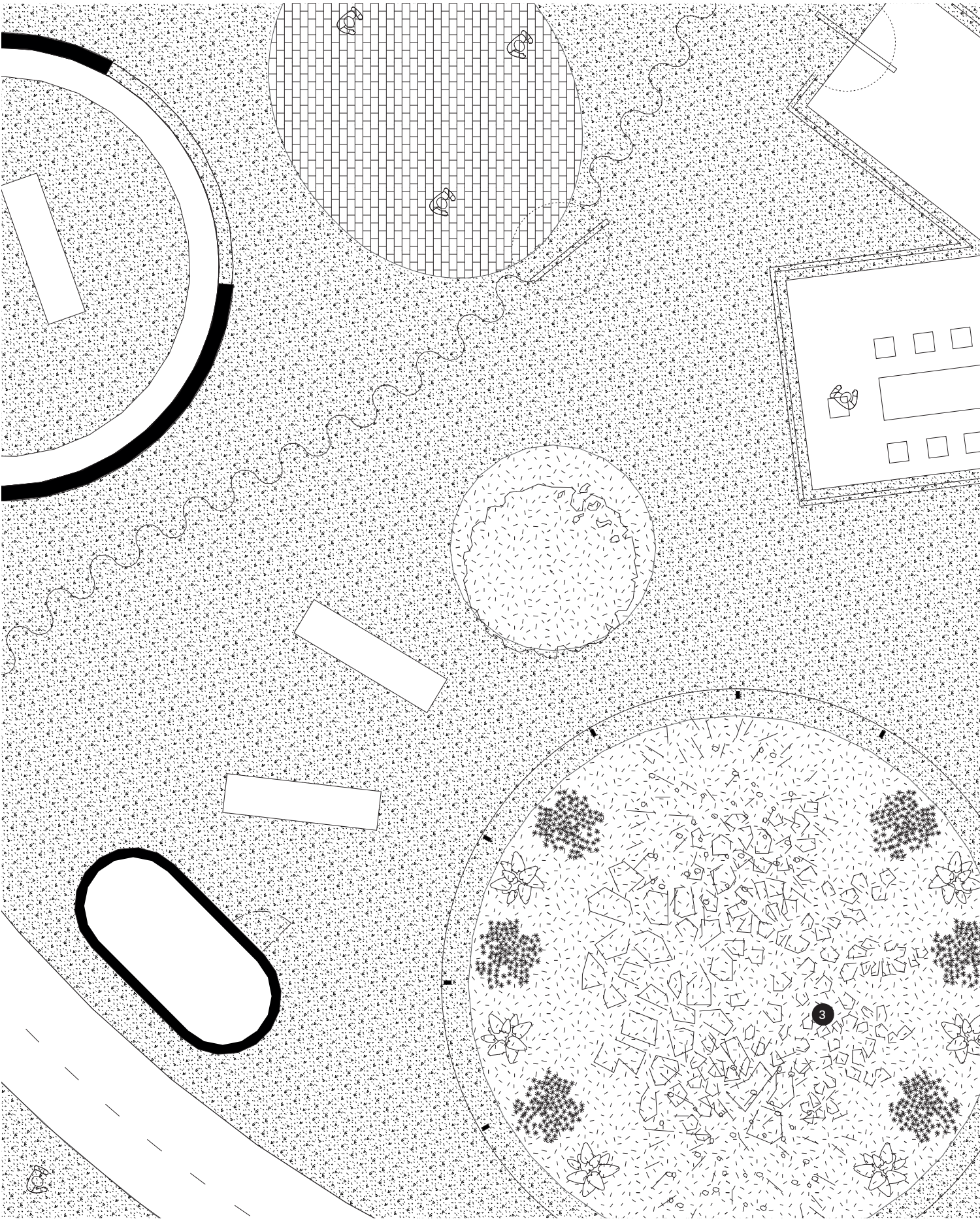


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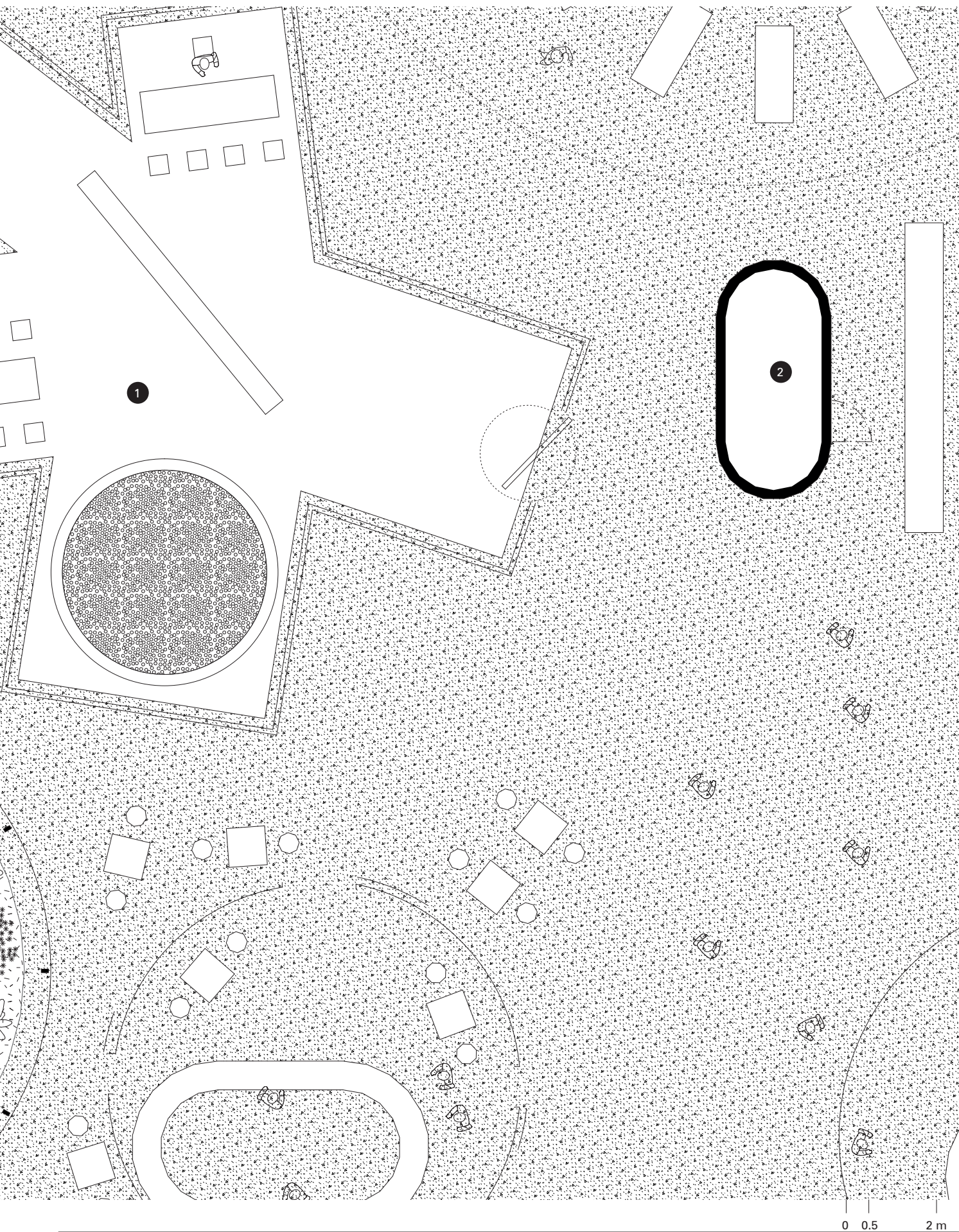


- 1 Returning point
- 2 Automat
- 3 Entrance



Public green zones are incorporated amidst the sales floor to entice the consumers to spend more time inside,

while also providing a green roofscape for the neighborhood.



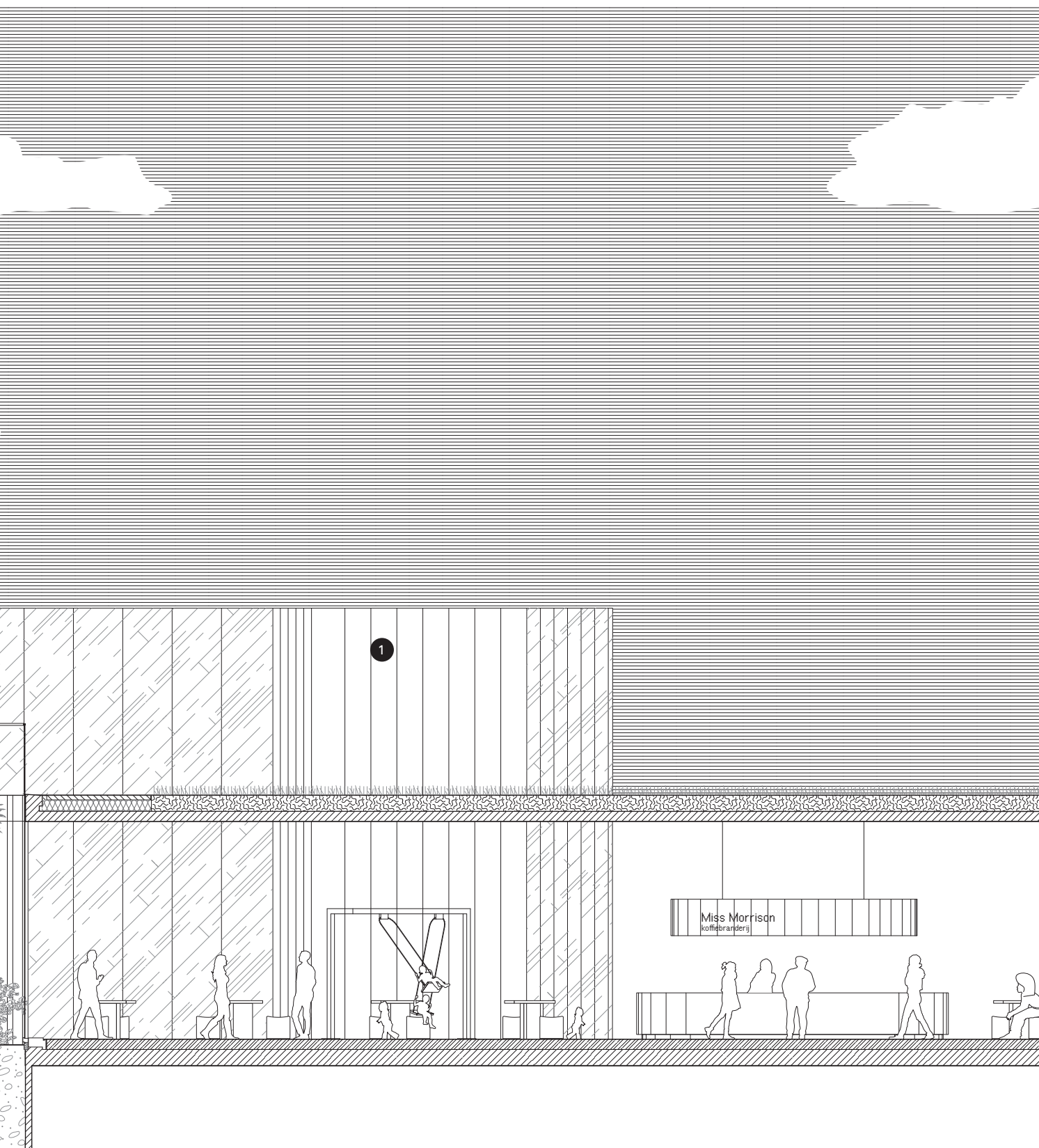
- 1 Kindergarten
- 2 Structural core, toilets, HVAC
- 3 Public green areas





Public green zones are incorporated amidst the sales floor to entice the consumers to spend more time inside,

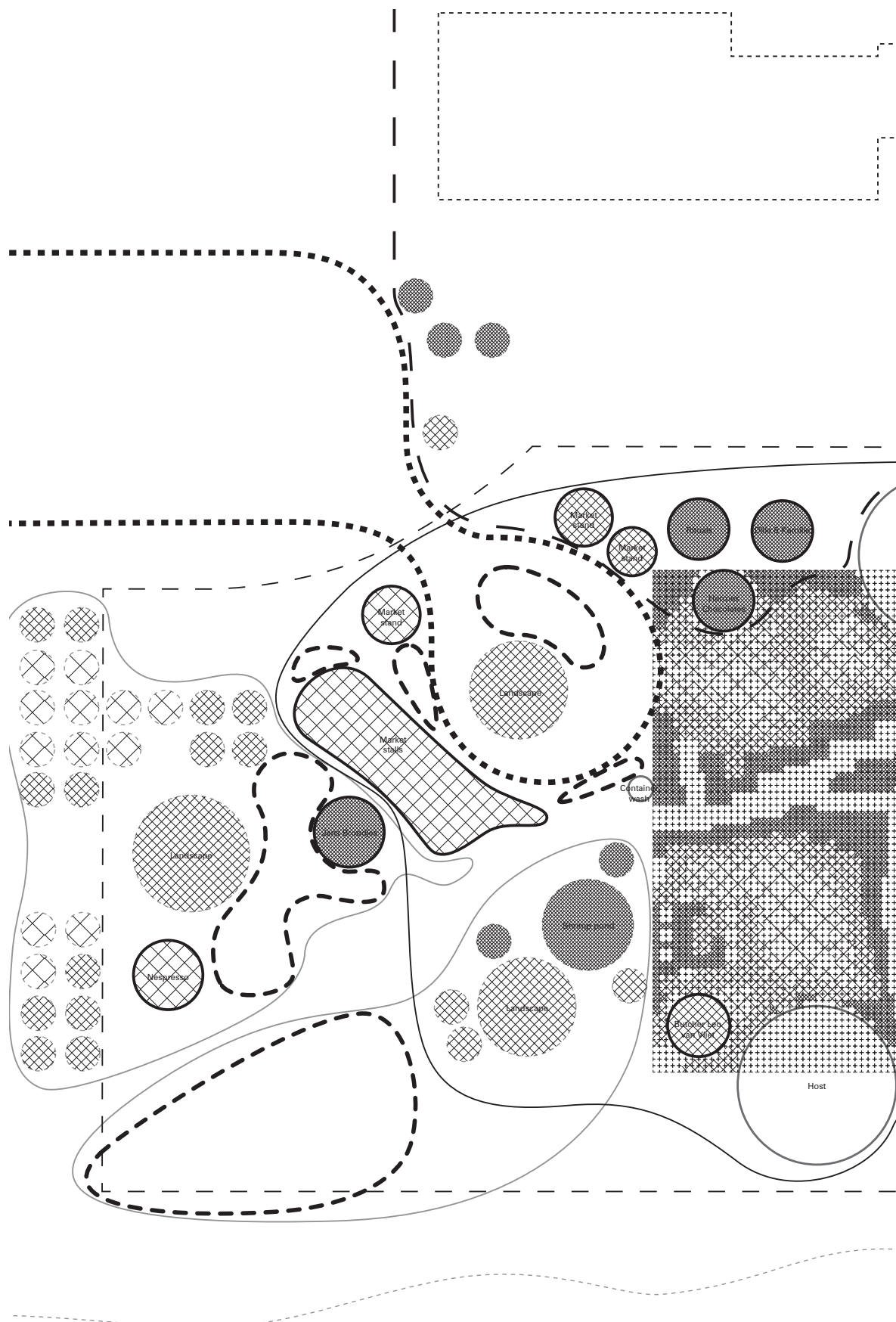
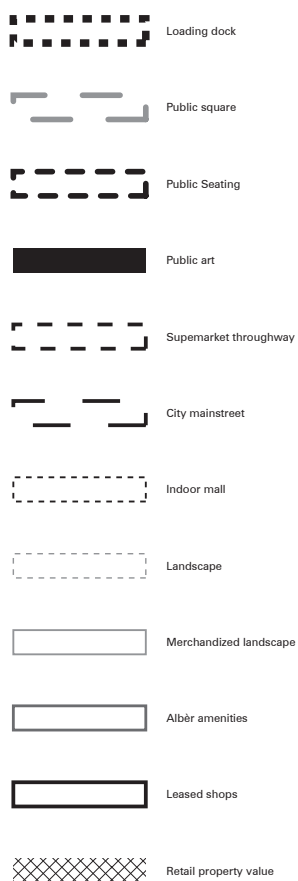
while also providing a green roofscape for the neighborhood.



0 0.5 2 m

- 1 Kindergarten
- 2 Structural core, toilet, HVAC
- 3 Public green areas

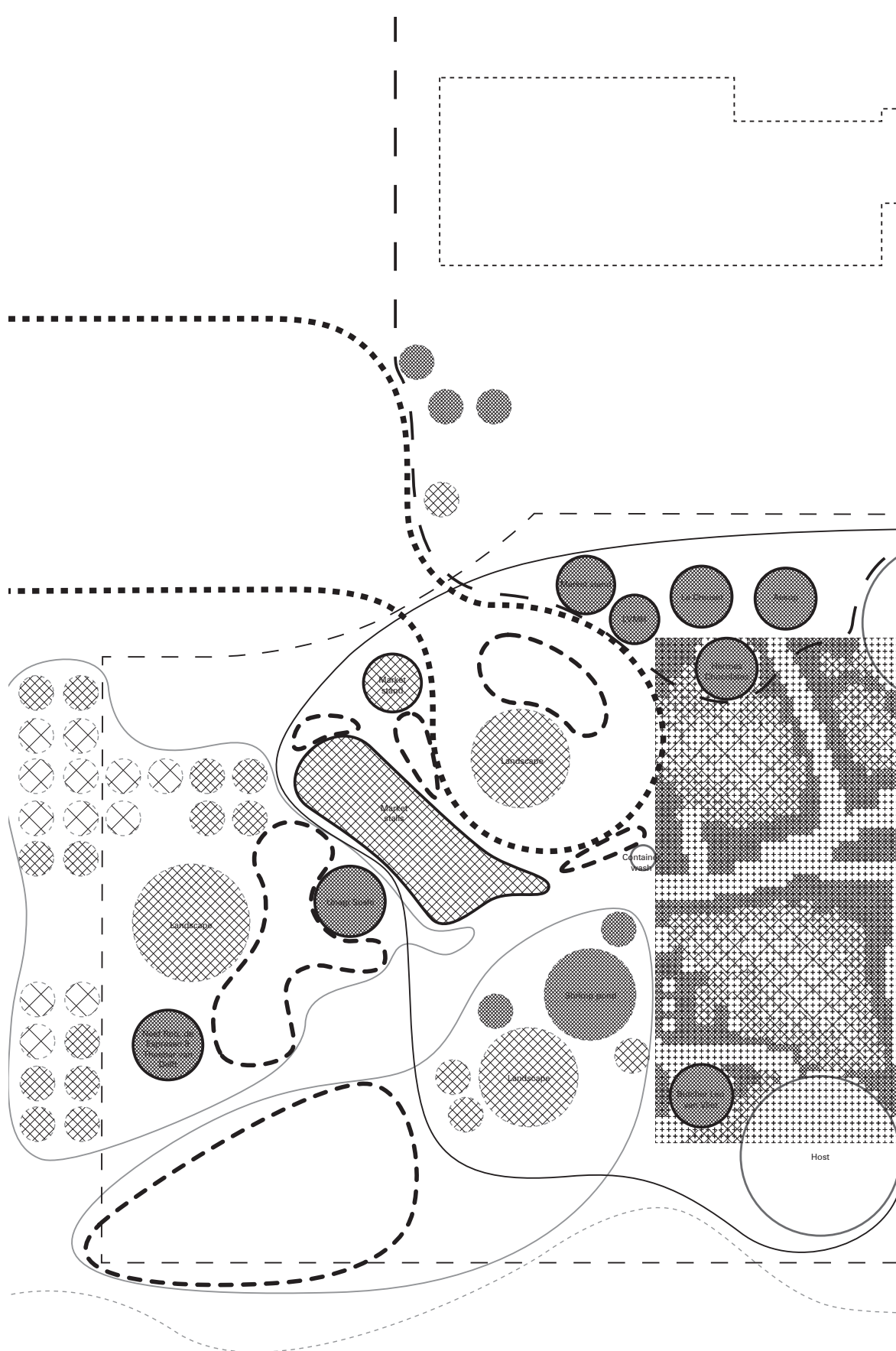
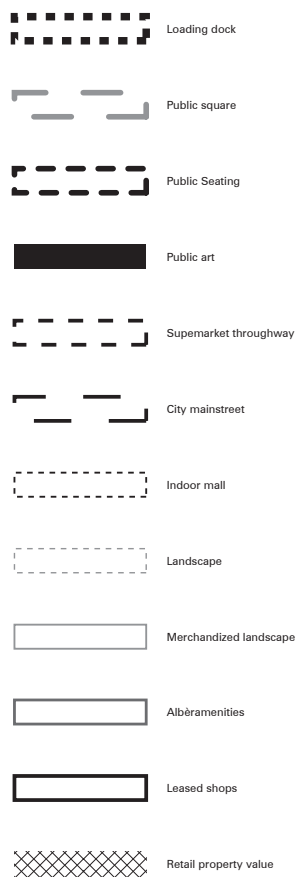
2030



From bulks to fresh produce crates, standardized shelving systems within the open plan generate new episodic formats of planograms. No longer

vertical and detached from each other, the new planograms dictate the dynamic floor plan.

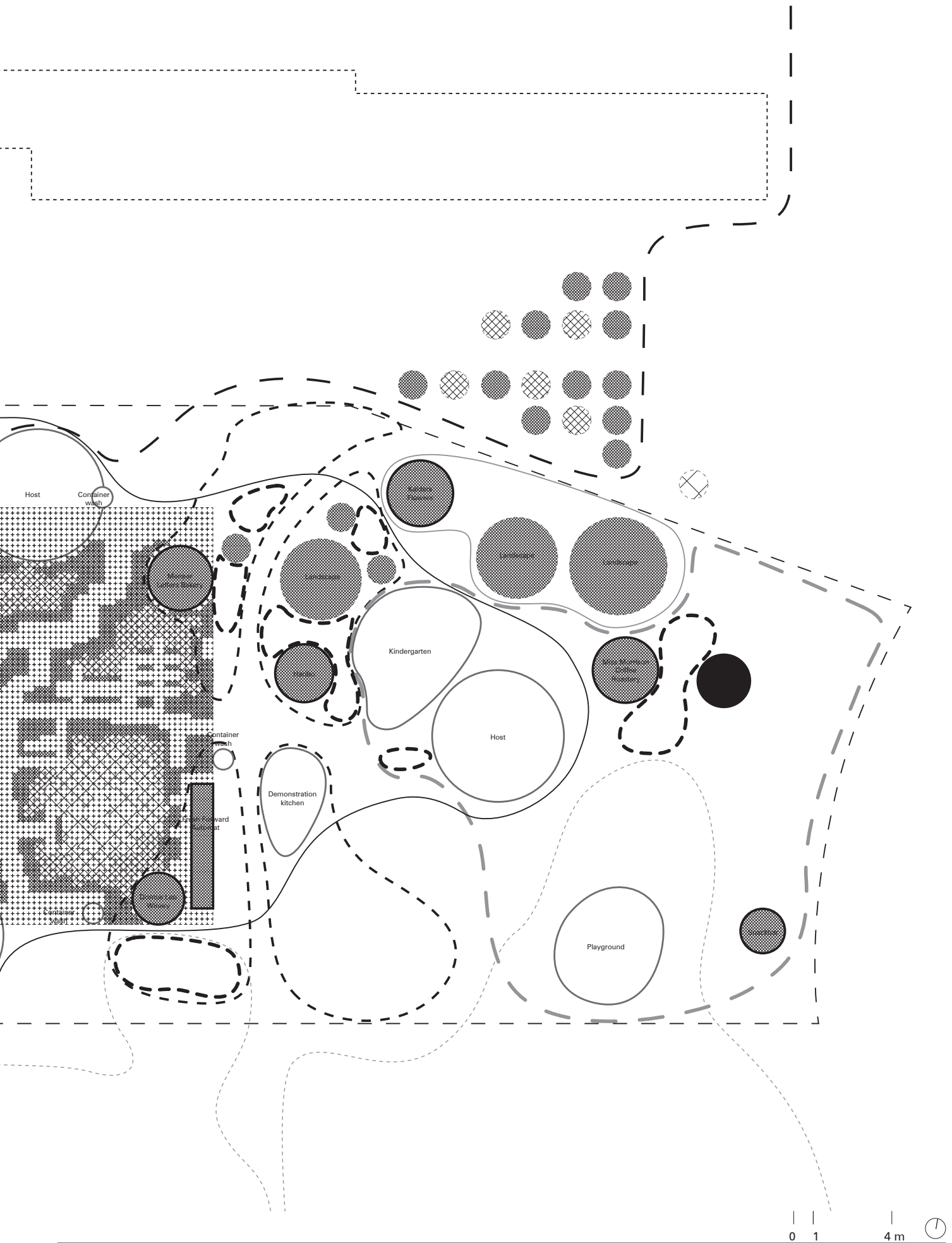




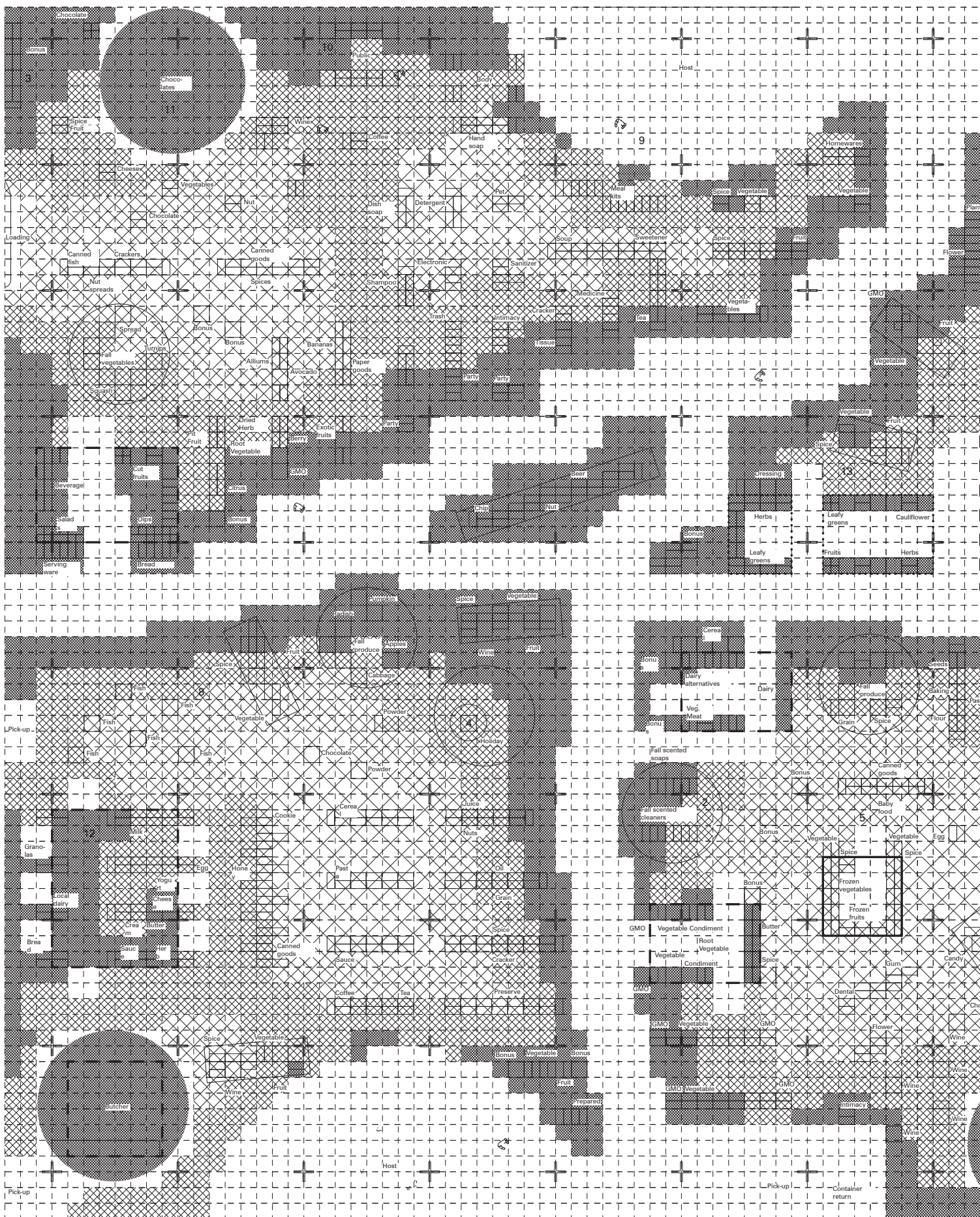
From bulks to fresh produce crates, standardized shelving systems within the open plan generate new episodic formats of planograms. No longer

