

Supermarket

5 *Collective Theme*

7 *Collective Research*

53 *Collective Project*

Context and Site
Annotated Analysis of Albert Heijn
Pictorial Narrative I
Visualized Evidence
Annotated Bibliography

Description
Spatial Narrative
Pictorial Narrative II
Drawing Set
Three-dimensional Visualization
Propositions

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,

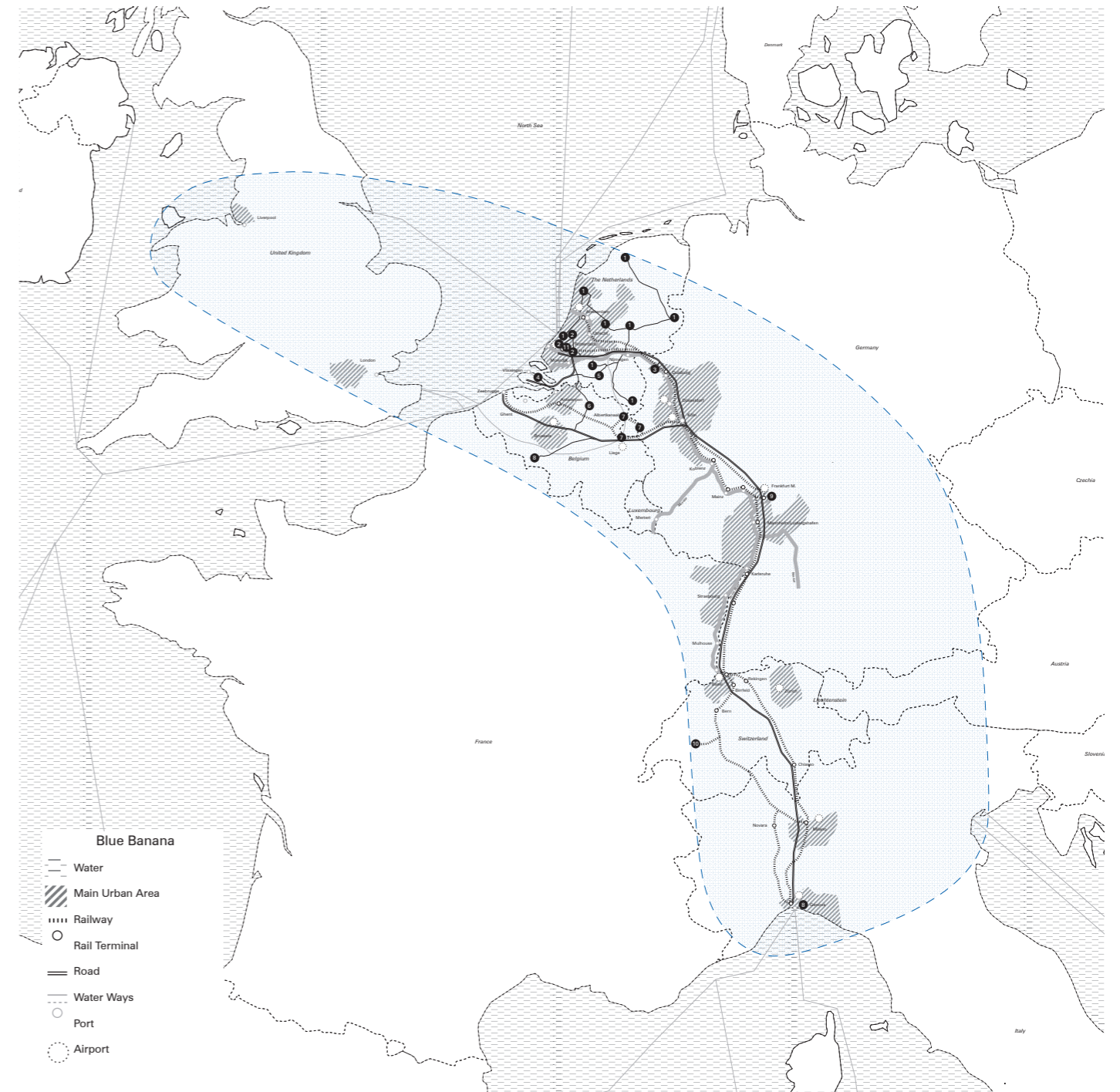
their associated building types, and their extensive territories. The collective design of this Albert Heijn XL will raise issues of scenography, product flow, human interaction, digital technology, and consumer experience, in an attempt to address the future of the food industry.

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.

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.



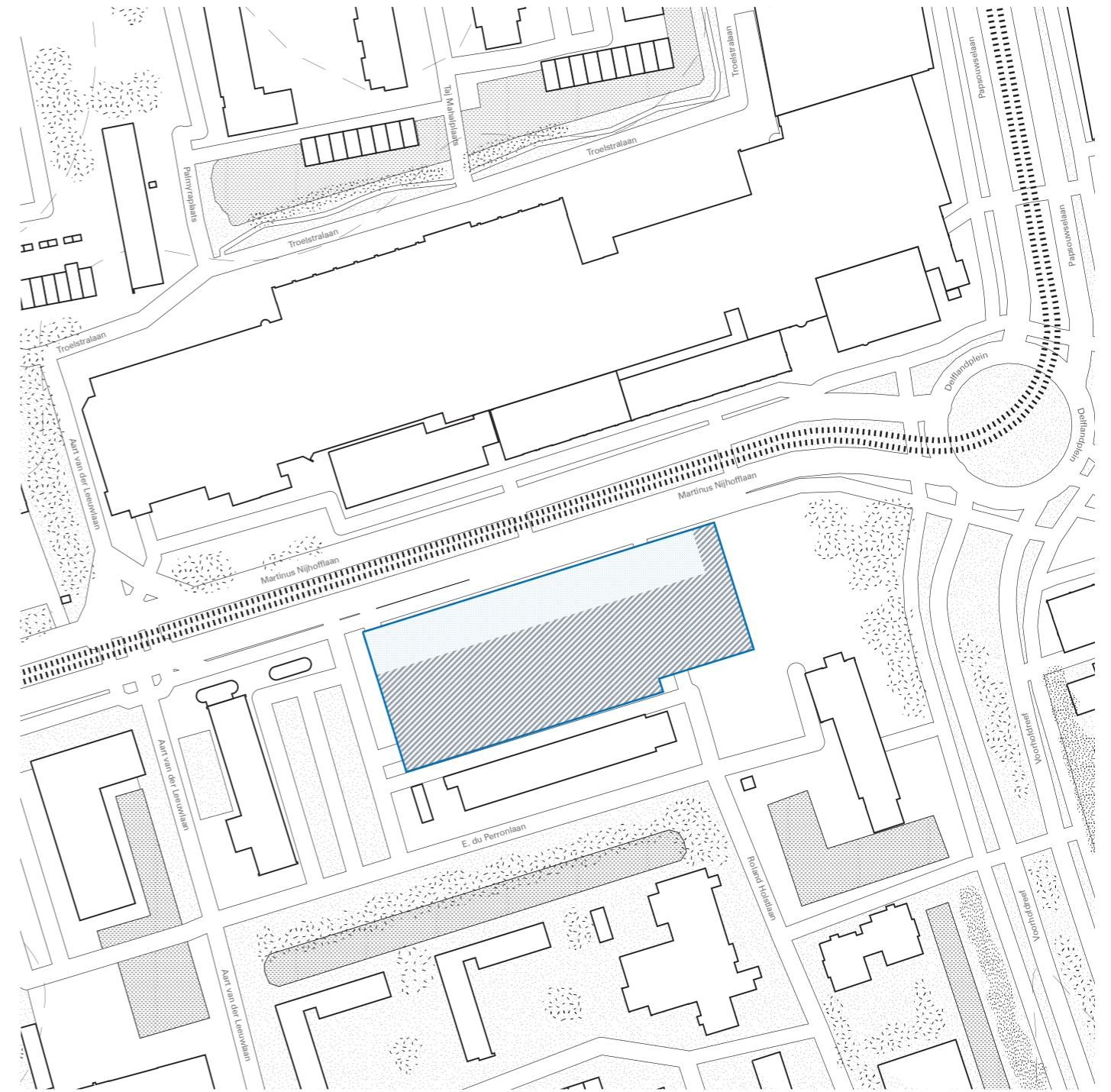
- 1 Lab Oratory
- 2 Whole Milk
- 3 Pink is Not a Color
- 4 The Tastemaking Estate

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

- 9 Fresh Forward
- 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?

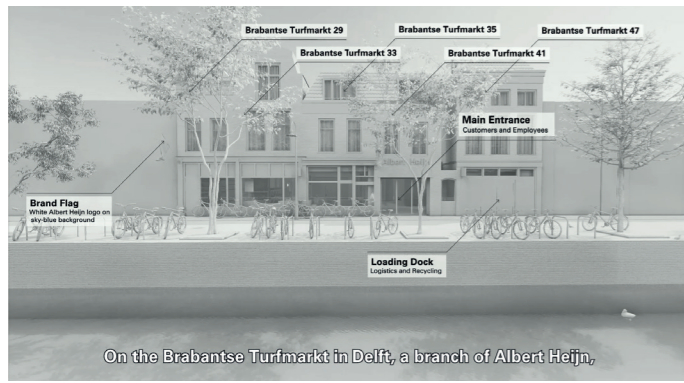
How does the incorporation of a supermarket reciprocate with its adjacent and peripheral demography, real estate, and territory and in turn affect land appreciation?

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.



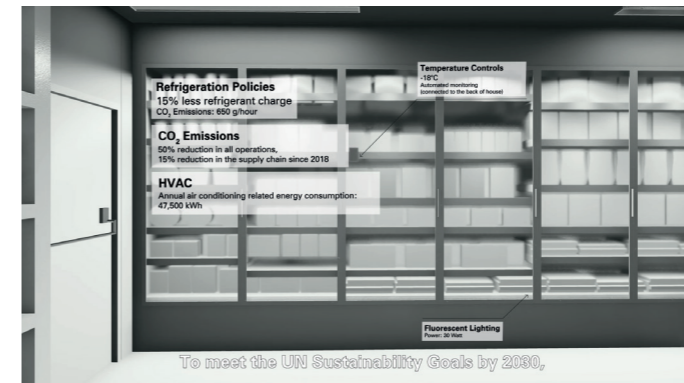
On the Brabantse Turfmarkt in Delft, a branch of Albert Heijn,

1



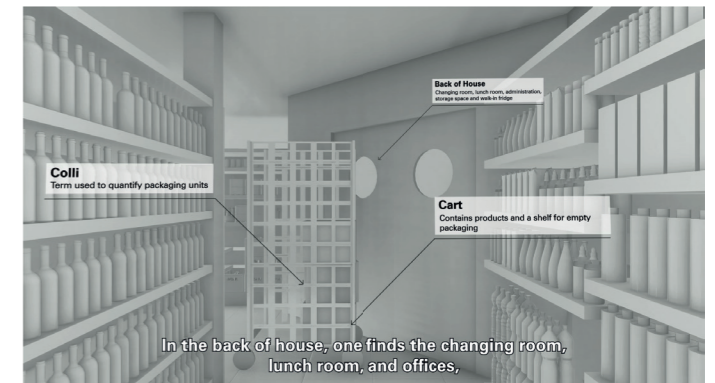
Brightly colored flowers and fresh produce are placed by the storefronts

2



To meet the UN Sustainability Goals by 2030,

7



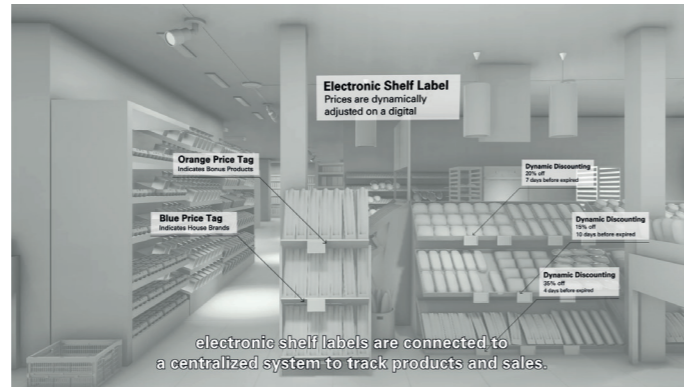
In the back of house, one finds the changing room, lunch room, and offices,

8



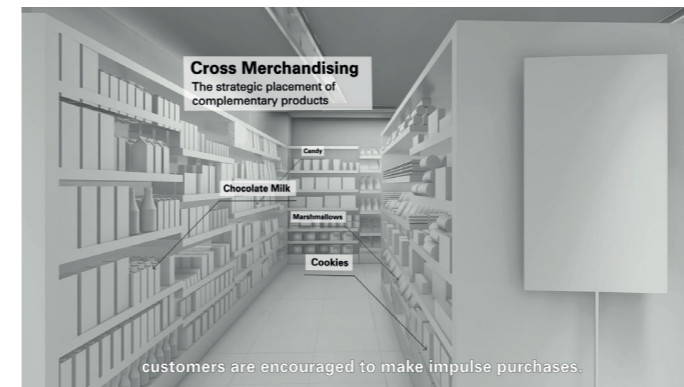
Strategic compartmentalized product placement impacts the layout of every Albert Heijn,

3



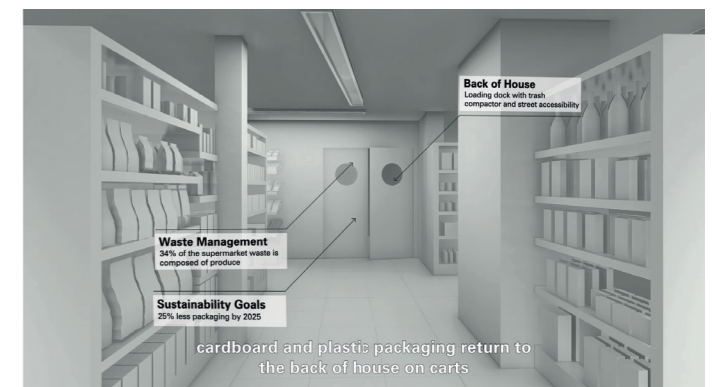
electronic shelf labels are connected to a centralized system to track products and sales.

4



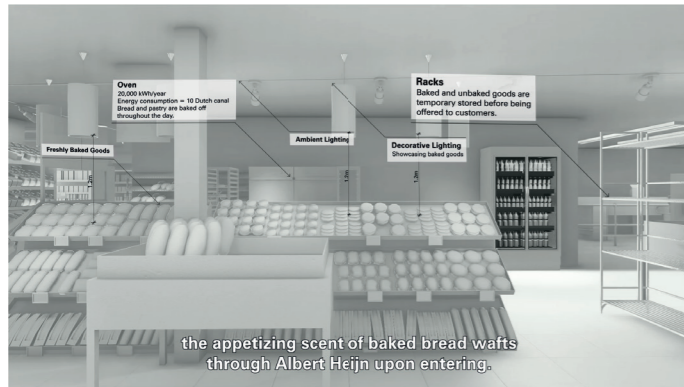
customers are encouraged to make impulse purchases.

9



cardboard and plastic packaging return to the back of house on carts

10



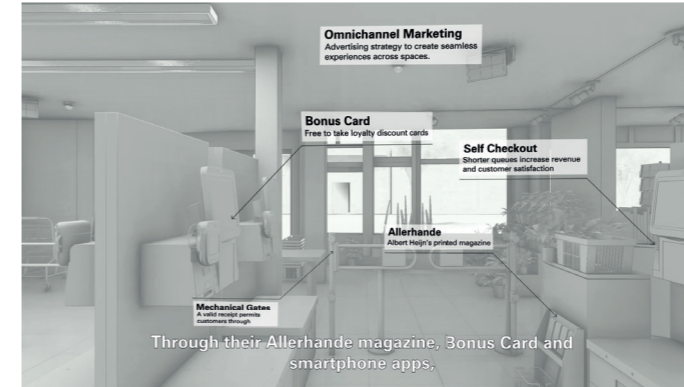
the appetizing scent of baked bread wafts through Albert Heijn upon entering.

5



The storefronts are specifically designed using planograms

6



Through their Allerhande magazine, Bonus Card and smartphone apps,

11



The Supermarket Reconstructed.



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.



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.



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



On protectionism- Special wine blends from yet unimagined European terroirs are displayed at eye-level—consumer's perspective—while a complimentary

tasting experience is placed at touch-level.



Een Deen-filiaal sluit vroeg vanwege coronamaatregelen, oktober 2020. JWP

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 Peek
25 August 2021 - appeared in no. 34



Menu nrc

Listen to 10:51
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



de Volkskrant

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

NOS NIEUWS · ECONOMIE · VR 24 SEPTEMBER, 09:20 · AANGEPAST VR 24 SEPTEMBER, 14:27

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



A Jumbo Flash Deliveryman. JWP

Het Parool

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 geprotesteerd door activisten, waarbij zelfs verschillende AH-supermarkten in Amsterdam werden dichtgekluisd.

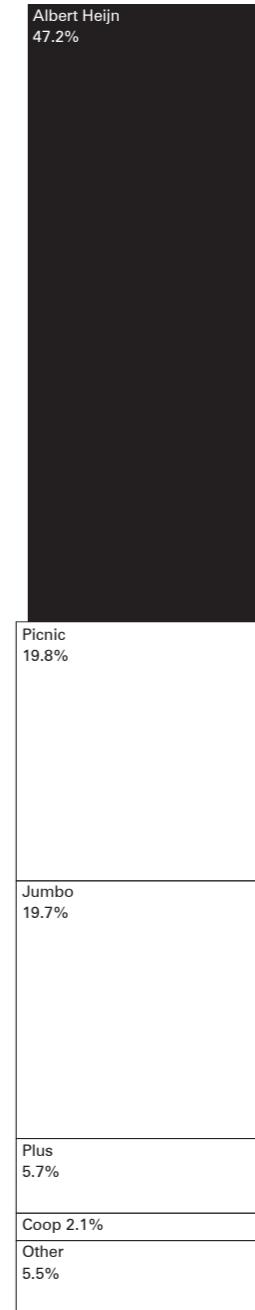
Bart van Zoelen 28 november 2021, 13:50

NOS Nieuws · Sport · Uitzendingen

NOS NIEUWS · ECONOMIE · VR 24 SEPTEMBER, 09:20 · AANGEPAST VR 24 SEPTEMBER, 14:27
Natuurbeschermers zeggen sloten AH-filialen Amsterdam te hebben dichtgekluisd



Market Share (2020) Supermarkets



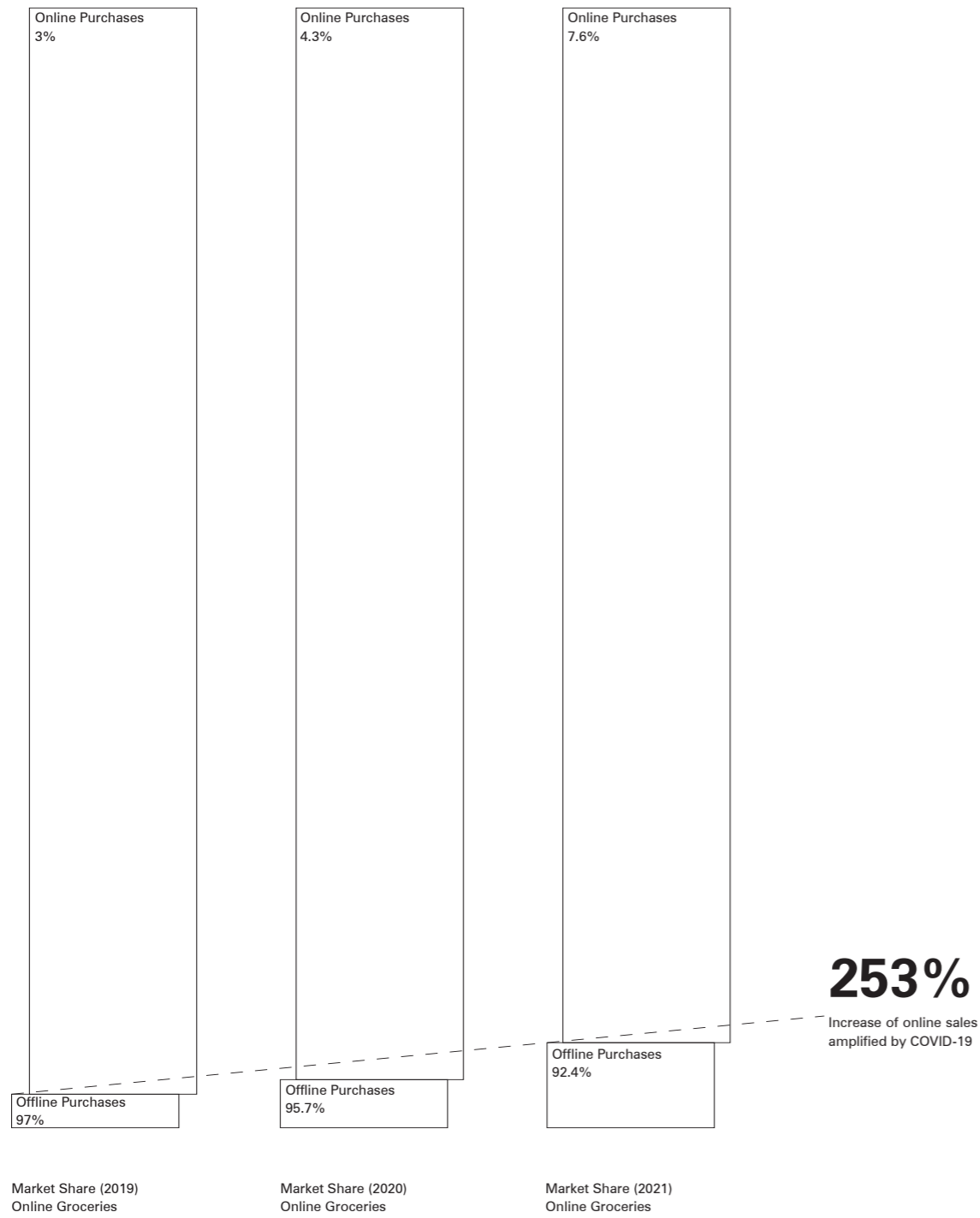
Market Share (2020) Online Groceries

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.

