

## ENGROS-TRIO

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Diplomarbeit FS 2021  
Thema C 24/7 Metropolitan Hybrid Machine  
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## Introduction

The site is located in Engrosmarkt, Zurich's largest wholesale market for vegetables and fruit. The design theme was how to open up the existing closed logistics market to the public and create a "hybrid machine" that can be used at different times of the day. "The former industrial area of Zurich", "cold and efficient logistics system", "fruit, vegetables, food", "metropolitan openness and inclusiveness " are just some of the key words that mark this site. The challenge is how to add new functions to maintain the existing logistics market, to make it symbiotic with the existing functions and to enhance its publicity.

As Carolyn Steel says in her *Hungry city*, food helps us to understand our relationship with the city and even the planet. Food has been the basis of social production and military activity since ancient times, but in modern times, with the help of industrialisation and mass production, how food moves from the soil to the table has faded from our view. Nowadays, in the background of global warming, the destruction of biodiversity and other crises, how we develop as human beings in the future, food can also serve as a bond that allows us to reconnect us with nature.

Food waste is a huge problem nowadays, as food consumes a lot of energy in its production, distribution and consumption, it plays a key role in the development of a sustainable low carbon economy (decarbonization). The starting point for my design is to increase public awareness of food during the production, processing and recycling process. I have three interventions: Producer Market, Productive kitchen and Composting. The Producer Market provides a public platform for small-scale local agriculture and its products, encouraging the consumption of regional and seasonal food rather than food produced through energy-intensive greenhouses or transported over long distances. Productive Kitchen, which purchases "non-standard" food from small and medium-sized farms that is often destroyed and wasted because it does not meet the aesthetic standard of the supermarket, as well as unsold but not spoiled vegetables or fruit from Engrosmarkt and turning them into juice, can or fermented food. The Composting section collects food waste from households or productive kitchens, using In-Vessel-Composting technique, converts it into nutritious soil that can be used to grow vegetables in allotment gardens or flowerbeds on site.

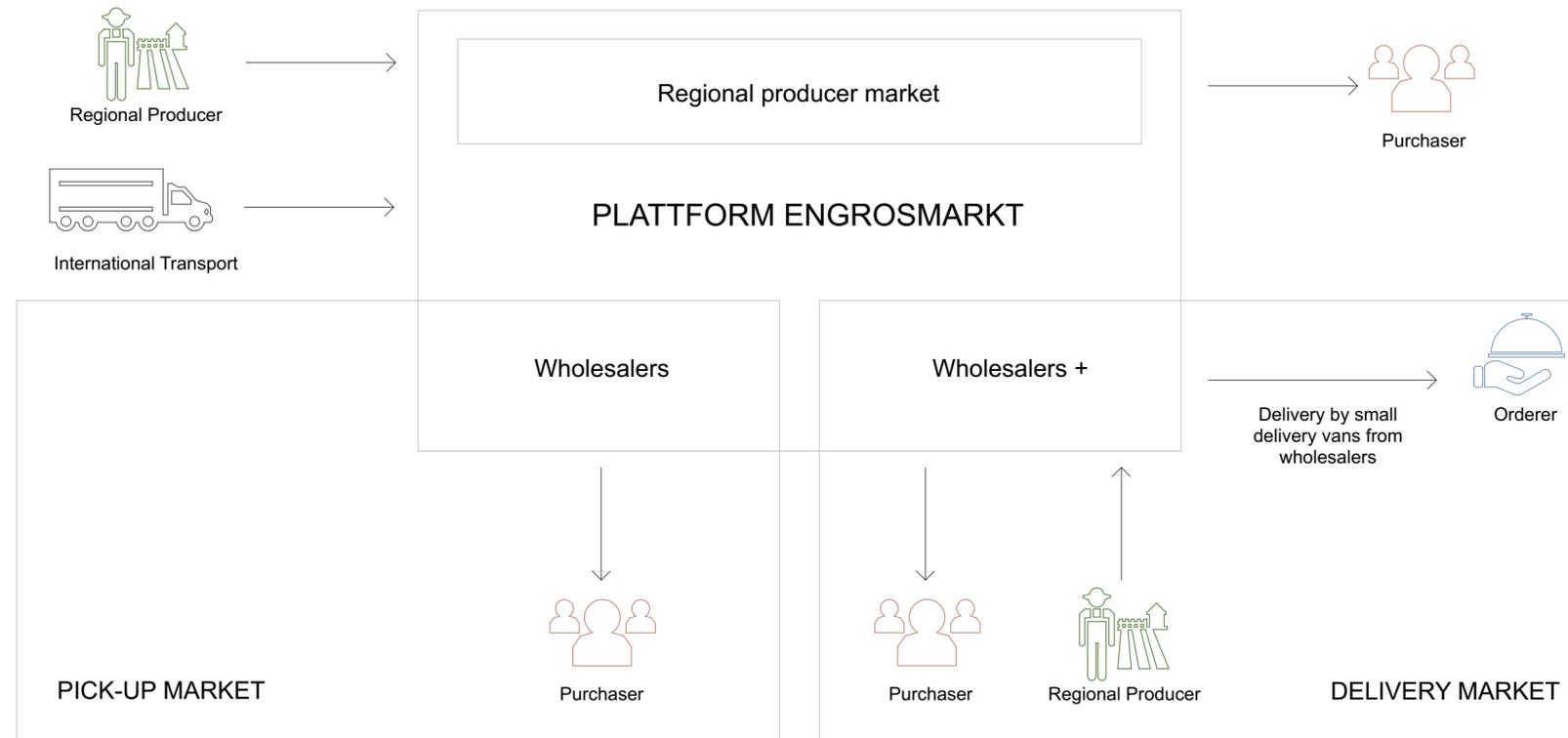
The new buildings will use building materials from the soon-to-be-demolished Parkhaus Hardturm on the opposite side of the site, cutting and repainting them to meet the new requirements, reducing the carbon footprint of producing and transporting the building components. By reassembling the building materials in a similar but different way, the three parts will give a new character to the otherwise cold logistics centre through the use of colour, providing a real stage to celebrate food and for public to be aware of and understand food and our connection with the earth.



Source: Der Gemüse- und Früchte-Engrosmarkt Zürich, Schweizer Ingenieur und Architekt

## Engrosmarkt

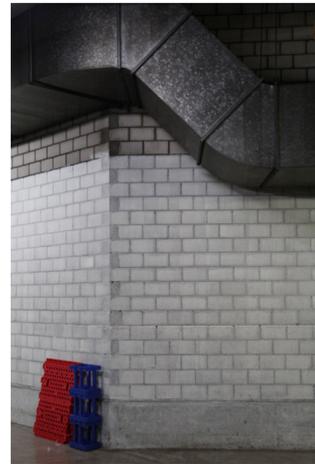
The city of Zurich is a transshipment and marketplace of supraregional importance for the trade in fruits and vegetables. Engrosmarkt is located in the west district of Zurich, the heart of the city, which was the most important industrial area at one time. A catchment area with approximately two million inhabitants of eastern and central Switzerland, but also of neighboring countries, is covered by the Zurich Engrosmarkt. In April 1971, under the pressure of the inner-city traffic redevelopment and the urgent expansion of the main railway station, the delegation of authorities for regional traffic gave the Zurich regional planning (RZU) the task of to work out proposals for the location of an "Engrosmarkthalle". From eight proposed sites, the Herdern area was the best solution. The site is located at the junction of the national and city road networks and close to the Europabrücke bridge. This ensures smooth transport to and from the site without burdening the city of Zurich. On the rail side, the location between Zurich's main station and the Spreitenbach is also very favorable.



Source: Presentation from Mr. Michael Raduner, Engrosmarkt-Immobilien-gesellschaft AG

