Graduation report

2025-2026 Design Data Society Graduation Studio

Radical Institutions.

New Currency: The Food Bank as Infrastructure for Social Wealth & Governance in Plato's Academy, Athens.

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thesis statement.

A 'bank' has historically been a space for financial governance, deposits, lending, asset security and transactions. In contrast, the bank in contemporary society can be radically reinterpreted as an institutional mechanism that safeguards the collective well-being and invests in future of a community.

The institution I intend to design is a food (Waste) bank dedicated to the food waste problem faced by Athenians. The food bank in conceived as an ambassador of food sustainability, education and governance. Beyond functioning as logistical platform for food collection, processing and redistribution, it is envisioned as a junction of welfare where stakeholders, citizens and policymakers meet, negotiate and co-produce new protocols around food.

I believe Greece has been known for its gastronomic delights apart from its glamorous historic architecture. To the Greeks, food isn't merely a substance that sustains life, but also a core expression of identity and daily life. Traditions, social rhythms and economy always revolve around the belief 'Philoxenia', which means hospitality. Nonetheless, modern patterns of living have sparked contradictions within this heritage. Behaviours such as overproduction, waste, and shifting diets have destabilised long-standing relationships between food, health, and ecology. Through architectural and institutional design of the 'food bank', the thesis seeks to reconfigure these strained relationships by making visible the flows of surplus, waste and care, and by embedding circular and sustainable practices within the everyday urban fabric of Athens. The project interrogates how architecture can transform waste-- a "negative matter" -- into social and ecological value.

Analogously, Plato's Academy hold significant cultural value as the Western world's first enduring institution of higher learning. This place incubated philosophy, mathematics, science, and politics, intellectual traditions for centuries. Despite its immense importance, the site of Plato's Academy is often criticized by locals for inadequate maintenance and preservation. During my visit to the site, there has been neglected ruins, damaged signage, limited educational information, and poor site management.

In this sense, the project draws a parallel between the transformation of waste and the revitalization of ruins. In like manner to how surplus food can be recirculated as value through collection, processing, and composting; the neglected remains of Plato's Academy be reactivated as a cultural node through architectural care, interpretation, and public use. The proposal views the ruins not merely as static remnants of the past, but as an active framework and guideline for contemporary meaning and needs. Furthermore, the project promts one to reconsider how resources, memory, and collective responsibility can be reorganized to produce cultural and ecological value.

problem statement.

In 2023, Greece ranked 3rd among all the countries in the EU of annual food waste[1]. In that year, the country discarded 2.09 million tonnes of food. In other words, an annual 201 kilograms per capita, far exceeding the EU average of 130 kilograms. The issue isn't merely caused by a single reason but stems from a cluster of intertwined political, infrastructural, managerial and cultural factors which are deeply rooted in the daily lives of Greeks.

The food waste problem on its own is not the standalone reason for the immense urgency of creating institutional and spatial intervention. Paradoxically, parallel to the enormous food waste problem, Athens faces a severe food insecurity issue. In 2024, one in ten Greeks experienced food insecurity, with 27.3% of those living in poverty unable to afford proper meals containing meat, fish, or vegetarian protein every other day, which is among the EU's highest gaps[2]. This stark paradox of simultaneous excess and deprivation reveals not only systemic inefficiency but also a deeply embedded structural injustice in the current food system.

This coexistence of hunger and waste reflects systemic inefficiency, including a lack of food redistribution infrastructure, confusion over expiration labels, promotional overconsumption, and cultural practices emphasising abundant portions tied to philoxenia hospitality traditions. Nonetheless, these culturally rooted patterns, while historically associated with generosity and communal relationships, now inadvertently contribute to unsustainable production, consumption rhythms and spatially uneven food landscapes across Athens.

Moreover, food apartheid exists have emerged where wealthy areas have access to quality traditional ingredients and restaurants, while poor neighbourhoods rely on cheap processed foods. Such disparities exacerbate health inequalities and undermine social cohesion.
As a whole, the Greek recycling system is facing multiple challenges, including low collection rates for organic waste, high levels of contamination in recyclable materials (~approximately 40% residues), severe delays in establishing new infrastructure and equipment, and underutilization of available European funding[3].

1 Eurostat, "Food Waste," Eurostat Data Browser, latest modified/released [Accessed December 16, 2025], https://ec.europa.eu/eurostat/databrowser/view/cei_pc035/default/table?lang=en.

2 Eurostat, "Inability to afford a meal with meat, chicken, fish (or vegetarian equivalent) every second day" Eurostat Data Browser, last modified/released [Accessed December 16, 2025], https://ec.europa.eu/eurostat/databrowser/view/ilc_mdes03/default/table?lang=en

3 WWF Greece, Municipal Waste Management in Greece: Proposal for a Sustainable and Just Management – Synopsis, June 2024, WWF Europe, accessed December 17, 2025, https://wwfeu.awsassets.panda.org/downloads/diaheirisi_astikon_apovliton_synopsi_en.pdf

relevance.

The issue of food waste sits at the intersection of three crises that are all spatial and infrastructural: a failing waste system, climate and resource pressures, and social inequality.

Commencing with the climate emergency, the unnoticed decomposing food waste in landfills generates methane, a potent greenhouse gas. Greece, and Athens in particular, is acutely vulnerable to climate impacts (extreme heat, wildfires). Reducing this methane source is a direct climate adaptation and mitigation strategy. Food waste is responsible for approximately 58% of fugitive methane emissions from municipal solid waste landfills, due to its rapid decay rate[1]. Moreover, the Attica region, dominated by Athens, produces around 40% of the country's waste. Out of which around 90% of it heads to the Fyli landfill[2]. Which is reported by a study that it is operating at its limits and poses serious environmental and social problems[3].

Besides climate impact, food waste also reflects economic & social crises. As previously mentioned, the paradoxical phenomenon of immense food waste and food security reveals this glaring social justice issue. The misalignment between surplus and scarcity exposes how existing infrastructures prioritise disposal over redistribution, concealment over visibility, and efficiency over care. For example, the European Environment Agency released a study in 2025 that revealed that a separate collection system that extends obligations[4] for municipalities and private companies towards food waste and non-packaging materials was supposed be implemented in 2022-2023. However, the included improvements are not yet fully achieved.

In parallel with growing environmental initiatives, WWF Greece has unveiled an ambitious yet achievable plan to transform Greece's municipal waste management system into a sustainable model. A 50% reduction in food waste by 2040[5], with specific interim targets including a 30% reduction in food waste in retail, catering and households. Additionally, 10% reduction in food waste from processing by 2030 compared to 2020. The initiative urges the development and implementation of a specific prevention plan for food waste, plastics, packaging waste and textiles, through waste management investments up to €3 billion. The proposed Food Bank directly engages this policy agenda, and through testing out new architectural typologies, to meet quantitative reduction targets while providing civic spaces that address stigma and social equity.

1 Maddy Lauria, "The Connection Between Food Waste, Methane, and Climate Change," One5c, March 14, 2024, https://one5c.com/food-waste-methane-136935965/

2 "Why Does Greece Continue to Bury Its Rubbish and Recycle Very Little?," Euronews, last modified October 31, 2025, https://www.euronews.com/green/2025/10/31/greece-still-buries-nearly-80-of-its-waste-despite-billions-spent-and-bins-everywhere.

3 Kallianos, Yannis, and Dimitris Dalakoglou. 2023. "The Distant Proximity of Infrastructural Harm: The Contested and (in)Visible Dynamics of Waste Politics in Athens, Greece." Globalizations 20 (6): 849–65. doi:10.1080/14747731.2022.2139136.

4 European Environment Agency, "Waste Management Country Profile: Greece (with a Focus on Municipal and Packaging Waste)" (factsheet, March 2025), accessed {cur_date}, https://www.eea.europa.eu/en/topics/in-depth/waste-and-packaging-waste-management-country-profiles-2025/gr-municipal-waste-factsheet.pdf/@@download/file.

5 WWF Greece, "Towards an Environmentally, Socially, and Economically Sustainable Municipal Waste Management in Greece," WWF Greece, July 16, 2024, https://www.wwf.gr/en/?14366841/municipal-waste-management

objective motivation.

A persistent gap from farm to consumer to Landfill is evident in the realm of food waste. Along this value chain, food systematically loses economic and social value once it exits the sphere of formal commerce and enters the legal and cultural category of "waste." Existing infrastructure normalises discarding and obscuring opportunities for recovery and redistribution[1].

In the present, the only existing, formal, large-scale food bank model, the Boroume, has achieved a successful decentralised model (20M portions in 2024)[2] as a network coordinator operating at scale limits. Nonetheless, the lack of structural infrastructure and logistical coordination still exists within.

Another gap lies between environmental science and spatial practice[3]. Where food waste infrastructure is rarely analysed through the lens of spatial clustering studies on circular economy activities. As a result, important factors such as physical access, public visibility, beneficiary dignity, stakeholder encounter and civic engagement remain underexplored in both policy discourse and architectural practice.

Alternatively, the motivation of picking Plato's Academy lies in its unmatched philosophical symbolism. Founded in 387 BC, it was considered the first Western university, which pioneered systematic philosophy and science. An academy that incubated the Platonic Philosophy, perfected the Dialectical Method and nurtured philosopher and polymath Aristotle. In addition, Plato's "Healthy City" Philosophy, mentioned in The Republic, Book II[4] mentioned food as one of the core civic virtues. His suggested diets are nearly identical to the Mediterranean diets. Plato also stated that unadorned food disciplines the appetite that leads to a steady mind, which contributes to stable politics. Situated at the historical locus of this pedagogical project, it would be purposeful to reimagine an institution that salvages surplus, redistributing food to build social solidarity and reactivates the Academy's legacy of education on equitable food systems. On an urban scale, the neighbourhood 'Akadimia Platonos' consists of dense residential and semi-industrial freight centre. In sum, the area exhibits a higher poverty level and a working-class concentration. The Southwest neighbourhood is currently an existing Industrial Zone where the government propose for clearance (FEK409A/2024). In sum, the creation of the "Food Bank" brings an actual and authentic value to the neighbourhood, where the building (institution) itself would be an ambassador in setting the theme in the redevelopment of the district.

The ambition is to create a Food Bank where food surplus from households, manufacturing, the service industry and primary production could be collected and transformed then redistributed in this space. Within the premises of the site, the oversight of governmental departments (Health and Food Safety) will ensure proper management and decent standards of the operation. Furthermore, a crucial factor contributing to the goals set by WWF Greece is raising the wider awareness through collaborative efforts of policy makers, citizens and potential tourists.

1 Tanya Tsui, Alexis Derumigny, David Peck, Arjan van Timmeren, and Alexander Wandl, "Spatial Clustering of Waste Reuse in a Circular Economy: A Spatial Autocorrelation Analysis on Locations of Waste Reuse in the Netherlands Using Global and Local Moran's I," Frontiers in Built Environment 8 (2022): article 954642, https://doi.org/10.3389/fbuil.2022.95464

2 Boroume, Annual Report 2024 (Athens: Boroume, 2024), accessed December 17, 2025, https://www.boroume.gr/Content/Files/1/pdf_files/Boroume_Annual_Report_2024_.pdf

3 Food and Agriculture Organization of the United Nations (FAO), Food Waste Management and Circular Economy in the Mediterranean Region (Rome: FAO, [year if available]), accessed December 17, 2025, https://openknowledge.fao.org/server/api/core/bitstreams/0f2afcbf-c9ef-4dc8-bcd7-e2773421926b/content

4 Plato, Republic, trans. G. M. A. Grube, rev. C. D. C. Reeve (Indianapolis: Hackett Publishing, 1992), bk. 2

objective motivation.

Commencing with the idea of gaining public trust through transparent, inclusive and constructive spatial design. A typical[5] "Food Bank" is usually a charitable nonprofit organisation that emphasises collection from donors and redistributes to communities. Architecturally, it often appears as a centralised warehouse with storage, food pantries, stores and offices. In this project, it would be an interesting challenge to (re)design this "Food Bank" as a waste processing plant infrastructure integrated with civic space, while including governmental supervision. The aim is to transition from a back-of-house, charity-oriented model characterised by concealment and stigma to a front-of-house, rights-based public infrastructure in which governance, service delivery and logistics are spatially interwoven yet clearly articulated and mutually legible. A food bank would no longer be a hidden warehouse of charity but transformed into a transparent public infrastructure for all.

Site Choice and potential value:

The current state of Plato's academy are fragmentary and the area is stigmatized as "degraded," given less attention by authorities. And despite its vast symbolic value, many visitors report a sense of disappointment at how little is visibly preserved and how neglected the surroundings feel. Moreover, the Unification of Archaeological Sites (UPASA) left out Plato's Academy despite officially recognised as important, but physically and functionally peripheral to the core cluster around the Acropolis that the Unification Project focused on. This is thus due

1: to its low connectivity to the historic core, post-industrial neighhourhood and no archaeological corridor linking it to the Acropolis cluster.

2: Limited "spectacle" value: where the visible remains are fragmentary and modest compared with the Acropolis or Agora, reflects less immediate "iconic" value to a showcase project.

3: Policy focus on central branding:
Heritage policy and investment have historically favoured the postcard centre over peripheral or stigmatised areas, so resources were channelled first to sites that fit a strong national/tourist image.

5 Tori Waite, "What Is the Difference Between a Food Bank and Food Pantry?" Feeding America, February 20, 2019, accessed December 17, 2025, https://www.feedingamerica.org/hunger-blog/what-difference-between-food-bank-and-food-pantry

research & design questions.

Leading question:

How can a "Bank for Food" reinterpret the role of a traditional bank by transforming surplus, waste, and decay into a new social currency, while simultaneously reactivating the historical ruins of Plato's Academy as sources of cultural and communal value?

1. How can the architectural program challenge the invisibility of waste management, transforming the mechanical processes of sorting and composting etc into a legible public spectacle of value recovery—a "vault of transparency" that educates while it operates?

2. How can the sensory, material and temporal dimensions of food decay and renewal re-establish a connection between the Athenian citizen and their consumption habits?

3. How can the site design utilise the "archaeological site" not merely as a method of excavation and preservation, but as a new typology, thereby preserving and intensifying the historically charged ground plane while embedding new ecological functions between the ancient and modern layers?

4. How can the architecture of the 'Food Bank' deconstruct and/or address the barrier between the 'Served' (dining halls /market/educational rooms), the 'Servant' (loading docks, logistics, sorting lines, waste processing) and the 'Overseeing' (governance offices, policy labs, inspection stations), that promulgate the relationship of food consumption and the production of refuse?

scope.

Category	Program	Size (m2)
Inbound Logistics and Receiving		
	Loading Docks/ Pick-up Areas	100
	Receiving Bays	60
	Quarantine / Control Area	60
	Quarantine & inspection zone	60
	Distribution: Direct-Service Areas	50
	Total	330
Storage (Deposits)		
	Dry Storage	600
	Chilled Rooms	300
	Freeze Rooms	150
	Circulation & Staging	200
	Total	1250
Sorting		
	Sorting Floors (1st sort)	200
	Sorting Floors (EDI)	400
	Processing_Packing and Kitting Lines	120
	Processing_Labelling and Testing	100
	Waste triage to composting & recycling (indoors	80
	Total	900
Composting	Plant and Treatment Area	500
	Total	500
Distribution		
	Shops	300
	Market/ Redistribution	500
	Total	800
Administrative		
	Offices	200
	Volunteer Office	200
	Meeting Rooms	100
	Data Lab	100
	MEP	60
	Total	660
Governance		
	Offices	150
	Meeting Rooms	50
	Data Lab (Secure)	100
	MEP	60
	Total	360

Civic		
	Reception & Lounge	50
	Information Centre	50
	Exhibition	300
	Classroom	200
	Multi-purpose Rooms	100
	Library/ Resource	150
	Restaurants	100
	Canteen	200
	Central Kitchen (Canteen)	80
	Central Kitchen (Restaurant)	60
	Ancilillary (baking, preserves, fermentation)	50
	Didactic kitchen / workshop lab	100
	Storage/ Washing/ Lifts	60
	Total	1500
Staff & Support		
	Waste woomrs, cleaning	150
	Staff Facilities (Changing/ Shower)	60
	MEP	250
	Total	460
	Approx Building Area	**6760**
	Landscape / Park/ Agora Space	5000
	Added Total	**11760**

methods.

site analysis.

To commence with, secondary sources, such as research papers published by the government, educational institutions, and researchers will be studied to investigate in an in-depth manner the current situation in Greece, more specifically, Athens. Charts and graphs would be a great way to visualise the data and clearly compare the statistics with different periods of time or place. Areas such as phenomenology, participant observations and various environmental performance studies would be conductive to the later design stage.

food system mapping and spatial analysis.

Maps methodologies from various sources, like GIS, will be analysed and compared to different cities to benchmark. For instance, actor mapping can reveal the stakeholder networks and power dynamics within the food system. And Layered spatial analysis can facilitate the visualisation of existing waste collection systems, transportation logistics, and noticeable patterns.

stakeholder mapping and engagement.

Followed by an investigation of trends and plans of the government, NGOs producers (farmers, manufacturers, service industry), distributors, retailers, communities and beneficiaries with interests in or influence over Athens' food system. In the process, I will be mapping out their interest, power dynamics and motivation. This information gives clarity and direction towards the needed spatial qualities or frameworks. Followed by power mapping to show how dominant each stakeholder is towards decision-making in the food system. By identifying underrepresented actors, design approaches can encourage and prioritise inclusive participation.

precedent research and operations research.

A building with programs that follow EU standards (Refer to Appendix) is critical. Functional requirements such as waste management for refrigerated storage, capacity, processing areas, transportation logistics, governmental administrative areas and areas dedicated to public etc. Furthermore, research into the food value chain (production, post-harvest, processing, transportation, retail , preparation, disposal) would be valuable in understanding how the design would be able to address the issues. In addition, it is also worth studying precedents and initiatives across various dimensions. Some examples that are:

- Denmark's "Stop Wasting Food"
- San Francisco's mandatory composting program
- Boroume's Athens-based surplus redistribution model
- Ballard Food Bank (Seattle) by Weinstein A|U
- Nourish Hub (London) by RCKa

program development.

After synthesising findings from the above analysis, various methods of testing, such as physical model, sketching and drawings, will be used to conduct iterative studies on form development. Where the development process itself becomes research, also in testing operational viability. In the process of designing, ongoing research about innovative programming of architecture will bring benefit to the outcome. Ultimately, being able to address the design questions stated in the above section holistically and competently.

theoretical framework.

The idea of a Food (Waste) Bank may risk being perceived as alienating or threatening to residents, provided the olfactory, visual, logistical and symbolic implications of waste treatment programs. The challenge is not only technical but also cultural and psychological: how to design an institution that handles decay and surplus without reproducing stigma, marginalisation or NIMBY (Not In My Backyard) resistance.

Aldo van Eyck's theory: Humanistic Architecture & "In-Between" Spaces[1] illustrates spatial strategy emphasised ambiguity, openness and encounter: thresholds that are neither fully public nor fully private, encouraging spontaneous appropriation, imagination and intergenerational interaction. Such gradation zones could be implemented, ranging from fully public archaeological park to semi-public platforms for food markets, to semi-private zones for sorting and processing, to secure areas for governance and administration, in ways that boundaries are porous, layered and negotiable rather than sharply demarcated.

On the approach to the existing Archaeological site, Carlo Scarpa's approach of layering, detail & temporal stratification gives an insightful approach to the time-related sedimentation of material and their meanings, especially concerning the pre-existing ruins. The design of the new layer of contemporary infrastructure onto archaeological fabric exposes the joint between new and old[2]: typology, material, and stakeholders.

In the realm of tectonics and construction, Andrea Deplazes, in his book 'Constructing Architecture: Materials, Processes, Structures', emphasised the inseparable relationship between design and constructive knowledge. He stated, "The process of combining various parts to create a structure is called building. Architecture occurs when this process is informed by both technical necessity and poetic intention."[3] Similarly, Louis Kahn's Served & Servant logic[4] states the difference between primary zones and supporting systems within a building, and the distribution of these spaces should be legible in the architecture's form and plan. It is worth investigating how service systems, logistic spaces could be ordered rationally and ultimately celebrated as an architectural expression and achieve transparency for the public.

Bruno Zevi's assertion "content is the internal space"[5], underscores the criticality of spatial sequence, experiential contrast and phenomenological curatorship in shaping user experience. In this unique context of beneficiaries seeking food, volunteers managing logistics, and policymakers conducting oversight, choreographing the experience inside the food bank through sequence and contrast would be a valuable element in curating the users' journey in the architecture.

Moreover, environmental design is both urgent and symbolically potent in Athens' hot, dry Mediterranean climate. In the context of the Food Bank, extreme environments and perishable food share a relationship of profound antagonism. Therefore, Randall Thomas' "Environmental Design" principles in energy balance, environment and lighting would be crucial to cope with environmental challenges. Such as Waste-to-Energy integration, subterranean placement of programs, calibrated daylighting and other strategies. Conclusively, they are not merely technical optimisations, but framed as visible, educative and symbolic components of the architectural experience—demonstrating how ecological performance, social infrastructure and civic identity can be spatially integrated.

1 Rob Withagen and Simone R. Caljouw, "Aldo van Eyck's Playgrounds: Aesthetics, Affordances, and Creativity," Frontiers in Psychology 8 (2017): Article 1130, accessed December 17, 2025, https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2017.01130

2 Tabrizi, Saeid Khaghani, and Cristina Càssola Guida. "Contemporary Construction in Historical Sites: The Missing Link of Tangible and Intangible Values." Frontiers of Architectural Research 13, no. 1 (2024): 165–188.

3 Deplazes, Andrea, ed. Constructing Architecture: Materials, Processes, Structures. A Handbook. Basel: Birkhäuser, 2005.

4 Louis I. Kahn, "Remarks," in Perspecta 9/10 (1965): 306.

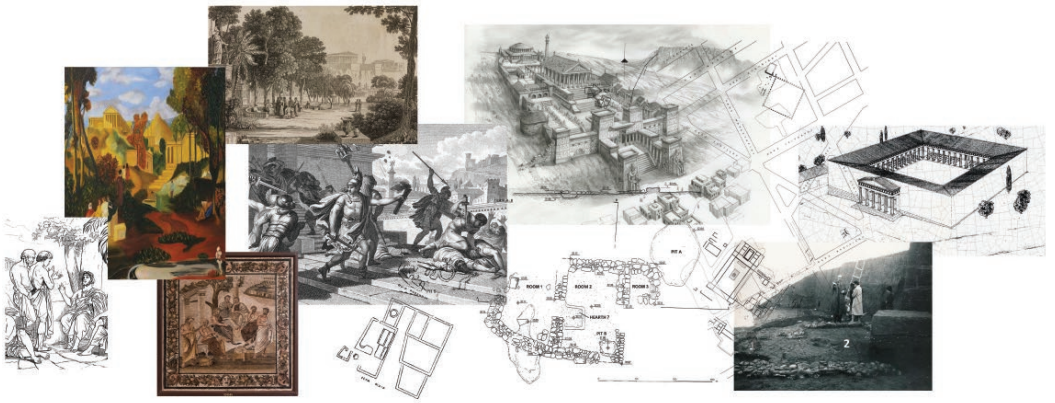
5 Zevi, Bruno. Architecture as Space: How to Look at Architecture. New York: Horizon Press, 1957.

results.

site context inspiration.

The site where the design takes place is between Platonos and Efklidou Street where an excavation in the 1930s brought to light the partially preserved "Square Peristyle". For which in the present only conglomerate foundations are preserved. This building, which dates to the 4th c. BC, measures ca. 40 × 40 m. Colonnade had a width of 8.60m where its Doric ordered columns are made of superb quality limestone. At its northwest corner is a separate room measuring 12.70 × 8.40 m, with a brick floor.

The building's architecture and function remain uncertain. Its ground-plan resembles that of other Athenian public buildings interpreted as law courts, such as the square peristyle of the Athenian Agora. However, it certainly belonged to the Academy's Gymnasium installations and may even be related to Plato's philosophical school. In the past, the peristyle palaestra has surrounding rooms as part of the gymnasium complex, where the space facilitates athletic and intellectual training. Later, the peristyle complex stayed in use thus framing philosophical conversation within colonnaded courts and rooms.



pre-387 BCE

The area later called the Academy lay in a grove of **olives** north-west of Athens, dedicated to Athena and named after the hero Akademos/Academus. The "**House of Academus**," a substantial building dated to roughly 2600–2000 BCE, showing prehistoric occupation of the site.

387 – 266 BCE

Around 387 BCE Plato founded his school within or beside the existing gymnasium in the Akademia grove, creating the first long-lived higher-learning institution in the West. Teaching took place on **public gymnasium grounds** and in a nearby private **garden** he owned, rather than a single monumental "campus" building. Archaeology identifies a 4th-century BCE square **peristyle palaestra** with surrounding rooms as part of the gymnasium complex active during the Academy's heyday, combining **athletic and intellectual training.**

266–86 BC

Under Arcesilaus the Academy turned toward **skepticism** (Middle Academy), and under Carneades it developed **probabilistic argument** (New or Third Academy), yet it remained physically anchored in the Akademia gymnasium. The 4th-century palaestra and peristyle complex stayed in use, framing **philosophical conversation** within colonnaded courts and rooms. Hellenistic builders added restructuring circulation and boundaries and reinforcing the grove's character as a walled, ordered landscape for study and exercise.

86 BCE– 2nd century CE

Sulla's siege of Athens in 86 BCE devastated the Academy's grove and buildings, effectively ending the continuous institutional life of Plato's original school. After Philo of Larissa's death (c. 83–84 BCE), no successor scholarch remained tied to the physical site. Yet the gymnasium continued: a large rectangular courtyard building dated to the 1st century BCE–1st century CE functioned as a palaestra with arcades, student toilets, cisterns, and adjacent Roman baths, reconfiguring the area as a **Romanized training complex**.

3rd–4th centuries CE

The Academy gymnasium remained active at least into the 2nd century CE, with usage tapering in Late Antiquity. Southern courtyard areas belong to this later phase, suggesting renovations to accommodate evolving exercise and social practices rather than a formal philosophical institution. Builders reused archaic and classical architectural members as spolia in new walls, indicating both respect for the site's past and cost-saving adaptation while the complex aged and the city's center of gravity shifted.

c. 5th–529 CE

In the 5th–6th centuries a **Neoplatonic** school at Athens, led by figures like Plutarch of Athens, Proclus, and Hierius (Damascius, was retrospectively linked to Plato's Academy but likely met in urban houses or halls, not the old grove. It emphasized elaborated Platonist metaphysics and commentary traditions.

6th–19th centuries

After Late Antiquity, the original Akademia grounds **lost** their gymnasium role and gradually reverted to rural and then **semi-urban** use on Athens' outskirts. Over centuries, later buildings, including the church of Agios Triphonos, rose near or on parts of the ancient complex, incorporating reused classical blocks and architectural fragments into their masonry. Ancient colonnades and courts collapsed or were **quarried away**, and the precise location of Plato's school was forgotten, preserved mainly in literary memory.

1929–present

From 1929 onward, systematic excavations identified major components of the **ancient complex**: the 4th-century BCE square peristyle palaestra, Hellenistic enclosure walls, Roman courtyard palaestra with cistern and student-latrines, baths, and the prehistoric "House of Academus." The site is now an open **archaeological park** within a modern neighborhood, where visitors walk among low walls and foundations set in greenery, guided by signage explaining the evolution from sacred grove and gymnasium to Plato's Academy and its later transformations.

ruins (re)design.

The inspiration of designing on this land of ruins brings back its historical legacy and value, incorporate it into the modern context; spatial, physical and emotional requirements. Where Stoas and colonnaded spaces for used as assembly places for philosophical conversations, the present approach reinstall it as a place of markets, stalls and casual dwelling.

At the moment there is a lack of record concerning the peristyle ruins. Few sources have indicated the amount and the condition of what is left of the ruins. The ground where the ruins sit has a total level different of around 6 meters. It is evident that grade level where surround buildings and roads are built 6 meters above the foundation level of the existing ruins. In the process of design, the surrounding site would be excavated by 1.5 meters from the lowest point of the archaeological site with the goal to unearth and potentially reveal the remains of the peristyle.

The revealed area is conceived as a layered **public realm** that mediates between the historical significance of the site and its contemporary urban life. Towards the Northern part of this space is designated as an flexible exhibition zone, where the history of the ruins is curated in detail and presented alongside themes of food systems, waste cycles, and resource stewardship.

This curated environment is oriented toward **locals, tourists**, offering an educational narrative that connects Plato's Academy not only to its philosophical legacy but also to present-day questions of **sustainability and collective responsibility**.

Progressing to the inner zone of the **stoa**, the area operates as a more active and informal space, dedicated to **temporary stalls and rotating markets**. This area is intentionally designed to attract local residents from the surrounding neighbourhood as well as visitors from the broader city centre, fostering everyday use and social interaction. The idea is to invite small-scale vendors, food distribution points, and community-driven exchange, supporting both economic activity and social cohesion. When opting for this **flexible layout**, stalls and furniture settings are oriented in an interactive way with the ruins. This **temporality** of these programs invite **seasonal variation and adaptability**, reinforcing the idea of the stoa as a living structure rather than a static monument. As a whole, these two zones establish a unique dynamic where **historical awareness and contemporary urban practices** coexist within a shared architectural framework.

results.

program and Spatial Layout.

In order to raise the awareness and promote the knowledge of food surplus treatment, it is important to place these treatment procedures (logistical process, sorting, process, composting, processing, storage) in areas where visual connection is prominent. The expected result from this spatial arrangement will mixture in the circulation for people who dwell, tourists, locals and companies who donate food and also stakeholders who come to collect the 'resource'. The amalgamation of all these parties some may say would be a double-edged sword that might cause chaos and confusion due to the contrasting positions or intentions of usage of the site. Yet, I believe public spaces are **self-organising** where **diversity** is valued over exclusivity.

Similarly, spaces for stoas encouraged **multi-dicipli-nary conversations and dicussions**. By bringing back this way of conferring would not only reoccupy the site from its current desolation, also reinstalling **historic value** to the ruins, thus ultimately curating a forum for collective discussions about food culture and waste.

flow of Food.

The treatment of food follows a **unified logistic approach** where in & out bound transport takes place on the ground floor. Transportation from trucks, cars, scooters, bikes and pedestrian drop off. Edible and Inedible food waste are sorted initially: Edible waste goes up to the top most floor (3rd floor) for second sorting and processing; inedible food waste going down to the composting plant in the basement. Then the edible food is then treated on the 3rd floor and then stored in the 2nd floor. The idea behind this approach is to move the technical spaces to the top in order to free up the ground and ruins level for people. Treated food is then distributed in forms of cooked food (cafeteria) and raw food (retail).

organization of spaces.

The **Ground** floor consists of inbound logistics space for pedestrians, bike, scooters, cars, vans, trucks and heavy trucks on the South-East side. The driveway is designed to go underground (level of the excavated ruins) in a single direction. This approach minimizes interruption to both the ruins ground and upper park level. Besides, keeping the logistics underground and partitioned off to the market area also minimises the risk of food ordour spreading. As food is dropped off via a drive-through and food lockers and moved into the building. Optical sorting using artificial intelligence (learning) serves as the first line of filtering followed by human sorting.

The initial screening directs unedible food to the **Basement** floor composting plant. Heavy in-vessel anarobic treatment plants are the best fit for a context like this. Compactiveness, small-scaled, controlled environment and efficiency were critical criterias leading to this decision of choosing this method of treatment. The process takes typically lasts for 5-7 days where unedible food convert into fertilizers. These converted **'resource' is the 'new currency' where people 'exchange' with their food surplus**. Moreover, these products would be promoted and used in the urban farming gardens in the park area by the entrance on the first floor; further contributing to the educational aspect of the institution.

The **First** floor is relatively at grade with the existing ground (layer of road and landscape around the site). Accessed through the east and south of the building are two ramps that visitors and buys could enter the building where the shop and retail area is located. Items that are sold is sorted in racks according to their time of expirary instead of catagories, or at least the vast majority. Time,

as one of the main themes in the design reveals the criticality of saving food before it turns from surplus into waste. Layered and wrapped around bu the retail area is the processing area where sorted food is processed and repacked before solde in the retail area. The South-East half of the building is designated as the food processing quarters

On the **Second** floor is purely a storage space for dry, chilled and non-chilled items. The storage spaces are placed around with the circulation core as the centre with a ring-like circulation path for efficiency. The level is closed offin terms of access for the public but as the main circulation for the public passes accross the space, visual access to the processes and activities inside the space is possible and clear. Technical design includes doubled layers PIR and sandwich panels behind the double glazed facade to ensure energy efficiency.

The **Third** and top floor can be divided into two main areas, the core (glass box) andv the ring. Core area is where the kitchens and technical activities happen. The food transportation core, lifts and storage unit. The ring area that encloses the core consists of civic programs such as multi-purpose rooms, offices, cafes, restaurants and teaching kitchens.

language, structure and material.

The building incorporates materials mainly ranging from Steel, limestone and concrete. The structural framework of the building consists of steel columns which sits on a structural grid that offsets from the **existing 3x3 meter grid of the ruins**. In this approach, the existing foundations of the ruins would remain untouch and unintruded.

Rather than simply maintaining or passively 'keeping' the ruins as a historical artifact. I am expanding their presence and significance within the contemporary urban fabric. Using the ruin remains and its orderly grid systems to curate the user's journey in experiencing the value of food. The idea is not to overshoaw or dominate over the ruins but extend its language and structure just as the program preserves its legacy.

The main architectural language is represented through its structure. Tensile rods are the **projection of the existing square perimeter** building. They are hanged from an extensive **truss system** supported by the peripheral columns. Supported by the tensile structure is a suspended 'stoa' connected to the cafeteria area. This space symbolises the corridor that wraps around the courtyard space that was once in the gymnasium. The concept of this approach is to emphasizedthe orderly arrangement of the ruin and at the same time ensure the lightness of the building. Ultimately a blance between the modern layer of intervention and the remains.

conclusions.

tackling the issues.

One of the ambitions was to significantly sooth the food waste and food insecurity issues in Athens. While the whole extent of Athens is vast and requires a lot of heavy industrial plants to fully cater for such hefty amound in the future. The design project focuses more the Kolonos region with 16,794 residents over 0.944 km² area. At its current capacity, the food bank building is capable of collecting, sorting and composting generated food surplus of the region and more.

As mentioned earlier in the report, the limited number and force of initiatives for example Boroume, the People's food project and governmental support reflects the difficulty in improving the issue of food. These approaches mitigates consequences instead of preventing the underlying issue.

The earlier studies about the underlysing root of the problem is often contributed to the lack of awareness of how and why food becomes surplus or waste, coupled with weak logistical systems for collection and redistribution; these knowledge and infrastructure gaps reduce participation and reduce the effectiveness of voluntary redistribution networks.

Another point that leads up to that is practical barriers further discourage donations. In the current context of Athens, inconvenient drop-off procedures in changing or far locations, limited opening and drop-off/ collection schedules. Unclear handling requirements or even governemental regulations generate more friction for donors and volunteers, hence lowering the output of usable food.

Moreover, the **social and personal incentives** to engage with redistribution schemes are feeble—many potential volunteers or donors perceive the tasks as time-consuming, bureaucratic or unstimulating amid busy schedule of daily life. Which further limits scale and long-term sustainability.

In sum, this project provides more than simply a relief-oriented program.The project brought a reason to **dwell, to learn** and ultimately **participate** the initiative thus contribute to the well-being of Helenic food scene.

the design and impact.

Addressing the **first** research question of bringing **transparency** into the treatment process of food followed by **re-valuing** the surplus food. The values are reflected in the circulation of food from logistical entry to final stage of retail. Access for both human visitors and logistics (trucks, cars, bikes and scooters) both happens at the ground floor where the ruins sits on. The arrangement maximizes possible visual connection between various activities. The mix of ruins, visitors and inbound logistics might sound chaotic and uncontrolled. Nonetheless, the same floor plate are gently separated into **various zones using configurable partition**. The logistic and open market area could be accessible through an openable door, the area also serves as a flexible drop-off or unloading area for incoming vehicles. The building envelop incorporates a glazed appearance where it creates an visually inviting feeling for all users.

Rotatory doors on the ground level and the first floor for all human centric functions. The retail area on the ground floor could be fully opened up to the ruins market area outside that facilitates. Emphasizing on the continuity between the building's commercial functions and the surrounding historic context.

Another design element that attracts users and stakeholders to dwell is the cafeteria on the first floor. The space marks the second entrance of the building through the existing park of Plato's academy. With the opening aligned towards the neighbourhood, flow of pedestrian is encouraged. The cafeteria is conceived as more than a place for meal collection or quick consumption, as in a conventional canteen. Through its materiality, natural light, and openness, it offers a dignified and welcoming atmosphere that supports social interaction and everyday use. The same rotatory doors are incorporated as the ground floor where the indoor area opens up to the hanging terrace that ressembles the historic 'stoa' of the gymnasium. The canteen fulfilled the purpose to pause, observe, and connect, while also enriching the relationship between the building, its users, and the historic landscape.

implications.

(re)establishing culinary habits through architecture.

Athenian hospitality is often expressed through abundance, generous portions, and overordering, especially in restaurants and social gatherings. However this motif of care and generosity, tends to lead to food waste when more food is prepared or served than people can eat. While it is especially difficult to change routine through the design of architecture. The design involves opening up this door of **data driven food collection system** where families or restaurants are able to register and log the amount of food that could be delivered to the centre and in exchange of such action, contributor would receive **credits and benefits** of different kinds. it is confident that the initiative would aspire locals or tourist to **rethink the value of food** through the culture and history of Athens.

Habits are also established through **education**. Learning to reduce and sort food waste is an urgent matter. Learning to treat and cook with such food motivates the urge to do so. Large areasa are dedicated to various kinds of kitchen and cooking labs on the top floor. Uniquely, the kitchen labs are placed adjacent to the exhibition space about food, waste, hospitality, or heritage. The kitchen itself acts as a live demonstration of values adorned by the initiative and creates a strong **public-facing educational sequence.**

document and logistical systems.

In the process of designing a system of well-organized drop-off and collection system. Time allocation plays a significant role to aviod congestion and allow rapid exchange. While collection and drop off for pedestrian, bikes and scooters access is unlimited, time constraints are applied for heavier transport tools such as cars and trucks (<8 meter). Through appointments through the application, trucks have dedicated timeslots to queue and drop off throughout the day. In-bound logistic interface incorporates drive-through style window and drop off food lockers where automation is widely used where digital documentation and registration would ensure clarity within the process ranging from appointed timeslots for drop off, order details, food condition, demand and even regulation updates. Collection of food is carried out accrodd the glazed wall from the initial food sorting area on the ground floor. Collected and cleaned raw vegetables and meat are able to be collected through prior digital reservation or in-store purchase.

With such **operation systems** in use, the architecture is **simplified** as the logistical demand is speficially and accurately represented. For example, similar to a how depot building works; treated food is in kept in the storage unit until a request from a customer or an order from a company is made instead of sitting on the shelves in the retail area. As time plays a crutial role in the deterioration of food, a stable, hygiene and controlled environment preserves the shelf life of each item. By saving time and space in retail, it is used to encourage customers to consume and purchase items that are in the risk of turning inedible. By shining the focus on the urgency of time, the initiative promotes change in comsumption behaviour and awareness.

the new typology.

social program and stakeholder analysis.

As a space that houses various stakeholders ranging from donators, stall owners, volunteers, governmental officers and benefitees, creating an atmosphere that is empathetic to each party becomes the centre principle. In the process of designing I was finding an or a few elements as a collective focus. That is the celebration of the ruins. Through the integration of the food bank building in the site of Plato's Academy, the project revitalises the unmaintained and deserted site and in turn converting it into a culinary node and a focus for social welfare. **Self-Determination Theory**[1] by Richard M. Ryan and Edward L. Deci that involveds design consideration across 3 realms (competence, autonomy and relatedness) that reinforces dignity of all parties within the architecture. In all, the identity of all users are directed towards preserving the resource of 'food' as how this ancient relic is revitalized.

sustainability and metrics.

On the treatment process, the collection and receiving zone could handle roughly 9.6 to 18.0 t/day; sorting zone 18.0 to 36.0 t/day; composting area would convert roughly 1.37 t/day of organics into compost. Approximately **1 to 8 tonnes of CO2e** could be avoided per day depending on the amount of processing.

With the tools of **mapping and operational analysis** (logistical and circulation), it is significant than spliting the levels of the site into two facilitated smoother access to the building and efficiently separates technical spaces according to design requirements. This approach that is also derived from the natural typography of the site, further integrating with the surrounding archaeological park, road network and neighbourhoog.

In addition, the food bank building also inherits the square peristyle construction grid. Programs and spaces are organized in a **non-interruptive** manner. The existing grid is offsetted inwards, creating a 'box in the grid' impression. Design of all the floors express the **same language, order and rhythm** of the peristyle structure while fulfilling all **programatic** and **atmospheric ambitions**. The historic 'stoa' for confering and philosophical discussions is relived as a **'perimeter gallery'** for culinary discussion, learning and leisure.

The ruins itself are not long hidden and enclosed by the existing landscape. Instead they are **revealed, hightlighted**; moreover, **augmented** by adding value **layers of program**. The legacy and existence of the ruins is clearly visible from the park and around the neighbourhood.

Scales, proportion, material and also language of the **polykatoikia** acted as prominent inspiration to the project. The project exhibits rational proportions and floor levels that relates to the surround residential buildings with a height cap of around 26 meters, its building footprint also offsetes from the perimeter of the park. At far, the 'boxy' mass of the project sits within the dense pack of trees with the impression of the cantilevering box **floating** on top of the **lushes**.

1 Richard M. Ryan and Edward L. Deci, "Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being," American Psychologist 55, no. 1 (2000): 68–78, https://doi.org/10.1037/0003-066X.55.1.68

reflection.

from the start.

Commencing from the study trip to Athens and the site itself. It is invaluable that being able to inspect the site in real life grants a understanding to the context that could not be achieved through other means: sensory study, atmospheric, human behaviour etc. Followed by numerous trials on various iteractions to reaching the final proposal. In the process, the design was guided by a few core principle of practical and logistical flow, dignified design and Space Syntax.

In the process, mapping really pushed the design. Athens' culinary related stakeholders are very scattered where even the governmental quarters are in a few different buildings for example. Mapping as a tool really brought to light the flow of logistics from primary production to consumer to landfill. Besides, analysis of the site about how different modes or food transport would access the site had been a critical design driver.

Furthermore, a lot of effort was put into balancing the preservation of the ruins. How could the ruins be excavated and how could the landscaping on the perimeter of the construction site be improved? These were quite challenging tasks since such design motifs to results are to also be coherent and at the same time practical when such a vast food processing & composting facility run in parallel.

improvements.

In the future stage of the project, I believe the form and landscaping could be further studied. Tasting of various geometries could be a great way to strive for the 'radical' way of designing. Although massings were tested out by rotating the peristyle grid or offsetting etc, could organix for also suit and make the preserved site stand out? Perhaps.

Another topic of study would be expansion capabilities . How would the building be in 20 years and would food waste no longer be a problem? Thus, what would the building be when the problem is solved? In addition, looking into creating a new typology: this approach of integrating modern program as a way of preserving ruins by inserting a function cum identity into the project itself. It would be invaluable in the context in Athens where a magnitude of cultural and historical traces are yet to be unearthed.

final remarks.

Finally, the project calls for reflection if other unmanaged or unmaintained historic ruins could learn from this way of integrating radical institutions to produce a new typology. Radically implementing real and timely solutions as a way of preservation and education.

project overview.

partners.

who, where and how

Bring it Back

What is it?
Greece's first mobile application designed to fight food waste (as highlighted in the video title). It functions as a marketplace connecting consumers with local food businesses (bakeries, restaurants, supermarkets) that have fresh, surplus food at the end of the day.

1. Discovery & Selection (The "Hunt")
- Interface: After downloading the app (available on iOS and Android) and creating a profile, users see a map or list of participating stores nearby.
- Store Availability: Businesses list their available "Magic Bags" for the day. These listings often appear or update later in the day as stores assess their surplus.

2. Reservation & Payment
- Booking: Users select a store and reserve a "Magic Bag."
- Payment: The transaction is completed directly within the app using a card or digital payment method. This pre-payment secures the bag and prevents food from being wasted if a user doesn't show up.
- Pricing: the goal is to "support your pocket". Bags are typically sold at a fraction of their original value (e.g., paying €3 for €10 worth of food).

3. Collection (The Pickup)
- Time Window: Each store sets a specific "collection window" (usually 30–60 minutes before closing time). The user must physically go to the store during this time.
- Verification: Upon arrival, the user shows their active order on the app to the staff. The staff then "swipes" or validates the order on the user's screen to confirm pickup.
- No Delivery: Unlike standard food delivery apps, Bring it Back is primarily a pickup-only service to minimize carbon footprint and keep costs low, aligning with the environmental mission mentioned in the video.

4. The "Unboxing" Experience
- Surprise Element: The user receives a bag filled with whatever fresh items were left unsold.

The Greek Forum of Refugees

What is it?
The Greek Forum of Refugees was founded by refugees, for refugees, with refugees in order to be the bridge between the refugees themselves and their new host society. The organization works consistently as the intermediary between the communities, either organized or not, the State, and the civil society.

- The GFR operates as a bridge between the refugee population and decision-makers. Its process moves from the "grassroots" level up to the "policy" level through a specific mechanism:
- The "Self-Advocacy" Mechanism. This is the core engine of their operation.
- Community Consultation: The GFR gathers feedback directly from its member communities to identify real, on-the-ground problems (e.g., "we can't open bank accounts," "asylum interviews are delayed").
- Training (The SAT): They select and train refugees to form the Self-Advocacy Team (SAT). These individuals are trained in public speaking, legal rights, and policy frameworks.
- Direct Representation: Instead of a Greek lawyer speaking for them, the SAT members themselves meet with ministries, the Municipality of Athens, and European Parliament members to propose solutions.
- Network Structure
Membership: It functions as an "umbrella" organization. Individual refugee communities (associations) become members of the Forum.
- Board of Directors: The Board is elected by these communities, ensuring the leadership is truly representative of the refugee population in Greece.

partners.

who, where and how

Bureau Veritas

What is it?
Bureau Veritas is a global leader in Testing, Inspection, and Certification (TIC). Unlike a consultant that advises companies on how to fix problems, Bureau Veritas acts as an independent "auditor" or "judge." It verifies that a company's systems, products, or assets meet specific international standards (like ISO) or regulatory requirements.

Bureau Veritas functions through a structured three-step verification model known as TIC:

A. Testing (Laboratory Analysis)
Function: They operate laboratories to physically test materials (e.g., testing food samples for contaminants, testing construction materials for strength).
Process: A client sends a sample → Bureau Veritas analyzes it against legal limits → Issues a "Pass/Fail" report.

B. Inspection (On-Site Checks)
Function: Inspectors visit a physical site (a factory, ship, or construction site) to ensure everything matches the plans and regulations.
Process: An inspector arrives → Uses a checklist based on specific regulations → Visually verifies equipment/processes → Issues an Inspection Certificate.

C. Certification (System Auditing)
Function: This is the most relevant to your "Food Waste" query. They audit a company's entire management system (not just one product) to certify it works correctly.
Process:
- Gap Analysis: Review the company's current rules vs. the required standard.
- Initial Audit: Visit the HQ to see if procedures are actually followed.
- Certification: Issue a certificate (valid for ~3 years) with the Bureau Veritas seal.
- Surveillance: Return annually to re-check.

Potential:
ureau Veritas certifies the processes inside these institutions. An institution designed with "Food Waste Management" in mind would need specific physical spaces (separation bins, weighing stations) and digital systems (tracking software) that an auditor can verify.

Helenco S.A.

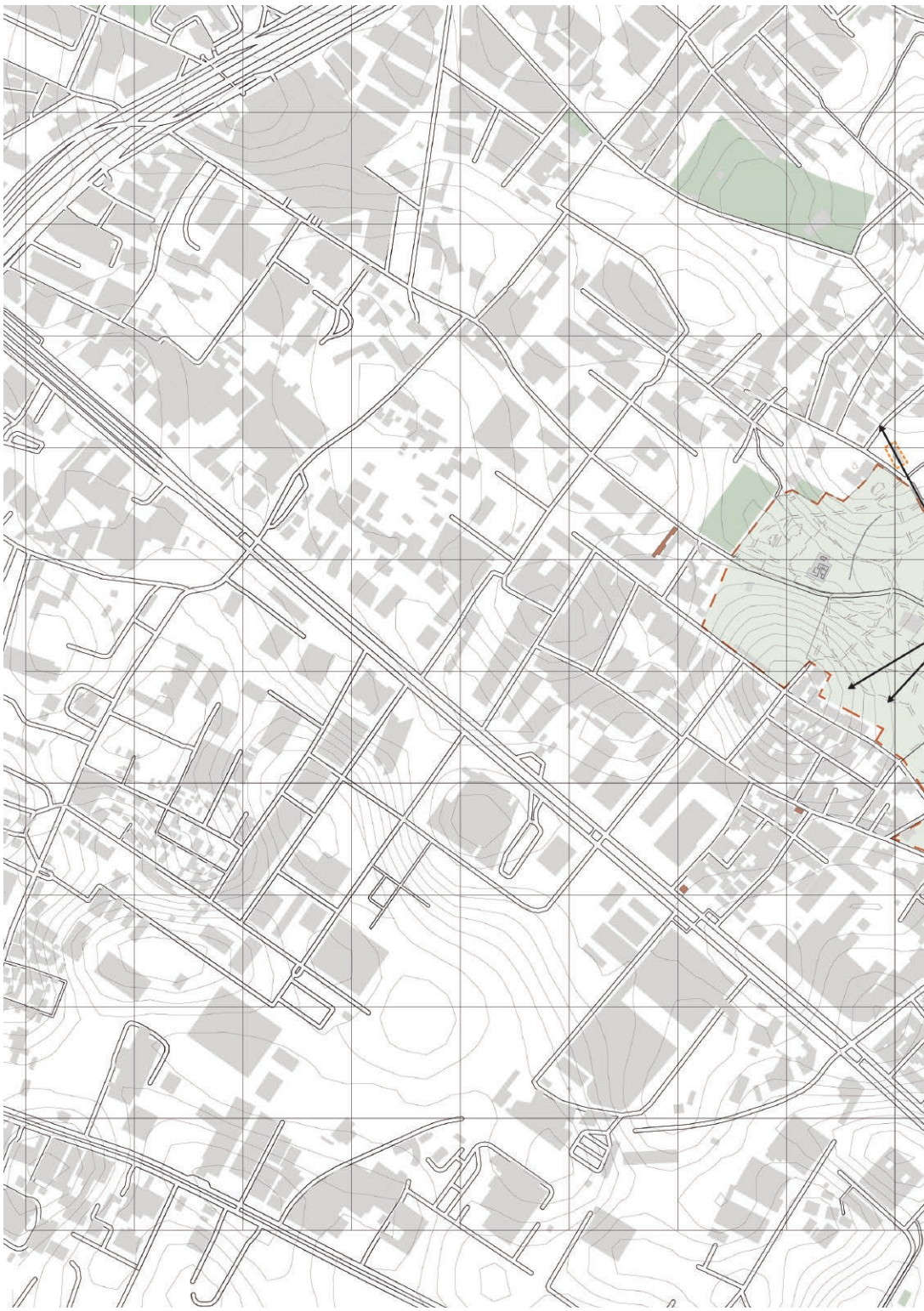
What is it?
Helenco S.A. is a specialized Greek company founded in 2012 that provides integrated waste management and facility management services. Unlike a general cleaning company or a public dump, it operates as a sophisticated private contractor that helps municipalities, industries, and large organizations (like hotels or airports) handle their waste legally and sustainably.
Their corporate mission explicitly aligns with the "Zero Waste" philosophy, aiming to divert waste from landfills—a critical issue in Greece given the EU fines mentioned in your attached file.