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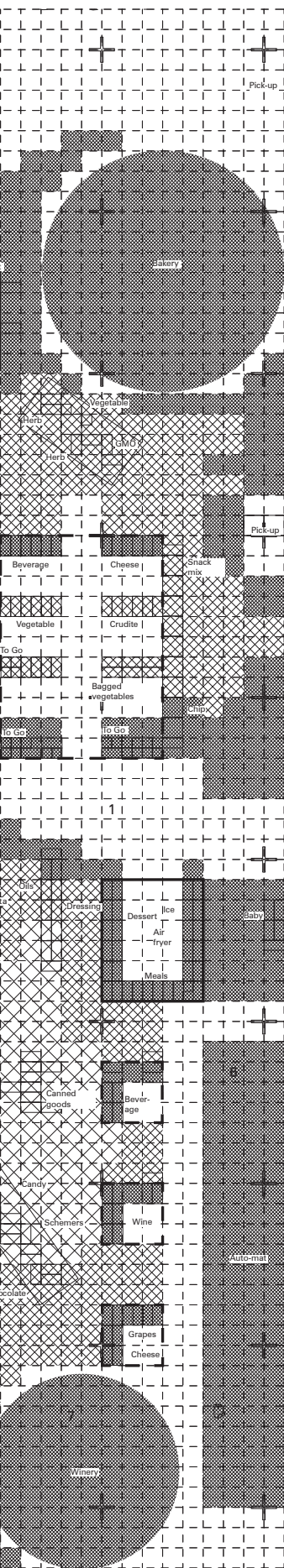




The supermarket sales floor as a real estate platform reveals business strategies in order to generate profit. Albèrt's business approach offers a

wide range of products through a binary financial model that incorporates all Albèrt products within the efficient automated grid system, while real

estate strategies—such as store-within-a-store—for branded products remain exclusively and independently staged.



Retail property value



Walk-in refrigeration



Misted refrigeration

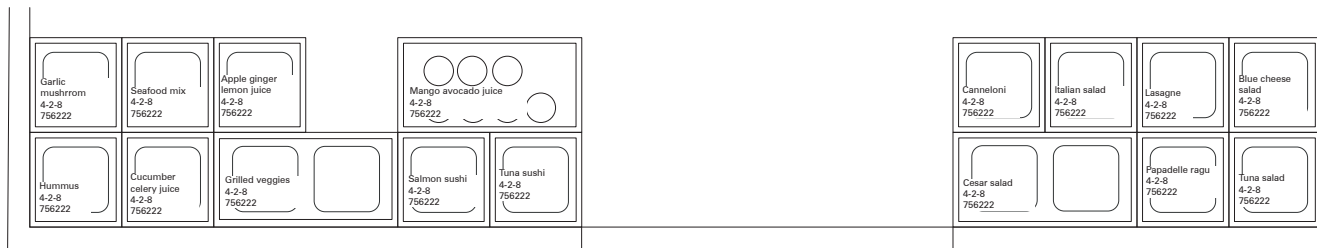


Freezer

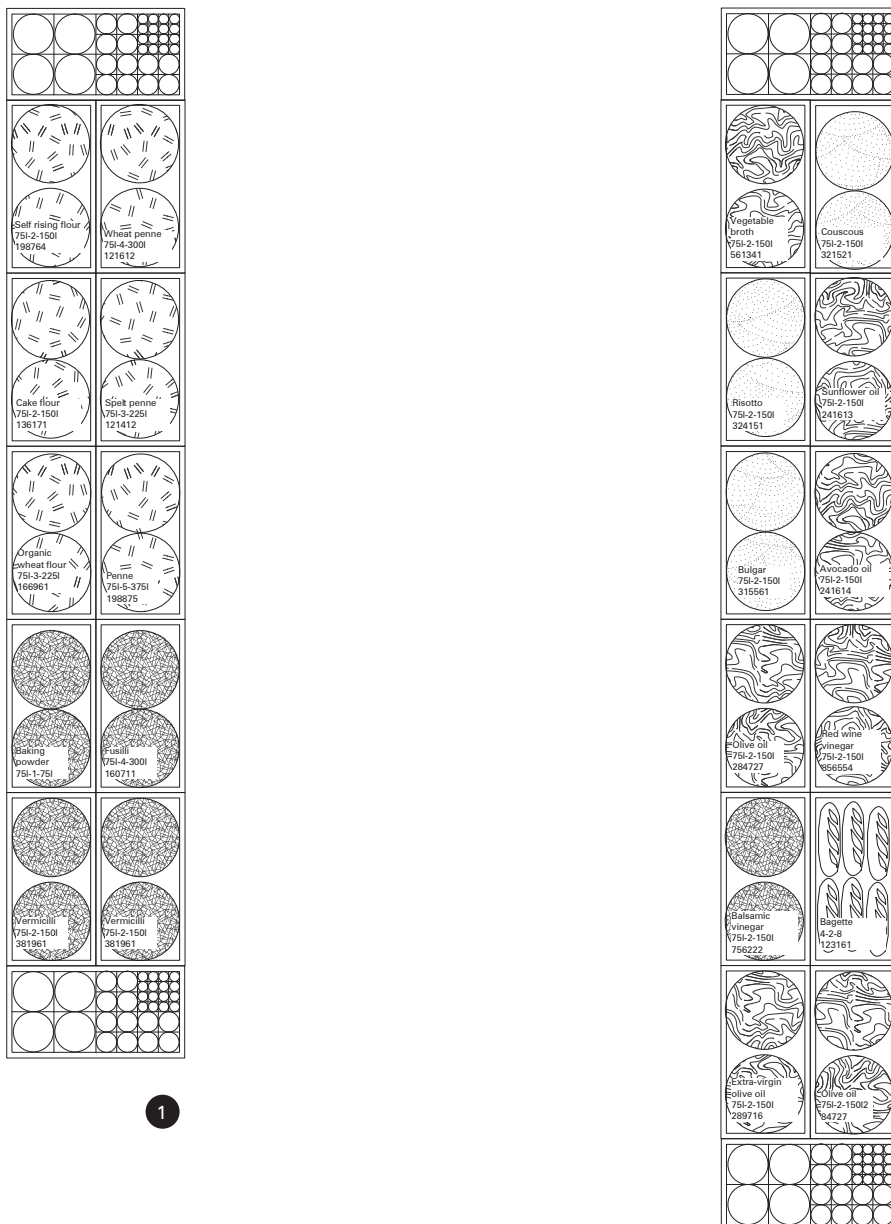


PRODUCT NAME (XXXX)  
UNITS IN CONTAINER - CONTAINERS IN STORE - UNITS IN STORE (#-#-#)  
PRODUCT CODE (#####)

0 1 4 m



Path



Holiday

Path

From bulks to fresh produce crates, standardized shelving systems within the open plan generate new episodic formats of planograms. No longer

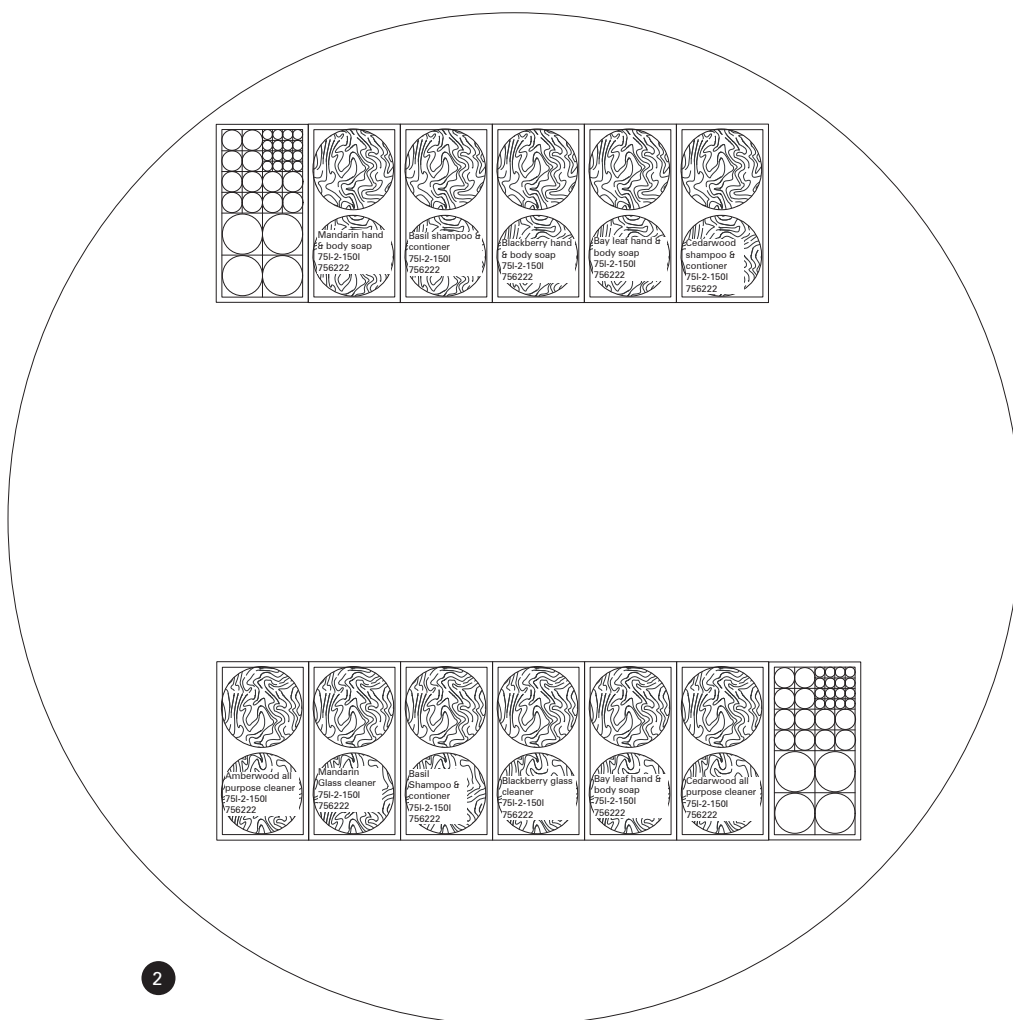
vertical and detached from each other, the new planograms dictate the dynamic floor plan.

Beetroot stew 4-2-8 756222	Chicory apple salad 4-2-8 756222
Farmer salad 4-2-8 756222	Veg curry 4-2-8 756222

Pick-up

Seating

Bike path



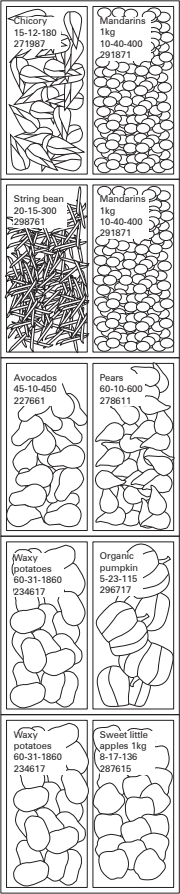
0 200 1000 mm

- 1 Bike path convenience
- 2 Fall scented cleaners

Saturday market stall

Path

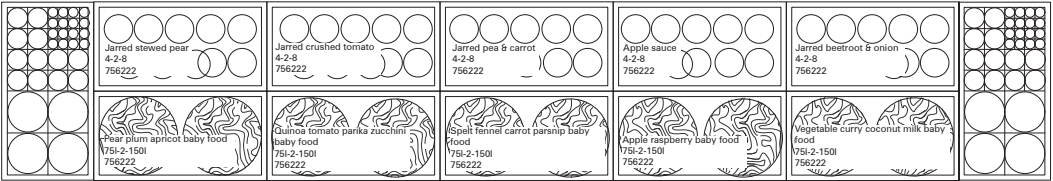
Saturday market stall



Loading dock

3

Fall produce



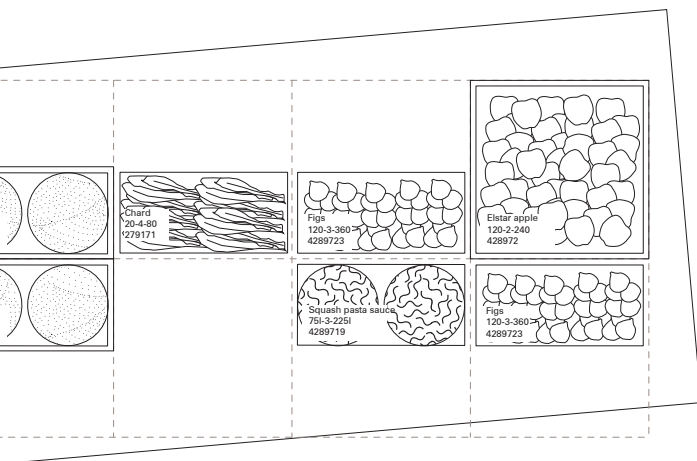
5

Frozen produce

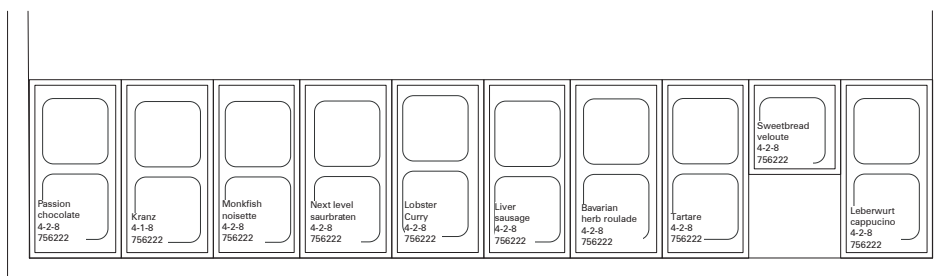
From bulks to fresh produce crates, standardized shelving systems within the open plan generate new episodic formats of planograms. No longer

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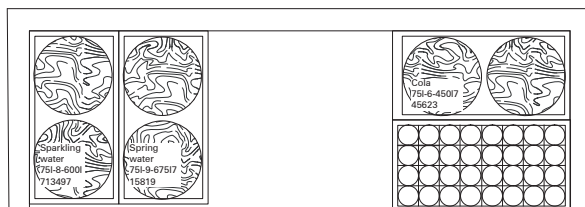




Path



Fresh forward automat



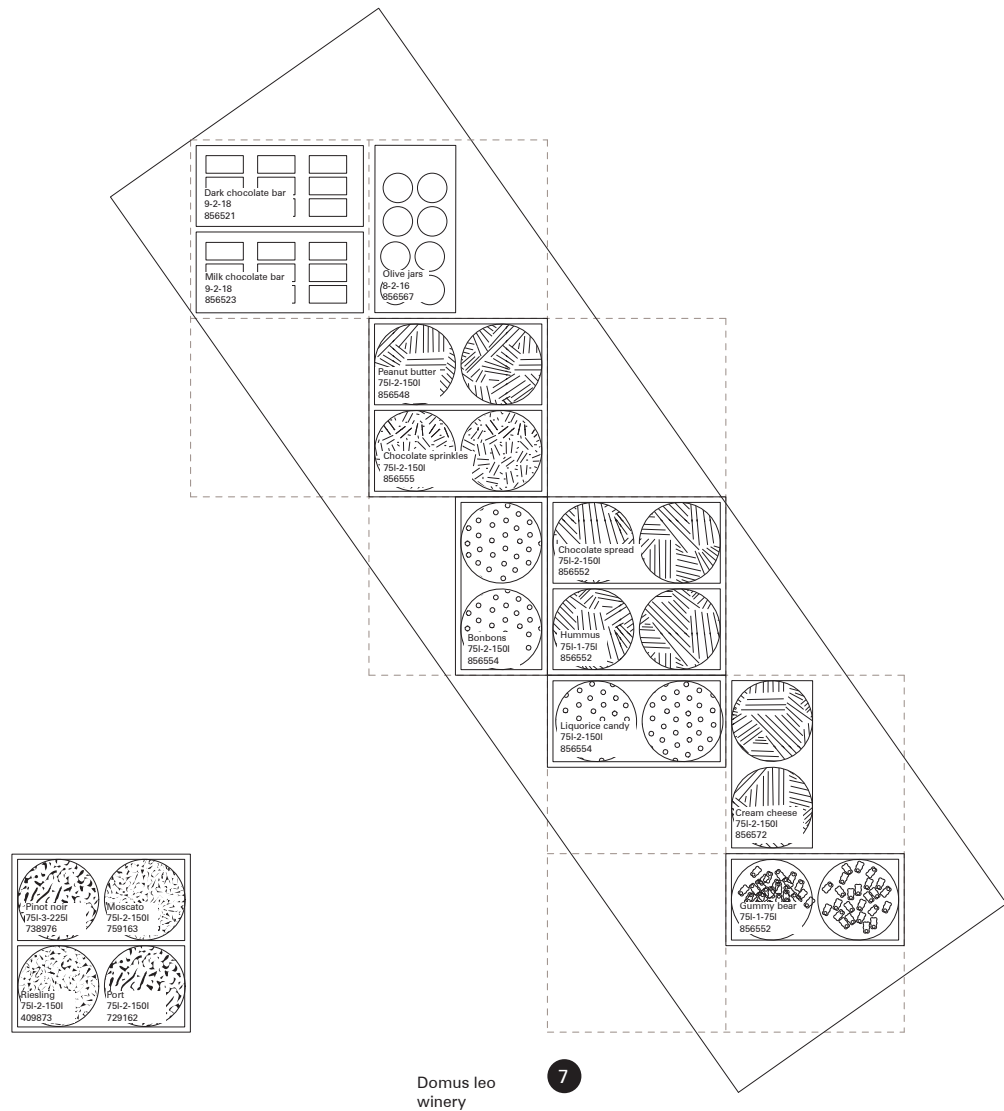
Seating

6

0 200 1000 mm

- 3 Saturday market aisles
- 4 Holyberry merchandising
- 5 Baby products and pantry
- 6 Automat merchandising

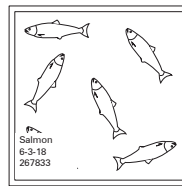
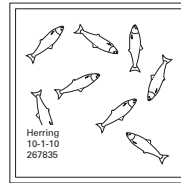




From bulks to fresh produce crates, standardized shelving systems within the open plan generate new episodic formats of planograms. No longer

vertical and detached from each other, the new planograms dictate the dynamic floor plan.

Shrimp pond

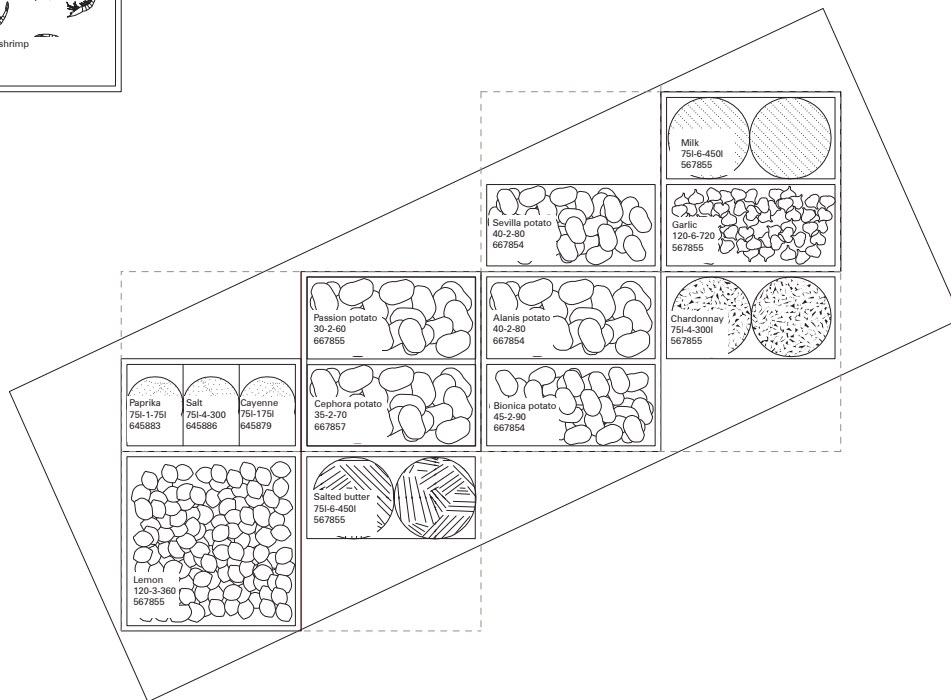


Path



8

Dairy



0 200 1000 mm

- 7 Wine merchandising
- 8 Fishmonger merchandising

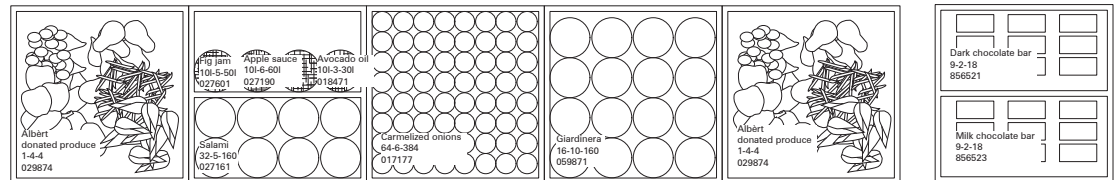
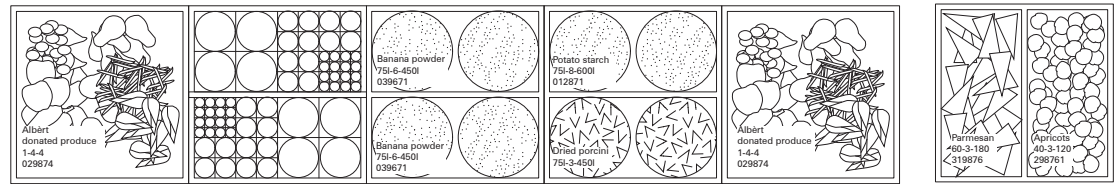
Main street

Entrance

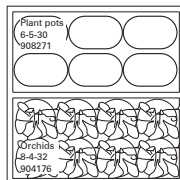
Le creuset

Aesop

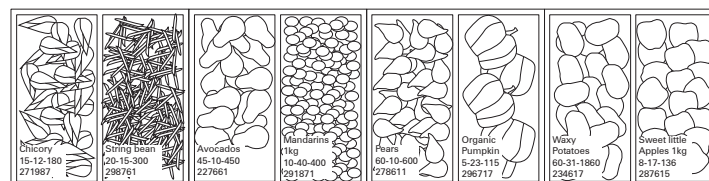
Hermès chocolate



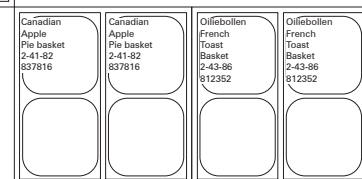
10



Host



9

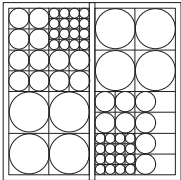
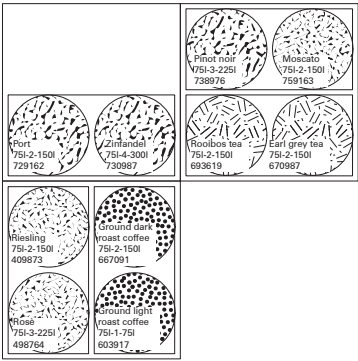
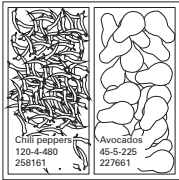


From bulks to fresh produce crates, standardized shelving systems within the open plan generate new episodic formats of planograms. No longer

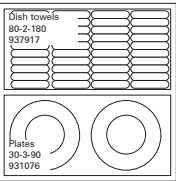
vertical and detached from each other, the new planograms dictate the dynamic floor plan.