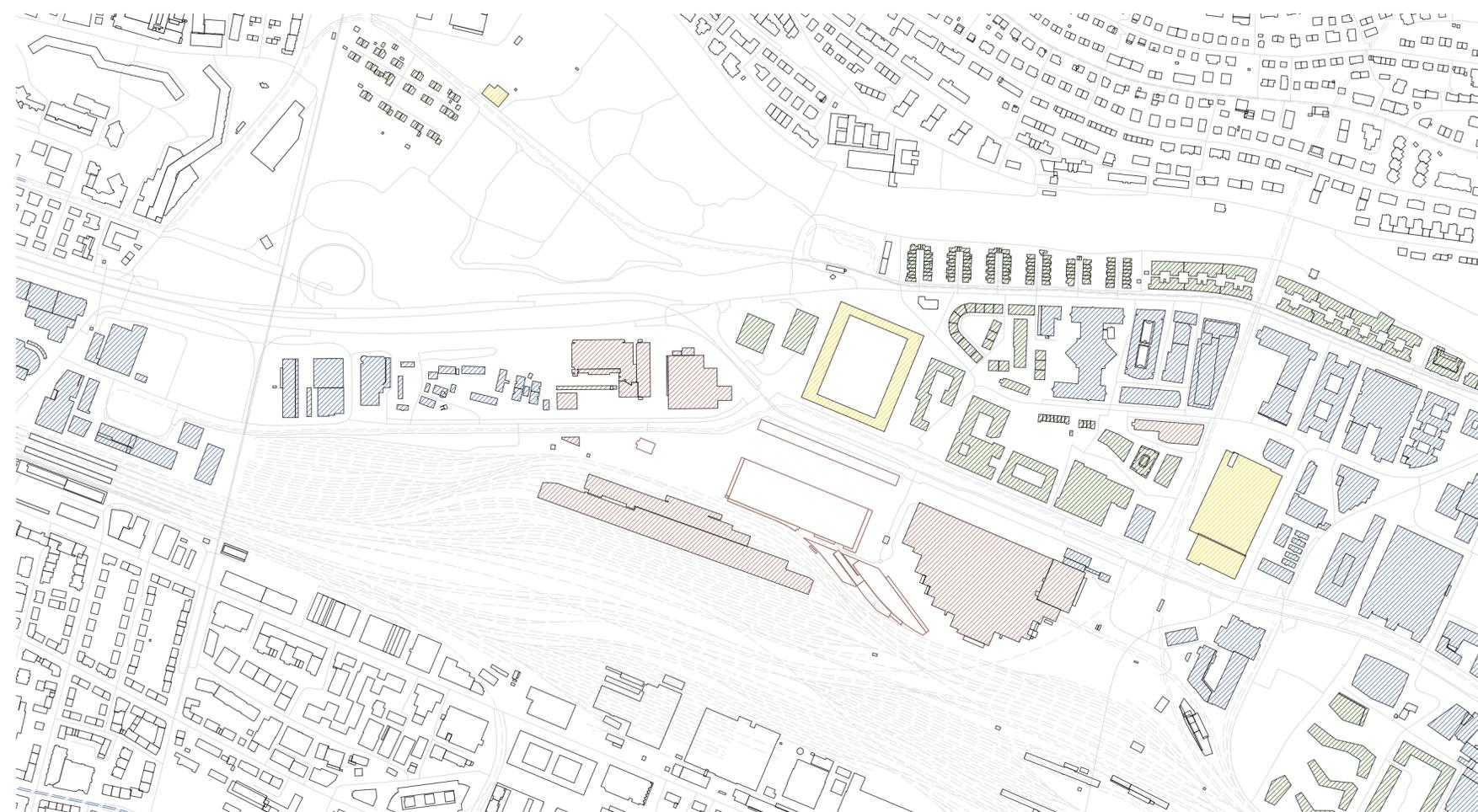
### Relationship

Importers Market Hall on the south side is the core of the market. It currently handles 120,000 t fruits and vegetables annually from distant production areas in Switzerland or other countries. In addition, the long, north-side producer market provides a marketplace for local producers. In the future, Engrosmarkt wants to offer Auslieferung services for the Gastronomie or order and to build a Food Hub.



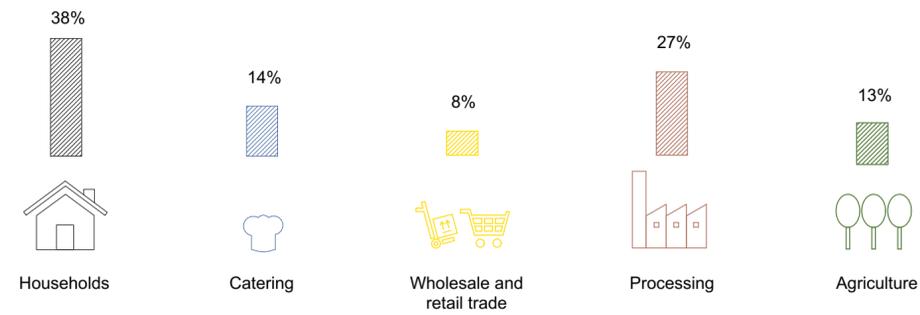
Strict concrete and steel Structure, Architectural elements with vivid colors and different mobilities identify the space

### Material and Atmosphere



At the end of Zurich West, surrounded by parks, sports facilities, railway tracks, highway exits and different functional areas

### Site and Function



Source: Bundessamt für Umwelt BAFU

## Food Waste

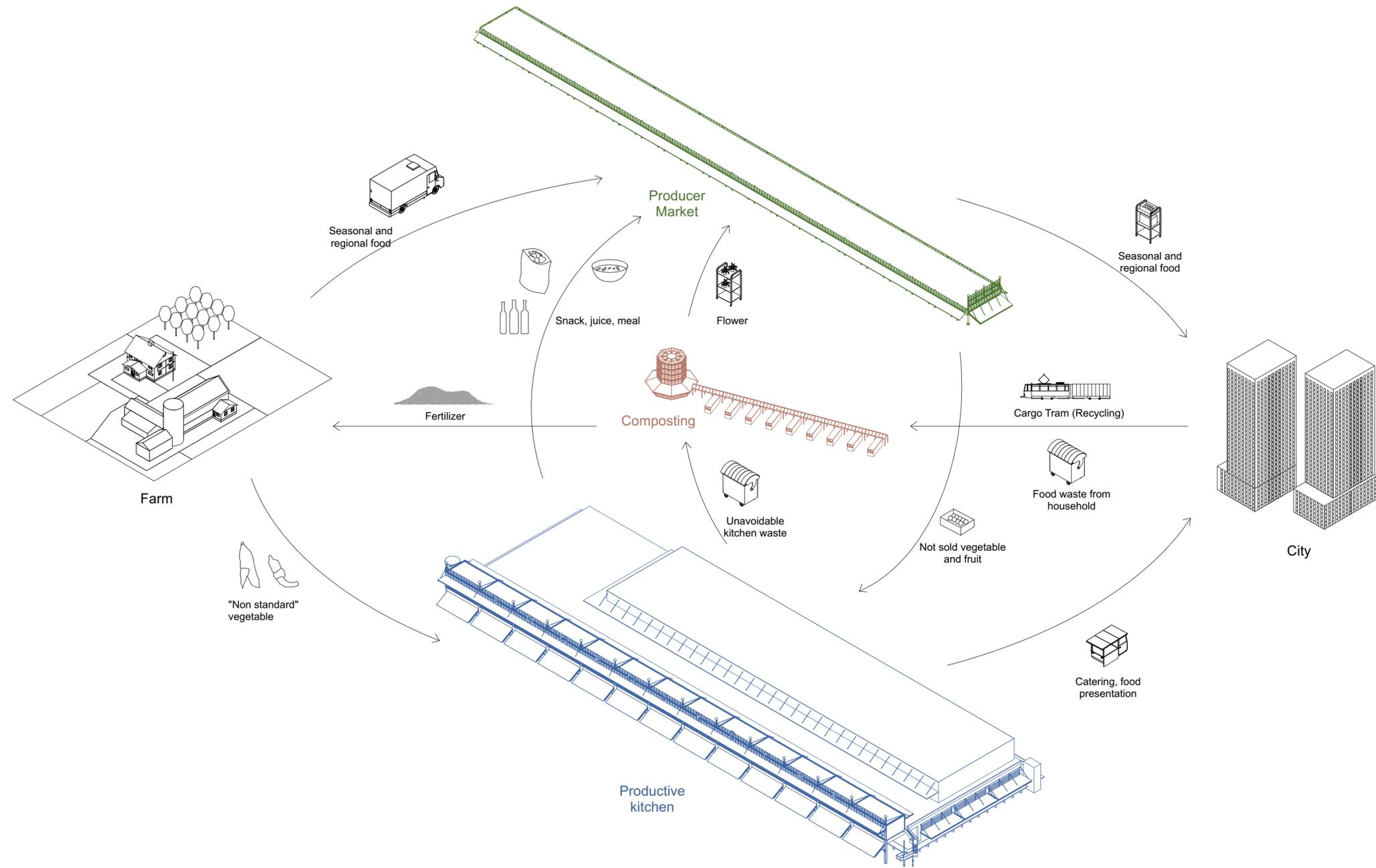
Food waste is a huge environmental problem worldwide, and in Switzerland it is no exception. The environmental impact of one tonne of avoidable food waste varies greatly depending on its constituent products and where the wastage occurs in the value chain. For example, vegetables and fruits have less environmental impact than meat. The half of the environmental impact of all avoidable food waste is generated by household (approximately 778,000 tonnes) and catering industry (approximately 210,000 tonnes) consumption. Across the catering industry as a whole, most avoidable food waste is assumed to be caused by distribution losses (preparation of too much food) and preference losses (plate leftovers). In agricultural area, the main causes of these food losses are industry standards in downstream sectors, technical conditions and inappropriate storage. Non standard-sized fruits are left in the field because they are too big, too small or too misshapen.