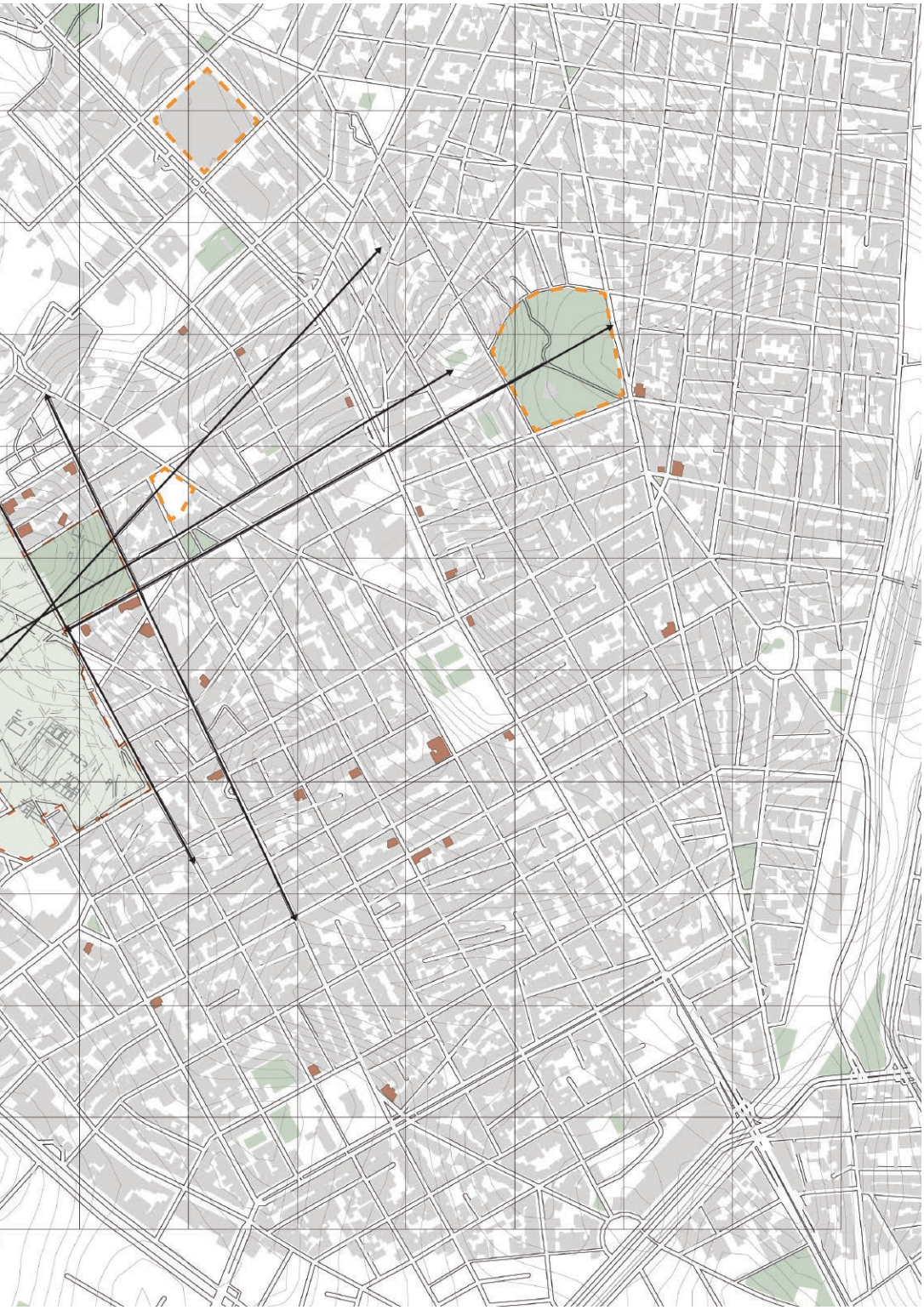
How does it function?
Helenco functions as a "turnkey" solution provider. Instead of a client hiring separate companies for bins, trucks, and recycling, Helenco manages the entire chain. Their process typically follows these steps:

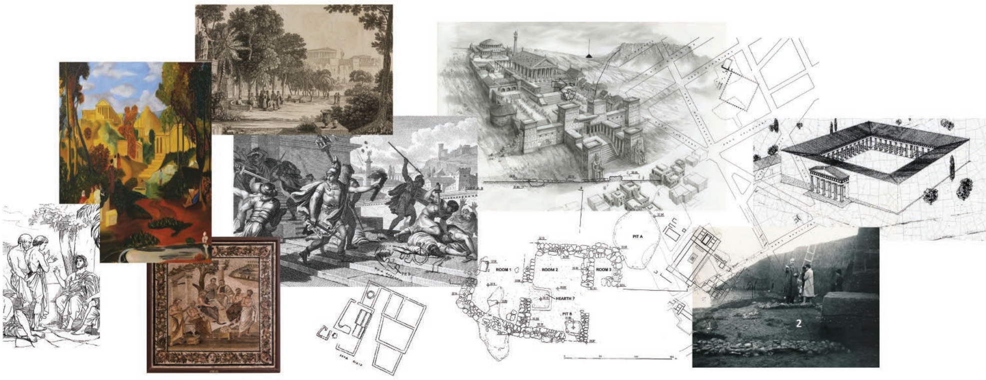
Step 1: On-Site Analysis & Collection (The "Source")
Assessment: They first analyze a client's waste stream (e.g., "You produce 30% organic, 40% plastic").
- Separation: They implement Separation at Source systems (providing specific color-coded bins and compactors) to keep recyclables clean, which is a key requirement of the new National Waste Management Plan mentioned in your file.
- Collection: They use their own fleet of specialized vehicles to collect these separated streams.

Step 2: Transport & Tracking
- Logistics: They transport the waste to certified treatment plants.
- Traceability: A crucial part of their function is the "Paper Trail". In Greece, illegal dumping is a huge liability. Helenco provides official certificates (Waste Transfer Notes) proving exactly where the waste went, protecting the client from legal fines.

Step 3: Treatment & Recovery (The "Processing")
Sorting: They operate or partner with Material Recovery Facilities (MRFs) where waste is further sorted by robots or manual pickers.
- Recovery: Recyclables: Plastics, metals, and paper are baled and sold to factories.
- Biowaste: Organic waste is sent to composting or biogas plants (Energy Recovery), aligning with the "biogas from anaerobic digestion" method supported by the National Plan in your text.
- Residuals: Only the non-recyclable "leftovers" are sent to landfills, minimizing the cost and environmental tax for the client.







pre-387 BCE

The area later called the Academy lay in a grove of **olives** north-west of Athens, dedicated to Athena and named after the hero Akademos/Academus. The "**House of Academos,**" a substantial building dated to roughly 2600–2000 BCE, showing prehistoric occupation of the site.

387 — 266 BCE

Around 387 BCE Plato founded his school within or beside the existing gymnasium in the Akademia grove, creating the first long-lived higher-learning institution in the West. Teaching took place on **public gymnasium grounds** and in a nearby private **garden** he owned, rather than a single monumental "campus" building. Archaeology identifies a 4th-century BCE square **peristyle palaestra** with surrounding rooms as part of the gymnasium complex active during the Academy's heyday, combining **athletic and intellectual training.**

266–86 BC

Under Arcesilaus the Academy turned toward **skepticism** (Middle Academy), and under Carneades it developed **probabilistic argument** (New or Third Academy), yet it remained physically anchored in the Akademia gymnasium. The 4th-century palaestra and peristyle complex stayed in use, framing **philosophical conversation** within colonnaded courts and rooms. Hellenistic builders added restructuring circulation and boundaries and reinforcing the grove's character as a walled, ordered landscape for study and exercise.

86 BCE– 2nd century CE

Sulla's siege of Athens in 86 BCE devastated the Academy's grove and buildings, effectively ending the continuous institutional life of Plato's original school. After Philo of Larissa's death (c. 83–84 BCE), no uncontested scholarch remained tied to the physical site. Yet the gymnasium continued: a large rectangular courtyard building dated to the 1st century BCE– 1st century CE functioned as a palaestra with arcades, student tables, cistern, and adjacent Roman baths, reconfiguring the area as a **Romanized training complex.**

3rd–4th centuries CE

The Academy gymnasium remained active at least into the 2nd century CE, with usage tapering in Late Antiquity. Southern courtyard areas belong to this later phase, suggesting renovations to accommodate evolving exercise and social practices rather than a formal philosophical institution. Builders reused archaic and classical architectural members as spolia in new walls, indicating both respect for the site's past and cost-saving adaptation while the complex aged and the city's center of gravity shifted.

c. 5th–529 CE

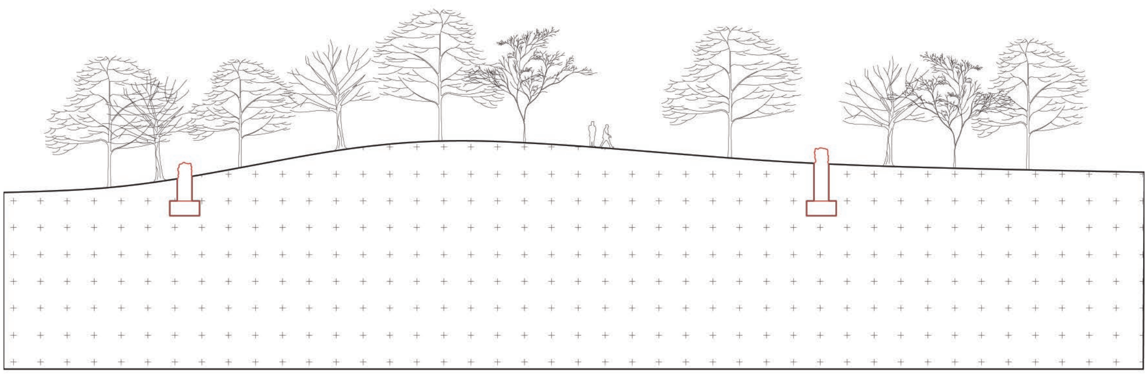
In the 5th–6th centuries a **Neoplatonic** school at Athens, led by figures like Plutarch of Athens, Proclus, and finally Damascius, was retrospectively linked to Plato's Academy but likely met in urban houses or halls, not the old grove. It emphasized advanced Platonist metaphysics and commentary traditions.

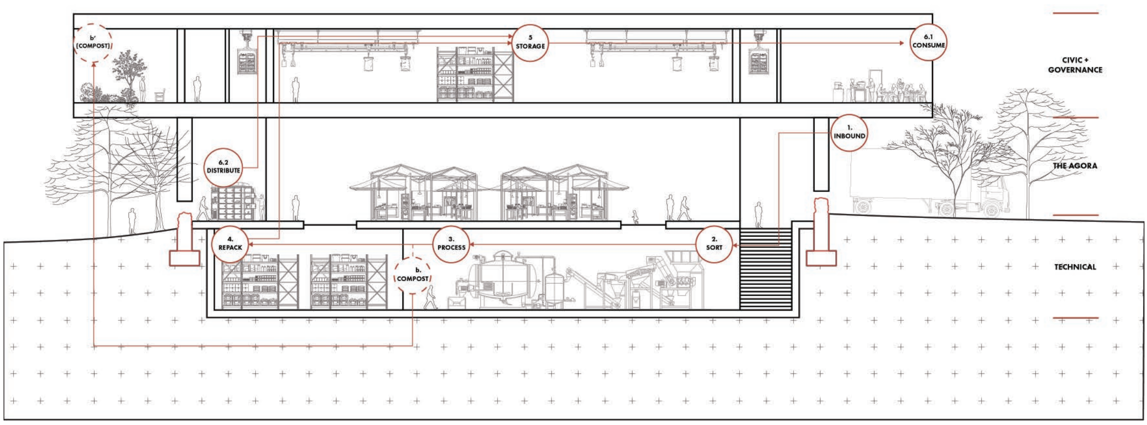
6th–19th centuries

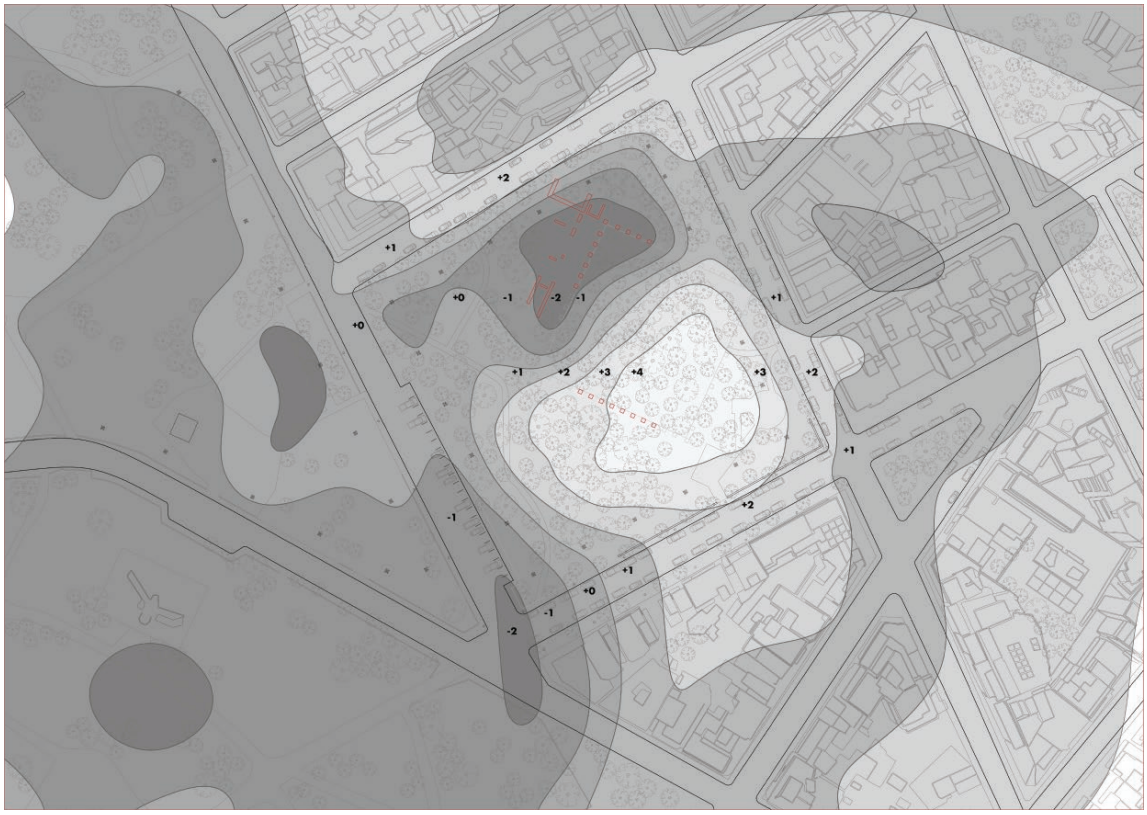
After Late Antiquity, the original Akademia grounds **lost** their gymnasium role and gradually reverted to rural and then **semi-urban** use on Athens' outskirts. Over centuries, later buildings, including the church of Agios Tryphonos, rose near or on parts of the ancient complex, incorporating reused classical blocks and architectural fragments into their masonry. Ancient colonnades and courts collapsed or were **quarried away**, and the precise location of Plato's school was forgotten, preserved mainly in literary memory.

1929–present

From 1929 onward, systematic excavations identified major components of the **ancient complex**: the 4th-century BCE square peristyle palaestra, Hellenistic enclosure walls, Roman courtyard palaestra with cistern and student tables, baths, and the prehistoric "House of Academos." The site is now an open **archaeological park** within a modern neighborhood, where visitors walk among low walls and foundations set in greenery, guided by signage explaining the evolution from sacred grove and gymnasium to Plato's Academy and its later transformations.



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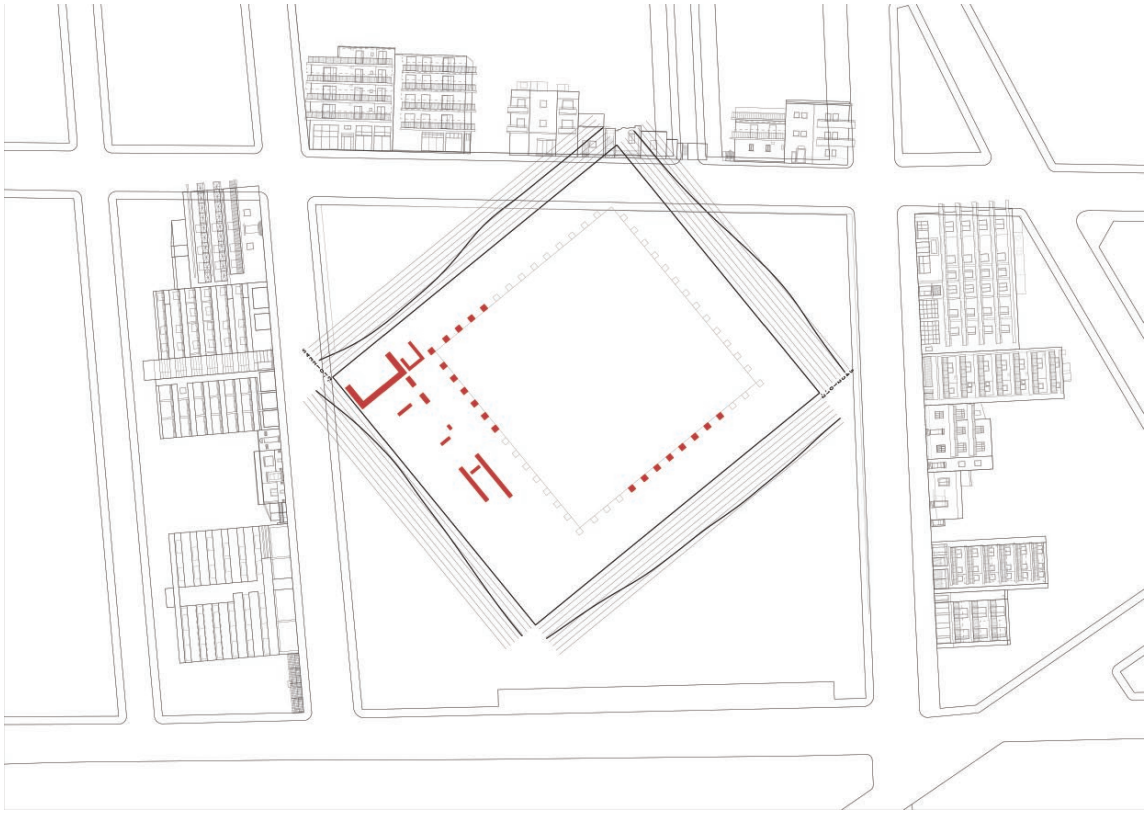
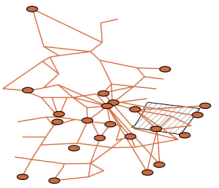
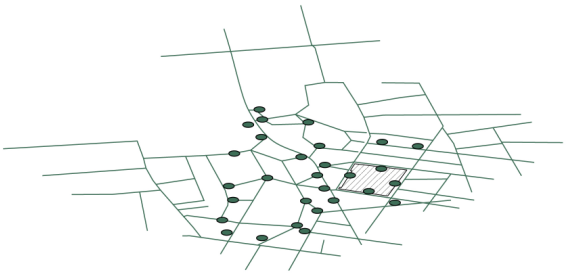
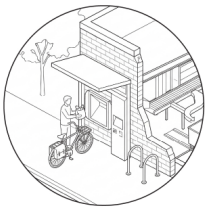


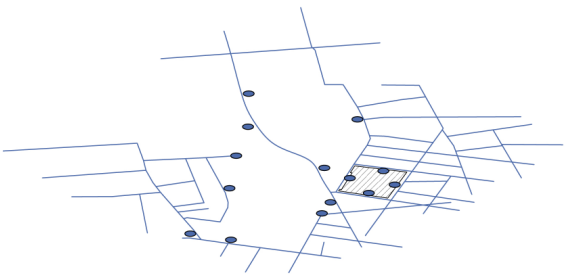


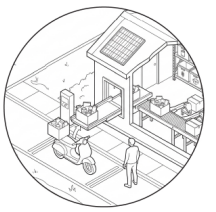
pedestrians



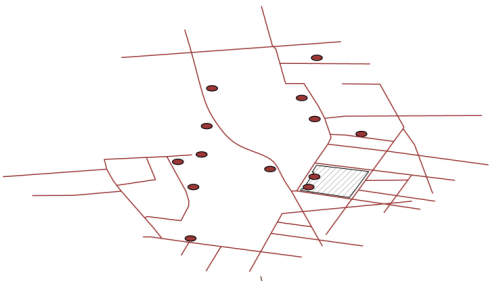


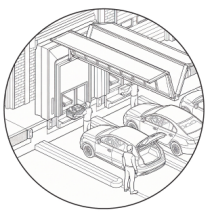
bikes



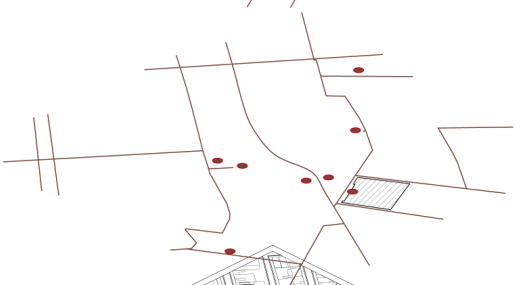


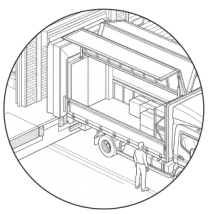
scooters



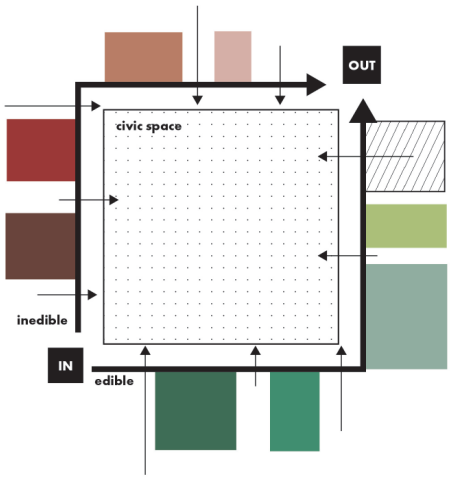


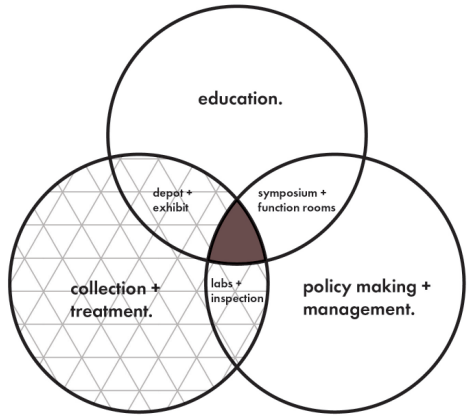
car





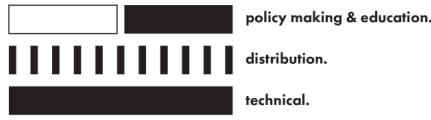
<7.5 tonne truck





The Agora: where philosophy and market met

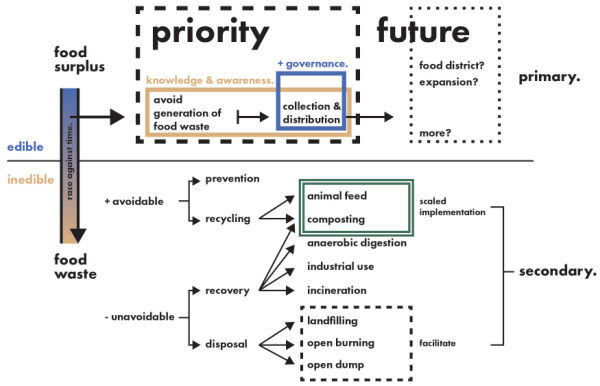
The Modern Agora: a Market of Welfare & Ideas



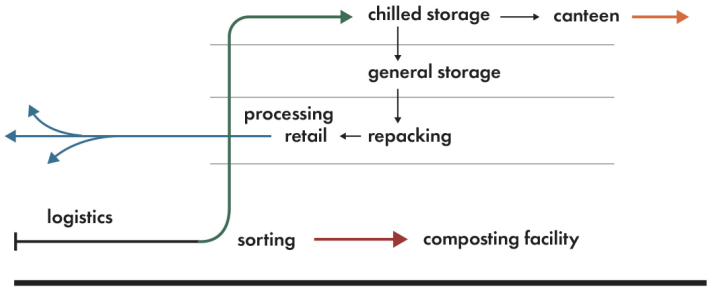
Stoas for assembly

Stoas as place to confer: social and climatic devices

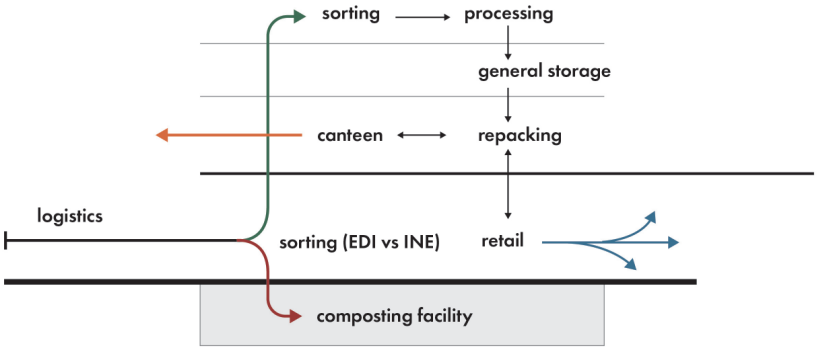
shops, meetings, legal business, and strolling



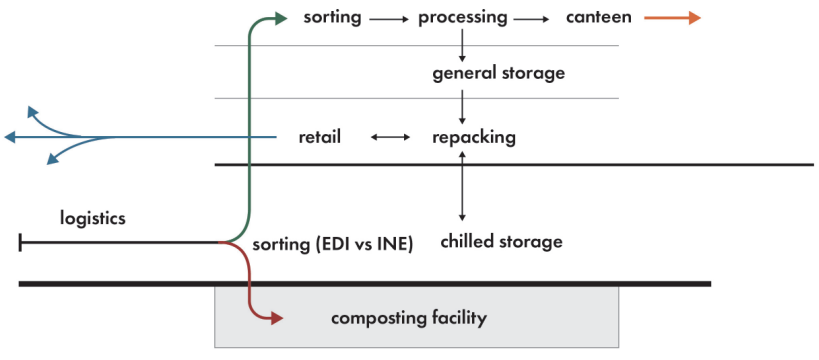
original.



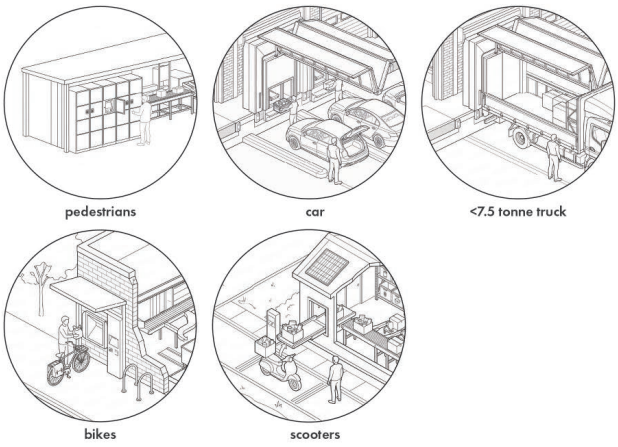
unified logistic approach.

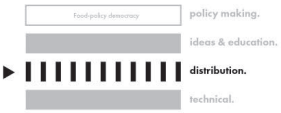


layered approach.

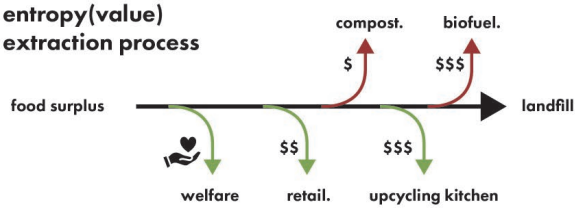


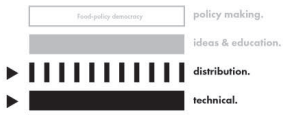
collection and redistribution.



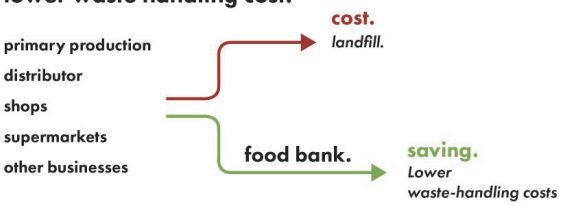


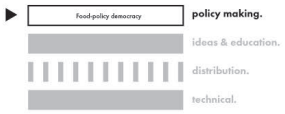
entropy(value) extraction process



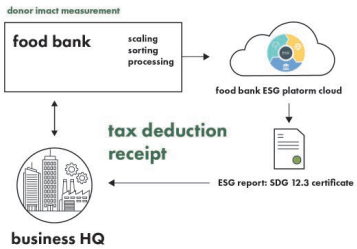


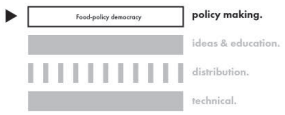
lower waste handling cost.



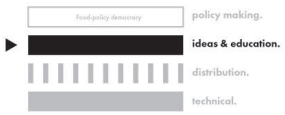


data for ESG & tax teams.

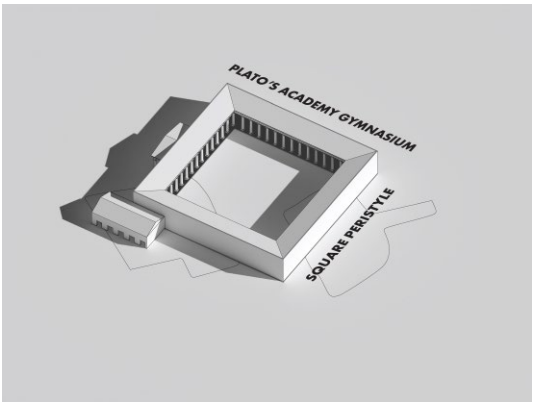


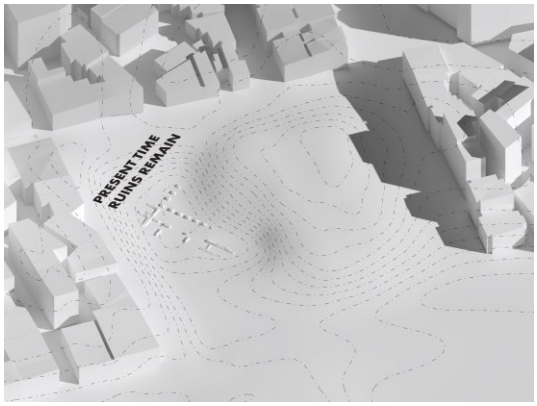


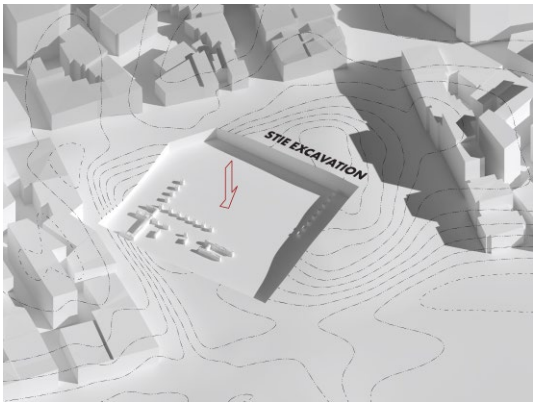
labs & kitchens.

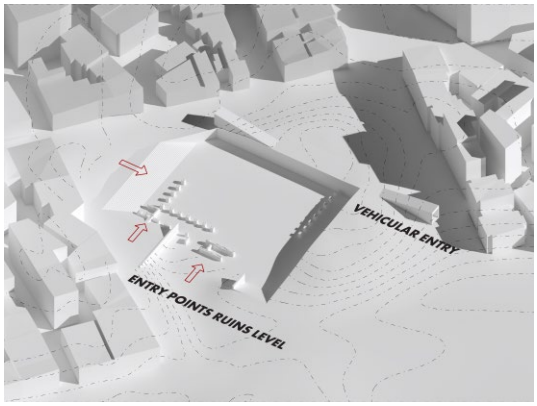


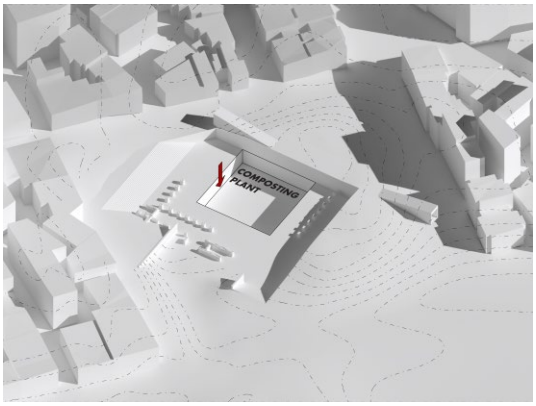
form development process.

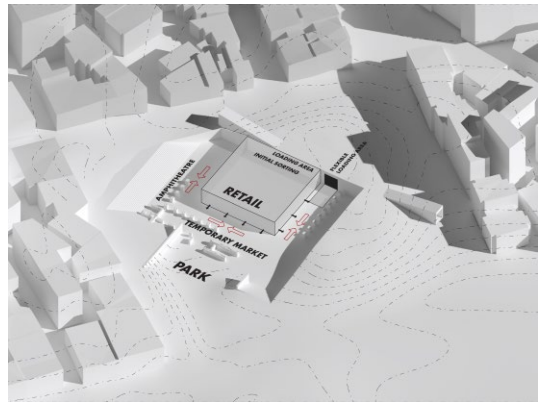


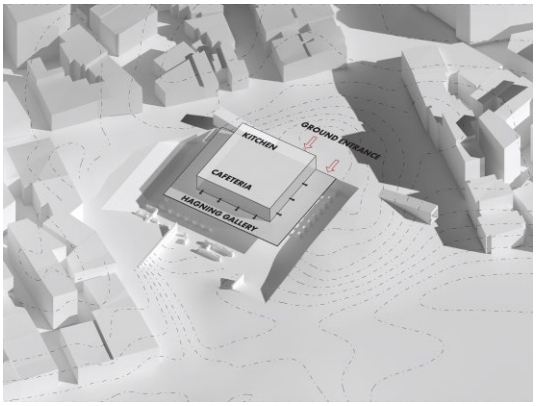




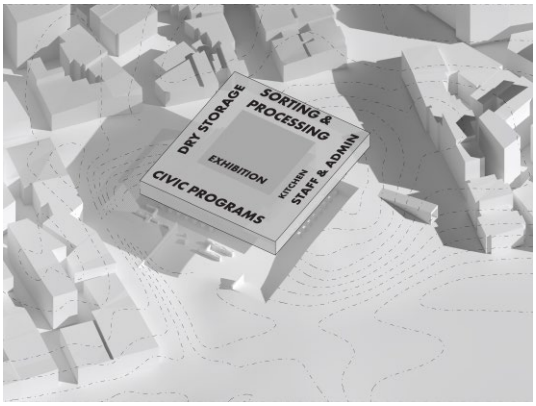


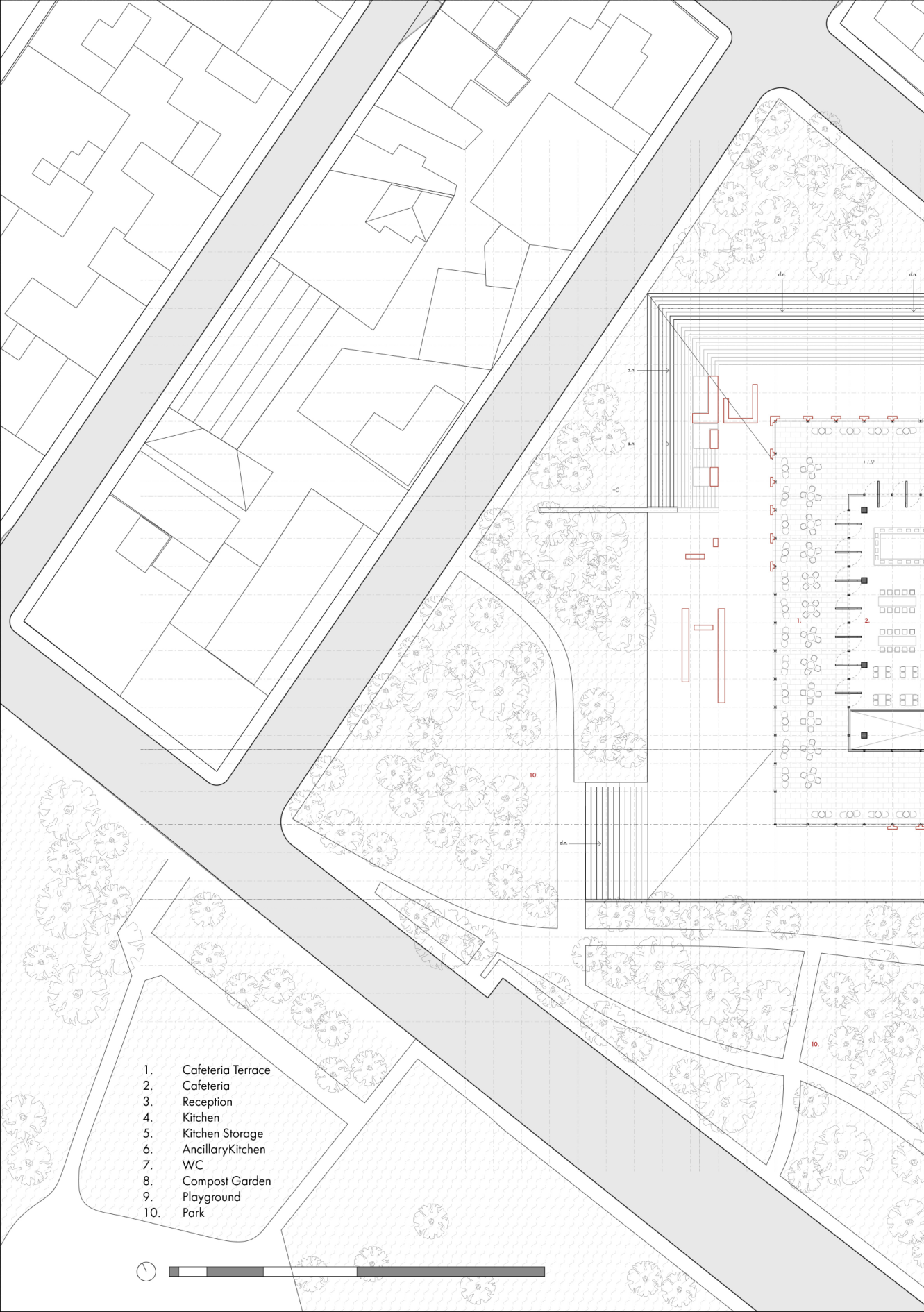

COMPOSTING PLANT


RETAIL
TEMPORARY MARKET
PARK

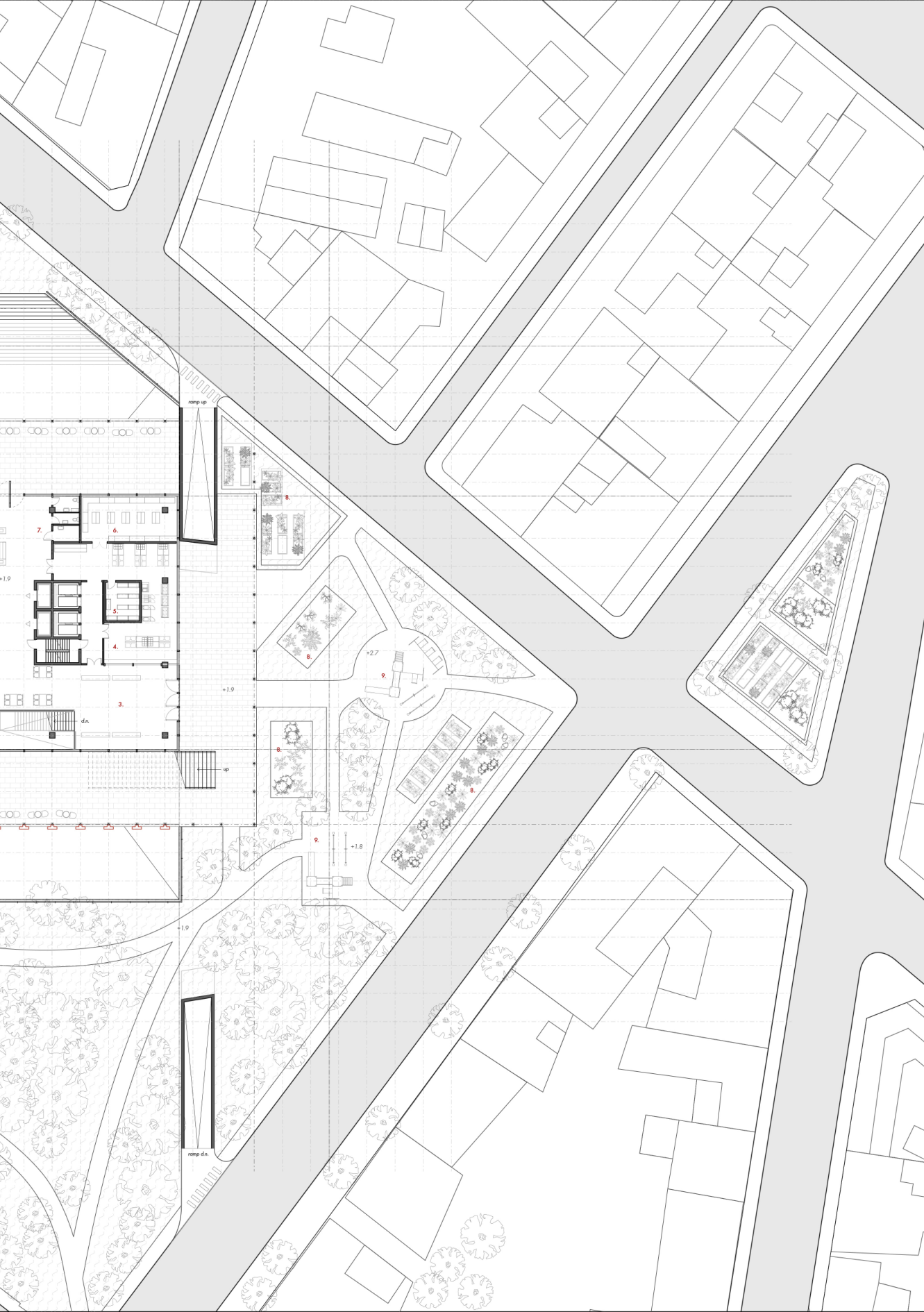

KITCHEN
GROUND ENTRANCE
CAFETERIA
MAONING GALLERY


FROZEN
CHILLED
DRY STORAGE

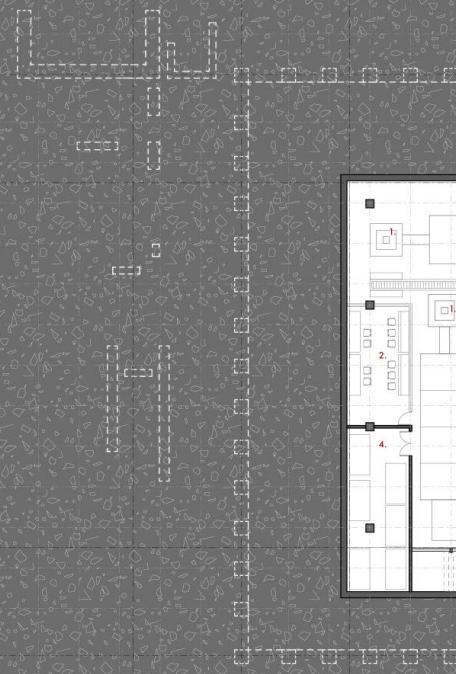

DRY STORAGE
SORTING & PROCESSING
EXHIBITION
KITCHEN
STAFF & ADMIN
CIVIC PROGRAMS



1. Cafeteria Terrace
2. Cafeteria
3. Reception
4. Kitchen
5. Kitchen Storage
6. AncillaryKitchen
7. WC
8. Compost Garden
9. Playground
10. Park

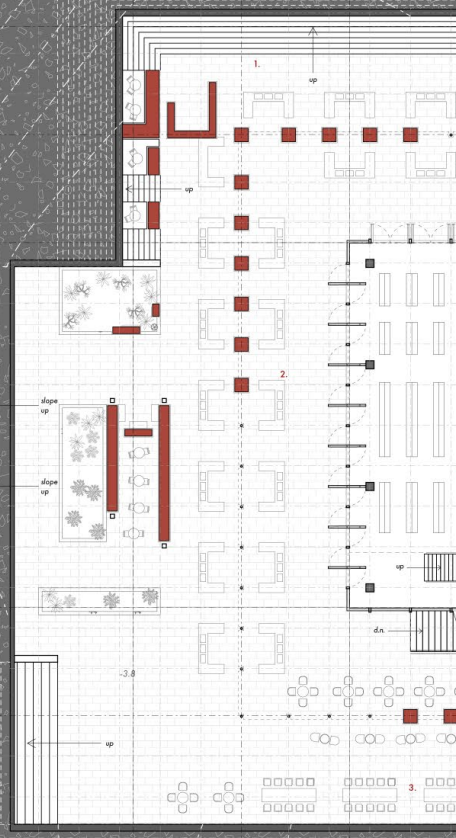

ramp up
7.
6.
5
4.
3.
d.n.
up
8.
8.
8.
8.
+2.7
9.
9.
+1.8
+1.9
+1.9
+1.9
ramp d.n.

1. Aerobic in-vessel rotatory drum
2. Control Room
3. Curing Area
4. Air Hanlding & Biofiltering
5. Equipment Well

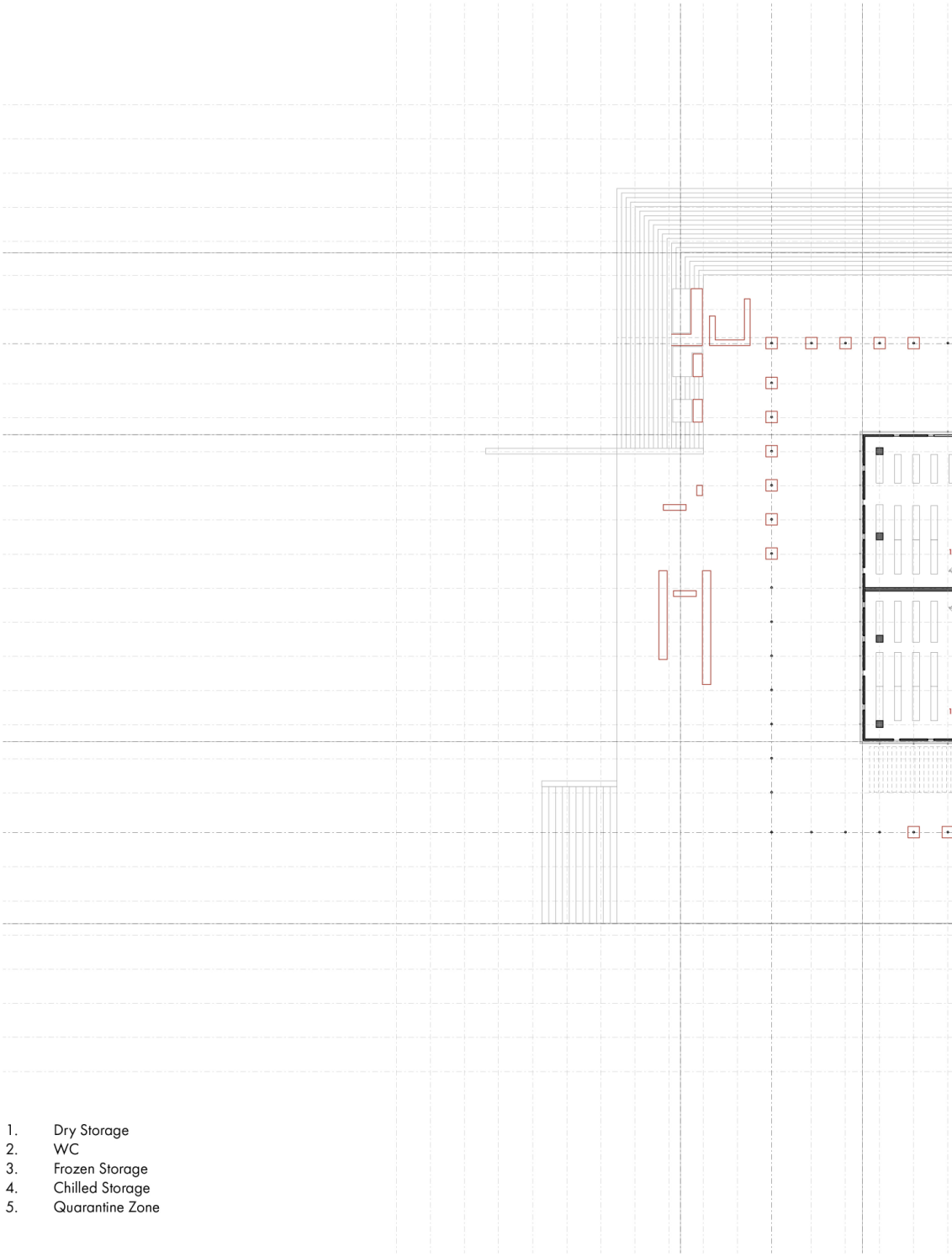



5.
3.
-10
3.
up

1. Amphitheatre area
2. Market area
3. Outdoor seating
4. Retail area
5. WC
6. Inedible food waste collection area
7. Primary Sorting area
8. Equipment Well
9. Collection zone & flexible unloading zone
10. Load & Unloading area (drive-through)

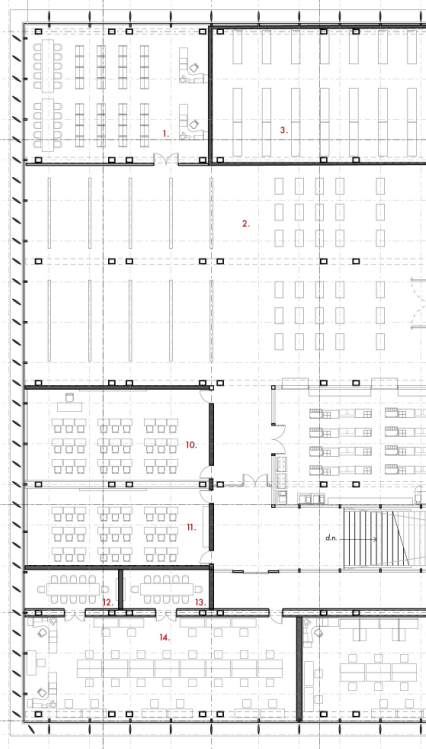



up
3.
5.
8.
6.
7.
10.
ramp up
-3.8
4.
9.
ramp d.h.

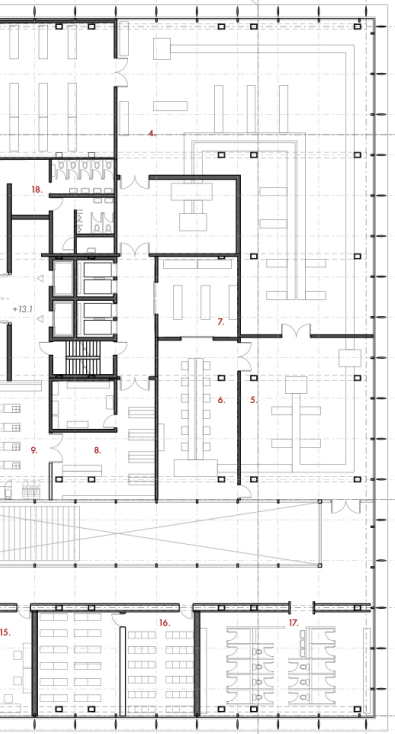


1. Dry Storage
2. WC
3. Frozen Storage
4. Chilled Storage
5. Quarantine Zone


4.
3.
+7.4
2.
5.
up
d.n.