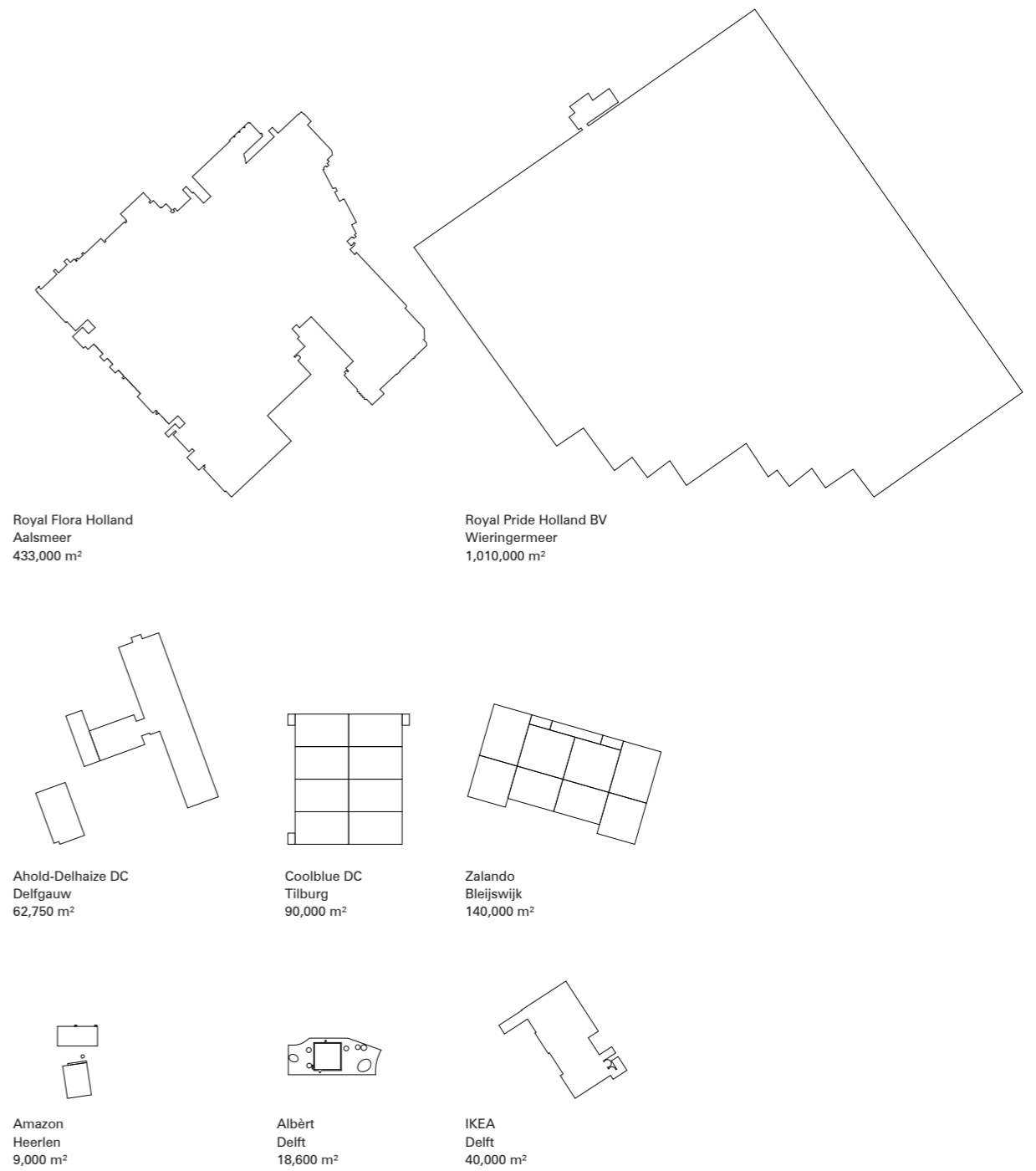
The "supermarket war" in the Netherlands, has led to a consolidation of companies and a seemingly oligopolized landscape of grocers, in

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



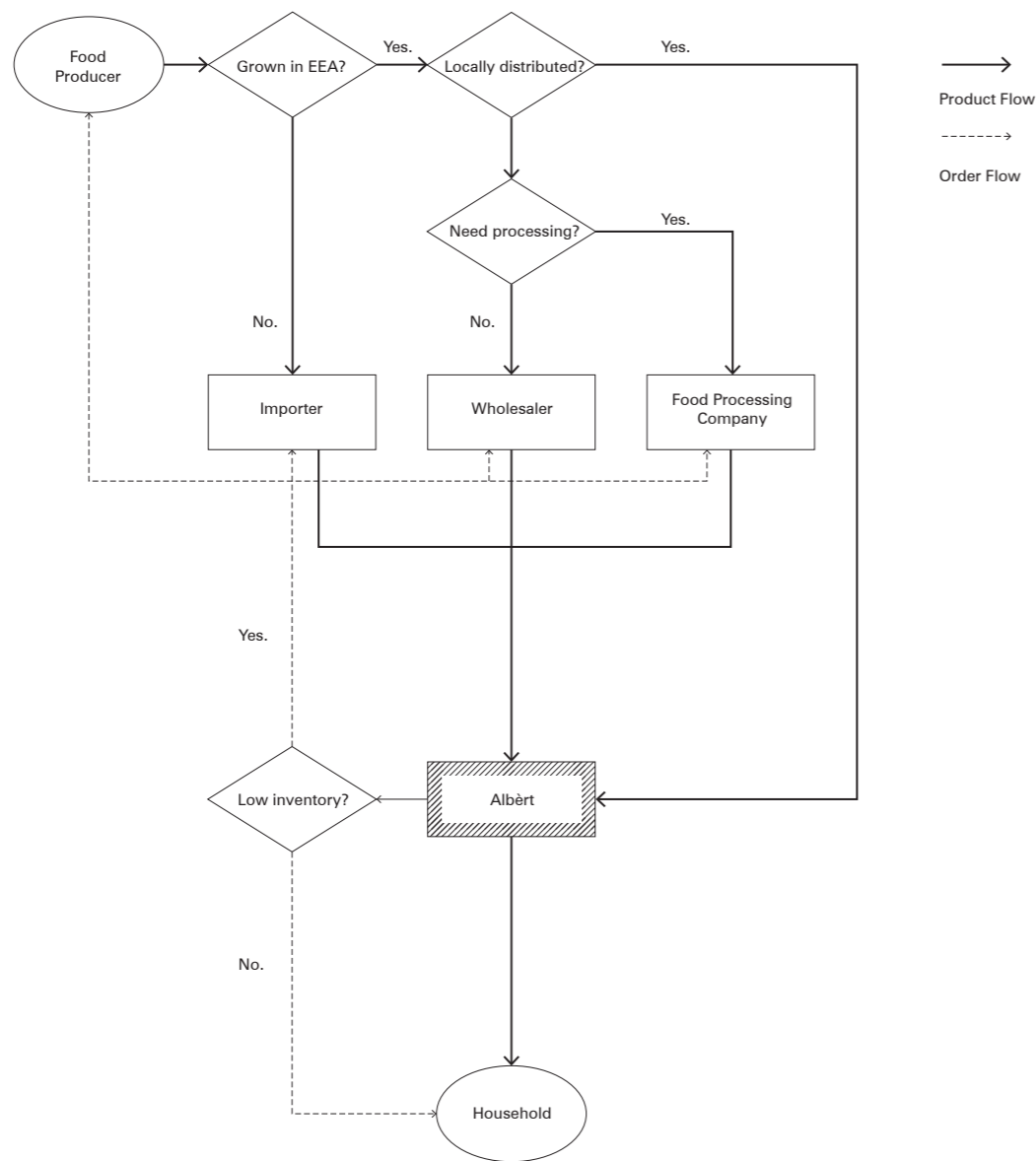
The “supermarket war” in the Netherlands, has led to a consolidation of companies and a seemingly oligopolized landscape of grocers, in

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



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.

2022

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



2030

- Albèrt



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.

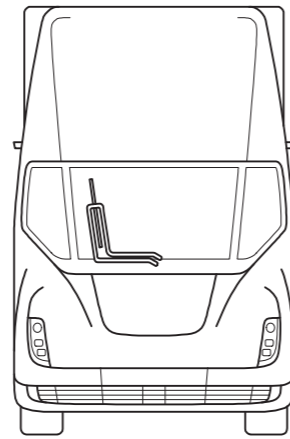
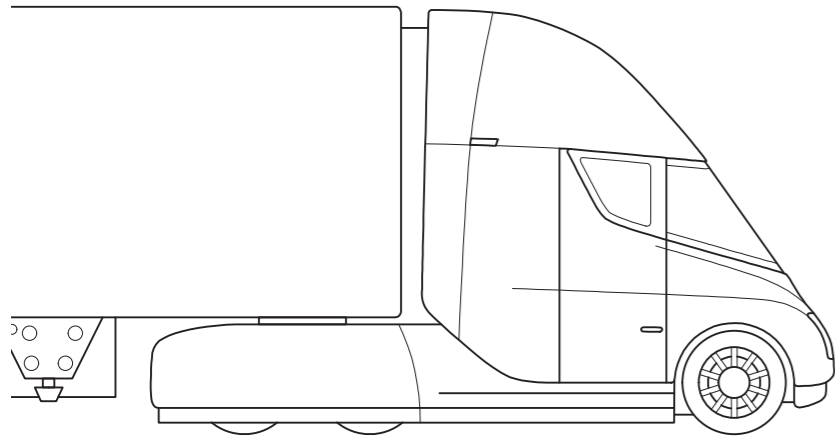
Delft's historic center, however, exhibits a high density of supermarkets and speed delivery hubs, responding to valuable shoppers in their proximity.

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



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

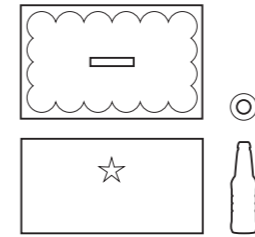
products directly sourced from local suppliers within the city, with the choice of having fine quality products and essential goods at the same place.



Freight-truck



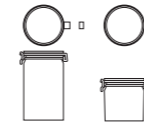
PET Bottle 1.5 l



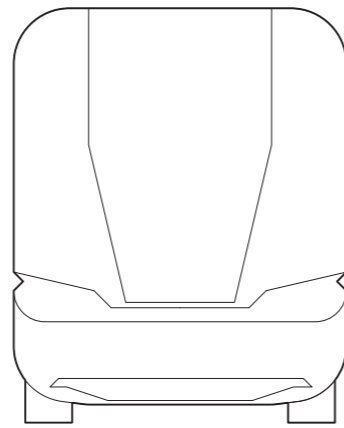
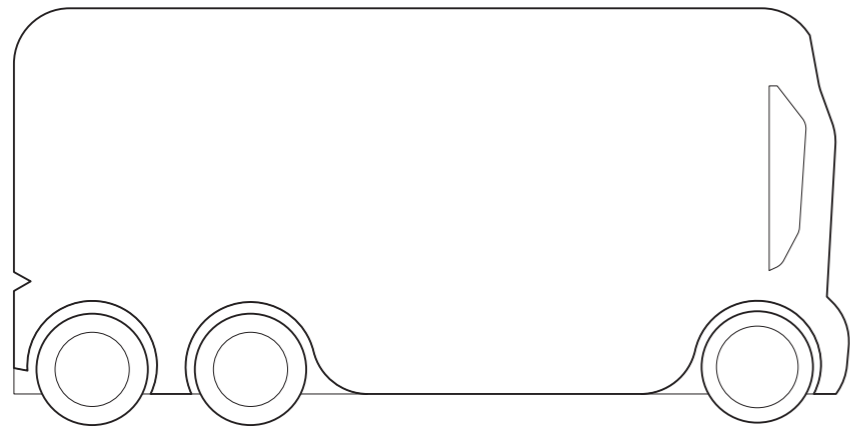
Crate and Glass Bottle, 33 cl



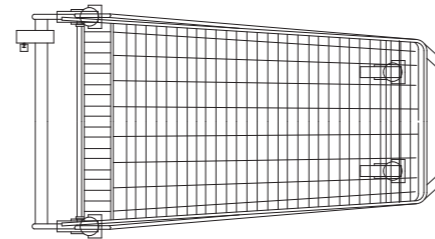
Albèrt Smart Cart



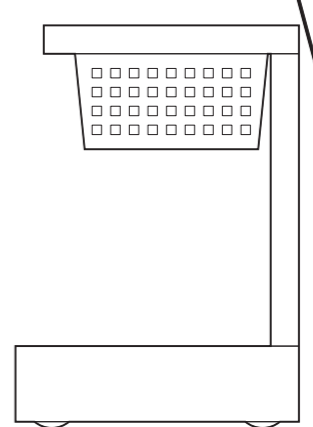
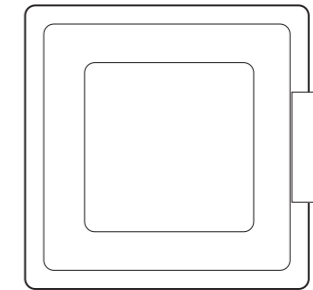
Pieter Pot Reusable Glass Jars, various volumes



Albèrt truck



Supermarket shopping cart and shopping basket



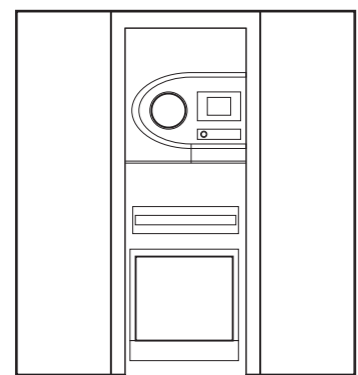
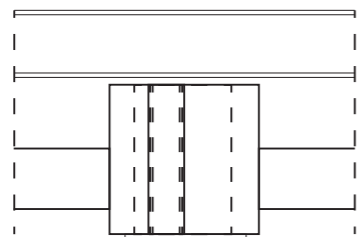
Albèrt Smart Cart

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

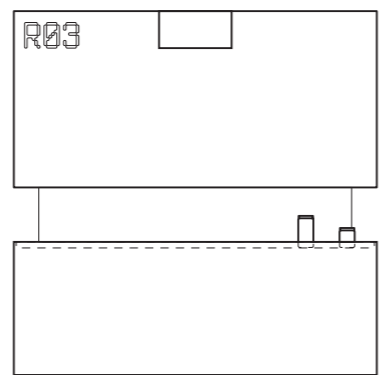
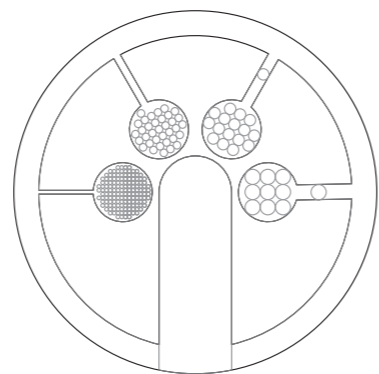
care of transport between producers, supermarkets, and homes.

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

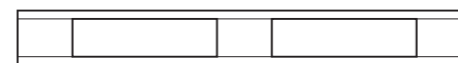
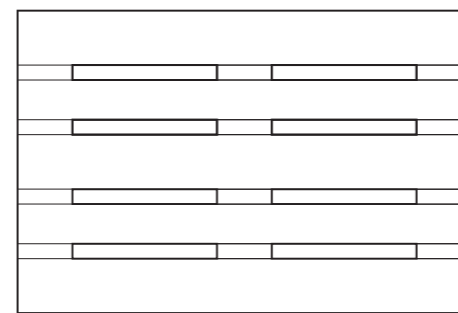
dimensions in Albèrt. Displays on the smart cart and supermarket hosts guide shoppers in finding their products.



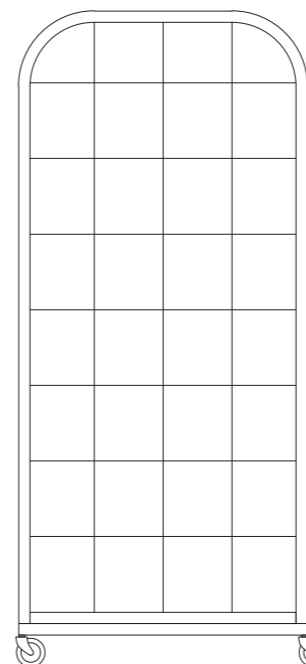
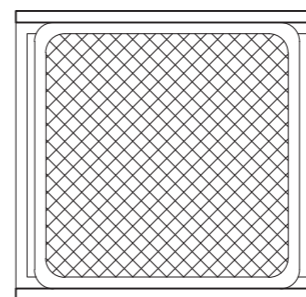
Container-deposit machine



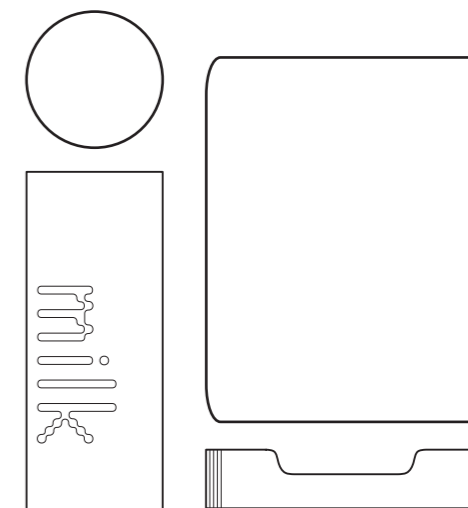
Albert Container Return Point



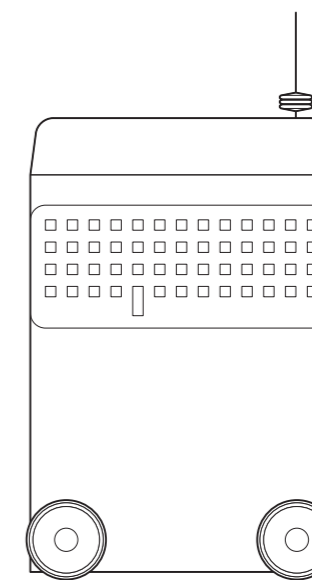
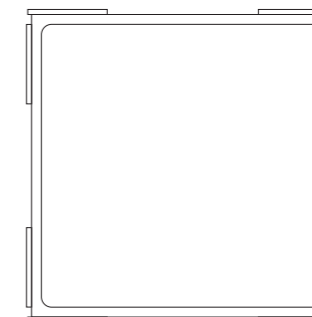
EPAL-Pallet



Stocking Cart



Albert Bulk Containers and Crates

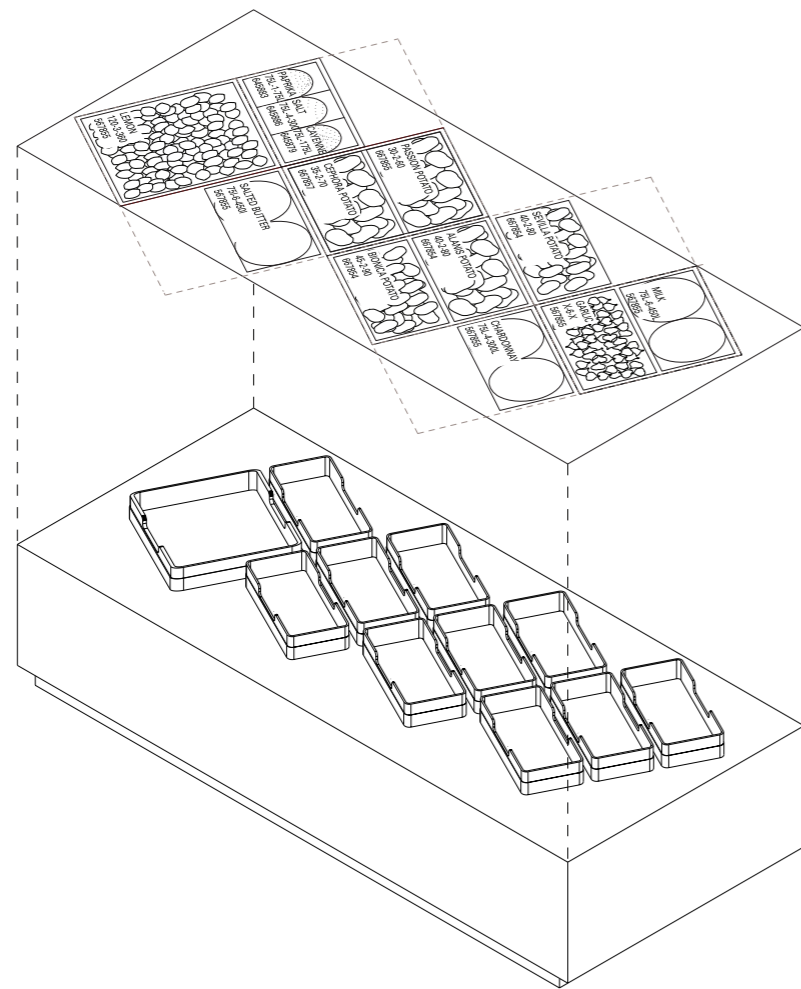
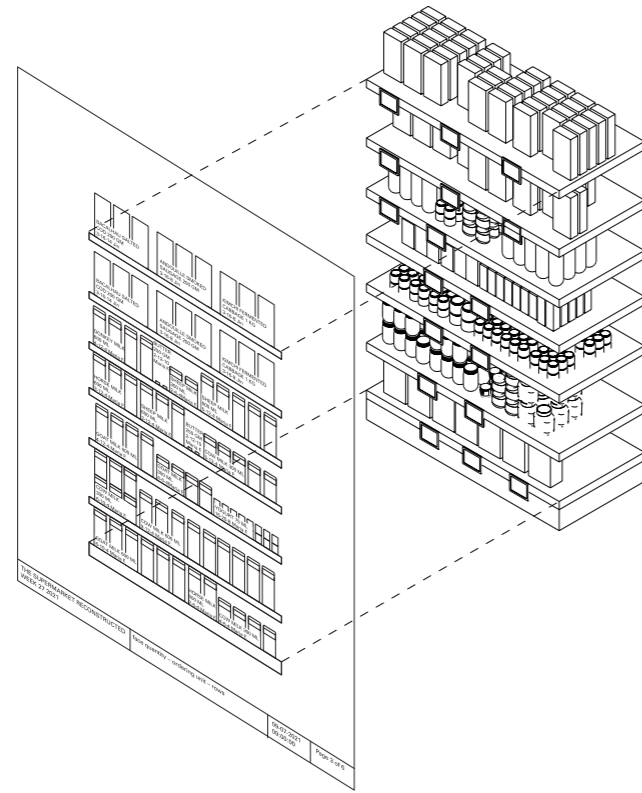


Ocado Robot

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

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

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



€ 1.00

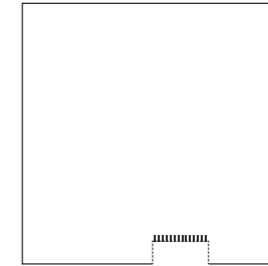


1970
Thermal printed price label with
European Article Number and unit
price
120 x 100 mm

Self-service store with checkout counters
~170 m²



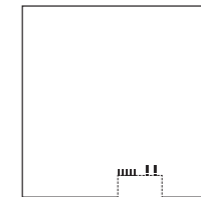
1936
Self adhesive price label
21 x 12 mm



Hypermarket with checkout counters
~6000 m²



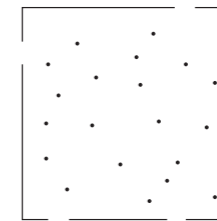
2020
Electronic Shelf labeling system with
dynamic display
70 x 36 mm



Modern Supermarket with
omi-channel checkouts
~3000 m²



2030
NFC tag embedded in the crate
Ø3 mm



2030
Albèrt with smart carts
Ø3 mm

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.