Source: Strategie nachhaltige Ernährung Stadt Zürich 2019

### Sustainable Strategy Zurich

The city of Zurich has set itself goals for sustainable development, including in the area of food. In order to put the goals and the understanding of sustainable nutrition into practice, measures are planned in five fields of action. The field of action Information and Education lays important foundations by means of education, information and dialogue. In the field of regional production and distribution, improved cooperation between regional actors and the establishment of efficient distribution improve the population's access to regional and seasonal products. Through its presence, urban agriculture makes food production tangible and visible to the urban population. A sustainable procurement strategy is required in the field of Procurement and catering, smaller and/or regional producers and suppliers are integrated into the procurement process. Measures include a majority plant-based, healthy diet in schools and climate-friendly menus in four municipal cafeterias. The field of action "Food losses and disposal" focuses on the efficient use of resources. Food is used as completely as possible. The field of cooperation and monitoring is a cross-sectional task, relevant for all activities.



Producer market , Productive kitchen and Composting are positioned at different stages of the food flow chain, supporting sustainable strategies and minimizing food waste

### Food Flow



Source: HUBACHER UND ISSLER ARCHITEKTEN, AUSGEWÄLTE BAUTEN 1946-1987

### Material Reuse- Parkhaus Hardturm

The Parkhaus hardturm is located at the opposite side of Engrosmarkt, was built in 1984. It was presented to the people of Zurich as "the one with the tram" when it was opened. The new buzzword at the time was "park and ride": residential districts were to be relieved of traffic by trying to encourage commuters on the outskirts of the city to switch to public transport. This required a multi-storey car park with optimal connections to public transport. The building with the blue stove-enamelled metal façade (which faded to purple in later years) stands near the junction of the A1 motorway in the west of the city, right next to the Hardturm stadium (demolished in 2009). Because of the new Project on the site, which includes a stadium and high-rise residences, the Parkhaus will be demolished within the next few years. In order to reduce carbon emissions, the new building will use materials directly from the parkhaus by means of repainting, cutting, etc. If the materials are not enough, similar elements from other buildings which are going to be demolished will be used.



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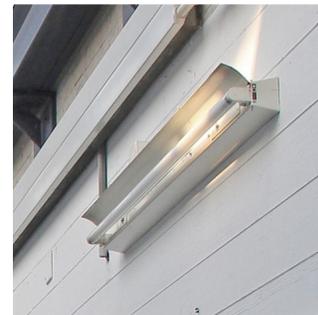
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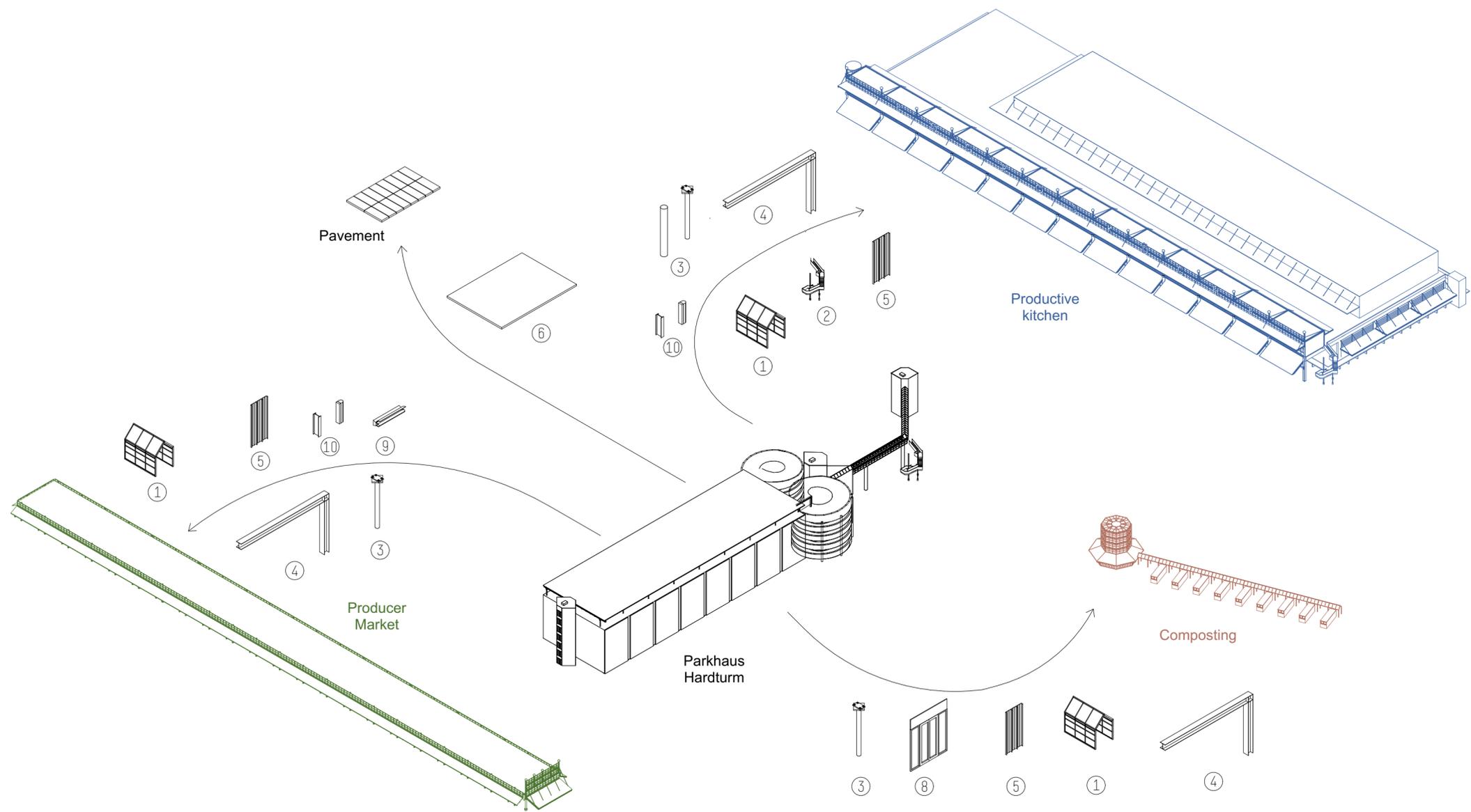
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stove-enamelled metal building elements, concrete floor and lamps

### Material Catalog



Materials will be repainted or cut to meet the new demands

### Material Flow



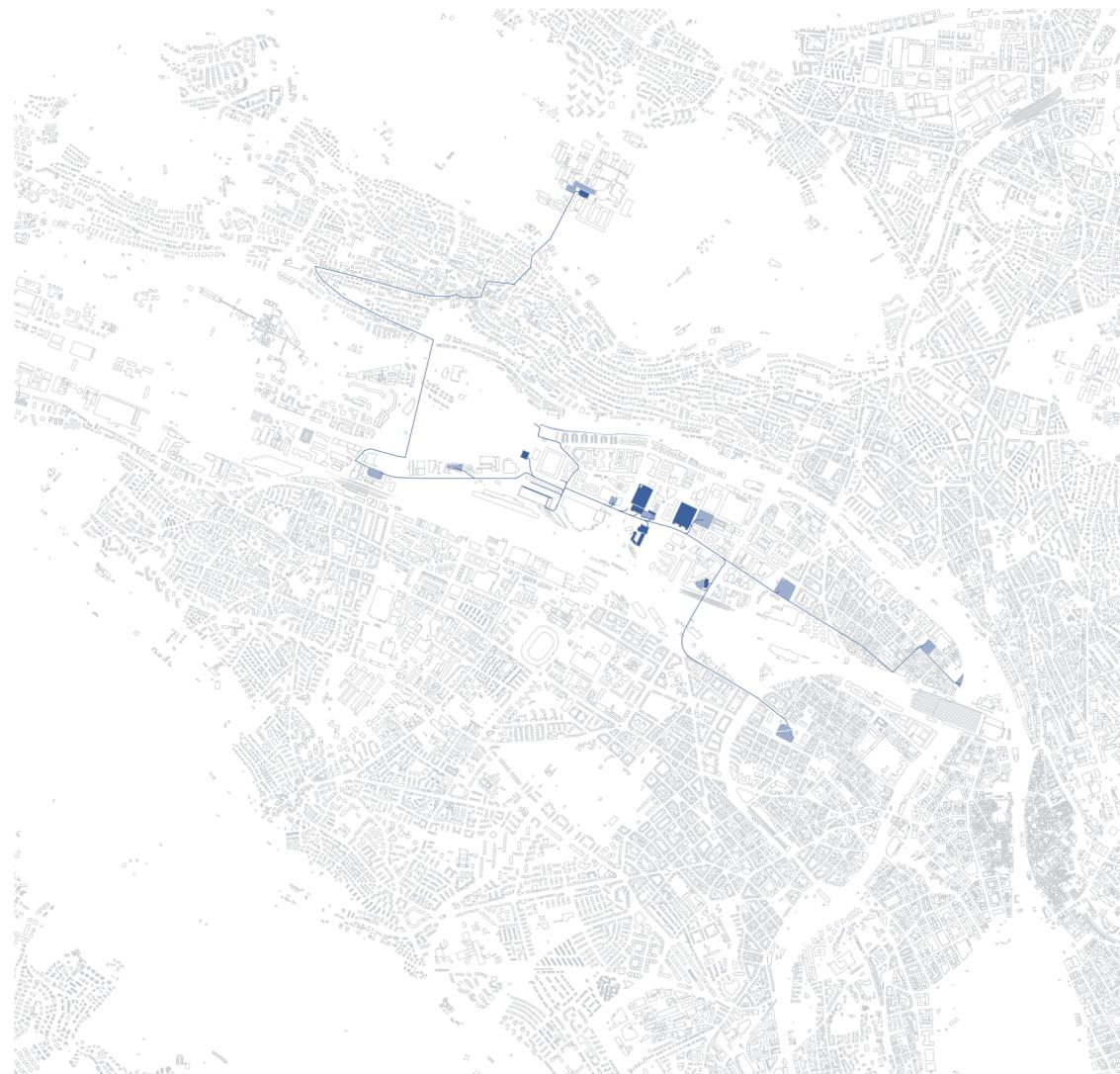
The new producer market is part of the existing public market network in Zurich supporting regional food and offers a semi-outdoor environment unlike any other