Main street

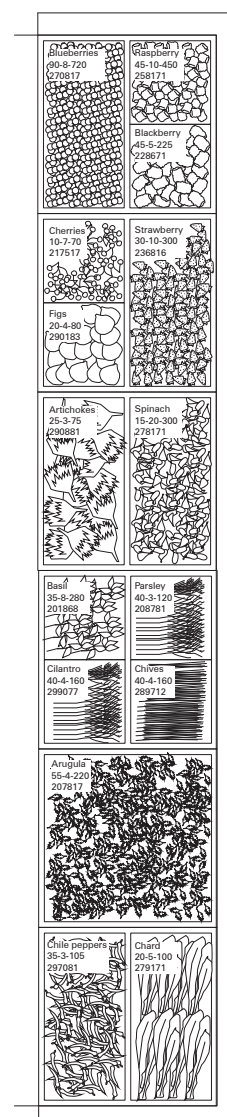
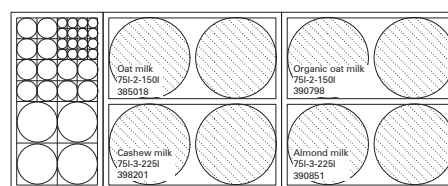
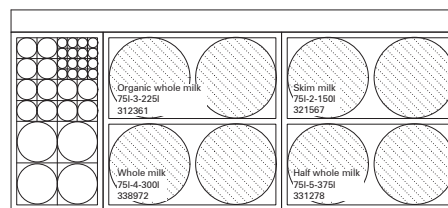
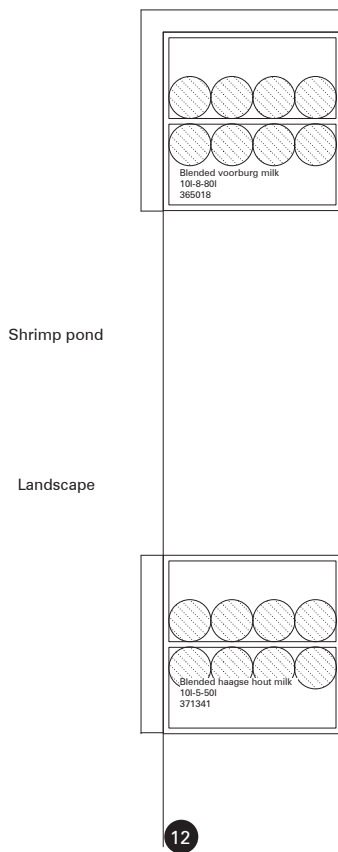
Hermès chocolate



11



0 200 1000 mm



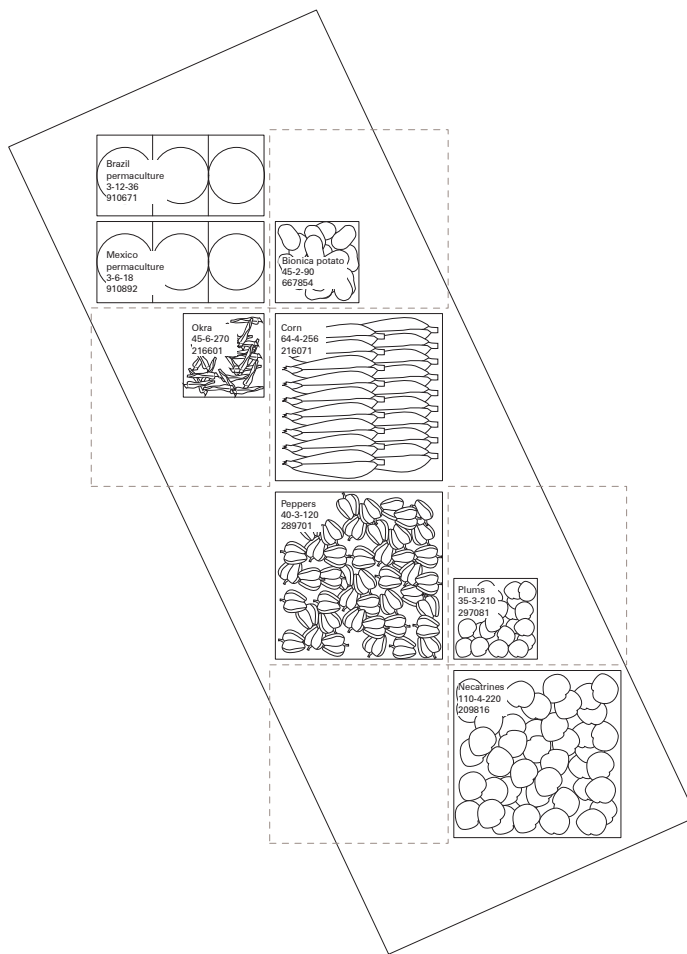
13

From bulks to fresh produce crates, standardized shelving systems within the open plan generate new episodic formats of planograms. No longer

vertical and detached from each other, the new planograms dictate the dynamic floor plan.

Entrance

Path



0 200 1000 mm

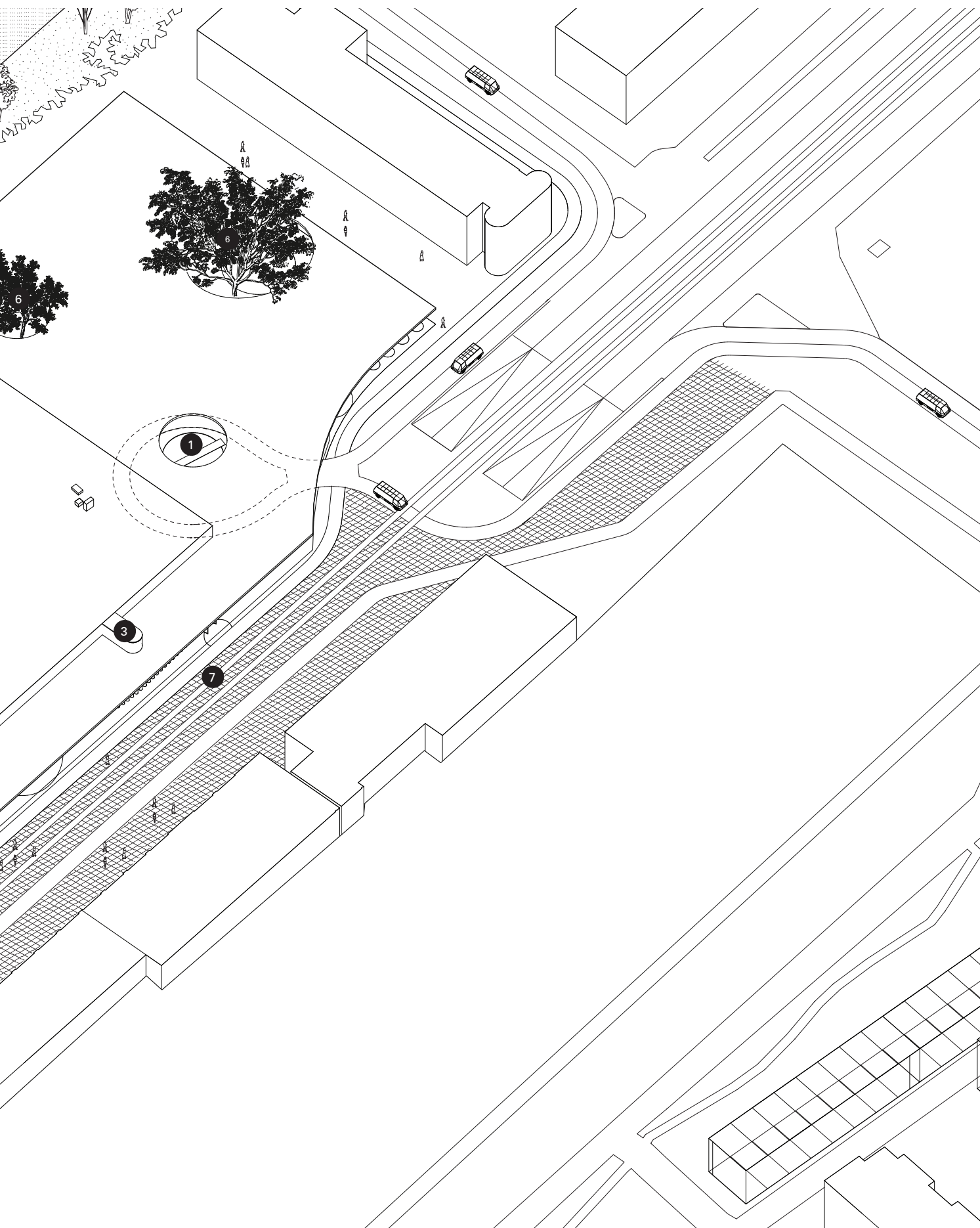
12 Dairy walk-in  
13 Fresh produce display





Amidst a transportation node and a public square, featuring a green roofscape, Albèrt extends its perimeter towards the city and its residents,

establishing a new civic presence.



- 1 Loading
- 2 Automated ceiling
- 3 Vertical core
- 4 Kindergarten

- 5 Sculpture of Albèrt's mascot
- 6 Garden
- 7 Tram







Stills from the walk-through video on the reimagined supermarket of the future, Albèrt.







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Stills from the walk-through video on  
the reimagined supermarket of the  
future, Albèrt.





Stills from the walk-through video on the reimagined supermarket of the future, Albèrt.







Stills from the walk-through video on the reimagined supermarket of the future, Albèrt.







Stills from the walk-through video on the reimagined supermarket of the future, Albèrt.





## Propositions

1 From The Hague to Genoa, the supply chain of the future supermarket will span across the Blue Banana trade corridor, addressing multifaceted aspects of the food industry in the Netherlands and beyond, through the notions of scarcity, trade, inclusivity, sensorialism, tastemaking, craft, reshoring, protectionism, automation, and extinction.

2 The reimagined supermarket—Albèrt—displays both the product and its supply chain for the conscious consumers by integrating the distribution center with an automated Ocado grid system above the supermarket, rendering a completely open sales floor.

3 In an attempt to reduce waste and address sustainability goals, Albèrt operates within a just-in-time production system of non-disposable packaging and dynamic pricing, maintaining small batches of products in the integrated Distribution Center.

4 No longer an enclosed and controlled retail space, the supermarket uses various strategies—such as store-in-a-store rentals for exclusive brands and specialty displays for seasonal products—to create a flexible sales floor in order to maximize profit, operating as a real estate platform.

5 Novel tasting experiences and green public spaces—along with the dynamic robotic movement that diverts human labor towards hospitality and social interaction—blur the boundaries between the supermarket and the city, introducing a new civic presence.









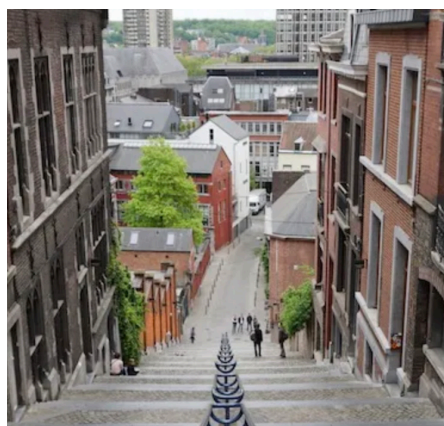




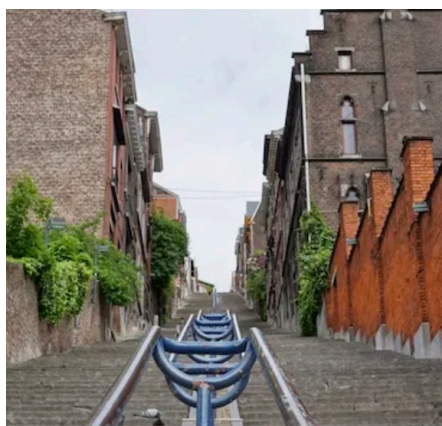
1



4



2



5



3



Liège, part of the Sillon industriel and the former industrial backbone of Wallonia, is still the economic and cultural center of the region, forming

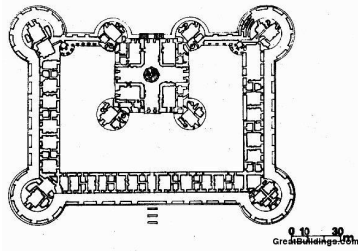
a fertile ground for the urban winery development. Infrastructural elements such as platforms on the river and a funicular cableway for transportation

are added, in order to connect the winery and its products to the waterways.

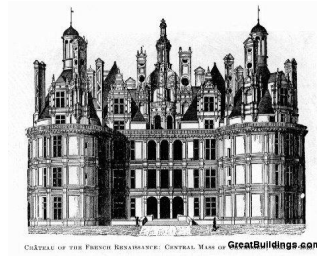




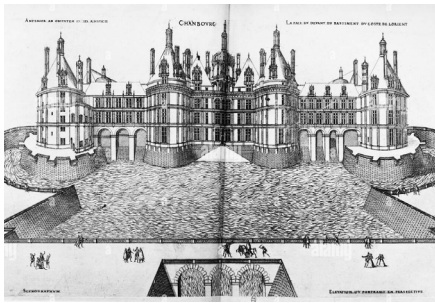




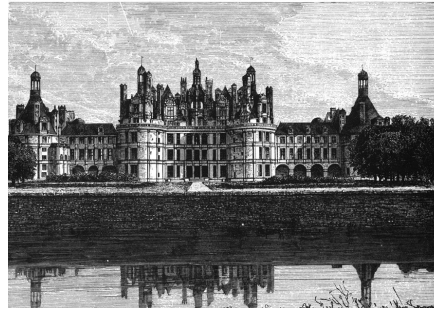
Medieval French Castle drawings and images.  
Château de Foix, Ariege, France.  
Source: [http://www.greatbuildings.com/cgi-bin/gbc-drawing.cgi/Chateau\\_de\\_Chambord.html/cid\\_chambord\\_har283.2.gbd](http://www.greatbuildings.com/cgi-bin/gbc-drawing.cgi/Chateau_de_Chambord.html/cid_chambord_har283.2.gbd)



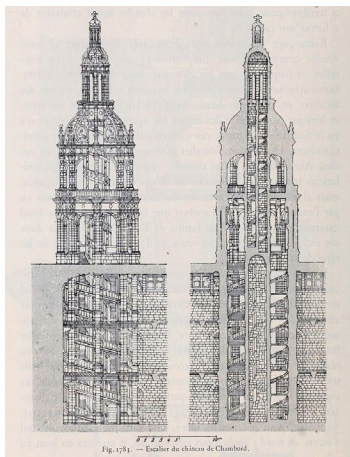
Medieval French Castle drawings and images.  
Château de Foix, Ariege, France.  
Source: [http://www.greatbuildings.com/cgi-bin/gbc-drawing.cgi/Chateau\\_de\\_Chambord.html/cid\\_chambord\\_har283.2.gbd](http://www.greatbuildings.com/cgi-bin/gbc-drawing.cgi/Chateau_de_Chambord.html/cid_chambord_har283.2.gbd)



Elevation of the Chateau de Chambord in the Loire Valley, drawn by one of its architects, Androuet du Cerceau, 16th century.  
Source: <https://www.alamy.com/stock-photo-france-chambordnelevation-of-the-chateau-de-chambord-in-the-loire-95793566.html>  
[http://www.greatbuildings.com/cgi-bin/gbc-drawing.cgi/Chateau\\_de\\_Chambord.html/cid\\_chambord\\_har283.2.gbd](http://www.greatbuildings.com/cgi-bin/gbc-drawing.cgi/Chateau_de_Chambord.html/cid_chambord_har283.2.gbd)

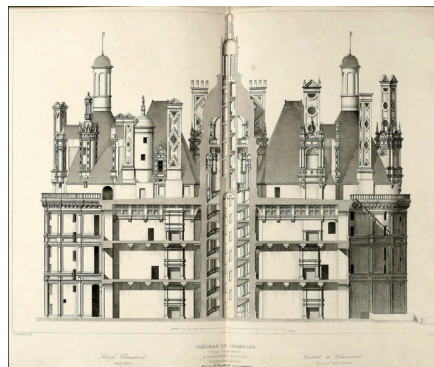


View of Chateau de Chambord and the surrounding territory.  
Source: <https://www.alamy.com/stock-photo-france-chambordnelevation-of-the-chateau-de-chambord-in-the-loire-95793566.html>  
[http://www.greatbuildings.com/cgi-bin/gbc-drawing.cgi/Chateau\\_de\\_Chambord.html/cid\\_chambord\\_har283.2.gbd](http://www.greatbuildings.com/cgi-bin/gbc-drawing.cgi/Chateau_de_Chambord.html/cid_chambord_har283.2.gbd)



Chateau de Chambord.

Source: <https://i.pinimg.com/originals/7d/20/b5/7d20b52cb924af642cf6d3bf7f31bba5.jpg>



Chateau de Chambord Section.

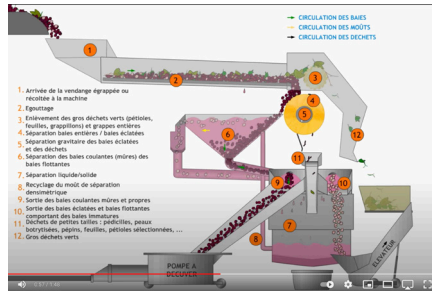
Source: <https://archimaps.tumblr.com/post/178898139662/section-of-the-chateau-de-chambord-france>



Platforms, catways, staircases, tanks, and railing.  
Source: [https://www.groupeserap.com/milk-tanks\\_wine-processing\\_walkways-for-wine-making-units.phtml](https://www.groupeserap.com/milk-tanks_wine-processing_walkways-for-wine-making-units.phtml)

Platforms, catways, staircases, tanks, and railing.  
Source: [https://www.groupeserap.com/milk-tanks\\_wine-processing\\_walkways-for-wine-making-units.phtml](https://www.groupeserap.com/milk-tanks_wine-processing_walkways-for-wine-making-units.phtml)

Wine tanks systems.  
Source: [https://sk-skrj.com/Content/Images/uploaded/pdf/vinarstvo/Katalog\\_vinarstvo\\_2017-10\\_\(EN\)\\_web.pdf](https://sk-skrj.com/Content/Images/uploaded/pdf/vinarstvo/Katalog_vinarstvo_2017-10_(EN)_web.pdf)



#### Open pump-over fermenters

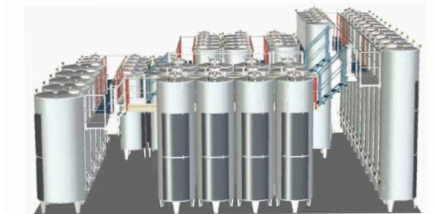
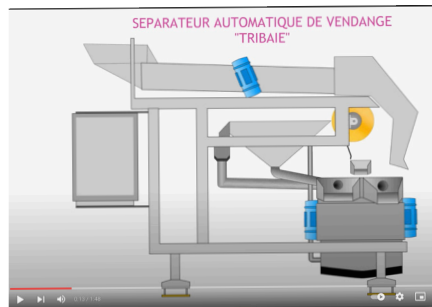
Due to their shape, open pump-over fermenters can also be used for the treatment of smaller quantities of must.  
The tank bottom is inclined, which enables good liquid discharge and easy tank emptying. The reinforced upper rim of the tank (upper reinforcement) gives strength and stability and prevents tank jacket deformations.  
The fermenter is easy to use. It can also be used as a classic wine storage tank, but only after removing the rotational sparger and the upper (removable) part of the pump-over tube, as well as closing the lid opening with a blind nut.  
On customer request, the fermenters can be equipped with a temperature regulation system and other technical equipment.



Platforms, catways, staircases, tanks, and railing.  
Source: [https://www.groupeserap.com/milk-tanks\\_wine-processing\\_walkways-for-wine-making-units.phtml](https://www.groupeserap.com/milk-tanks_wine-processing_walkways-for-wine-making-units.phtml)

Synoptique tribaie 6.20 by Ammos, Grape Sorting machine.  
Source: <https://www.youtube.com/watch?v=VDxeKeKAb5U&t=1s>

Wine tanks systems.  
Source: [https://sk-skrj.com/Content/Images/uploaded/pdf/vinarstvo/Katalog\\_vinarstvo\\_2017-10\\_\(EN\)\\_web.pdf](https://sk-skrj.com/Content/Images/uploaded/pdf/vinarstvo/Katalog_vinarstvo_2017-10_(EN)_web.pdf)



Platforms, catways, staircases, tanks, and railing.  
Source: [https://www.groupeserap.com/milk-tanks\\_wine-processing\\_walkways-for-wine-making-units.phtml](https://www.groupeserap.com/milk-tanks_wine-processing_walkways-for-wine-making-units.phtml)

Synoptique tribaie 6.20 by Ammos, Grape Sorting machine.  
Source: <https://www.youtube.com/watch?v=VDxeKeKAb5U&t=1s>

Wine tanks systems.  
Source: [https://sk-skrj.com/Content/Images/uploaded/pdf/vinarstvo/Katalog\\_vinarstvo\\_2017-10\\_\(EN\)\\_web.pdf](https://sk-skrj.com/Content/Images/uploaded/pdf/vinarstvo/Katalog_vinarstvo_2017-10_(EN)_web.pdf)



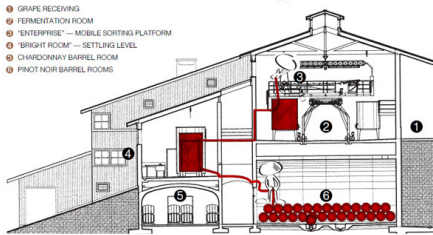
## How Gravity-Flow Wineries are Taking Grapes to New Heights

BY JESSICA KELLY



Woollaston Estates winery.

Source: <https://sdra.com/woollaston-estate-winery/>



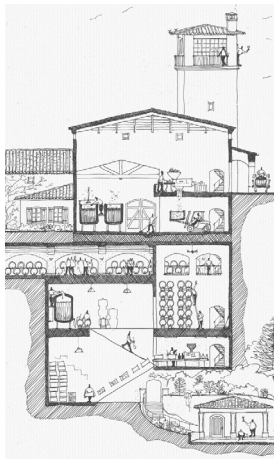
Gravity flow wineries.

Source: <https://www.winemag.com/2019/01/07/gravity-flow-wineries/>



Woollaston Estates winery.

Source: <https://sdra.com/woollaston-estate-winery/>



Woollaston Estates winery.

Source: <https://sdra.com/woollaston-estate-winery/>

Wine making gravitational process.