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.

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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

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, 2022, <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.

22. Thibaut Marie Tardieu, *Potential Greenwashing At Dutch Supermarkets* (Wageningen University & Research May 11, 2020)

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).

An excerpt from a book questioning the notion of nature and a human's place within it.

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.

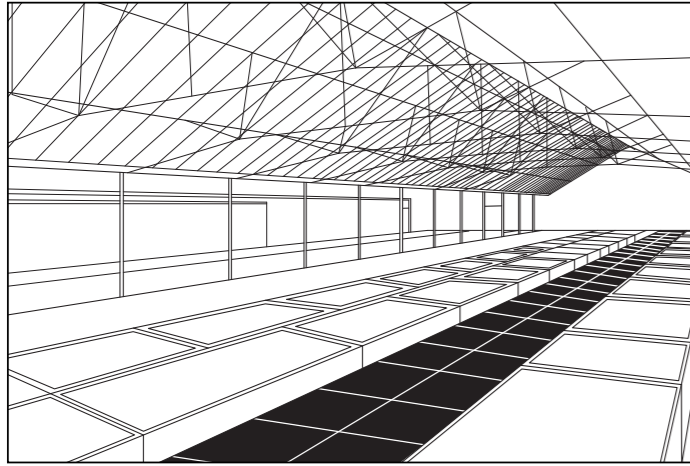
Ten products, along with their associated building types and territories demonstrate how a modified food distribution network converges at the future supermarket—Albèrt—on Martinus Nijhofflaan in Delft. Albèrt seeks to display products and their supply chain by integrating the once stand-alone and distant 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.

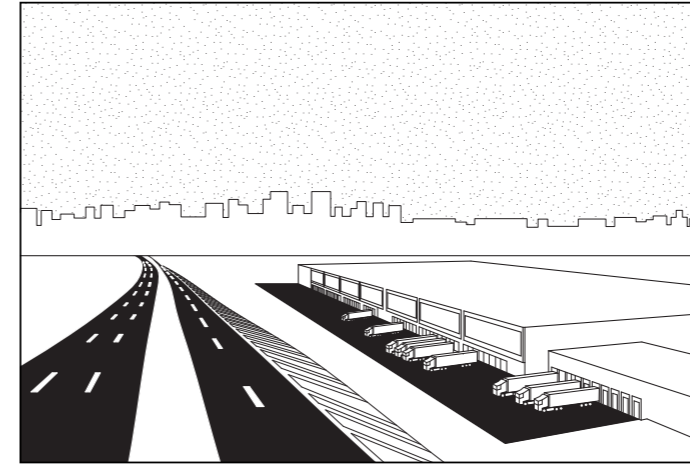
The supermarket—previously conceived as a destination— incorporates a pathway to meet the constant movement of divergent consumers with the conjunction of fast-paced pick-up zones—promoting cycling, delivery, and e-commerce— and slow-paced demonstration zones offering novel tasting experiences along 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.



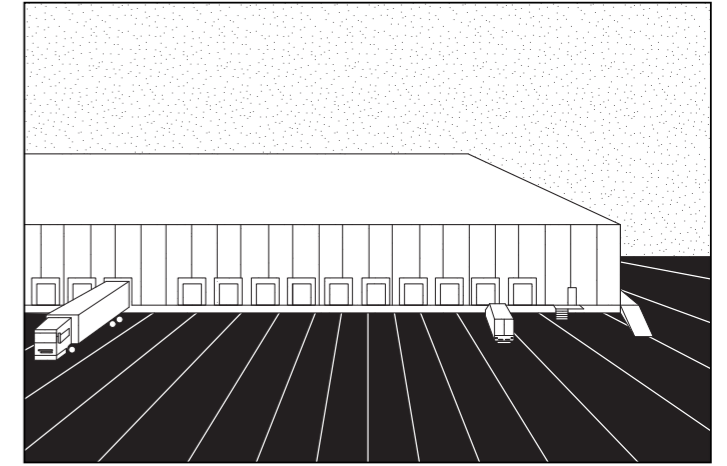
The Netherlands is internationally recognized as one of the world's largest food exporters due to its excellent connectivity throughout Europe. Home to world-class research institutions, it is—in effect—feeding the world. However, food production and consumption are responsible for around 25% of the 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.



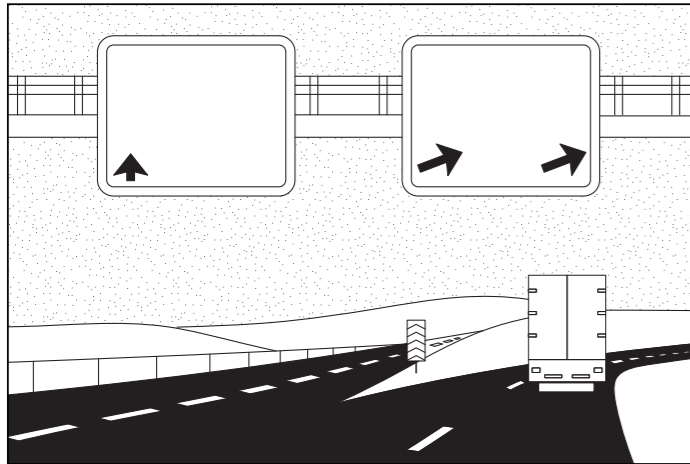
Ten architectural and urban design contributions sited within the Blue Banana—a European corridor of almost continuous urbanization—originating from supermarket products, <<<redesign the future supermarket of 2030.



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.



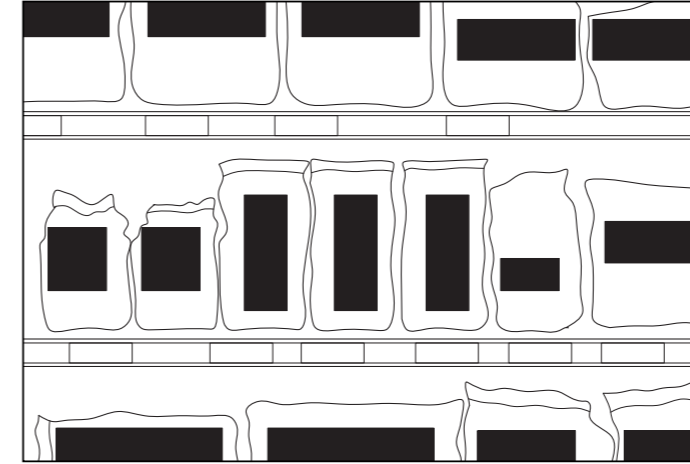
For this purpose, distribution centers currently serve as the epicenter, exploring the resultant spatial characteristics, and linking these ten contributions with the future supermarket.



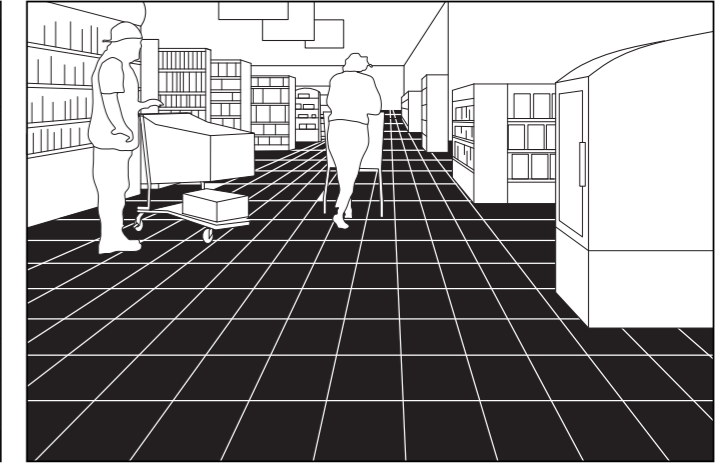
A continuous supply of products and materials, to and from the current supermarket, is made possible through a vast network of roads, rails, and waterways, connecting it to various infrastructural nodes and European trade routes within the Blue Banana.



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.



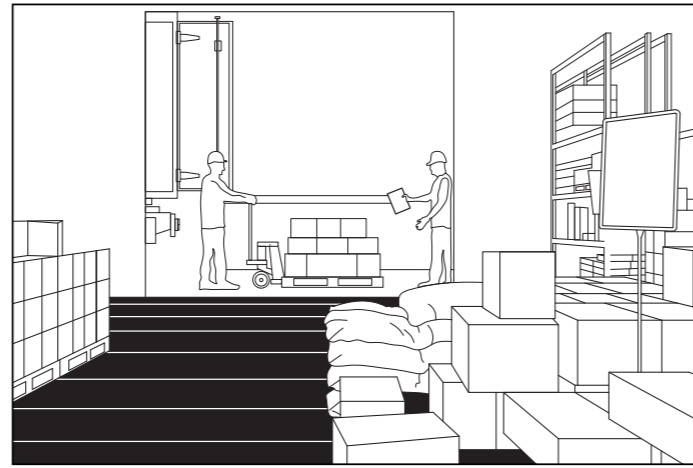
Fixed prices that originated in order to accelerate grocery sales had a huge impact on consumer experience. From standardization of price tags to uniformity of products, and from barcodes to electronic shelf labeling, the improved logistics, shorter employee training periods, a monitored supply system,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



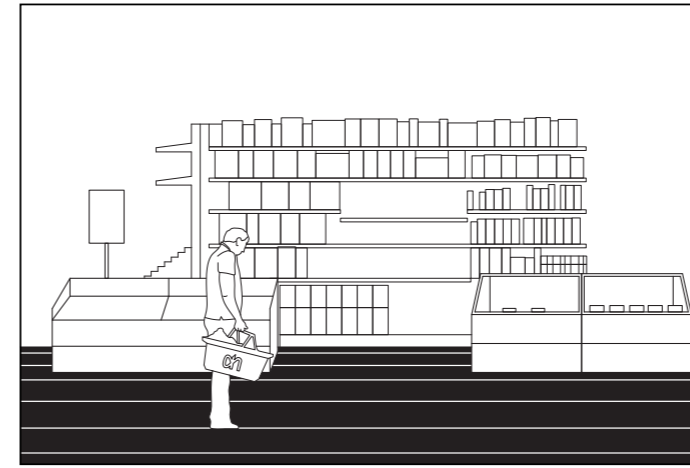
As the COVID-19 pandemic has reshaped the retail market in unprecedented ways, consumers shift around lifestyle and value. Its profits increased up to 40% and physical stores overflowed with people seeking to maintain a sense of normalcy, underscoring it as an essential service, one that represents a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



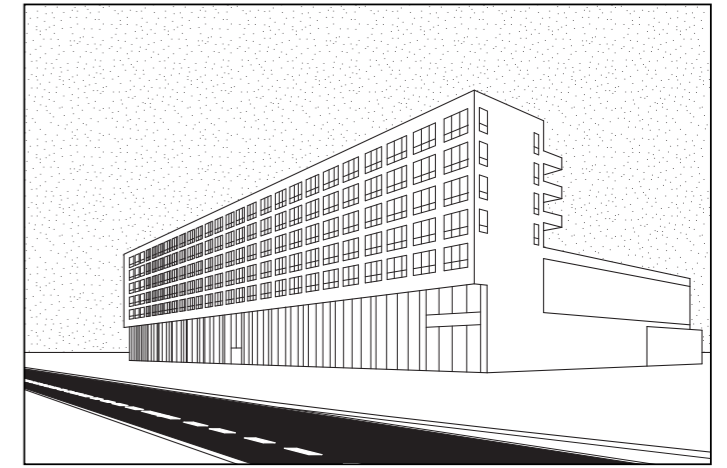
Home delivery and e-commerce businesses grew up to 5 times faster than before the pandemic, giving rise to an online distribution center that offers the convenience of a digital supermarket.



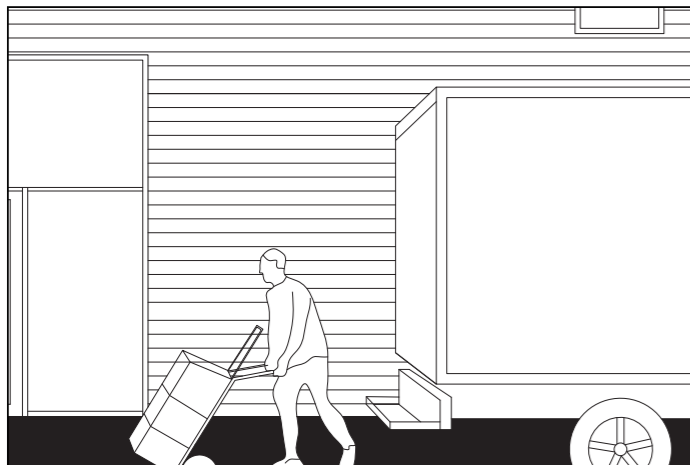
The supermarket analysis reveals its functional logic through the concealed back of house that is associated with the product's supply chain. Regarded as the employee's domain, the back of house is concerned with product flow, supply, and demand through data-driven decision-making, standardized packaging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



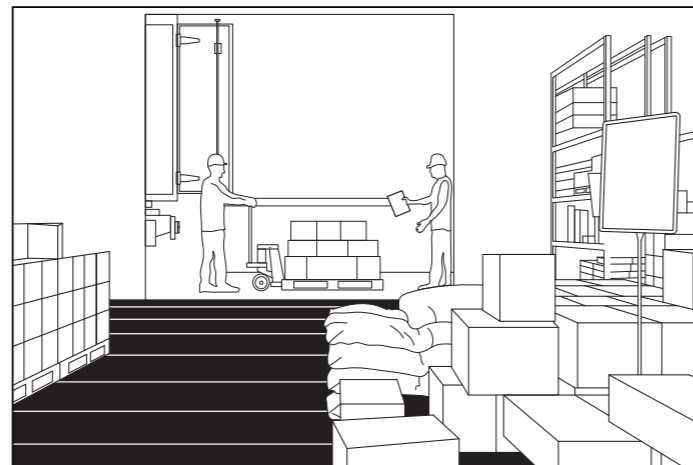
Secondly, the meticulously designed sales floor provides an immersive consumer experience. The sales floor raises issues of scenography, human interaction, digital technology, and the organization of supermarkets within the ever-changing future of retail through the notions of craft, reshoring, protectionism,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



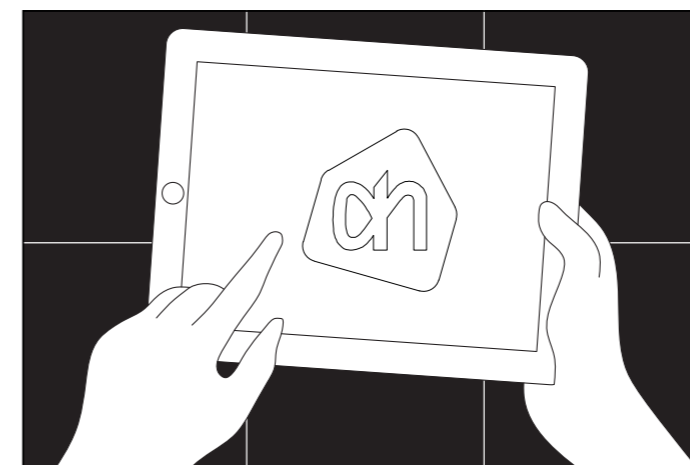
The collective project on the spatial implications of the food industry in the Netherlands and beyond redesigns a future supermarket on the current site of the Albert Heijn XL on Martinus Nijhofflaan in Delft, implementing developments on the sales floor and the back of house ensuring a frictionless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



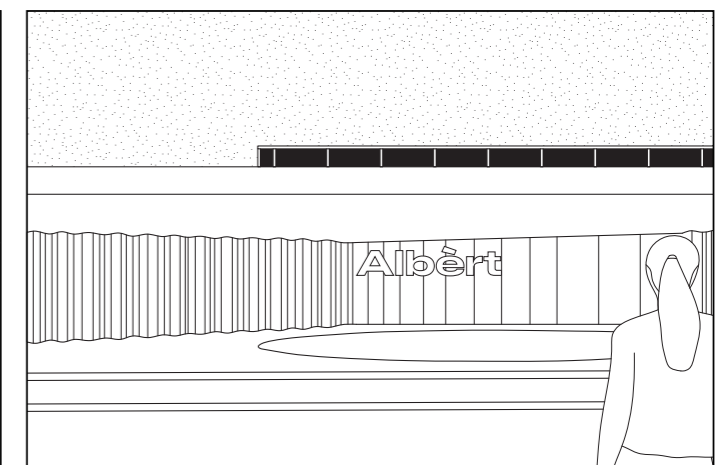
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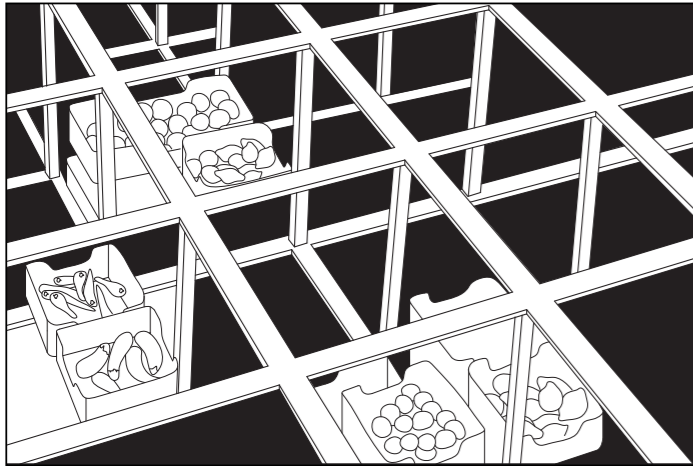
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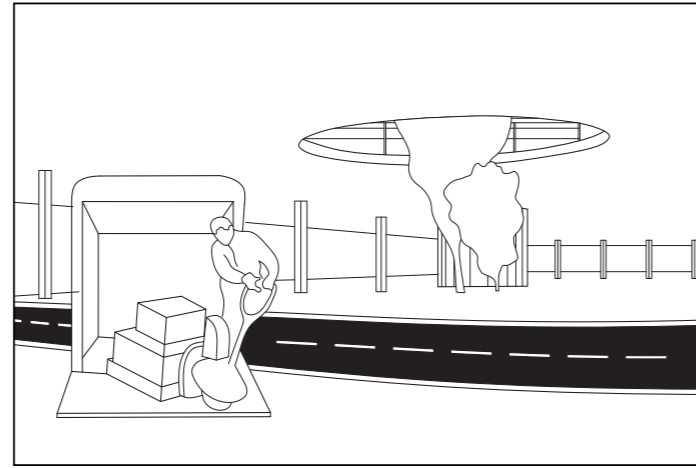
Situated in a densifying expansion area of Delft, a forecasted demography of (international) students, families, and elderly will make use of this supermarket and its e-commerce services.



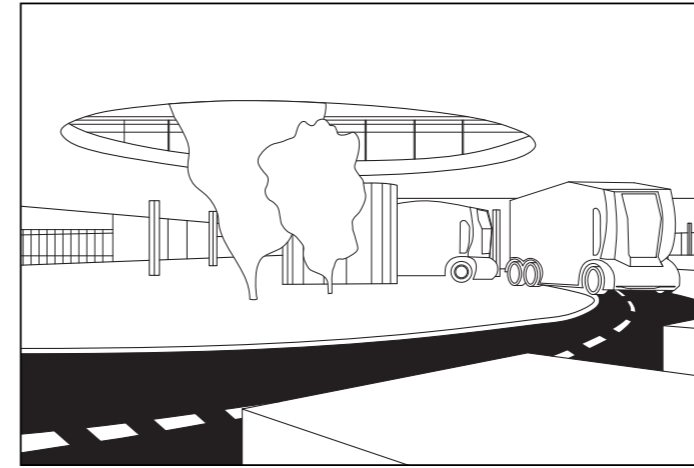
Responding to technical, environmental, and societal demands from the Blue Banana's urbanized corridor to the new Albért, and from the supermarket's back of house to the sales floor, new spatial propositions redefine the future supermarket of 2030.



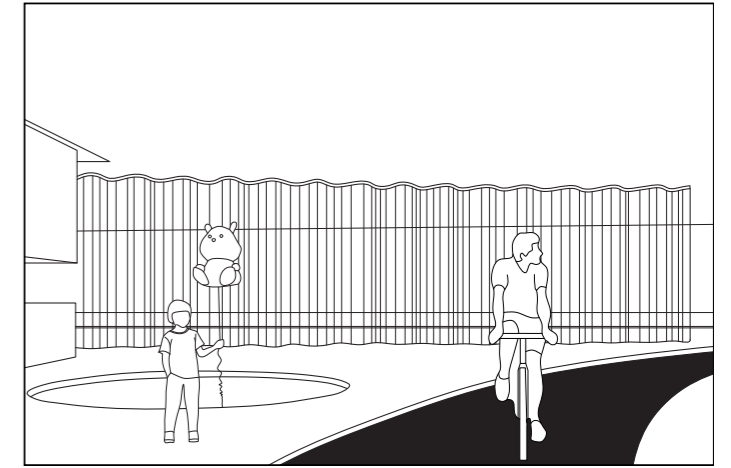
The reimagined supermarket—Albèrt—seeks to display both the product and its supply chain, in turn, the sales floor and the back of house, by integrating the distribution center with an automated Ocado grid system, asserting itself as the generator of a just-in-time production system.



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.



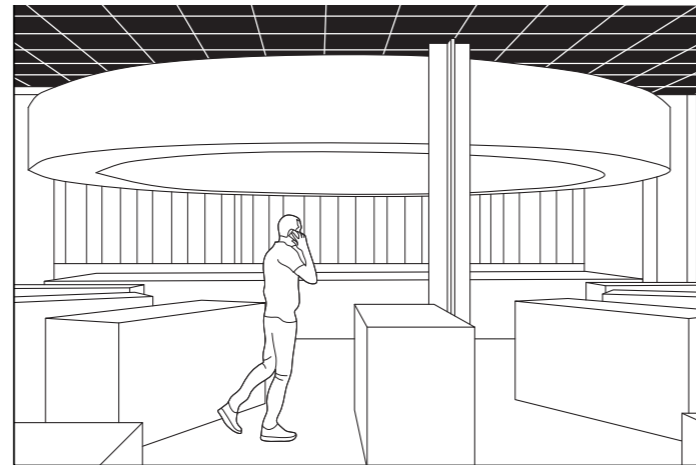
The relationship between the supermarket and the city changes with a modified transitional system that showcases the dynamic loading dock and its functioning on the sales floor, diverts private vehicular flow, e-trucks, and car-sharing services towards the Albèrt parking on the site, and promotes cyclists 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.