### Market connection



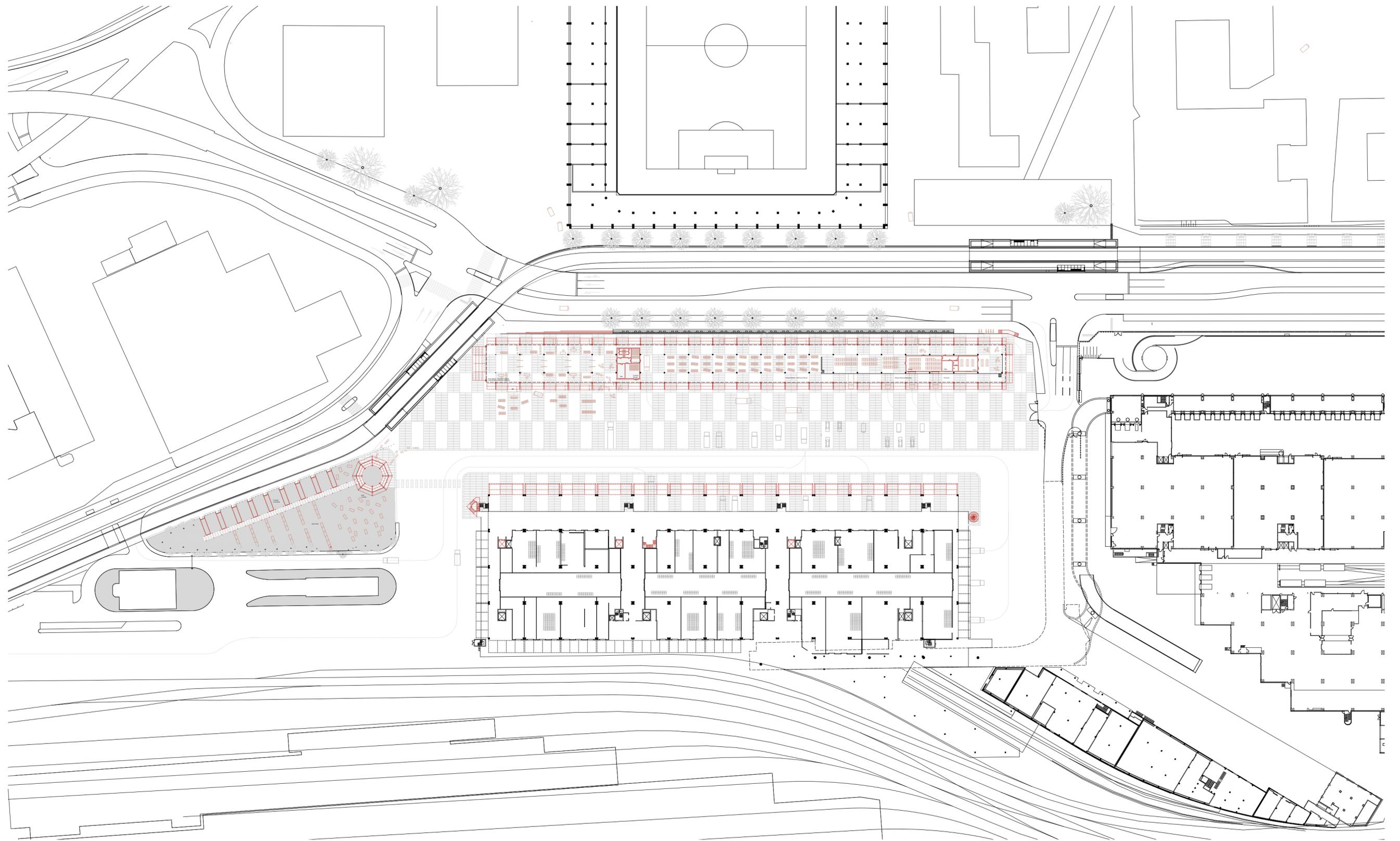
Nutrient soil produced from household and kitchen waste in the composting section will be used to the flowerbeds on site or sold to the neighbouring allotment gardens to grow food.

### Earth Flow

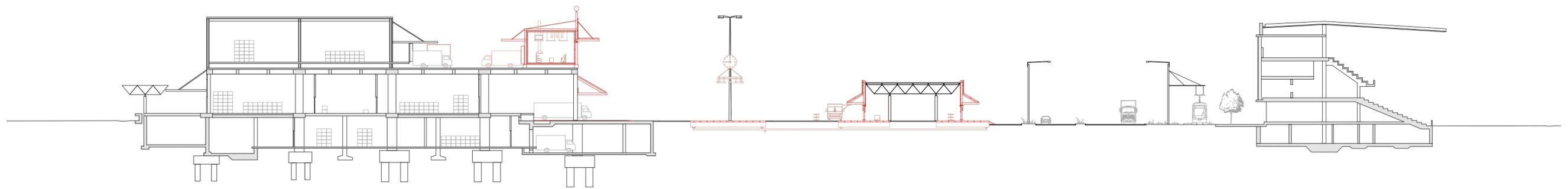


Vegetarian-based food using "non standard" fruit and vegetables or saved "wasted food" cooked with innovative recipes will be served to surrounding companies, kindergartens or schools via solar-powered electric cars