1. Arhive
2. Exhibition area
3. Dry Storage
4. Sorting Floor
5. Quarantine & Inspection Zone
6. Labelling
7. Temporary Storage
8. Anciliary Kitchen
9. Kitchen Lab
10. Classroom
11. Multi-Function Room
12. Meeting Room 1
13. Meeting Room 2
14. Administrative Office
15. Government Office
16. Data Room
17. Staff Quarters
18. WC


4.
18.
+13.1
7.
6.
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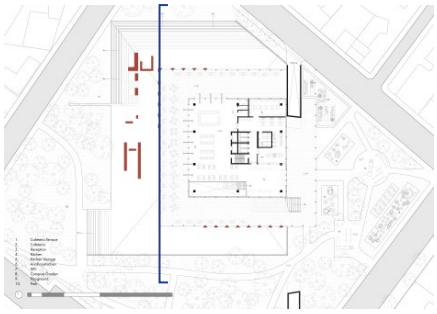
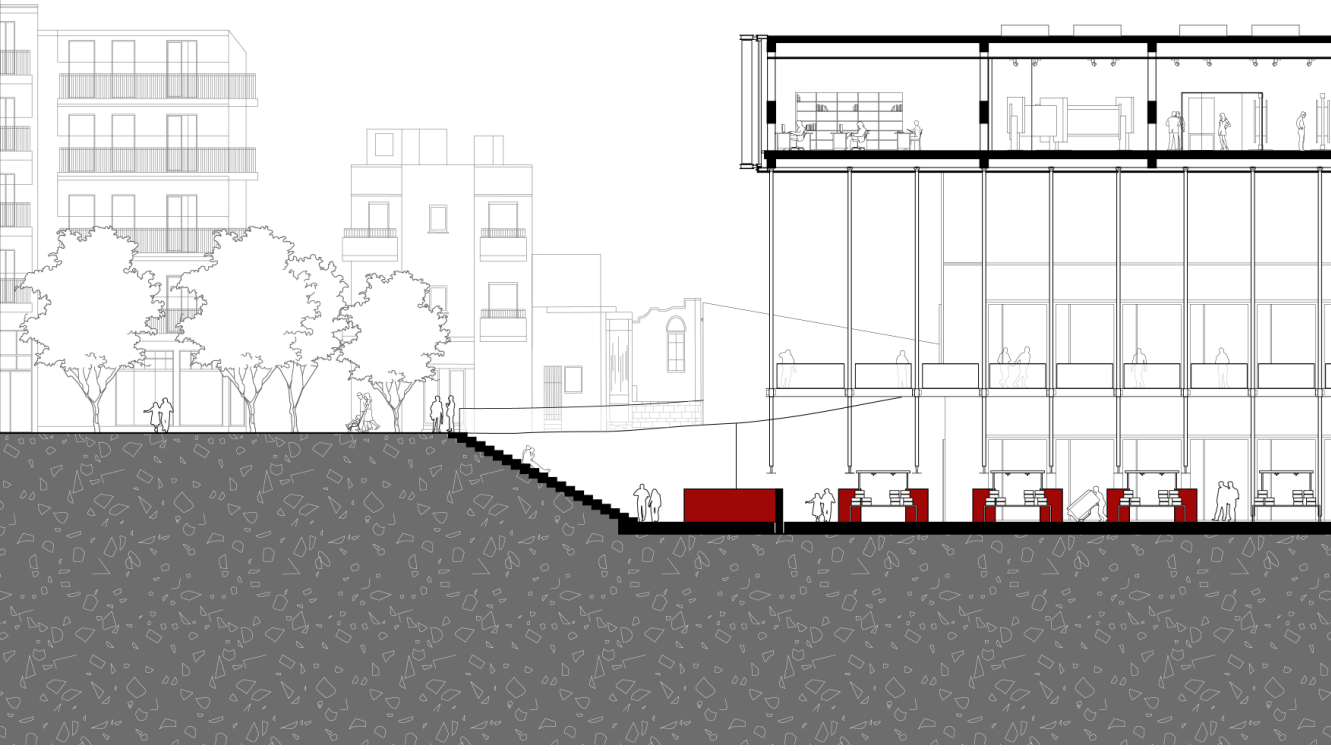
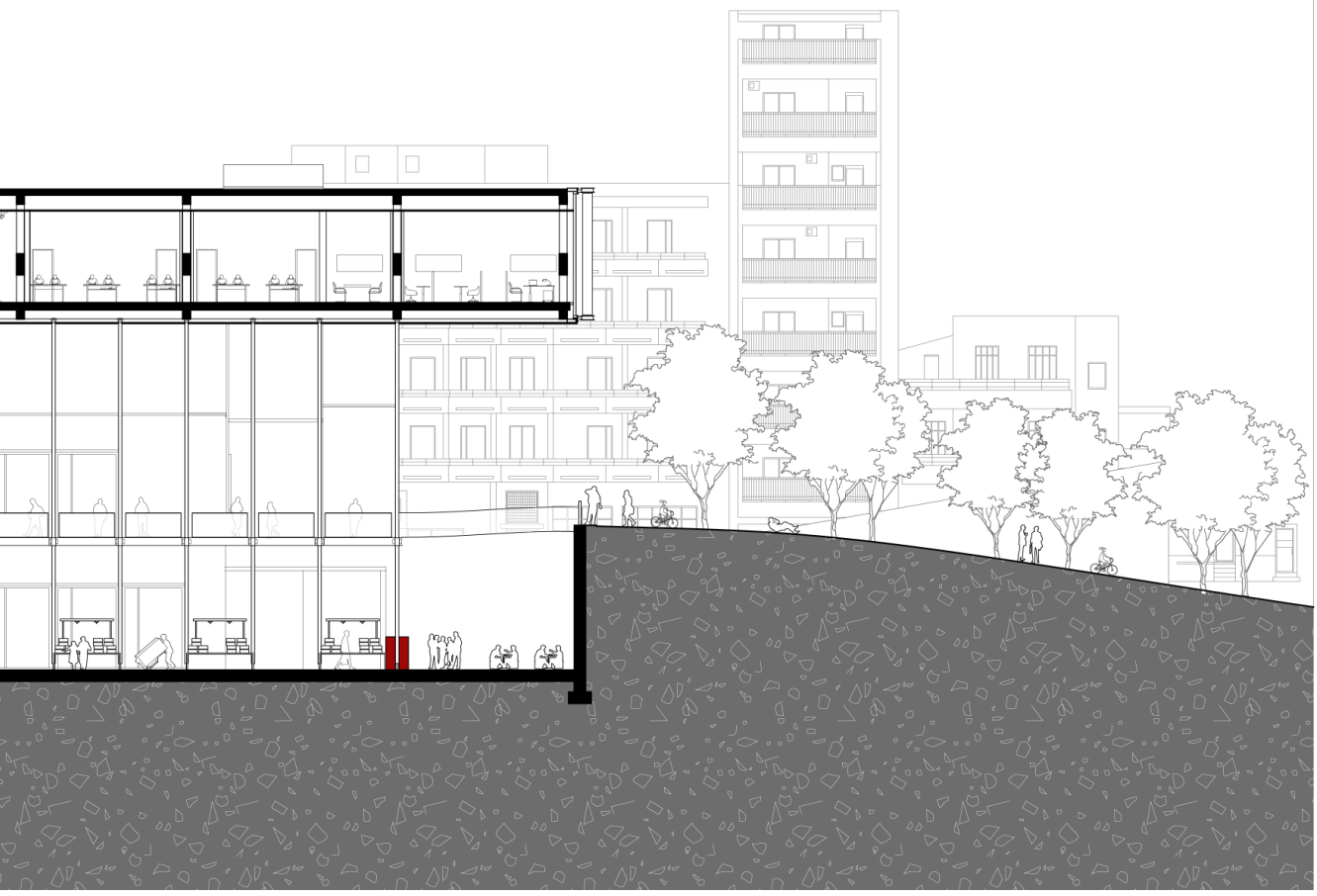
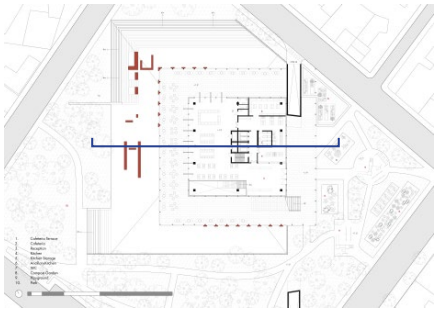
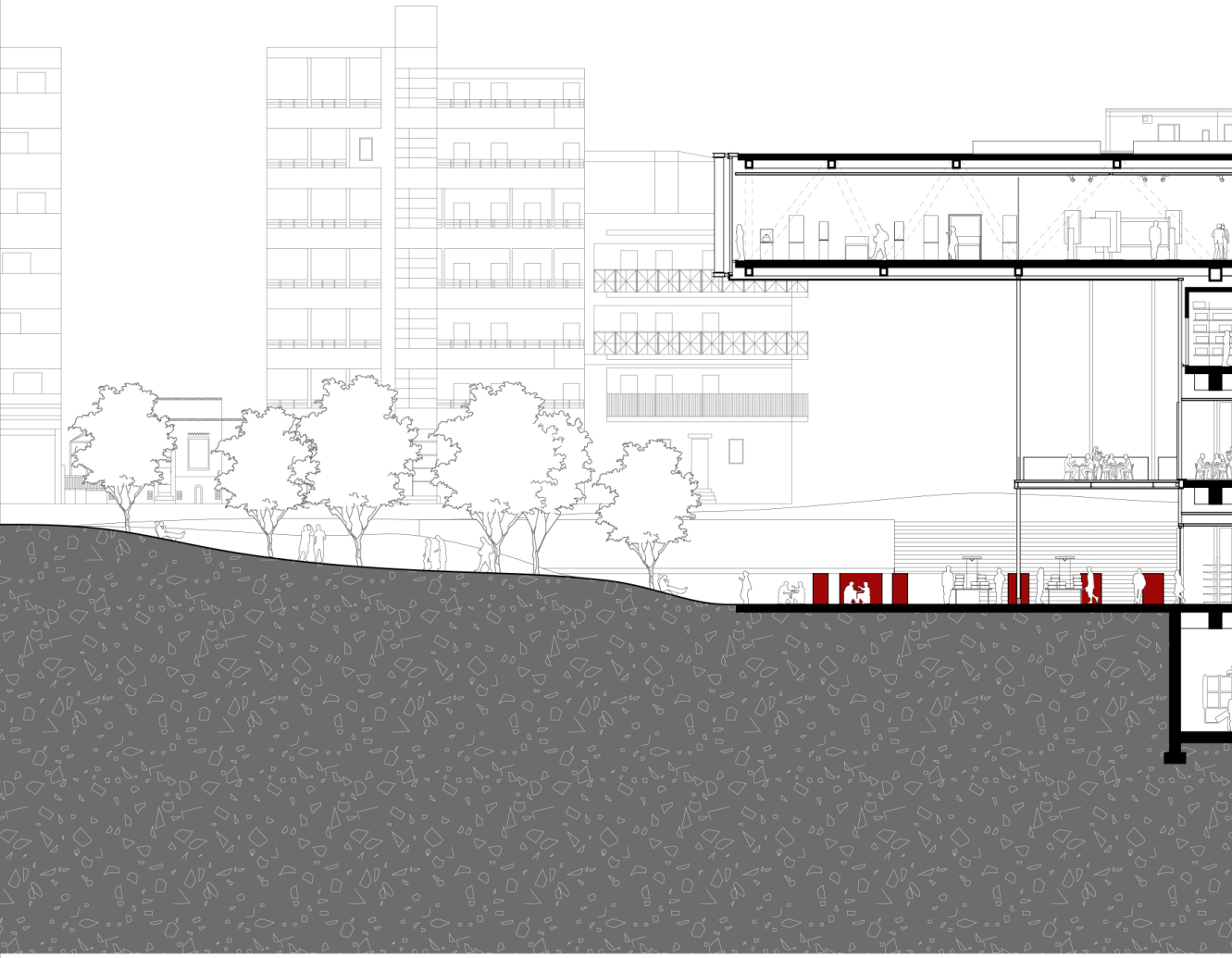
17.

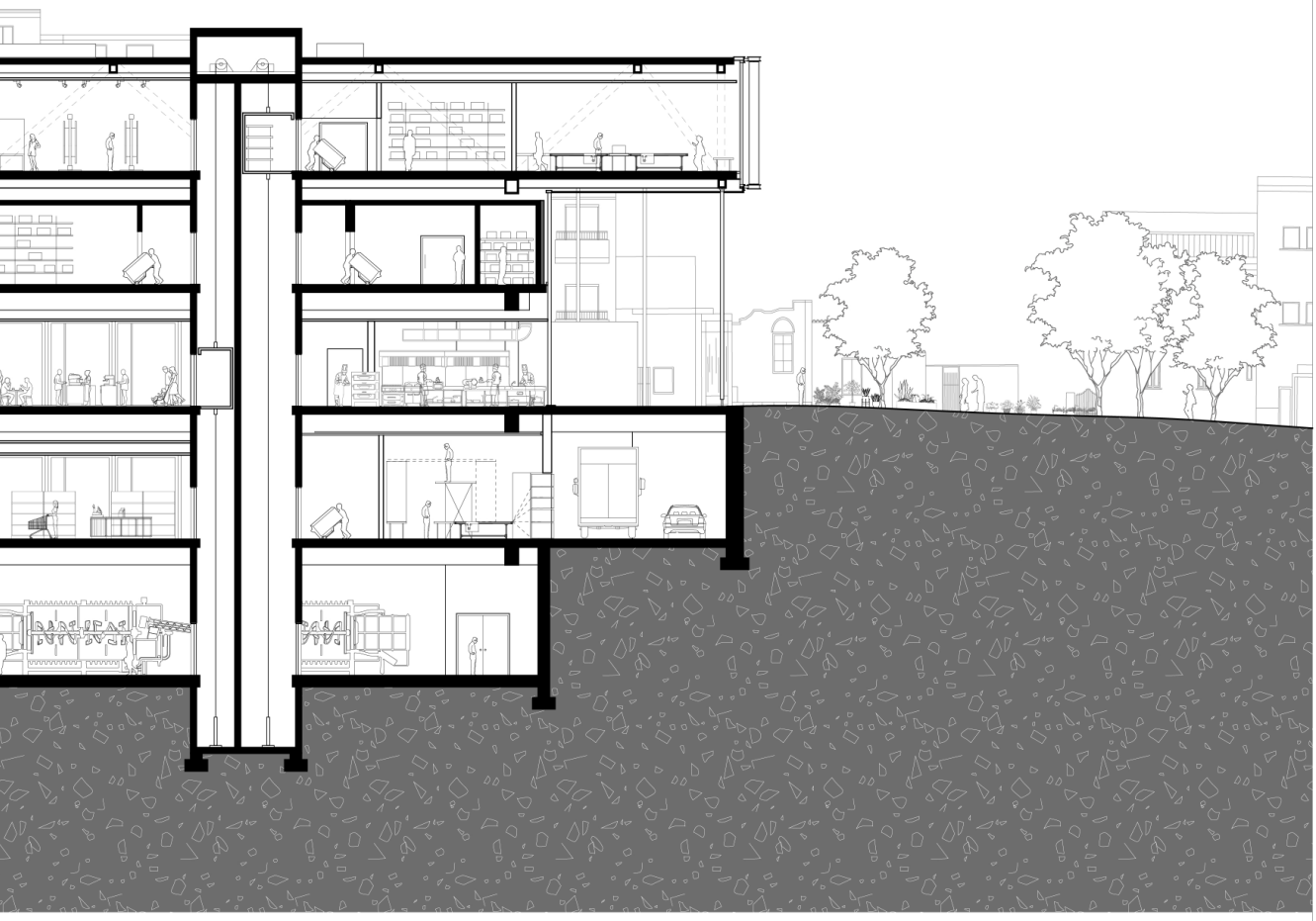




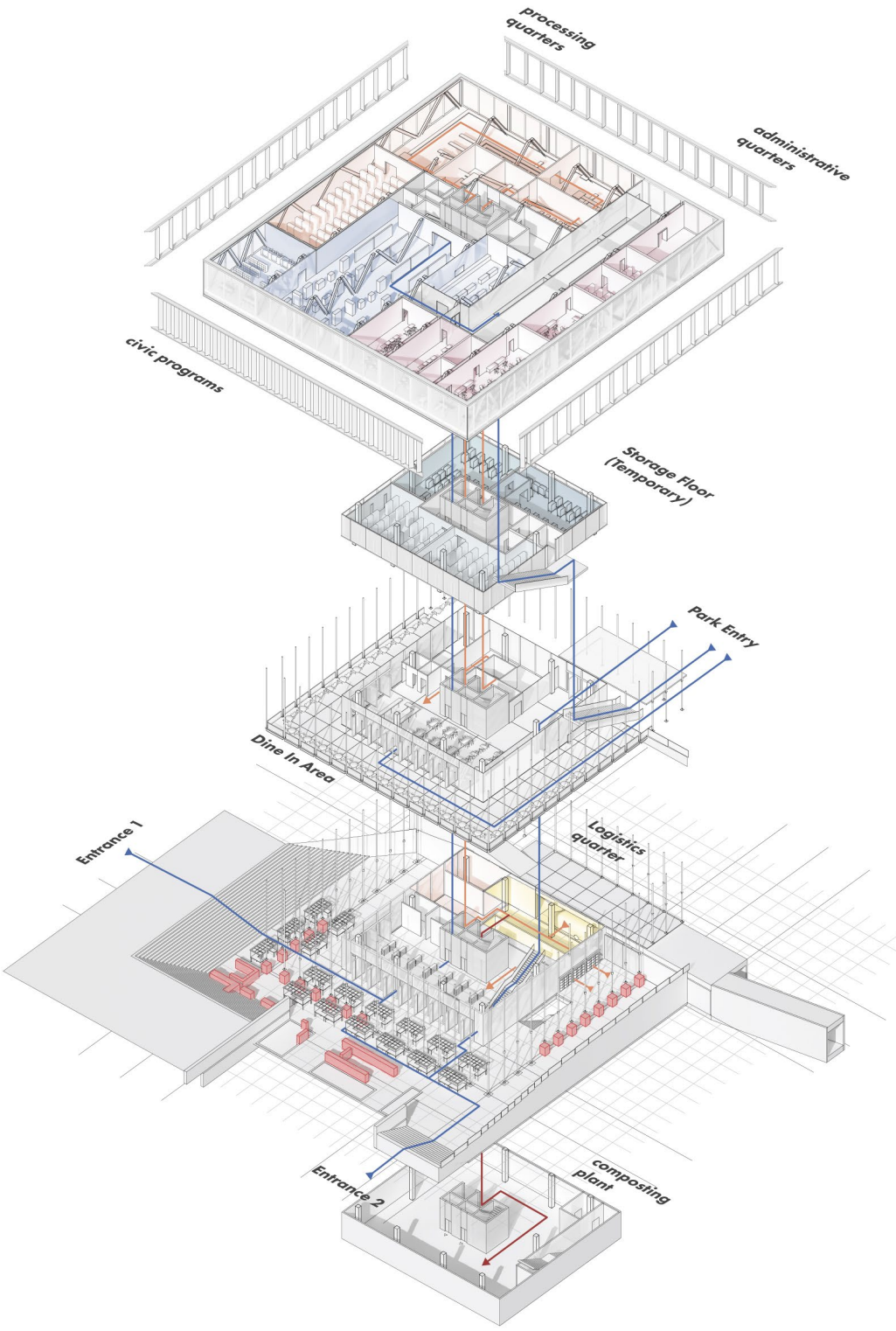




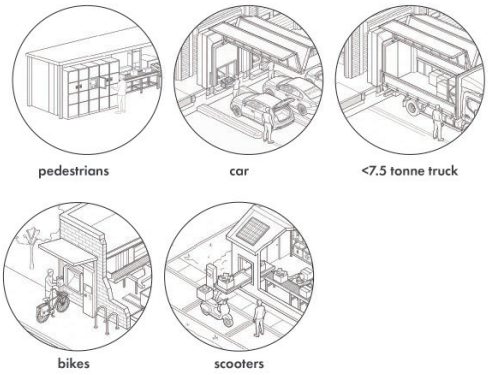


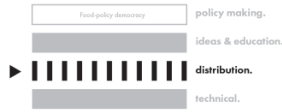



CASHIER

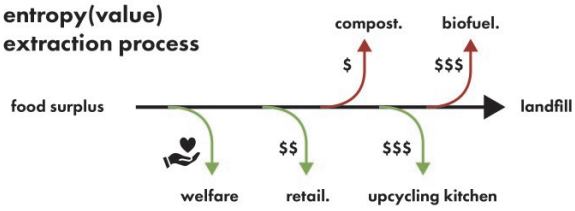

processing quarters
administrative quarters
civic programs
Storage Floor (Temporary)
Park Entry
Dine In Area
Logistics quarter
Entrance 1
Entrance 2
composting plant

collection and redistribution.

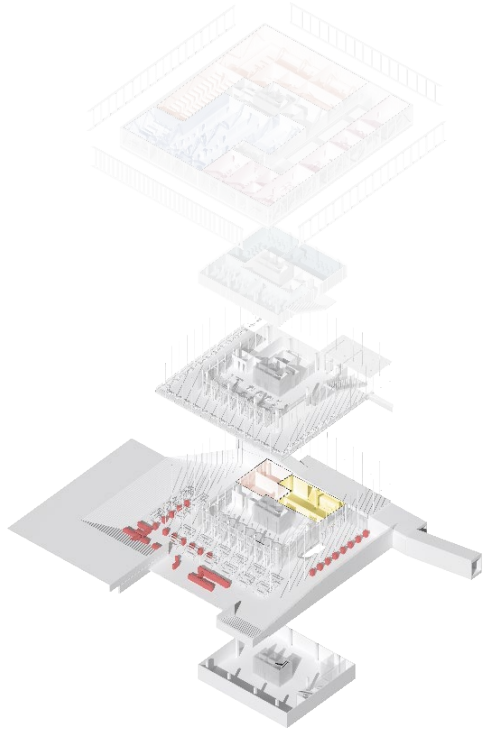




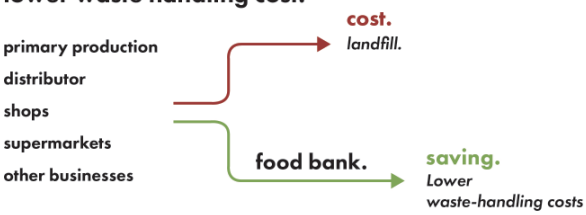
entropy(value) extraction process

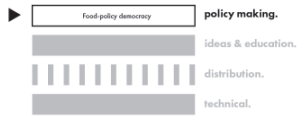


exchange.

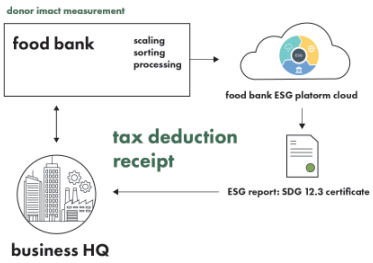


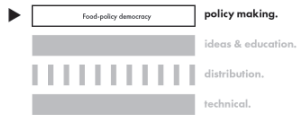
lower waste handling cost.



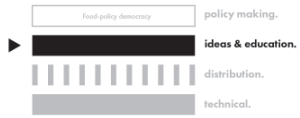


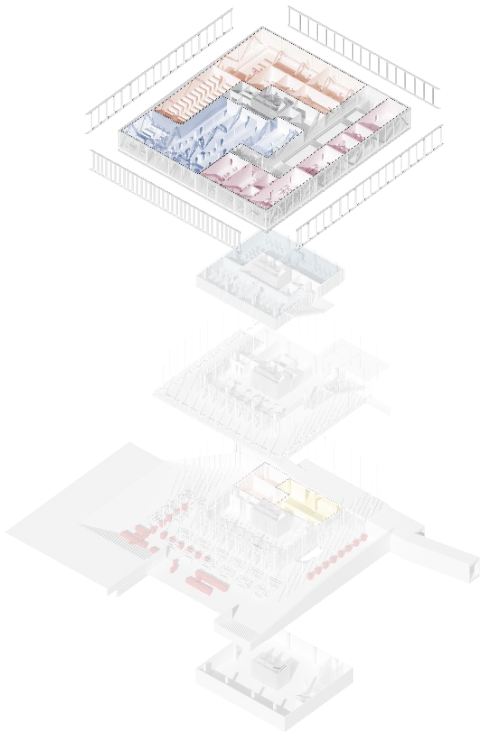
data for ESG & tax teams.





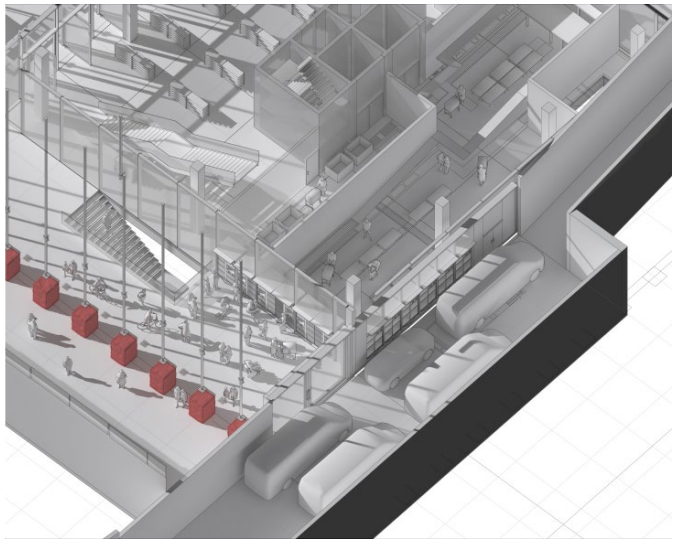
labs, kitchens & exhibition





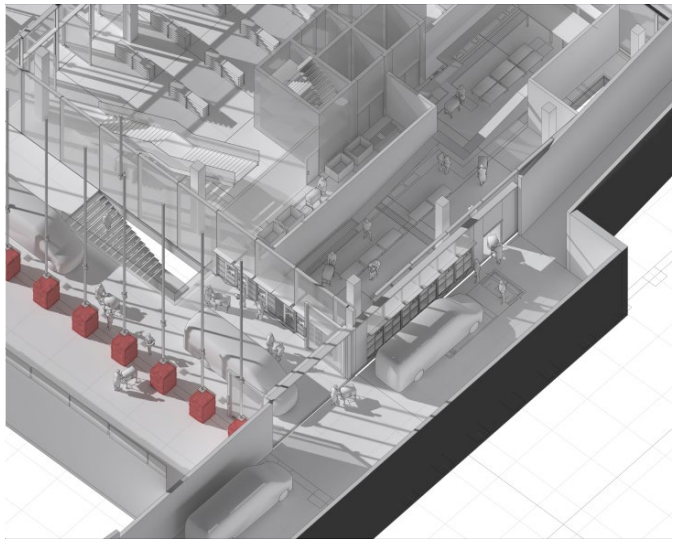
configuration a.

Isolation mode. Vehicular and Pedestrian flow separated.



configuration b.

Flexible layout. Loading bay extended into market area.



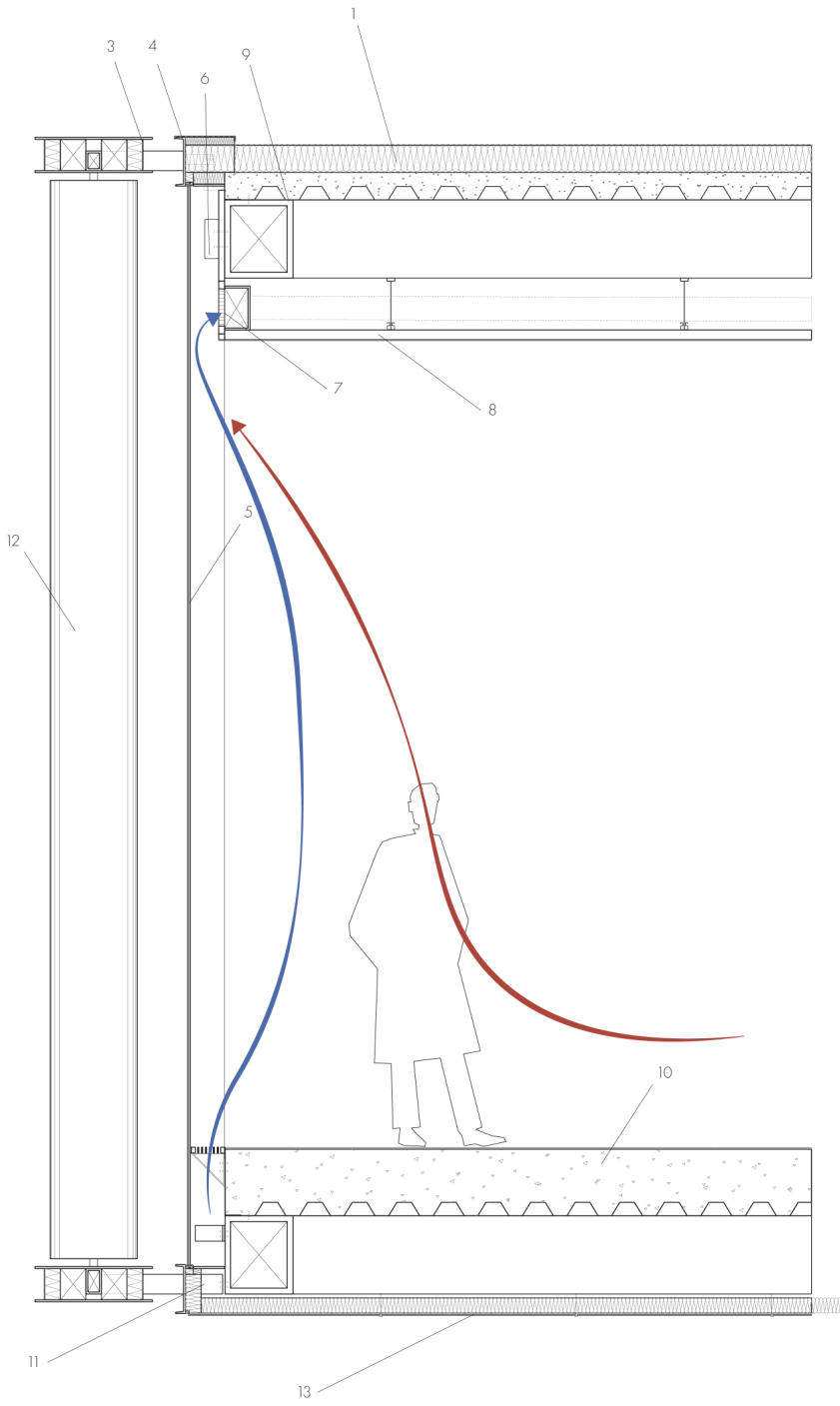
collection/dropoff lockers

optical sorting

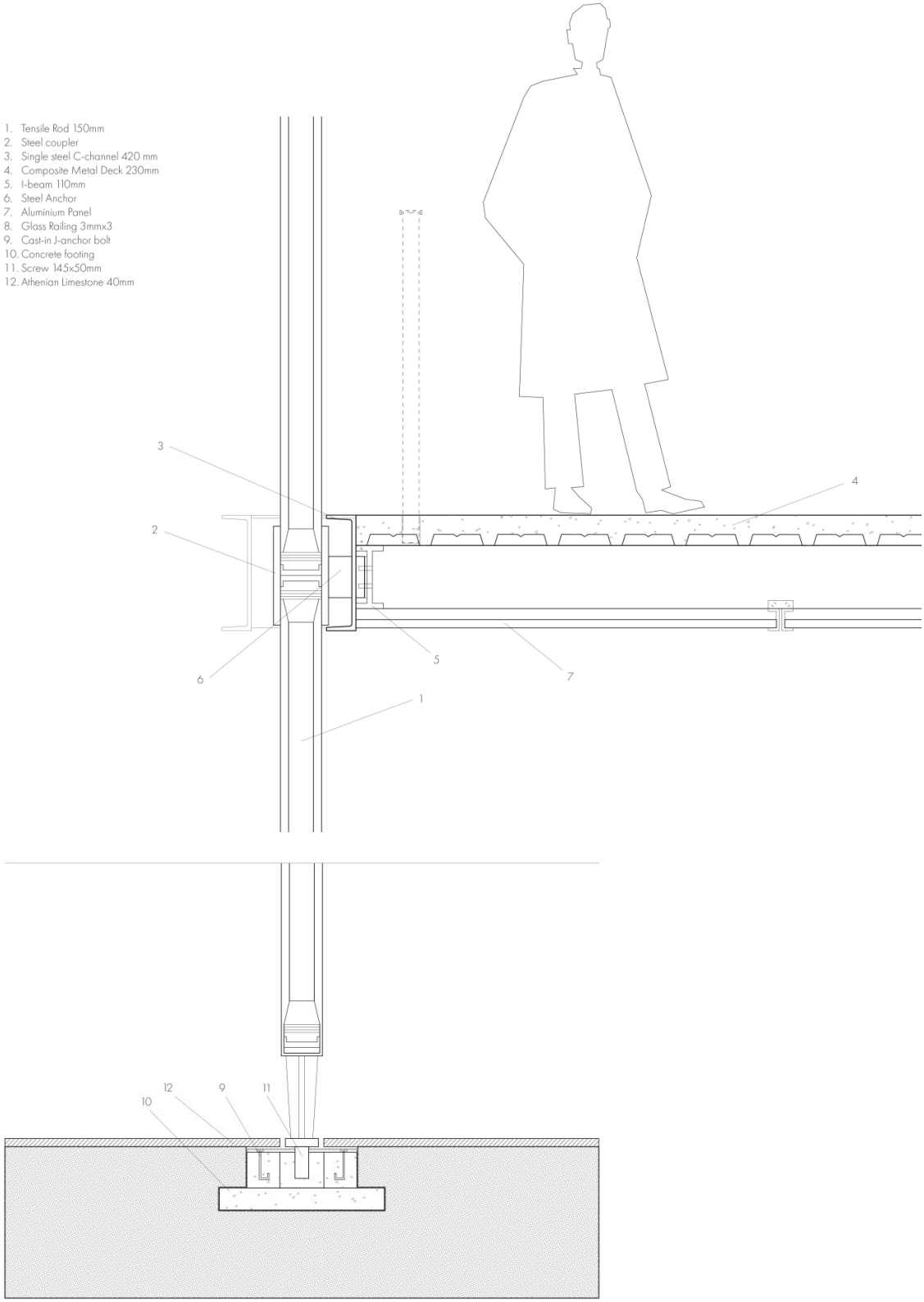
human sorting

transportation & storage

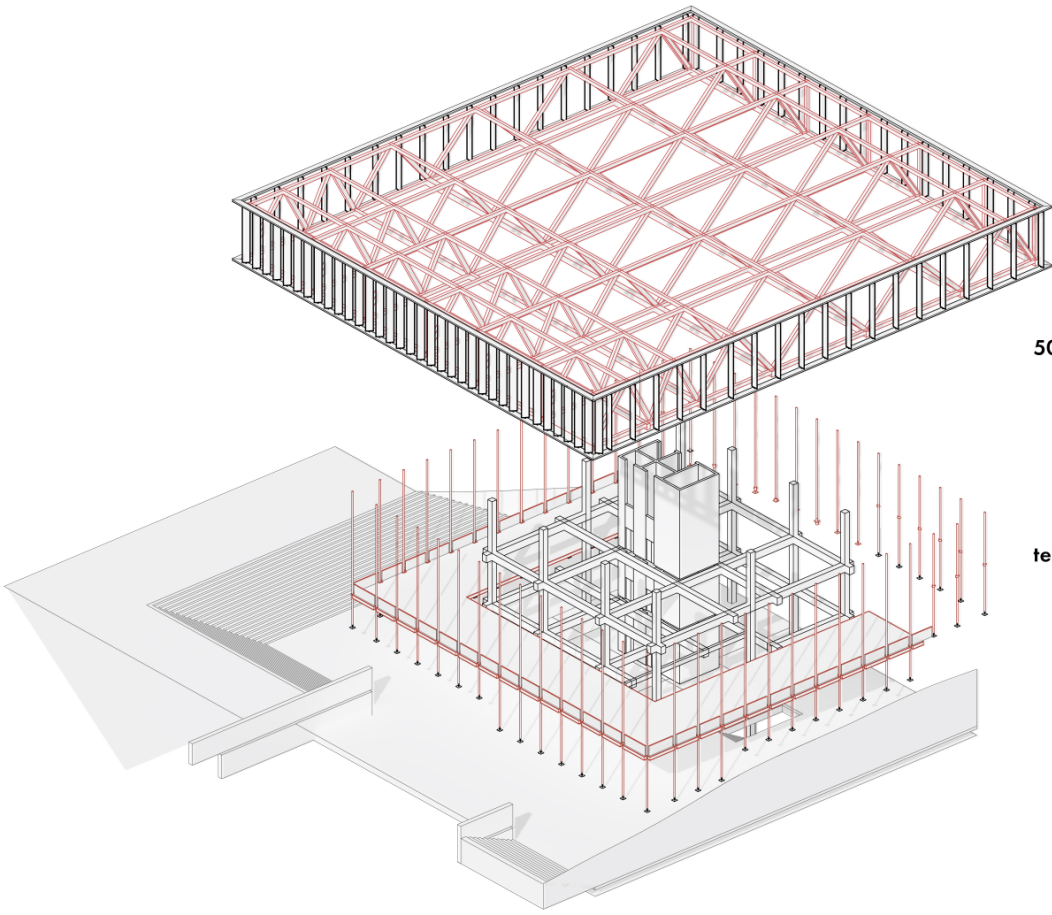
1. PIR Roof insulation
2. RHS Steel Beam 400x350x40
3. Aluminium Frame
4. C-channel 250mm
5. Low-E Double Glazing 5mm x 2
6. Steel plate
7. Air Grill and inlet
8. Gymsum board 50mm
9. Composite Metal Deck 230mm
10. Composite Metal Deck 320mm
11. Steel Anchor
12. Aluminium Fin 5510x100mm
13. Aluminium panel 4mm

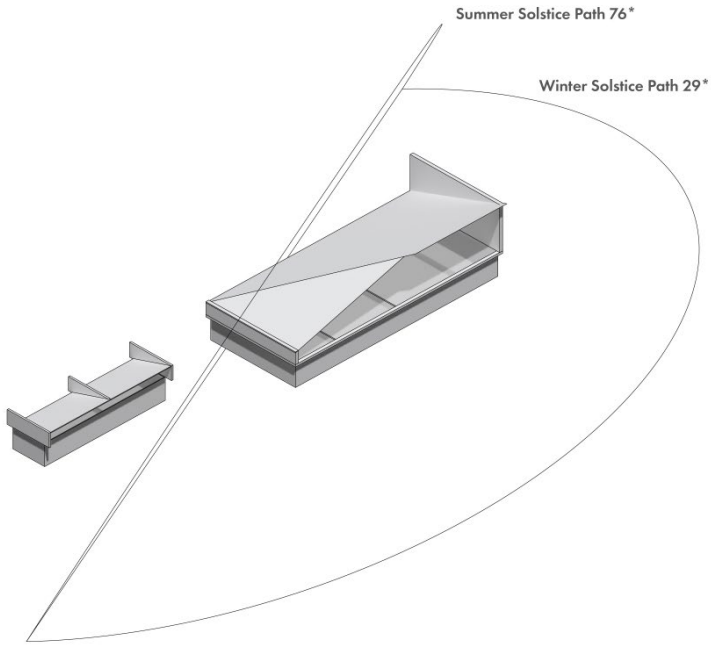


1. Tensile Rod 150mm
2. Steel coupler
3. Single steel C-channel 420 mm
4. Composite Metal Deck 230mm
5. I-beam 110mm
6. Steel Anchor
7. Aluminium Panel
8. Glass Railing 3mmx3
9. Cast-in J-anchor bolt
10. Concrete footing
11. Screw 145x50mm
12. Athenian Limestone 40mm



structure.




Summer Solstice Path 76*
Winter Solstice Path 29*

appendix. Design + Progress.

Week 7.1 Design Bootcamp w1

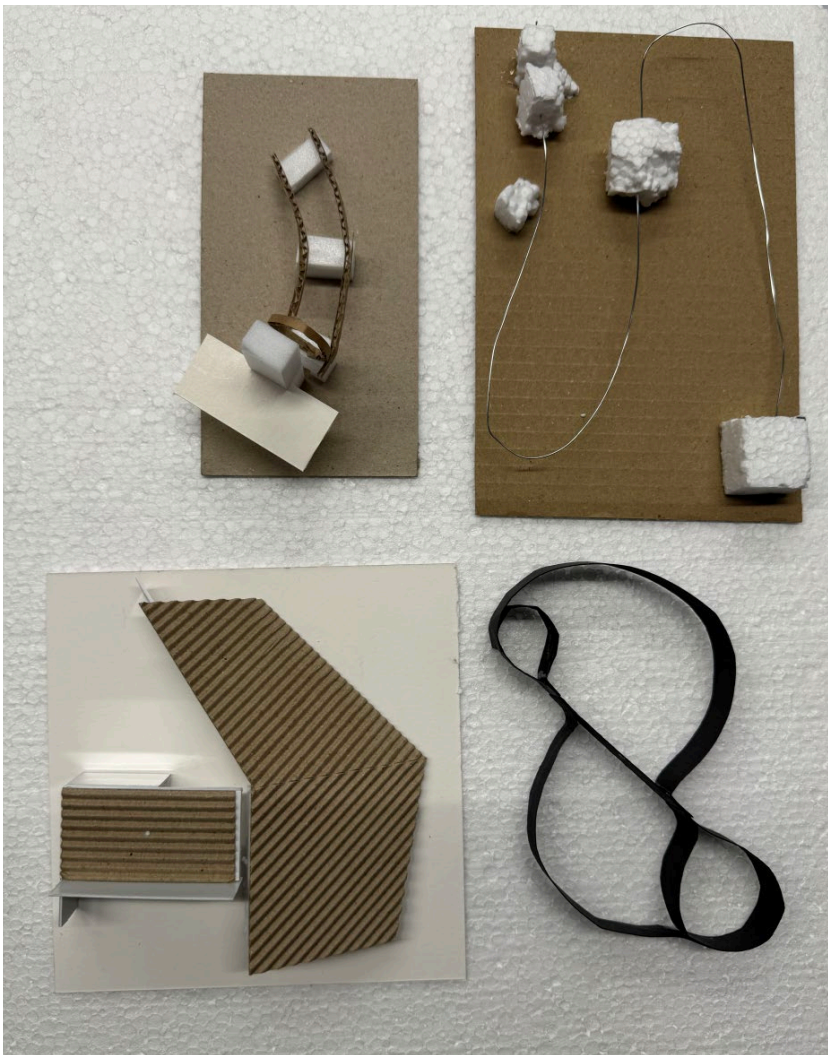
Material Compilation.

Ip Ho Nam
6155650

concept modelling.

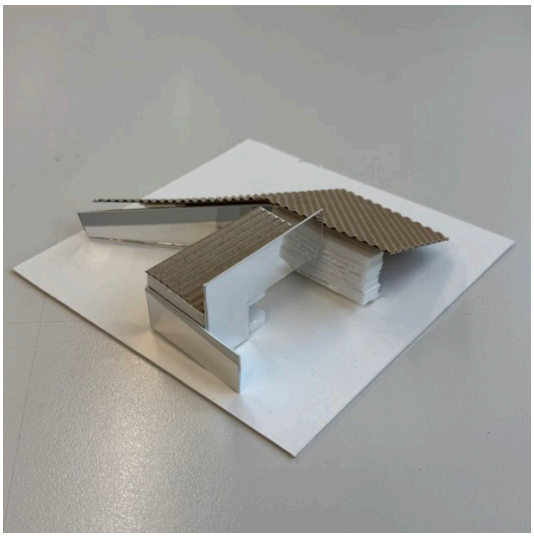
Temporal Vault: A race against decay.

The Food (Waste) Bank institutiont for Social Wealth & Governance. Redistributing more than food, Awareness, Access, Agency.



day 2.

concept interpretation by pod members

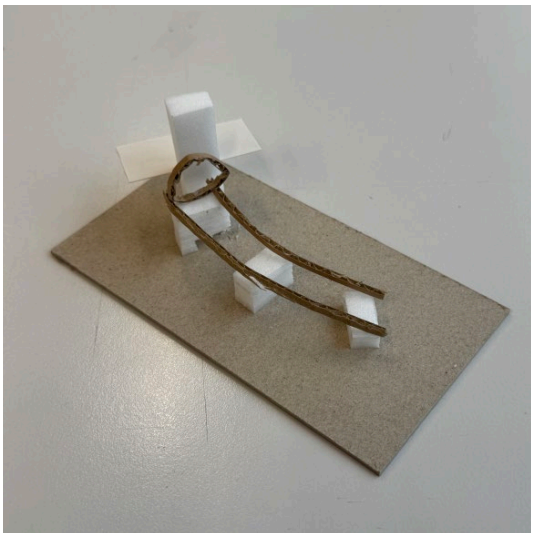


by author

Concept: Sloping landscape to respect the landscape of plato's academy. Bond between governance and food treatment. Bringing transparency.

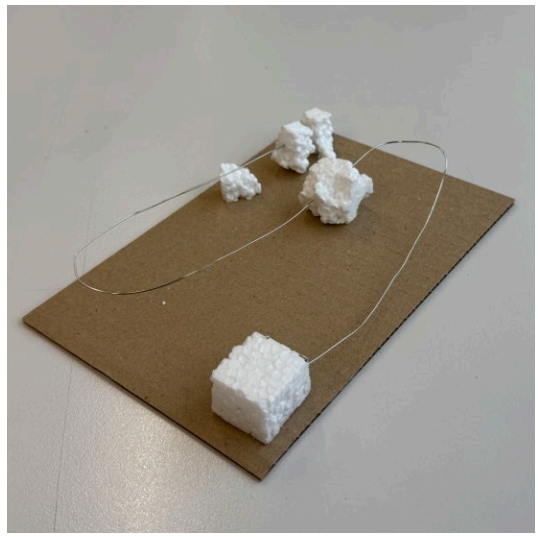
by Isabel

Concept: Continuous circulation within the food bank. Looping ressembling the cycle of food production and decay.



by Cho Ting

Concept: Rollercoaster that extends Underground. A race against expiry date. Hierarchy of food relating to level and elevation.

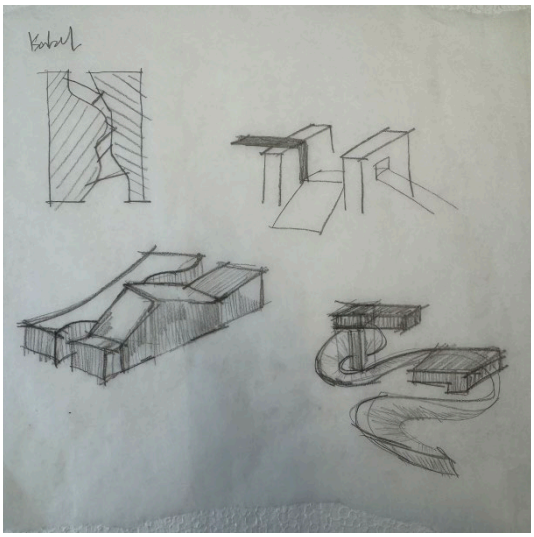


by Denis

Concept: Coveyor belt: Fluidity of food suplus, food waste and humans within the building.

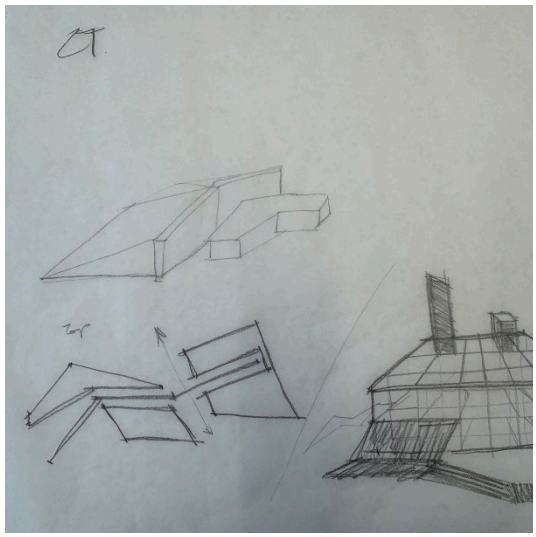
for pod members.

sketch concept interpretation



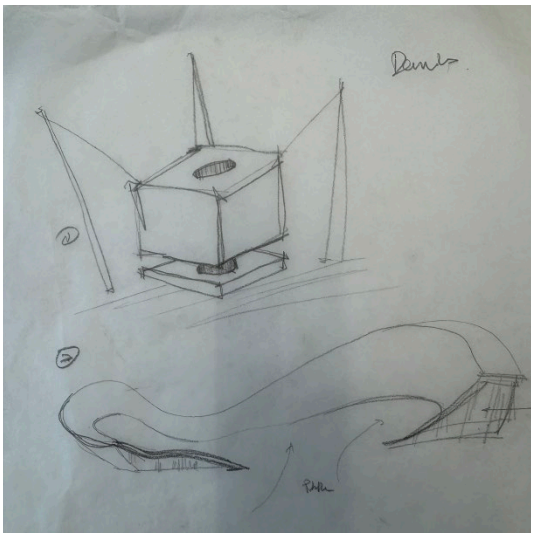
For Isabel

Exchange. Immigration vs Lovals



For Cho Ting

Bringing the exterior street into the interior

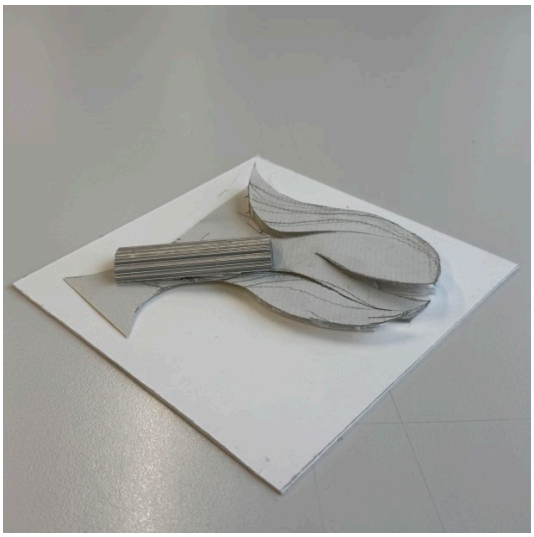


For Dennis

Environmental ministry for locals. How to kill tree without killing the park?

for pod members.

model concept interpretation



by Denis

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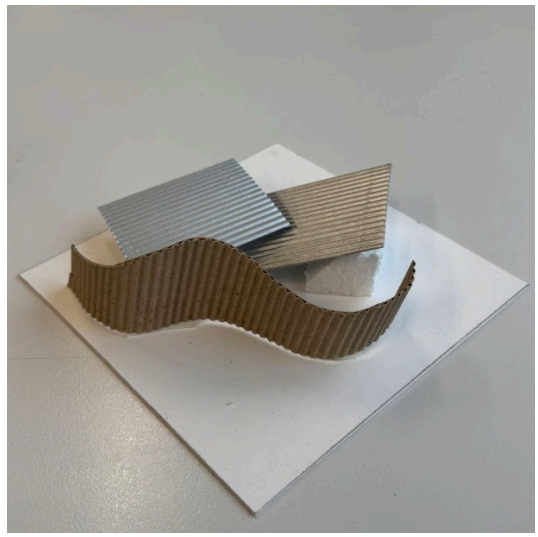

by Isabel

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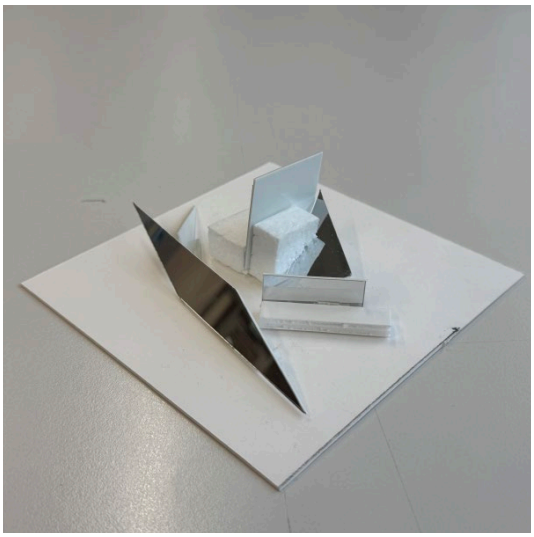


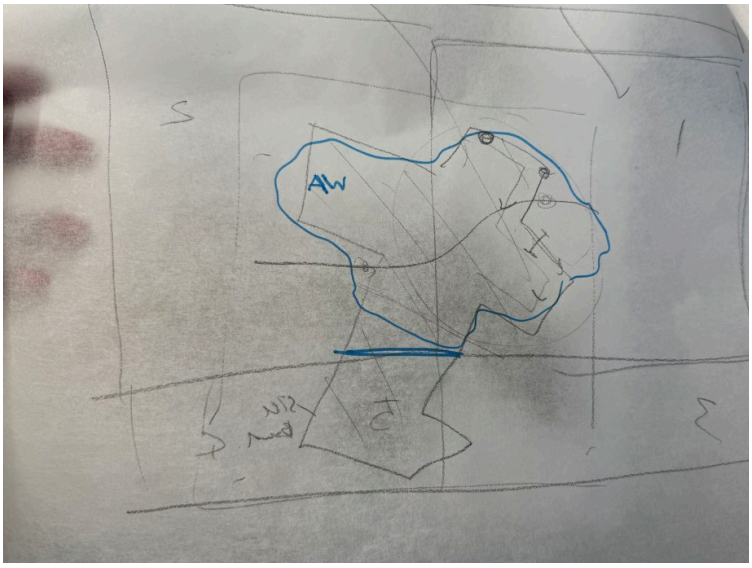
by Cho Ting

Concept: Rollercoaster that extends Underground. A race against expiry date. Hierarchy of food relating to level and elevation.

day 3.

site drawings.