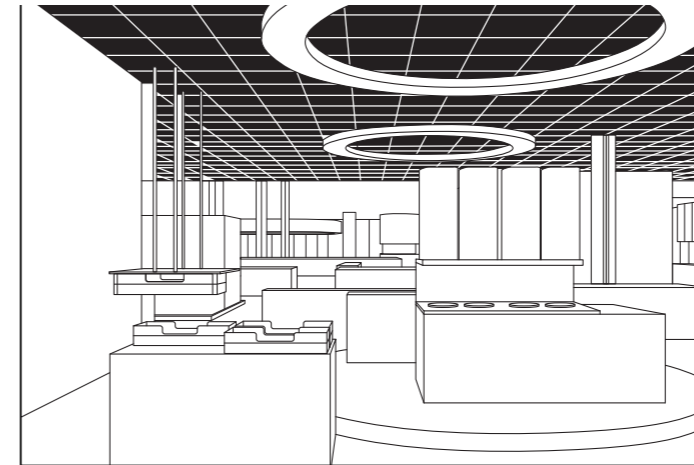
The supermarket provides several entrances—strategically located near high traffic zones—to move away from a one-directional circulation path to a multi-directional circulation pattern within the organic layout of the facade that is designed in response to the surrounding context.



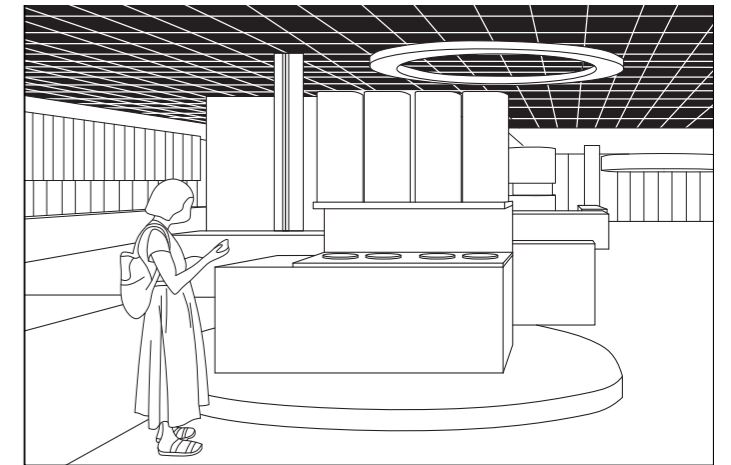
The storefront of the supermarket moves beyond blocked-off rows of checkout lanes and security gates to designated slow-paced zones with product demonstrations, workshops, and exclusive shops that entice consumers into the supermarket.



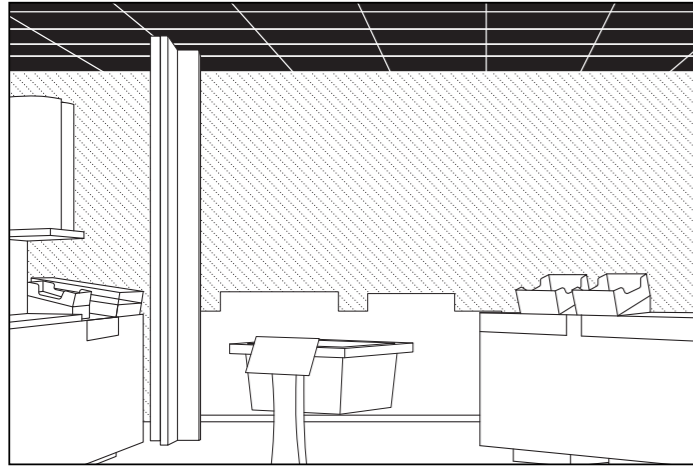
The automated Ocado system in the distribution center above allows for the diversion of labor in the supermarket towards hospitality and social interaction through various host stands—strategically placed to encounter pedestrian flows—offering a tailored shopping experience.



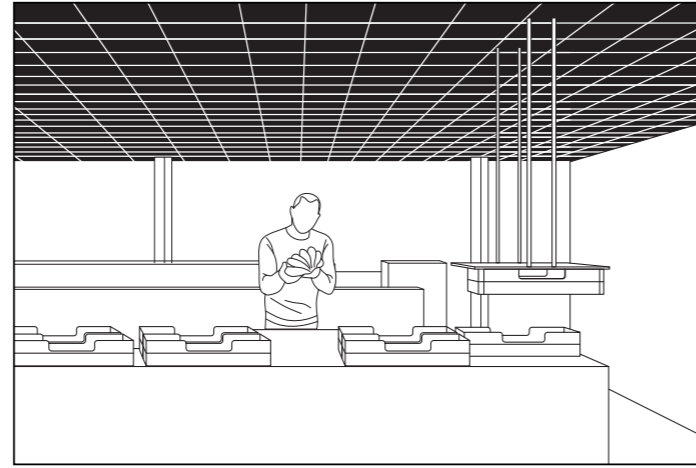
The supermarket is reorganized according to the central high yield automated distribution center within a static grid ceiling that offers dynamic robotic movements, allowing various iterations of product displays in reaction to seasonality and specialties, to render an open floor plan shopping experience.



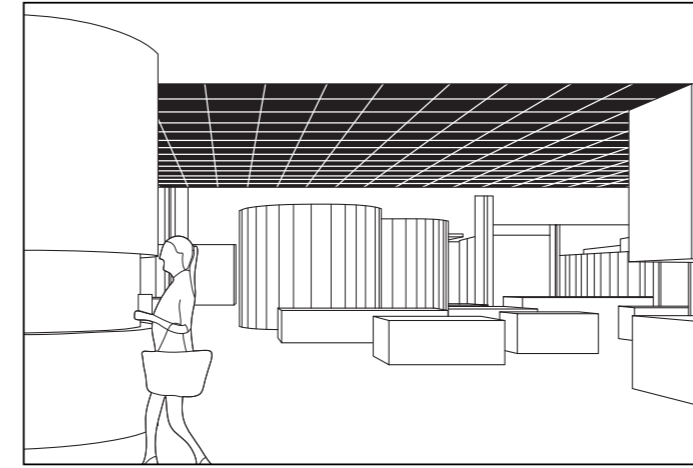
Stores will continue to use planograms, working on existing principles of increasing sales. From bulk shelves to fresh produce crates, shelving systems within the open plan generate new episodic formats of planograms, while accommodating changes in circulation with the incorporation of electronic signage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



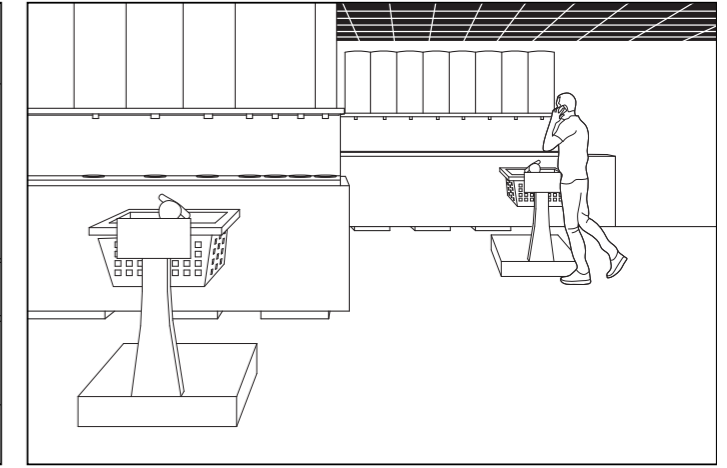
Responding to the supermarket's visibility of the supply chain, vertical experiential walk-in refrigerators represent the ripening rooms and recreate the conditions of refrigerated trucks to extend the distribution center to the sales floor with a convenient product flow, allowing consumers to momentarily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



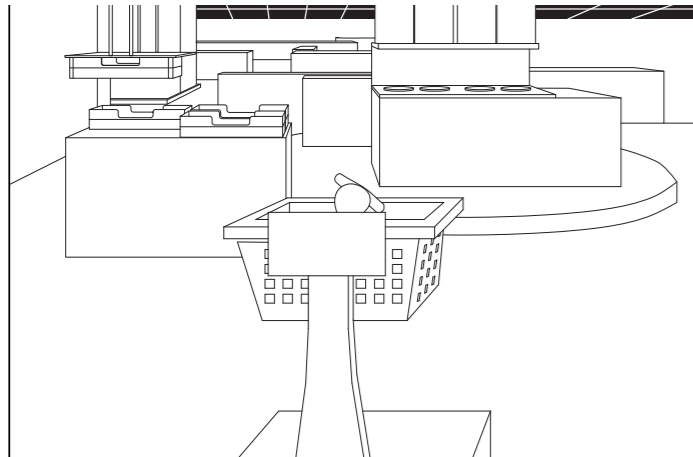
All new shelves, carts, packaging, and delivery methods work within the 800mm x 800mm grid to ensure full standardization within the supply chain system starting from the cargo pallet itself.



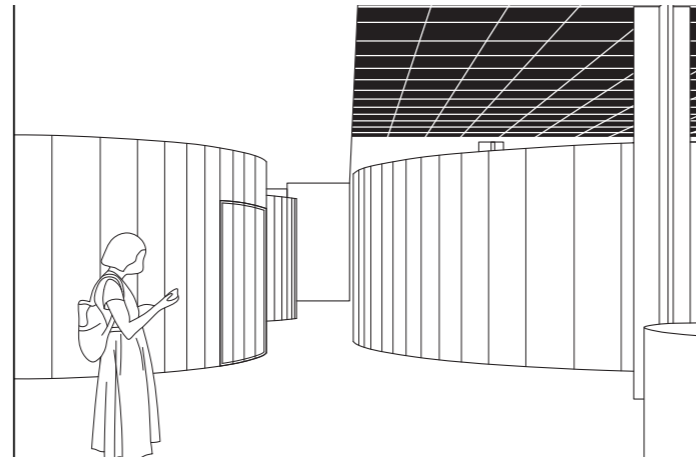
The future supermarket addresses sustainability goals through a reimagined supply chain with reusable packaging for all Albèrt products that are collected, cleaned, and redistributed on site in various return points, cleaning stations, and end-cap gondolas respectively, that remain scattered throughout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



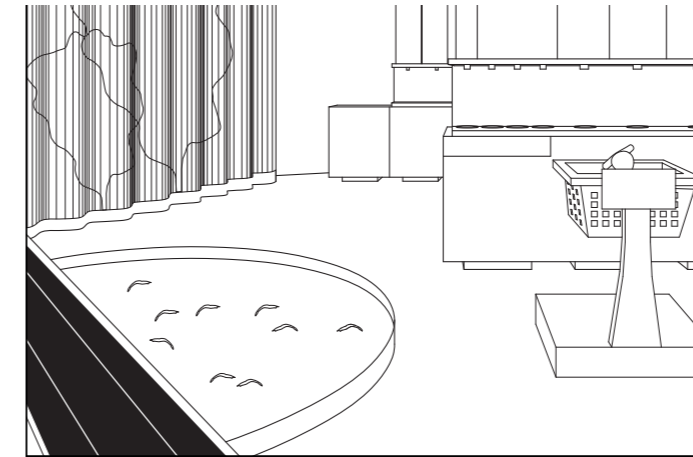
Smart carts with digitized scanners react to the particularities of the product on the shelf with information on the provenance of products for conscious consumers. Electronic displays are connected to expiration dates, supply, and demand through dynamic pricing monitored by data-driven decision-making.



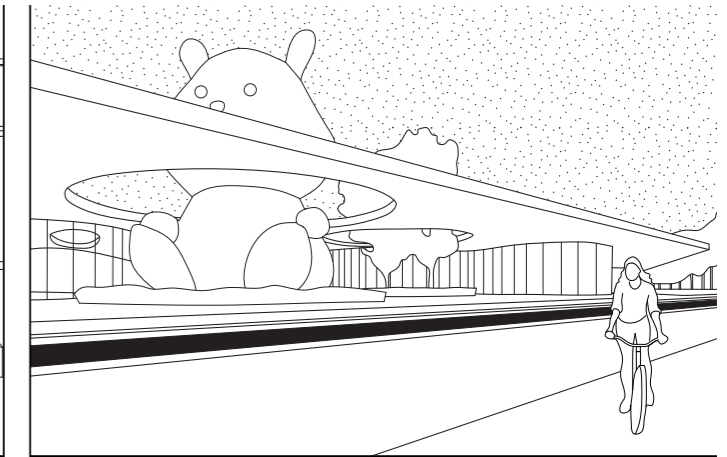
Once an item is delivered, the screen on the smart cart displays other useful items, or the next item on the shopping list while still incorporating key supermarket sales concepts and experiences like cross-merchandising and impulse buys.



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.



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 biodiversity 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.



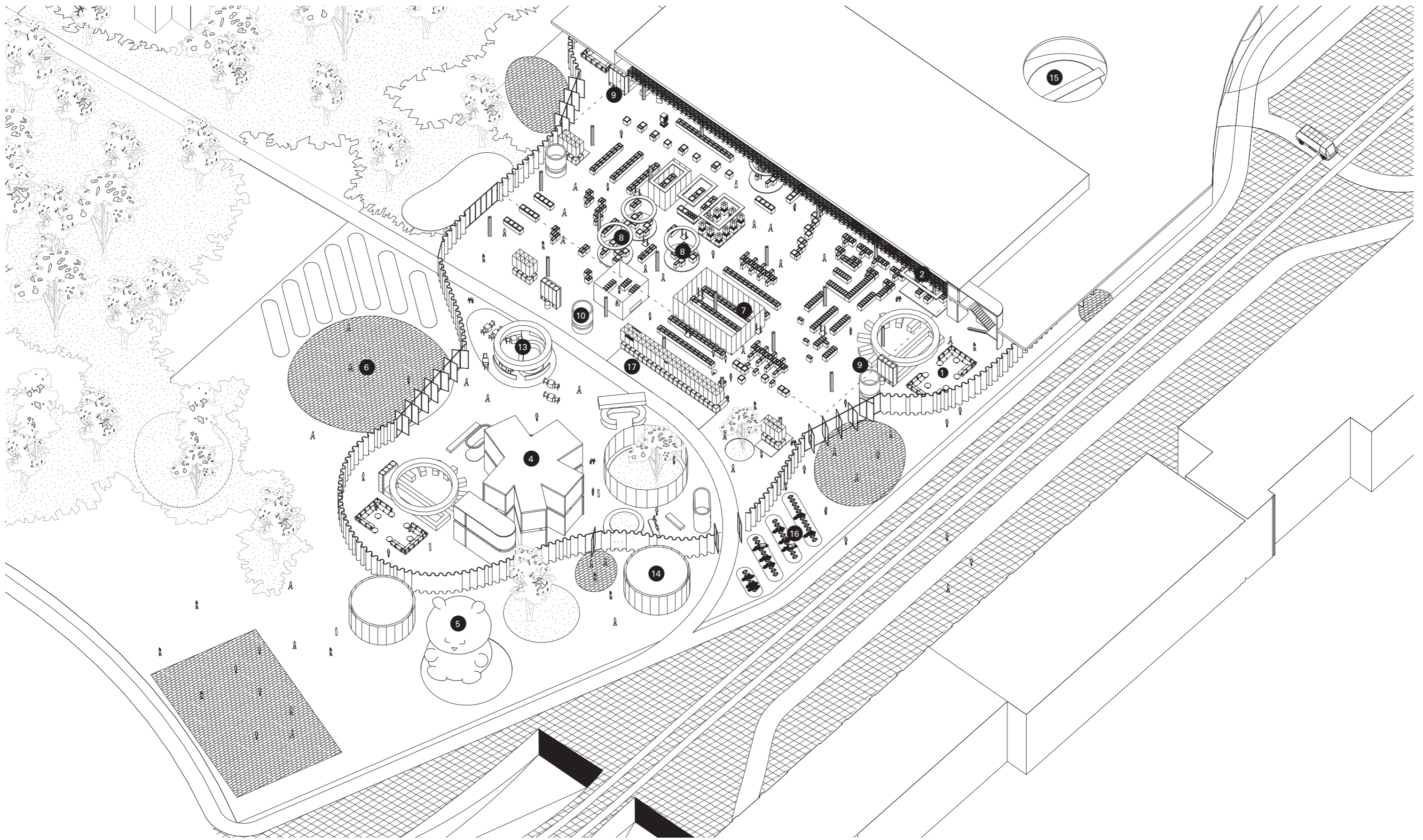
Beyond the internal core, Albèrt offers an innovative retail experience, opening up the supermarket's perimeter towards the city.



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.

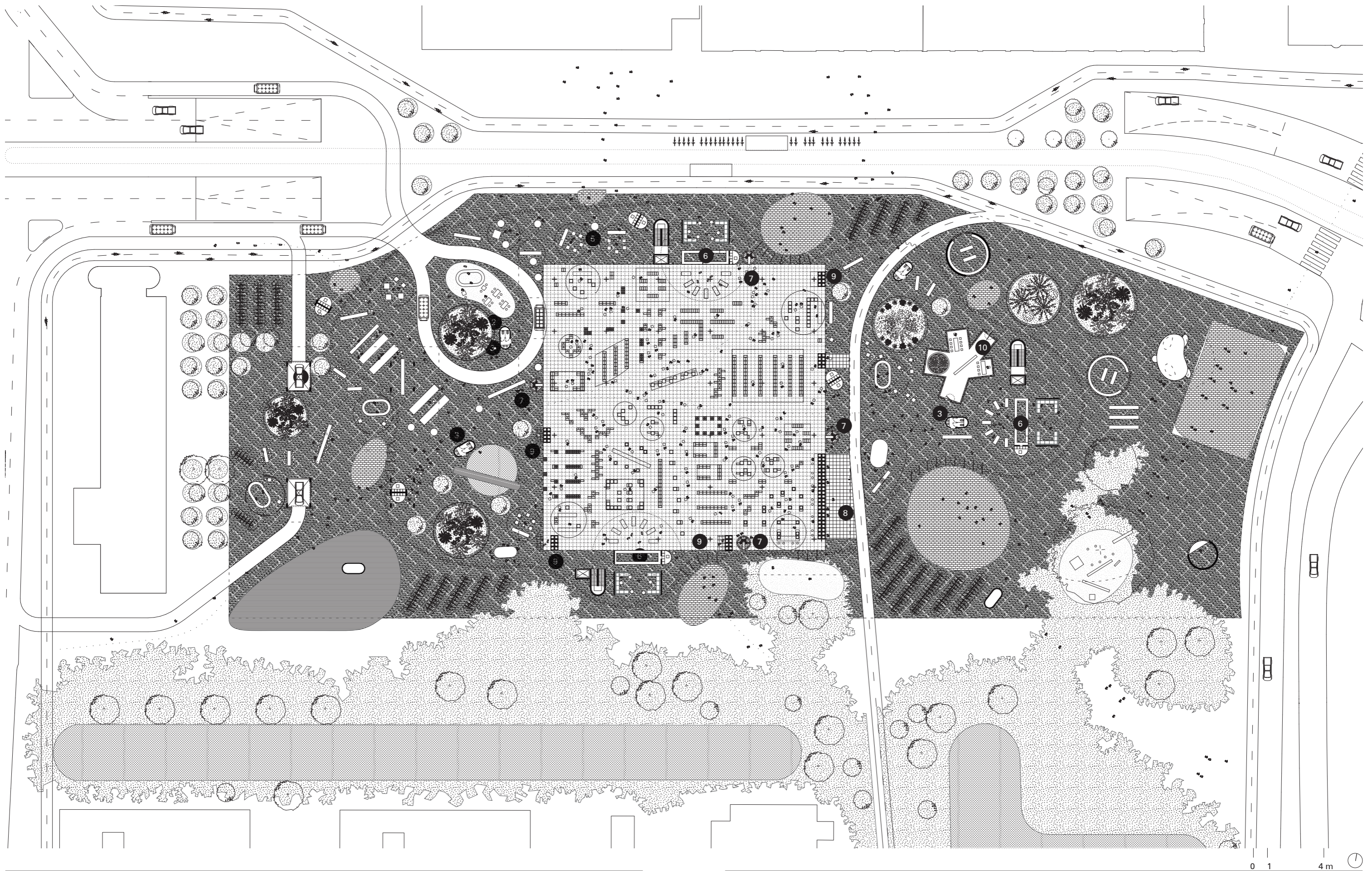
- 1 Concierge
- 2 Automated Ocado grid
- 3 Vertical circulation core
- 4 Kindergarten

- 5 Sculpture of Albèrt'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

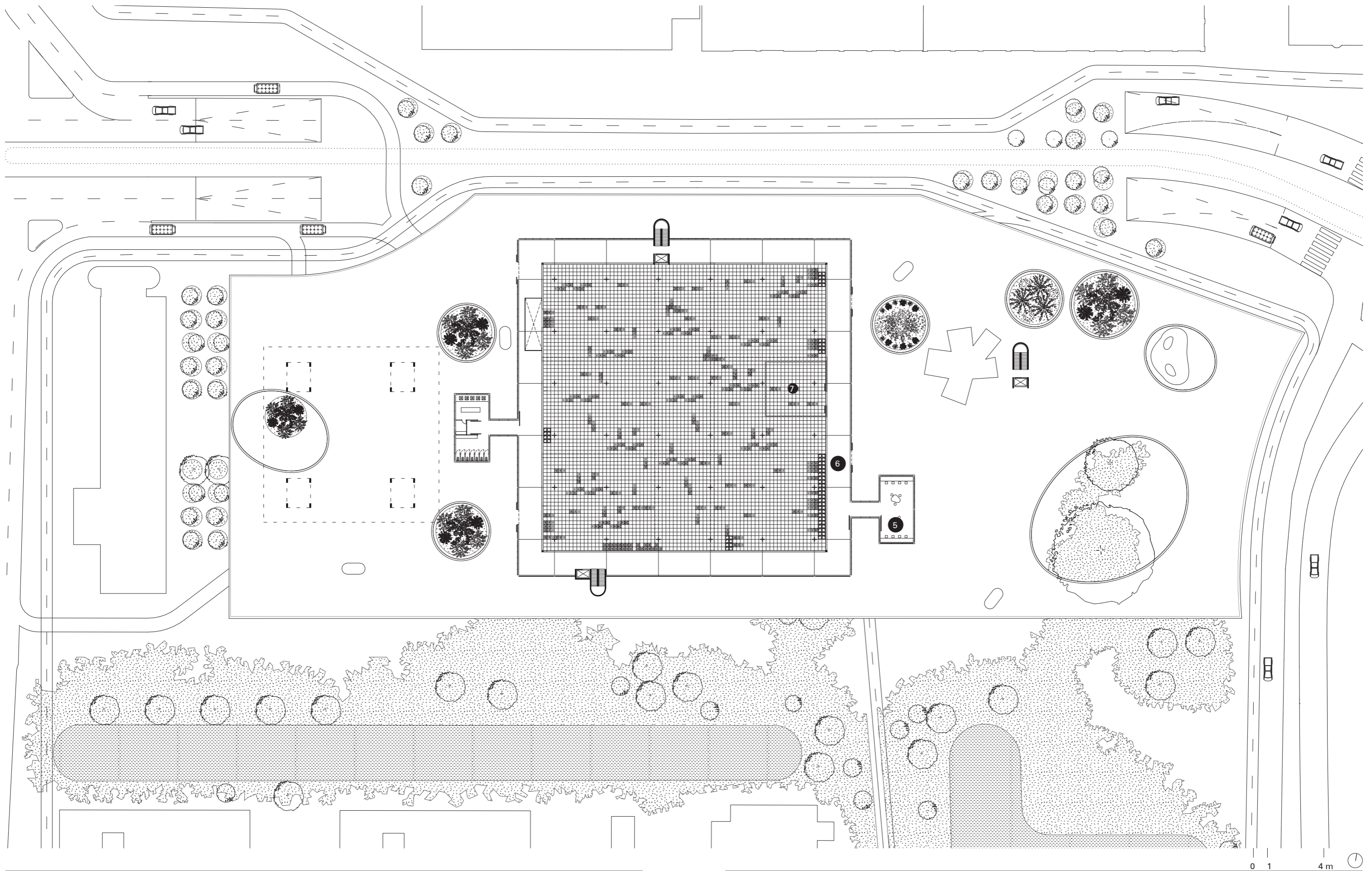
the product and its supply chain. The supermarket is organized in three different zones, consisting of the central high yield core, the interior

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

- 1 Access to Parking
- 2 Loading dock
- 3 Estructural cores, toilets, HVAC
- 4 Shrimp pond

- 5 Shop-in-shop
- 6 Concierge
- 7 Return point
- 8 Automat

- 9 Pick up points
- 10 Kindergarten

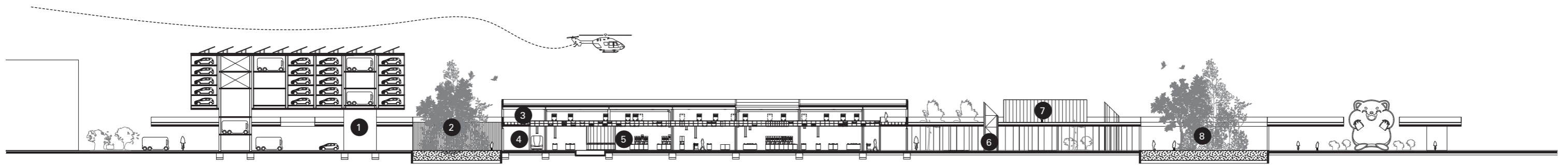


The back of house operates as a distribution center above the sales floor, consisting of the automated Ocado system in the static grid ceiling

core that offers dynamic robotic movements.