### Catering relationship

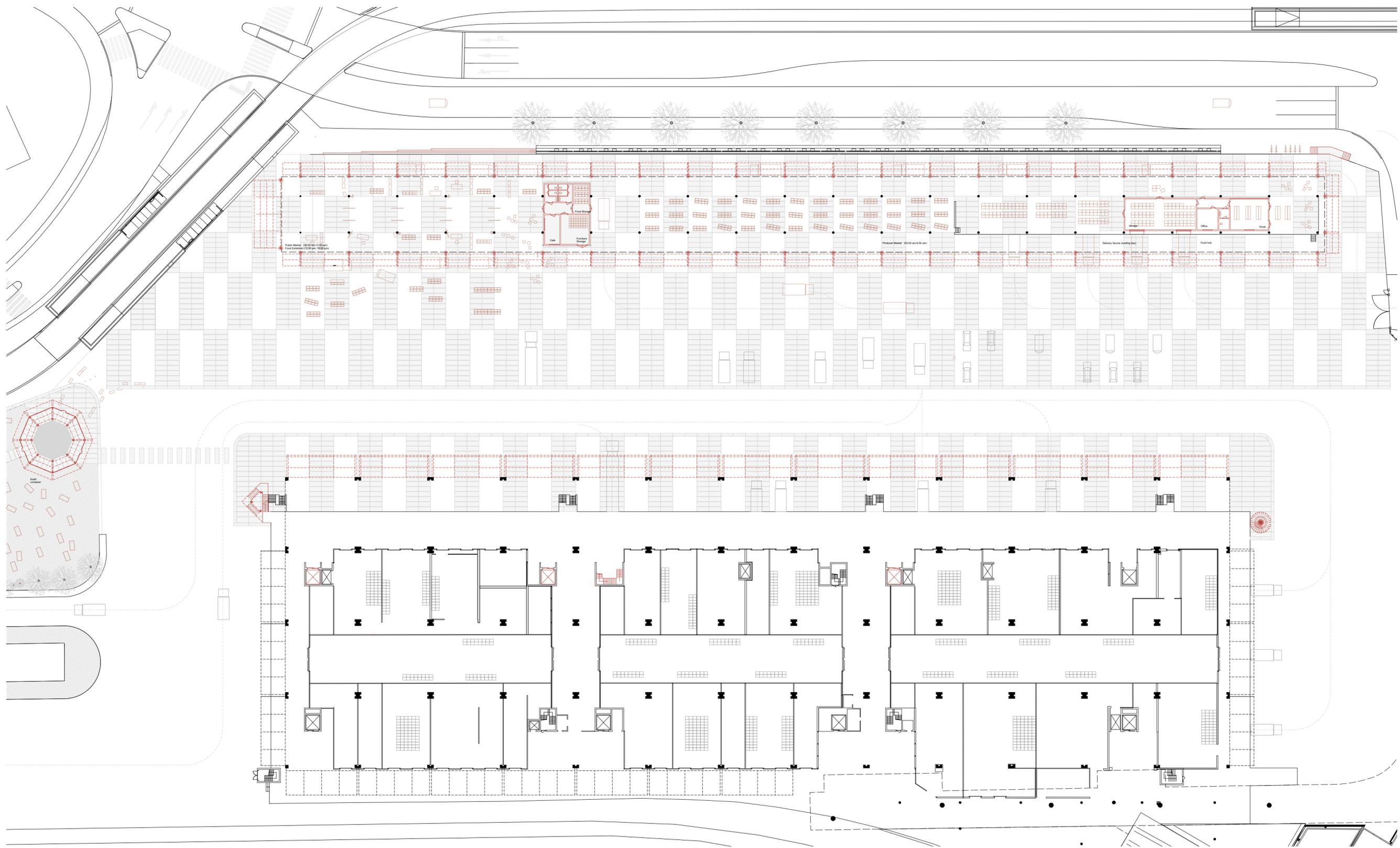


Situation Plan

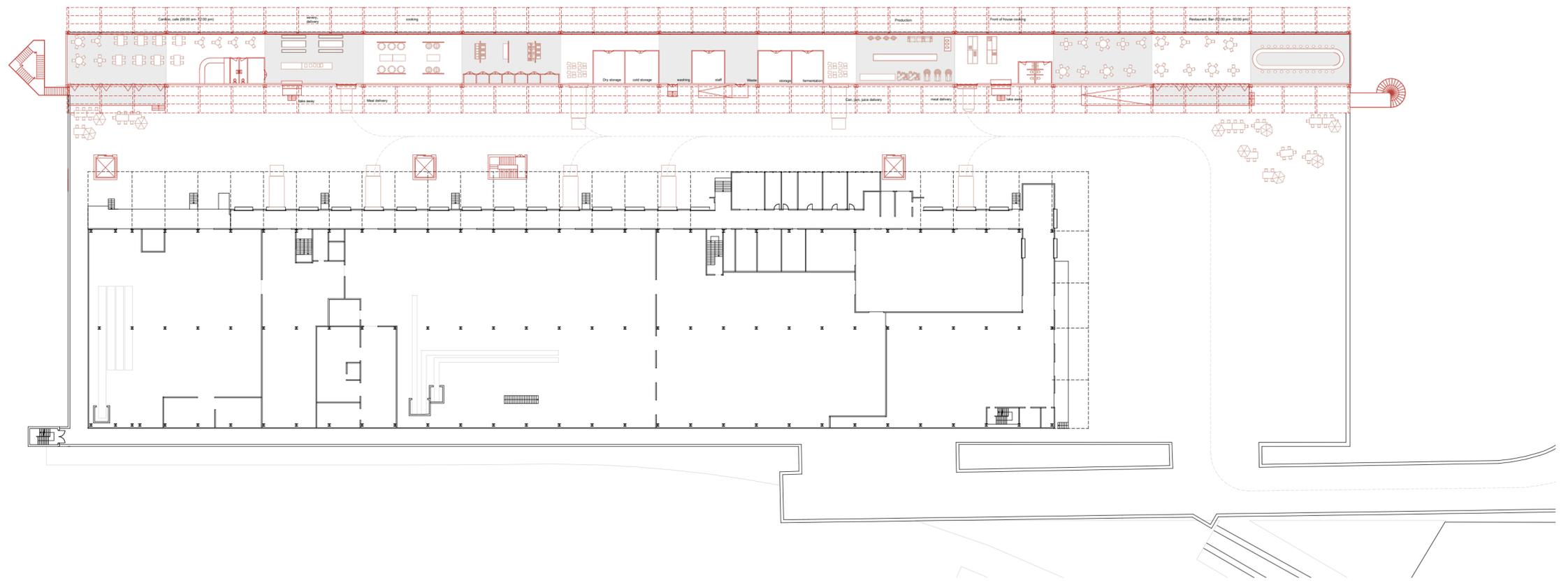


### Section Site

The Producer Market, as a pergola in the middle of the Engrosmarkt and the stadium on the opposite side, provides a huge roof structure for the market by adding new awning structures, bringing a new character on both sides to the square and the city. On the other side the ground floor also adds awning structure to the loading area underneath, the new productive kitchen is located on the roof terrace and forms a Vis-à-vis to the stadium with a performative character facing the square and the city, and on the other side echoing the existing structure. The middle of the square is partially cut and replaced it with concrete slabs from the parkhaus to create a permeable surface that collects rainwater which will be used to flowerbeds on the composting side.

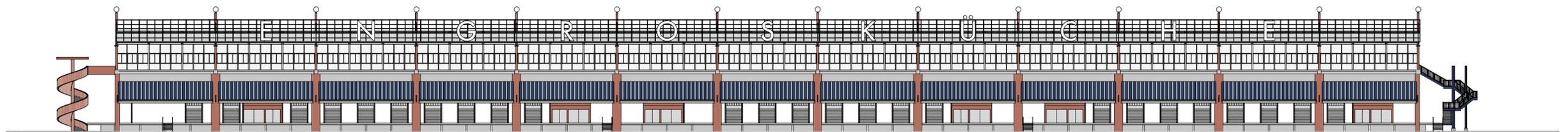
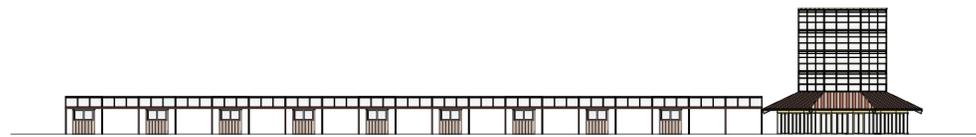
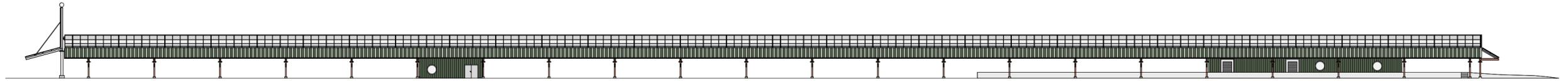


Ground floor plan



0 5 10 25

First Floor Plan



0 5 10 25

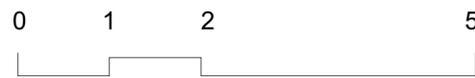
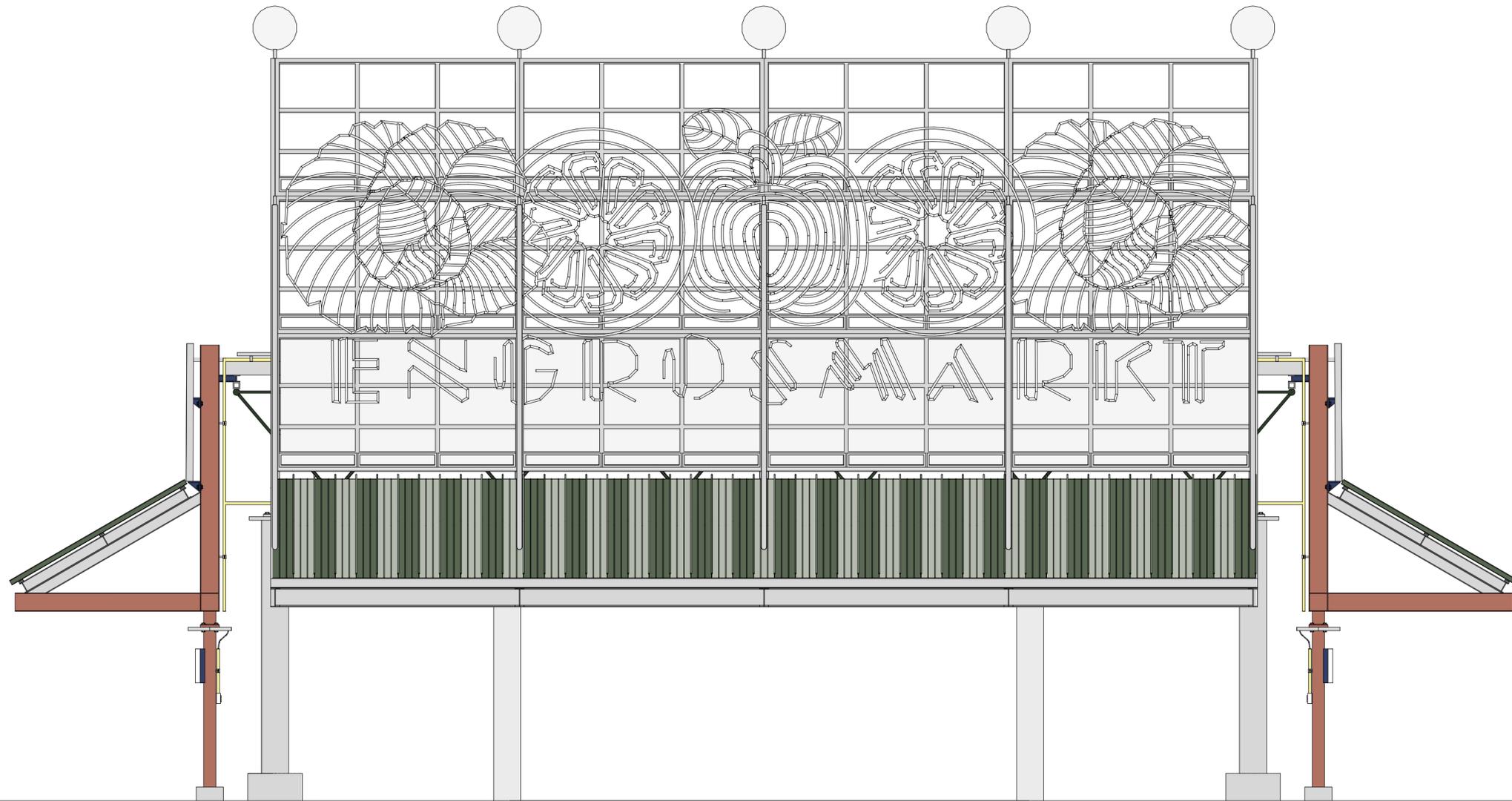
Fassade "Engros-Trio"