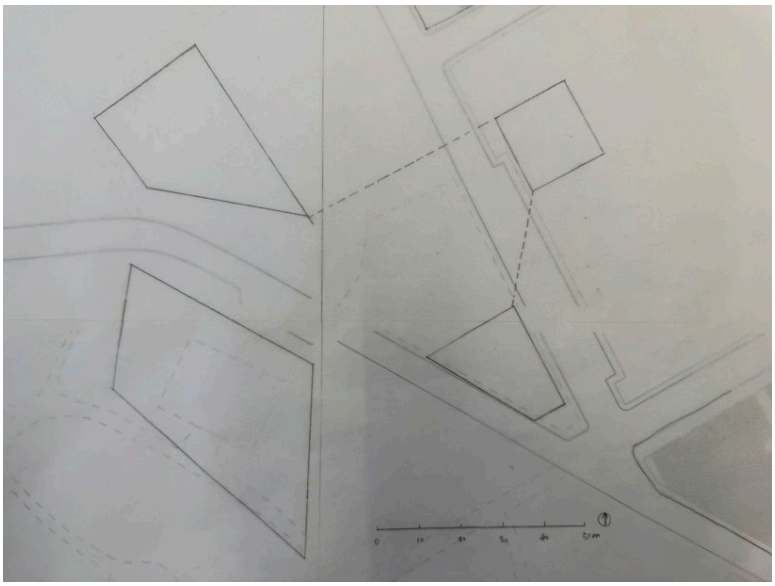
site section brainstorming and site model configuration.

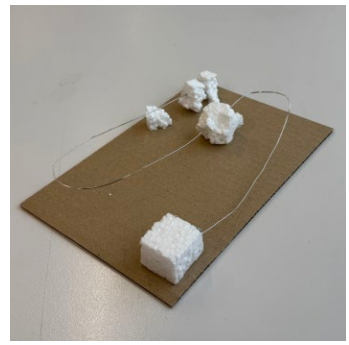


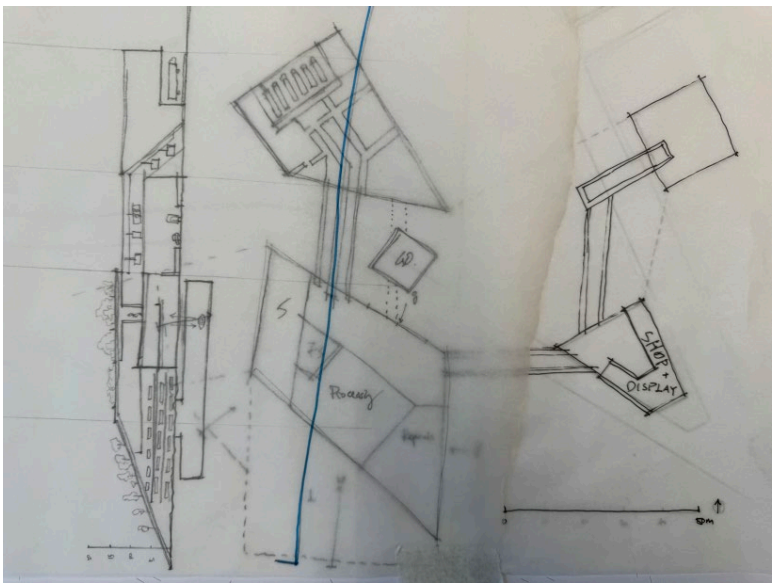
day 4.

plan and section development from pod member's concept model

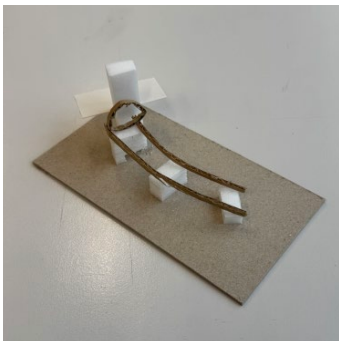
from Denis

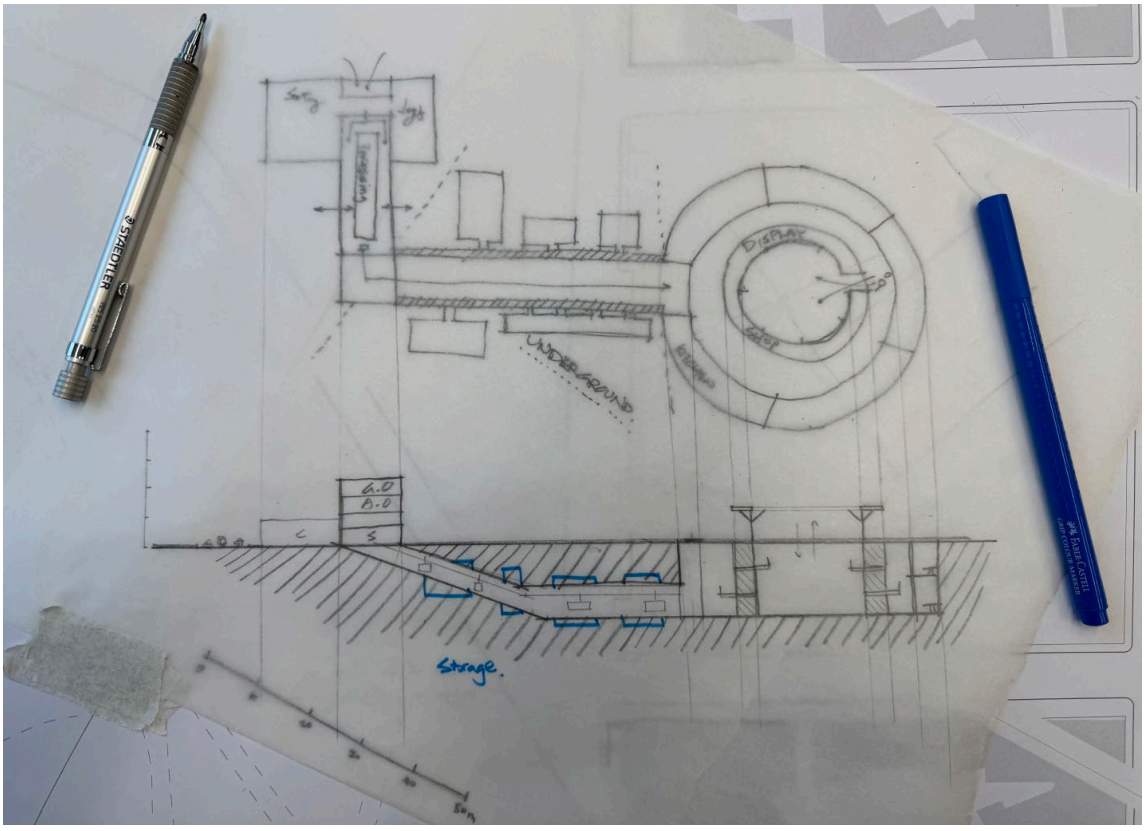




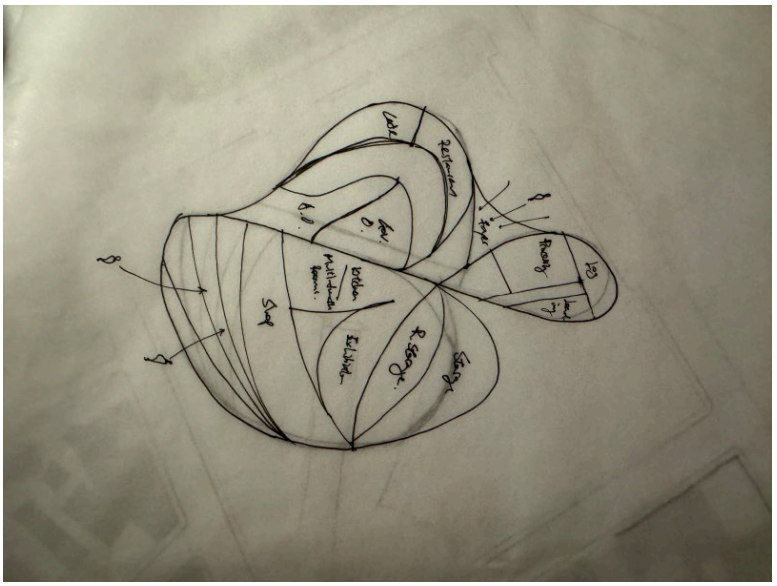


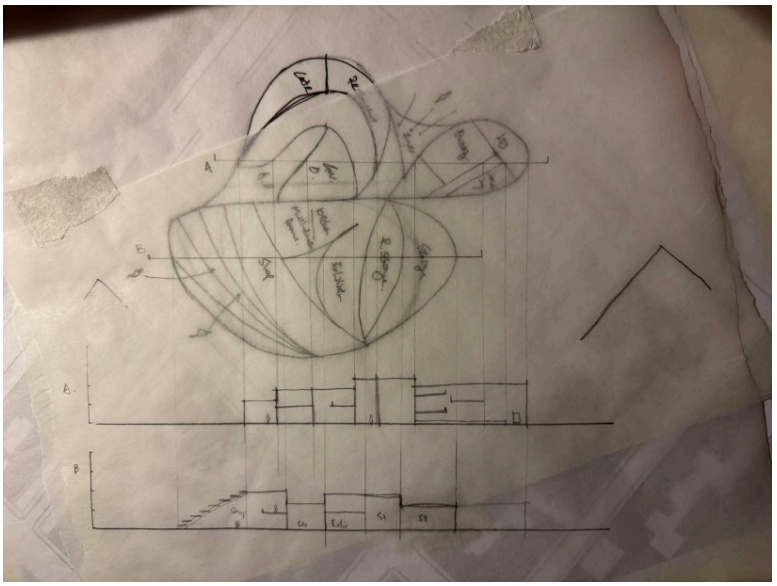
from Cho Ting





From Isabel

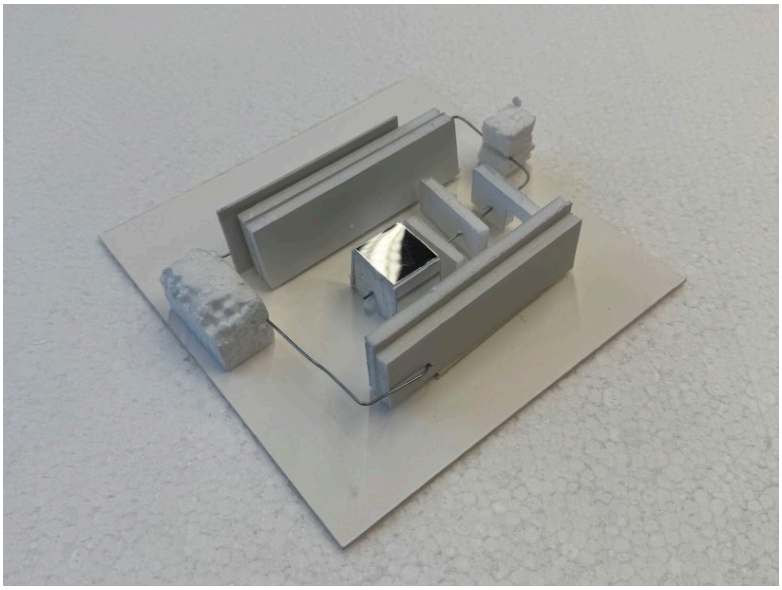


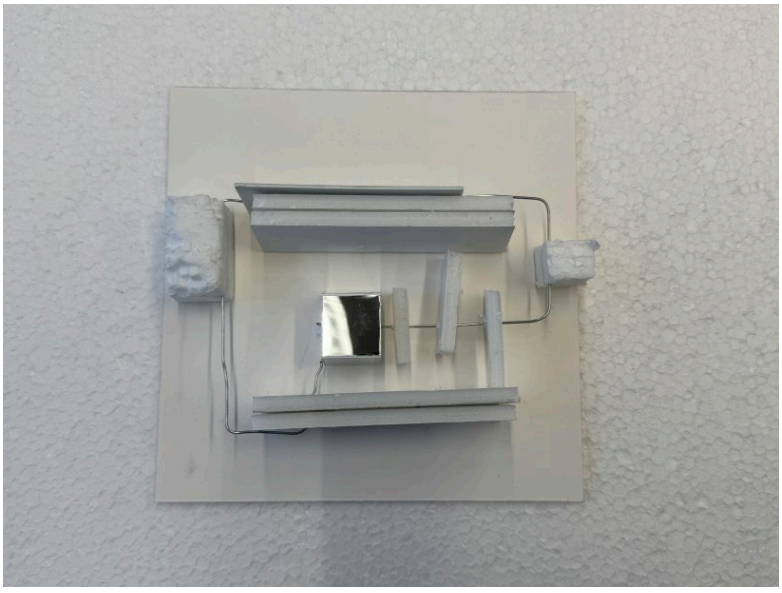


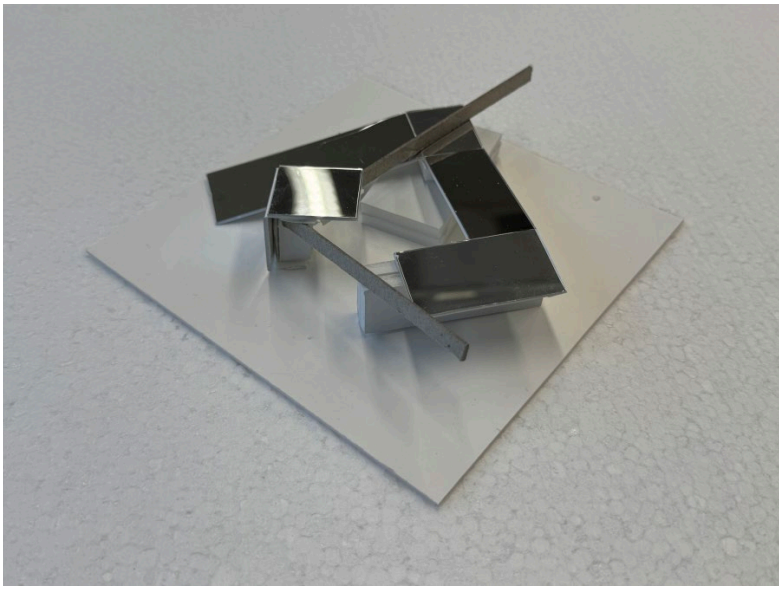
day 5.

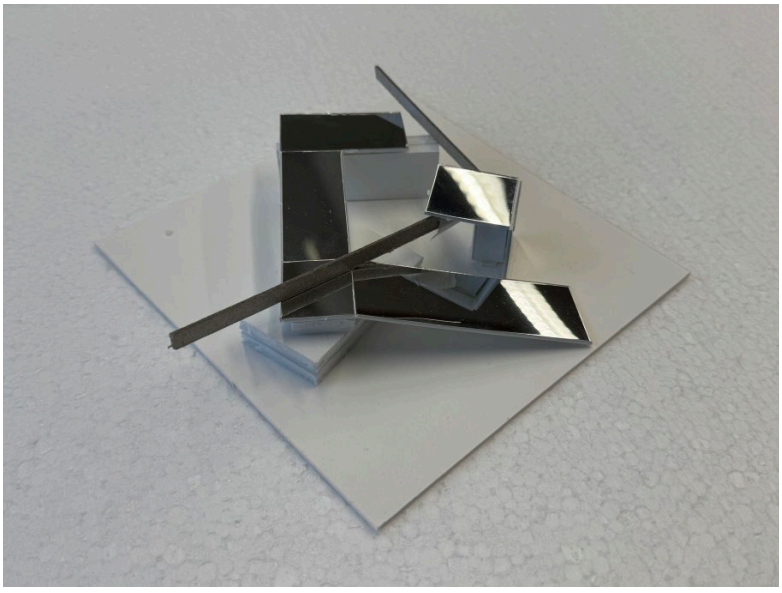
further model development.

iterations of concept from plans and sections.









more materials to be uploaded...

Week 7.2 Design Bootcamp w2

Concept Drawing

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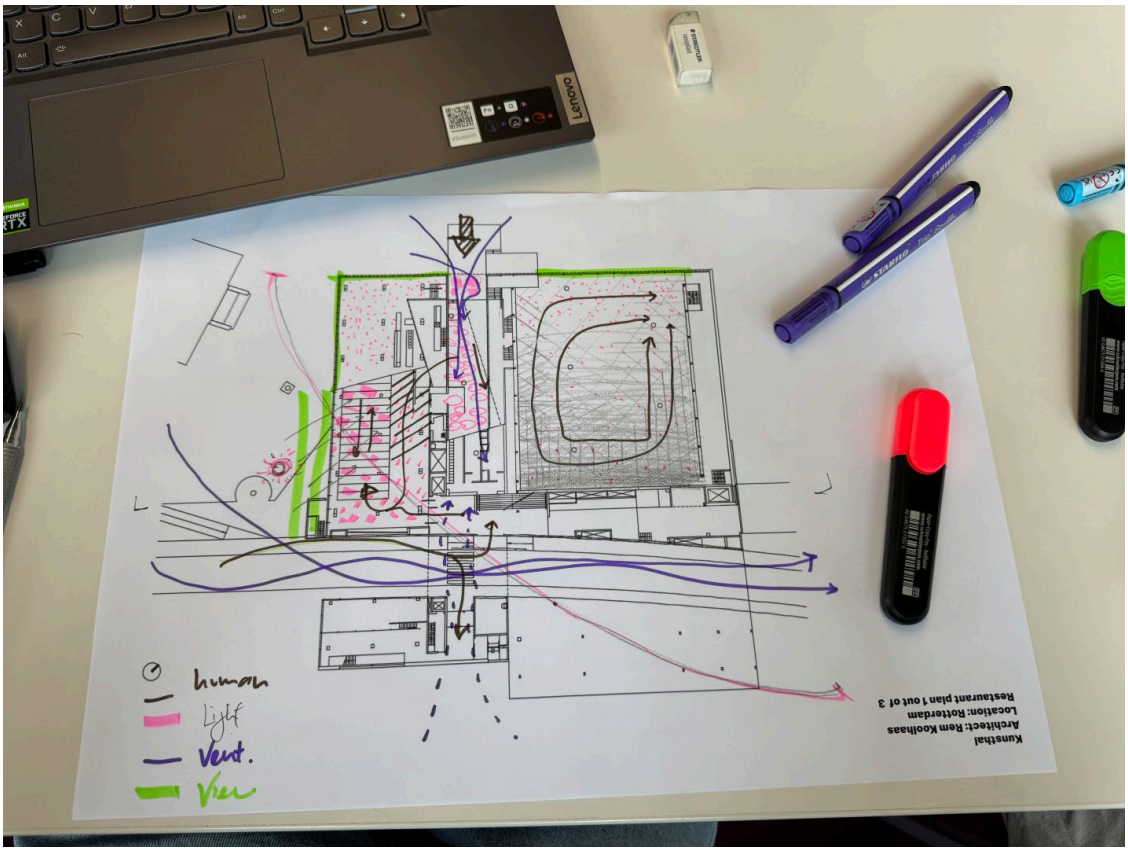
concept drawing

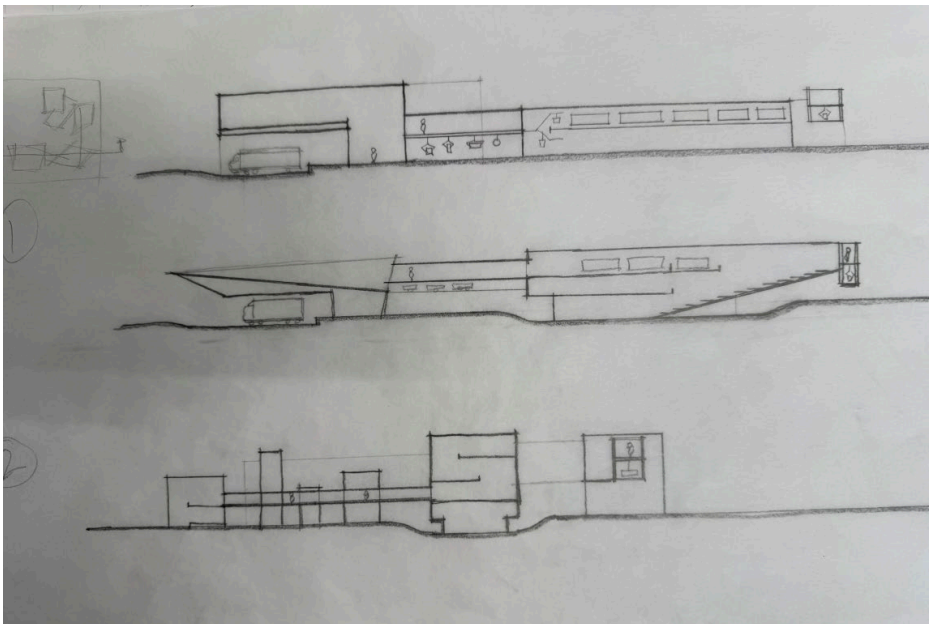
case study

sketching Kunsthal

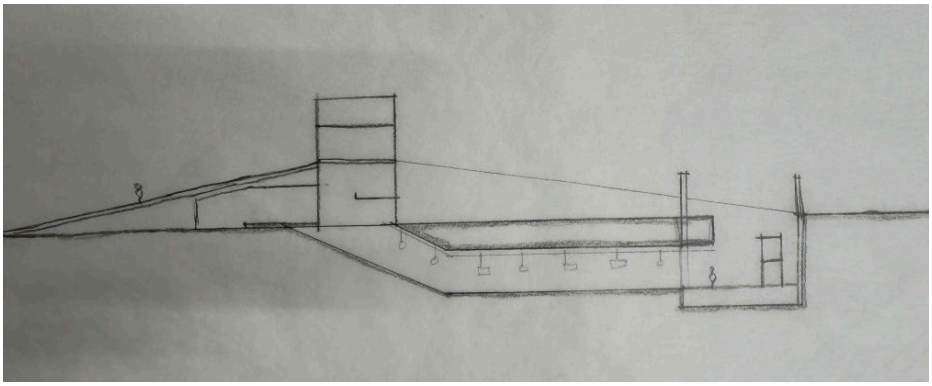


section drawings

evolution of sections

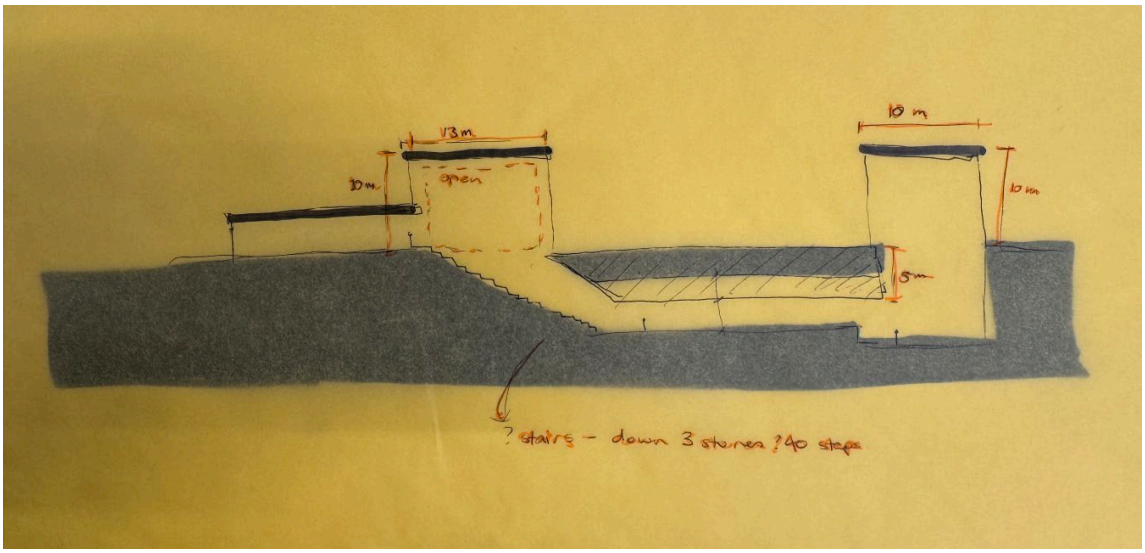


sub-terrain option

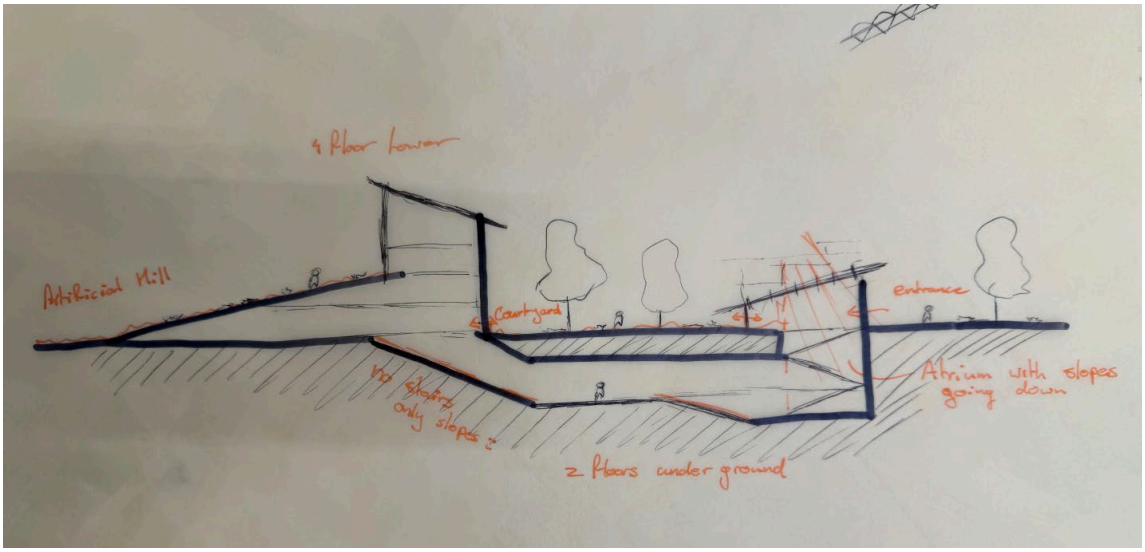


from others.

from Angie

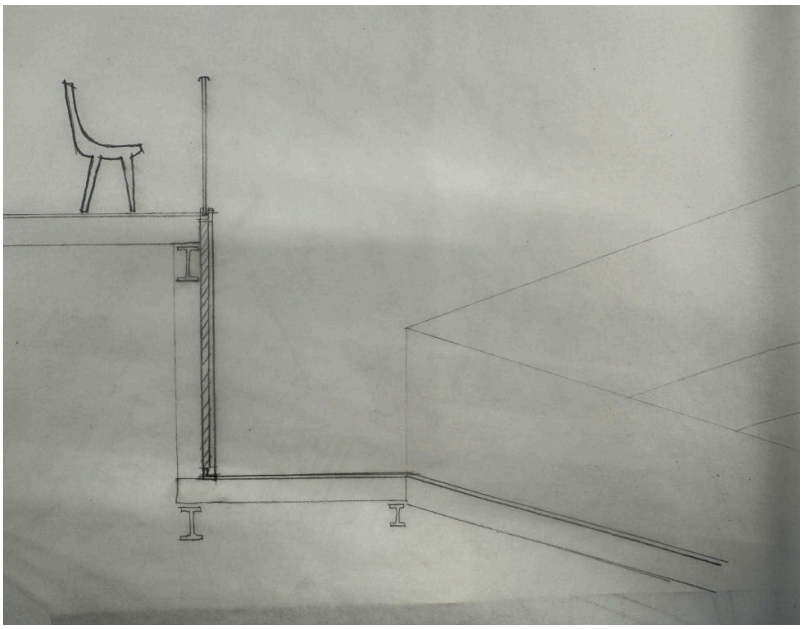


from Lianna

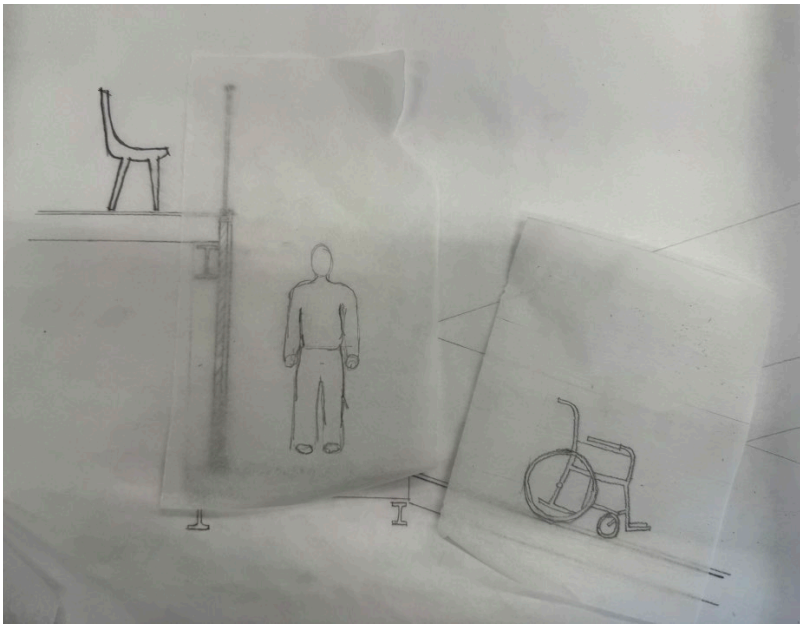


1:20 section fragments

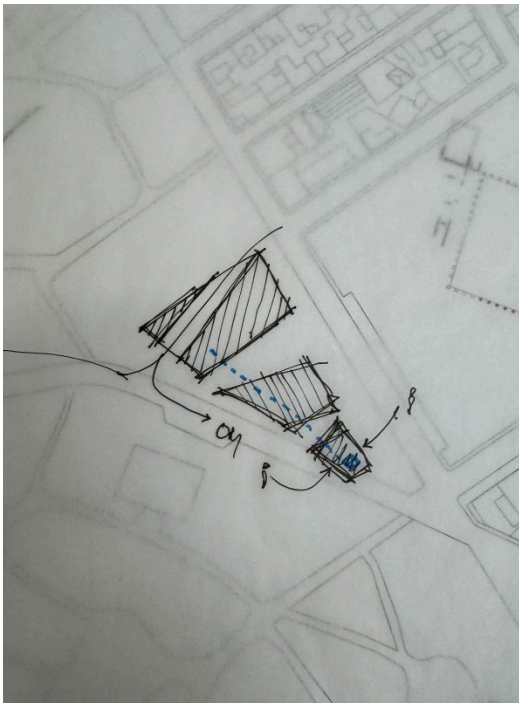
sloped ramp and chair

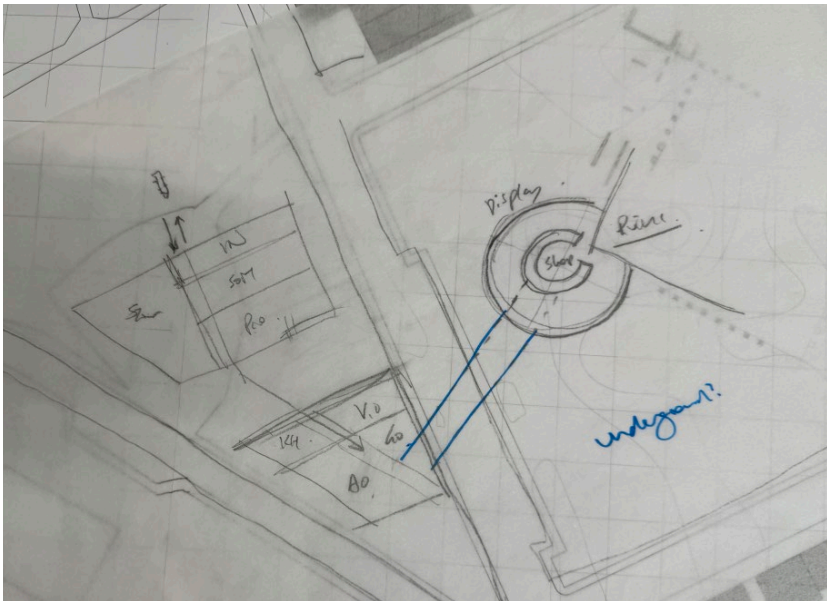


with human and BFA

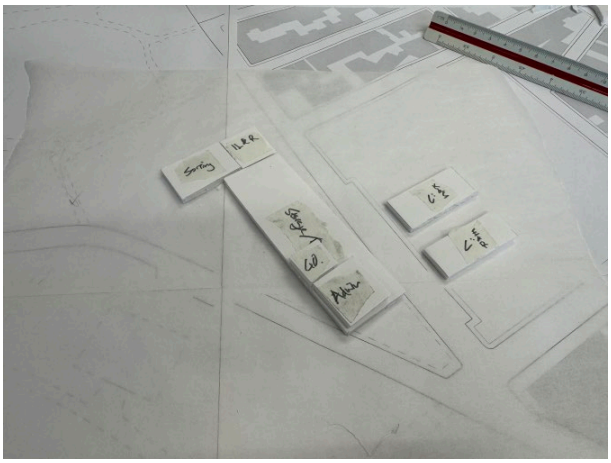


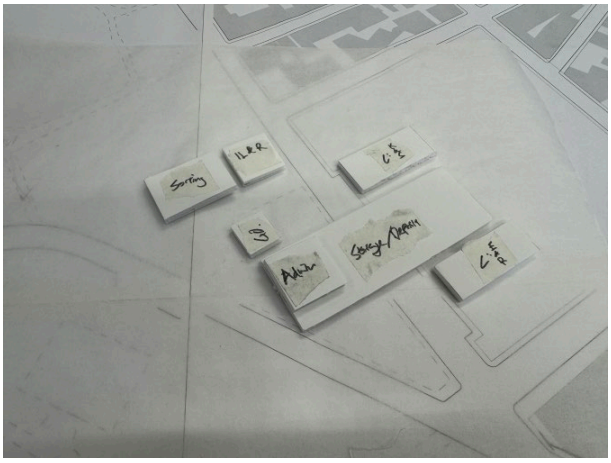
plan drawings.

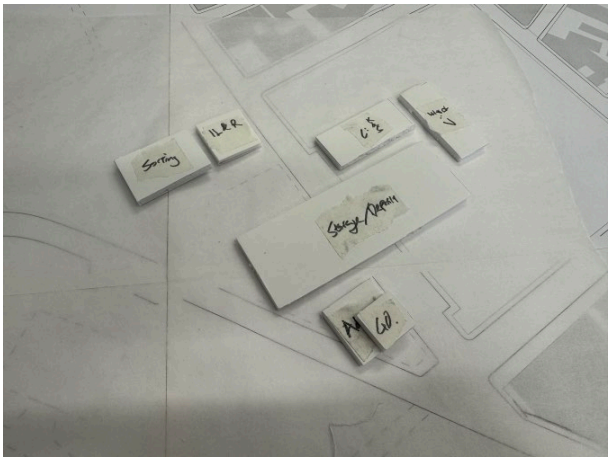


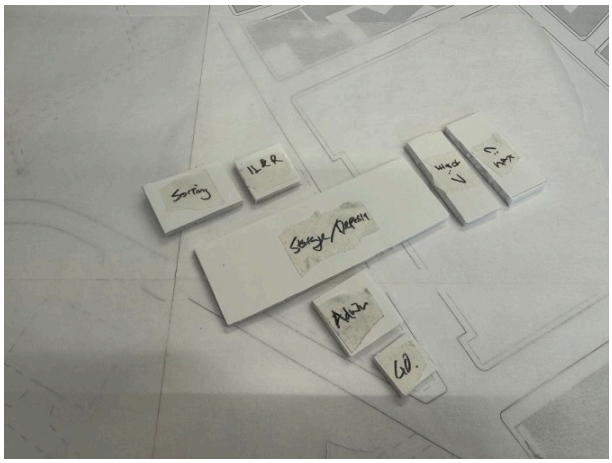


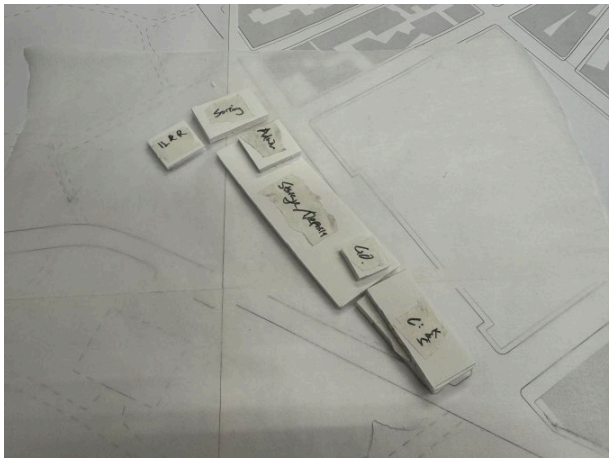
testing iterations.

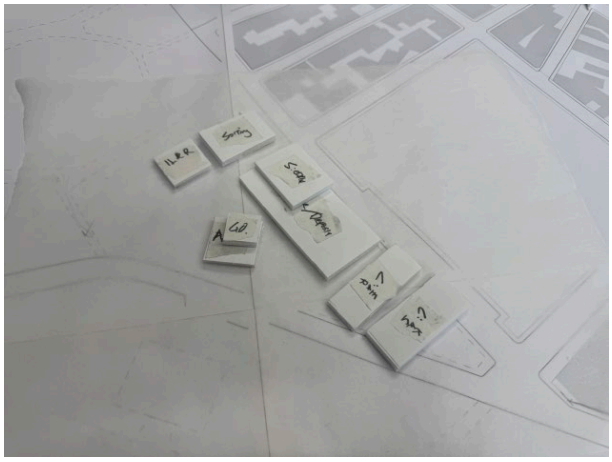




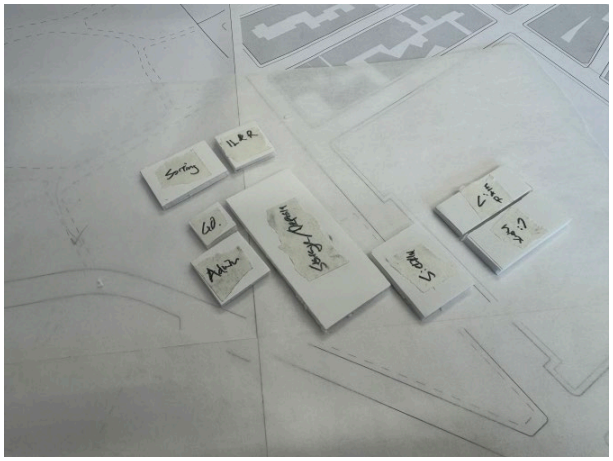




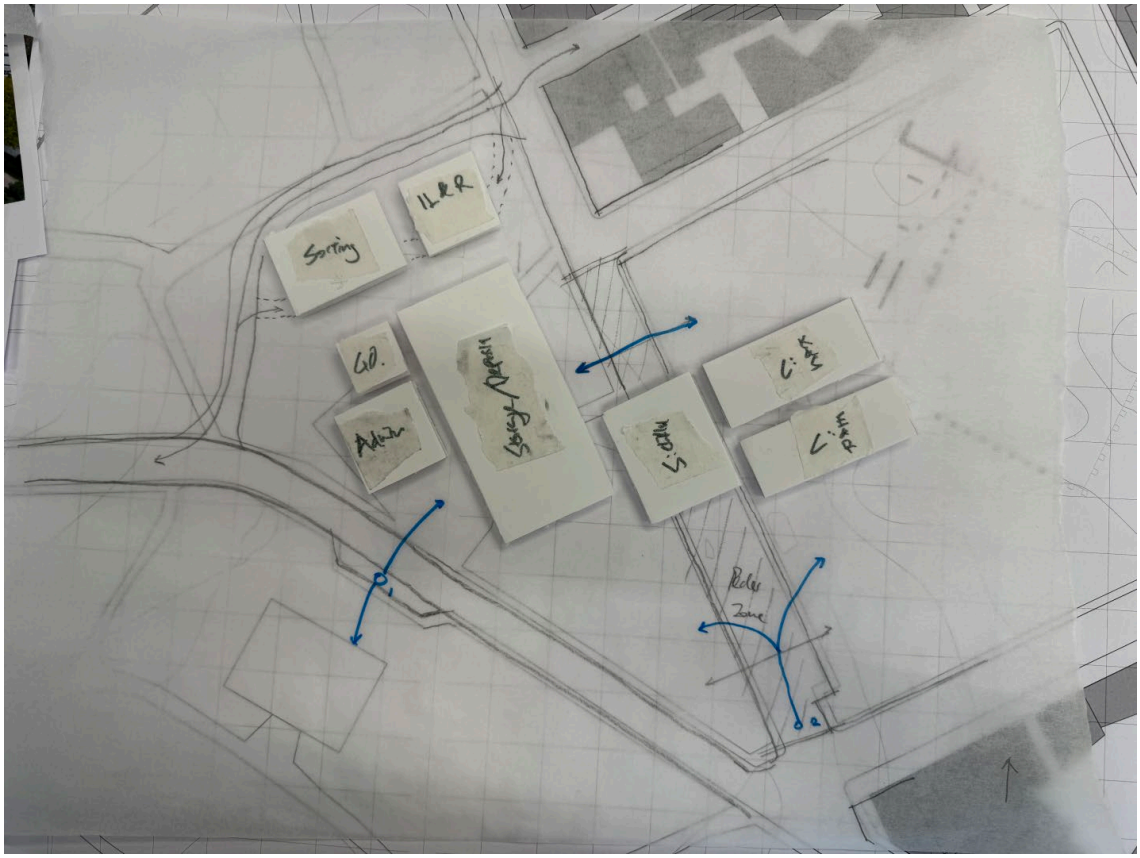




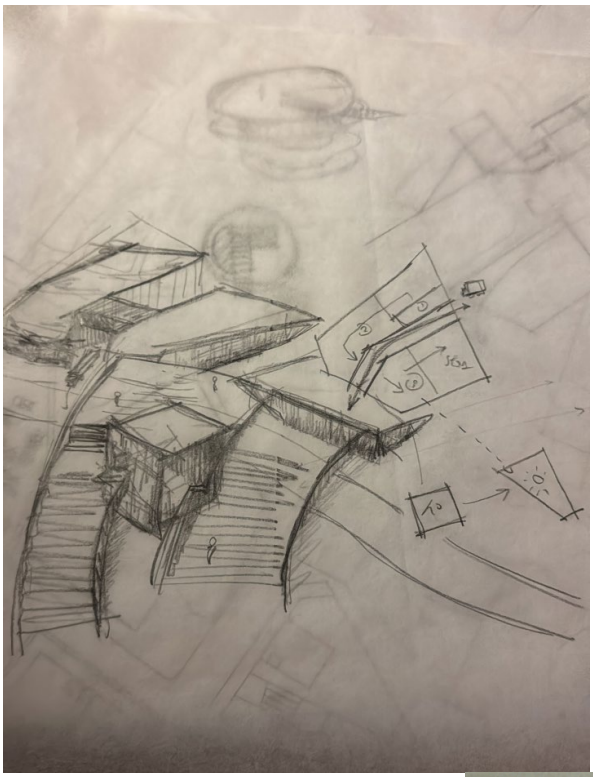
testing iterations.



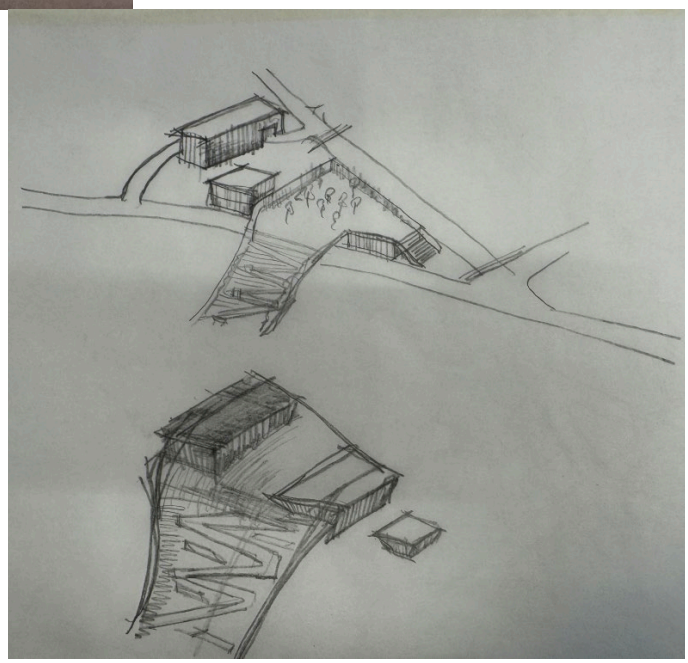
Developed program layout and flow.



sketches and more.

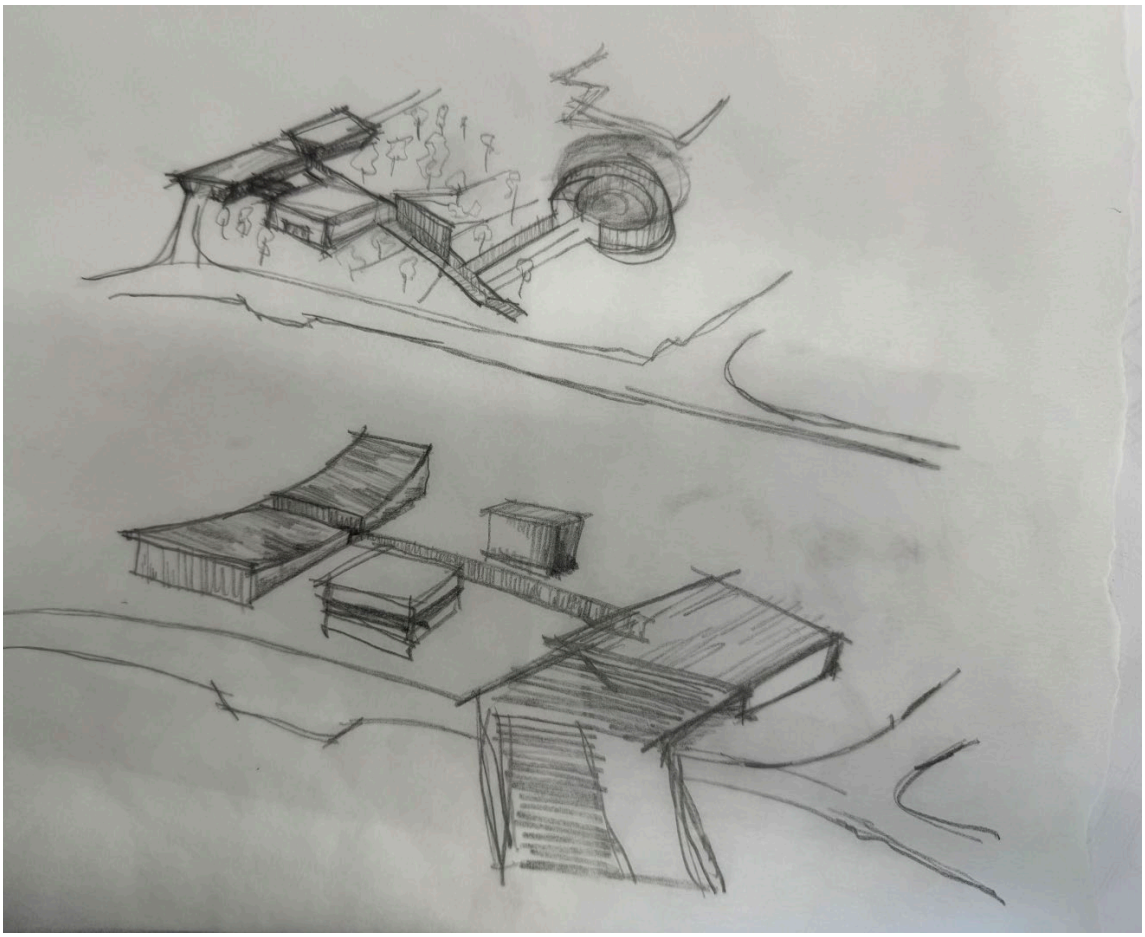


connecting landscape.



separate building programs

sub-terrain and sloped mass iterations.



site plan.

group site plan.

Week 7.4 Free Solo Week 1

Research Topics:

_Gravation and attraction of spaces: vs user interface
_Subterrean Spaces: Climate control

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6155650

composting plants.