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

- 5 Offices
- 6 Perimeter for humans
- 7 Refrigerated area

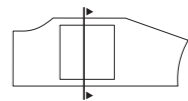
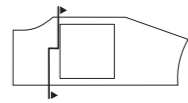
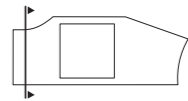
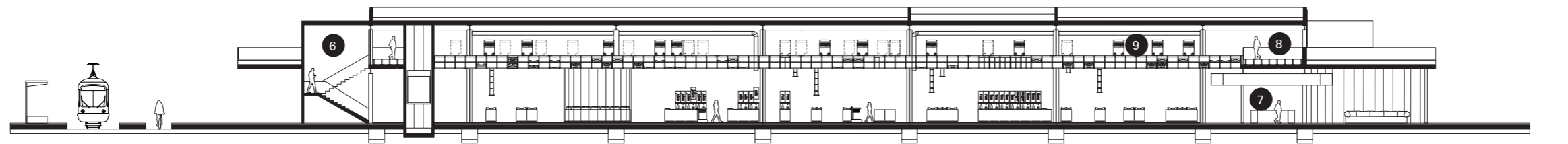
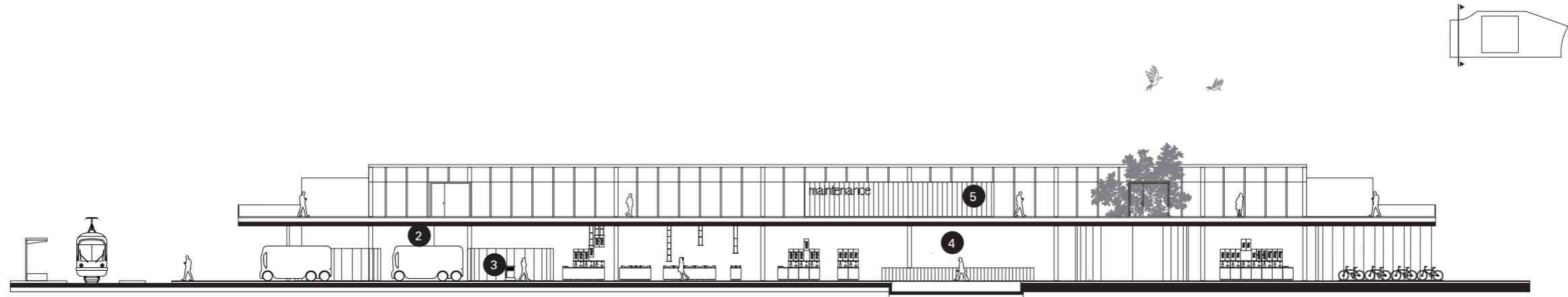
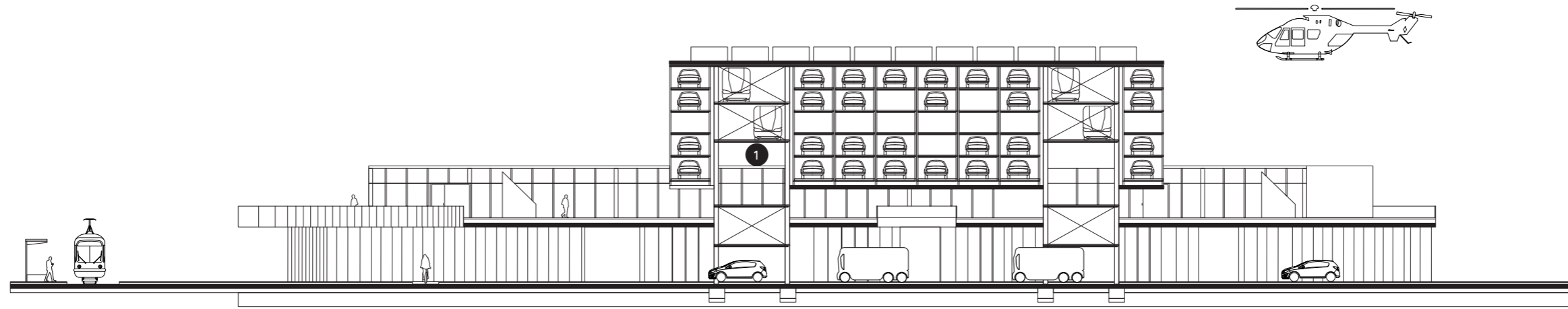


The reimagined relationship between the supermarket's sales floor and back of house is vertical, juxtaposed with the additional Albèrt car-sharing facilities

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





0 2.5 10 m

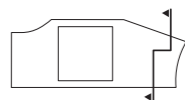
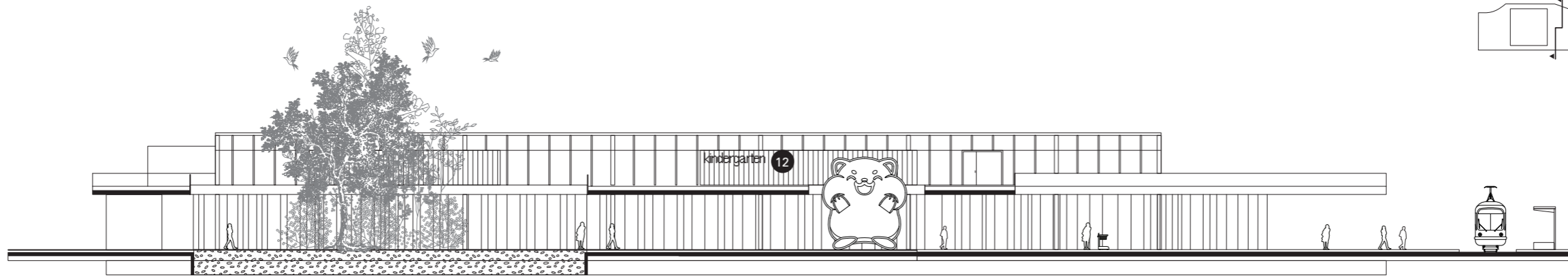
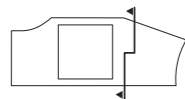
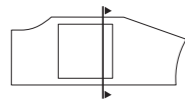
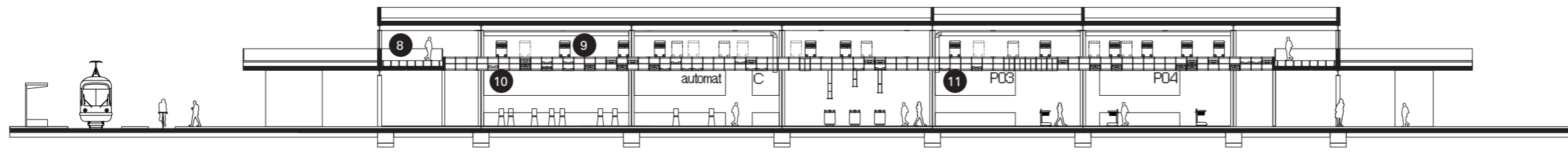
The organization of the building around the central high yield distribution center allows for various iterations of product displays on the sales floor, disrupting

the infinite seriality of the supermarket aisles.

- 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

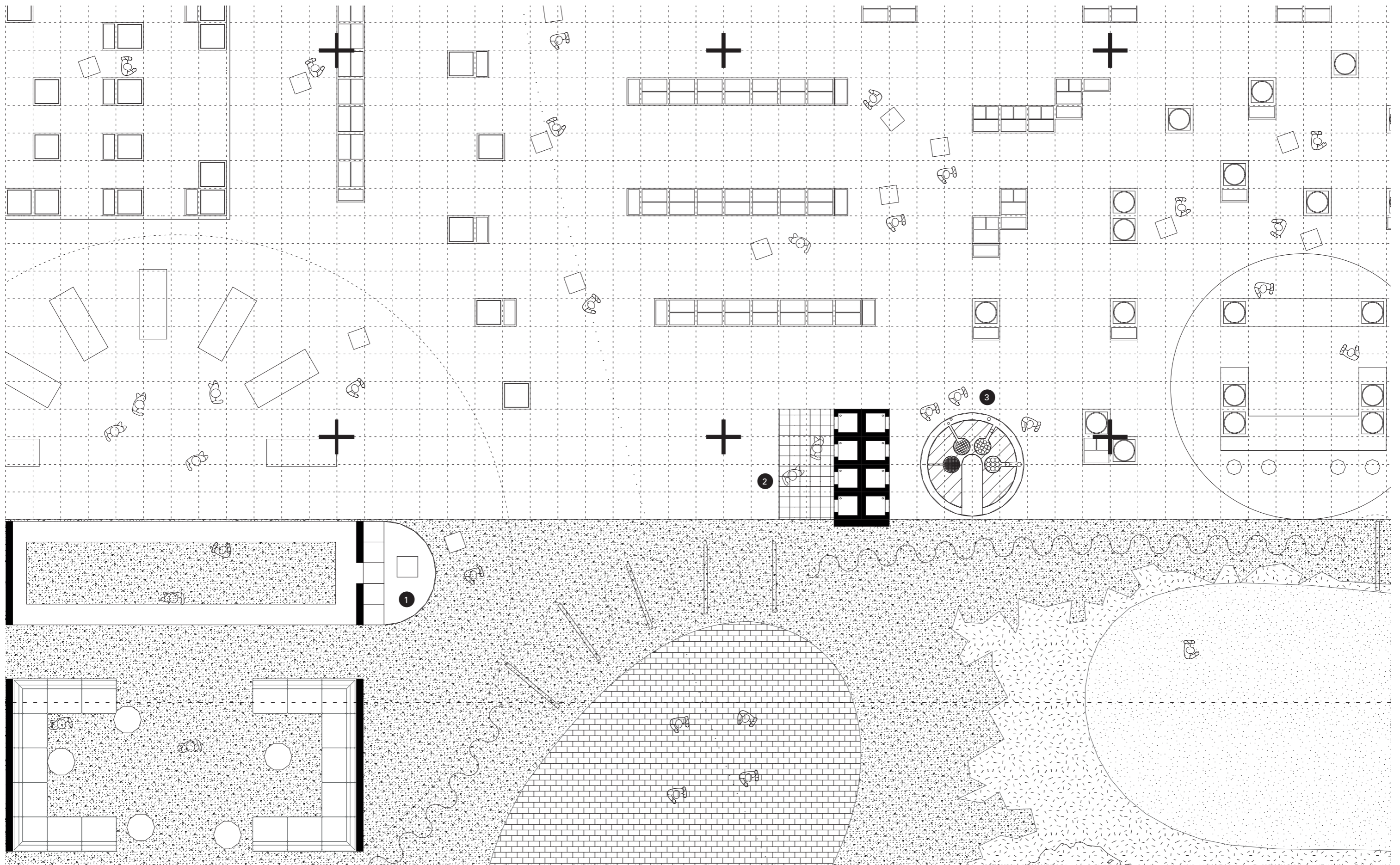


0 2.5 10 m

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.

- 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.

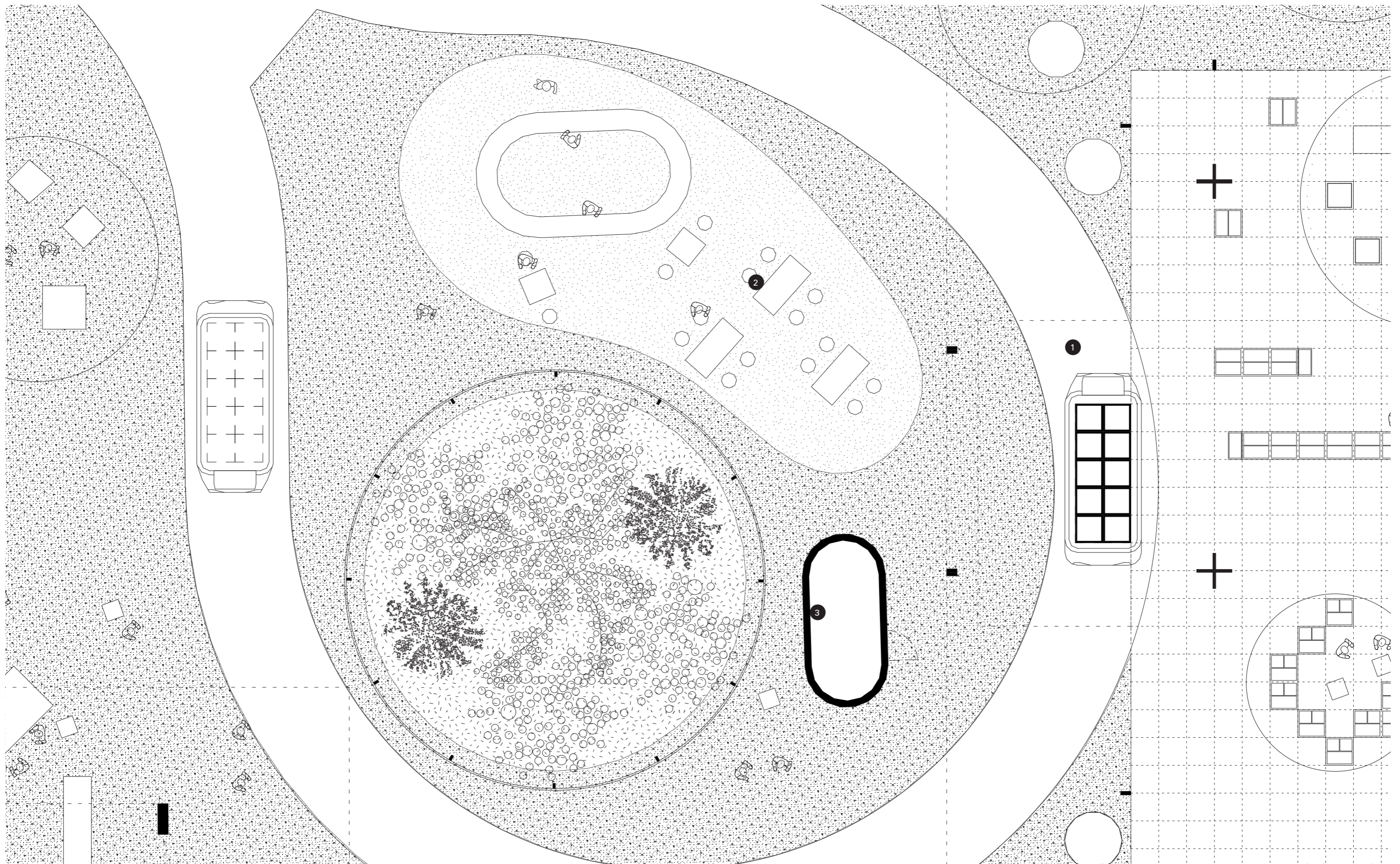
- 1 Concierge
- 2 Pick up points
- 3 Returning point



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

unique shopping experience.

- 1 Host
- 2 Cart station



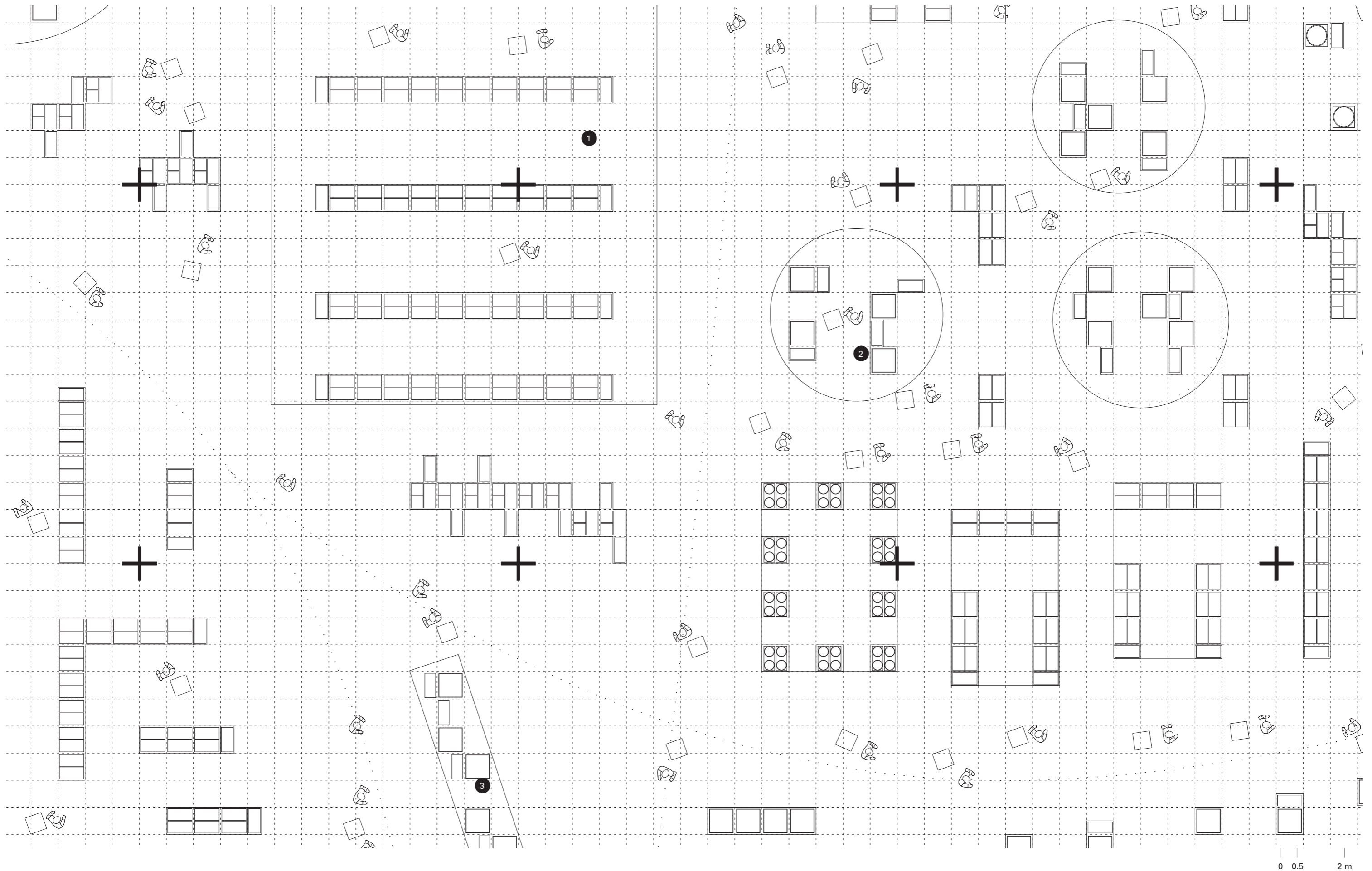
A ritual of loading and unloading is experienced on the sales floor, exposing the supermarket's supply chain to the conscious consumers.