The Square



The Transition



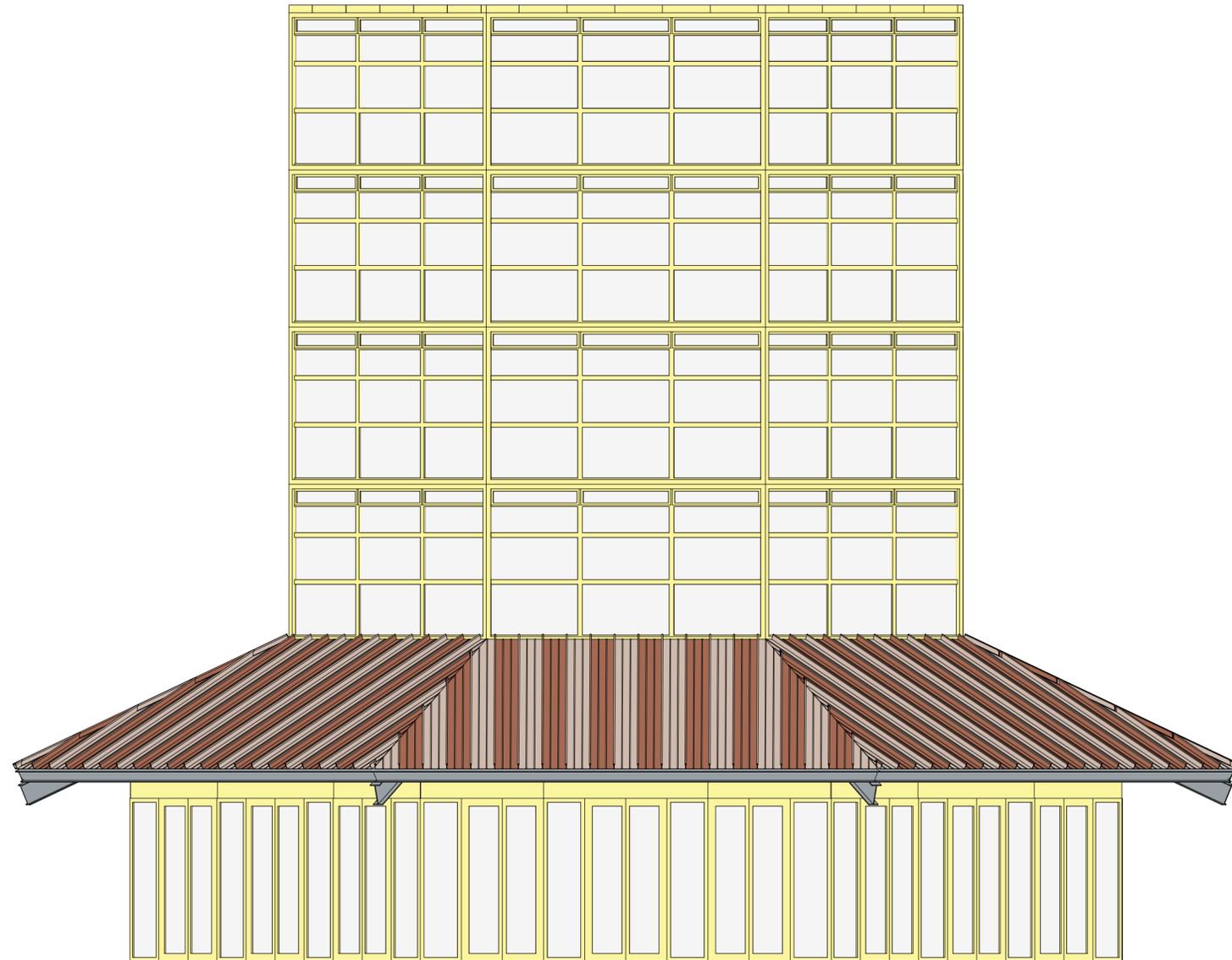
Fasade Producer Market



Producer Market - Open Market



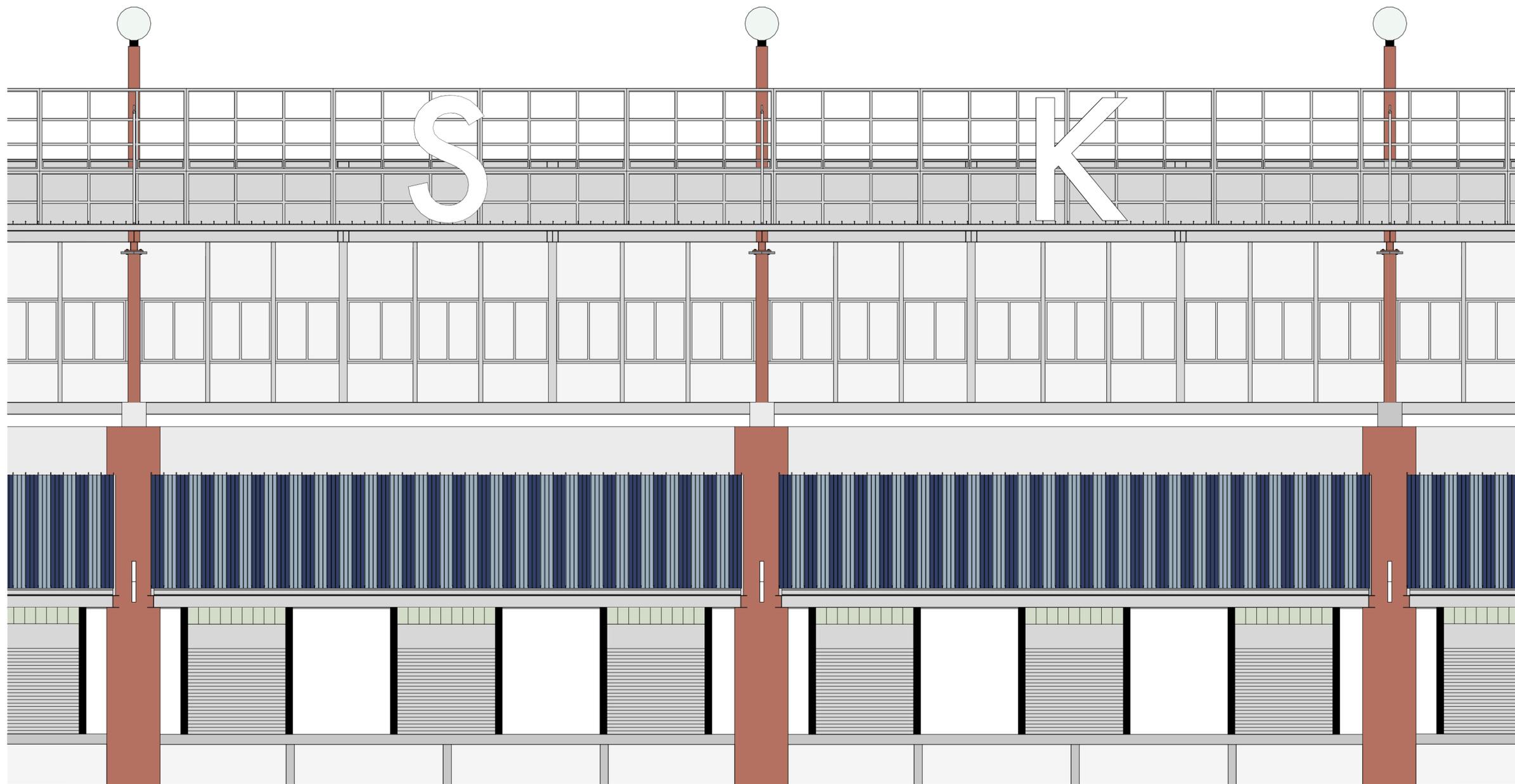