Source: <https://www.domaineserene.com/Wine-making-2016>





Château La Dominique, Jean Nouvel.  
Source: <https://www.dezeen.com/2015/02/09/jean-nouvel-chateau-la-dominique-winery-france-red-mirrors/>



Château La Dominique, Jean Nouvel.  
Source: <https://www.dezeen.com/2015/02/09/jean-nouvel-chateau-la-dominique-winery-france-red-mirrors/>



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Source: <https://www.dezeen.com/2015/02/09/jean-nouvel-chateau-la-dominique-winery-france-red-mirrors/>



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Source: <https://www.dezeen.com/2015/02/09/jean-nouvel-chateau-la-dominique-winery-france-red-mirrors/>



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Source: <https://www.dezeen.com/2015/02/09/jean-nouvel-chateau-la-dominique-winery-france-red-mirrors/>



Château Margaux.  
Source: <https://seele.com/references/chateau-margaux>



Château La Dominique, Jean Nouvel.  
Source: <https://www.dezeen.com/2015/02/09/jean-nouvel-chateau-la-dominique-winery-france-red-mirrors/>



Château La Dominique, Jean Nouvel.  
Source: <https://www.dezeen.com/2015/02/09/jean-nouvel-chateau-la-dominique-winery-france-red-mirrors/>



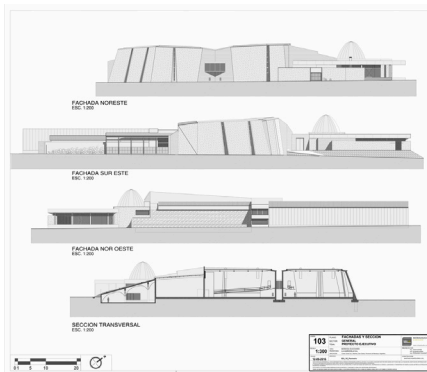
Zuccardi Winery in Valle de Uco, Tom Hughes + Fernando Raganato + Eugenia Mora.  
Source: [https://www.archdaily.com/802293/zuccardi-winery-in-valle-de-uco-tom-hughes-plus-fernando-raganato-plus-eugenia-mora?ad\\_source=search&ad\\_medium=search\\_result\\_projects](https://www.archdaily.com/802293/zuccardi-winery-in-valle-de-uco-tom-hughes-plus-fernando-raganato-plus-eugenia-mora?ad_source=search&ad_medium=search_result_projects)



Zuccardi Winery in Valle de Uco, Tom Hughes + Fernando Raganato + Eugenia Mora.  
Source: [https://www.archdaily.com/802293/zuccardi-winery-in-valle-de-uco-tom-hughes-plus-fernando-raganato-plus-eugenia-mora?ad\\_source=search&ad\\_medium=search\\_result\\_projects](https://www.archdaily.com/802293/zuccardi-winery-in-valle-de-uco-tom-hughes-plus-fernando-raganato-plus-eugenia-mora?ad_source=search&ad_medium=search_result_projects)



Les Davids Winery, Atelier Marc Barani.  
Source: <https://www.archdaily.com/963444/les-davids-winery-atelier-marc-barani>



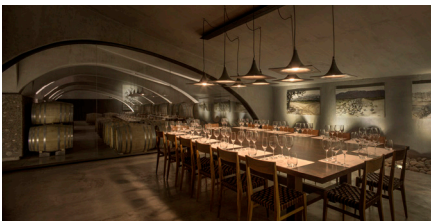
Zuccardi Winery in Valle de Uco, Tom Hughes + Fernando Raganato + Eugenia Mora.  
Source: [https://www.archdaily.com/802293/zuccardi-winery-in-valle-de-uco-tom-hughes-plus-fernando-raganato-plus-eugenia-mora?ad\\_source=search&ad\\_medium=search\\_result\\_projects](https://www.archdaily.com/802293/zuccardi-winery-in-valle-de-uco-tom-hughes-plus-fernando-raganato-plus-eugenia-mora?ad_source=search&ad_medium=search_result_projects)



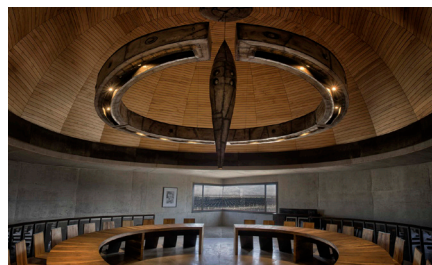
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Les Davids Winery, Atelier Marc Barani.  
Source: <https://www.archdaily.com/963444/les-davids-winery-atelier-marc-barani>



Zuccardi Winery in Valle de Uco, Tom Hughes + Fernando Raganato + Eugenia Mora.  
Source: [https://www.archdaily.com/802293/zuccardi-winery-in-valle-de-uco-tom-hughes-plus-fernando-raganato-plus-eugenia-mora?ad\\_source=search&ad\\_medium=search\\_result\\_projects](https://www.archdaily.com/802293/zuccardi-winery-in-valle-de-uco-tom-hughes-plus-fernando-raganato-plus-eugenia-mora?ad_source=search&ad_medium=search_result_projects)



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Antinori Winery, Archea Associati.  
Source: [https://www.archdaily.com/371521/antino-ri-winery-archea-associati?ad\\_medium=gallery](https://www.archdaily.com/371521/antino-ri-winery-archea-associati?ad_medium=gallery)

Winery in Mont-Ras, Jorge Vidal + Víctor Rahola  
Source: <https://www.archdaily.com/805958/win-ery-in-mont-ras-jorge-vidal-plus-victor-rahola>

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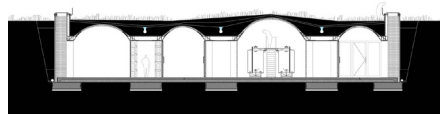
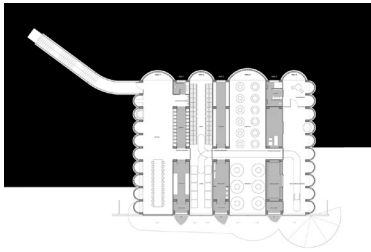


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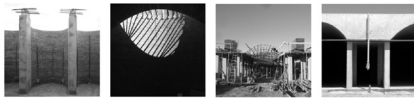
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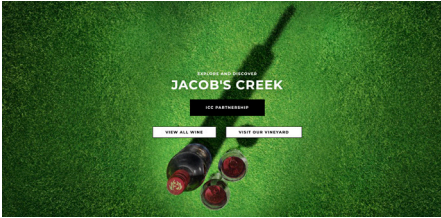
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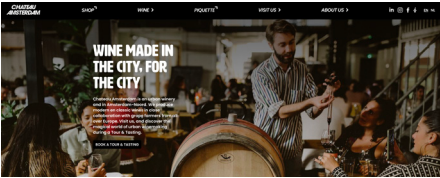
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Jacob's Creek, the official wine served at Wimbledon Tennis Championship.  
 Source: <https://www.jacobscreek.com/en>



Chateau Amsterdam.  
 Source:<https://chateau.amsterdam/en/>



**What Is Ripasso?**

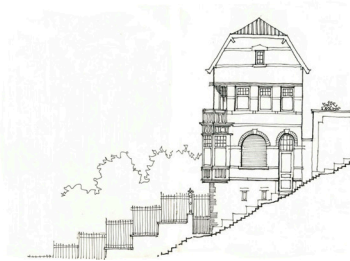


“Two Buck Chuck” and Ripasso wine as value for money options.  
 Source: <https://vinepair.com/wine-blog/what-is-ripasso/>[https://en.wikipedia.org/wiki/Charles\\_Shaw\\_wine](https://en.wikipedia.org/wiki/Charles_Shaw_wine)

Chateau Amsterdam.  
 Source:<https://chateau.amsterdam/en/>

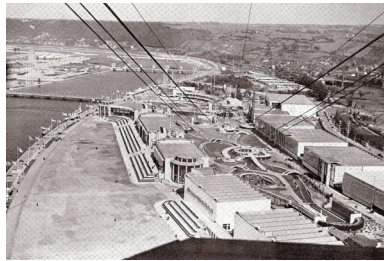


“Two Buck Chuck” and Ripasso wine as value for money options.  
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Montagne de Bueren.

Source: [https://www.flickr.com/photos/gerard\\_michel/3102077631/in/photostream/](https://www.flickr.com/photos/gerard_michel/3102077631/in/photostream/)



Liege World Fair Expo Teleferique.

Source: <http://www.chokier.com/FILES/EXPO/Expo1939-Plan.html>

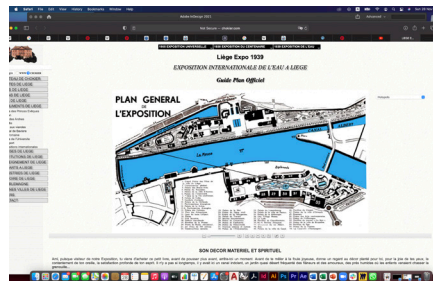


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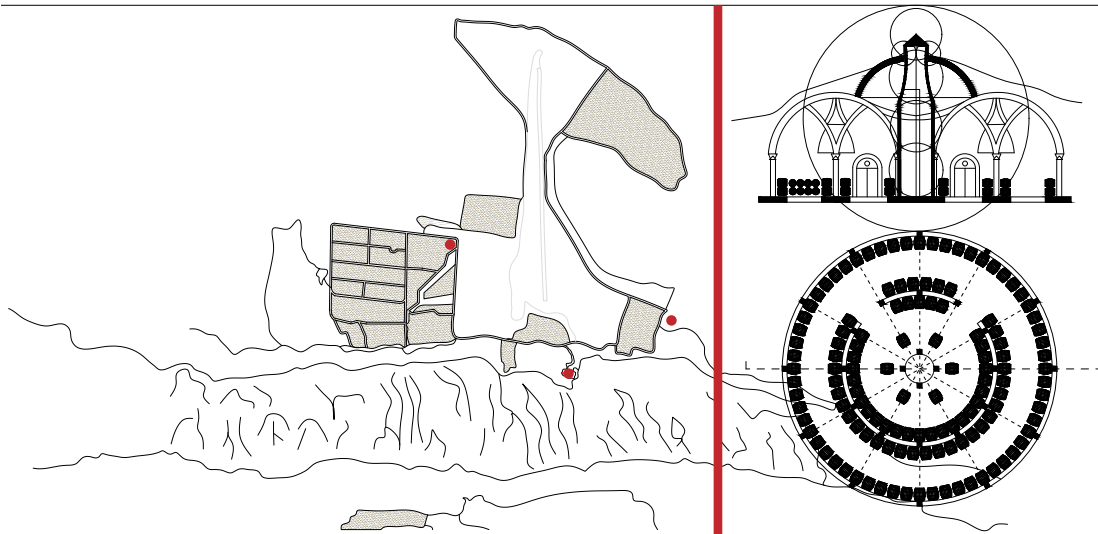
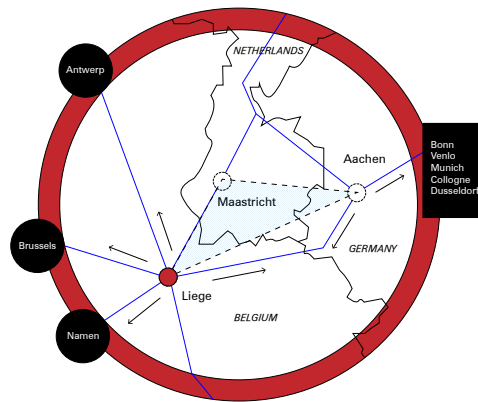


Liege old map.



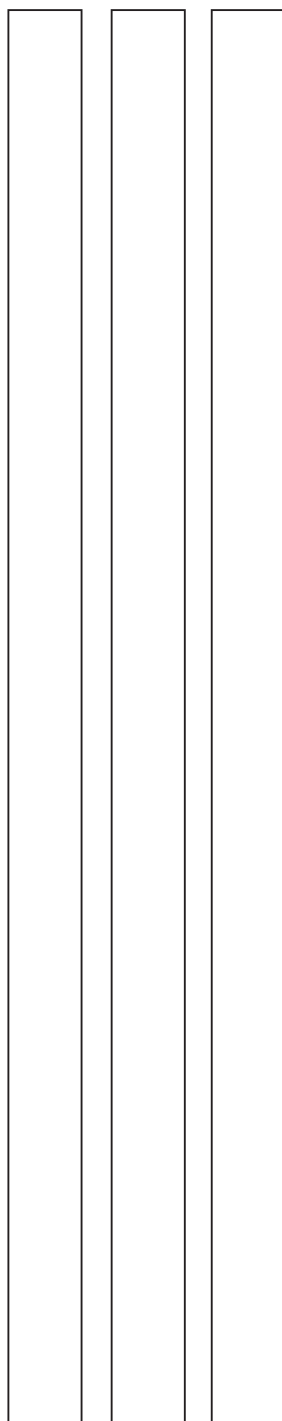






Producers and suppliers respond to complex market dynamics through just-in-time production, relying on automation, logistics, and infrastructure

within the Blue Banana, allowing supermarkets to optimize their stocking to shopper's demand.



Europe Wine Production

**167 million hectoliters**

45% of world wine-growing areas

65% of production

60% of global consumption

70% of exports

23,9 liters wine consumption per capita

**3,000 hectoliters**

0,00001875% of European production

150% of Belgian production

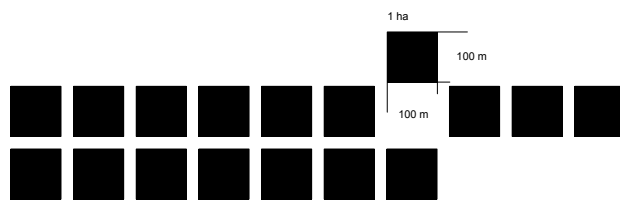
**2,000 hectoliters**

0,00001198% of European production

26,3 liters wine consumption per capita

Belgium Wine Production

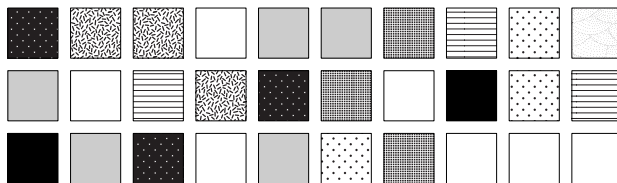
Domus Leo Wine Production



17 ha  
Domus Leo yield:  
7,000 ltr/hectare=5 tons of grapes/acre

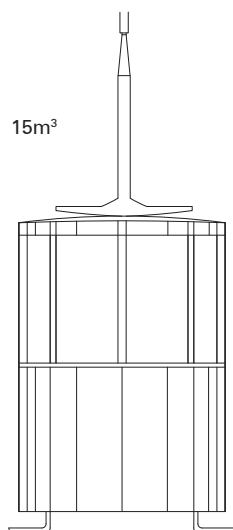
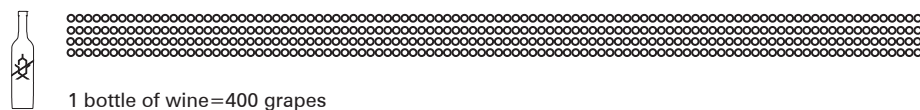
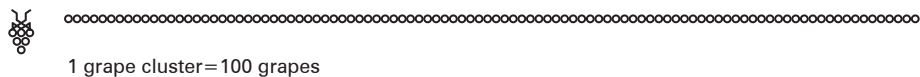


200,000/300,000 ltr of wine per year  
100,000/150,000 unique bottles of wine per year



offshore European vineyards





1 kg grapes=0.001m³=400 grapes=1 bottle of wine

1 ton grapes=1m³=400,000 grapes=750 ltrs of wine

15 ton grapes=15m³=60,000 grape clusters=11,250 ltrs of wine







Making wine the city, was for us a completely new idea. It's being done in North America, or some urban wineries as we call it. In New York, USA. Canada, Australia. I think there's one more in Europe, basically the idea is that you have the middle of the city that you get grapes from all over, you make the whites here. And there's a couple of benefits to it. We get to blend between countries, as you might have noticed, but also very direct contact with the consumer. That means for us to be inspired days what right to make on the taste. But also for you as a consumer, you can go to a winery and tasting an hour later ethnicity, and all the interesting stuff that we get to live in the city of Irvine. But it also brings about challenges. As you can imagine, for great, perfect writers. But it also looks very volatile.

So a lot of things can happen when you move into something to go on. After that we have incredibly refreshing where we get the grade from. If you drive a great school away from the Netherlands, and they're very right, they're talking and they're happy very transport, temperature wise can stop for too long. They can make a break. Right too far too many shivers are just rocking. So that's where the department's at the moment focuses on getting a grant here the same condition is that it leaves the field something refrigerated on the field after harvest have been driving the refrigerated trucks to adapt, we just have to start the process as soon as possible. We're gonna walk out there with this choir and then I'll tell you a bit more about that.

But it's a nice to get to know us as a company, we started in 2017 butter and some together Fargo wine store in the south of the Netherlands for over 20 years. They passion into wine. So the son grew up with every journey, every holiday was quite focused. So not a big surprise when he was growing up and living here in Amsterdam, but he still felt like doing something with one. spotter integrating one lead city life another three times to go to rural areas. So they ended up being looking for at our options still big wide. And then they found this location bigger.

First of all, we are conducting an experiment with orange wine fermenting in an amphorae. It's very large fortune, it's better to colour and for the chemical processes that happen naturally. It's actually one of the oldest wines in the world together red wine. And what they did is that they put the grapes inside the amphorae and they crushed it and

just left it in there. So you get to choose the skins and stems together. And then choose when to extract the flavour and the colour of the skin. And blu rays again, right like it'd be a good library to get an orange white, because white grapes aren't actually white, or cold that way, but they're unripe, they're reading their body interpreted from yellow to orange juice as the orange wine. It also gives you two flavours of that skin. So what you might be used to for red wine, pennies in the mouth when you're trying to get the same. Again, this is a very light filter, but we also have the Sahara which is the opposite of this wine because it's super authentic to your mouthfuls of a bitter coffee.

So the grapes come in. And they come in in big boxes. And they come in with the stems and everything on so you get big bunches of grapes, we put into this machine. And then it comes out in two ways, she gets the stems in one box and the grapes and another one. And then you can do two different things depends on what wine you want to make. So if it's a white wine, you only use the juice. So then we'll put it in the press, which is this machine. But if it's red grapes are for red wine, orange wine, or Rosae, you only want to crush so you taste the setting, and the machine crushes the grapes to get the most grapes trigger. Because you once again the skins to stay in there so that the Jews can extract the colour and the flavours from the skins. Unless you make white one breast looks complicated is actually super simple how it works, you can have a look later on if you want. From the back entrance, you can look inside, just put the grapes in and there's a rubber band. And you once the grapes are in it expense, you inflate it, and then basically press the grapes to the side and press super simple just to do on the bottom and then you put the juice in the tank to ferment if you have the skins and you leave the skins in where you live for depends on the grape and what you want to make. But in general, a couple of weeks, sometimes almost a month or longer for the skin contact to happen. And during that period, you always have your first fermentation.

First fermentation is where the alcohol works. That's where the sugars transform into alcohol. And after that, you get the second fermentation, which is where the wind forms that from visibles are called the metal lactic fermentation. There's a lot of chemistry happening there. In general, if you can say that acidity levels will change. So if you have fresh grape

juice that is fermenting, it's quite like sharp acidity. And in that period of time, the mono acids and the lactic acids so Aqua Zuta, and milk students, they are changing the way they're built up. So there's less stress sharp acidity, and it's a lot more round. Also, the lactic acid demotivator is something that is also in dairy. So when you have a Chardonnay, for example, you say this was quite buttery, it's quite accurate because the same acids that you can find in dairy as well. And then we decide what we want to do. So the wind is quite formed, do we want a bottle or do we want an H in there we also have here we have French oak barrels, small ones, and you can eat them. A couple of things that happen on Oak. One is that oak gives a flavour for our stainless steel doesn't completely neutral flavour wise, oak does give up some flavour, there's also less dense, so there's a lot more oxygen never penetrate the wine from the side. And that creates like a micro oxidation. So if you have a bottle of wine, you leave it open on the kitchen for a week. It's not nice. But if you have that on the microscope level, a little bit of oxidation, it gets more length to the wine and it kind of changes the composition of it. Depending on the wine decisions of the winemaker, you can do it for a couple months, six months, a year, two years. And it will just develop further and give it a different flavour. In general, that's just a matter of tasting on a regular basis and deciding what you want to do. You do it with the same wine year after year. Of course, you learn what the wine prefers, but it's all decisions. And then we bottled that as well. And that kind of like slowly brings us back to harvest.

So when will you start, when will you bottle what is harvested now normally always kind of depends. But approximately around April May. I would say if you really want to be very fast, you can bottle your whites March. And it depends on the winemaking because you can see all these pipes, you might feel the drips over here. Those are all AC pipes and are connected to the things you can see like these sleeves around them. And that's a way to lower the temperature because in fermentation, the temperature of the wine goes up. And if you lower that you stretch out the fermentation process so it takes a lot longer. But you get a different flavour profile. Some winemakers just do a quick fermentation couple weeks, some take up to three weeks for the first fermentation by lowering the temperature. It's the steering wheel of the fermentation process.

-We are doing our thesis, so the collective theme is the food industry, the architectural implications. And then each person has chosen a building type but let's say collectively, we design as the supermarket of the future. Then we choose a certain building type that produces something, and that it goes back to the supermarket. So I'm doing the urban winery.

-Nice. Very very interesting. Do you know by any chance the supermarket initiative Peter Pot?

-Yes, yes of course.

-Okay. Nice. That's kind of the supermarket of the future. Exactly. Exactly. So what the basic principle, it's a nice reminder is that there is no packaging, that's always exactly. So it's everything is done disposable with jars, black jar, so you can bring your own or really reuse exactly and clean in the supermarket. We're still busy with that, we are going to get to connection with them. They don't sell at this moment, produce of fresh produce. Our wines are actually so fresh, we don't add substance to it. So find some more gas, CO<sub>2</sub>, for instance. Because fresh until five days, okay. When are these longer? And when they do know when they start with fresh products? Also like cheese, sausage chairs? Yes. milk dairy products? Oh, then we're going to approach them for wine. Yes, yes. Yes. Actually, it's kind of a successful. So what we experienced right now in the concept here is that people will come back with your empty bottles. And that's good. But sometimes they come back with dirty bottles, okay. And we don't have the facility yet to clean that. And I want to give you if you come here, you buy the wine and you come to buy your bottles, I think it's necessary to needs to be spotless, but yes, fresh and clean and talks with traces that are this patch, usually somebody and then how is it clean, etc, etc. So it's a kind of connection with a wholesaler like Peter Pot. They have their own washery in a socialist scheme. Yes. Social. It said social labour. So that's, I think, also very good to do to do that. And we might also deliver at home and yes, expand because a little bit of economy of scale is necessary for a concept like this, to keep it financially healthy.

-Yes, yes, yes. Because we were also talking about this just in time production scheme where even for the milk in the supermarket, for example, you would get it back in a way, but from local farms that are again, somehow close to the city, so that you

constantly have small batches, but press

from your where you live, actually.

-Yes. I think it's kind of cool. We also have the floating farmer in Rotterdam. I think it's a nice example. And it's nice to visit a lot of strange places. Well, I feel honoured that you came here.

-I also wanted to ask you where this kind of idea came from, the Zero Waste boutique wine shop.

-Actually, it's it is an idea are born out of craziness. And a bit out of complete shock when Corona started. I had to change my whole business life around because I was organising events, business events in Cyprus, and sailing boats. That's a complete different part of business. But of course there people also drink a lot of wine and eat a lot and you're also busy with that. And actually then I thought, okay, if we see Wine, wine is always in a bottle. Most of its 75 cents per litres. And in the books, they're always six. Yes. Why is that and why can we don't change that around? And why do we always need to go to the dustbins for the bottles to change that around. And if you go on a holiday in France or Italy, in Spain, or elsewhere where they produce wines, you can see that you go to the local wine farmers to buy the wine and enjoy it and it doesn't matter. But if you have a Jerry, Ken or an old boss, if he doesn't have both, so they were both on PUC Kirkland and enjoy that style. So then we thought, okay, let's try to do that, and how to do that merger start? And are there farmers willing to sell us wine in bulk? Because that's basically what you need to get it that's also directly the problem we faced because nobody actually wants to sell in bulk. They make more money to sell it to bottles. I mean, yeah. Because it is easier. It's easier to put it in a bottle and change the label and sell it to different supermarkets as different products without actually it's the same in wine business as kind of normal. And online businesses also normal that there's no ingredient list somewhere. Yes. It's also strange to think about it. And then we tried actually to convince a farmer, like to know just I was in the Yellow Pages and just find them an internet and give them a call to see if, if they're, if those guys are really into to sell an X amount. Directly to us. Yes. And then just in the bulk of wine, let's say a couple of 1000 litres an hour, they're willing to do that, because we thought if it is less than four or five minutes of interesting, yes, because

then it's just a couple of 100 Extra in his pockets. Well, he's not going to work hard for that. So you need to give him something substantial. And most line producers, most of them, they sell all their wine directly to a corporation, yes, directly. So they have they know already upfront, in the season, how much they're going to make. And that's for them. It's easy. It's convenient, because they know they're going to sell everything. But of course, for prices, it's like horrible. And then there's always a little margin. And that actually, if you treat people well have been a little bit more kind of willing to And asked a bit more in it. Do that. So our European wines, this very moment we buy ourselves get it. We bottle it in Belgium, in tanks of 50 litres. Okay, this is because otherwise it is not possible to keep it fresh. Yes. And otherwise, it's not possible to have a store like this. Because you need to face like a normal retail store to shop. You need to face surgeon hygienic, all aspects, etc, etc. And you're working with alcohol. And it's by law. Oh, it's different than milk or Coca Cola. So, from that point, we decided, well, this is the nicest, how we can do it to get a feel. And we also thought, can we call it a winery and urban winery? But then we thought it's a bit tricky. Because basically, we're not because you don't produce pay a bit more Yes. tit, you don't produce it here it is produced elsewhere. And then we start cheating with that. It looks cool. But then we get a lot of negative feedback from people who say I'm able to come on, you know, it's just wine out of a tank or attack. Yes, even worse, because that's it that is I think in my perception is tapped wine comes out of a tap. It's not you can not market that. Well, yes, it has a negative connotation that is true. That's why we call it mind tank, because it's in a tank, focus more on where the wind is in there on the thing you get it out to. So that is a change we made and it is still true. And then actually, it's kind of simple because the quality you put in is also the quality you get out. So the story is round, and then it's still very sustainable. Instead of you know getting bottles like this from Spain, all the way in the truck or in a bulk. And then we put it in a bottle here and it's much easier Joe. Finally, sustainability factor is locally. You would vote on it locally for you, you consume it locally, and then you come back to for the refill. And that's it little circular circle was sent around.

-But how do you get so you transfer it in different kinds of containers from the producers to Belgium?