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



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

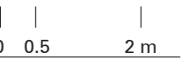
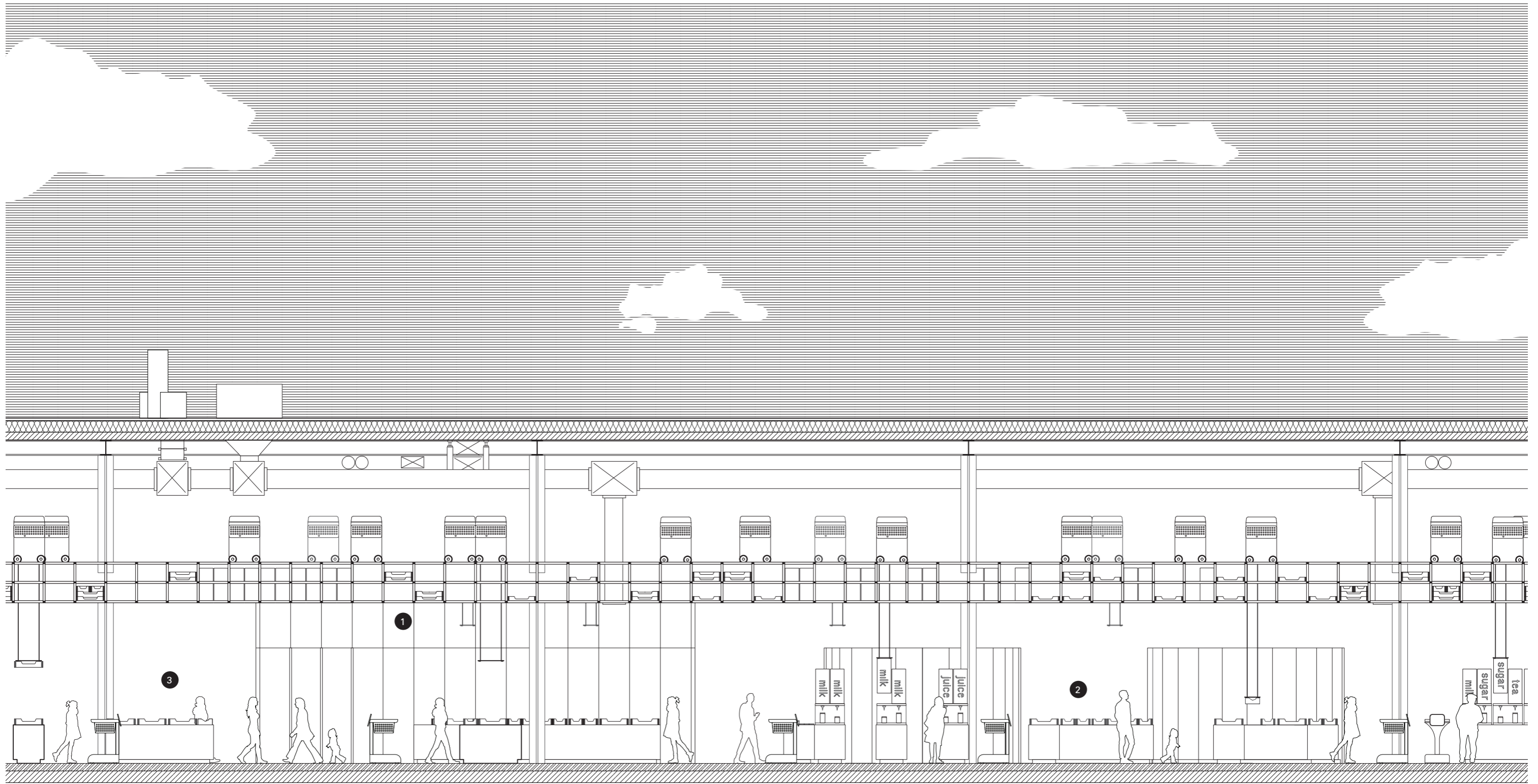
- 1 Loading dock
- 2 Bar
- 3 Structural core and HVAC
- 4 Permaculture



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

unique shopping experience.

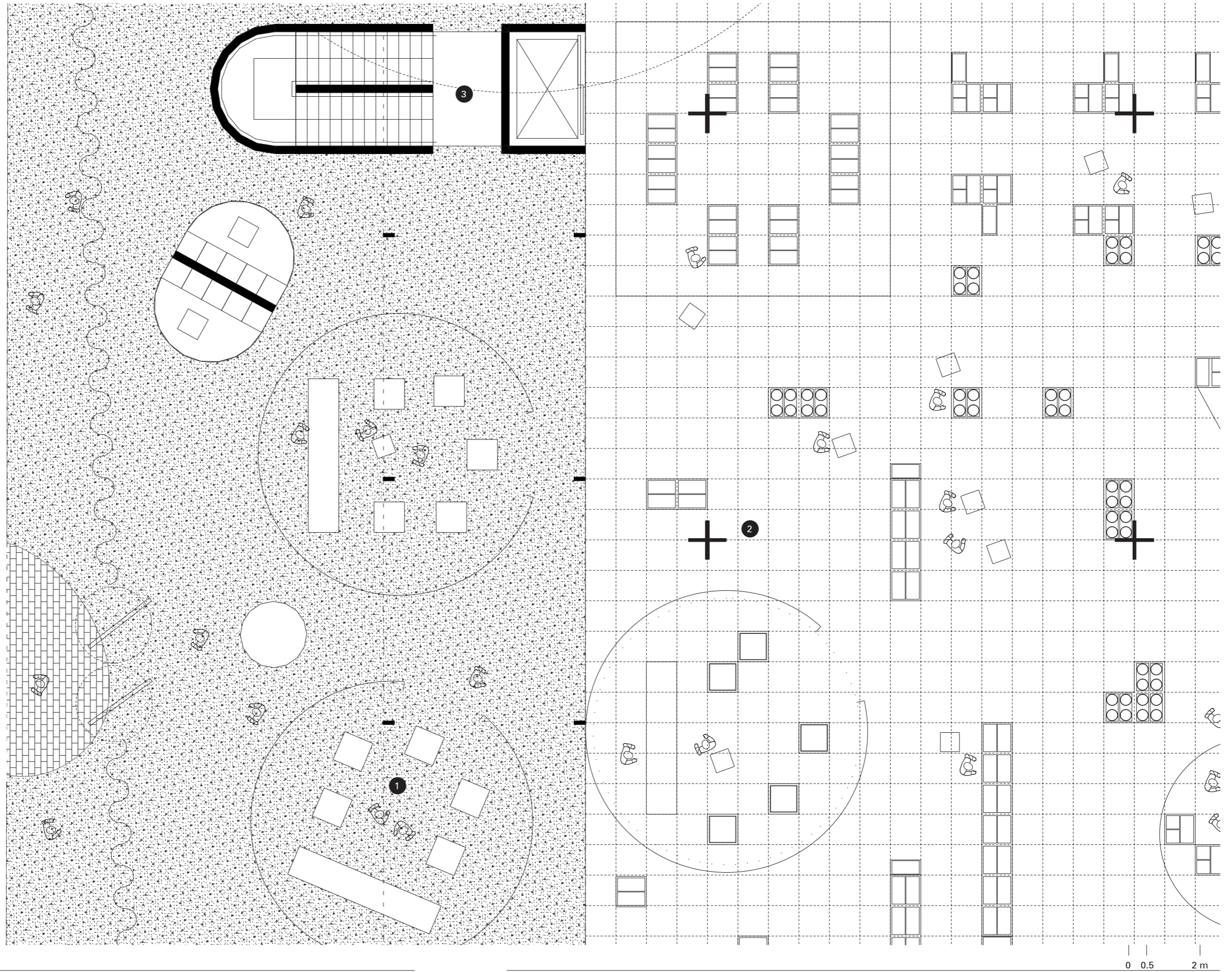
- 1 Refrigerated room
- 2 Seasonal products
- 3 Bonus



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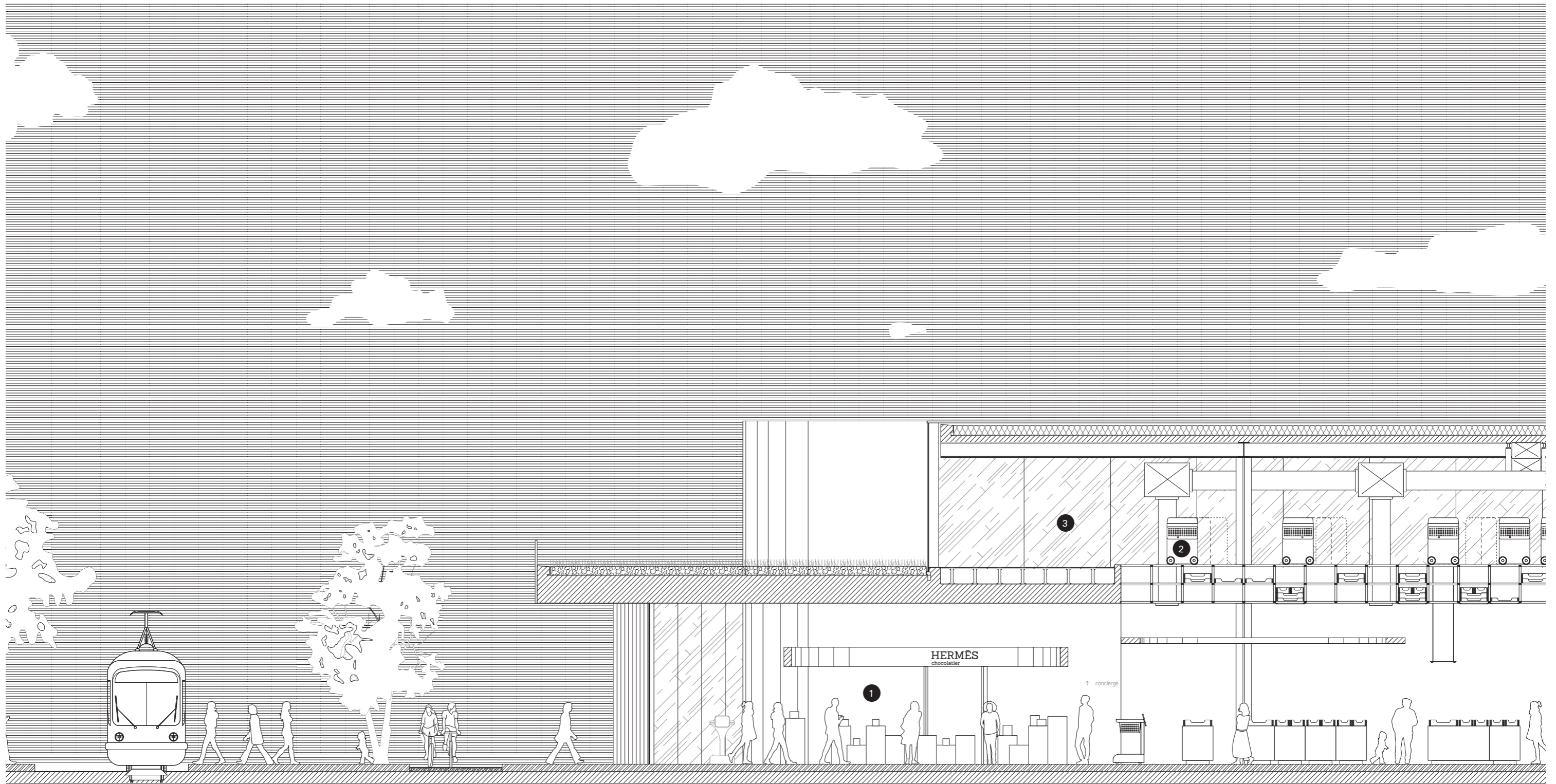
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- 1 Refrigerated room
- 2 Seasonal products
- 3 Bonus



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

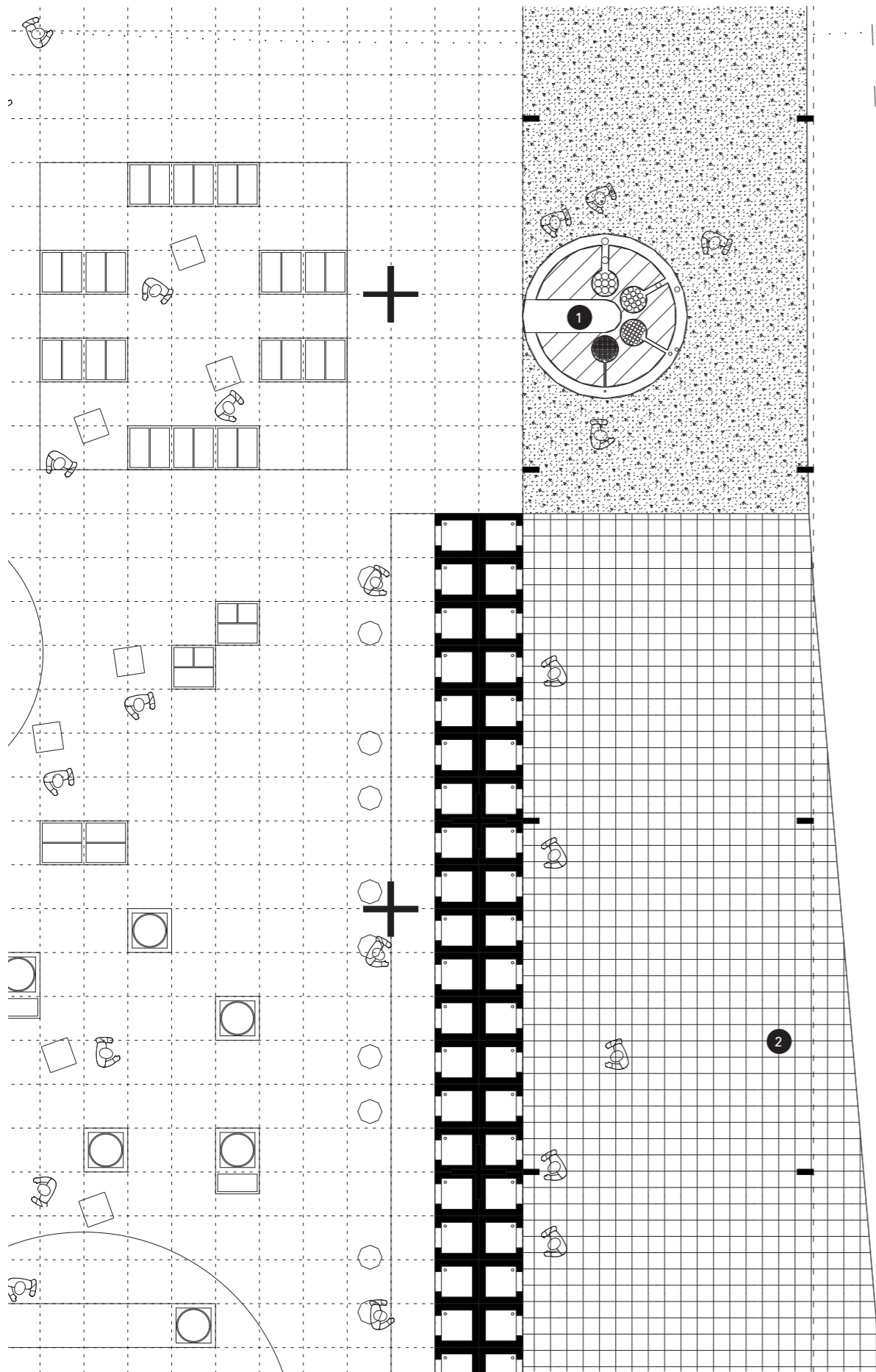
- 1 Shop-in-shop
- 2 Sales floor
- 3 Vertical core
- 4 Loading dock



0 0.5 2 m

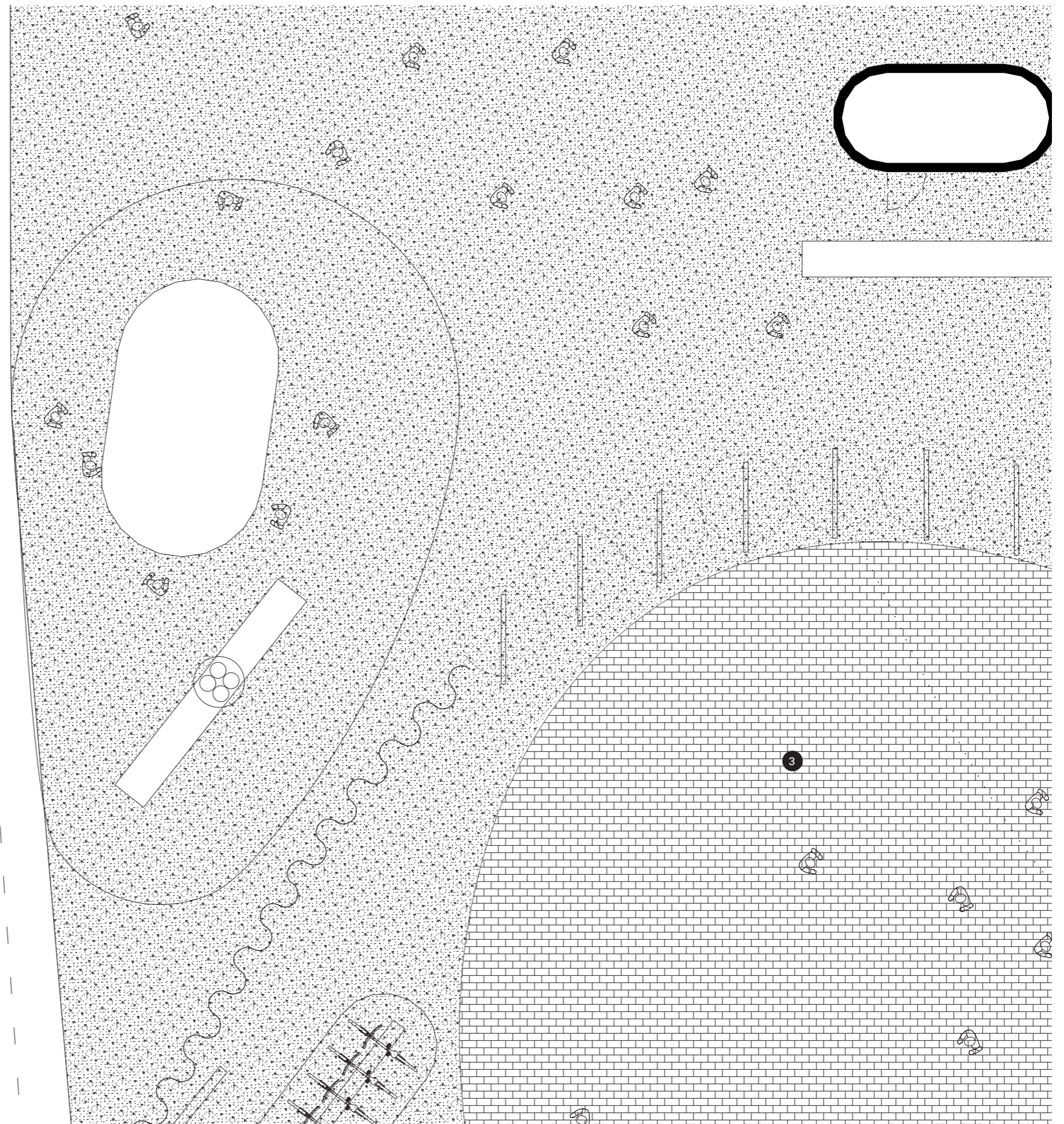
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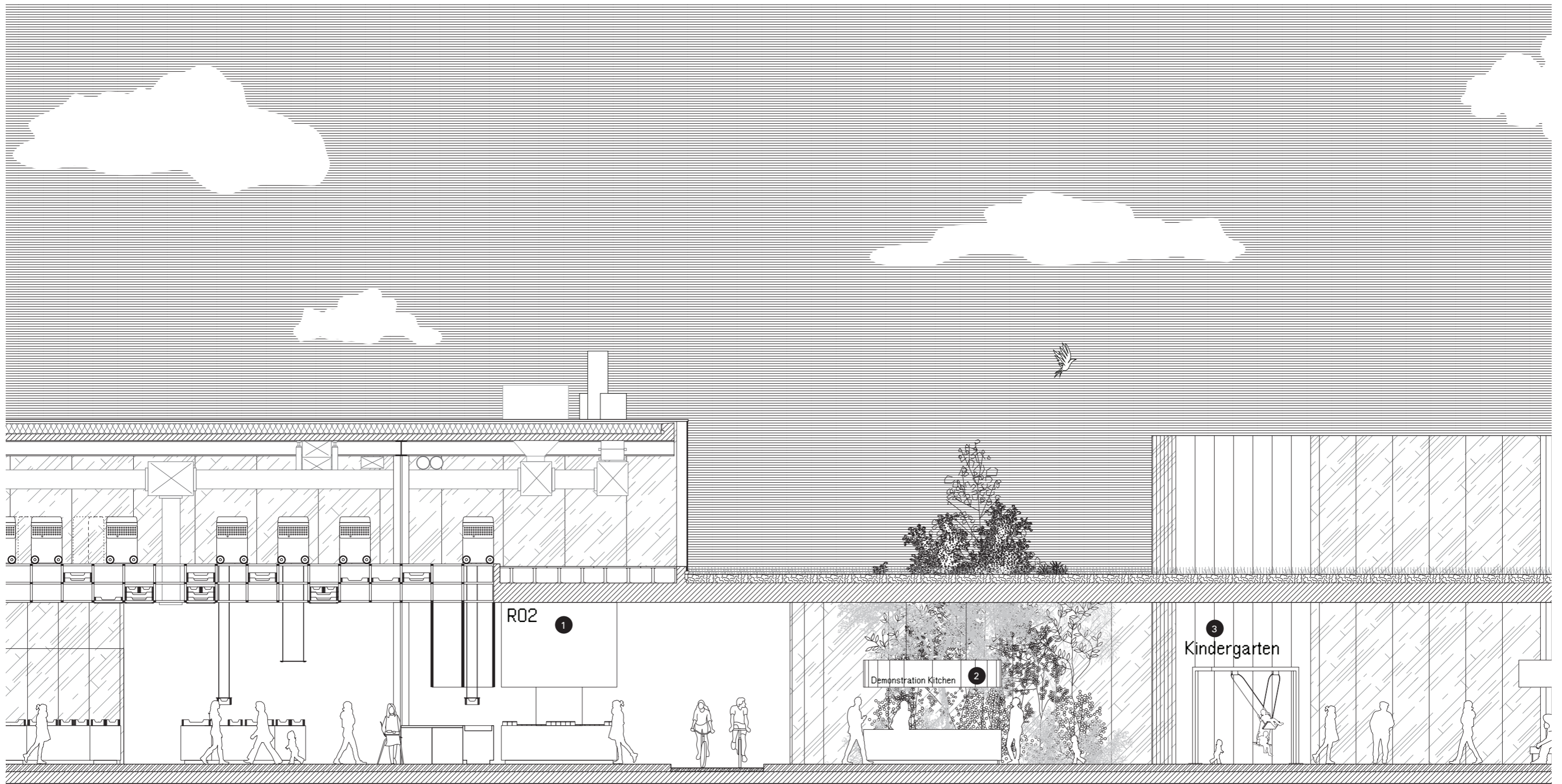


Designated slow-paced zones with product demonstrations, workshops, and exclusive shops are developed around the periphery of the