Producer Market - Exhibition



Fasade Composting-Earth Container



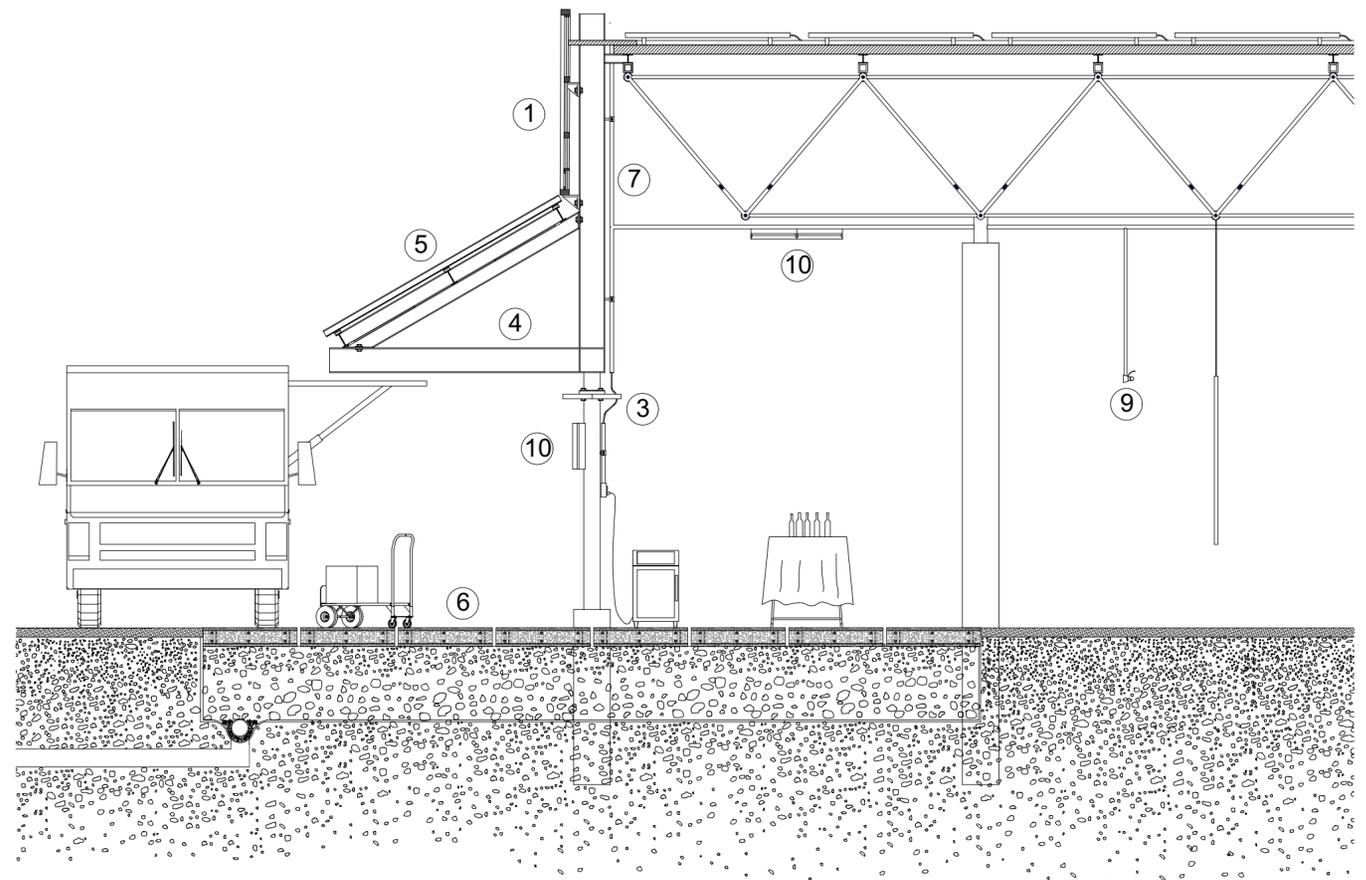
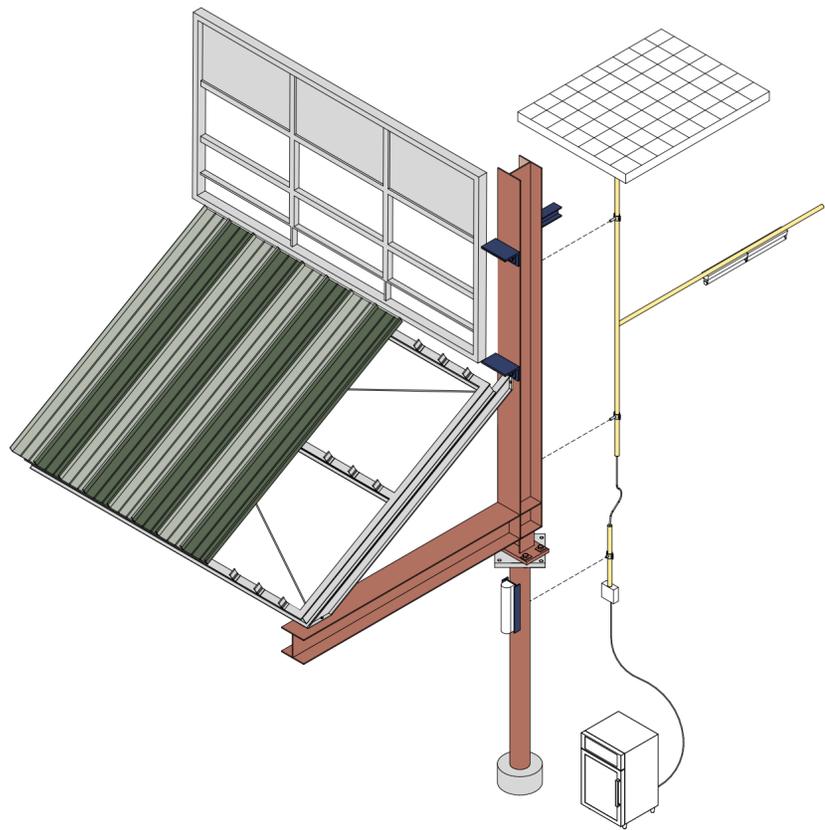
Composting - Earth Container