Size & Scale

For 5,000 tonnes/year capacity (matching Athens food bank inedible waste):

Daily input: 19.2 tonnes

Footprint: 7,500 m² total (7.1% of 106,000 m² site)

Active composting: 1,500-2,500 m²

Curing: 2,500 m²

Storage/screening: 1,000 m²

Buffer/access: 2,000 m²

Total operational volume: 13,400 m³

Final yield: 2,500-3,000 tonnes/year finished compost

Garden Integration Concerns & Solutions

Garden Integration Concerns & Solutions
1. Pathogen Contamination (HIGHEST RISK)
Concern: E. coli, Salmonella surviving composting
Solution: Process to 55°C for 72 hours (PFRP standard), test every batch, apply 120 days before harvest, or use only for fruit trees/ornamentals, not annual vegetables

2. Heavy Metals
Concern: Packaging contaminants (lead, cadmium) accumulating in soil
Solution: Source-separated waste only, rigorous pre-sorting, meet EU Class A limits (Pb <100 mg/kg, Cd <1.5 mg/kg), annual testing

3. Compost Immaturity
Concern: Phytotoxins stunting plants, nitrogen tie-up
Solution: Germination index test >80% required, C:N ratio <15:1, minimum 90-day total process, temperature stable <35°C

4. Physical Contaminants
Concern: Glass, plastic, metal fragments
Solution: Two-stage screening (50mm + 10mm), magnetic separation, visual inspection, target <0.5% contamination

5. Persistent Chemicals
Concern: Pesticide residues, cleaning chemicals
Solution: Accept only known-source food bank waste (not industrial), composting dilutes/degrades most organics, bioassay testing

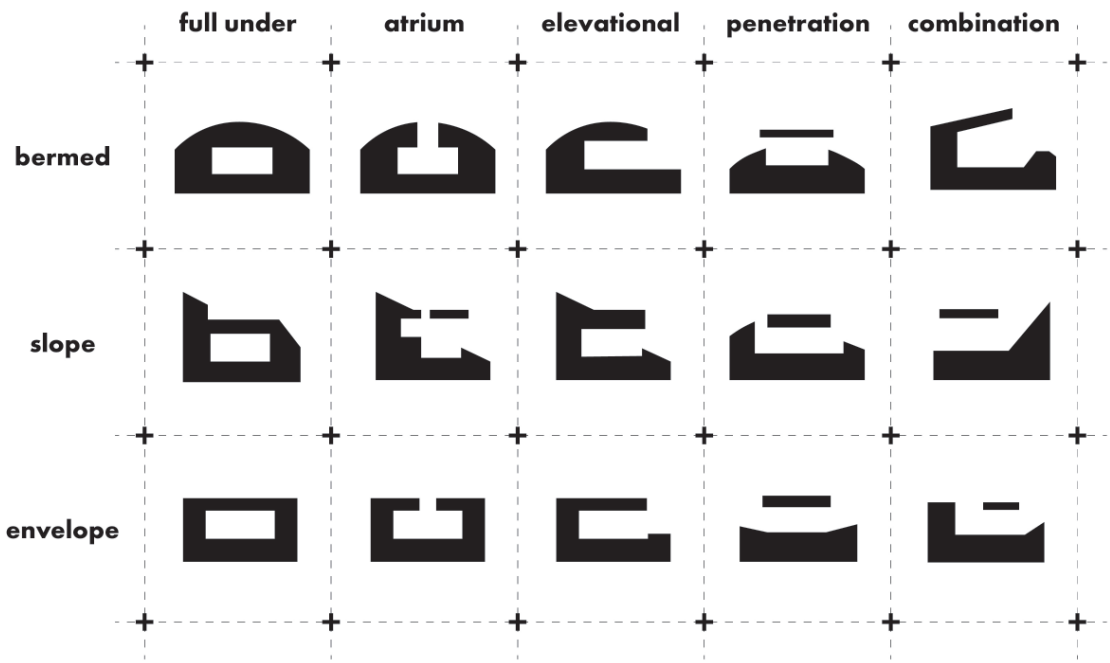
6. Odor & Vectors
Concern: Attracting rodents, creating nuisance odors
Solution: In-vessel systems with biofilter (nearly odor-free), proper moisture management (50-60%), screen all openings, locate downwind

Earth-Sheltered Architecture

introduction & typologies.

Underground architecture can be classified in several ways depending on different typologies, such as its function or purpose, construction method, relationship to the ground surface, and the type and position of openings connected to the surface. According to Akubue (2012), the main construction approaches include bermed or banked buildings, where earth is piled against the structure; the envelope type, where the building is surrounded by soil; and the true underground type, where the structure is fully embedded within the ground.

Akubue, J. (2012). Testing the Basements Thermal Performance as an Approach to the Earth-Sheltered Buildings Application at Hot Climates: Case Study (Egypt). Available from ResearchGate (accessed Mar 06, 2026).



Land Use Efficiencxy

Acoustic Isolation

Thermal Stability

Passive Design Potential

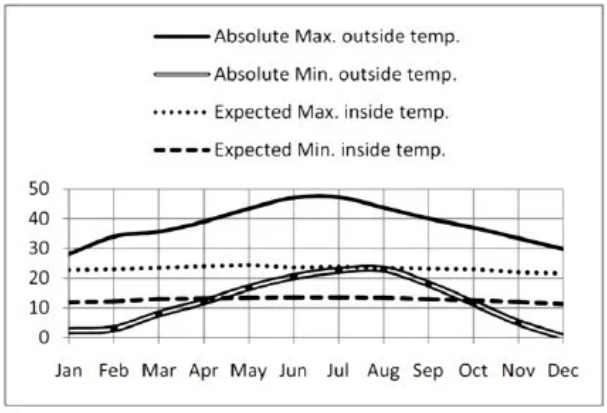
climate & temperature.

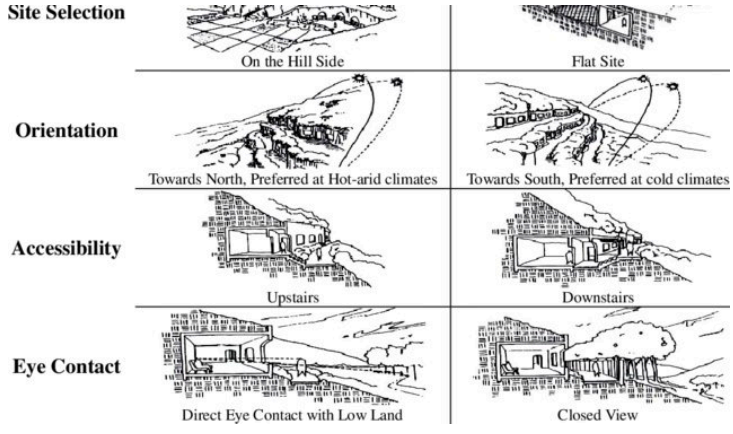
Most modern earth-sheltered buildings are constructed with concrete, which is able to absorb excess thermal energy from the surrounding soil. This stored heat is gradually released back into the building when the indoor air temperature falls below that of the thermal mass. Figure 2 illustrates the typical relationship between annual air temperatures and the corresponding temperature fluctuations beneath the ground surface (Khair-El-Din A. M., 1991).

Sherief A. Sheta (2010) identified four main reasons why earth-sheltered buildings can achieve energy savings:

Reduction of heat transfer through conduction due to the insulating effect of the surrounding earth mass.
Reduction of peak heating and cooling loads.
Improved control of air infiltration.
Passive cooling through evaporation resulting from vegetated or green roofs.

Source:
Testing the Basements Thermal Performance as an Approach to the Earth-Sheltered Buildings Application at Hot Climates: Case Study (Egypt). Available on ResearchGate (accessed Mar 06, 2026).



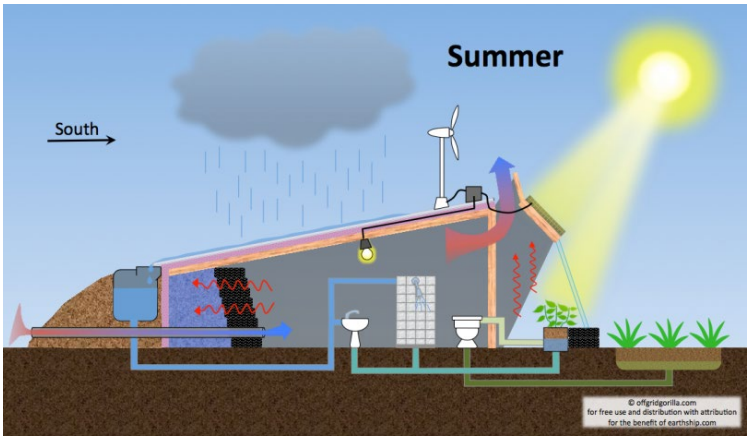


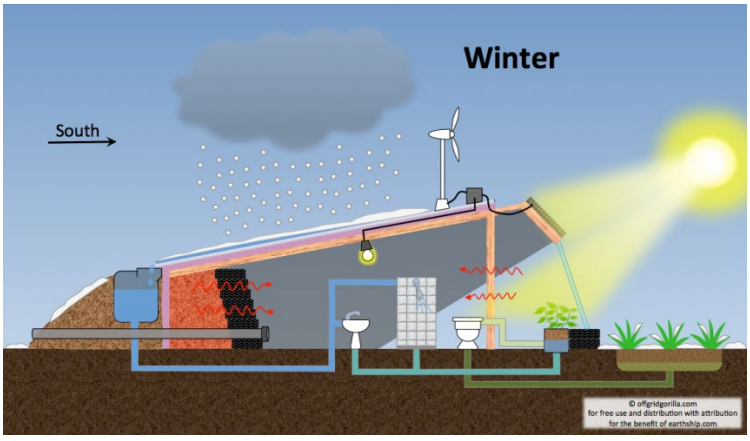
designing in different climates.

A key advantage of earth-sheltered and ground-coupled architecture is the use of passive thermal regulation provided by the surrounding soil mass. In both residential and large-scale buildings, earth berms and partially buried building envelopes can significantly influence indoor thermal conditions by acting as a form of natural insulation and thermal storage. Buildings designed with these strategies are often oriented to maximize solar exposure—typically with south-facing façades in the northern hemisphere—to enhance passive solar heat gain and daylight availability.

The earth surrounding the building envelope functions as a large thermal mass that moderates temperature fluctuations. Because the ground temperature remains relatively stable compared to outdoor air, soil in contact with the building absorbs heat during warmer periods and gradually releases it when external temperatures drop. This buffering effect reduces heat loss in winter and helps limit heat gain during summer, thereby stabilizing indoor temperatures and lowering the demand for mechanical heating and cooling systems. Studies on earth-sheltered and buried buildings indicate that this ground-coupling mechanism can significantly improve energy efficiency by exploiting the thermal storage capacity of soil and reducing exposure to extreme outdoor temperature variations.

In large-scale architectural applications, passive thermal control is typically combined with additional design strategies, including controlled natural ventilation, façade design, and the strategic placement of windows and openings. These elements facilitate airflow, solar gain management, and daylight distribution, forming an integrated passive environmental system that improves thermal comfort while minimizing operational energy use.





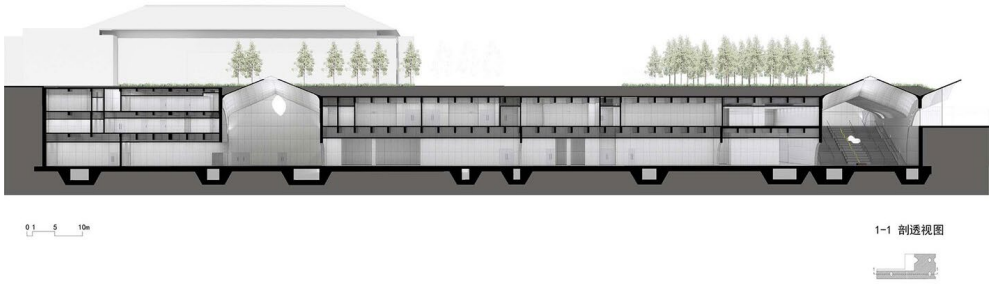
https://offgridgorilladotcom.wordpress.com/off-grid-systems/heating-cooling/earth-sheltered-homes/

case study

Deep Time Palace_Wutopia Lab.

The building has a vertical difference of 7.2 meters from north to south. The GFA is around 16,650 square meters. A burial depth of 17.67 meters is on the northern side of the art museum, and at the plaza entrance on the southern side, it is 10.47 meters. The closest distance between the deep foundation pit of the art museum and the original palace walls and fortifications is about 450mm, necessitating the installation of continuously drilled piles and tie rods.

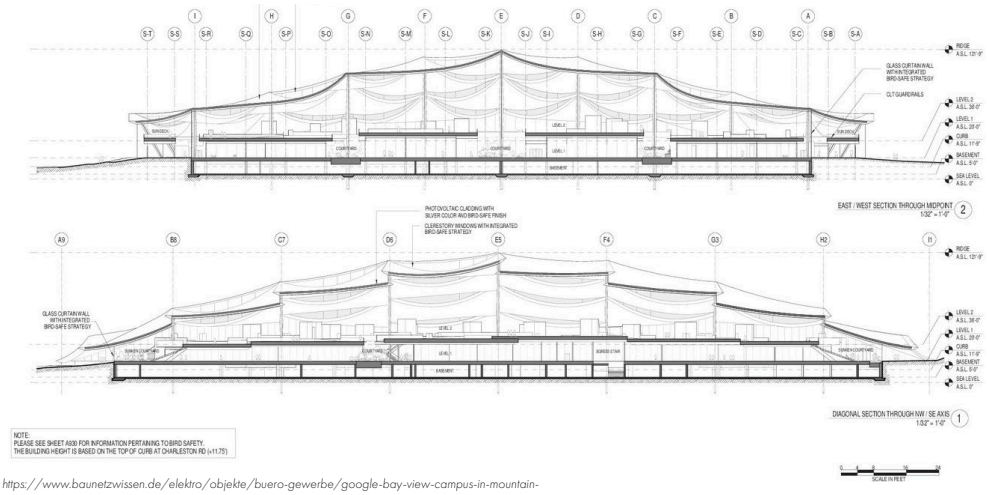
As the building sits within Manchurian Regime Palace historical complex, a sensitive area. Therefore the architects hide the museum underground to avoid disturbing the historical environment and skyline. As the same time, it keeps the landscape visually intact and respectful to the surrounding monuments.



Google Bay View Campus.

A central climate strategy is the integration of the largest geothermal pile system in North America. Roughly 100 miles of geothermal piping are embedded within the structural foundation piles, enabling heat exchange with the ground's stable temperature. During summer, excess building heat is transferred into the soil, while in winter stored ground heat is returned to the building, reducing carbon emissions by around 50 % and lowering cooling water demand by about 90 %.

Spatial organization also supports environmental performance. Workspaces are located on the upper level under a large-span canopy, while communal functions—cafés, meeting areas, and circulation spaces—occupy the lower level. This vertical zoning allows thermal buffering and acoustic separation, while courtyards and clerestory glazing deliver diffused daylight and natural ventilation pathways.



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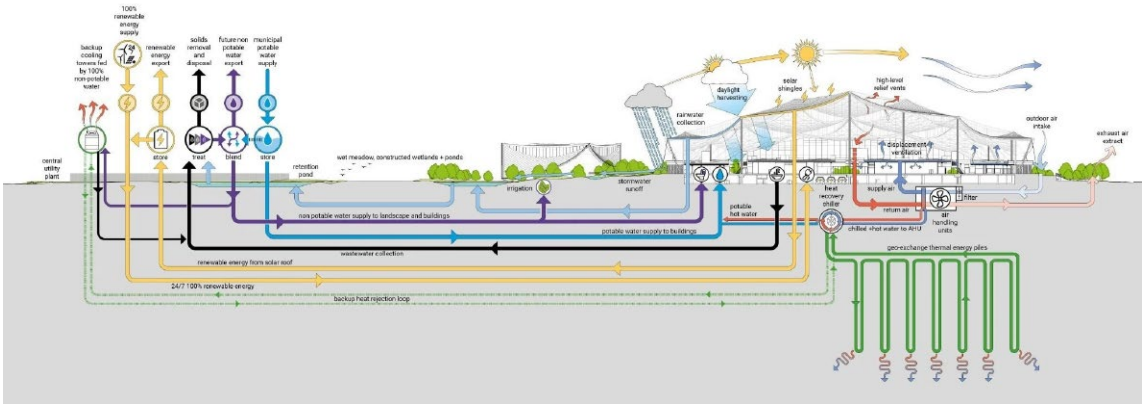
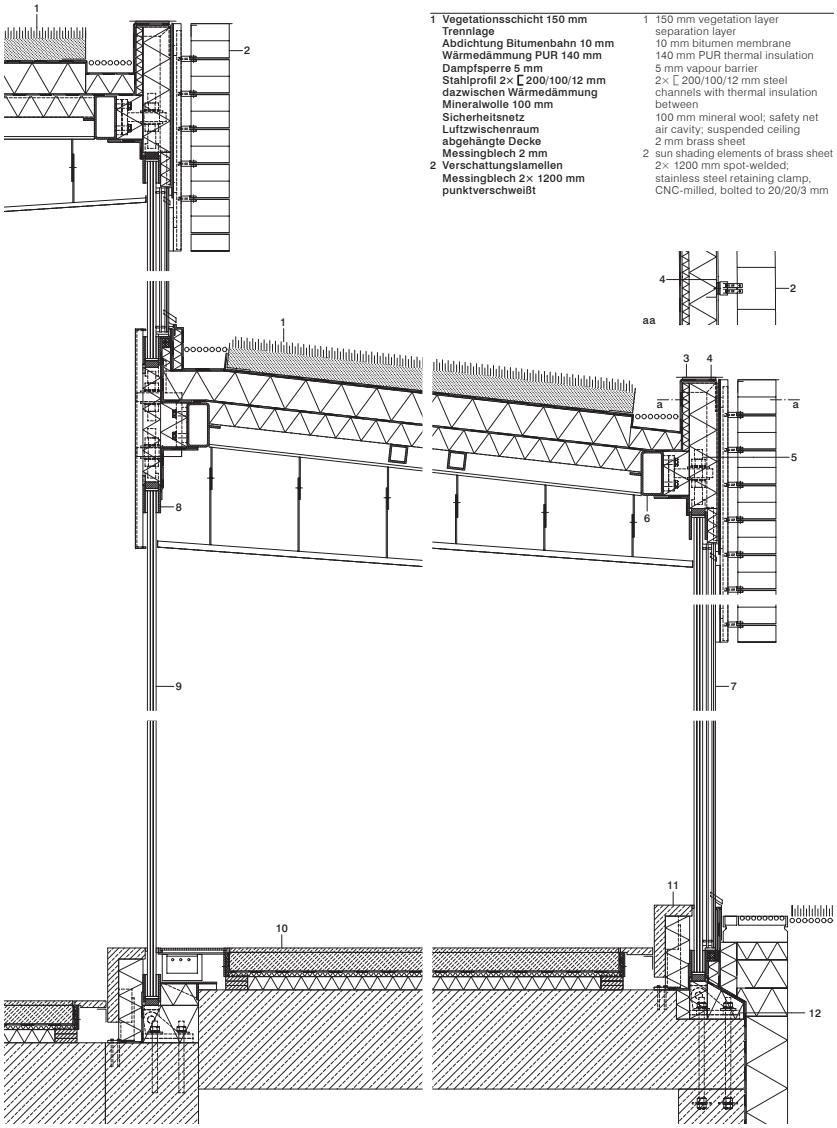


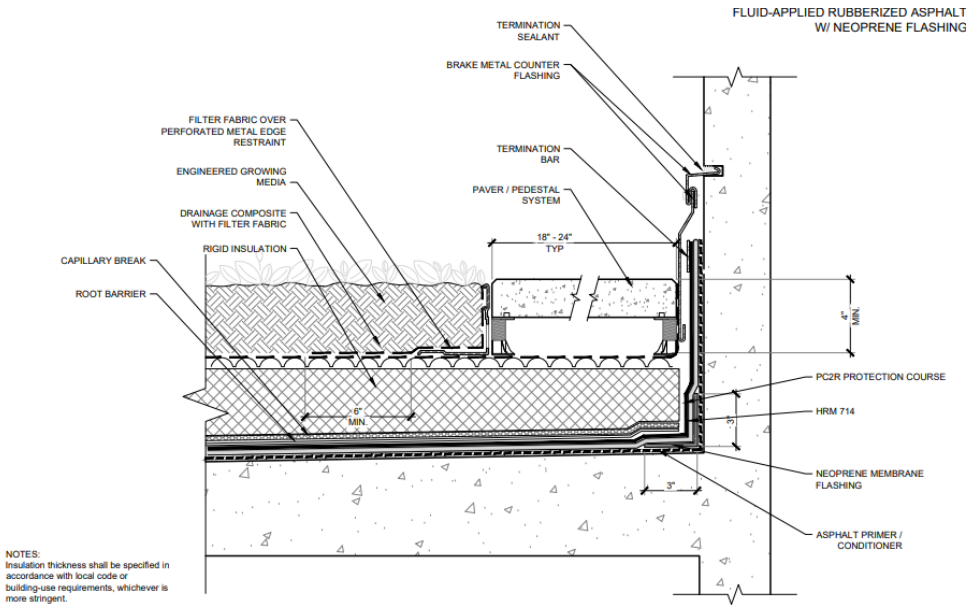
https://www.srgnc.com/google-bay-view-sustainability

details.

Musée Atelier_Audemars Piguet



Vertikalschnitt • Horizontalschnitt **Maßstab 1:20**	Vertical section • horizontal section scale 1:20
1 Vegetationsschicht 150 mm **Trennlage** **Abdichtung Bitumenbahn 10 mm** **Wärmedämmung PUR 140 mm** **Dampfsperre 5 mm** **Stahlprofil 2× ⊏200/100/12 mm** **dazwischen Wärmedämmung** **Mineralwolle 100 mm** **Sicherheitsnetz** **Luftzwischenraum** **abgehängte Decke** **Messingblech 2 mm**	1 150 mm vegetation layer separation layer 10 mm bitumen membrane 140 mm PUR thermal insulation 5 mm vapour barrier 2× ⊏ 200/100/12 mm steel channels with thermal insulation between 100 mm mineral wool; safety net air cavity; suspended ceiling 2 mm brass sheet
2 Verschattungslamellen **Messingblech 2× 1200 mm** **punktverschweißt**	2 sun shading elements of brass sheet 2× 1200 mm spot-welded; stainless steel retaining clamp, CNC-milled, bolted to 20/20/3 mm



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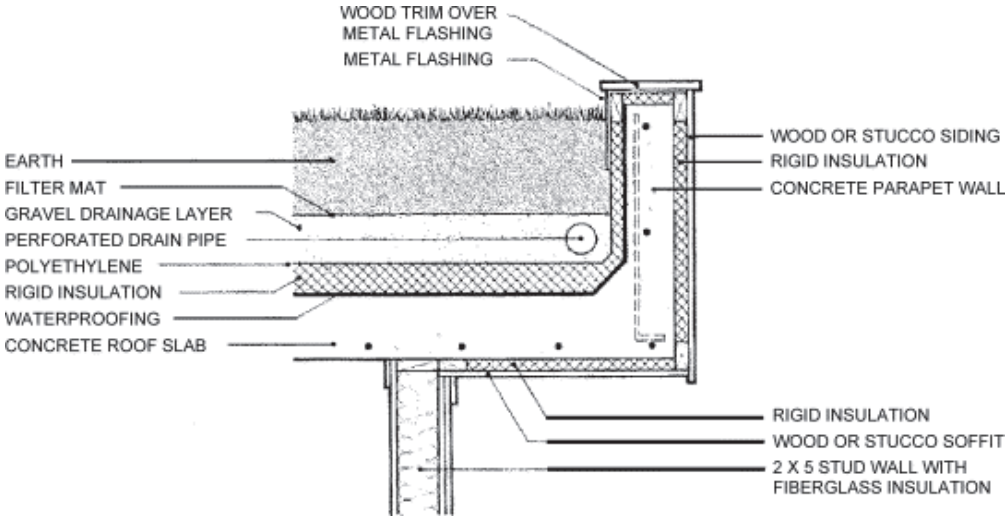

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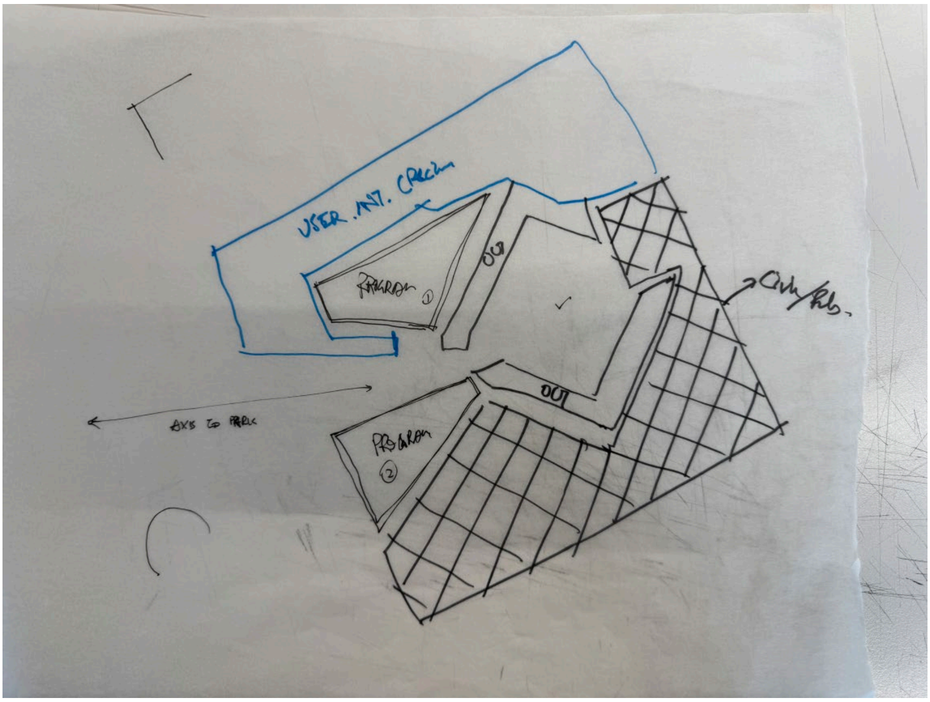
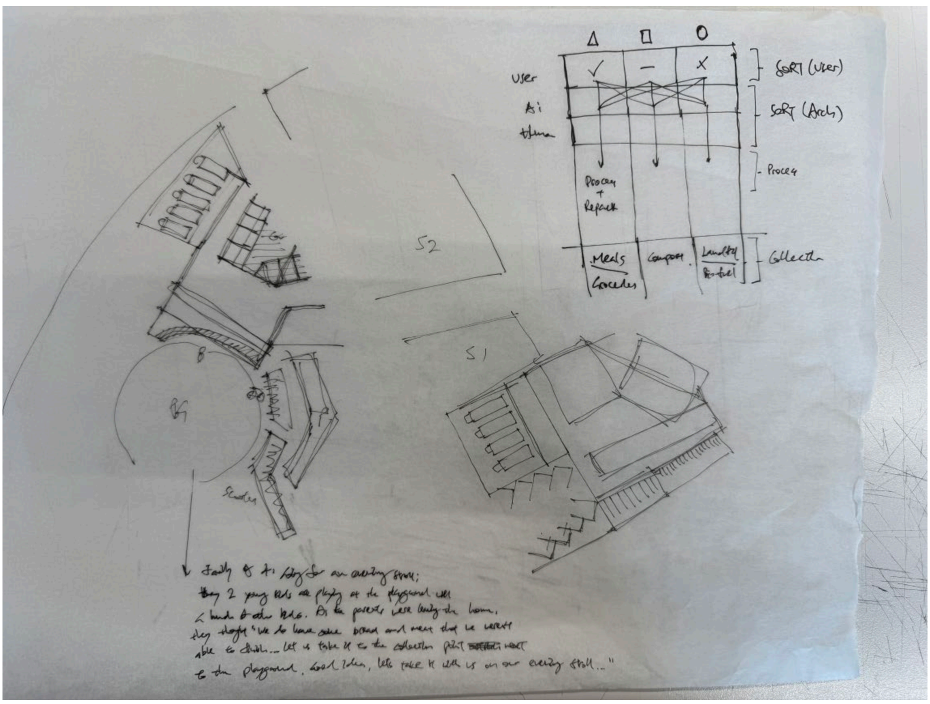
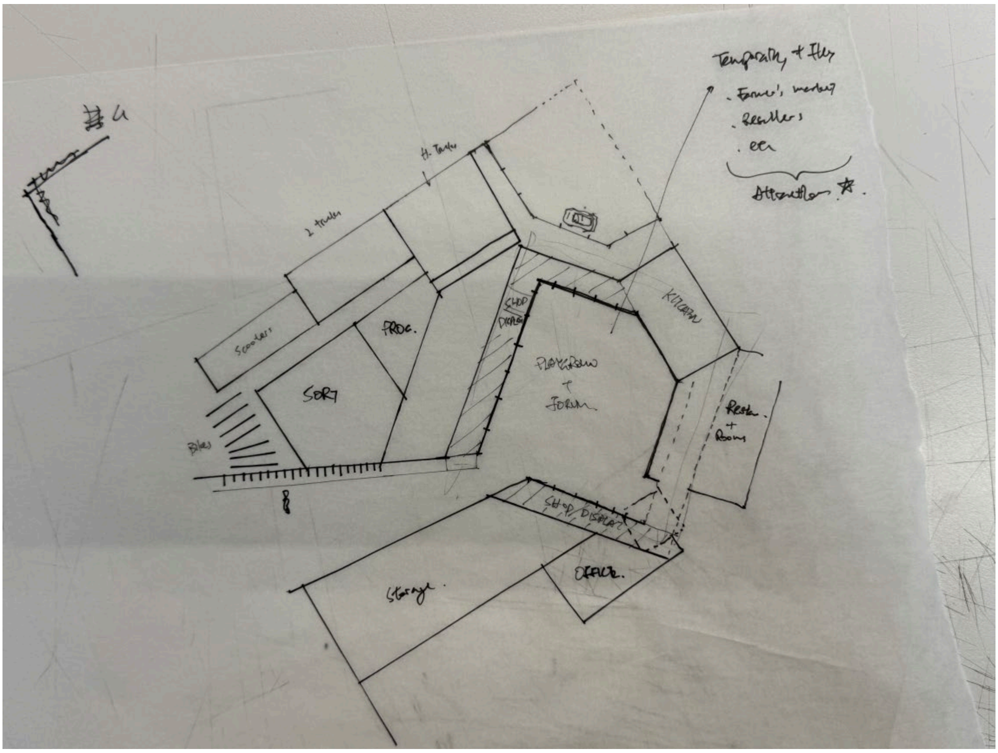
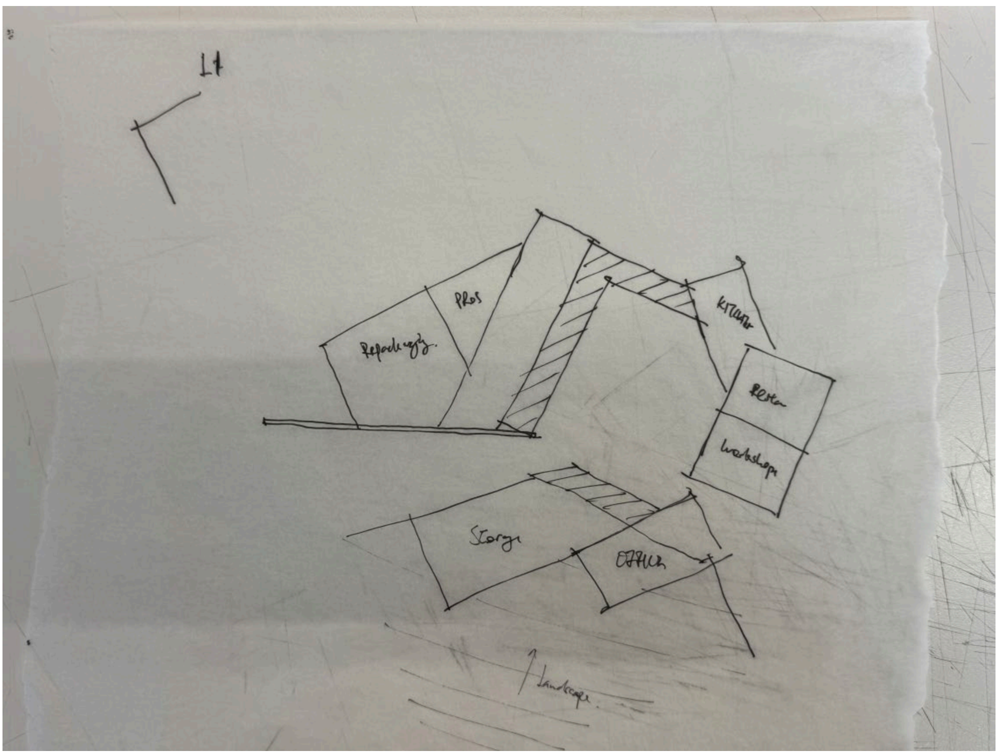
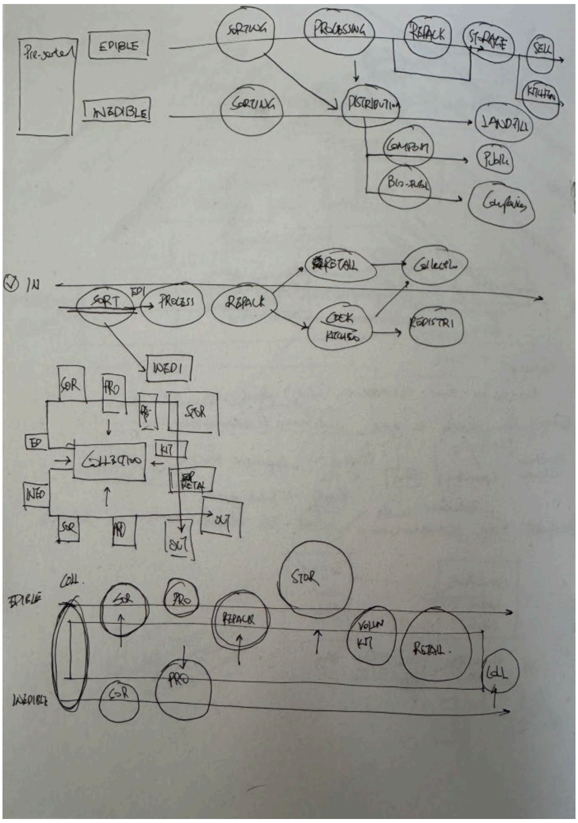
drawings.


OUT
OUT


SORT (User)
SORT (Arch)
Process
Meals
Compost
Collection
S2
S1


SORT
PROC.
KITCHEN
PLAYGROUND
+
FORUM
SHOP DISPLAY
OFFICE.
Storage.


PROS
KITCHEN
Resta
Workshops
Storage
OFFICE
Landscape.


EDIBLE
SORTING
PROCESSING
REPACK
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DISTRIBUTION
LANDFILL
COMPOST
SORT
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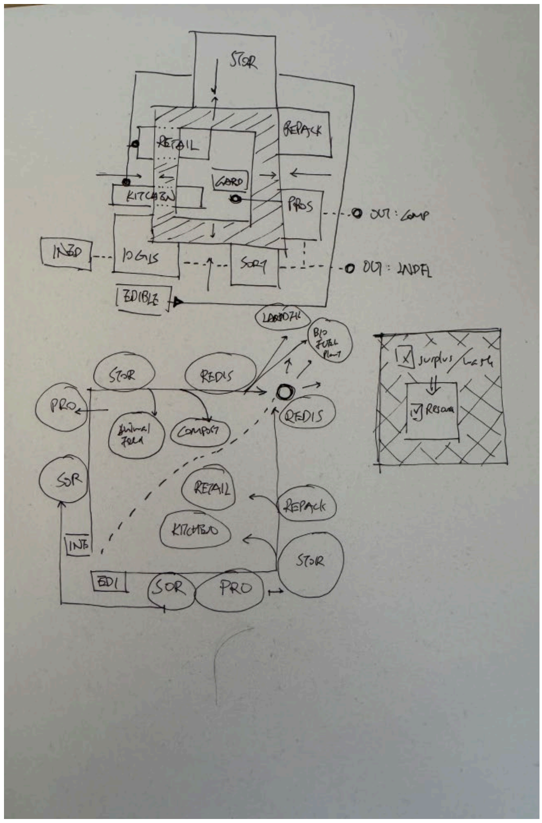
REPACK
RETAIL


STOR
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KITCHEN
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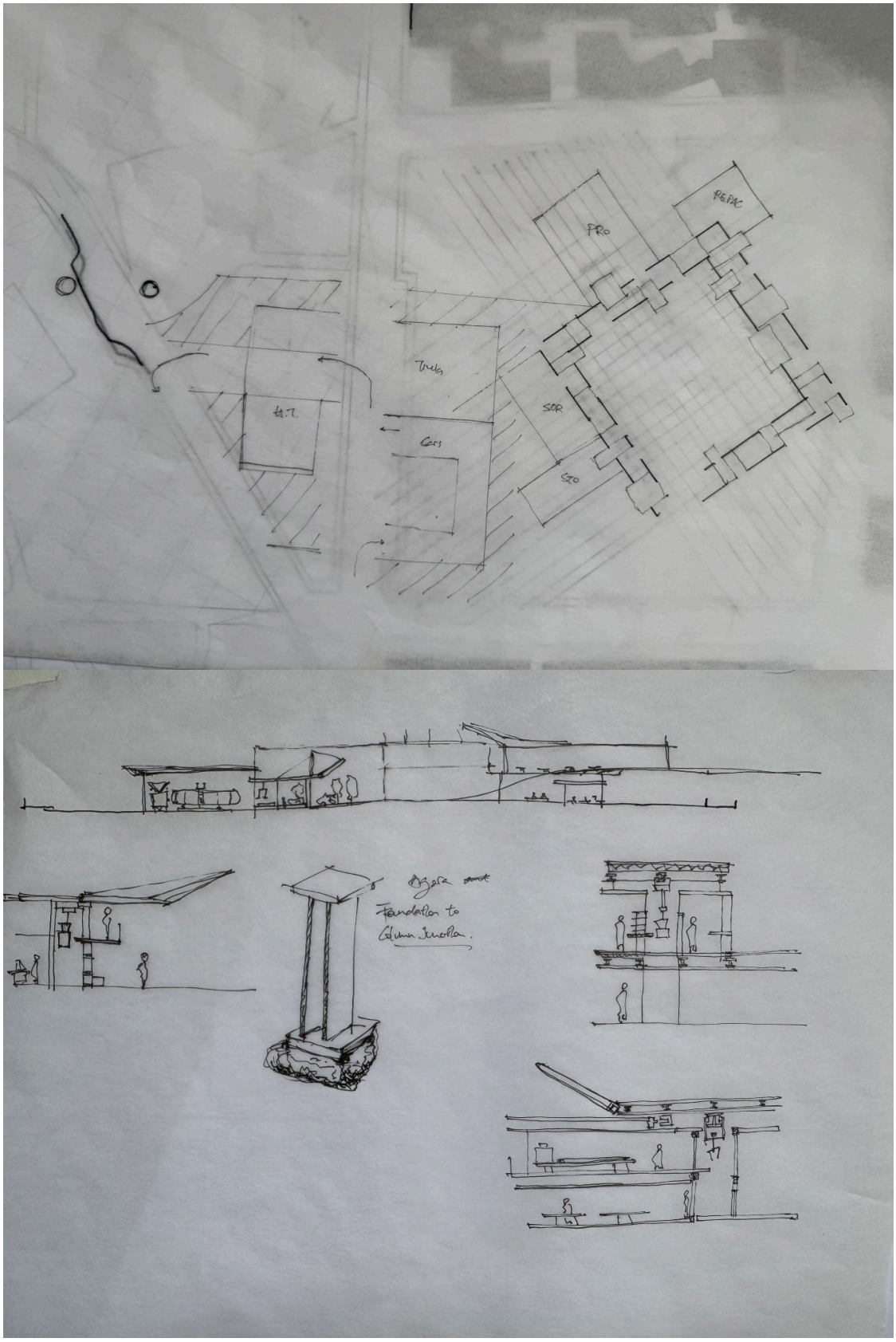
PRO


PRO
SOR
Foundation to
Column


LAYBY
— underground.


KITCHEN
REST.

Week 7.5 Free Solo Week 2

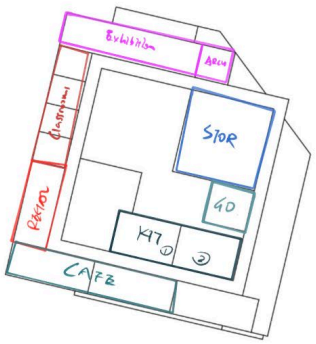
_Floor plan iterations x2
_Micro spaces/ Urban Spaces

Ip Ho Nam
6155650

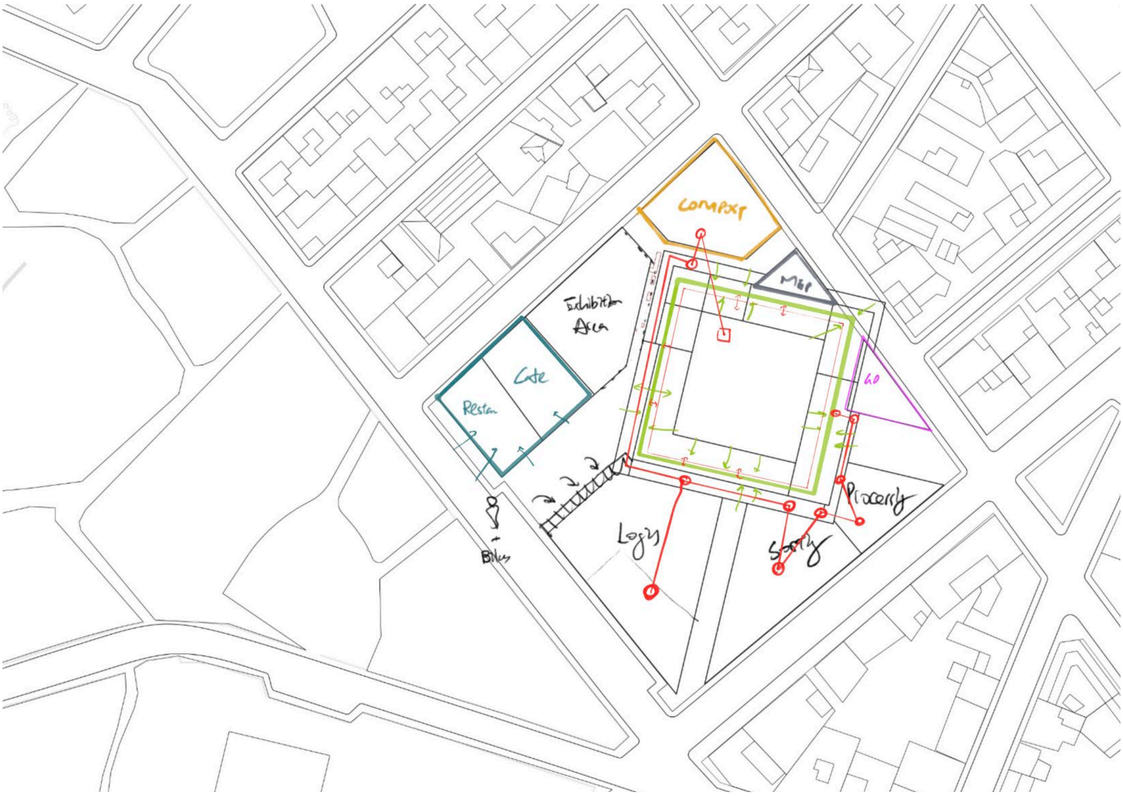
scheme 1


Compost Plant
MEP
Sort
AD
Process
MEP


Compost
MEP
Sort
AD
Process
logis (N)
MEP


STOR
AD
CAFE

scheme 2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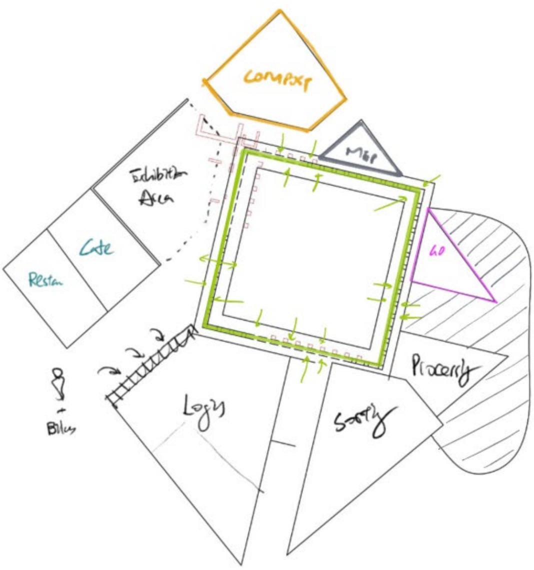
Sorting
Processing
Bikes


COMPOST
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Exhibition Area
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Sorting
Processing
Bikes


CIVIC
ADMIN
TREATMENT

life between buildings.

Jan Gehl

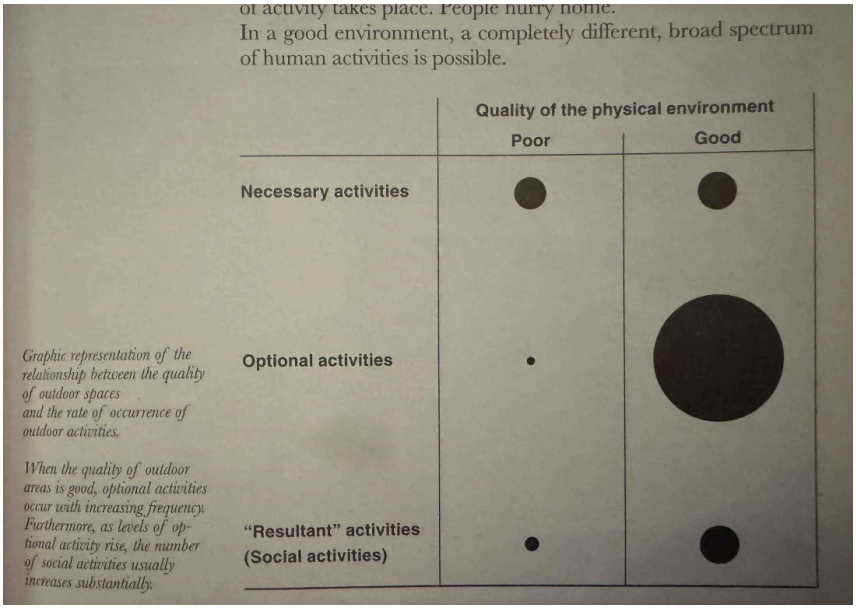
The 5 km/h Perspective: Humans are biologically designed to walk at about 5 km/h (3 mph). Modern cities are often designed for 60 km/h (car speed). This results in "boring" architecture—large, repetitive facades that feel alienating to a pedestrian.

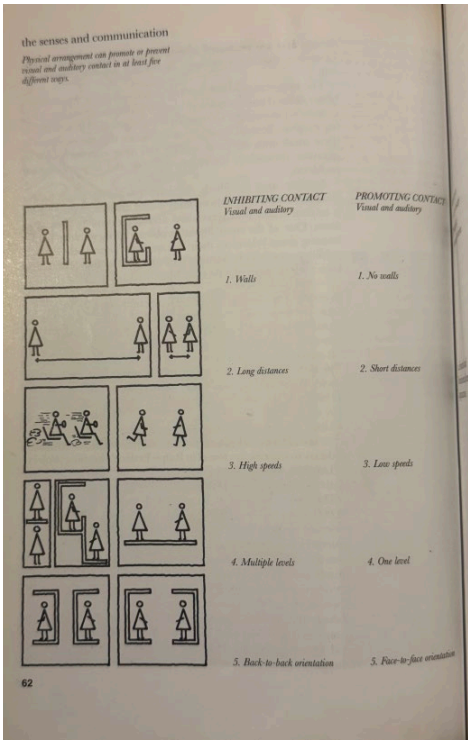
The "Edge Effect": Humans naturally gravitate toward edges (the perimeter of a square or the front of a building) because they offer a sense of security while allowing us to observe the "open" space.

The Senses: Our vision and hearing have limits. Gehl notes that we can only truly see facial expressions at about 25 meters. Design that respects these physical limits feels "cozy" and safe.

Small-Scale Details: High-quality paving, good lighting, and "integrated" seating (like stairs or low walls) encourage people to stay rather than just pass through.

"A good city is like a good party—people stay much longer than really necessary because they are enjoying themselves." — Jan Gehl



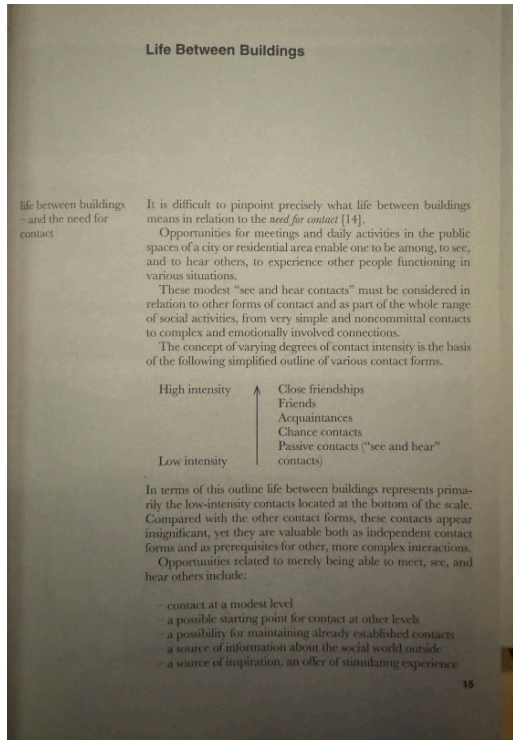


the senses and communication

Physical arrangement can promote or prevent visual and auditory contact in at least five different ways.

	INHIBITING CONTACT Visual and auditory	*PROMOTING CONTACT* Visual and auditory
1.	*Walls*	*No walls*
2.	*Long distances*	*Short distances*
3.	*High speeds*	*Low speeds*
4.	*Multiple levels*	*One level*
5.	*Back-to-back orientation*	*Face-to-face orientation*

62



Life Between Buildings

life between buildings – and the need for contact

It is difficult to pinpoint precisely what life between buildings means in relation to the *need for contact* [14].

Opportunities for meetings and daily activities in the public spaces of a city or residential area enable one to be among, to see, and to hear others, to experience other people functioning in various situations.

These modest "see and hear contacts" must be considered in relation to other forms of contact and as part of the whole range of social activities, from very simple and noncommittal contacts to complex and emotionally involved connections.

The concept of varying degrees of contact intensity is the basis of the following simplified outline of various contact forms.

High intensity ↑ Low intensity

- Close friendships
- Friends
- Acquaintances
- Chance contacts
- Passive contacts ("see and hear" contacts)

In terms of this outline life between buildings represents primarily the low-intensity contacts located at the bottom of the scale. Compared with the other contact forms, these contacts appear insignificant, yet they are valuable both as independent contact forms and as prerequisites for other, more complex interactions.

Opportunities related to merely being able to meet, see, and hear others include:

- contact at a modest level
- a possible starting point for contact at other levels
- a possibility for maintaining already established contacts
- a source of information about the social world outside
- a source of inspiration, an offer of stimulating experience

15

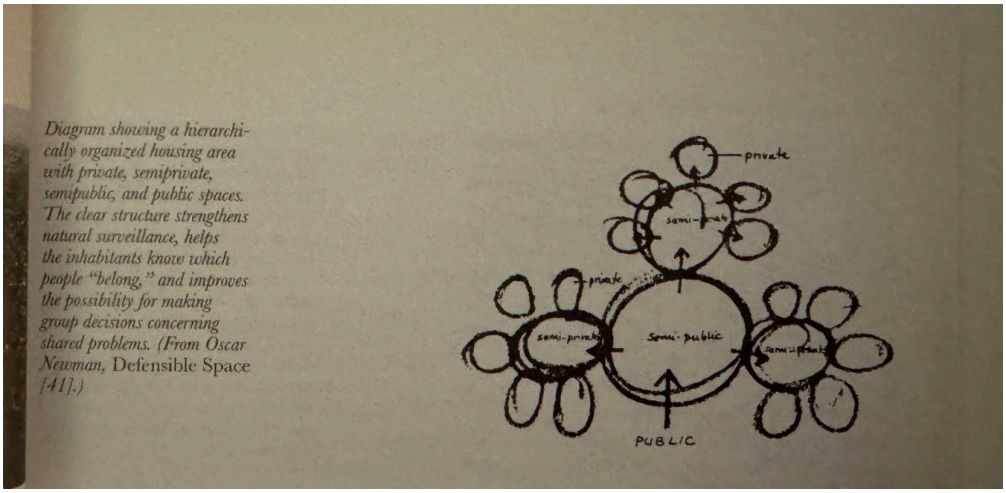


Diagram showing a hierarchically organized housing area with private, semiprivate, semipublic, and public spaces. The clear structure strengthens natural surveillance, helps the inhabitants know which people "belong," and improves the possibility for making group decisions concerning shared problems. (From Oscar Newman, Defensible Space *[41].)*

the Social Life of Small Urban Spaces.