-Well, actually, if we buy it, for instance, here, all the European lines, so except South Africa, because that's too far away, it's too complicated. There's in between the drills, we're going to do that from next year. For instance, we're spending this this particular Weinhaus is selling 80% to the corporation. So there's 20% left, but they keep for themselves to sell to tourists who pass by they also have a medical bed and breakfast. Yes. And then actually, we bought here from this for desktop, I think it was two and a half 1000 litres. And we have also a tempranillo is coming from the same farm. Then the truck is coming, the special truck for food supplies, and they take it from there. And from that truck is just like a huge amount of wine in one compartment in kind of a container or

reading the truck. In the truck, truck, like you see those trucks on the highway with round, long round things. And sometimes that's for food supply off, there might be apple juice in there might be I don't know, milk, or full of wine. Okay, interesting. And then they have a truck full of wine, and they need to hurry up, because that isn't kind of air tight. And the advantage is there. So such a quantity of wine together. So that keeps it also good. But you need to do you need to act quick. And then actually, in Belgium, we found a factory or a guy who's bottling it in bigger syntax instead of bottles. We do that in mass production in Belgium, it is a little city that's like, basically, it's near the Dutch border, I actually like live within this part, this is in between mass drift and enter. But you can also do it here in Rotterdam. So there's also a factor like that they are more expensive here than in Belgium. And then of course, you have to promote or the problem that needs to be again hygiene and the law with alcohol is kind of strict because the amount of alcohol which we drink right now needs to be indicated. And it needs to be tracking traceable. So every batch needs to be so from the farm in plancha it goes in the truck two and a half 1000 litres arrives in Belgium there needs to be checked if it is really two and a half 1000 litres or perhaps three or two because it needs to be perfectly in order because he also needs to pay I said it local or not local alcohol duties assigned we call that over the amount of alcohol and it is pretty obvious if it is 15% or 10% or

it's a hell of a lot of difference in Texas. So that needs to be checked monitored by by a person who is legitimate to do that same kind of notaire certification certification that is the proper product that the alcohol is right. And when that is all checked and approved, then you can put it into the tanks and then every tank will get the same batch number of deaths quantity of wine. Okay, okay. And that's also indicated in the little stickers we put under on our bottle. For instance here you can see the alcohol percentage, this is the lock number Okay that is the bus number is the batch number Exactly. And that we need to change constantly if it is a new batch we need to change this because if this is not correct that actually we're you'll be able to do a series that is really yes mandatory otherwise it will be more so that actually is how it works. And then those two and a half litres will be dispatched in 15 or 30 or 20 litre tanks just would you like you can choose and then actually you have a batch of that specific demand and a bit by bit we connect them to our system.

-Okay, but so there's a system of tanks behind the wall? How does it work?

-Exactly. And then there's a little cooling thing that why the nose is coming out and chilled because I think it's summertime and most of the time you drink this cold. So Dan's ready to go and you don't need to freeze it in the fridge just use their convenience. So that's what I was gonna say for the future. Was this was actually what we do here is actually the live test of concept was doesn't exist in this for and we want to see how people react, where the problems are and practicalities, logistics in other bottle issues, etc, etc. And then make it make it into a concepts which we got to spread out. And that's why we chose this particular area of Rotterdam because it's practical because it's free around the corner where I live. And it's not so busy. Yes, indeed. Because if there are mistakes, and you multiply the mistake, you could ruin a whole concept. So it's easier to you know, to try it out in secret. Not that we have anything to hide from that perspective, but it's more convenient for us and at the centre without being too busy. Exactly. And so there we are.

-How many liters do you actually import per month or year?

-we have we've made an estimation of course in terms of litres and we will

grow to I think in one shop 234 1000 litres a month. Okay, yeah. Okay, and it's consumed. Okay, yeah, we're not there yet with this shop. Because first of all, we were just opening up here now. I think in the next six months, we will reach like, in this particular shop, like 3000 litres a week amongst we will read stacks. Okay. So basically that's like, let's say 180 litres a day. Yes. When you are five days open, and almost laid our days that we never go to reach that sometimes in the busy day we just face it. So that's a little bit how we how we deal with that. With that. Of course if you calculate resellers for 10 euros a litre that's a solid healthy turnover to maintain shop like this. Yes, yes, for sure. And it could be less. But more is better.

Yes. Always. You have the opportunity to expand it. of course we run shop you have always the problem that we are limited. There are also some farmers who say okay, you need to buy at least 10,000 litres. And then we say about 10 times at least we have we want to have more tasty flavours and righty who where do we put the stock because there's a huge amount of all those barrels you know, we cannot put it here and stash it in the back to the you get all logistical thing that it's easier to have more shops, where every shop has, let's say 10 barrels of every taste in stock. That's more easy. Okay. Okay. So that's for the future a little bit over coffee scale is important was to buy glass glassware is pretty expensive. It needs to be good enough to be hygienic. We don't want to import it from China. Not that we have anything against China that is just a psychological thing. And so it's coming from Italy, in Germany, glasswork actually, it's kind of expensive, we don't make much money out of it. Because we don't want to, you know, double the price. Because then you could say I hate it save me a full bottle by the supermarket. Indeed.



Well I'm gonna all us this is a region called LP euro for Euro which comes from premier it's monastery for fine okay this is a very oh not so well known area in the south east of Catalonia on West during the last well as almost all Catalonia used to be wine grapes production and 19th century and 19th century, but because of the phylloxera that, yes, yes is that always the most of the most of the biners around Europe also these appear here, but then shows up again during the beginning of the 20th century, but not the high quality one. But the specificity of this area is that is very hilly, hilly landscape.

So, they traditionally, they placed binders in that kind of low situation not producing terraces us in generally nor Catalan landscapes. The the agricultural way to produce a ricotta also Bioneers is by producing terrorist, nothing this area that the traditional way to produce Bioneers was on that kind of as local lobby. But, of course, at the mid 20th century, they also transform that into the most common way to produce a kind of terrorists and so on. So, the wine here is, it wasn't really good, or general it was accepted that it was a very common wine. But there's a guy called Alberto Palacios, I got to Palantir this guy, very well known family from Ribera del Duero. Labriola is the most well known wine this wine area they they do all the wines is done with great call comparing the tempranillo is they always using the same kind of guy who is the son of that family very well known because of the way he was the all his yoke looking for a place to produce the wine that he was imagining. Yes. And he discovered that in this area, because of the kind of soil that they think that it's very easy to try and fix the water doesn't keep there is not it's not like it's more like stone and so on. So he decided that this place it's it's the perfect place for to do this idea of new wine. And he began to work with a traditional kind of grapes of this surrounding that I don't know the names and so on, but mixing because in Catalonia is very traditional to to produce wine by mixing different kinds of grapes. It's not like Labriola that is always the Bernier is sometimes they mix a little bit with covenants when you're on or something like that, but in Catalonia all the panellists they are blends yeah, it's interesting because they are going when I'm designing uses British oil producers on the blended wines.

Well, in fact that guy well so this is more or less the simple idea of wine our product is far more well known because it's been always our winery, it is a binary area. You don't have to imagine this like broccoli or LibreOffice because it's difficult to find out the binomial because it's very small production very small productions. But thanks to that, guys, the prereq position in general market has changed a lot. But the tradition still is that the business is really small business and in general, originally they placed the sellers in the basement of the particular houses into the counties and I don't know if it's for this reason or for right but

these people we used to be known as Salado to stay soloqueue stay Hussein was an already existing business small production and this guy that came from Switzerland, both part of the business and he decided to put more money to build a new seller in the middle of the of the clauses be less to the to the binary, which is greater. It was like four or five original blocks placed in that north south direction with all that partition walls with, with neighbours, yes, only this, only this block here was not a real house, it was more like, I don't know, you have that in the race, but we call that from dawn, just today, it's just, it's just two perpendicular walls that they used to play with. It's not like a tennis ball because it's far more harder, and you play with hand or something like that. So it's, it's a game between tour between a routine for the it's not really traditionally Catalonia it's more from Basque country, but also in Katana or someplace. But it was the only part that was not the house. But all those houses were in really bad conditions. So the guy bought that different plots to place to the new seller for the for the correction. So you can see here is his charge and so I'm so okay. So, because of the because of the European norms, we have to be a way of the gardens and the courtiers of the neighbours.

So we find out talking with council, a new situation that they accepted that we move the closer part of the building, but they accepted us to place in that distance between us and the partition wall. Open groups, okay, so, so it's not completely often this is made is covered by these very thin, concrete slabs that is just producing minimum shelter in front of the rain, but it's completely open in front of the temperature and the wind. So, this works a little bit like an alley like

private street because you have a big open here and a small open here, this one here is the original door into the plus side of these former houses. So, this is the very basic strategy which is to place the seller and identification room in the back room in that part and this part here is to come in the grapes during the burndown in English when you

when you get the grapes from the bionews great receiving well yeah, it's a great receiving bad sorting and pressing biolog these different process takes place here and also inside okay, so then we'll find out more plants and so on okay. So, this is the basic section with that former with a former partition wall here okay, you can see the original partition wall that in several places has been grew up a little bit in order to find out the final situation for each slab okay. So, this this atmosphere here is producer producing that in between space between the big walls of the bathroom and the original partition wall with those labs.

So, this is the cellar level which is underground it used to be a cellar here it used to be a tailor, but because of the geometry and the size and dimension was not big enough. So at the very beginning of the project, we tried to keep the original seller here, but at the end we decided because of the foundation of the new blocks to to do a bigger seller, which is this kind of also structural walls the support not only the Perimetral wars but also the the slap for the battle for the bathrooms. Yeah, this is nice, straight levels with the big gates here and here is the reception for the grapes and also his exit for the bottles because also the box with bottles keeps here before go to the selling places or whatever. So this is the bottling line here. Well, in fact no date during ya know, the bottling machine. They they use this space during because they rent it. It's not from it's one guy that came here because it's a very small day and they are doing it before, before the seller, before our building, they used to produce like 75,000 bottles. And after the building, they will produce about 150,000 bottles. So they are really small. So even for all the process, they ran the machines, so even to to do the rake transformation to sell also for bottling, they placed the machine here. And they they do the process here with a machine that they went, I don't know if it's here, it's here, but they went all that process. So basically, this is the bad thing, okay, so they come

with a grapes here and they place the machine close to the to the different bats in order to take off the grapes from the from the rest of the leaves and so on, do the smashing of the grapes. And put put the product in the top part of the bats at the beginning, now they are using in advance, but they want to change it into they're trying to change it into different kinds of baths. They are also using concrete baths. And they want also to try to use like clay baths and things like that. So there's taking the taking the outside the stairs, because there's some stairs that relate the different level of the slabs through these outdoor spaces, you can come into the small office that there's one here, and there's our meeting room here for the small meetings with people to check the ones and so on. Okay, so And there's a third level, because it's supposed to gonna be a couple of bedrooms for gas.

So but the we can see, we can find out some images. But the original project, the idea was to show the complete volume with that kind of bricks, without any kind of refurbishment without any kind of coating.

But when we show the project to the Council at the very beginning, before the construction, we show it like as if the colour of the bricks were a little bit more yellow or closer to the existing to existing because the norms in town doesn't accept any foresight without coding, they want that kind of traditional line coating made with lime and sand.

But when they show the building app, and they saw the real colour of the brick, they asked us to do the coating, we were not really agree with that we were not really happy because our original idea was to show all the bricks position showing the construction and, and the structural behaviour that the structural relation between the elements. But thanks to the thanks to the call of the of the console at the end, we began our research process, checking different ways to to produce not it's not a real coating in terms because is accounting made with lime. And just a little bit of really light sand. But it's so so life is so so liquid that we applied not with nothing solid matter but more in a liquid matter more like a painting. Yeah, more like painting. So this is what in Spanish is called Havana. Havana is a traditional way of fainting, but not with not with liquid pain, but with liquid pain mixed with sun and with lime, the Mahabharata is the lightest way to coat to protect

ourselves. So we were doing this research with different natural lines and natural sands in order to find out the colour and the way to apply it to don't lose completely the texture of the bricks, exposition all these holes were at the very beginning as a way to show the more structural parts of the world because the wall is made with we can see somewhere where we will see that the worlds are not only in this direction, but there's some stronger parts of the wall is in a solid as a solid column made out of bricks. So that kind of small house answer or respond to the position of these. You all come into the column is in this is this what we call in Spanish apparel, apparel? What is the impact in Spain, what we call technical architects used to be called apparel colours, which means the region of the world is the one that will decide how the brakes are related in order to make a stable anymore. Okay, so America is something very important to us and we drove always, although worlds that we build are always drove as layer per layer giving the instruction to the builder about all these operands to make easy to understand all the relation because it's very important in order to make a very not just solid in terms of compressive support but also stable in terms of geometrical relation between the geometries and the parts. Here, there's always a time when the large piece pass but the short piece this is also because the brief that we use is not completely house and double relation so that that site here is 10 by nine but in the other direction is a little bit more than 20. So when you place the two bricks on the short side is not as large as the same brain in the large side. Using that condition of the brain, we decided a little bit to do that kind of ornament based on the side and on the dimension and also to express that kind of apparent relation.

So those are just laps and staircases that leading you to the different levels of offices or small logistic places and here is that street the grapes came here come into the into the back room. And this is the shower let's say social or logistic place where the battles are battle done and keep it before the sending and so on even the staircase that goes to the basement it comes from outside so everything happens the vertical relations, everything happens outside the batting and undersell.

Okay, so this is this was something that we used in order to help the consumer to accept that we were covering this

distance between the building and on the neighbours that was that no neighbour will see any slab higher than the former Wall. And if he sees something, it's going to be a green roof. Okay, so this is the end of that social corridor, which is an original part of the farside that used to be here, okay. And as you see, well, there's a relation between the volume and the colour of the charge and, and to place this this it was that presence of the charge that made us decide to place the big Ballroom in the corner in front of the church. Because is a small town made with very small houses. It was in order, it was thanks to the presence of the shard the church that was decided to show a big volume in our ballots that he's not made with big volumes of them. So it's larger than the two shot three centimetres. So that's, the big black out shows up in the in the wall. So, the structure has not really a structural role, or well, this is to fill a row but it works more as a totalizing system that has a compressive system because in terms of pure structural system is basically a particle with columns and beams from column to column, okay, but to stabilise that particle to sterilise that in the other dimension. So you have that series of particles, beams and columns, but the sterilisation in that system is all that very thin walls going. That works also as as a beam because on the basement, on the street level does our window. So this will work that beam that goes from one column to the other, but is working out of impact is also working as a stabilising walls. That keeps it stabilised. For example, here you can see that all these are calls are windows, except this two frames here that are where the wall goes to the basement to the foundation estate. So also in the room, there's another Bricks beam that goes from the main beans to the euro. But these beans here only work as a beam in the sea. Okay, so here you can see that the same, the same brick, the same brick placed in vertical position with the house one in front of the other, you see, okay, so this brick at this break, but at the bottom of the wall, the brick turns vertical, okay, as you can see here, and reinforcement bars, the steel bars, we delete a bar, it's not done in the position because it's impossible. So, we did it in a vertical position placing one brick over the other placing the steel bars from up down and then pouring pouring the concrete through the house in order to produce those clay clay bricks and clay



bricks, beans. So, the only part that work as a real been working at flexion is the that part of the wall, the rest is just a pure wall. It's also with some steel bars in the joints. So, you can see here on this for So, all this part is working as a beam okay, but you have to remember that this part in inner beam because the flexion movement is like this, all this part is working at compression. So the brace is also helping just as a pure wall, just disappear world is also working in compression, so it's helping to the, to the structural behaviour of that wall. Okay, so it's just in that part of the world that is working in Rio Fletcher in real traction, yes. So that's why the steel bars are here, but the whole wall is working as a beam because the the top part of the beam is working at compression. So, the whole world is a beam Yes.

And then so, the disease the walls, but the bad the beans that goes from the main beam to the other is also the same system, but in this case, the break comes up here in order to produce that boy, because all this is is an open space. So, you can see here here you can see the bricks in regular position, but when we arrived to all that level, the beans I the bricks are placed like this. So, one is places like this in order to produce the beam structural, but the other one is placed like this in order to produce all that series of holes, yes, where the arrow moves in an origin. Okay, so this is the seller part. And so once we complete so and this is something that we are always in that idea, which is energy is a very simple concept in terms of of thermodynamics. So it's as simple as the biggest amount of energy you have into the building, the better you can help the indoor comfort in order to make it more stable, more temporary, during the day, because that set of heat during the day, it's kept into the nation. And during the mind, if you if the temperature at night goes down enough, then you're able to take off all this excess of off of him. And in winter time is the same but the opposite. The internal heat that you're producing. With active systems of the internal feed that you can get with the sun gains are kept into the nation into the energy and when the outside conditions are worse, the energy keeps you back during the night, all that ate that cake has kept during the day. So the key with the energy is how you dissipate the excess of heat in summer.

In winter, the key with the energy is

how you get natural gain from the sun. So everything is not only that immediately internal artificial heat gains heating systems.

But in this case, our only problem is in summer, because to be here outside let's say today

Yeah, 14 degrees is not a big deal. And even outside, we are five or 10 degrees with all these big words inside, we can be around 14, yes, because because the verification process is an exothermic process, so you're not in a big day in the wintertime, the problem isn't some that could be really hot outside. So

but I'll take would be really hard but as in everywhere in the Mediterranean area, and you know very well 75% of the hours more or less, you can be in the street in quite good condition. So even in summer, if you're in a shadow in the street, you can accept it, the problem is inside the buildings that if you don't have a very good cross ventilation, the heat keeps there and keeps there and everything goes up. So here is the natural cross ventilation. And we really appreciate not only to have this big amount of energy has to have it at the most. So phase you have between the energy and the or the better interchange you have between the energy where you're keeping, and there. So that's why we're not doing huge white walls, we are doing the that white wall, but divided to get far more. So phase four interchange. Okay, so that's the idea with us Multiliners. Now, that's really interesting. So if the outside conditions are good enough, we just producing that cross ventilation with that top here, this mechanical system that gets open or close.

But the funny idea is that during the nights, we have that water layer, okay. So, this is about also thermodynamics.

That that liquid is, is giving hit to something that is less like deer or like my body. And so in this case, the amount of energy that is in the sky is infinite. Yeah, so it's far better to do the interchange of a witness chi.

neighbour, yes. Okay. So that's why it's more efficient to do that process with the region talaia in front of in front of the ball with slst than in another position. So it's the easiest way to to give to give hit, so to be as fresh as possible. With that very thin layer of voting the day the water goes down. We're still checking all that, I mean, the building is working perfectly well

without working absolutely well in that system, because we have such an amount of energy, such a big shadow such amount of earthmoving that this is a helping but we're still dealing with the pumping system because this is an artificial system because you have to pump the water at night again, to put it back on the upper position. But the idea is quite funny. So, thanks to that cold water, the call the hardest originalist to to get colder. So, just because of thermodynamics in the the earth tends to go up, but when the earth touches all this colour structure, try to find out a way to go down. But as this this earth is hotter, then he finds that the air finds the way out on an origin town movement. And when he funds, yes, so in this position, there goes up through the walls, but in the other situation they are go goes down to the so it's kind of a natural air circulation. Yeah, it's a natural way to do something that is very difficult, which is to make the earth go down. Yes, yes. Okay. So it's a natural state and a gene that is producing something that it's not easy to find out in just pure natural systems. That's why I was talking yesterday about that idea of architecture that in the solid aspect of architecture is not concerned directly on the human experience, but this concern about how to manage that without condition of PC phenomenon to produce the human experience or in this case, conditions for batting for wine whitening verification, okay. So, this is not, this is not it doesn't exist in nature. But these are physical nature effects natural effect, thanks to the conditions produced by our detectors. So basically This is a funny part of the building this is the self this is but this is just about the pure energy working with. So, if you have the inside conditions without energy just with the world but without taking advantage of the energy and with the next one. No, no, no sorry.

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At a moment when future generations may not be able to enjoy the same style of the Bordeaux wine—as protected and produced during the 20th and 21st century—transnational wine blends will determine the future of wine production. This paradigm shift, subserved by the consequent importance of distribution networks and the ambiguous protectionist rhetoric of our times, will transform the winemaking estate into an urban building type, shifting from the Chateau to the Domus.

Sited in the Liège city center, this contribution proposes an urban winery that blends terroir fragments across the Blue Banana. Exploring protection regulations that can build upon the knowledge, tradition, and novel techniques of winemaking, Domus Leo envisions a modified distribution network for wine.

Located within the Meuse-Rhine Euroregion—a central part of the Blue Banana European urbanization corridor—the contribution utilizes its strategic position in order to transfer and blend grapes from three different terroirs in the shape of a triangle: the Dutch Province of Limburg and the city of Maastricht, the German Region of Aachen, and the Belgian Liège Province. 17 hectares of Riesling, Pinot Noir, Chardonnay, and various youthful cross grapes form the base for Domus Leo signature wine blends. At the same time, this contribution brings a revolution to the European network of wine by importing an extra 200 tons of grapes per year from small vineyards all over Europe, according to overproduction or indicated climate. Liège, a traditional urban trading node, part of the Sillon industriel, and the former industrial backbone of Wallonia, is still the economic and cultural center of the region, forming a fertile ground for the urban winery development.

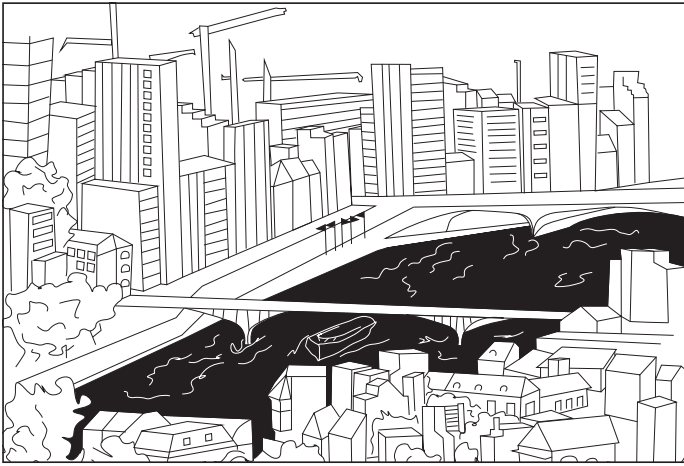
Domus Leo occupies a plot of 1,500 square meters in the middle of the Montagne de Bueren, a nineteenth-century grandiose staircase composed of 374 steps that not only serves as the entrance to Liege's citadel but is also a new-found pilgrimage route for wine enthusiasts. The winery is developed around a traditional townhouse in the middle of the staircase, consisting of the wine production facilities, outdoor terraces, and an eponymous wine bar. The buildings are organized according to the central circular blending hall that dictates the routes for the grapes

and the visitors, with five different levels taking advantage of the site, the views, and the topography. Grapes are received from the terrace to the upper level of the winery, making their way down through the building, from production to consumption. The section of the wine production facilities follows the gravitational process of winemaking, ensuring an innovative design to protect the grapes—a must during the first stages of production—and a connection to the blending hall at every level of the vinification process. Visitors enter from three different levels, encountering the building from a bottom-up perspective, leading from consumption to production: the bar and its respective terrace on the lower level, the central courtyard level designed as an amphitheater, and the main entrance accessible from the upper levels. The facade represents the reimagined image of Liège, and the materials used are local to the Meuse-Rhine Euroregion. Finally, the Domus Leo eponymous wine bar offers a “barrel to bar” blended experience. With uninterrupted views of the cellar, customers and potent buyers are challenged to create their own blends from the wine tanks hanging above the ceiling. Infrastructural elements such as platforms on the river and a funicular cableway for transportation are added, in order to connect the winery and its products to the waterways.

Capable of producing up to 300,000 liters of wine per year, Domus Leo exports cases of its signature blends, barrels, and wine tanks specifically catering to the supermarket's sales floor. This contribution offers a novel tasting experience in all Albèrt supermarkets, inside the exclusive Domus Leo shop-in-a-shop, challenging the consumer to create unique wine blends from different countries.







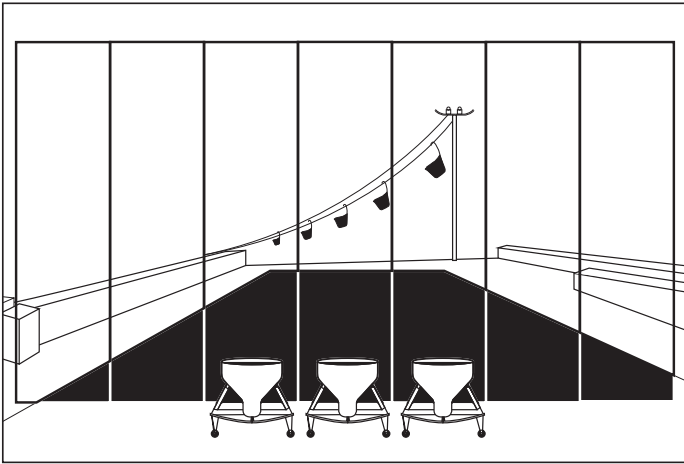
Liège is a city with a maritime climate, situated in the valley of river Meuse, and the third most populous urban area in Belgium. Widely known as the former industrial backbone of Wallonia, part of the Sillon Industriel, Liège is still the economic and cultural center of the region. Domus Leo utilizes its strategic position in order to bring production back into the city, in an attempt to revitalize the past glory.



Domus Leo is an urban winery that reassembles terroir fragments from different countries within the Blue Banana to produce high-end wine. As climate change is altering viticulture and its associated terroir, the future of wine production will lie in the north. 17 hectares of Riesling, Pinot Noir, Chardonnay, and various youthful cross grapes—cultivated in terroirs within the Meuse-Rhine Euroregion—form the base for Domus Leo signature wine blends.



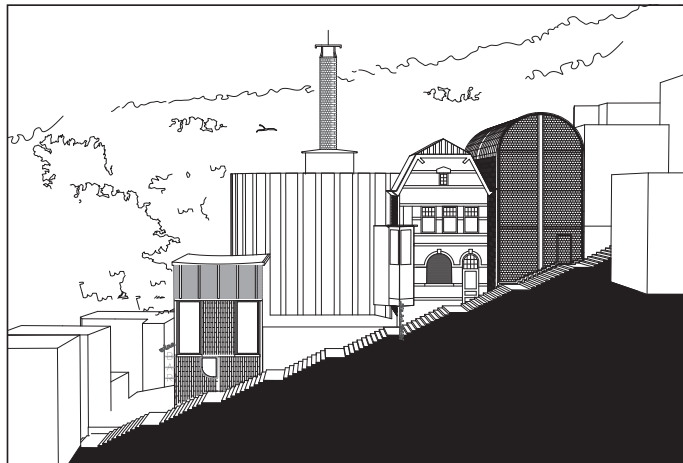
At the same time, Domus Leo brings a revolution to the European network of wine by importing extra 200 tons of grapes per year from small vineyards all over Europe, according to each year's overproduction or indicated climate.