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



- 1 Returning point
- 2 Automat
- 3 Entrance

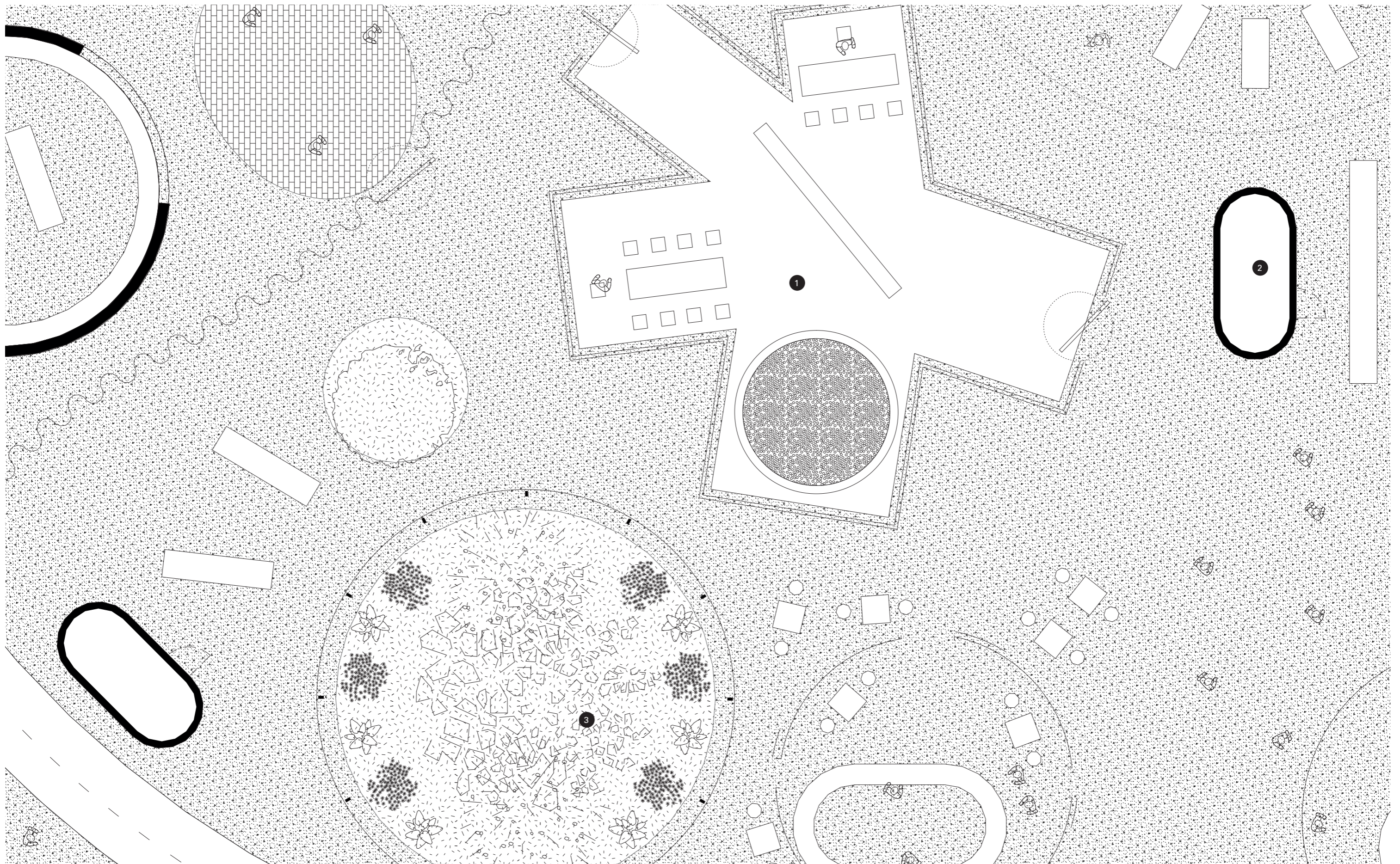


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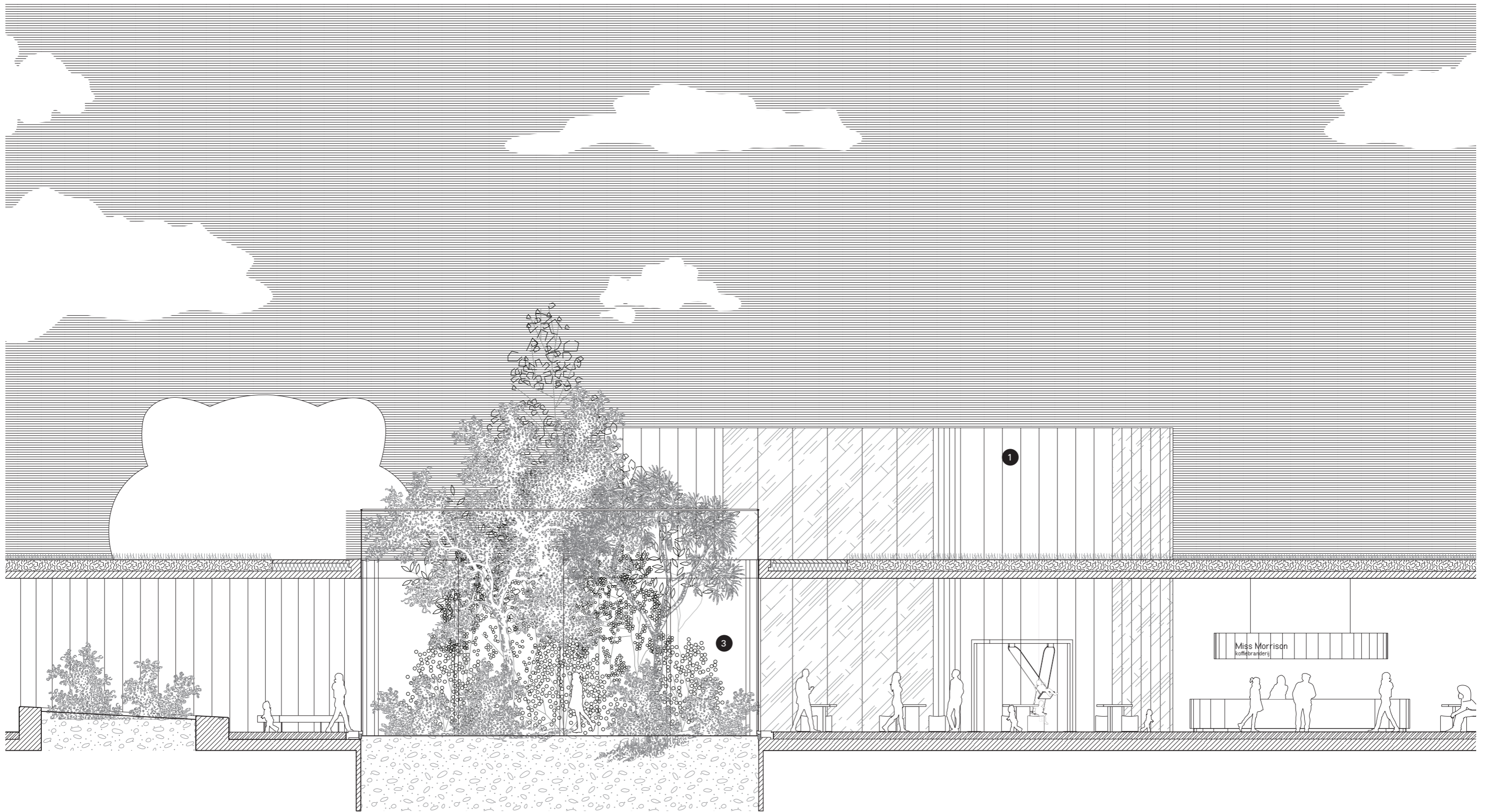


0 0.5 2 m

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.







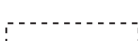





- 1 Kindergarten
- 2 Structural core, toilets, HVAC
- 3 Public green areas

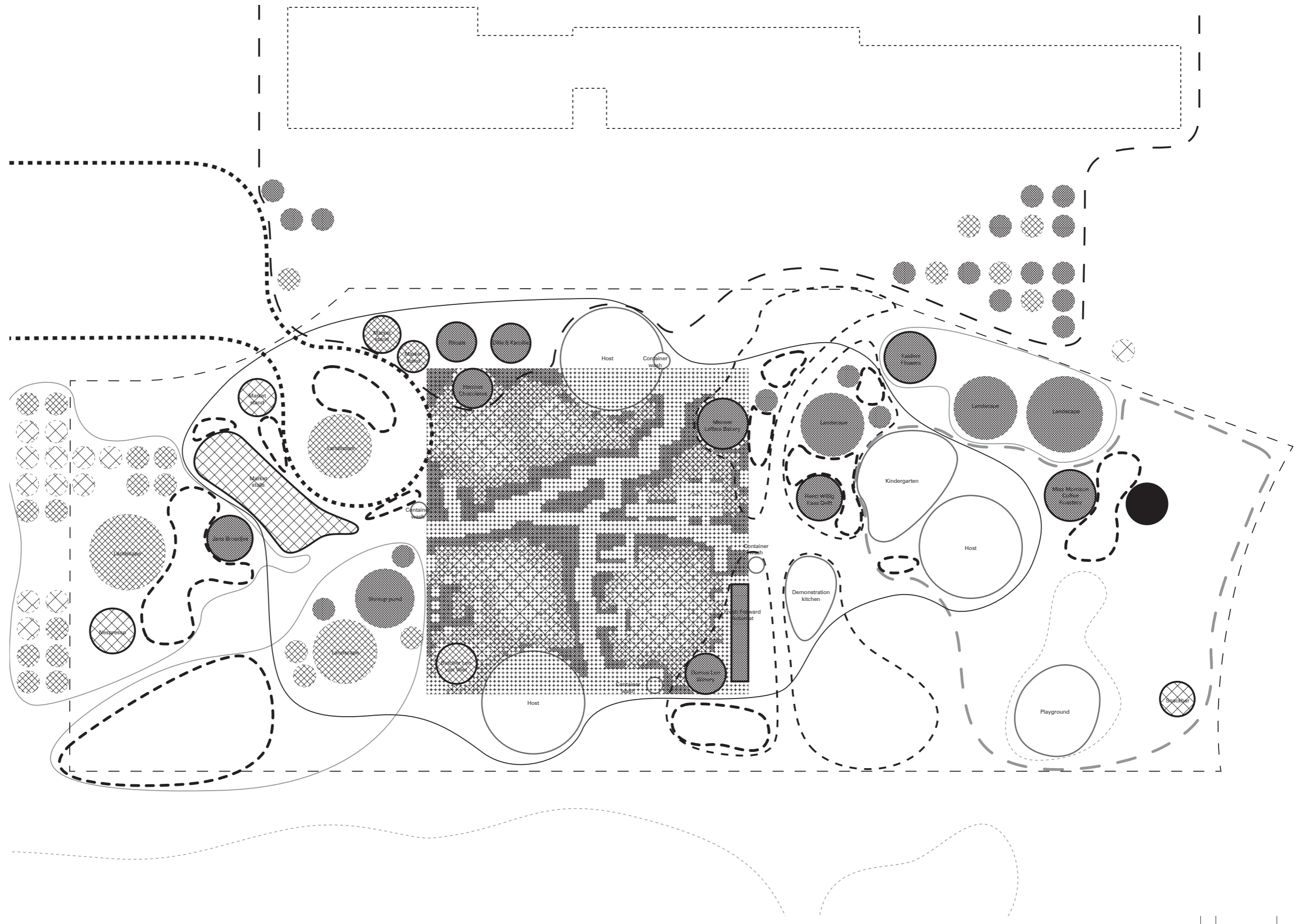


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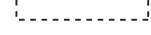





- 1 Kindergarten
- 2 Structural core, toilets, HVAC
- 3 Public green areas

-  Loading dock
-  Public square
-  Public Seating
-  Public art
-  Supermarket throughway
-  City mainstreet
-  Indoor mall
-  Landscape
-  Merchandized landscape
-  Albatr amenities
-  Leased shops
-  Retail property value



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

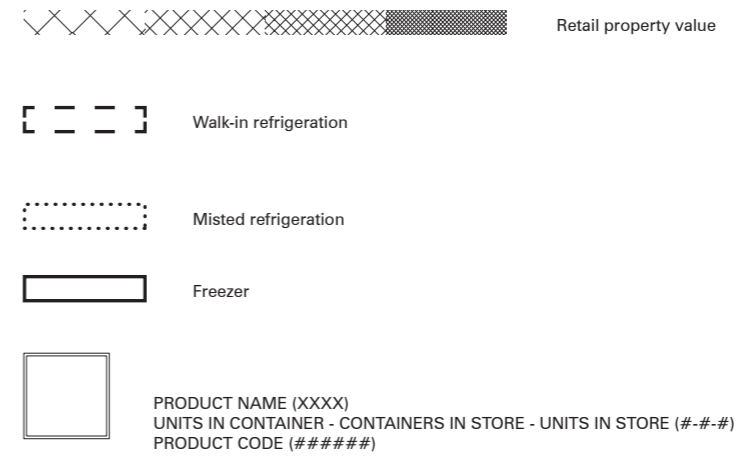
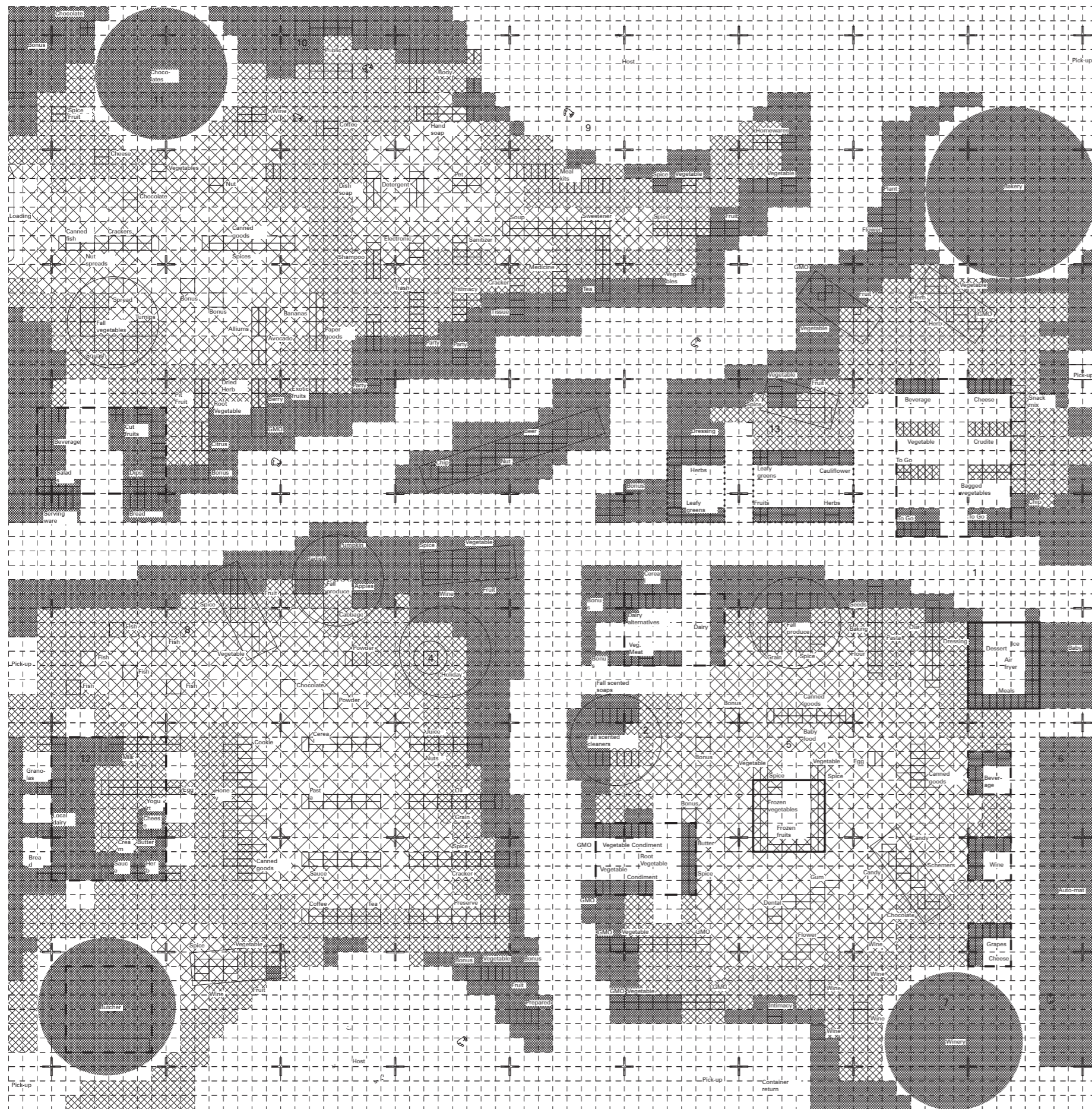
vertical and detached from each other, the new planograms dictate the dynamic floor plan.

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

wide range of products through a binary financial model that incorporates all Albert 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.

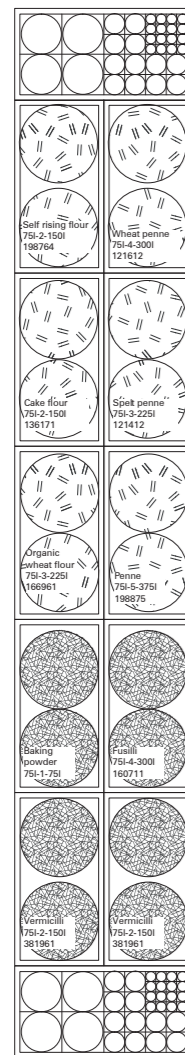


Pick-up

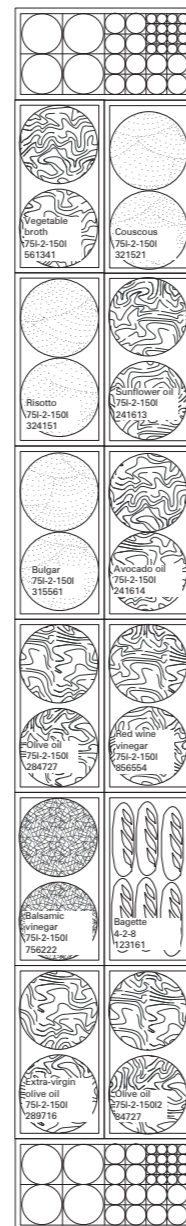
Seating

Path

Bike path

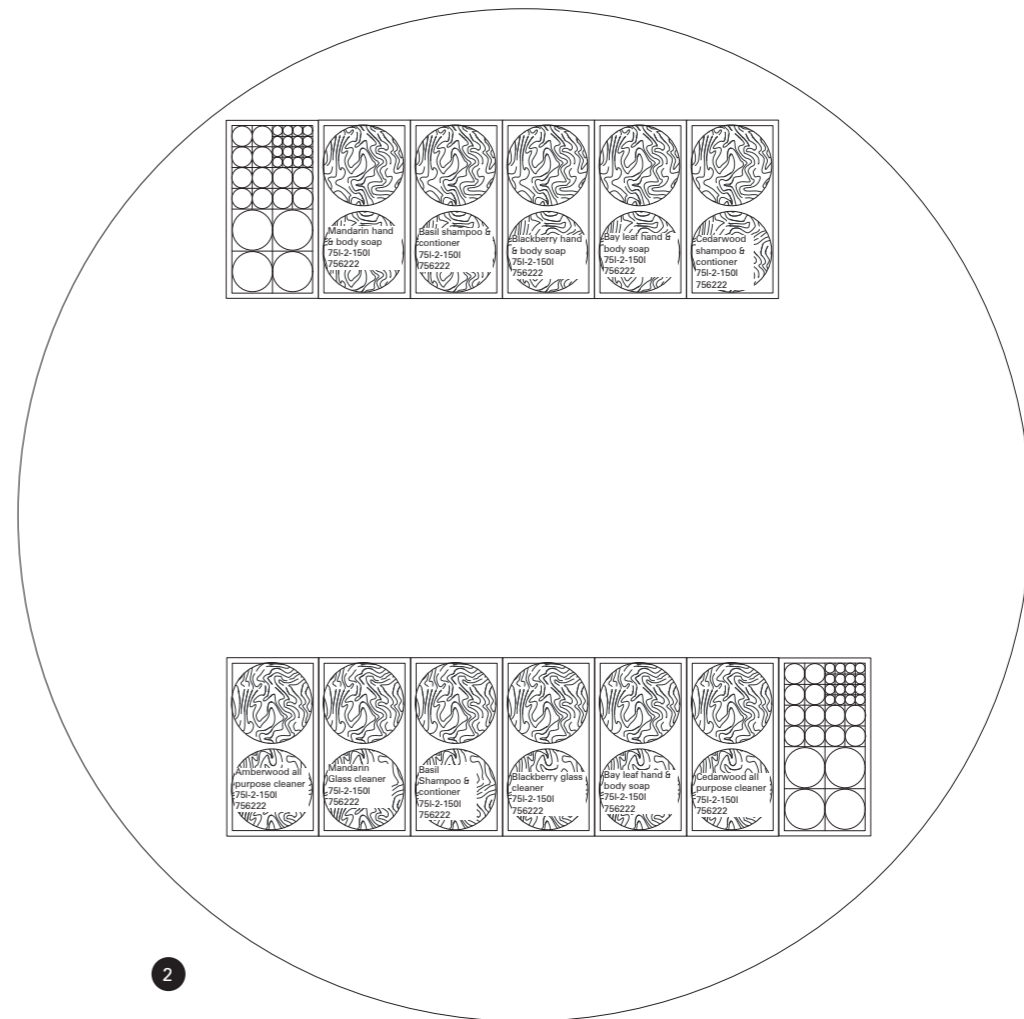


1



Holiday

Path



2

0 | 200 | 1000 mm

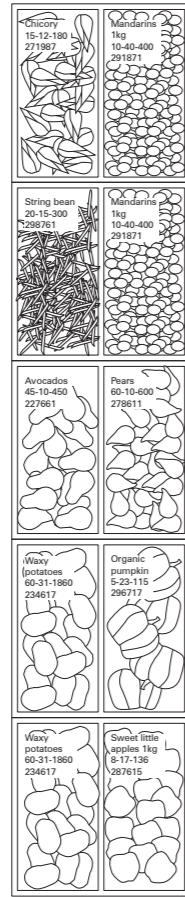
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- 1 Bike path convenience
- 2 Fall scented cleaners