William H. Whyte

Food, Vendors, and Everyday Activity

Whyte shows that the presence of food—carts, kiosks, and nearby cafes—greatly increases the vitality of public spaces. Vendors act as magnets, drawing pedestrians, giving them a reason to stop, and generating repeat use at predictable times of day. Far from being a nuisance, small-scale commercial activity provides basic amenities and helps sustain a continuous, watchful presence of people in the space.

"Undesirables" and Defensive Design

A notable chapter addresses fear of "undesirables"—people perceived as threatening or marginal—and the tendency of designers and property owners to remove amenities to keep them away. Whyte argues that measures meant to exclude certain users, such as removing benches or designing hostile seating, often make spaces worse for everyone while doing little to solve underlying social problems. His observation is that more people and more ordinary activity generally improve safety through mutual visibility and informal social control.

Smaller Cities and Secondary Contexts

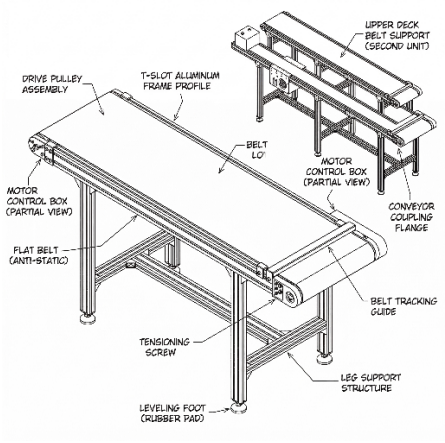
Whyte also discusses how his findings apply in smaller cities, where lower densities make it harder to generate the same intensity of street life. He observes that dispersing uses and over-providing parking can drain vitality from down-towns, whereas concentrating activity, preserving historic fabric, and creating compact, well-connected public spaces can restore urban life. These insights highlight that design and land-use decisions interact with demographics and economics to shape public space performance

personal design considerations.

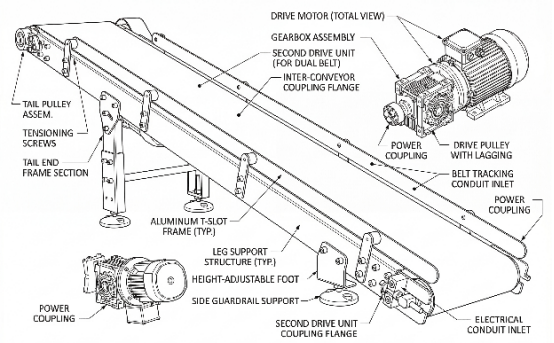
People attracts People
People like well defined spaces
Eye-level
Chairs: move 6-8 inches, the exercise of of choice is satisfying
> If you want to seed a plaza with activity, put out food>
Push cart vendors: but hygiene concerns
Sometimes bunching facility (food): people are compressed in meeting one another, striking up convos

conveyor systems.

Flat belt conveyor

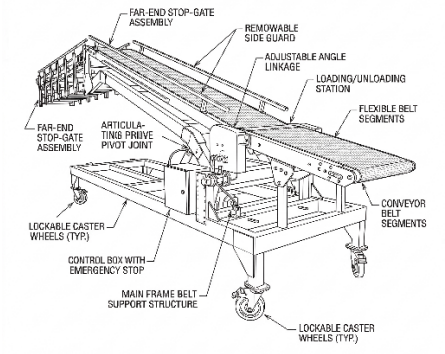


Take up conveyor

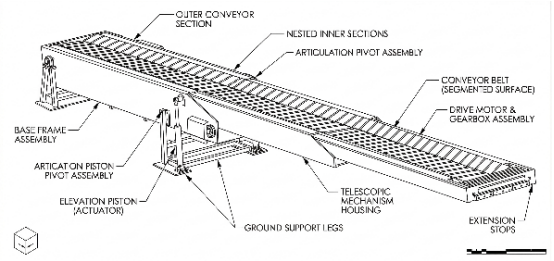


Take Up Conveyor System

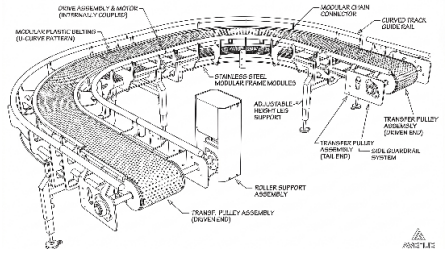
Loading/Unloading Conveyor



Telescopic Conveyor



Modular Belt Conveyor



Internal Transport Systems: Options, Pros, and Cons

Systems compared

System	Typical use in food bank	Pros	Cons
Manual pallet jacks & hand carts	Short-distance pallet and case moves in receiving, sorting, and staging areas.	Very low capital cost, minimal maintenance, no licensing; easy to train volunteers; highly flexible to layout changes.	Labor-intensive for longer distances; lower throughput; ergonomic risk for heavy or frequent moves; limited to relatively flat, unobstructed floors.
Forklifts & reach trucks	Moving pallets from dock to storage and racking, replenishment, loading outbound vehicles, often in cold storage or narrow aisles.	High lifting capacity and vertical reach; efficient pallet handling; electric models suit indoor and cold-storage food environments; proven technology with wide service support.	Higher capital cost; requires trained and often certified operators; safety risks in tight, people-heavy areas; needs sufficient aisle width and good floor quality.
Powered belt/roller conveyors	Continuous flow of cartons or totes between zones (receiving–sorting–packing–shipping) and along docks.	High throughput and consistent flow; good for standardized cartons/totes; can bridge longer distances and elevation changes; reduces manual handling and travel time.	Fixed infrastructure that is costly to design, install, and reconfigure; consumes constant power; can obstruct floor space and create single points of failure; requires regular maintenance.
Overhead / suspension rail (monorail) conveyors	Moving empty or full cartons/totes or hanging containers above work areas, often for order fulfillment or carton delivery/removal.	Uses otherwise unused overhead space and frees floor for pallets and people; reduces clutter and trip hazards; can deliver totes/cartons at ergonomic heights; supports continuous, **high-speed flows.**	Higher initial engineering and structure cost; layout is relatively fixed; not ideal if roof/structure cannot support loads; changes require specialized contractors; cleaning and hygiene must be managed at height.
Tuggers with tow carts	Batch movement of multiple pallets or carts between zones (e.g., dock to storage, storage to pick area) on defined routes.	**Higher payload** per operator trip than a single pallet jack; flexible routes; can be a stepping-stone toward AGV tug systems; lower cost than full conveyor networks.	Still driver-dependent; turning radii and train length can be challenging in tight aisles; requires clear pathways and some traffic management.
AGVs/AMRs (mobile robots)	Automated pallet or cart transport between docks, storage, and picking/packing areas, especially in facilities seeking reduced manual travel.	Very flexible routes and easily reconfigurable in software; installation often requires little building modification; energy use is on-demand rather than constant; can run with **minimal labor intervention** and integrate with existing equipment.	Higher upfront system cost and integration effort; depend on reliable Wi-Fi, charging, and safety infrastructure; throughput may not match high-capacity conveyors for very heavy flows; requires technical support capabilities.

themes.

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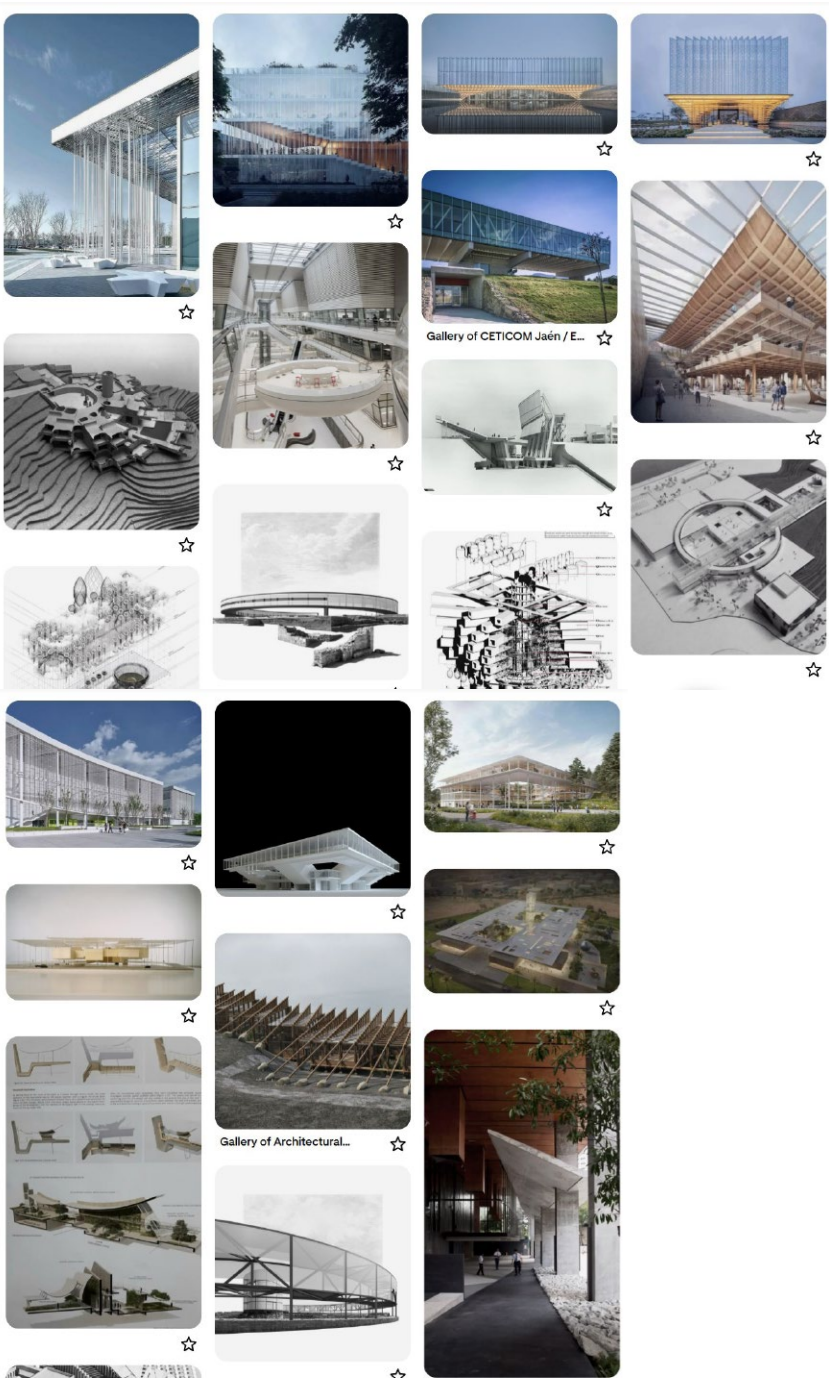

iterations.

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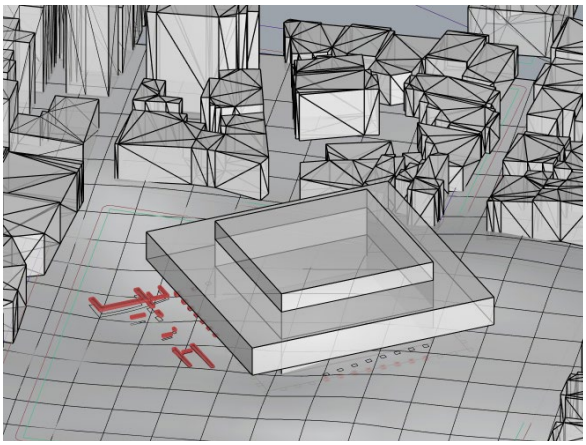
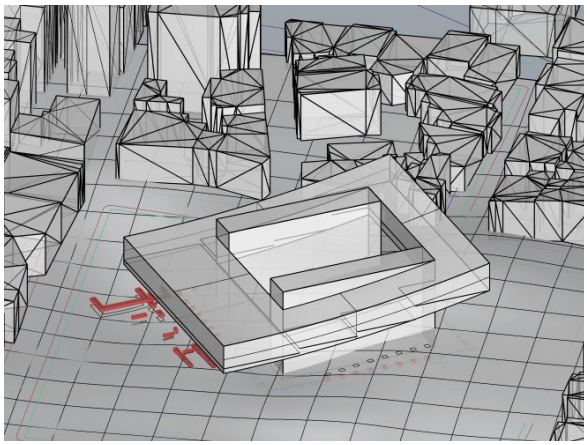
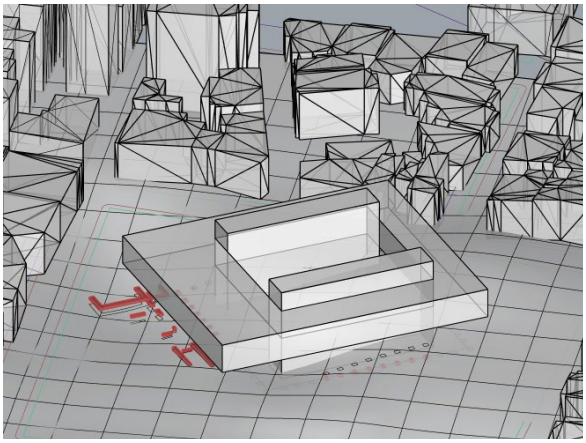
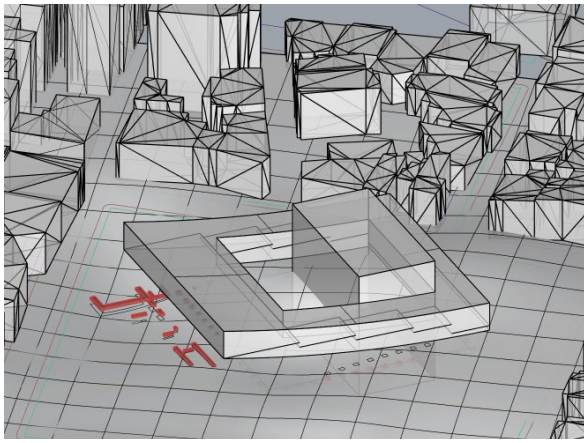
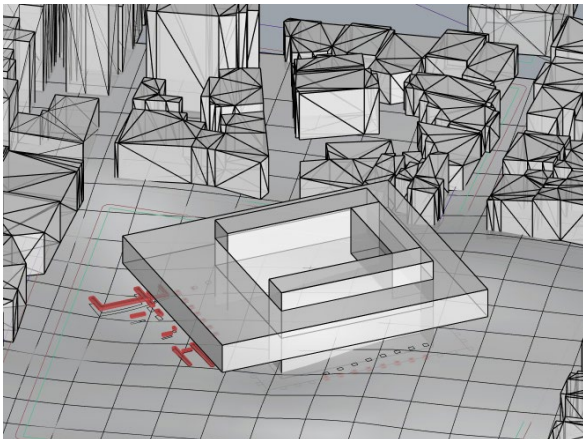




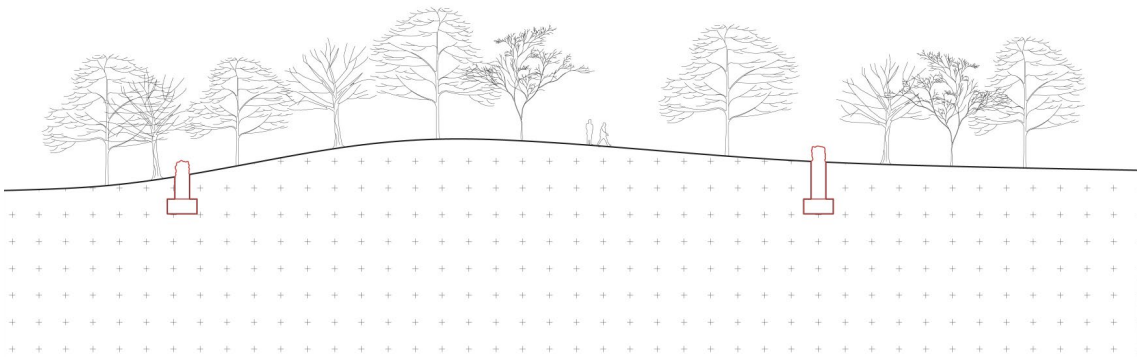




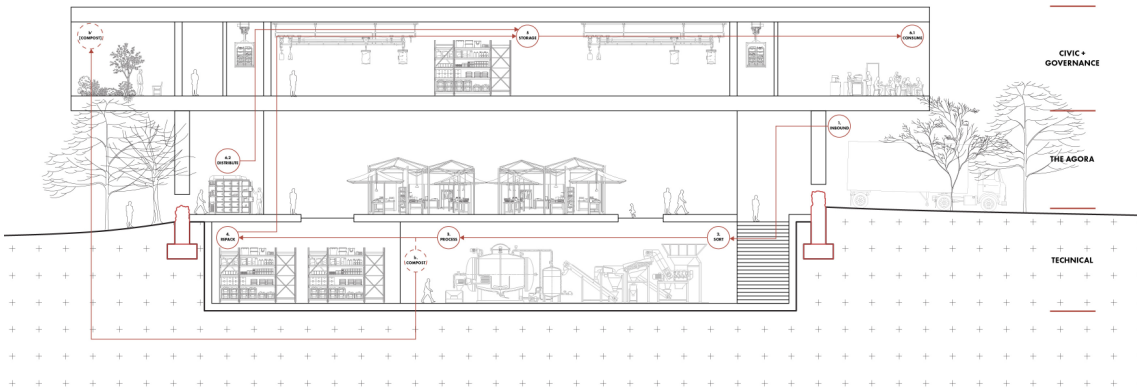


concept and flow.

existing.



proposal.



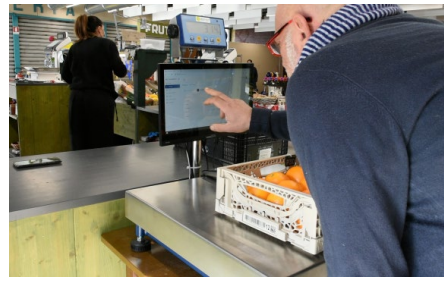
ai insirations.

sub terrean iterations.

systems.

FOOD MARKET 4.0 DASHBOARD: DESIGN AND PROTOTYPING

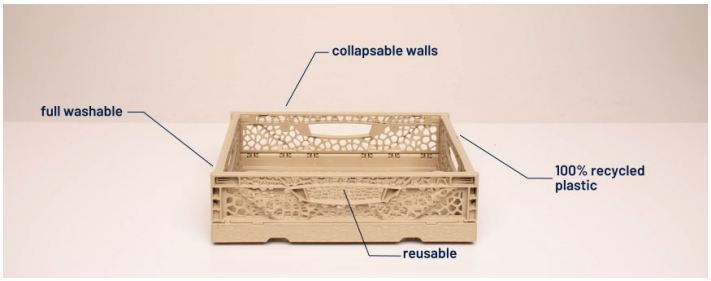
The Food Market 4.0 Dashboard (FM4.0D) is part of the EU-funded REFLOW project, and it's all about making city food systems smarter, less wasteful, and more connected. The project focuses on local markets in Milan, where a lot of food distribution still relies on manual processes and limited data tracking.

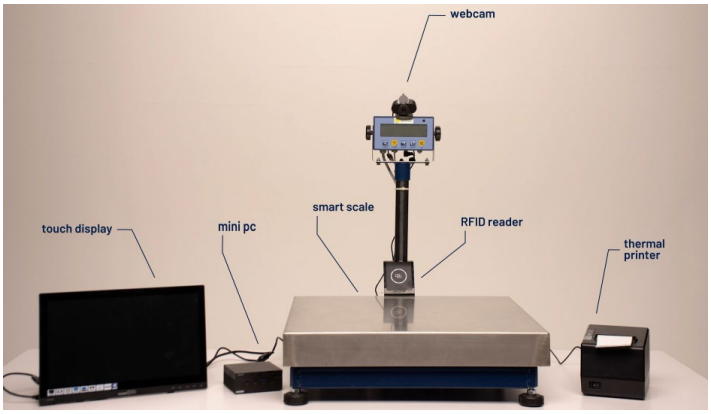


What they're building is essentially a digital tracking system for food flows. Using tools like RFID-tagged reusable crates, smart scales, and sensor-equipped entry points ("smart gates"), the system collects real-time data on how food moves through markets—from delivery to sale. All of this information feeds into a central dashboard, giving vendors and operators better insight into stock levels, sales, and waste.

The scope goes beyond just one market. While it starts locally, the idea is to scale this system across multiple markets and eventually connect the whole supply chain—from wholesale distribution to last-mile delivery. The bigger goal is to support a circular food economy, where resources are used more efficiently and waste is minimized.

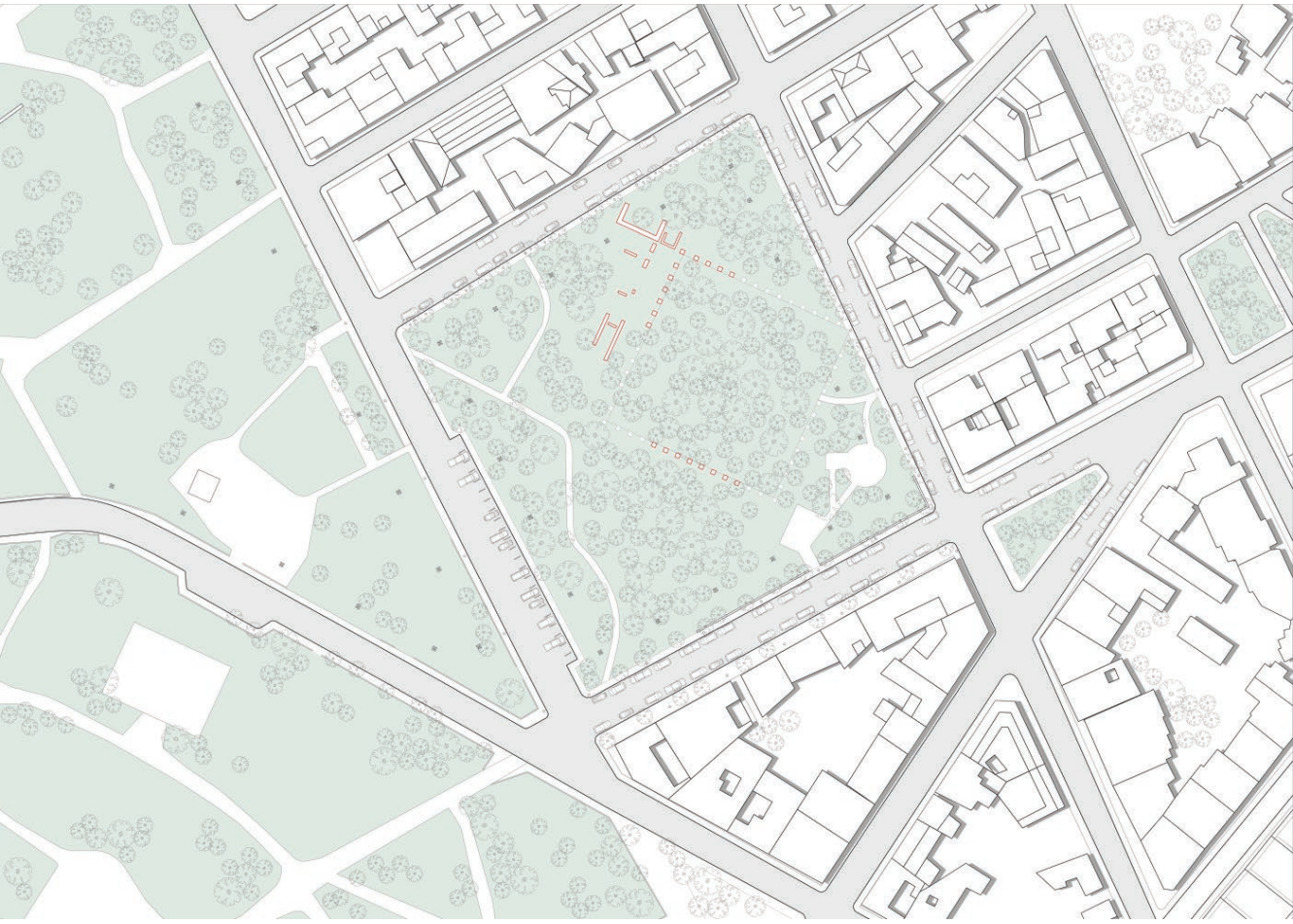
One interesting aspect is the project's open and practical approach. Many of the tools are designed to be adaptable and accessible, even for smaller vendors who aren't very tech-savvy. It shows how digital tools can realistically fit into traditional market environments without overcomplicating things.



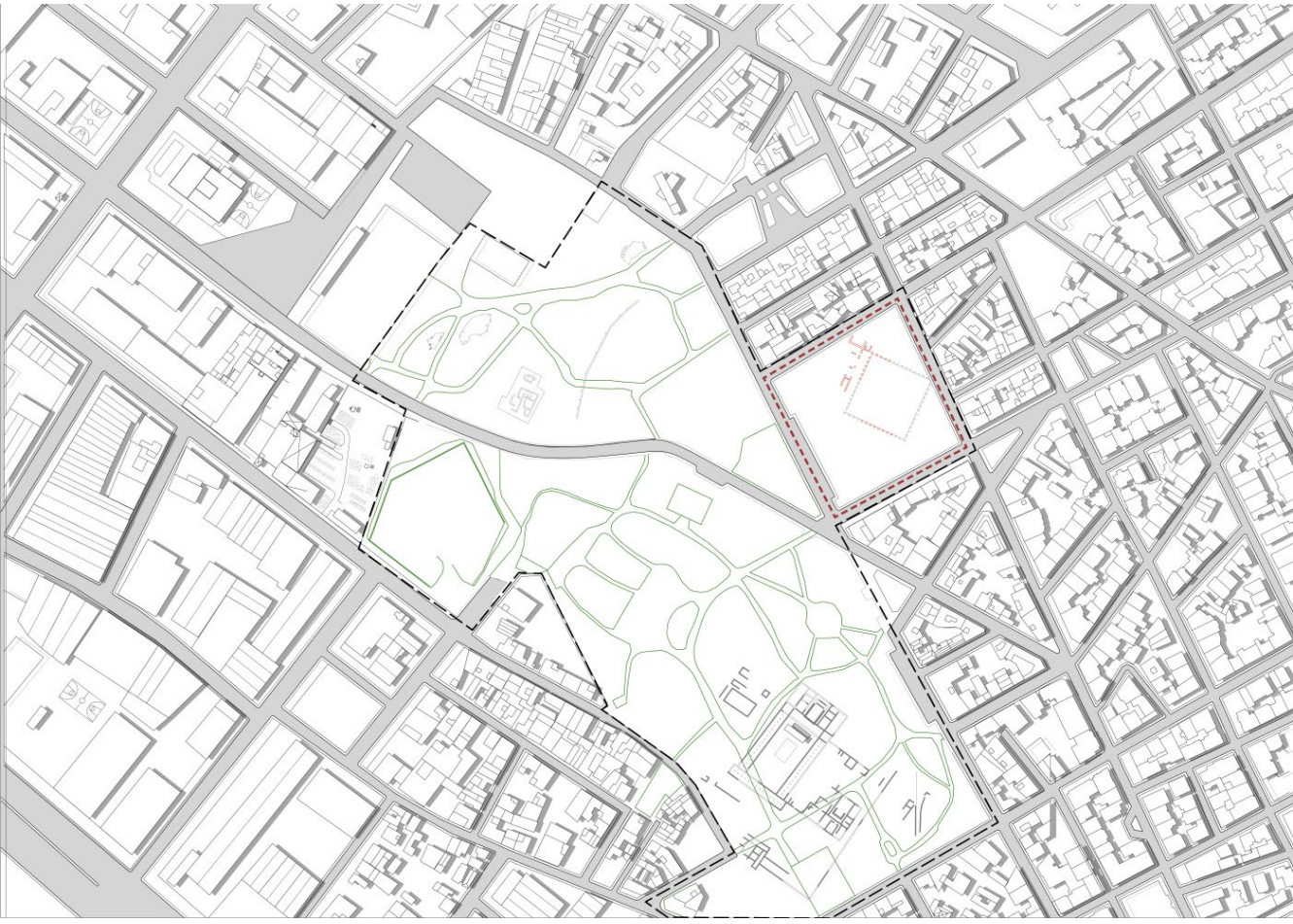


A2.

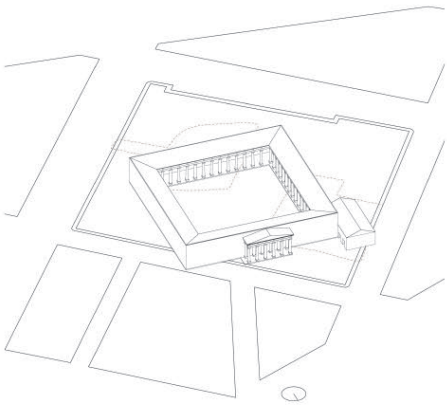
site plan.

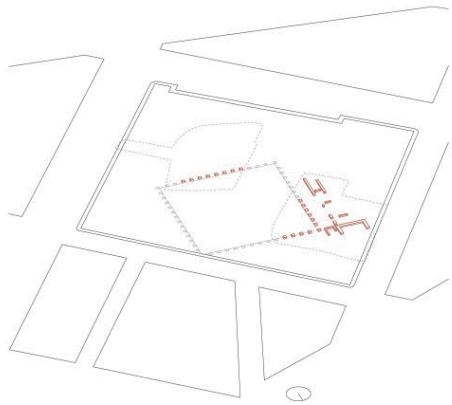


urban plan.



site info.





today.

Between Platonos and Efklidou Street. An excavation in the 1930s brought to light the partially preserved "Square Peristyle". Only conglomerate foundations are preserved.

This building, which dates to the 4th c. BC, measures ca. 40 × 40 m. Colonnade had a width of 8.60m where its Doric ordered columns are made of superb quality limestone. At its northwest corner is a separate room measuring 12.70 × 8.40 m, with a brick floor.

The building's architecture and function remain uncertain. Its ground-plan resembles that of other Athenian public buildings interpreted as law courts, such as the square peristyle of the Athenian Agora. However, it certainly belonged to the Academy's Gymnasium installations and may even be related to Plato's philosophical school.

Fragments of honorary and votive military decrees were found here. Painted terracotta metopes of the 6th c. BC attest to the existence of some earlier public building. One has a scene of a man and a small animal.

concept diagram.

The Agora: where philosophy and market met

The Modern Agora: a Market of Welfare & Ideas

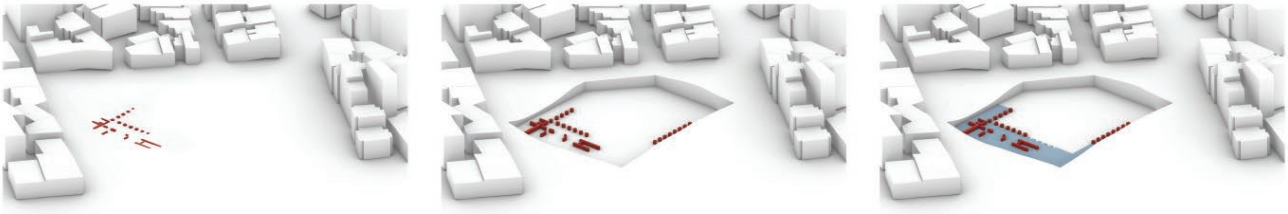
Stoas for assembly

Stoas as place to confer: social and climatic devices

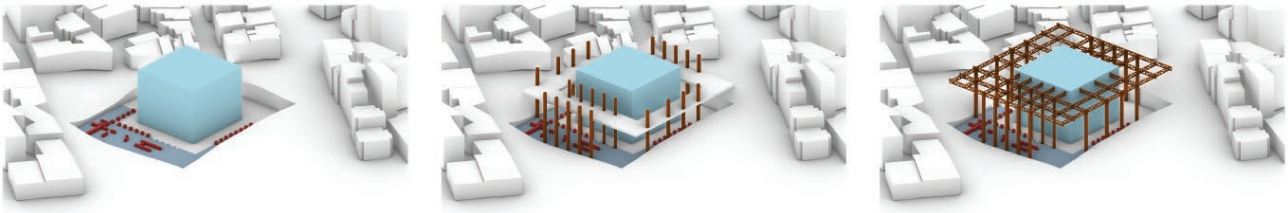
shops, meetings, legal business, and strolling

methods.

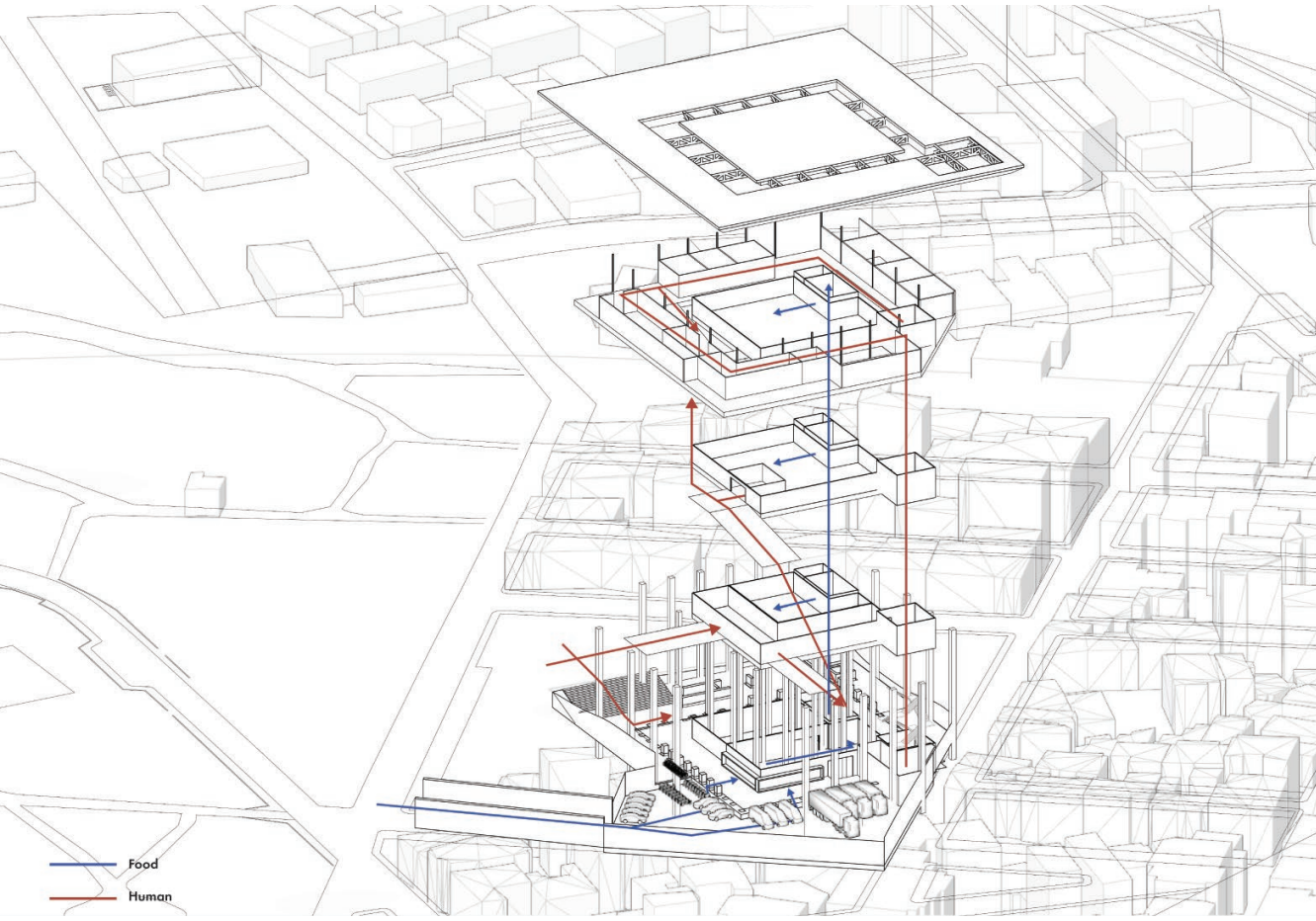
unearthing.



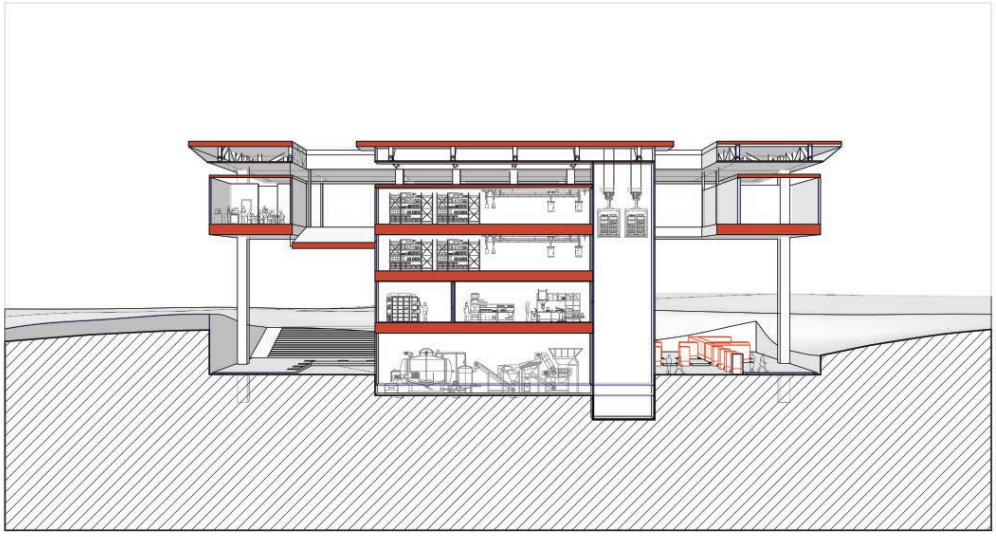
integrating.



isometric diagram.

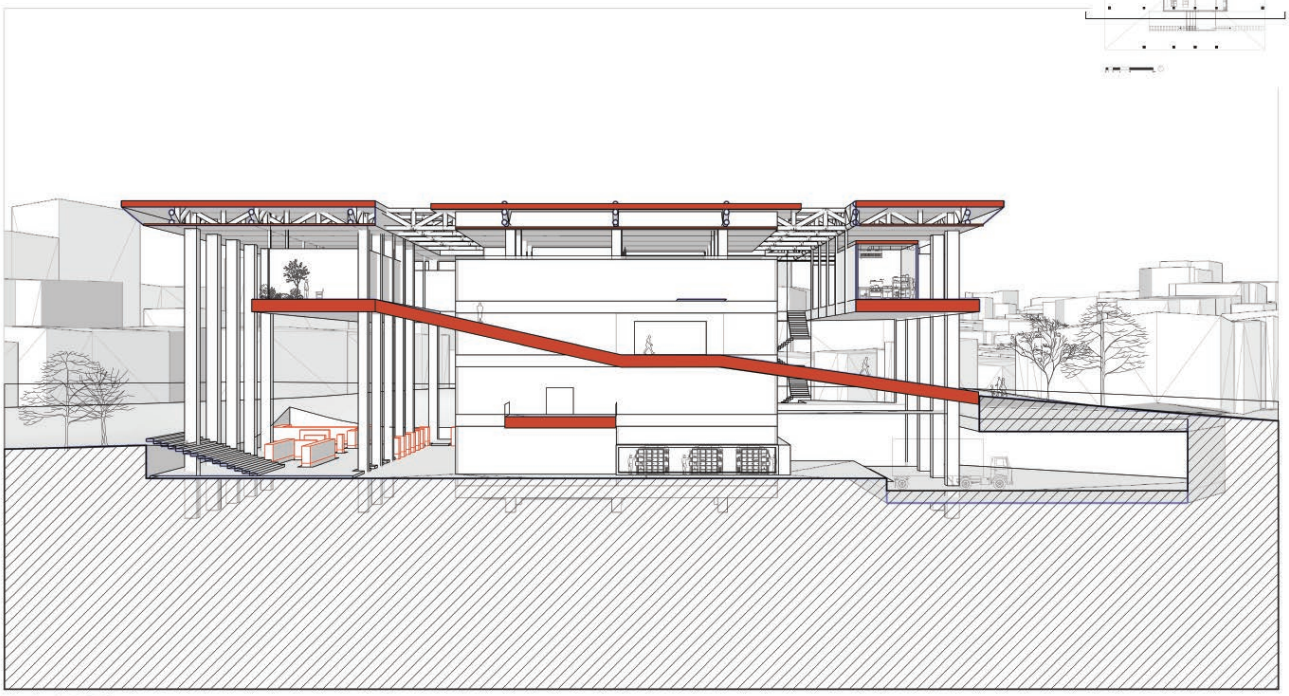


section A.



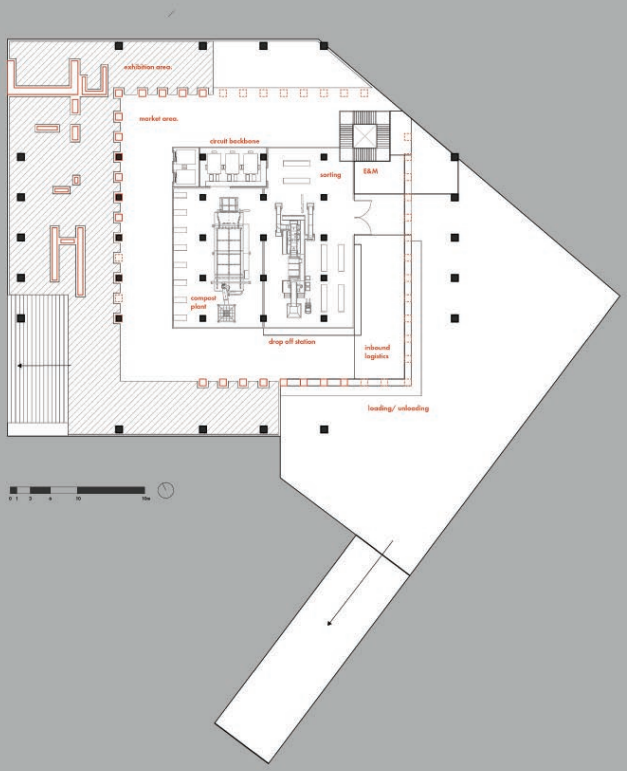
Section A_1:333

section B.



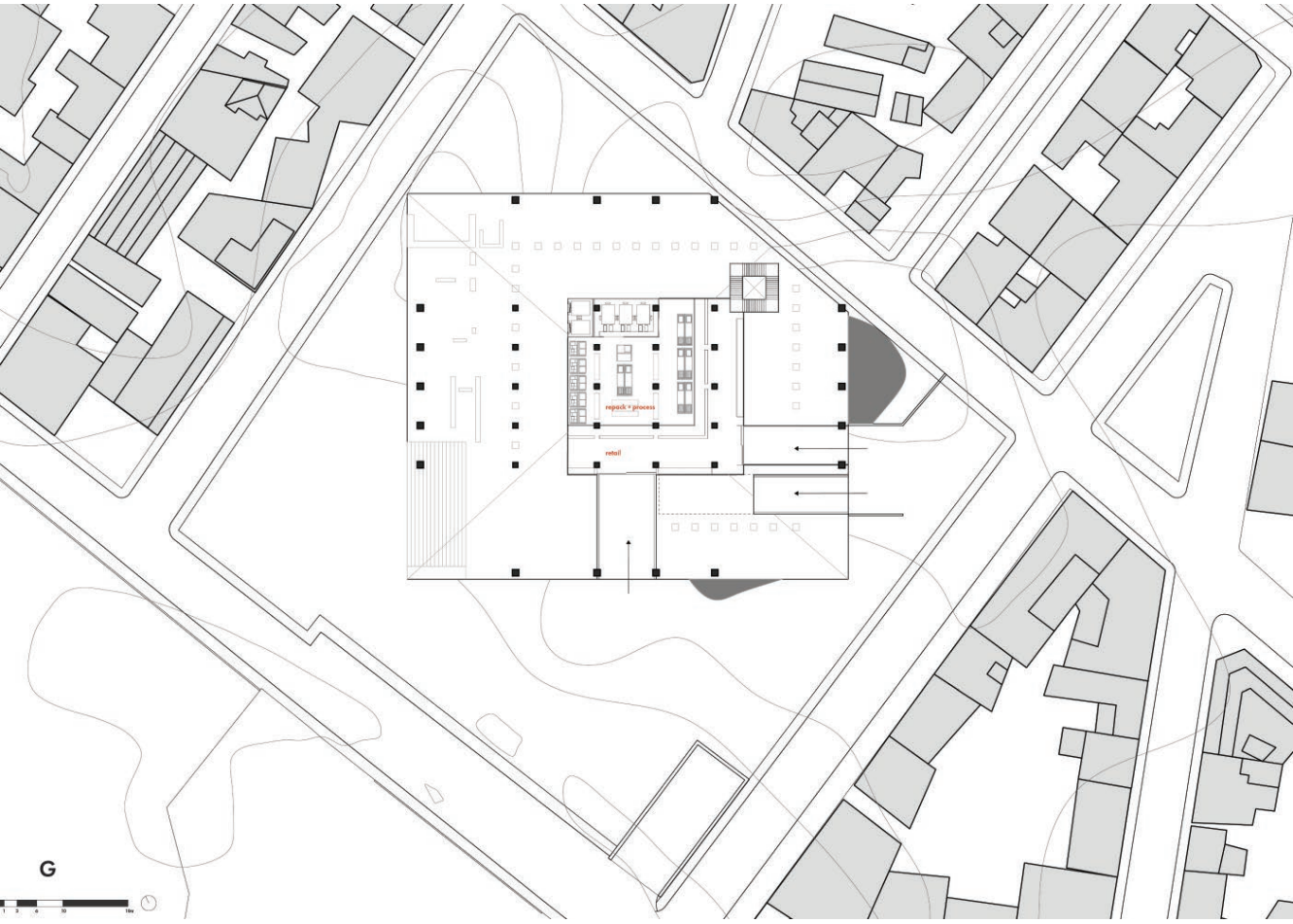
Section B_1:333

floor plan. UG

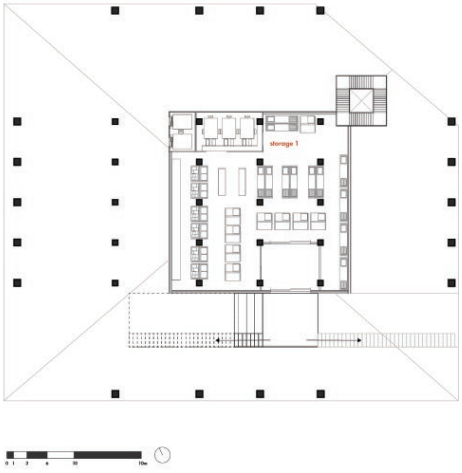


UG

floor plan. G



floor plan. L1

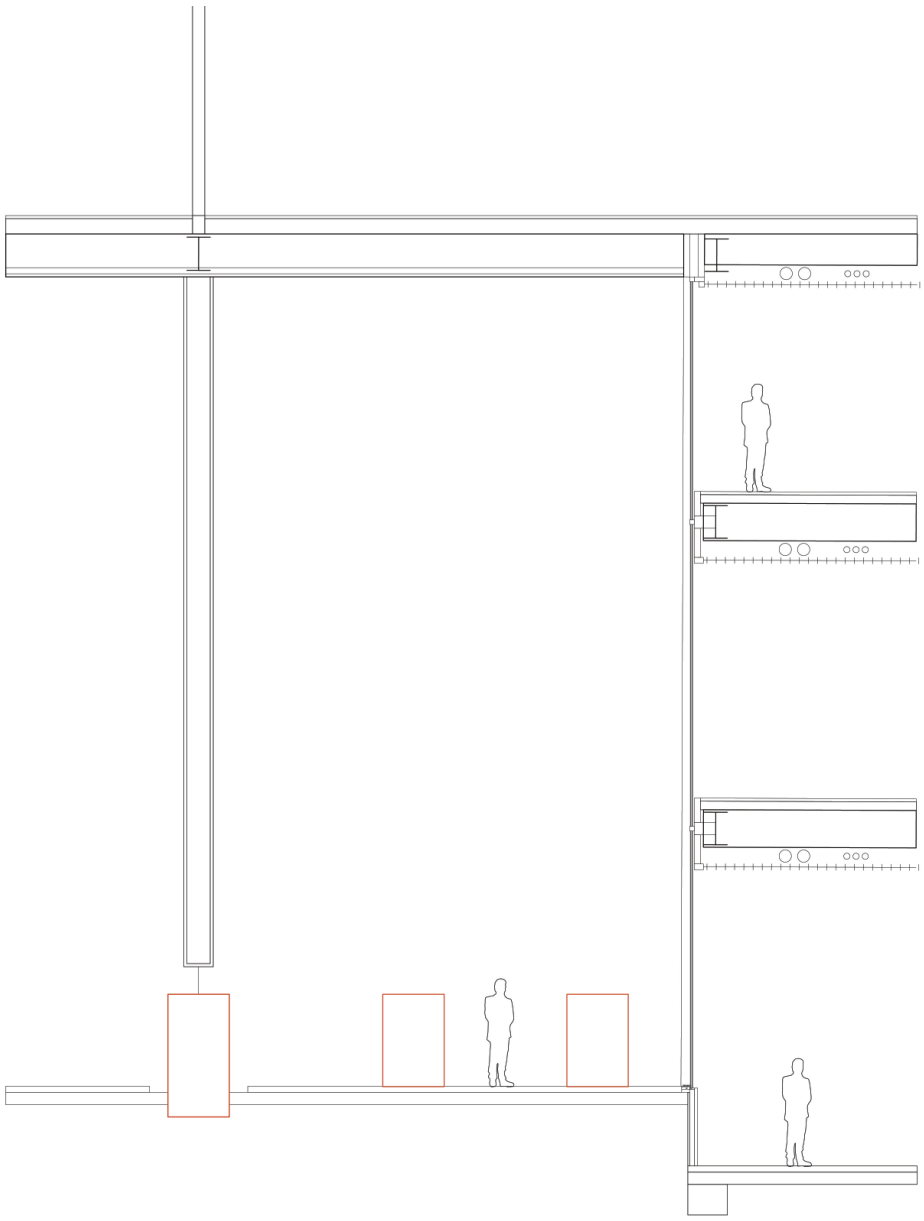


G

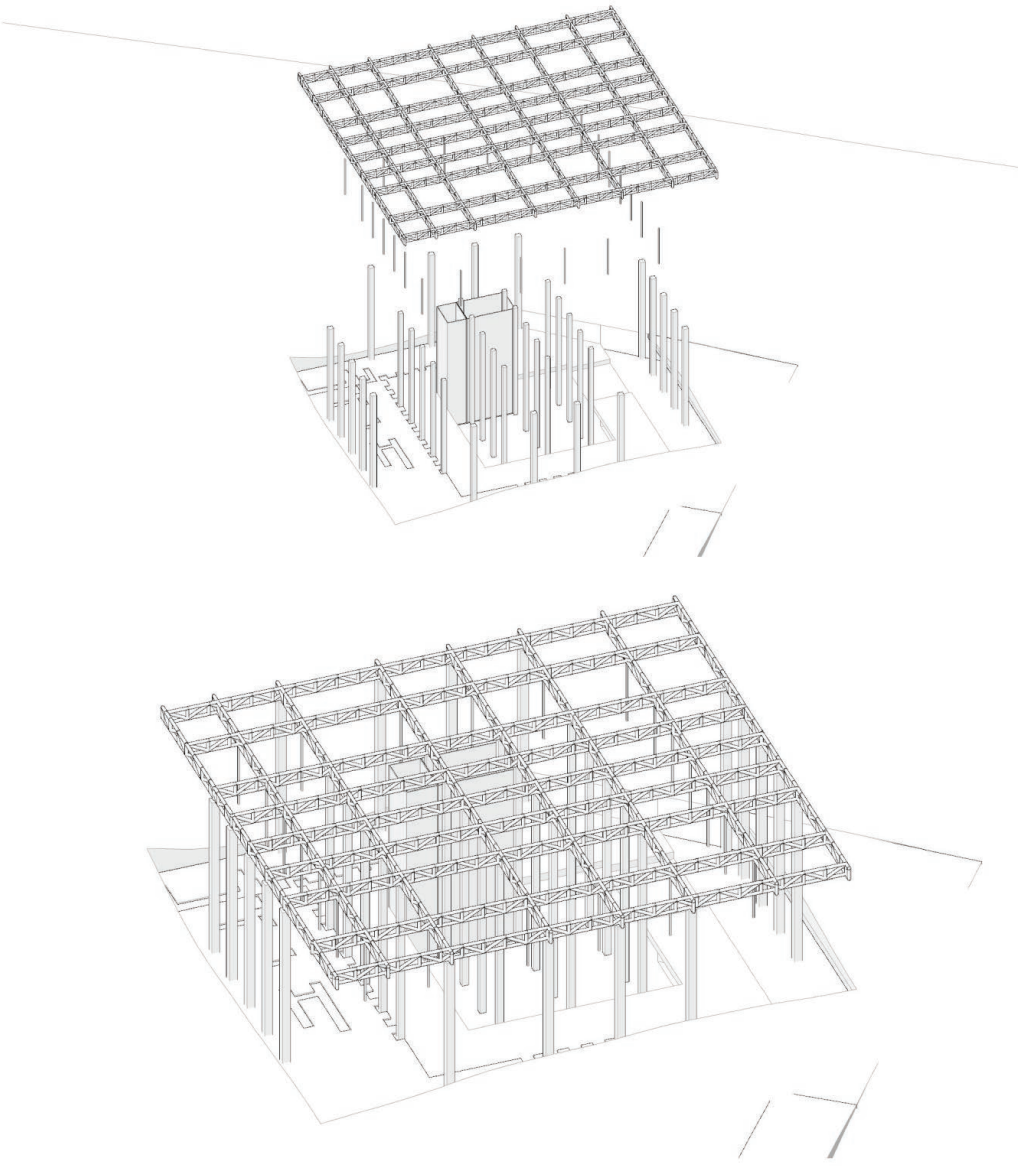
floor plan. L2

1

site plan.



urban plan.



visualization 1.

visualization 2.