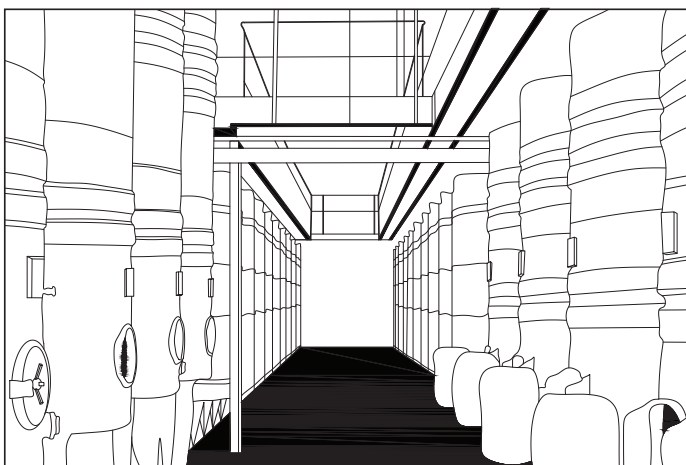
The imported grapes from the offshore vineyards are transferred in containers via waterways. They go through a first stage, whole-grape fermentation in less than six weeks while on their way to Liege, through the method of semi-carbonic maceration. The grapes enter the building from the vat room terrace, via a funicular cableway.



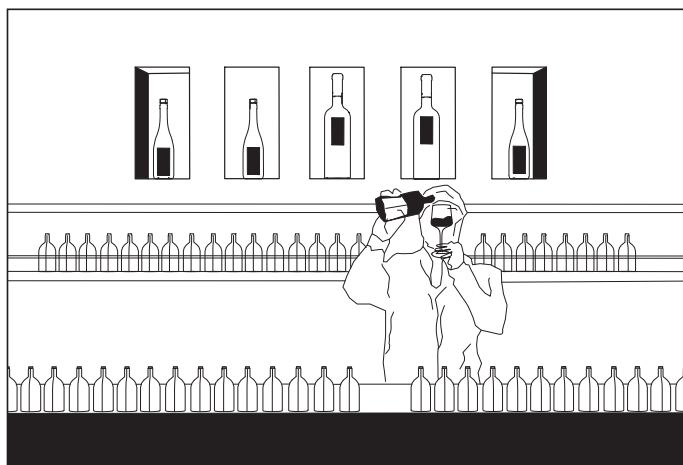
After the harvest—that takes place between August and October—the hand-picked grape varieties, grown within a transnational cooperation between 3 different territories, are transferred to the winery, in the city center of Liège. Domus Leo occupies a plot of 1,500 m<sup>2</sup> in the middle of the Montagne de Bueren. A 19th century grandiose staircase with 374 steps that serves as the entrance to the citadel.



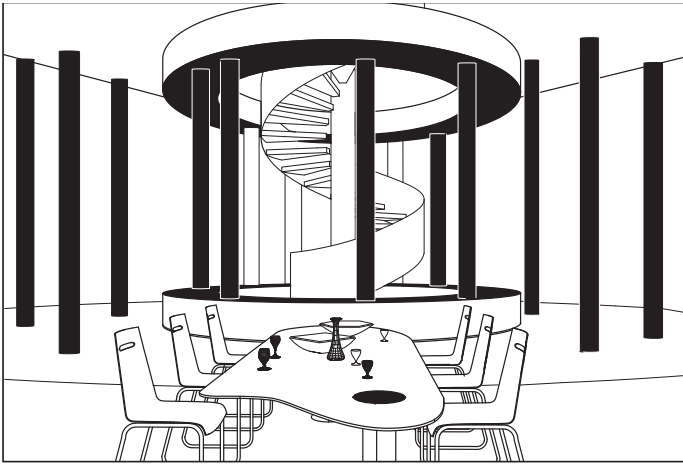
Domus Leo is not a Chateau, nor a Domain. It is rather a «Domus», the urban equivalent of a wine making estate, bringing wine production closer to wine lovers. It forms the new viticultural epicenter of the Meuse-Rhine Euroregion—the city-corridor of Aachen–Maastricht–Liège. What singles the name out is the lion, the emblem of all three cities.



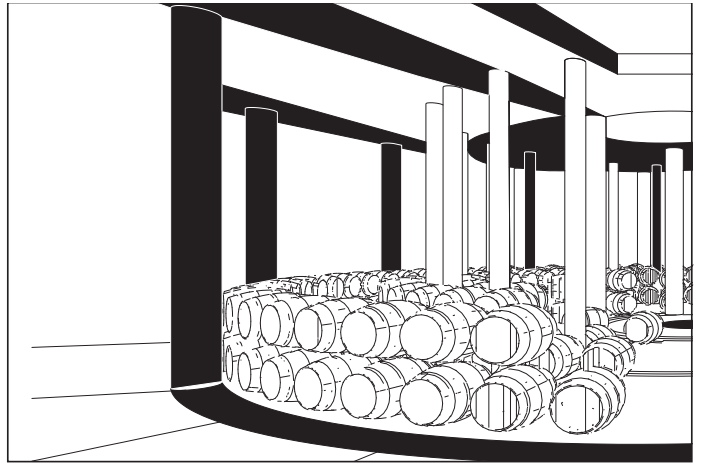
The vat room—a 15m high, vast, linear building—houses the machinery for manual sorting and pressing, 35 vinification vats of various sizes for fermentation, and the chemical processes such as mixing of grapes, micro-oxygenation, clarification with fining agents and reverse osmosis. There, during October and November, the grapes are vinified and blended with the Domus Leo signature base, in order to mature within the urban setting.



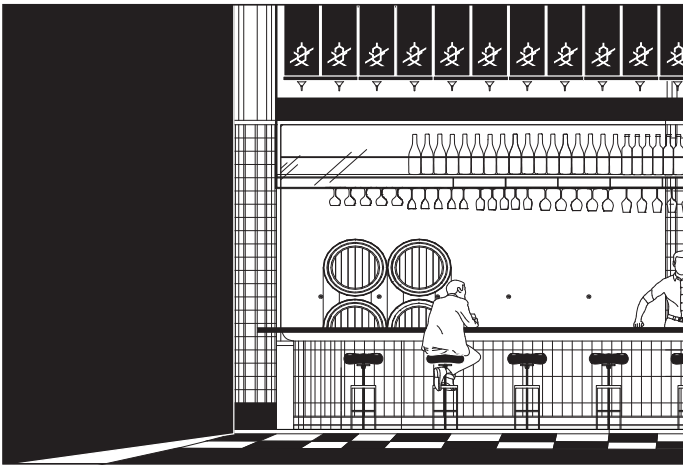
Domus Leo proposes a European blended experience in the city. When future generations may not be able to enjoy the same style of the Bordeaux wine—as protected and produced during the 20th and 21st century—special wine blends will determine the future of wine production. This paradigm shift, subserved by the recent pandemic and the ambiguous protectionist rhetoric of our times, is making the distinction of the winery and the vineyard possible.



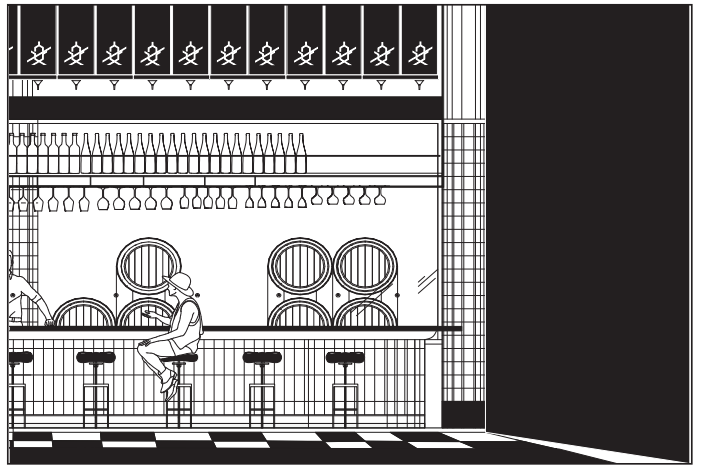
Domus Leo normally launches 1 signature blend, 1 special blend, and 1 value for money blend of the year. Domus Leo wine blends are produced by the master blender and owner of the winery, through both organoleptic and scientific approaches. Events, where masterblenders from all over the world are hosted to develop their own Domus Leo recipes, occur periodically, bringing in exotic ideas.



After the blending process, the wine needs to be stored and preserved in order to mature in huge oak barrels. The wine cellar is an underground hall with obscure lighting conditions. It is connected to a scarlet tower that captures the light through a dormer, delivering it to great depths.



Domus Leo consists of an eponymous wine bar, operating from Thursday to Sunday. From the AH sales representative to the visiting business man and the (local) wine lover, potential buyers can enjoy Domus Leo signature wine blends via their respective glasses or bottles. The bold types are even challenged to create their own blends from tap!

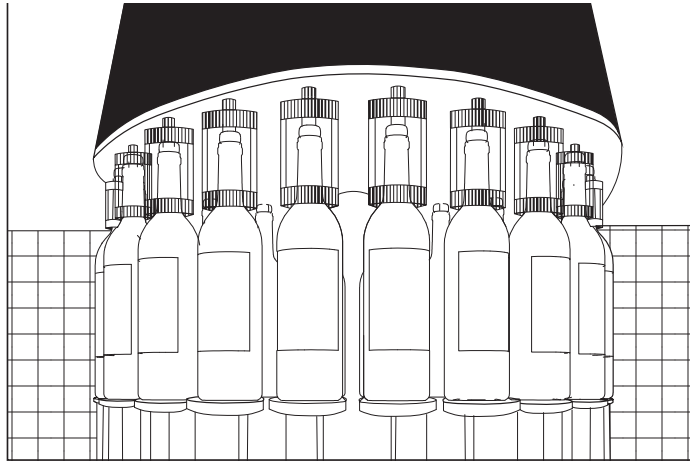


Blending has always been a strategy to mediate climate shifts within the wine industry. A blend has its roots in wine knowledge and tradition, being always greater than the sum of its parts. As the weather creates a new set of conditions that alters the way grapes ripen and make wine after each harvest, blend recipes are unique and can only be used once.

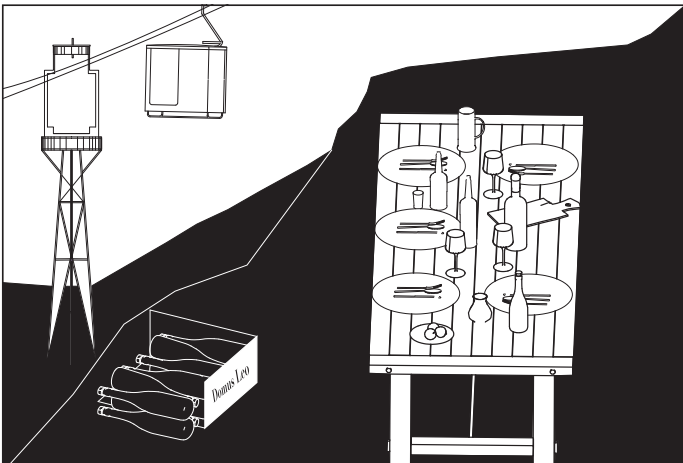




The wine cellar utilizes both gravity and technical innovations in order to accommodate the barrels at a fixed and constant temperature between 12° and 15° and a humidity level between 80%-90%. Domus Leo sells en primeur barrels.



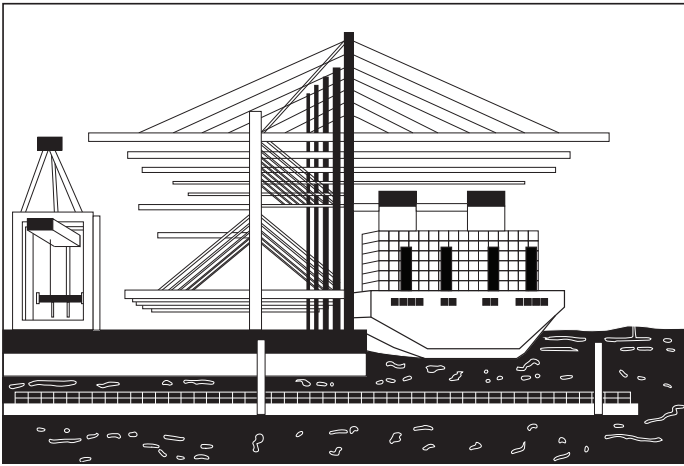
Domus Leo is capable of producing up to 300,000 liters of wine per year, namely 150,000 unique wine bottles. Between April and May, the glass bottles are filled, corked, and labeled in the underground bottling station, located next to the cellar. The label is double sided, featuring the logo of the winery and the name of the blend on the front side, as well as explaining the company's philosophy and the myth behind each wine on the backside.



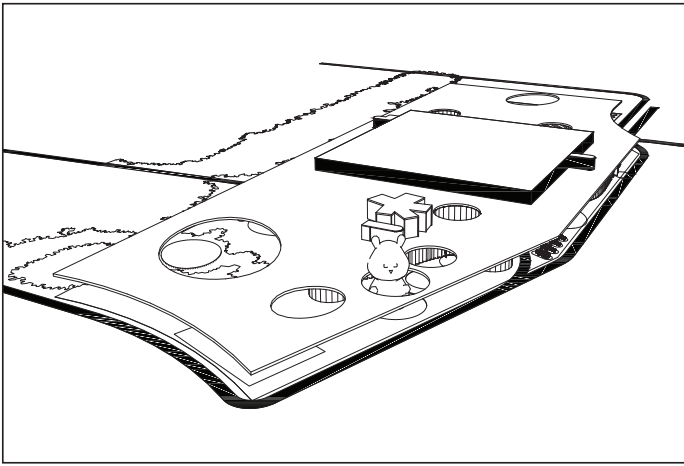
The corked wine bottles are stored in metal cases of 12, ready to be sent out for delivery, supplying local restaurants, the AH supermarket chain, and private costumers. Before or after the costumers and visitors invest, either by purchasing a unique case or by speculating upon en primeur barrels, wine tasting and pairing is offered at the terrace.



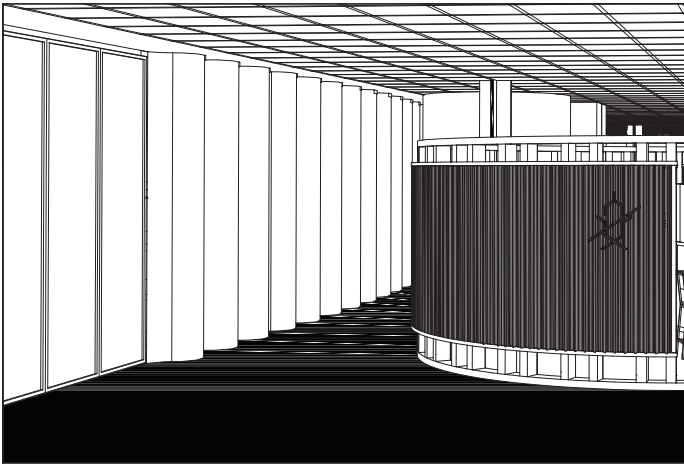
Additional infrastructure, such as platforms on the river and a funicular cableway for transportation, connect the winery and its products to the waterways, ultimately leading to Albèrt supermarkets. Domus Leo exports cases of its signature blends, barrels, and wine tanks specifically catering to the supermarket's sales floor.



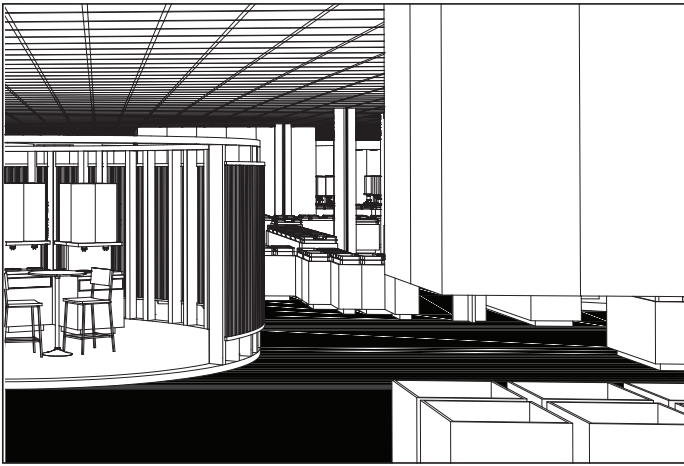
The containers with the bottle cases, wine tanks, and barrels arrive at the port of Rotterdam. In Maasvlakte, cranes unload the cargo boats. Domus Leo wine is then transferred from the Futureland to the rest of the world.



The Domus Leo wine tanks reach their destination, the Albèrt supermarket on Martinus Nijoflaan in Delft. Albèrt functions within a just-in-time production system, integrating an automated distribution center on the ceiling for deliveries across the Netherlands.

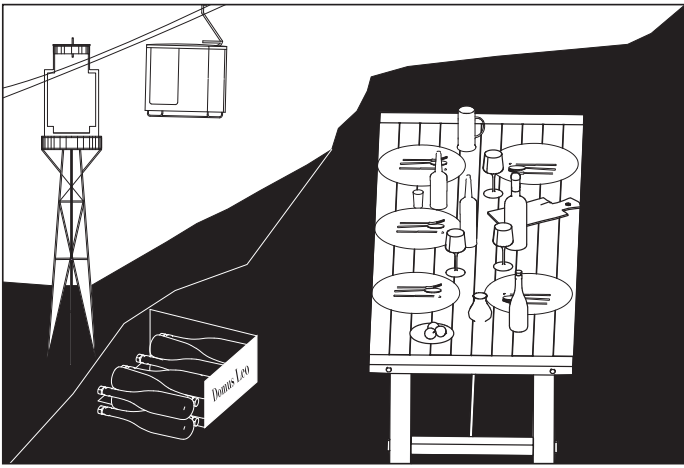


Albèrt demonstrates an innovative retail experience beyond the technology of the integrated distribution center, extending its perimeter toward the Delft city center to establish a new civic presence.

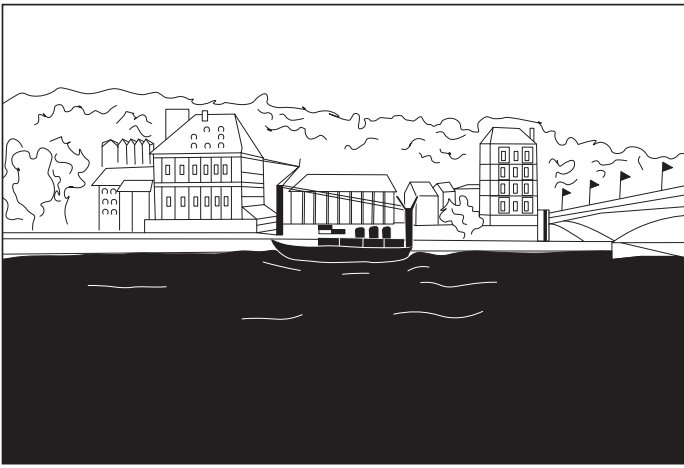


Domus Leo shop-in-a-shop is strategically located in the designated slow-paced zone—along the building's periphery and next to a public green area—, filled with product demonstrations, workshops, and exclusive shops that entice consumers into the supermarket.

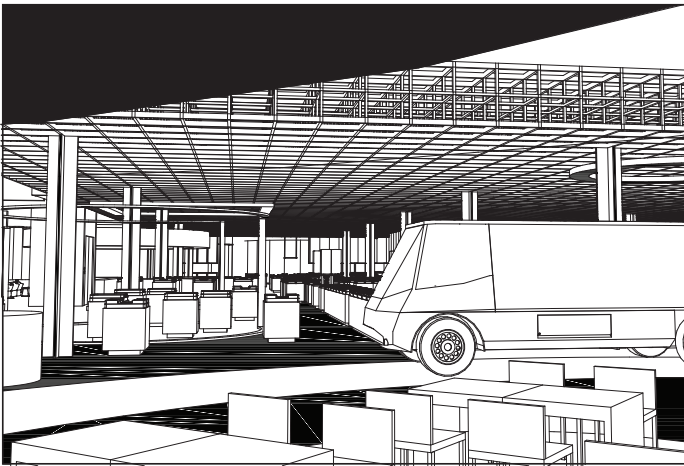
The spatial sequence of Domus Leo wine, from the city center of Liège to the shelves of Albèrt in Delft.



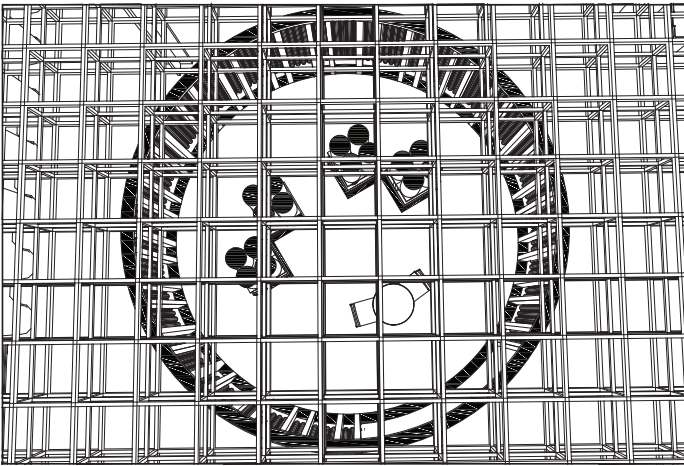
The corked wine bottles are stored in metal cases of 12, ready to be sent out for delivery, supplying local restaurants, the AH supermarket chain, and private costumers. Before or after the costumers and visitors invest, either by purchasing a unique case or by speculating upon en primeur barrels, wine tasting and pairing is offered at the terrace.



Additional infrastructure, such as platforms on the river and a funicular cableway for transportation, connect the winery and its products to the waterways, ultimately leading to Albèrt supermarkets. Domus Leo exports cases of its signature blends, barrels, and wine tanks specifically catering to the supermarket’s sales floor.



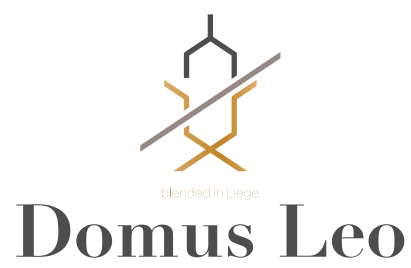
The wine tanks are delivered in e-trucks—sorted regarding the blending categories—to the dynamic loading dock located on the supermarket’s sales floor. Ocado robots lift the tanks with magnetic robotic arms and place them in the static grid ceiling above the sales floor that forms the distribution center for Ahold Delhaize.



Domus Leo offers a European blended experience in all Albert supermarkets, inside the exclusive Domus Leo shop-in-a-shop. An independently curated circular volume that floats in the open sales floor, located below the high-yield core of the building in order for the tanks to be easily replaced by the Ocado robots.