Saturday market stall

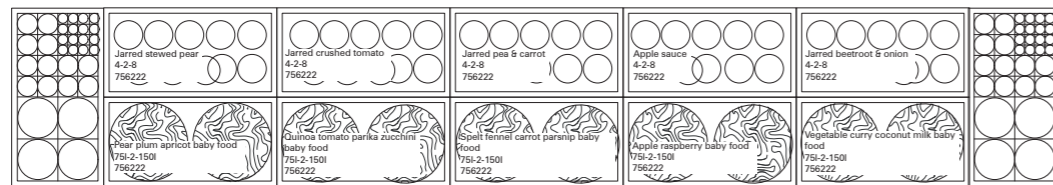
Saturday market stall



Loading dock

3

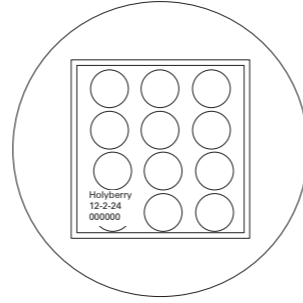
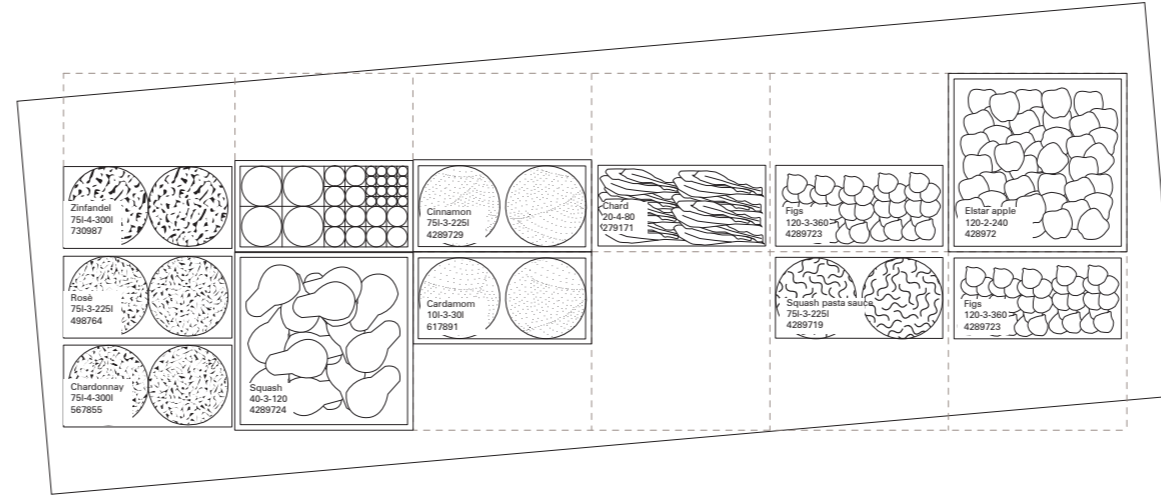
Fall produce



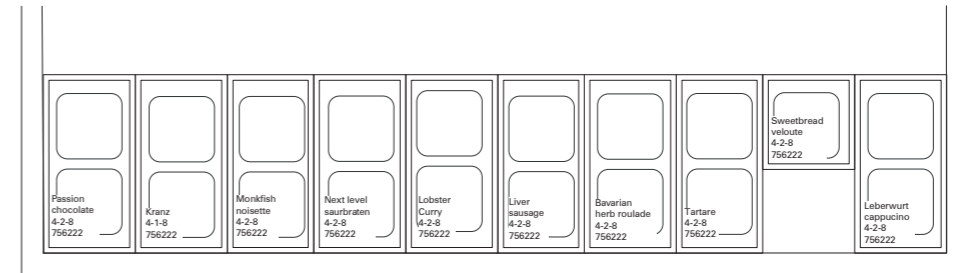
5

Frozen produce

Path

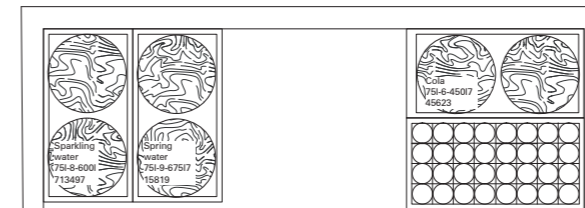


Path



Fresh forward automat

Seating



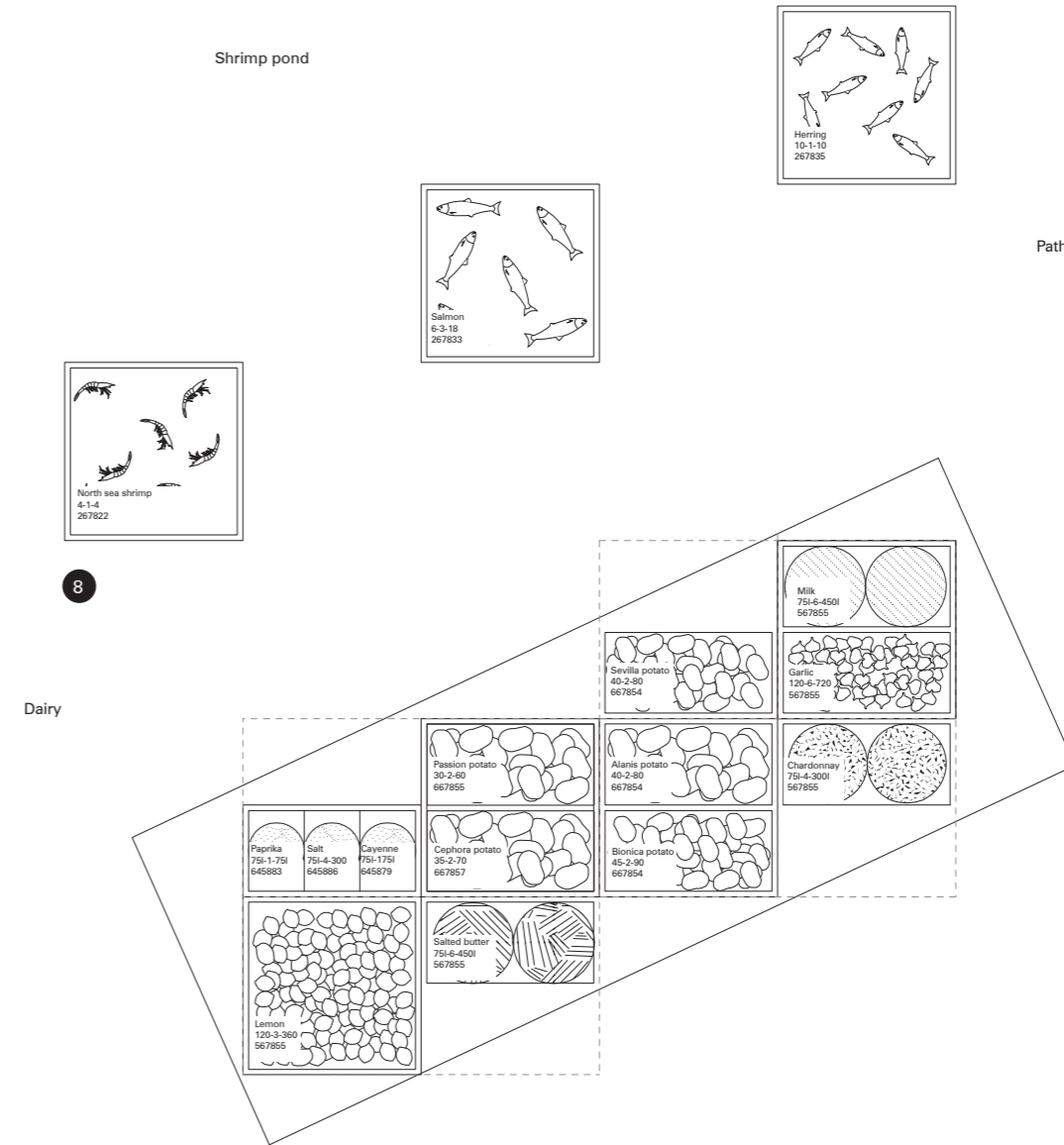
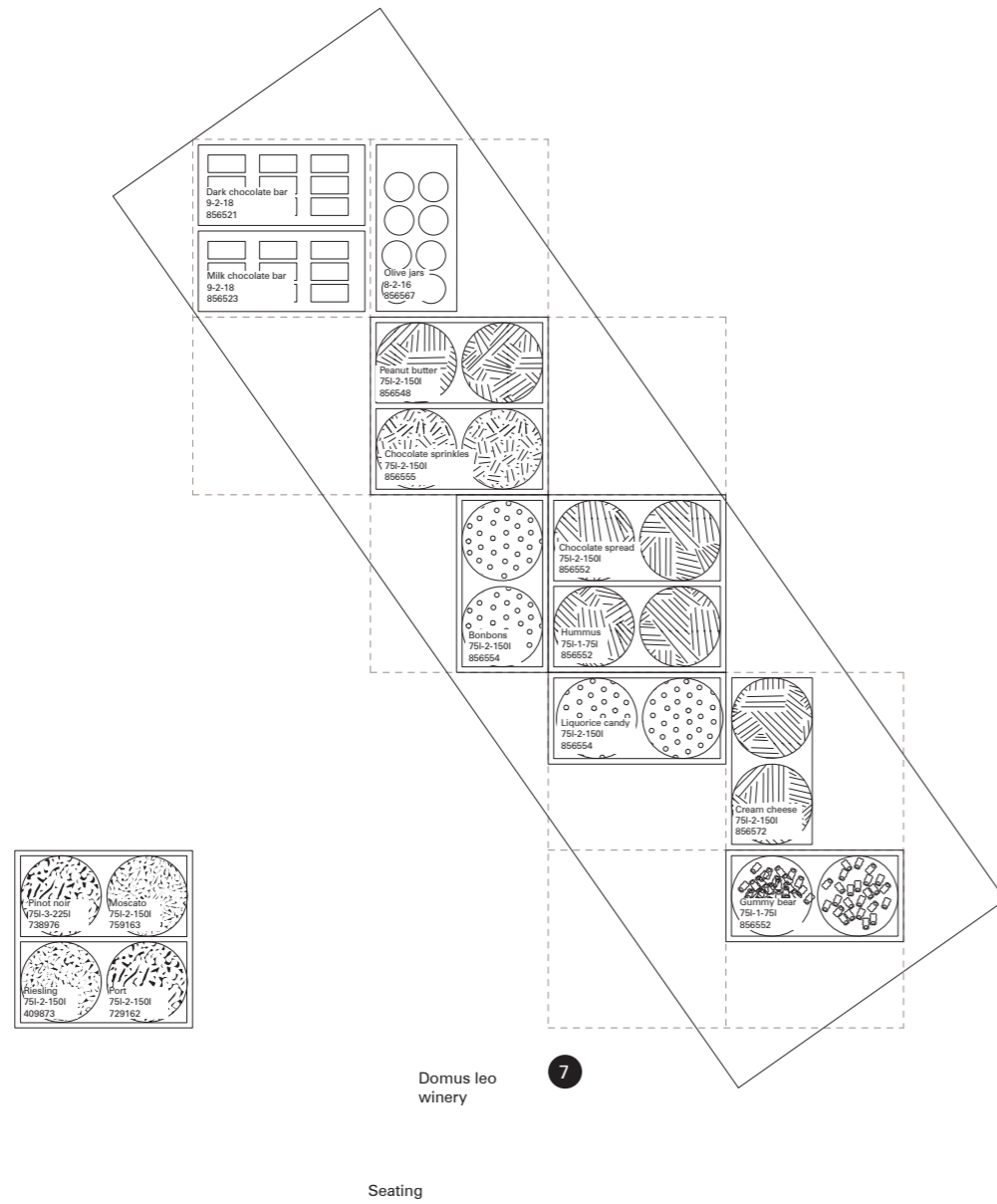
6



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.

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



0 200 1000 mm

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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- 7 Wine merchandising
- 8 Fishmonger merchandising

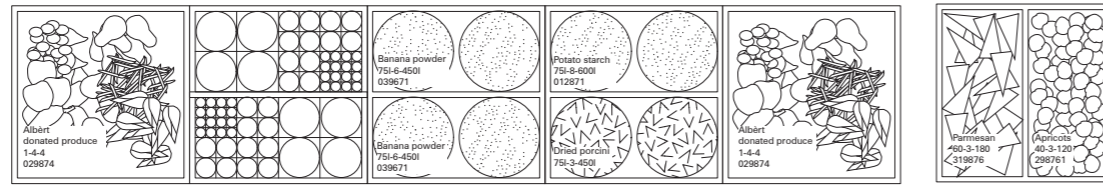
Main street

Entrance

Le creuset

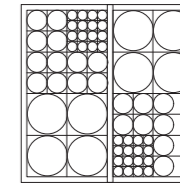
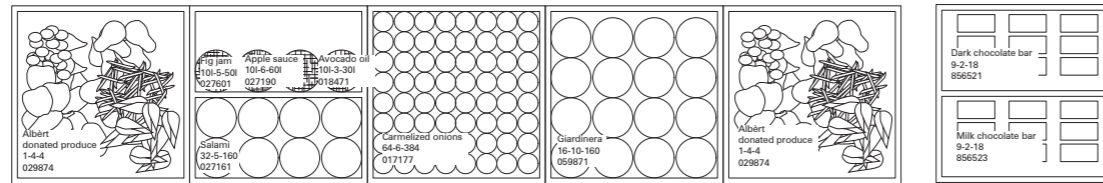
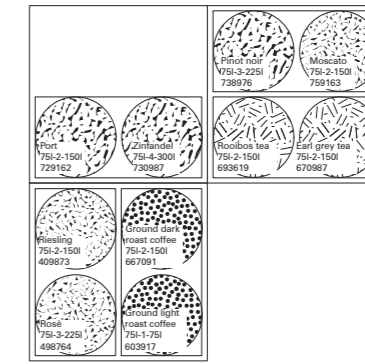
Aesop

Hermès chocolate



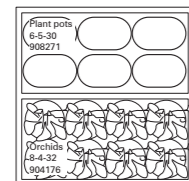
Main street

Hermès chocolate

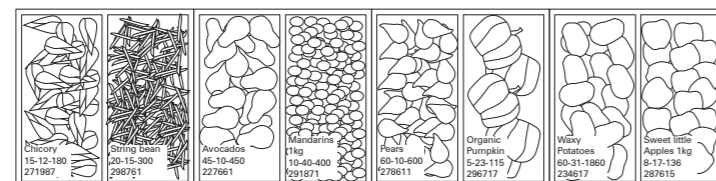
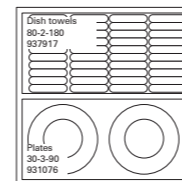


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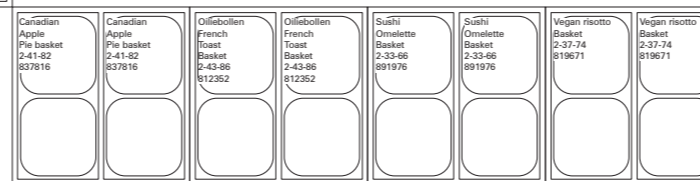
11



Host



9

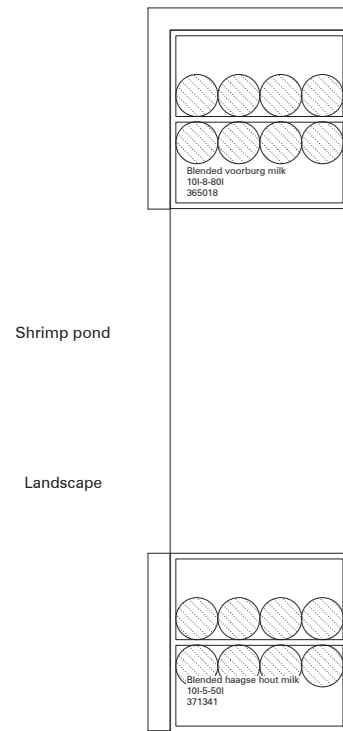


0 200 1000 mm

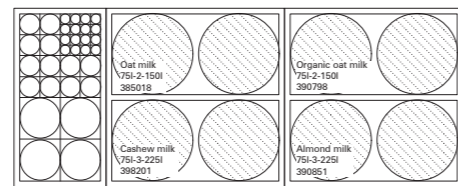
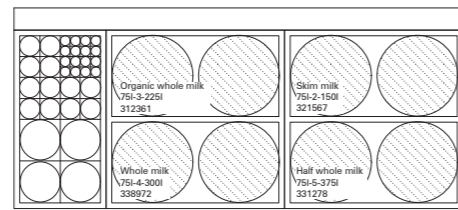
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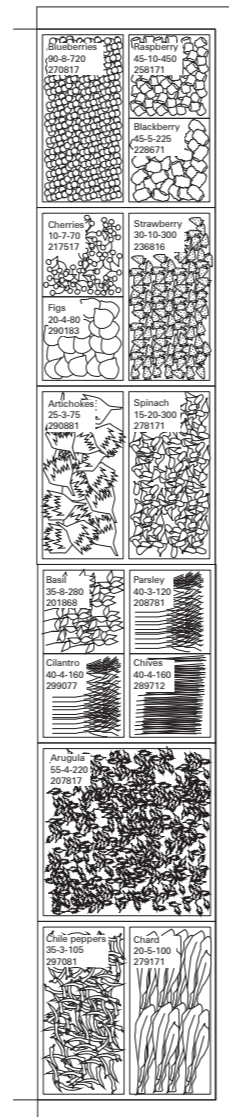
9 Albert lifestyling
10 Public products
11 Chocolate merchandising



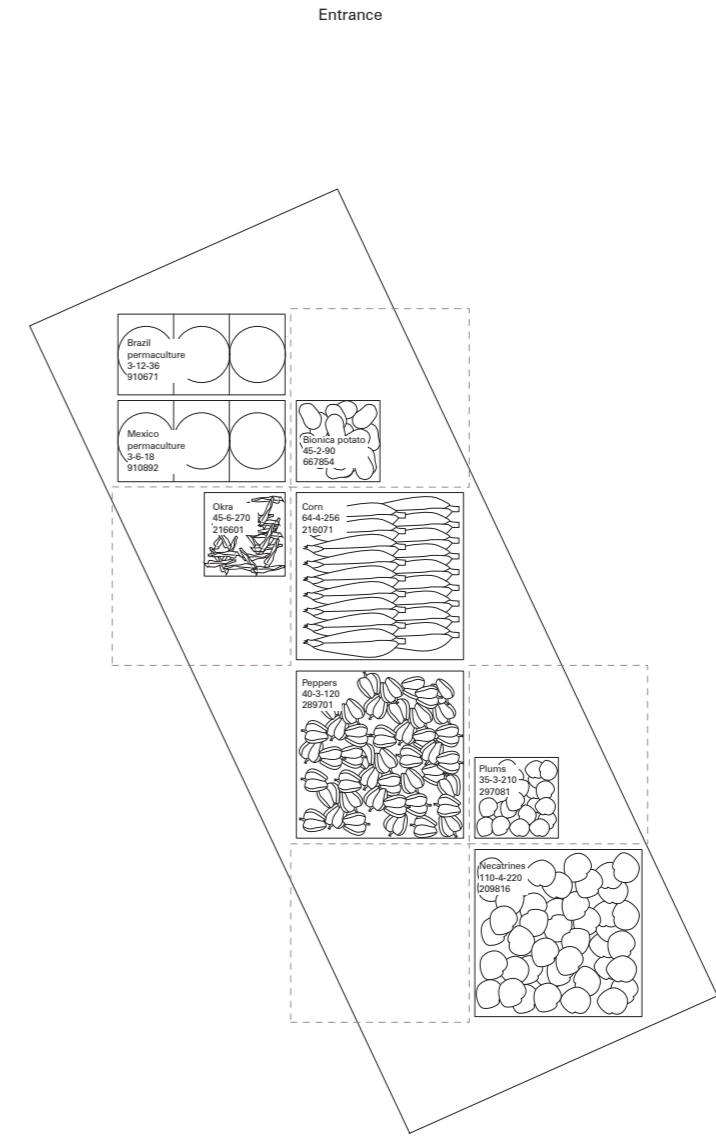
12



13



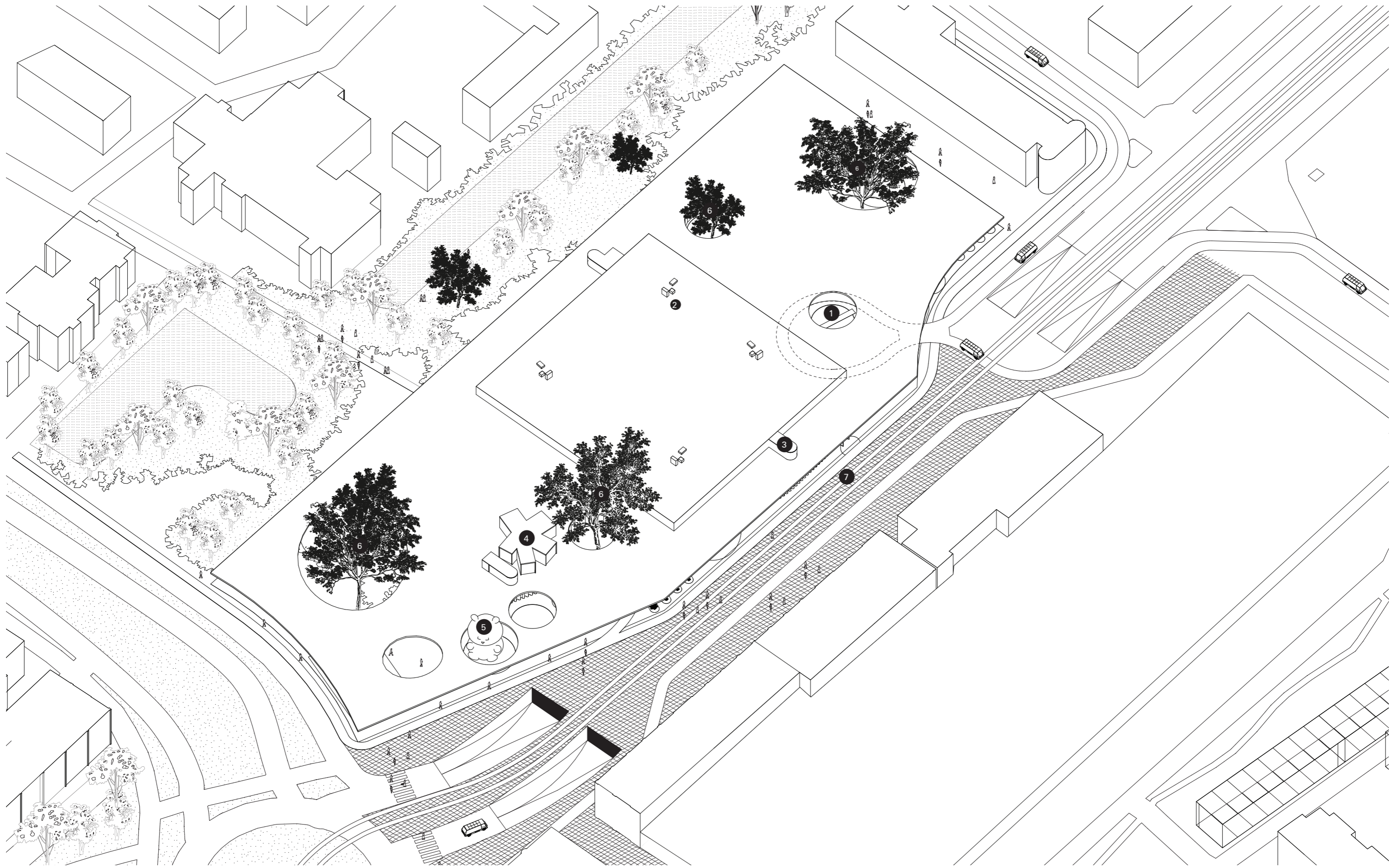
Path



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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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.





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



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.



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.

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.

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and Urban Design

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Delft University of Technology

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