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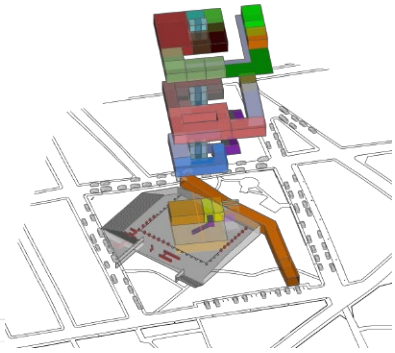
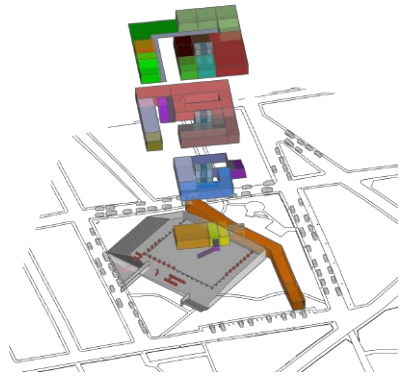
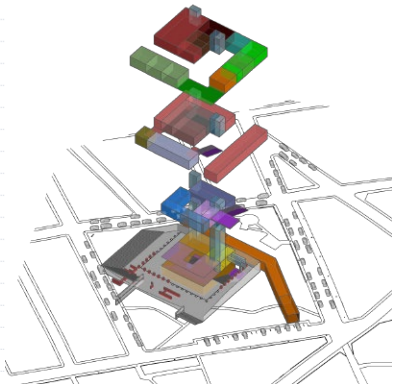
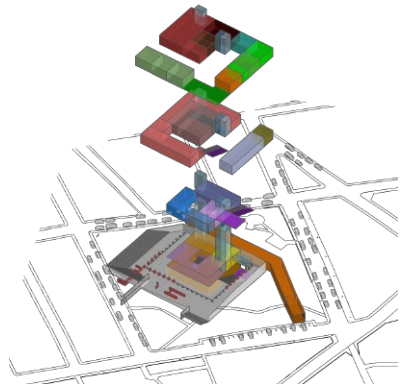
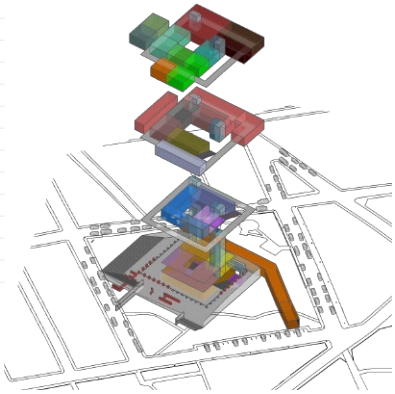


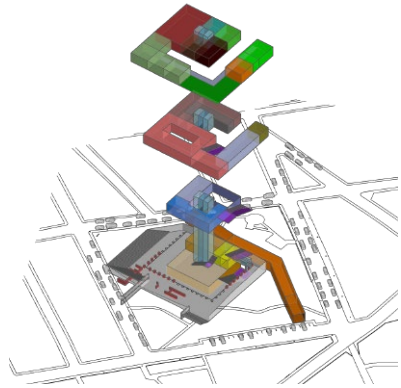


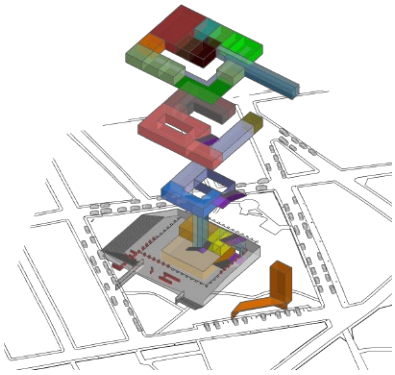
- Massing
  - 1_Logis
    - Quarentine
    - Inspection Zone
  - 2_Sorting
    - 1st Sort (ED vs IED)
    - Sorting Floor
  - 3_Processing
    - RePack
    - Testing + Labelling
  - 4_Storage
    - Dry
    - Chilled
    - Freeze
  - 5_Civic
    - Reception
    - Canteen
    - Central Kitchens
    - Kitchen Labs
    - Ancillary Kitchens
    - Restaurants
    - Retail_Distribution
    - Classrooms
    - Multi Funct Rooms
    - Library/ Archive
  - 6_Admin
    - Admin Office
    - Data Labs
    - Staff Cleaning Fac
  - 7_GO
  - 8_Circuit
  - 9_Staff Circuit
  - 14_Greens
  - 15_Roof
  - Composting

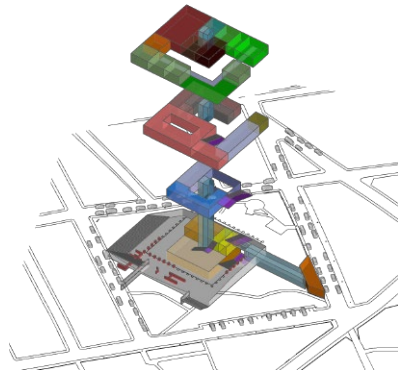


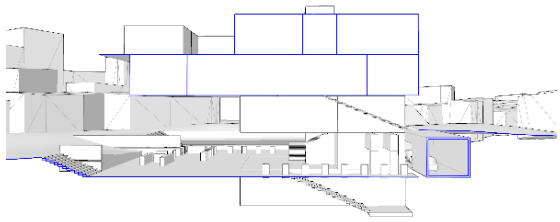


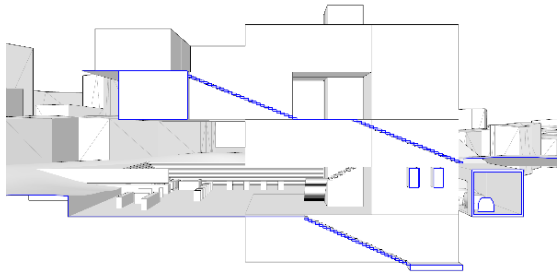


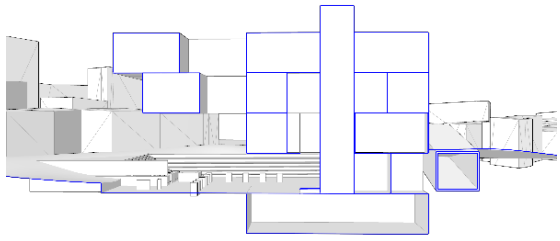


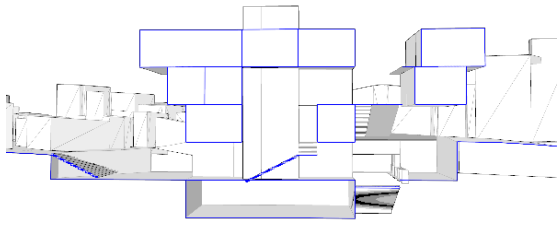


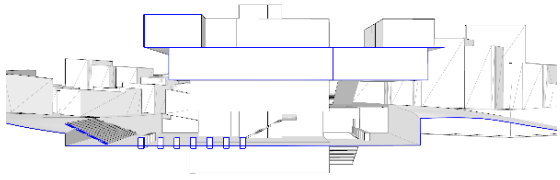


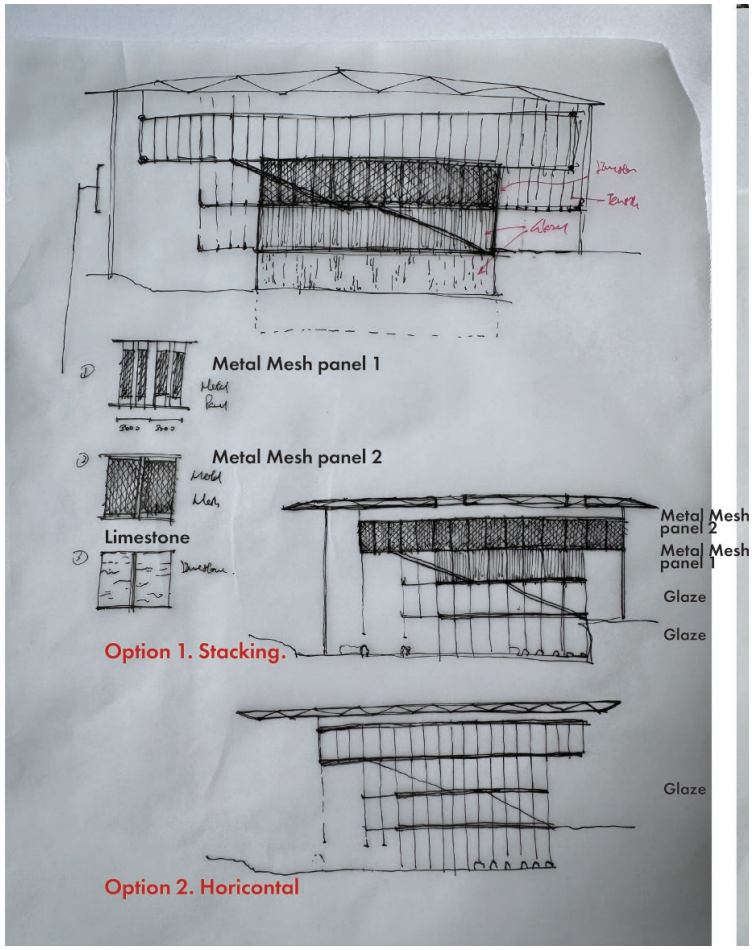


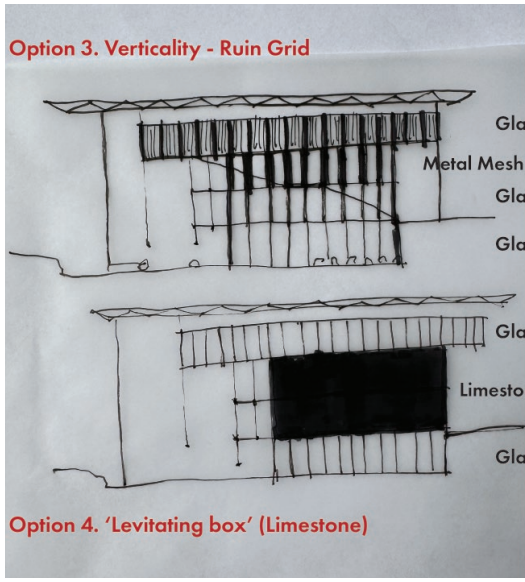


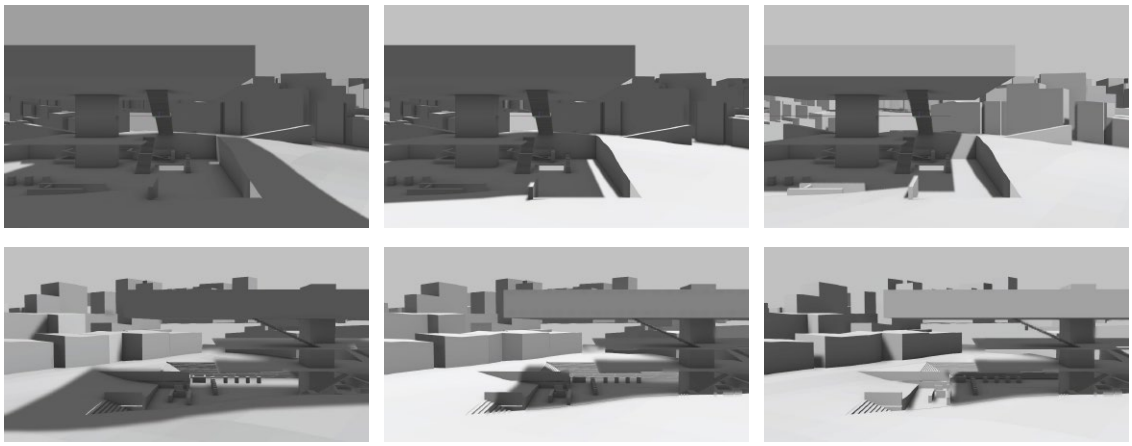


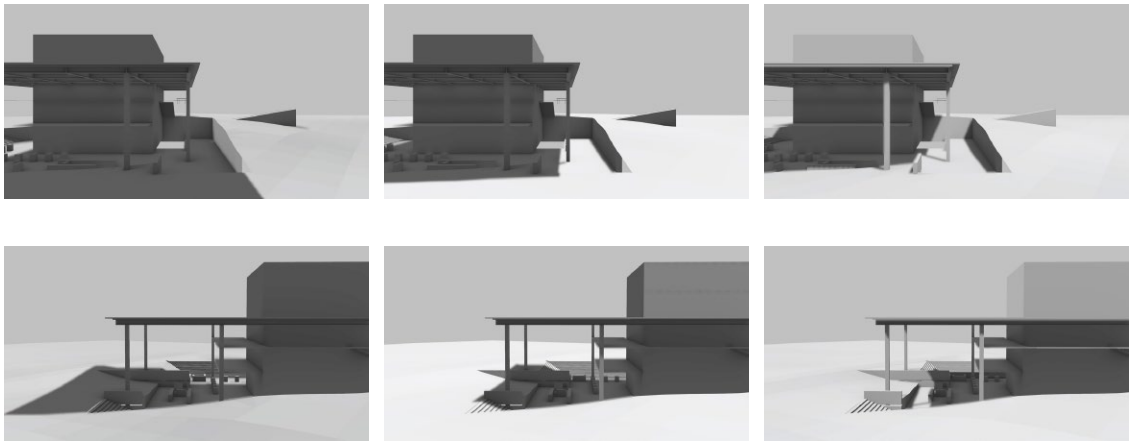


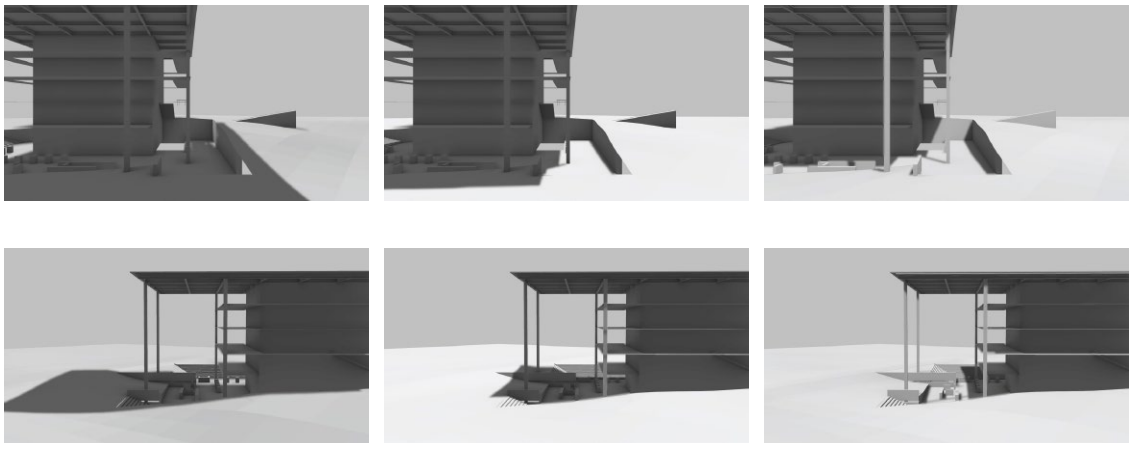


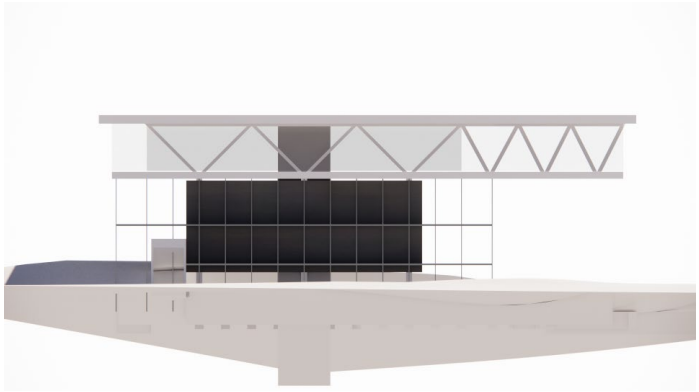

Metal Mesh panel 1
Metal Mesh panel 2
Limestone
Metal Mesh panel 2
Metal Mesh panel 1
Glaze
Glaze
Option 1. Stacking.
Glaze
Option 2. Horicontal

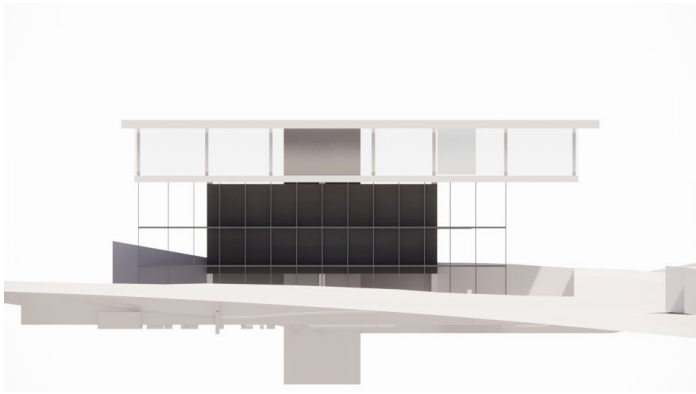

Option 3. Verticality - Ruin Grid
Glaze
Metal Mesh panel
Glaze
Glaze
Glaze
Limestone
Glaze
Option 4. 'Levitating box' (Limestone)

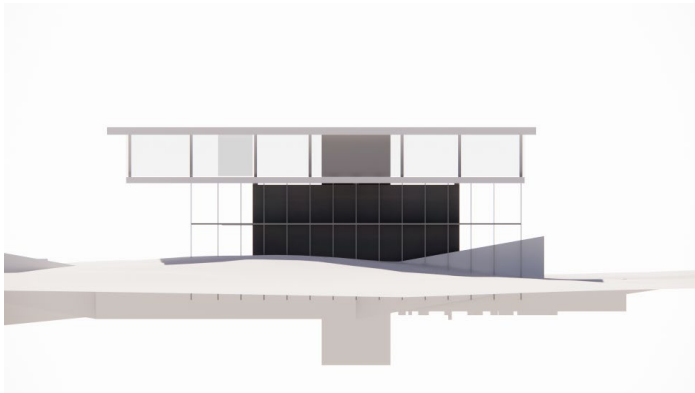


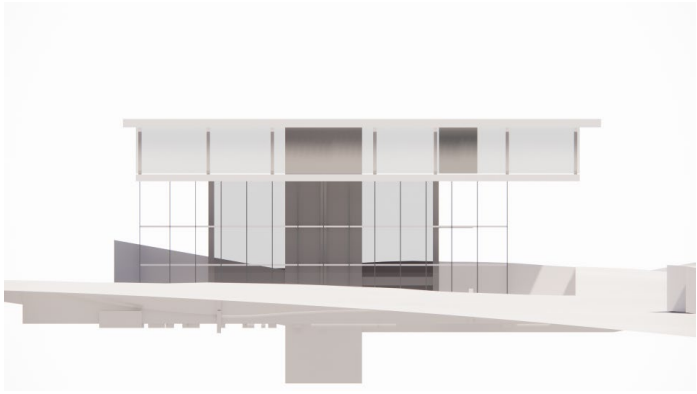


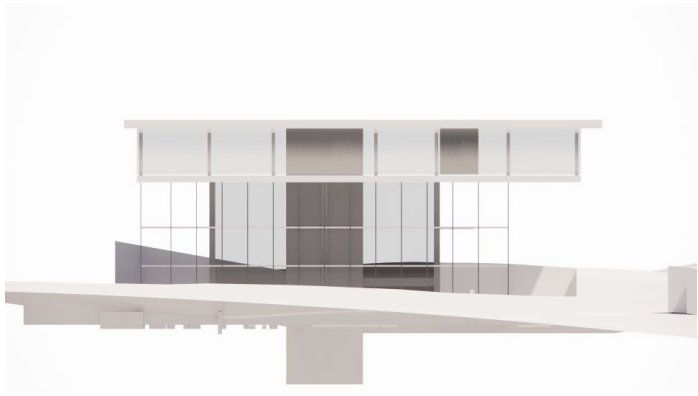


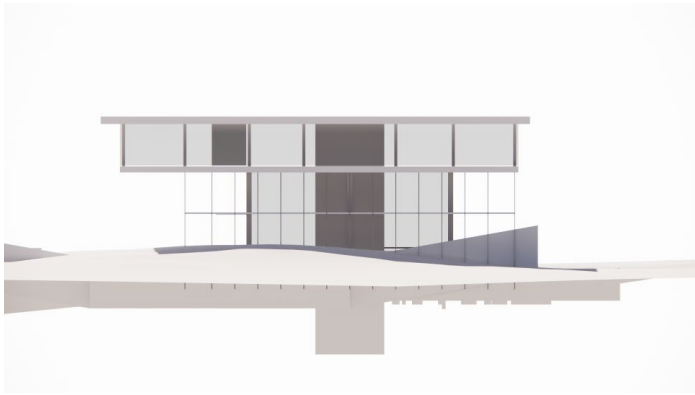


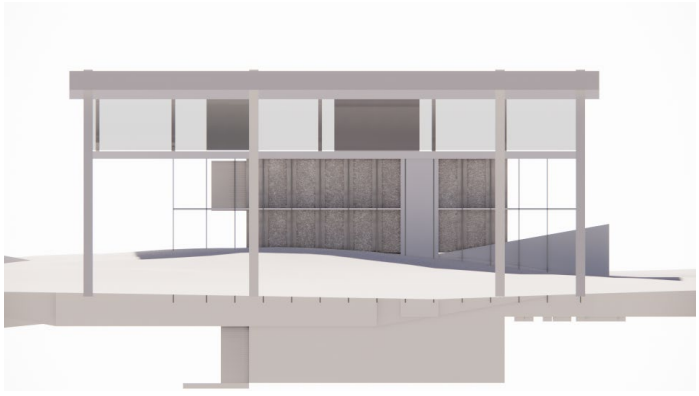


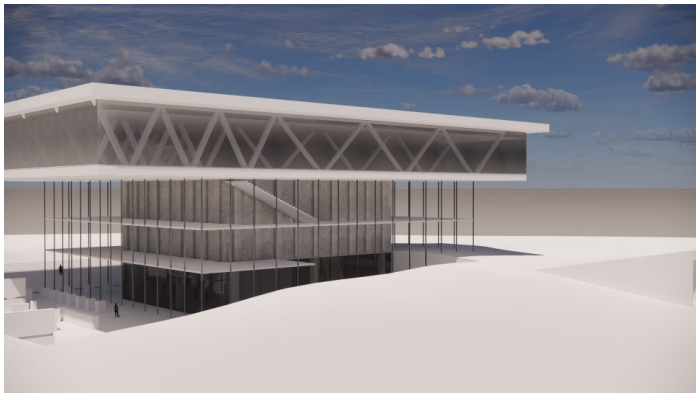


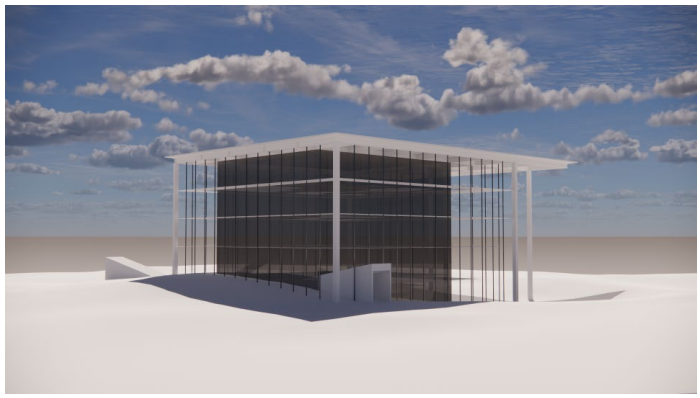


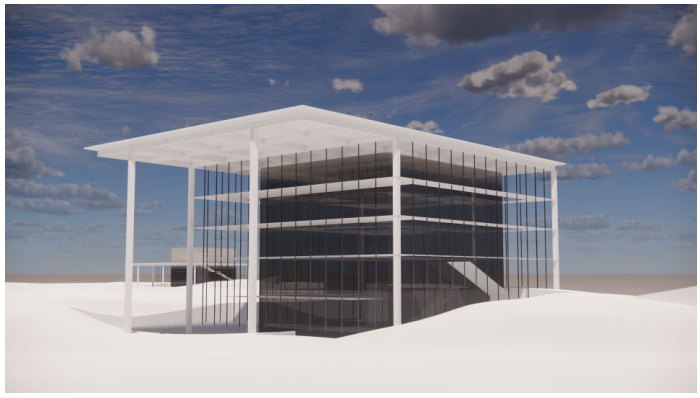


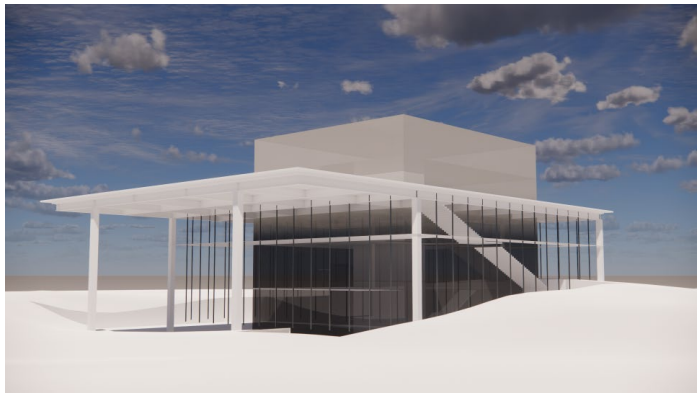


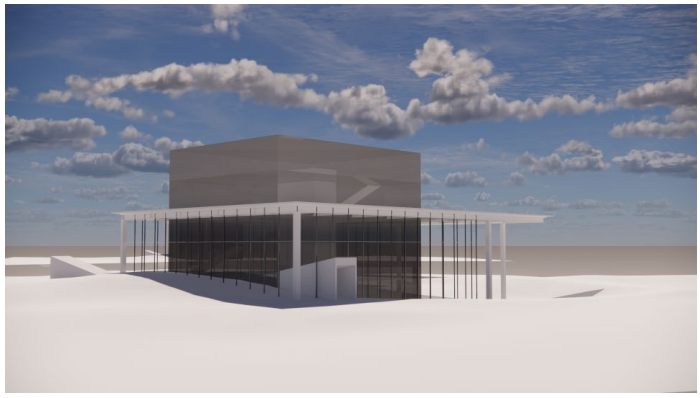




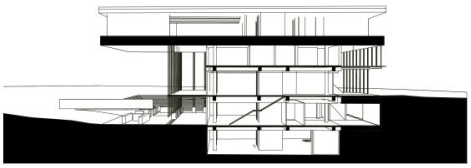


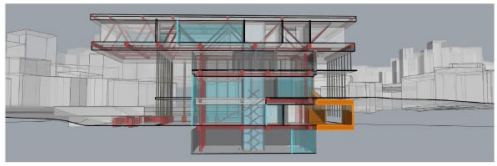




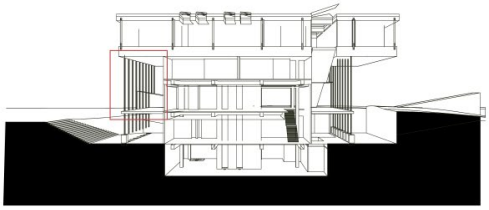


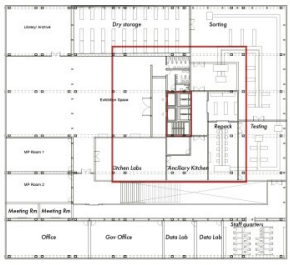
Section A





Section B





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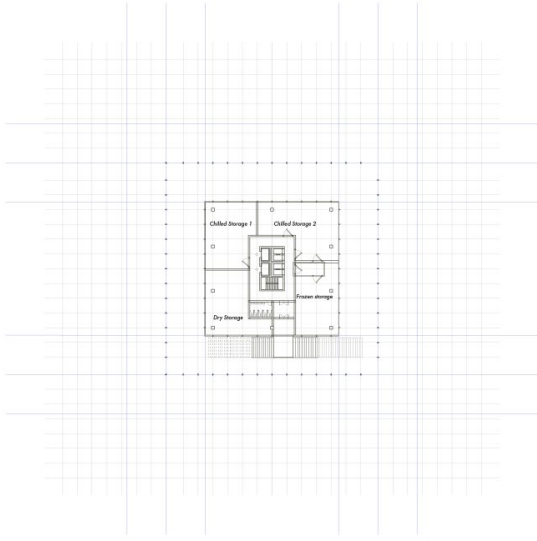

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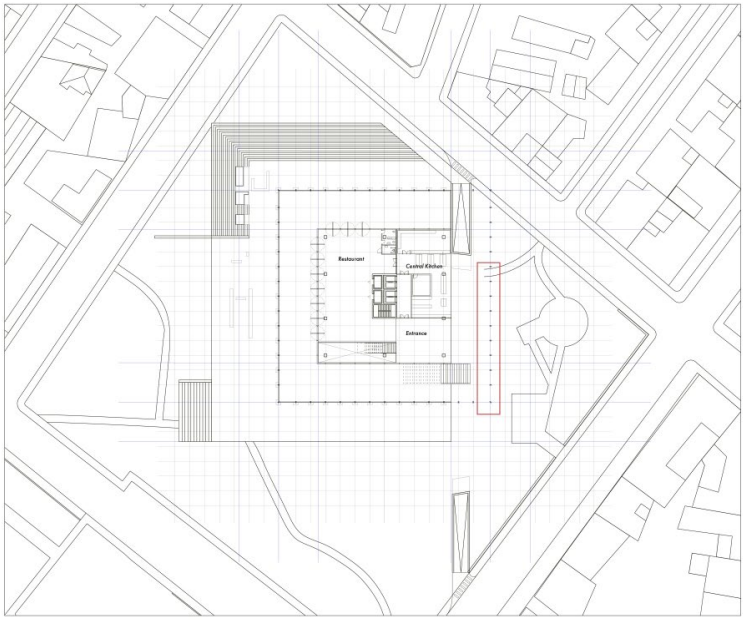
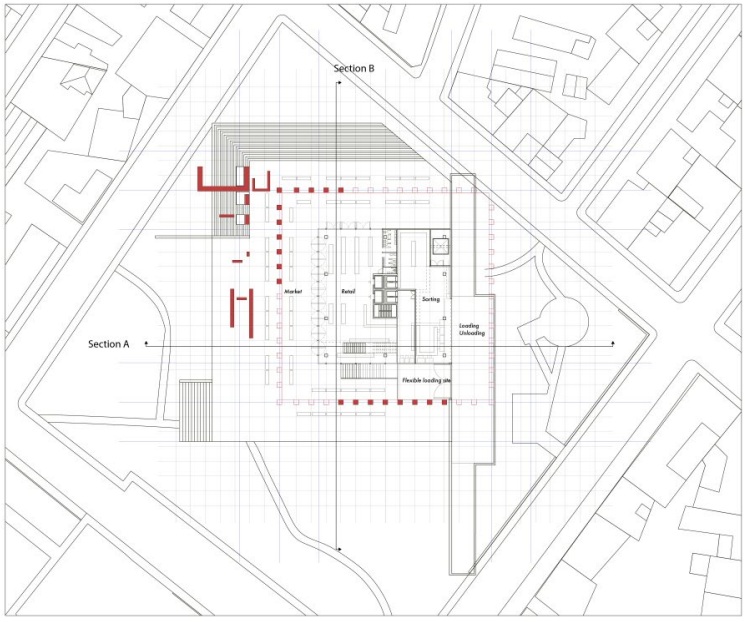
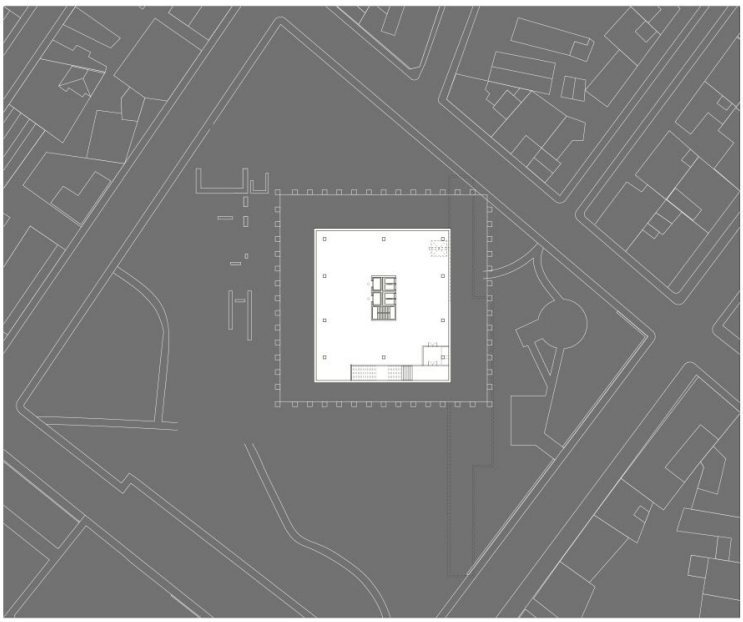


How could the Interface with the park be improved?

1F

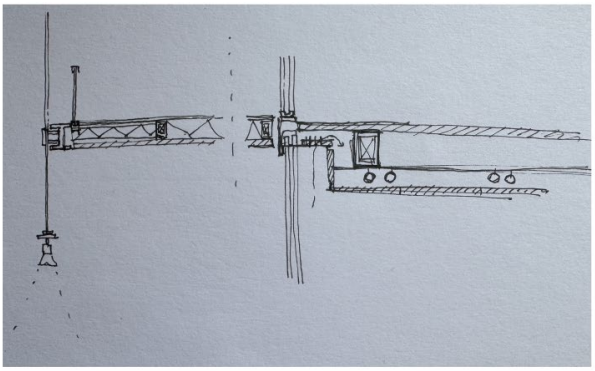


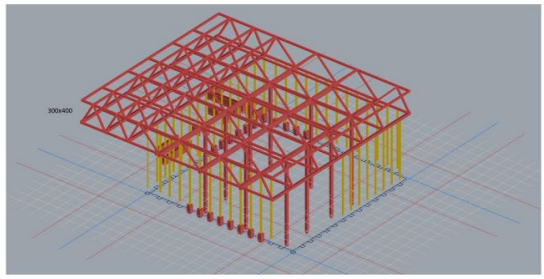
GF



Basement

Details

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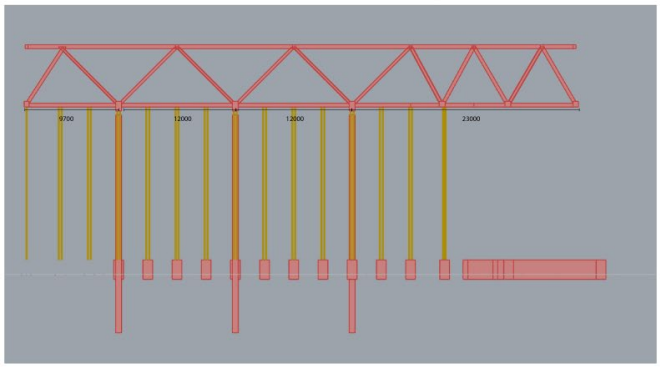
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12000
12000
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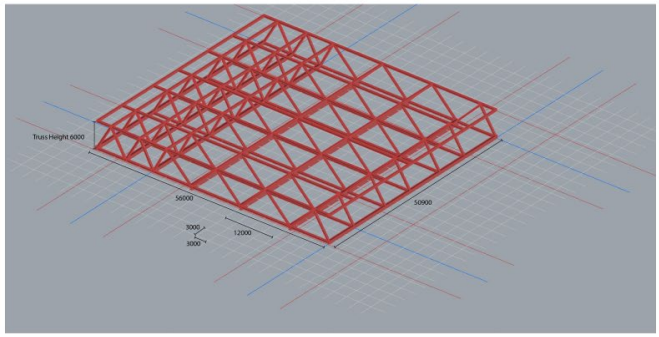
Structure


Truss Height 6000
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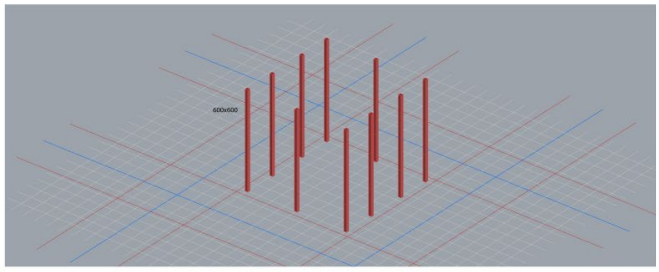
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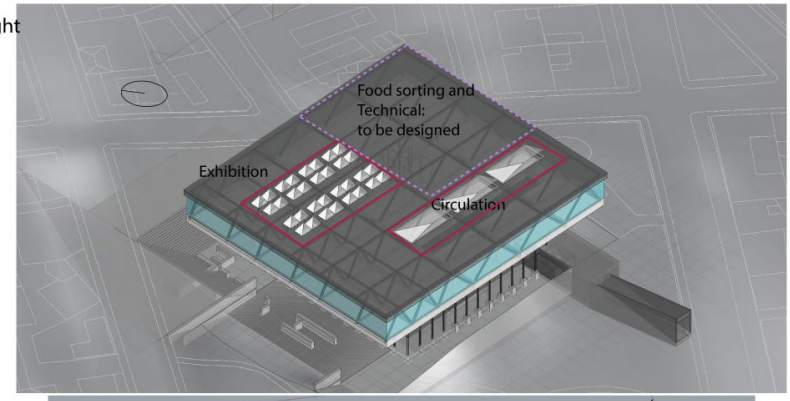
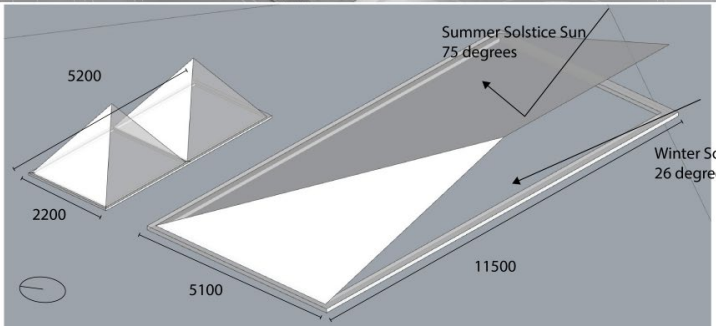
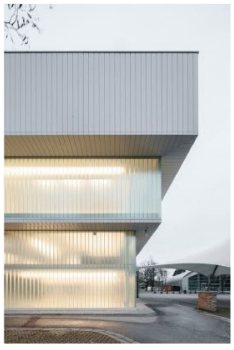
Roof Skylight



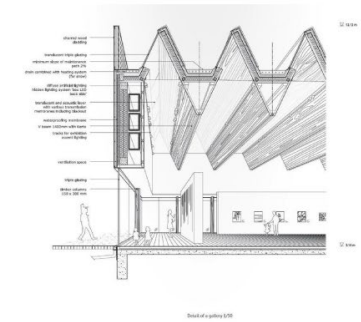


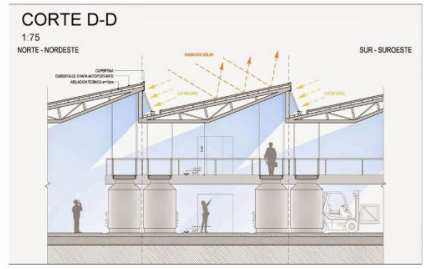
Limestone



Alum 1

Alum 2

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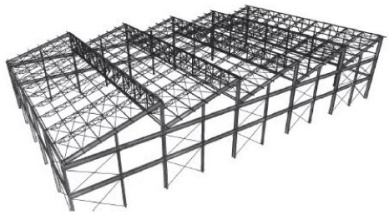
SUR - SUROESTE



Appendix.

food waste in Athens.

Kinship, care and hospitality.

In the Greek culture,hospitality is important for a family's **reputation**; food is the medium throughwhich **hospitality** is enacted and intra- and extra-familial social relations areforged (cf. Dubisch 1986).

Greek culture emphasizes on parental care, love and their food. And it is also under this cultural context that the notion of sustainability and efficiency is subordinate to taking care of one's family or guests.

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The dynamics of collective identity formation are closely connected to the cultural spaces within which they emerge. Present generation's reluctance to save or consume leftovers could be considered a symbolic act that produces **temporal, spatial, and cultural distance** from the previous generations' experiences of hardship and an earlier era of scarcity. This gesture poses a contrasting framework of **prosperity and mindset of abundance**, one in which the **frugality** of previous generations is **rejected**. In other words, the act of wasting food could be interpreted as a means of reaffirming a **generational identity** grounded in contemporary conditions of **material security**."

https://pappaspost.com/greece-ranks-third-in-eu-for-food-waste-with-201-kilograms-per-capita-discarded-in-2023/

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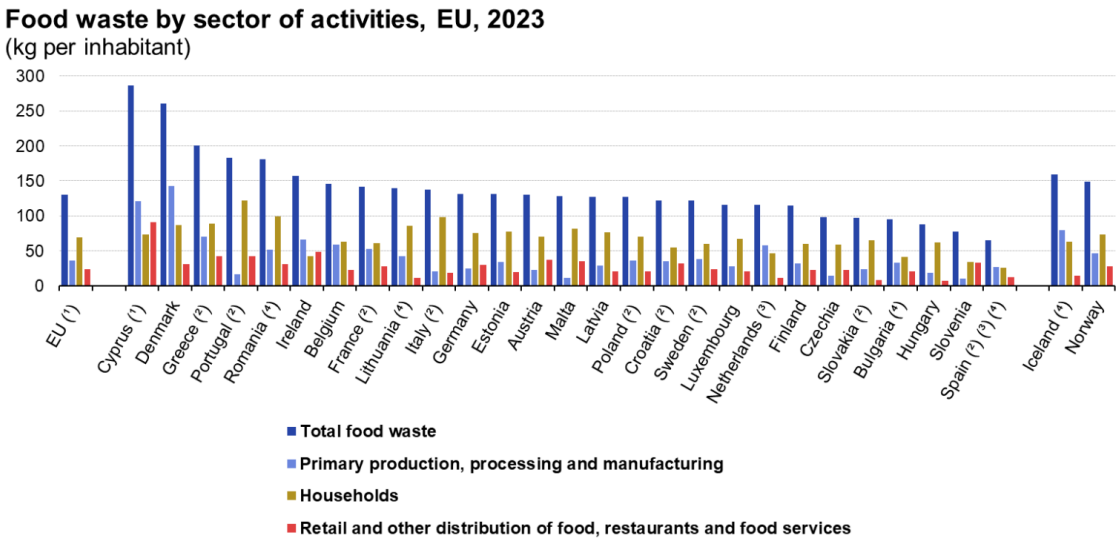

(1) Estimated data
(2) Estimates in some figures
(3) Definition differs in some figures
(4) 2023 data not reported, 2022 data presented
Source: Eurostat (online data code: env_wasfw)

eurostat

food insecurity in Athens.

Kinship, care and hospitality.

aradoxically, parallel to the enormous food waste problem, Athens faces a severe food insecurity issue. In 2024, one in ten Greeks experienced food insecurity, with 27.3% of those living in poverty unable to afford proper meals containing meat, fish, or vegetarian protein every other day, which is among the EU's highest gaps1. This stark paradox of simultaneous excess and deprivation reveals not only systemic inefficiency but also a deeply embedded structural injustice in the current food system.

This coexistence of hunger and waste reflects systemic inefficiency, including a lack of food redistribution infrastructure, confusion over expiration labels, promotional overconsumption, and cultural practices emphasising abundant portions tied to philoxenia hospitality traditions. Nonetheless, these culturally rooted patterns, while historically associated with generosity and communal relationships, now inadvertently contribute to unsustainable production, consumption rhythms and spatially uneven food landscapes across Athens.

Moreover, food apartheid exists have emerged where wealthy areas have access to quality traditional ingredients and restaurants, while poor neighbourhoods rely on cheap processed foods. Such disparities exacerbate health inequalities and undermine social cohesion.
As a whole, the Greek recycling system is facing multiple challenges, including low collection rates for organic waste, high levels of contamination in recyclable materials (~approximately 40% residues), severe delays in establishing new infrastructure and equipment, and underutilization of available European funding2.

1 Eurostat, "Inability to afford a meal with meat, chicken, fish (or vegetarian equivalent) every second day" Eurostat Data Browser, last modified/released [Accessed December 16, 2025], https://ec.europa.eu/eurostat/databrowser/view/ilc_mdes03/default/table?lang=en

2 WWF Greece, Municipal Waste Management in Greece: Proposal for a Sustainable and Just Management – Synopsis, June 2024, WWF Europe, accessed December 17, 2025, https://wwfeu.awsassets.panda.org/downloads/diaheirisi_astikon_apovliton_synopsi_en.pdf

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HOME / NEWS / ATHENS-CLARKE COUNTY / FOOD INSECURITY IN ATHENS IS A BIGGER ISSUE THAN MANY REALIZE

ATHENS-CLARKE COUNTY FOOD HOUSING IN-DEPTH SUSTAINABILITY

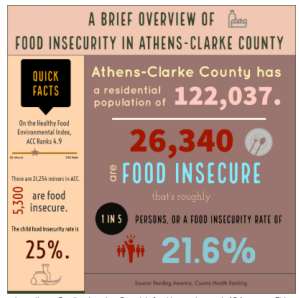
Food Insecurity In Athens Is A Bigger Issue Than Many Realize

BY GRADY CAPSTONE JOURNALIST OCTOBER 16, 2018 3,610 VIEWS

The food insecurity rate in Athens-Clarke County was 22 percent in 2016, according to Feeding America's annual "Map the Meal Gap" project.

Clarke County has approximately 26,340 food-insecure individuals, according to Feeding America data from 2016. Approximately 70 percent are below 130 percent poverty, which means individuals in this bracket have a yearly income of less than $15,000.

Why It's Newsworthy: Alongside UGA students in Athens-Clarke County, many long-term residents face food insecurity. The issue is directly tied to housing inequality and impacts the number of food insecure individuals across Athens-Clarke County. Organizations and community gardens are hoping to alleviate the problem through their work.



According to Feeding America, Georgia's food insecurity rate is 15.1 percent. This infographic details how Athens-Clarke County compares to the state average. (Graphic by Rebecca Nauth)

Factors That Contribute to Food Insecurity

Jerry Shannon, an assistant professor in the department of geography and the department of financial planning, housing, and consumer economics at the University of Georgia, researches food in low-income communities. He defines food security by a single question: "Do you know when your next meal is?"

"If you're food insecure, the answer to that question is: [I'm] not sure," Shannon said.

He said some factors that contribute to food insecurity include: poverty, lack of access to healthy food, transportation and health issues, all of which are especially common among the elderly.

Food Swamps and Lack of Healthy Options

Shannon said heightened costs and a lack of fresh food options may cause people to be unable to obtain healthier meals in which they turn to fast food as a replacement. Areas like this, which have more fast-food options than healthy options, are known as food swamps.

https://gradynewsource.uga.edu/food-insecurity-in-athens-is-a-bigger-issue-than-many-realize/

A persistent gap from farm to consumer to Landfill is evident in the realm of food waste. Along this value chain, food systematically loses economic and social value once it exits the sphere of formal commerce and enters the legal and cultural category of "waste." Existing infrastructure normalises discarding and obscuring opportunities for recovery and redistribution[1].

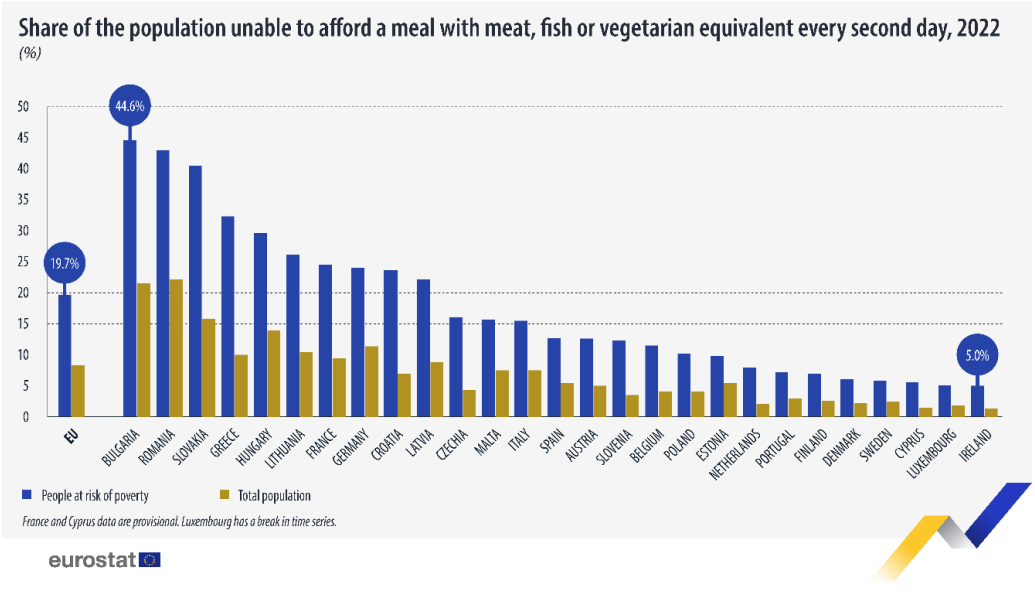
In the present, the only existing, formal, large-scale food bank model, the Boroume, has achieved a successful decentralised model (20M portions in 2024)[2] as a network coordinator operating at scale limits. Nonetheless, the lack of structural infrastructure and logistical coordination still exists within.