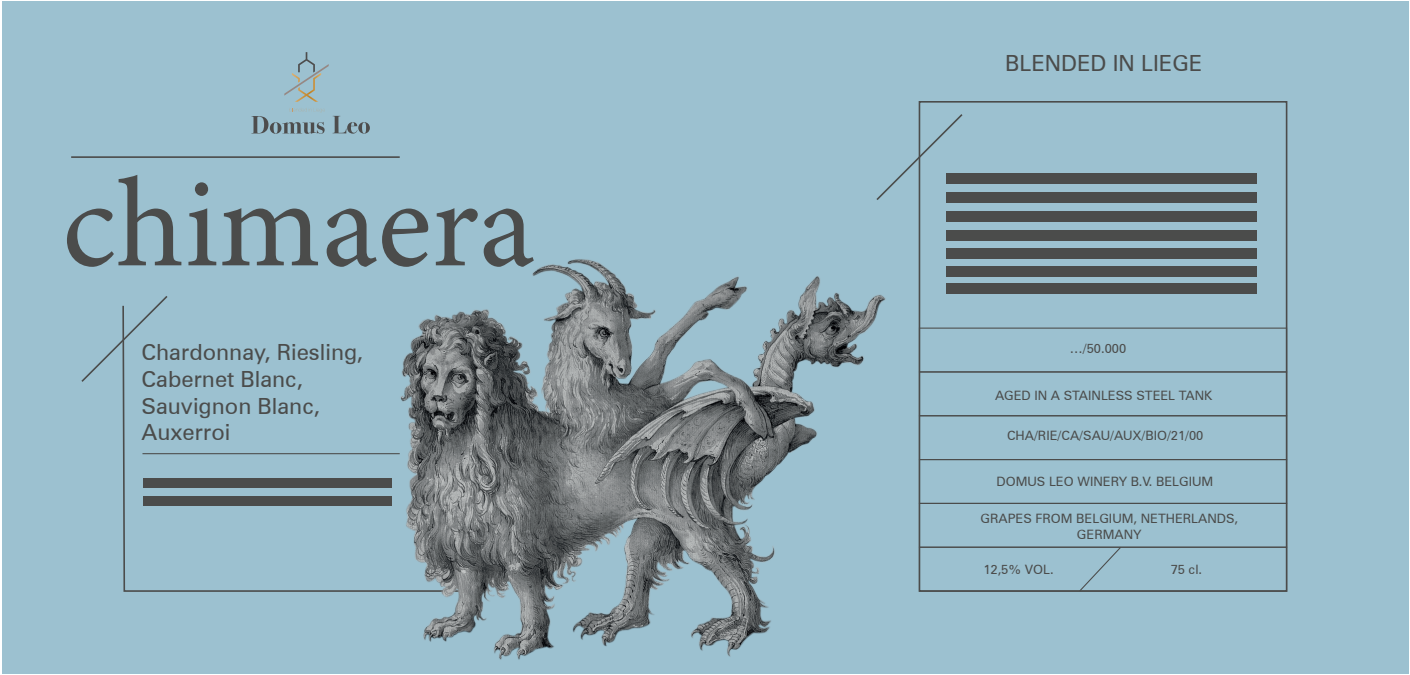
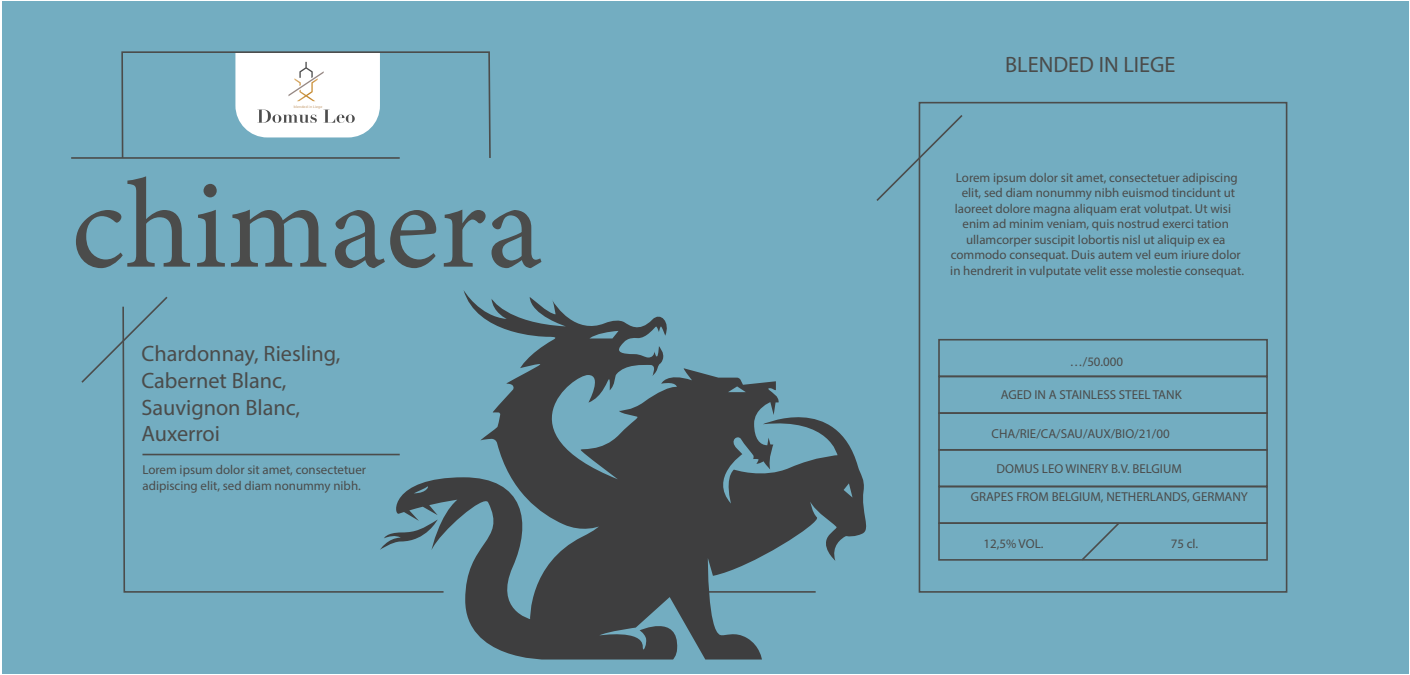




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Domus Leo Wine Logo and bottle label.

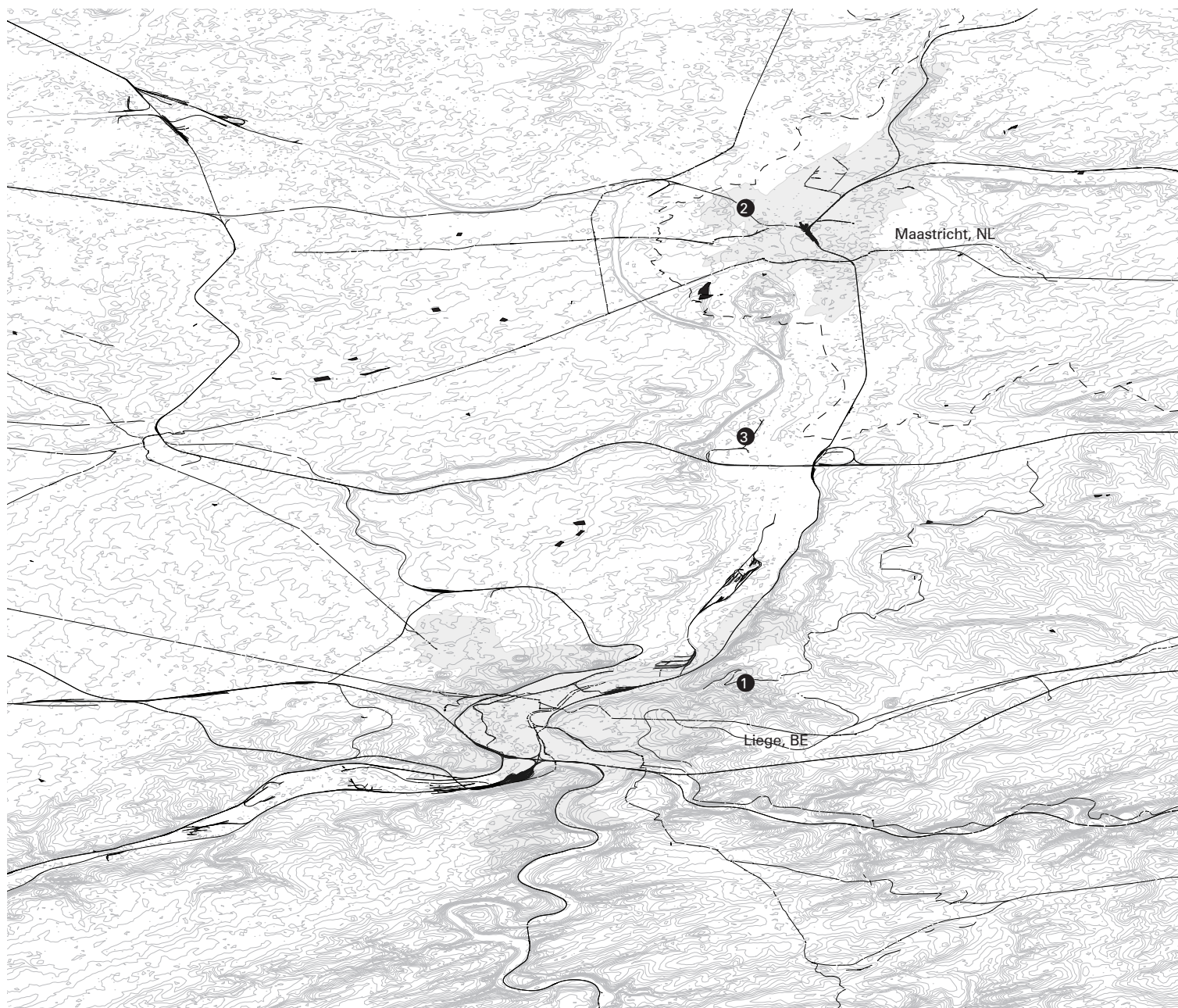




A wine bottle label along with the European Commission Delegated Regulation as regards wines and wine sector products—protected designations of origin, protected geographical indications, traditional terms, labeling and presentation—that reimagines the terroir as a quality base.





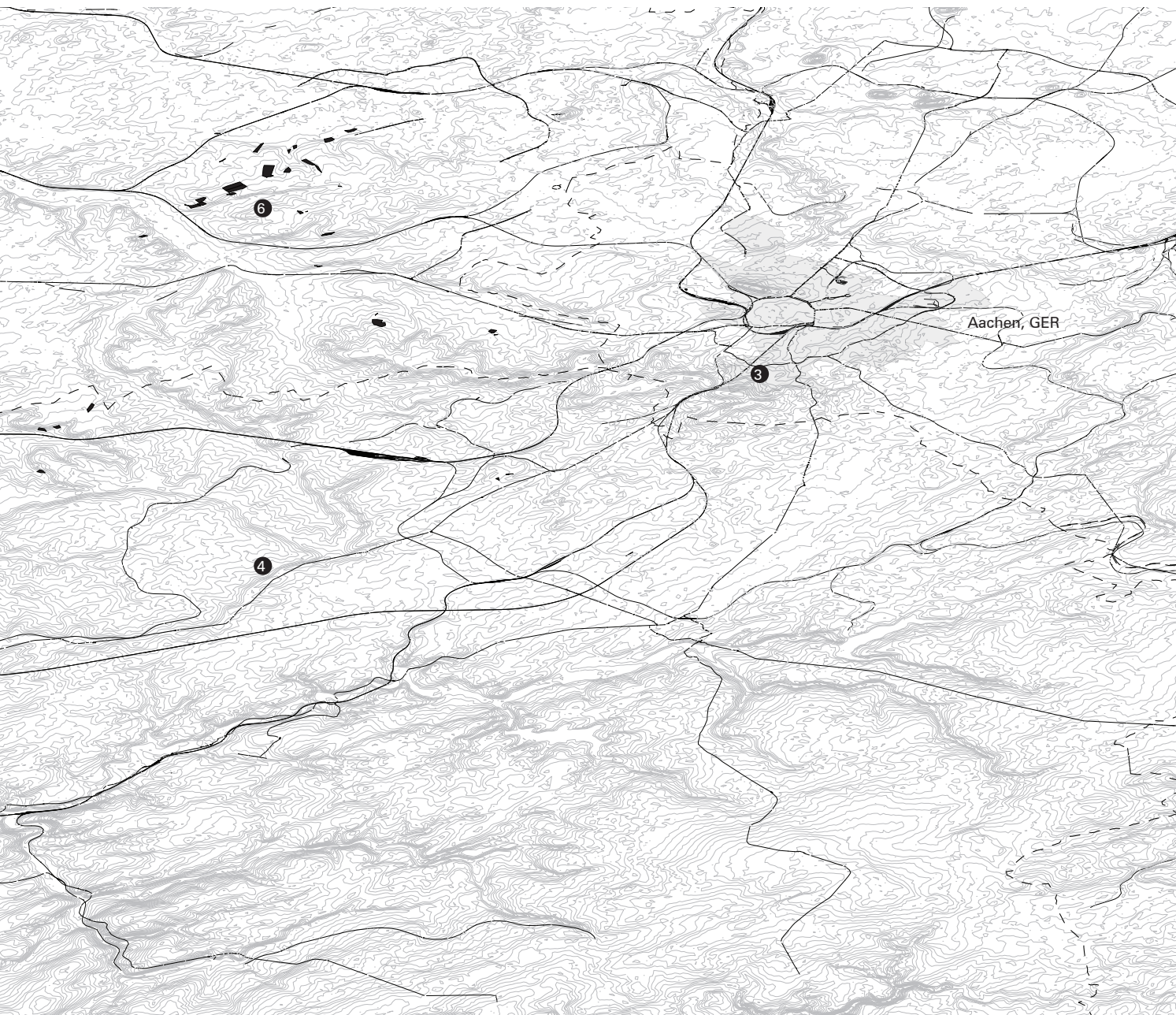


Located within the Meuse-Rhine Euroregion—a central part of the Blue Banana European urbanization corridor—the contribution utilizes its

strategic position in order to transfer and blend grapes from three different terroirs in the shape of a triangle: the Dutch Province of Limburg and the

city of Maastricht, the German Region of Aachen, and the Belgian Liège Province.





- 1 Liège, Belgium
- 2 Maastricht, Netherlands
- 3 Aachen, Germany
- 4 Railway Network
- 5 Highway Connection
- 6 Vineyards

0 5 10 km





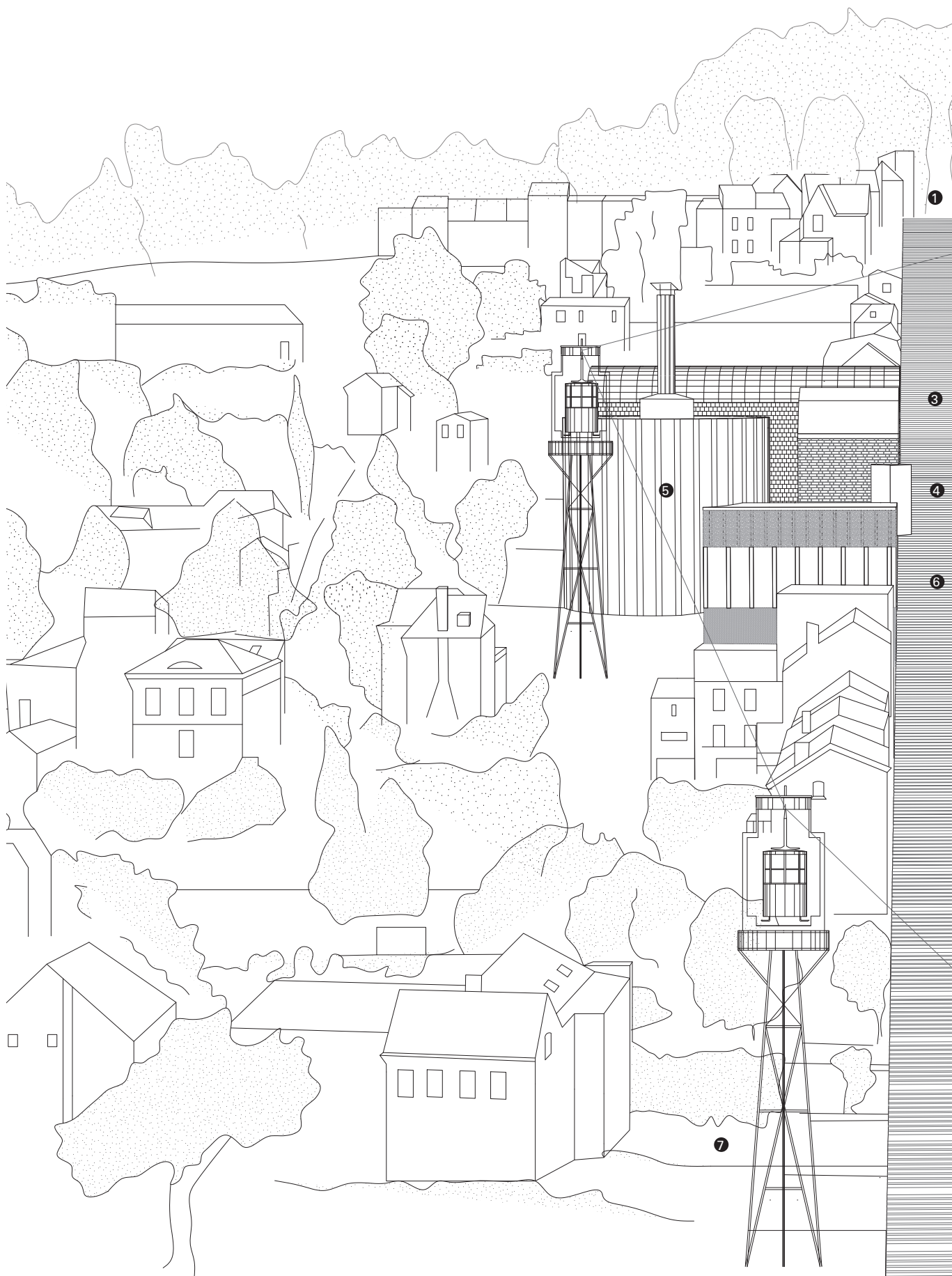
Liège, part of the Sillon industriel and the former industrial backbone of Wallonia, is still the economic and cultural center of the region, forming

a fertile ground for the urban winery development. Infrastructural elements such as platforms on the river and a funicular cableway for transportation

are added, in order to connect the winery and its products to the waterways.



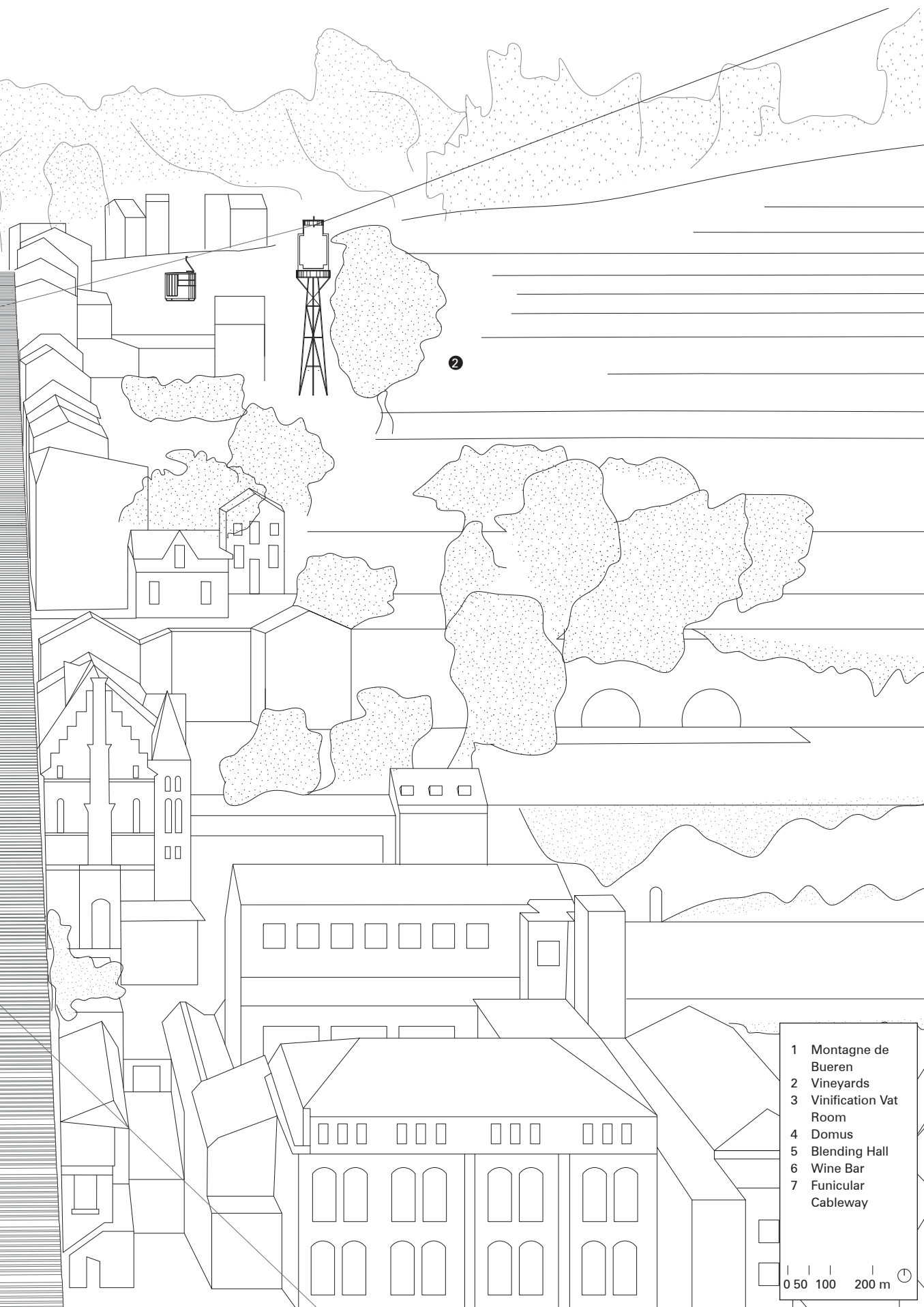




The contribution occupies an L-shape plot of 1,500 square meters in the middle of the Montagne de Bueren, a nineteenth-century grandiose

staircase composed of 374 steps that not only serves as the entrance to Liege's citadel but is also a new-found pilgrimage route for wine enthusiasts.

The winery is developed in three different buildings around a traditional townhouse in the middle of the staircase.



- 1 Montagne de Bueren
- 2 Vineyards
- 3 Vinification Vat Room
- 4 Domus
- 5 Blending Hall
- 6 Wine Bar
- 7 Funicular Cableway

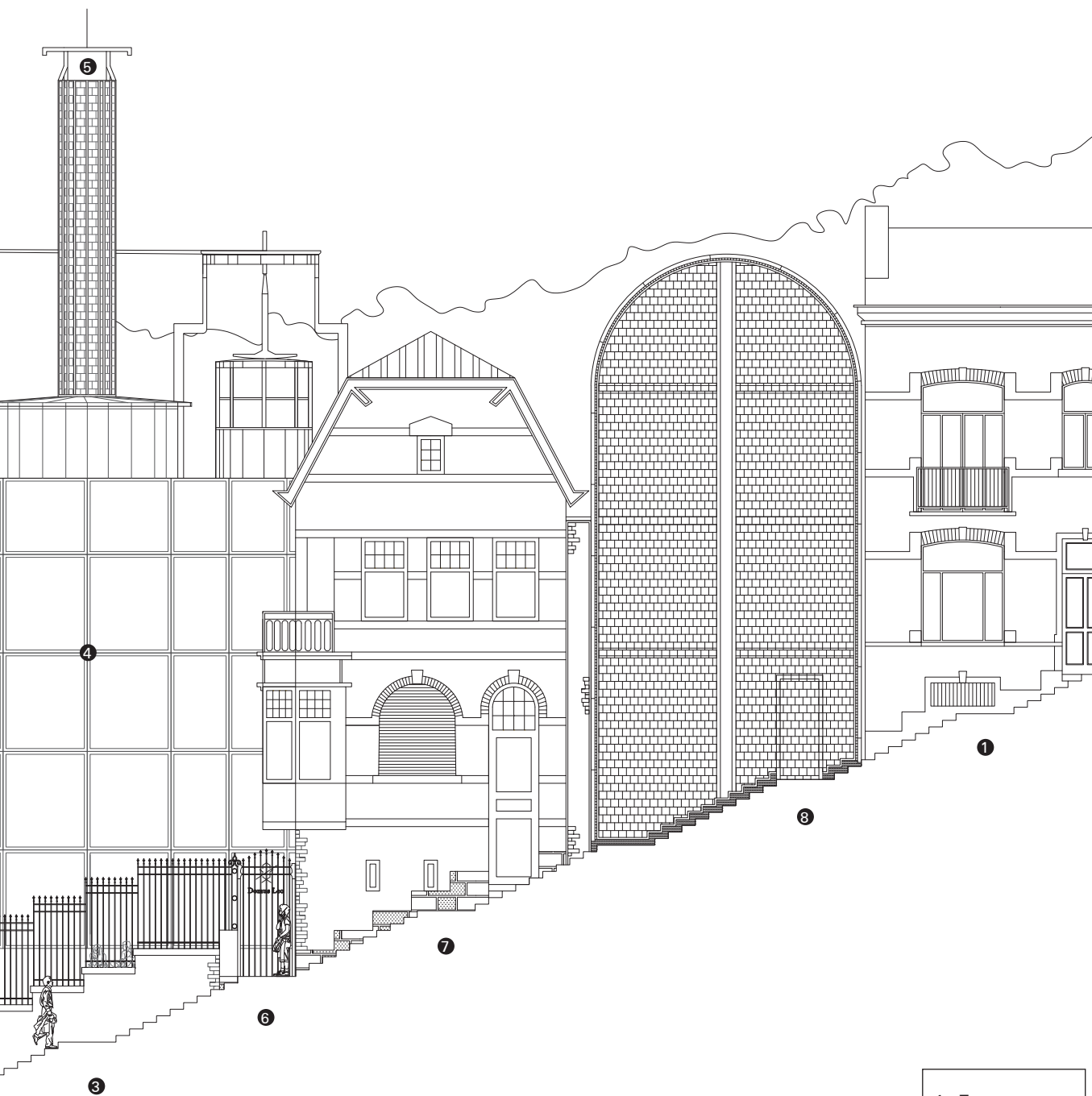
0 50 100 200 m



Visitors enter from three different levels, encountering the building from a bottom-up perspective, leading from consumption to production: the

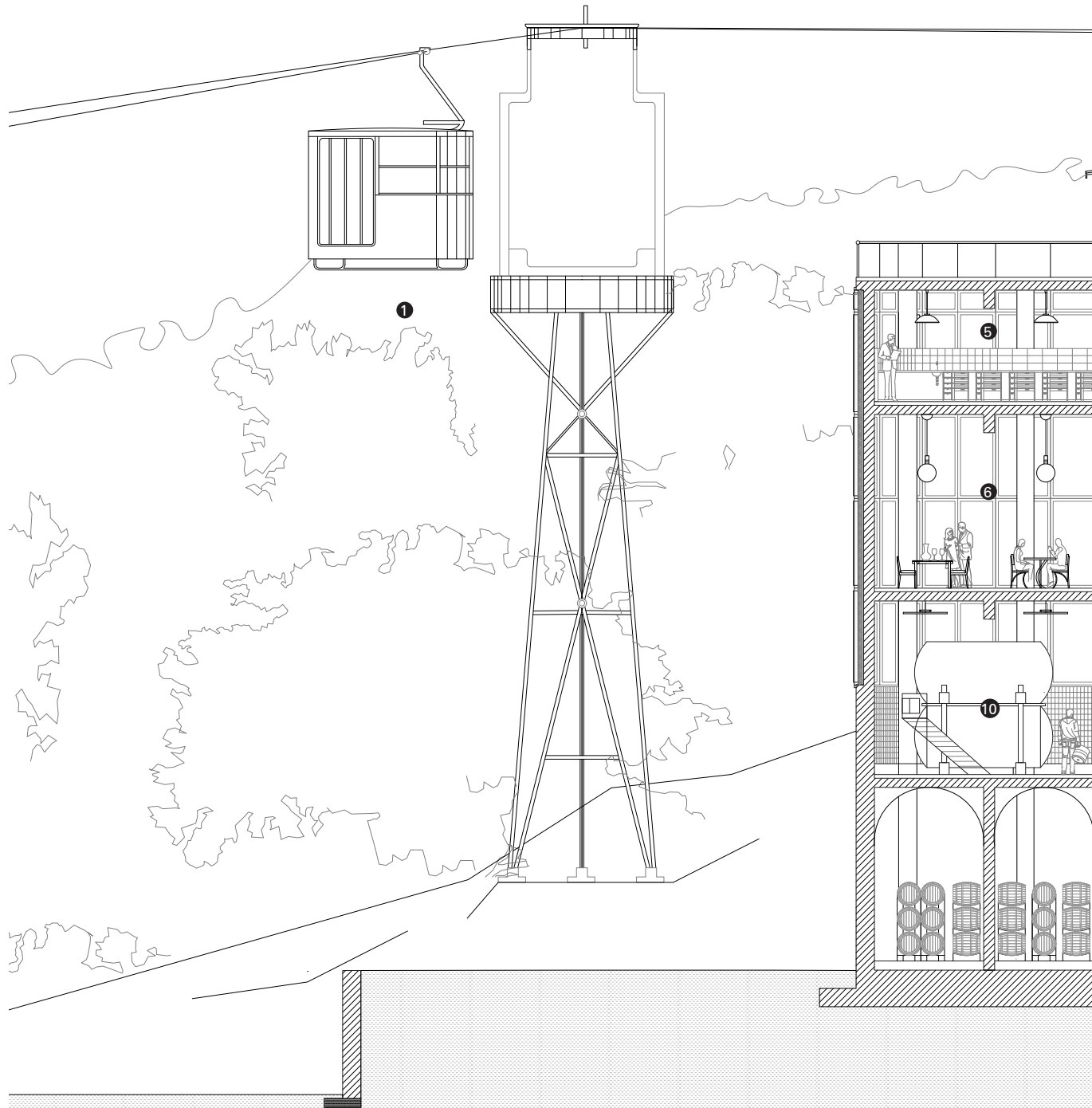
bar and its respective terrace on the lower level, the central courtyard level designed as an amphitheater, and the main entrance accessible from the

upper levels. The facade represents the reimagined image of Liège, and the materials used are local to the Meuse-Rhine Euroregion.