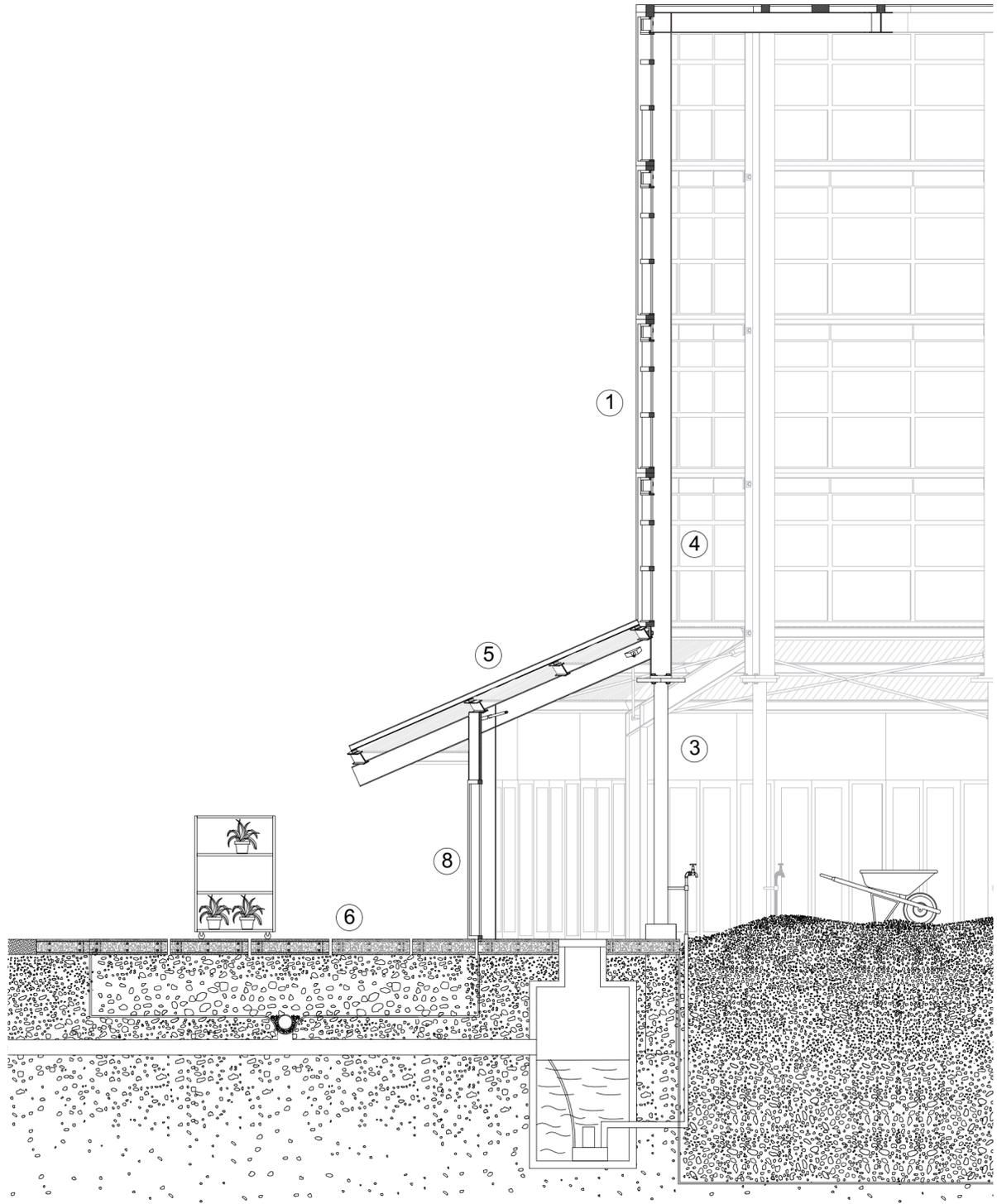
Fasade Productive Kitchen



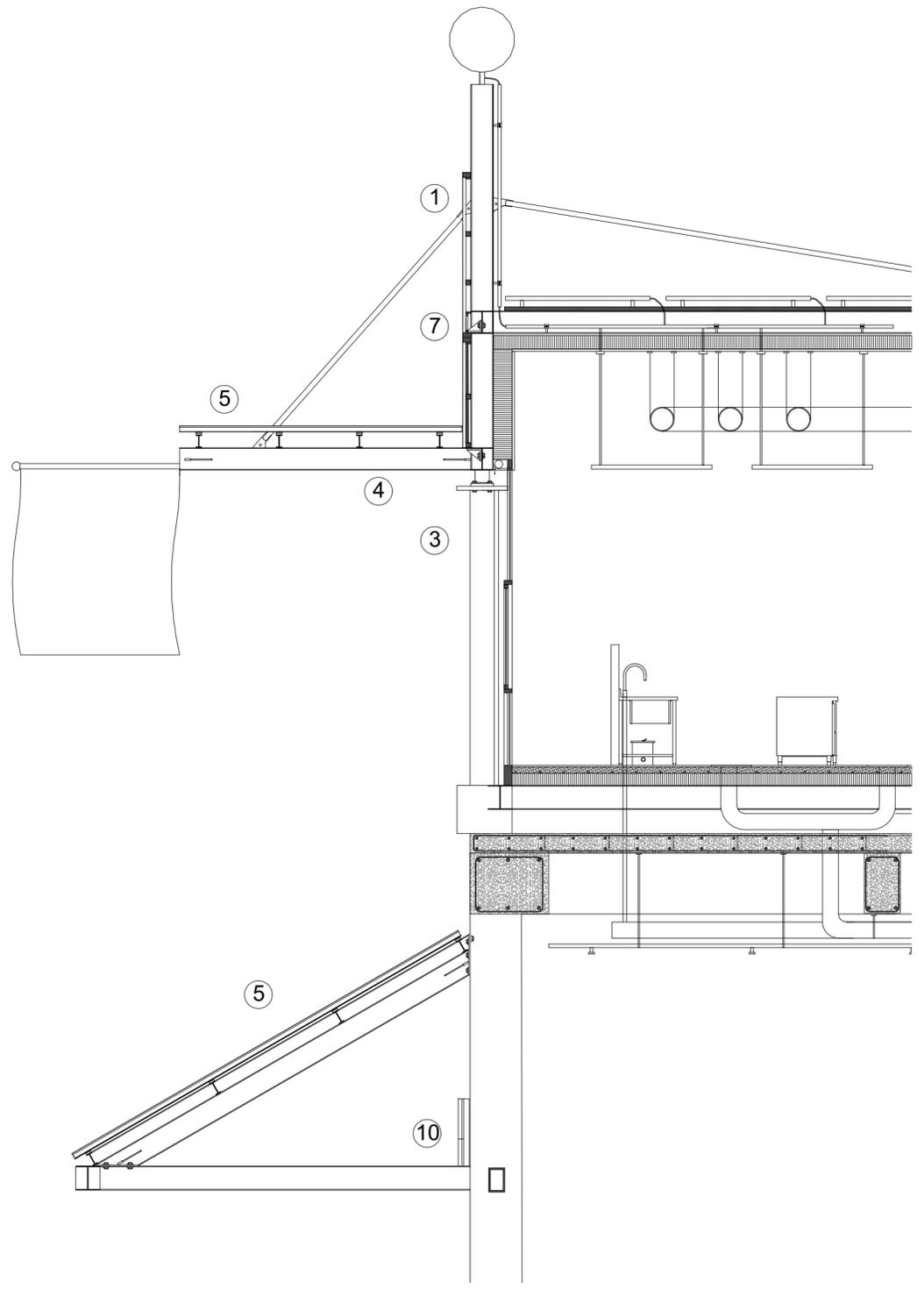
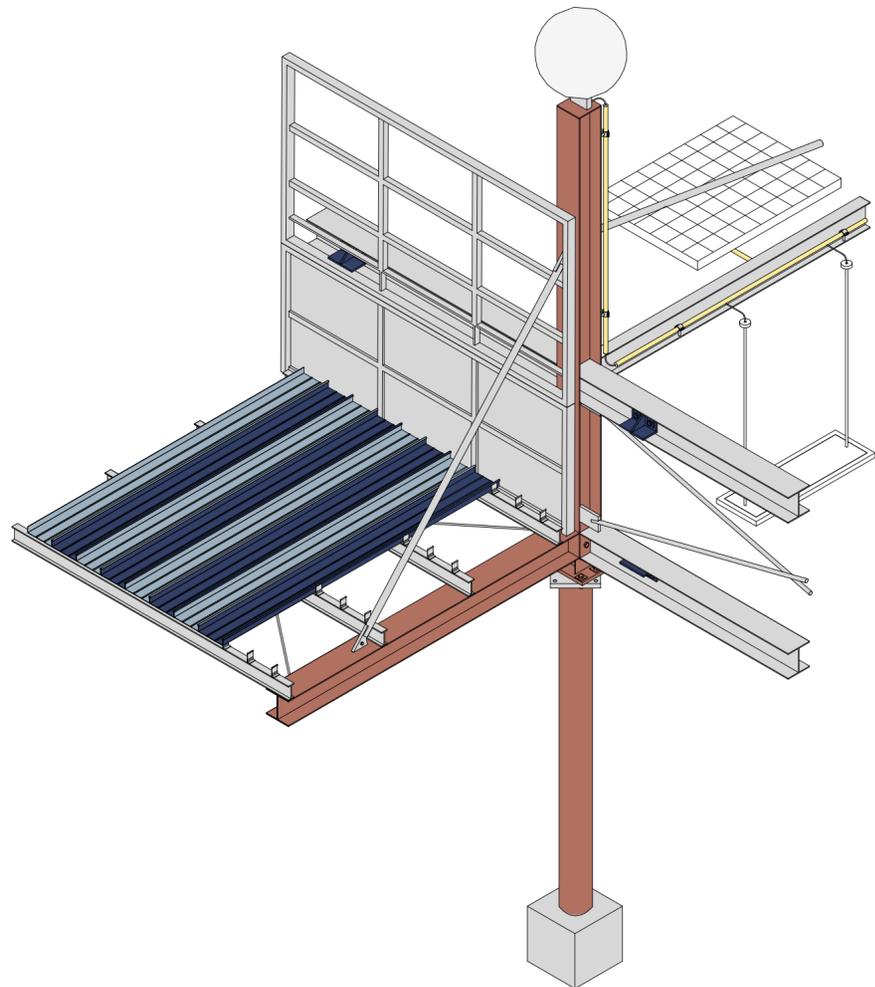
Productive Kitchen



Construction Detail - Producer Market



Construction Detail - Composting



Construction Detail - Productive Kitchen

# Impressum

## Source

Strategie nachhaltige Ernährung Stadt Zürich 2019, [www.stadt-zuerich.ch/ugz](http://www.stadt-zuerich.ch/ugz)  
Bundessamt für Umwelt BAFU, Thema Abfall  
<https://www.savefood.ch/de/das-kannst-du-tun/tipps-und-rezepte/detailseite/karotten.html>

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Design & Maintenance Guide 18, Design of Catering Facilities, Ministry of defence, August 2011  
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Der Gemüse- und Früchte-Engrosmarkt Zürich, Schweizer Ingenieur und Architekt, Band (Jahr): 101 (1983)  
Presentation from Mr. Michael Raduner, Engrosmarkt-Immobilien-gesellschaft AG

## Acknowledgement:

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