- 1 Terrace
- 2 Wine Bar
- 3 Central  
Courtyard
- 4 Blending Hall
- 5 Scarlet Tower
- 6 Main Entrance
- 7 Domus
- 8 Vinification Vat  
Room
- 9 Montagne de  
Bueren

0 | | | 3 m

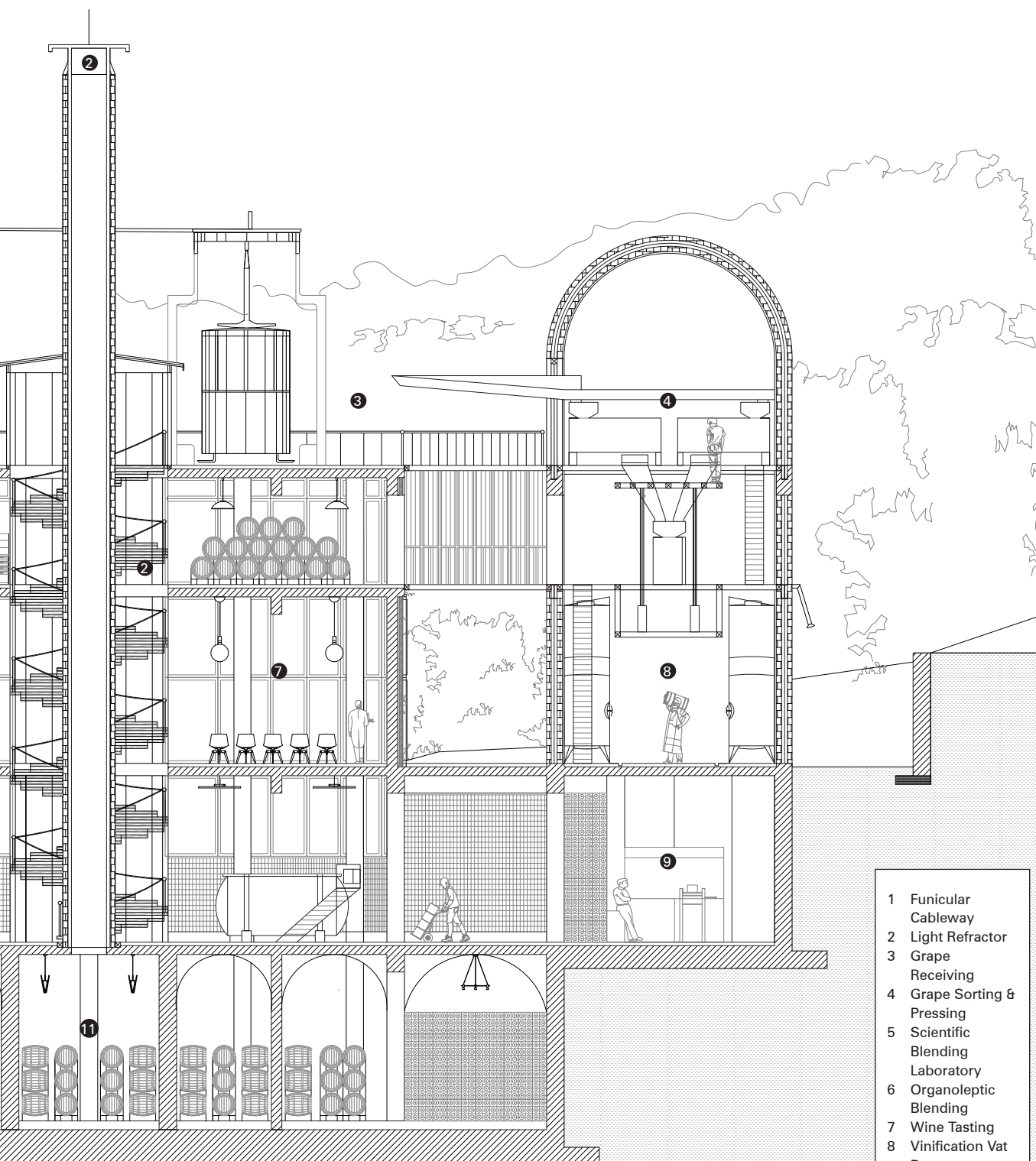


Grapes are received from the terrace to the upper level of the winery, making their way down through the building, from production to consumption. From

the vat room to the laboratory and cellar, the section of the wine production facilities follows the gravitational process of winemaking, ensuring an innovative

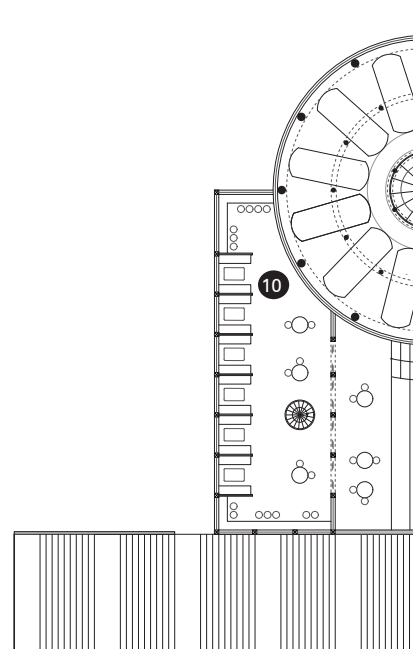
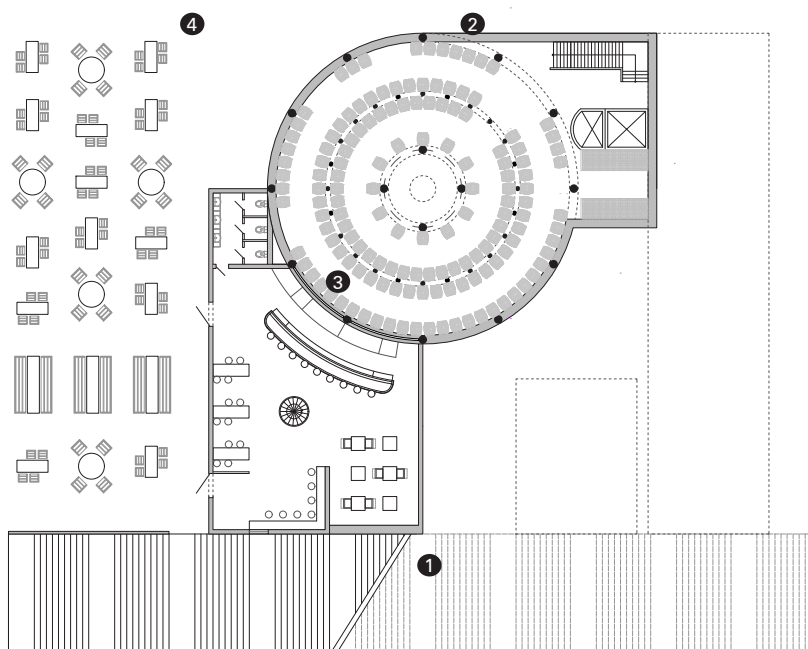
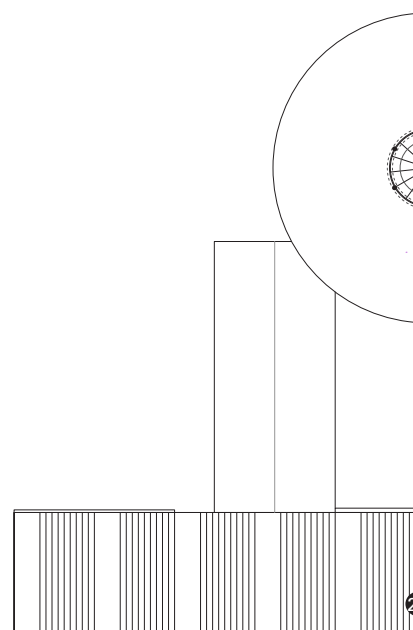
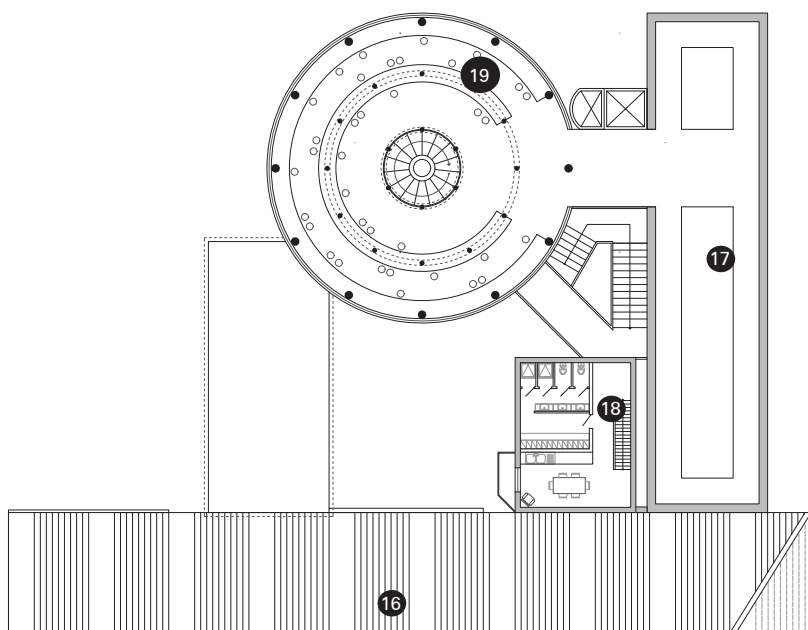
design to protect the grapes—a must during the first stages of production—and a connection to the blending hall at every level of the vinification process.





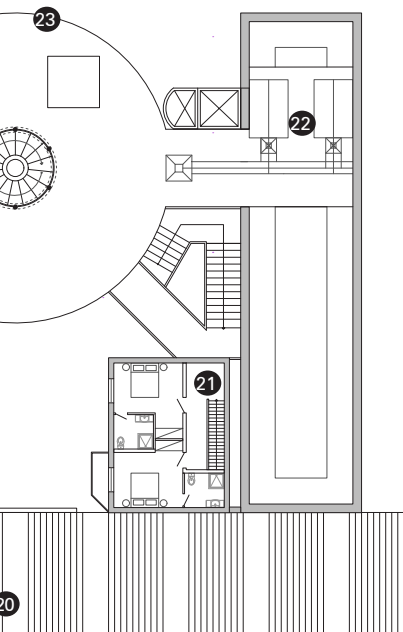
- 1 Funicular  
Cableway
- 2 Light Refractor
- 3 Grape  
Receiving
- 4 Grape Sorting &  
Pressing
- 5 Scientific  
Blending  
Laboratory
- 6 Organoleptic  
Blending
- 7 Wine Tasting
- 8 Vinification Vat  
Room
- 9 Bottling &  
Labeling Line
- 10 Tank (1st) Cellar
- 11 Bar (2nd) Cellar

0 3 m



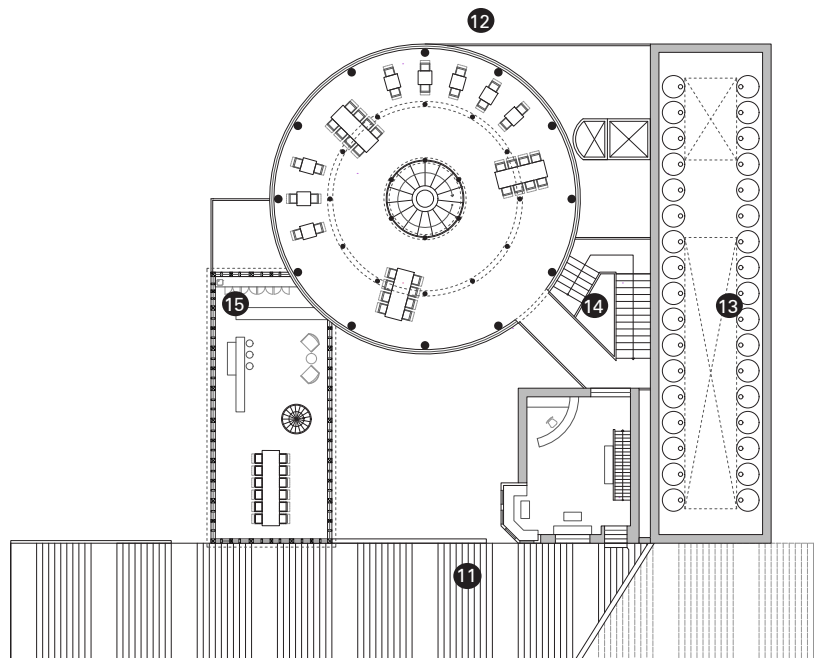
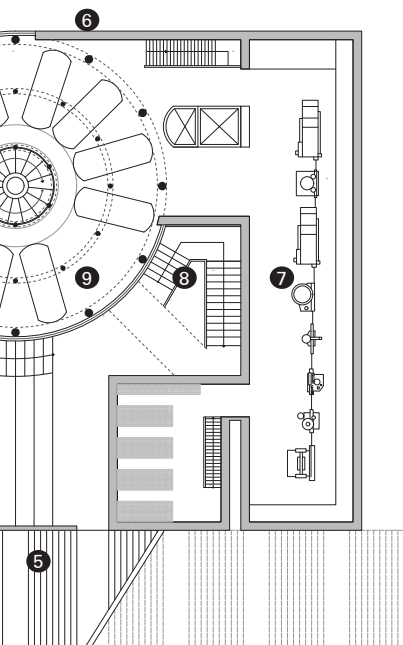
The building is organized around a central circular blending hall dictating the routes for the grapes and the visitors, with five different levels taking

advantage of the site, the views, and the topography.



- 1 Level 1
- 2 Barrel (2nd) Cellar
- 3 Wine Bar
- 4 Terrace
- 5 Level 2
- 6 Tank (1st) Cellar
- 7 Bottling & Labeling Line
- 8 Bottle Cellar
- 9 Main Entrance & Amphitheater
- 10 Panorama Bar
- 11 Level 3
- 12 Organoleptic Blending
- 13 Vinification Vat Room
- 14 Concierge
- 15 Private Dining
- 16 Level 4
- 17 Vinification Vat Room
- 18 Employee Area
- 19 Scientific Blending Laboratory
- 20 Level 5
- 21 Guest House
- 22 Grape Sorting and Pressing
- 23 Grape Receiving Funicular

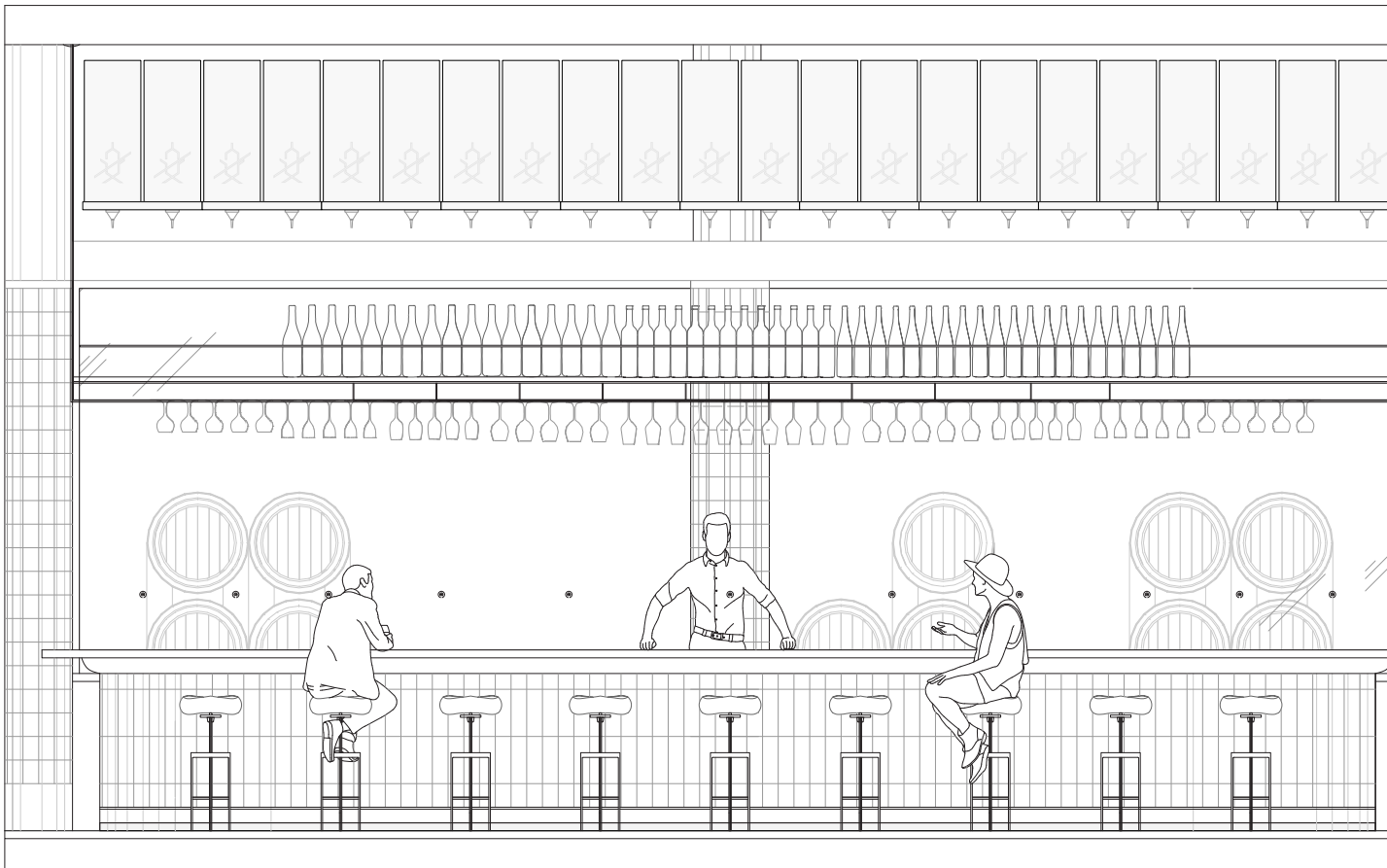
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1

2

3

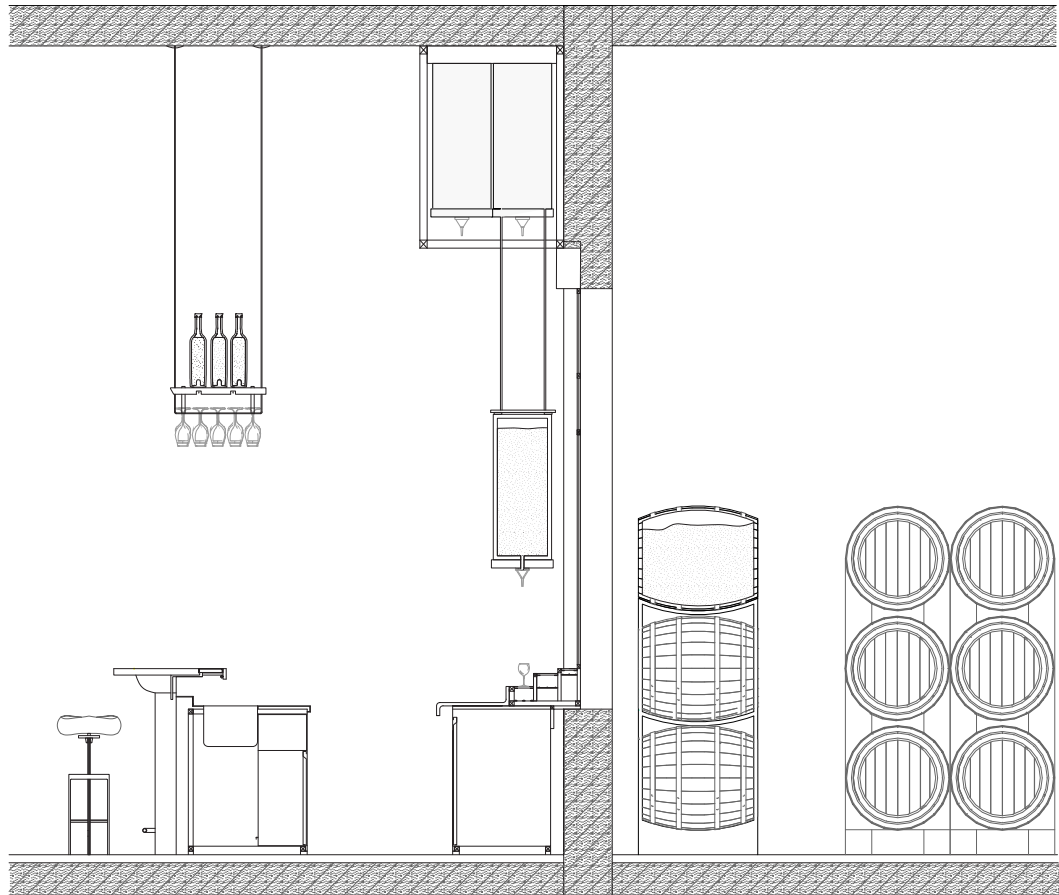


The Domus Leo eponymous wine bar offers a “barrel to bar” blended experience. With uninterrupted views of the cellar, customers and potent

buyers are challenged to create their own blends from the wine tanks hanging above the ceiling.

4

5



- 1 Wine Bar  
Elevation
- 2 Wine Tanks
- 3 Cellar Window
- 4 Wine Bar Section
- 5 Barrel (2nd) Cellar

0 1 m





## Propositions

1 Global warming and ecological catastrophe are threatening the productivity of renowned viticultural regions, questioning the inherent relationship between wine production and its associated terroir and challenging the traditional European perception of wine.

2 In an attempt to reestablish the economic viability of the Old World Wine, Europe must reimagine the notion of the terroir as a quality base beyond protectionism regulations.

3 No longer associated with one sole terroir, the finest wines of European viticulture will be transnational blends, building upon the knowledge, tradition, and novel techniques of winemaking.

4 The importance of distribution networks such as highways or rivers will transform the winemaking estate into an urban building type, shifting from the Chateau to the Domus.

5 Liège—the former industrial backbone of Wallonia and a traditional urban trading node—will utilize its strategic position in order to form the ground for the urban winery development, reinventing the image of the city.

This contribution is part of *Supermarket*, a collective project on the spatial implications of the food industry in the Netherlands and beyond, redesigning the now considered essential architecture of a supermarket.

Site in the Liège city center, Domus Leo proposes an urban winery that blends terroir fragments across the Blue Banana, exploring protection regulations that can build on upon the knowledge, tradition, and novel techniques of winemaking.

The Berlage Center for  
Advanced Studies in Architecture  
and Urban Design

Faculty of Architecture and  
the Built Environment

Delft University of Technology

#### Thesis advisory team

Salomon Frausto  
Benjamin Groothuijse  
Michiel Riedijk

#### Thesis examination committee

Dick van Gameren  
Kees Kaan  
Daniel Rosbottom  
Paul Vermeulen  
Nathalie de Vries

#### Students

Ana Herreros Cantis <sup>(ES)</sup>  
Jin Young Chang <sup>(KR)</sup>  
Maria Christopoulou <sup>(GR)</sup>  
Matthew Cook <sup>(UK)</sup>  
Maria Finagina <sup>(RU)</sup>  
Georgia Katsi <sup>(GR)</sup>  
Jacklyn Mickey <sup>(US)</sup>  
Ryan Ridge Rahardja <sup>(ID)</sup>  
Nishi Shah <sup>(IN)</sup>  
Michael Tjia <sup>(NL)</sup>  
Heng Yu <sup>(TW)</sup>

#### Director of Studies

Salomon Frausto