Another gap lies between environmental science and spatial practice[3]. Where food waste infrastructure is rarely analysed through the lens of spatial clustering studies on circular economy activities. As a result, important factors such as physical access, public visibility, beneficiary dignity, stakeholder encounter and civic engagement remain underexplored in both policy discourse and architectural practice.

1 Tanya Tsui, Alexis Derumigny, David Peck, Arjan van Timmeren, and Alexander Wandl, "Spatial Clustering of Waste Reuse in a Circular Economy: A Spatial Autocorrelation Analysis on Locations of Waste Reuse in the Netherlands Using Global and Local Moran's I," Frontiers in Built Environment 8 (2022): article 954642, https://doi.org/10.3389/fbuil.2022.95464

2 Boroume, Annual Report 2024 (Athens: Boroume, 2024), accessed December 17, 2025, https://www.boroume.gr/Content/Files/1/pdf_files/Boroume_Annual_Report_2024_.pdf

3 Food and Agriculture Organization of the United Nations (FAO), Food Waste Management and Circular Economy in the Mediterranean Region (Rome: FAO, [year if available]), accessed December 17, 2025, https://openknowledge.fao.org/server/api/core/bitstreams/0f2afcbf-c9ef-4dc8-bcd7-e2773421926b/content



Athens current food waste situation.

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Takeaway:

Simplifying regulations governing **food-waste donations** and establishing **local hubs** for food redistribution could redirect the desire for connectedness through food toward practices that promote reduced waste. Likewise, **national awareness campaigns** that encourage the use of food-sharing applications and normalize taking leftovers home may influence public attitudes and reframe notions of dignity through a sustainability-oriented perspective.

"Complex socio-political issue that largely has to do with social justice and structural issues in various stages of food (and other) supply."

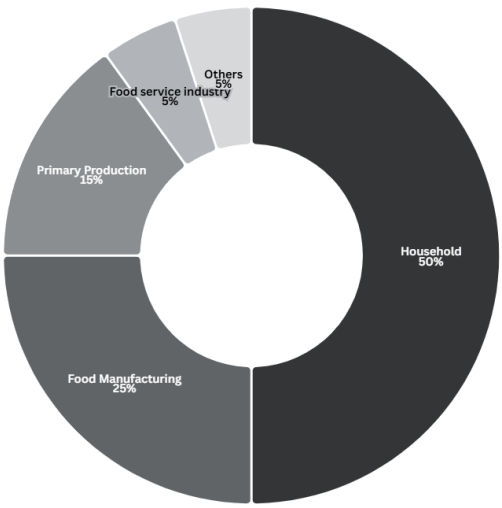

Diagram by author

National and Regional Context

Athens annual waste: Approximately 2.7 million tonnes mixed household waste
pre-Athens-Biowaste project

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https://news.gtp.gr/2023/08/04/athens-municipality-installs-underground-garbage-bins-across-the-city/

pressing issues.

the context.

Economic and Agricultural Challenges:

Declining agricultural productivity:
The Greek agricultural production has been struggling to expand, according to a study, the gross value added per person employed fell to a fifteen-year low: €13,465 in 2023. Besides, the labour productivity has weakened sharply since 2020.

Small, fragmented landholdings:
An average Greek farm hardly exceeds 5.3 hectares, posing challenges to economies of scale and efficient investment. This fragmentation indirectly leads to **overinvestment** in cheap, basic equipment and **underinvestment** in modern technology.

Rising production costs:
Farmers face soaring **input costs, high energy prices, and increasing intermediate consumption**. While intermediate consumption represented about one-third of agricultural production value in 2003, by 2022 it accounted for more than half.

Subsidy dependency:
Greek farmers' income is heavily dependent on **EU subsidies**. As of 2024, €1.1 billion in accumulated payments were owed by the Greek state. In addition, the CAP distribution model, allocating funds based on **land ownership** rather than production, favours large landowners over small producers.

Middleman dominance:
Intermediate actors (such as supermarkets) exert significant power over farmers and consumers. Despite sharp falls in labour costs during the crisis, prices for consumers hardly decreased, indicating **high markups** in processing and retail.

Food price inflation:
Rising food prices are forcing Greeks to give up nutritious eating. Food inflation has imcreased around 30% over five years. For example, meat, milk, and butter seeing increases of 30%, 40%, and 50% respectively since before the pandemic. In poorest households, more than a third of the total budget now goes to food.

Cultural erosion:
The traditional Mediterranean diet is threatened across the Mediterranean region due to abandonment of traditional habits. And fueled by the emergence of new lifestyles associated with socioeconomic changes. It is not just a health crisis but a loss and dilution of intangible cultural heritage.

Social and Cultural Issues

Rural depopulation:
Cuts in social policy spending, reduction of public sector wages, and closure of critical public facilities in rural areas have contributed to rural depopulation, severe aging of farmers, and labour shortages.

Loss of food sovereignty:
Greece's integration into the European market led to dismantling of agricultural and food production capacity, increased dependence on imported food, and the consolidation of power by intermediate actors in the food system.

Black market trading:
High taxation and strict regulations have led to a rise in black market trading of agricultural goods, particularly olives.

Disease outbreaks:
Current outbreaks of sheep and goat pox are forcing culling of hundreds of thousands of animals, threatening feta cheese production—a cornerstone of Greek cuisine and identity

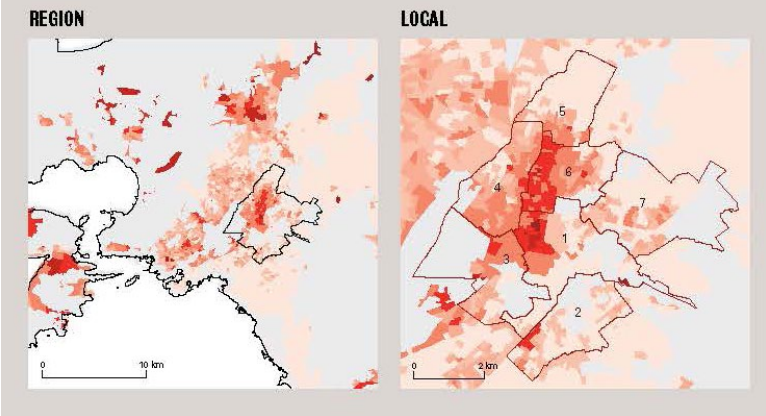
Health Crisis:
Abandoning the Mediterranean Diet; the country that gave the world the Mediterranean Diet is increasingly abandoning it. Why?

Childhood obesity:
Greece leads Europe in childhood obesity rates, about one-third of Greek children now are overweight/ obese. Around 22% and 21.6% of boys and girls respectively are overweight, thus additional 9% and 7.5% classified as obese.

Dietary shift:
Merely 28.3% of the adult Greek population maintains high adherence to the traditional Mediterranean diet. The younger generation (under 65) shows even lower numbers at 25.5% compared to 39.7% for those over 65. Younger Greeks consume more meat, cereals, alcoholic beverages, and sugar products compared to their elders.

demographics

Inequality



Comparing neighbourhoods

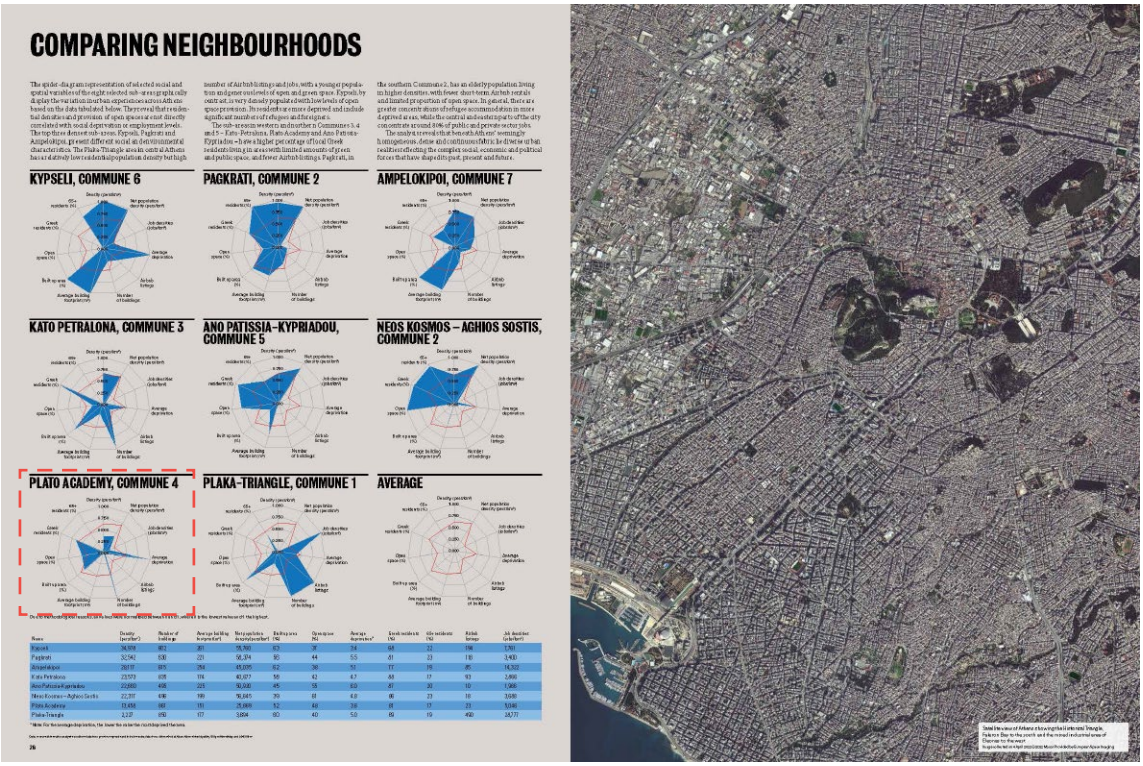
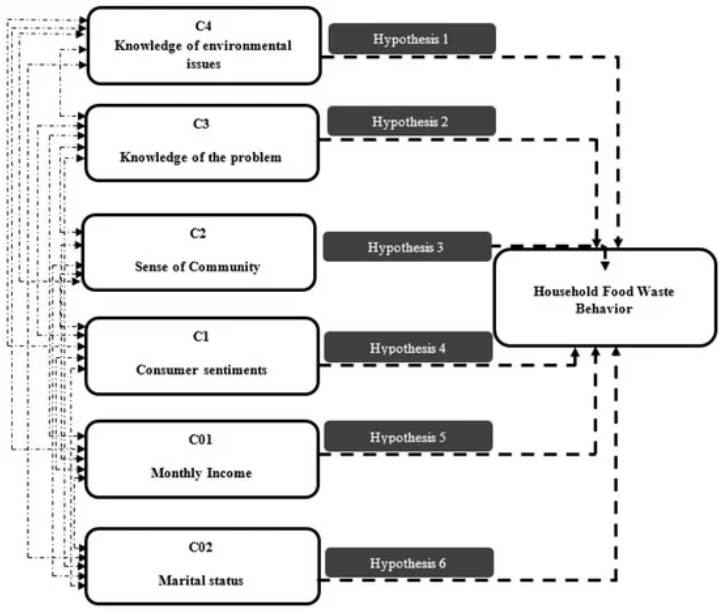


Image credits: https://www.lse.ac.uk/Cities/Assets/Documents/Urban-Age/Athens-Urban-Age-Task-Force-Spatial-Compendium.pdf

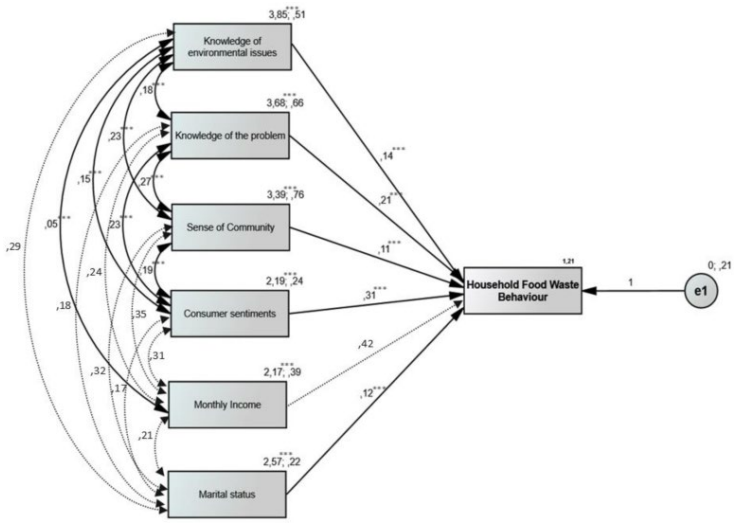
food waste.

A Path Analysis of Behavioral Drivers of Household Food Waste in Greece

by Zacharias Papanikolaou and Christos Karelakis



Schematic representation of the conceptual framework



Path Diagram—Statistically Significant Paths and Standardized Coefficient

Papanikolaou, Zacharias, and Christos Karelakis. 2025. "A Path Analysis of Behavioral Drivers of Household Food Waste in Greece" Agriculture 15, no. 23: 2481. https://doi.org/10.3390/agriculture15232481

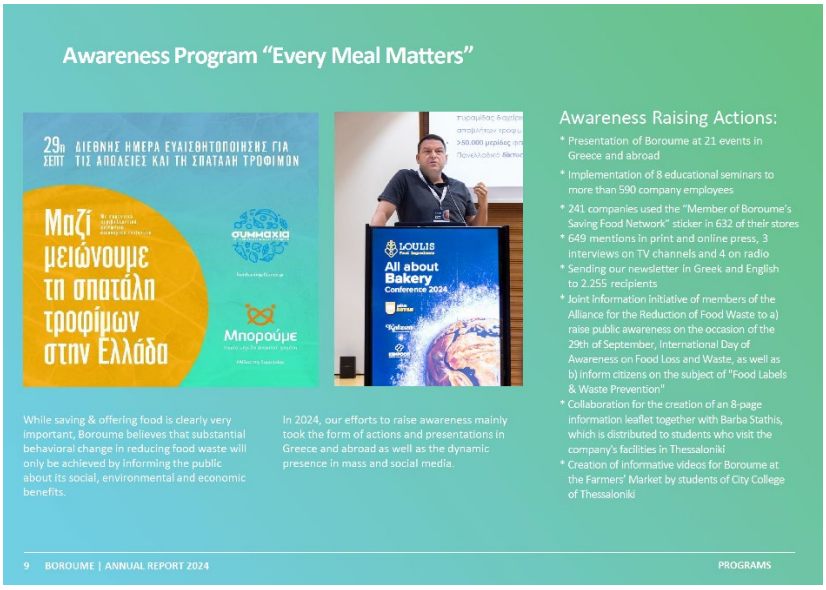
major food banks in Athens.

1. Boroume

"Direct Donation" System - Key characteristics:
No warehouse: "Boroume works directly with charities without intermediate food storage"
No refrigerated fleet: Relies on volunteer personal vehicles (753 volunteers total 2024)
Matchmaking service: "All you need is a phone, a (very good) database, and enthusiastic volunteers"
"Permanent bridges": 80-84% of donations are recurring connections (donor regularly gives to same charity)

Efficiency metrics:
91 food portions per €1 operating cost (2024, highest in 12-year history
54,921 portions/day average
0.57 volunteers per action at farmers' markets (indicates high turnover/inconsistency)

Logistics gaps:
No cold chain for perishables (40% of food waste)
Point-to-point routing inefficiency (781 donors × 290 charities = 226,890 possible routes)
Volunteer inconsistency (personal vehicles, unpredictable schedules)
Cannot aggregate seasonal surpluses (no buffer storage)



https://www.boroume.gr/Content/Files/1/pdf_files/Boroume_Annual_Report_2024_.pdf

2. The City of Athens Reception and Solidarity Centr

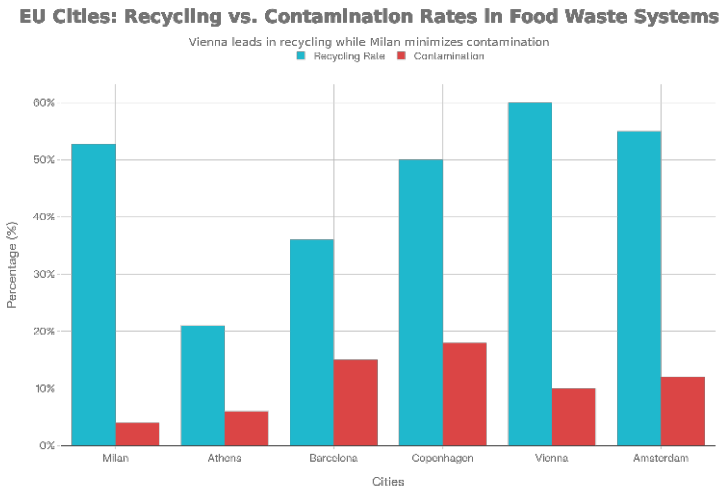
The City of Athens Reception and Solidarity Centre distributes 900-1,000 full meals on a daily basis. KYADA's street work teams distribute meals to homeless shelters and to the people who live in the streets on a daily basis.

https://kyada-athens.gr/en/meals-and-food-bank/

athens vs EU countries.

City	Overall Recycling Rate	Organic Stream Contamination	Notes
Milan	52.7% (2015)	4%	Best-in-class; visual inspection protocol
Vienna	~60% (estimated)	~10% (estimated)	Quality-focused selective collection
Amsterdam	~55% (estimated)	~12% (estimated)	Prevention-first approach
Copenhagen	~50% (estimated)	18% (reject rate in pre-treatment)	Biobag system, universal household access
Barcelona	36%	~15% (estimated)	Transitioning, takeaway packaging challenge
Athens	21% (Greece national)	6% (pilot programs)	Far below potential; contamination low in pilots

Generated Figure by author



Generated Figure from https://www.smartchain-platform.eu/sites/default/files/publication-files/FOODRUS_BPF18_FLW%20Prevention%20unit_Halandri_Greece.pdf

Main regulatory families in EU law

A. Food hygiene & food safety

a. Regulation (EC) 852/2004 on the hygiene of foodstuffs ("Hygiene Package")
b. Regulation (EC) 178/2002 (General Food Law)
c. National Greek transposition and enforcement rules.

B. Food donation & redistribution

a. EU Food Donation Guidelines (2017, updated by 2021 hygiene amendments)
b. Sectoral guidance by FEBA, Global Food Donation Policy Atlas etc.

C. Waste, biowaste and circular economy

a. Waste Framework Directive 2008/98/EC as amended by 2018/851 (obligatory separate collection of biowaste by 31.12.2023)
b. Landfill Directive 1999/31/EC as amended by 2018/850 (10% municipal waste to landfill by 2030, ban on landfilling separately collected waste

A. Food Donation & Redistribution Framework
EU Food Donation Guidelines (2017, updated 2021)
Adopted on World Food Day 2017 as part of the Circular Economy Action Plan:
Purpose: Facilitate compliance with EU food safety, hygiene, traceability, liability, and VAT requirements
Key Clarification: Food redistribution organizations and charities are "food business operators" under General Food Law and must comply with all hygiene regulations
Best Before vs. Use By: Food can be donated after "best before" dates if fit for human consumption, but not after "use by" dates
2021 Amendments: Regulations 2021/382 and 2021/1374 further facilitated donation from hospitality/catering sectors

FEBA (European Food Banks Federation)
The coordinating body across Europe with valuable precedent data:
341 Food Banks operating across 30 European countries
2021: Redistributed 907,280 tonnes to 11 million people via 45,810 charitable organizations
Established food safety protocols and acceptable donation criteria

Waste, Biowaste & Circular Economy Legislation
Waste Framework Directive 2008/98/EC (amended by Directive 2018/851)

Greece transposed this through Law 4042/2012 and updated with Law 4685/2020:
Article 22 - Mandatory Biowaste Separate Collection:
Deadline: 31 December 2023 (Greece set 31 December 2022)
Requirement: Bio-waste must be either separated and recycled at source (home composting) OR collected separately and not mixed with other waste
Definition: Biodegradable garden and food waste from households, restaurants, catering, retail, offices

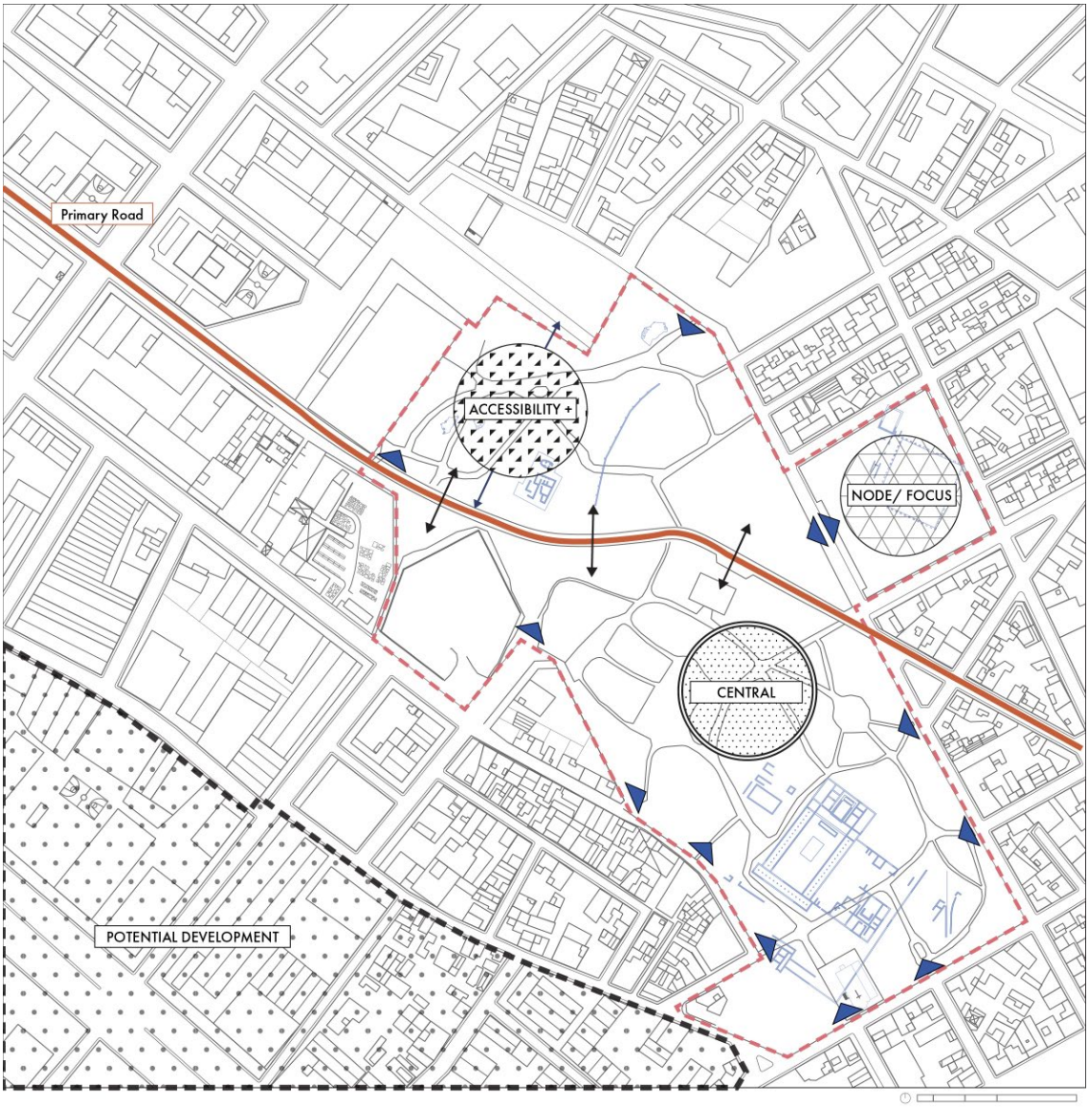
Greece-Specific Context:
Greek municipal waste is approximately 44% organic (~223 kg/capita/year potential)
As of 2023-2024, separate biowaste collection is almost non-existent in Greece, limited to pilot programs
National target: 40% separate collection of bio-waste

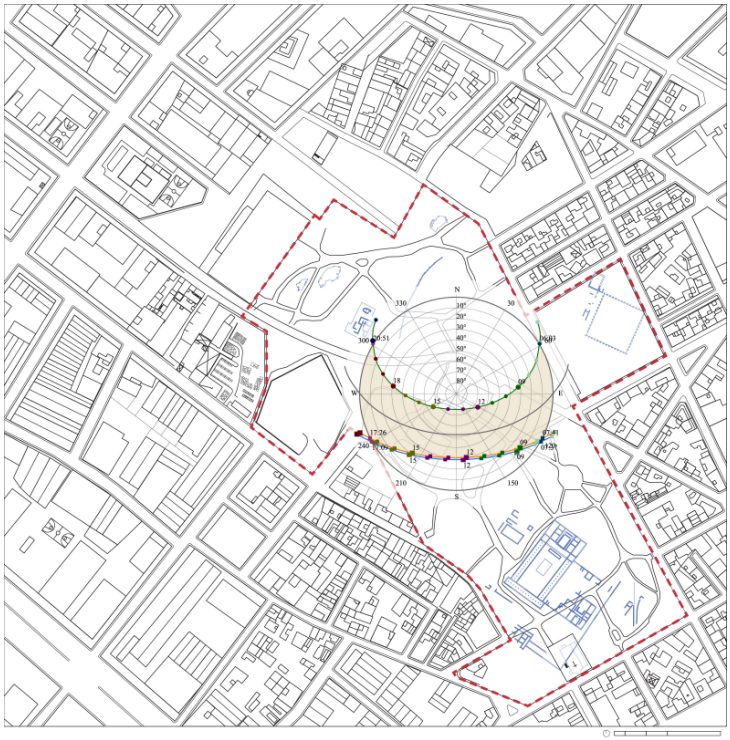
Municipal Waste Recycling Targets:
2025: 55% recycling
2030: 60% recycling
2035: 65% recycling
Critical 2027 change: Only separately collected bio-waste counts toward recycling targets; Mechanical Biological Treatment (MBT) of mixed waste no longer counts

Landfill Directive 1999/31/EC (amended by Directive 2018/850):
2030: Maximum 10% municipal waste to landfill
Ban: Separately collected waste cannot be landfilled or (for bio-waste) incinerated
Greece Context: Attica region produces ~40% of country's waste; ~90% goes to Fyli landfill which operates at capacity limits with serious environmental problems[document]

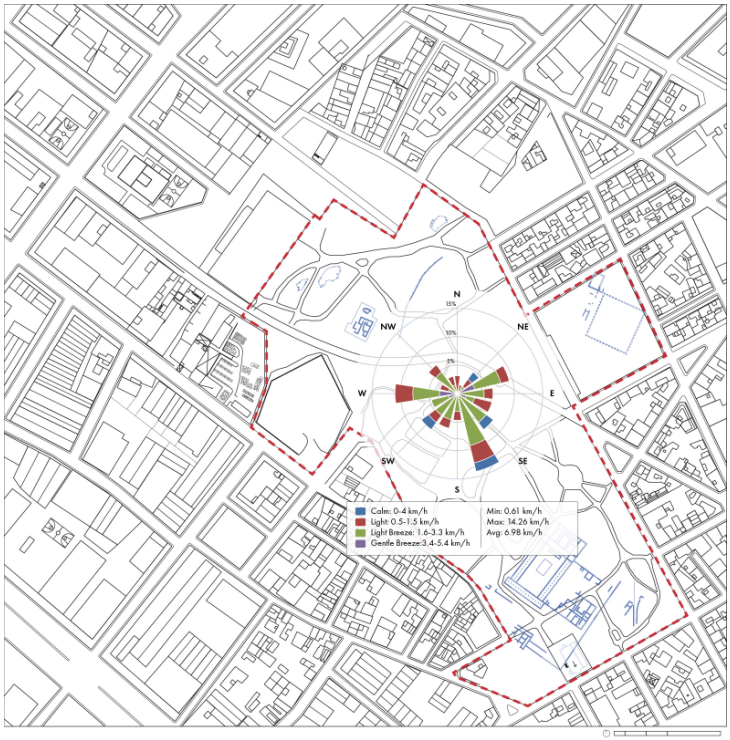
Global E-Waste Statistics Partnership. "The EU Adopts Four Directives to Solidify Europe's Leading Position in Waste Management." GlobalELR, July 2018. Accessed January 12, 2026. https://www.globalelr.com/2018/07/the-eu-adopts-four-directives-to-solidify-europes-leading-position-in-waste-management/
Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV). "Directive 2008/98/EC on Waste and Repealing Certain Directives." Accessed January 12, 2026. https://www.bundesumweltministerium.de/en/law/directive-2008-98-ec-on-waste-and-repealing-certain-directives
European Commission. "Food Loss and Waste Prevention." Farm to Fork Strategy. Accessed January 12, 2026. https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy/food-loss-and-waste-prevention_en

genius loci.


Primary Road
ACCESSIBILITY +
NODE/ FOCUS
CENTRAL
POTENTIAL DEVELOPMENT

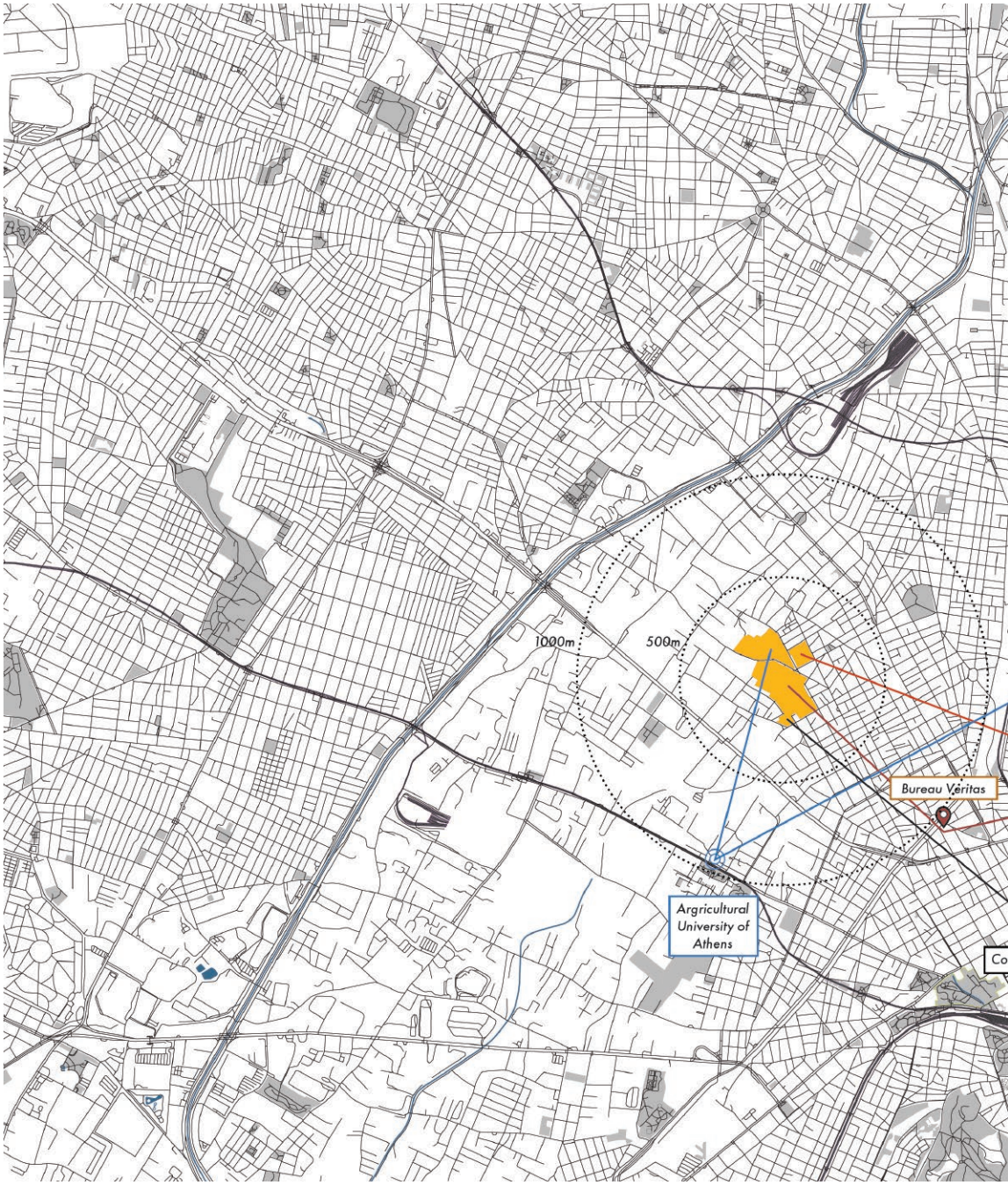


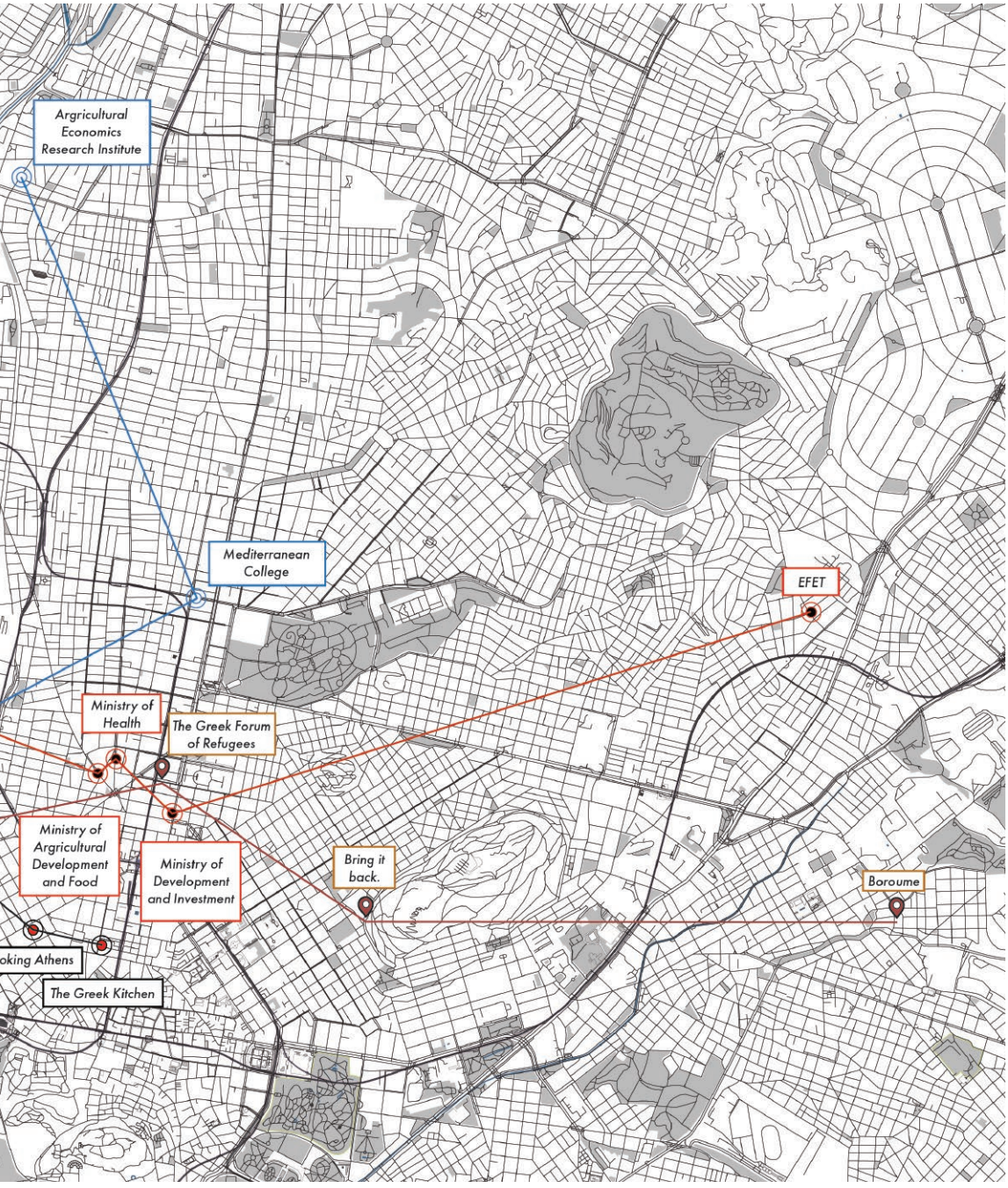
sunpath diagram.



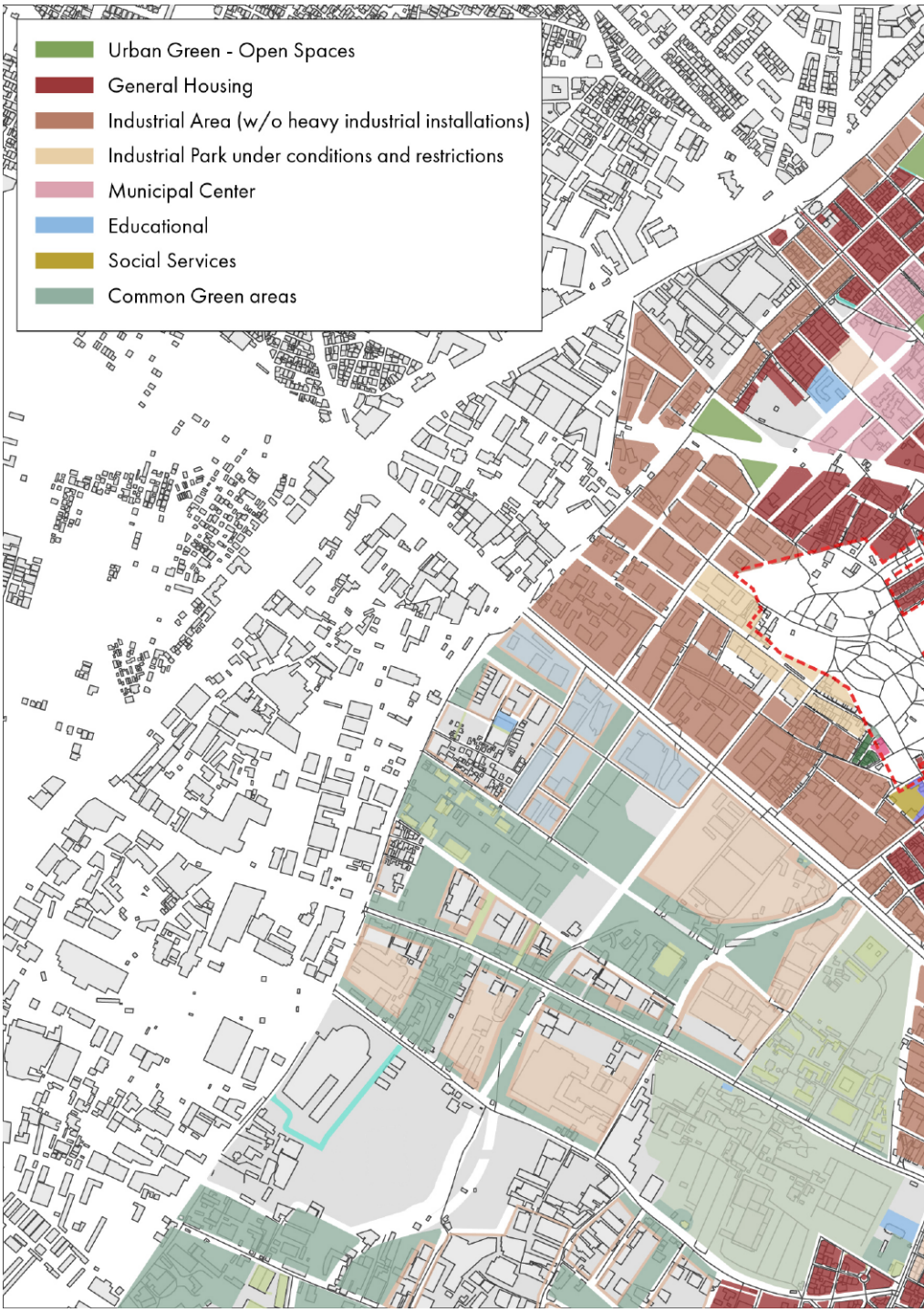
wind rose july.

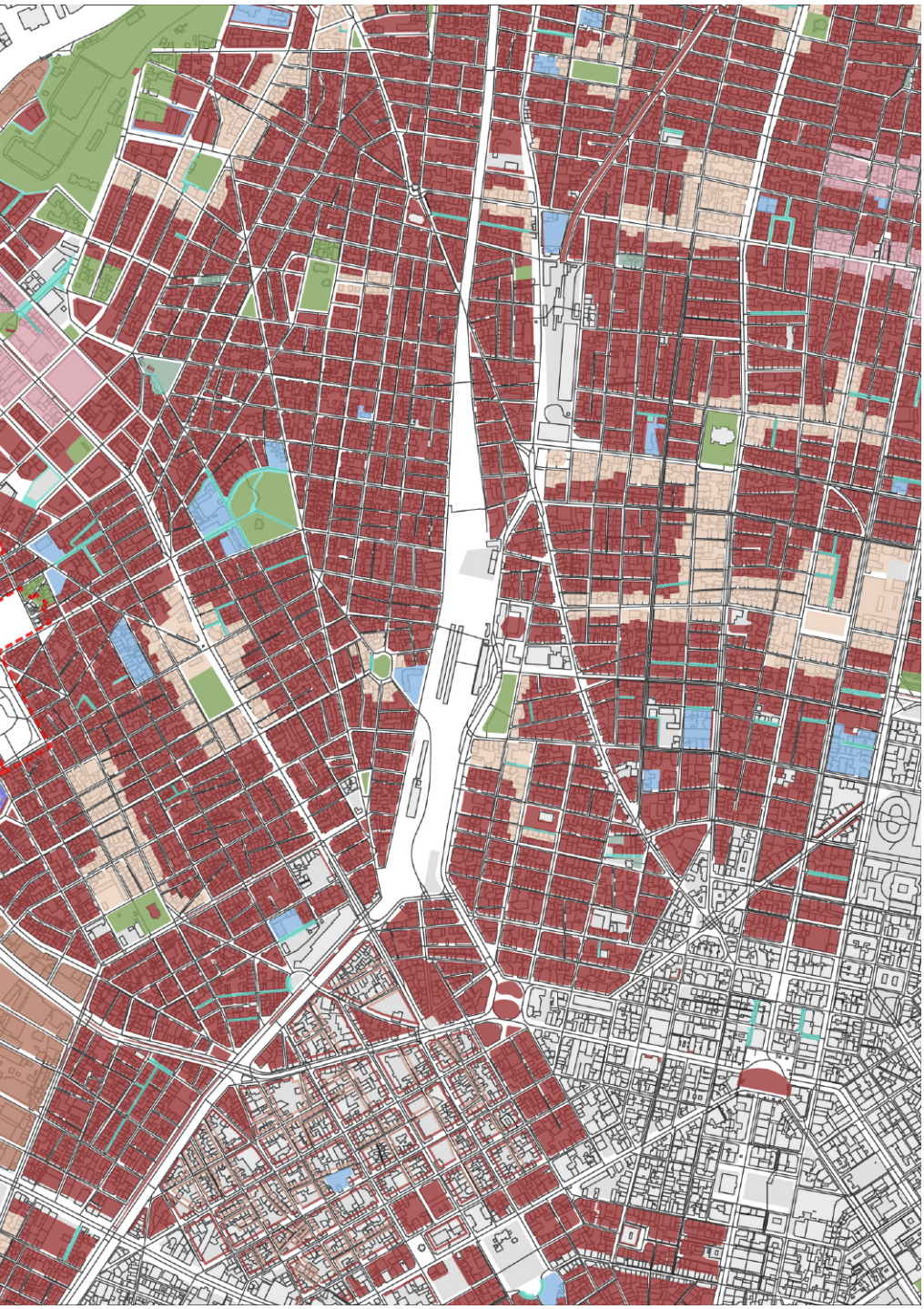
organisation mapping.



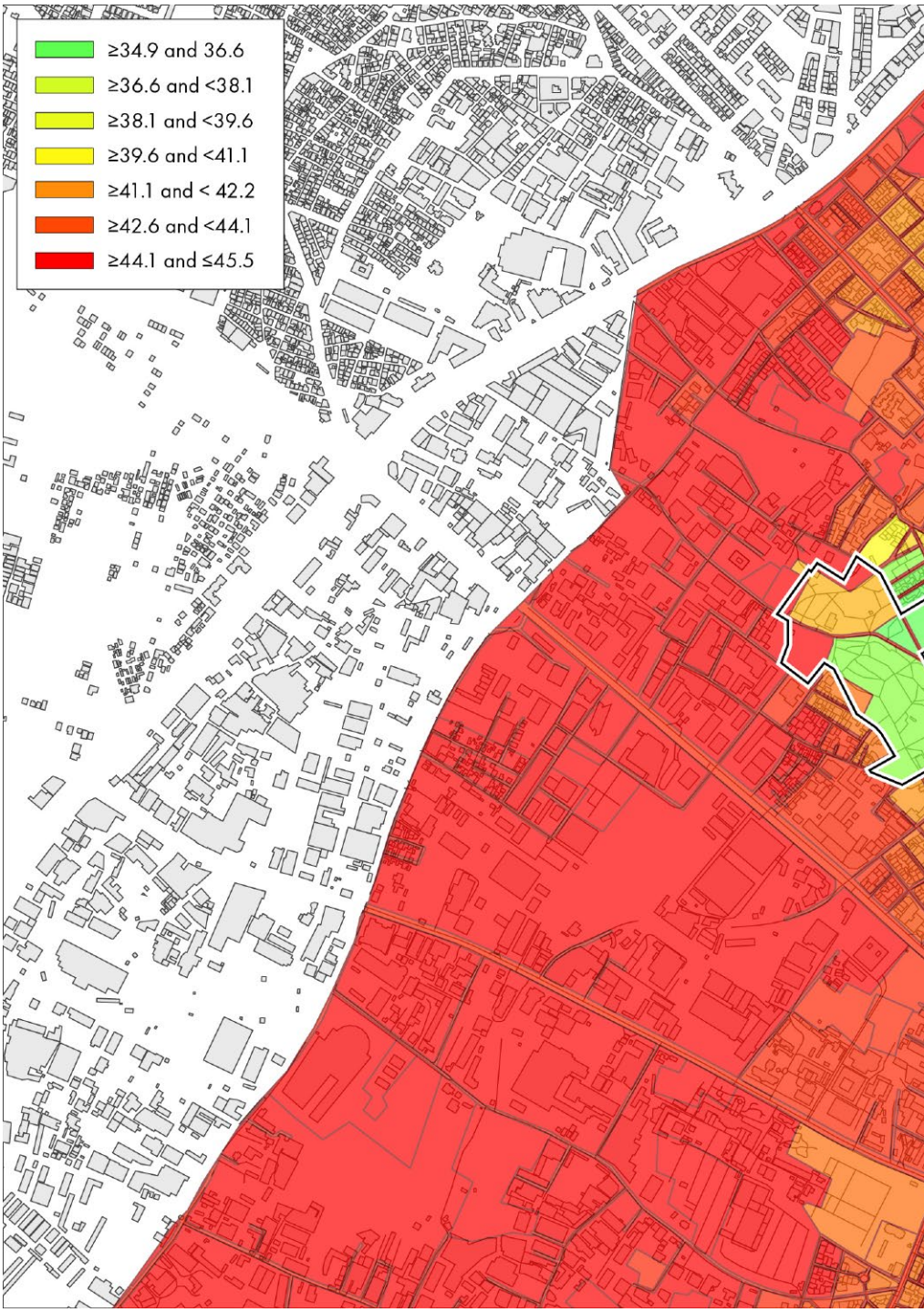

Argricultural Economics Research Institute
Mediterranean College
EFET
Ministry of Health
The Greek Forum of Refugees
Ministry of Argricultural Development and Food
Ministry of Development and Investment
Bring it back.
Boroume
oking Athens
The Greek Kitchen

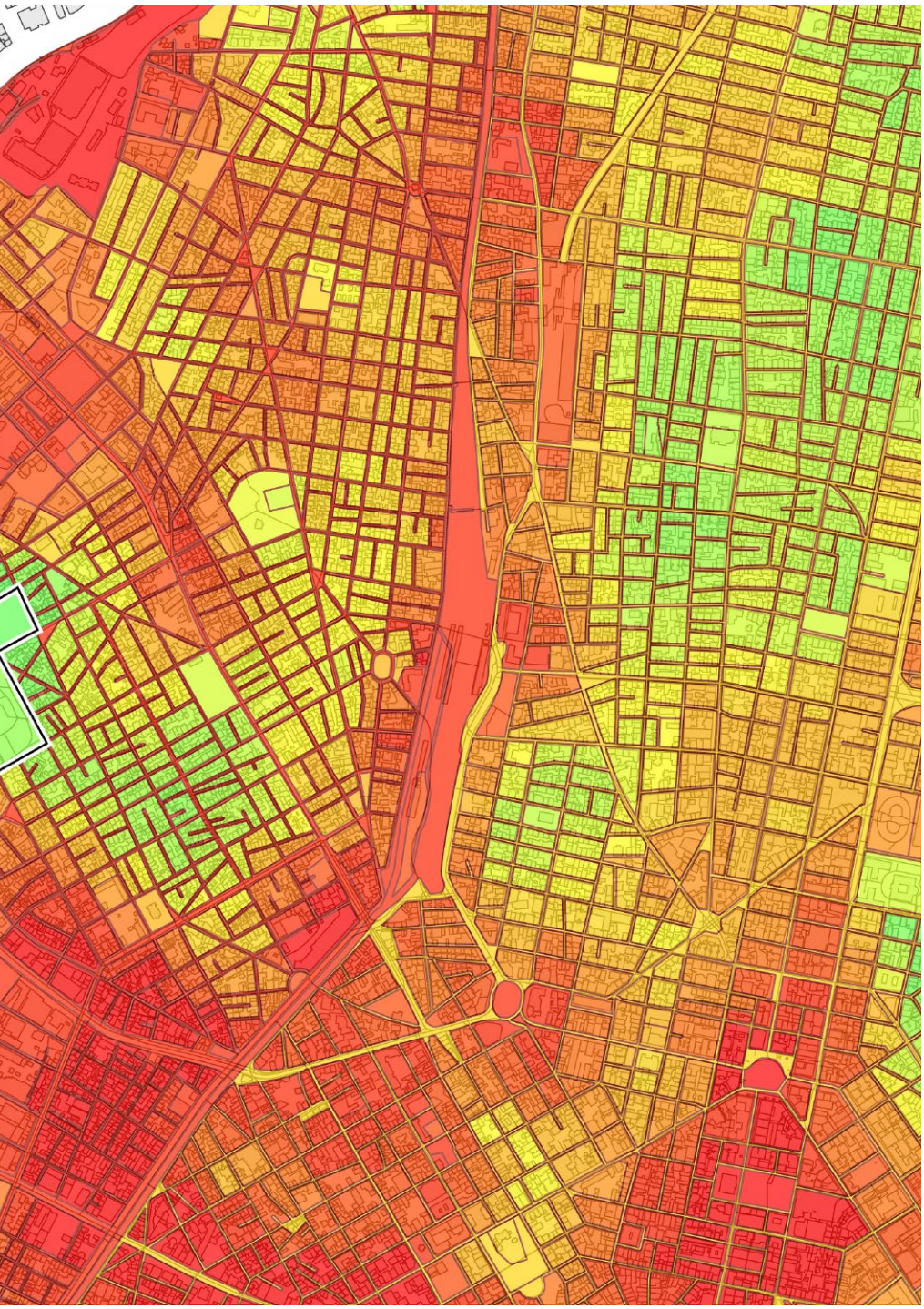
building typologies.



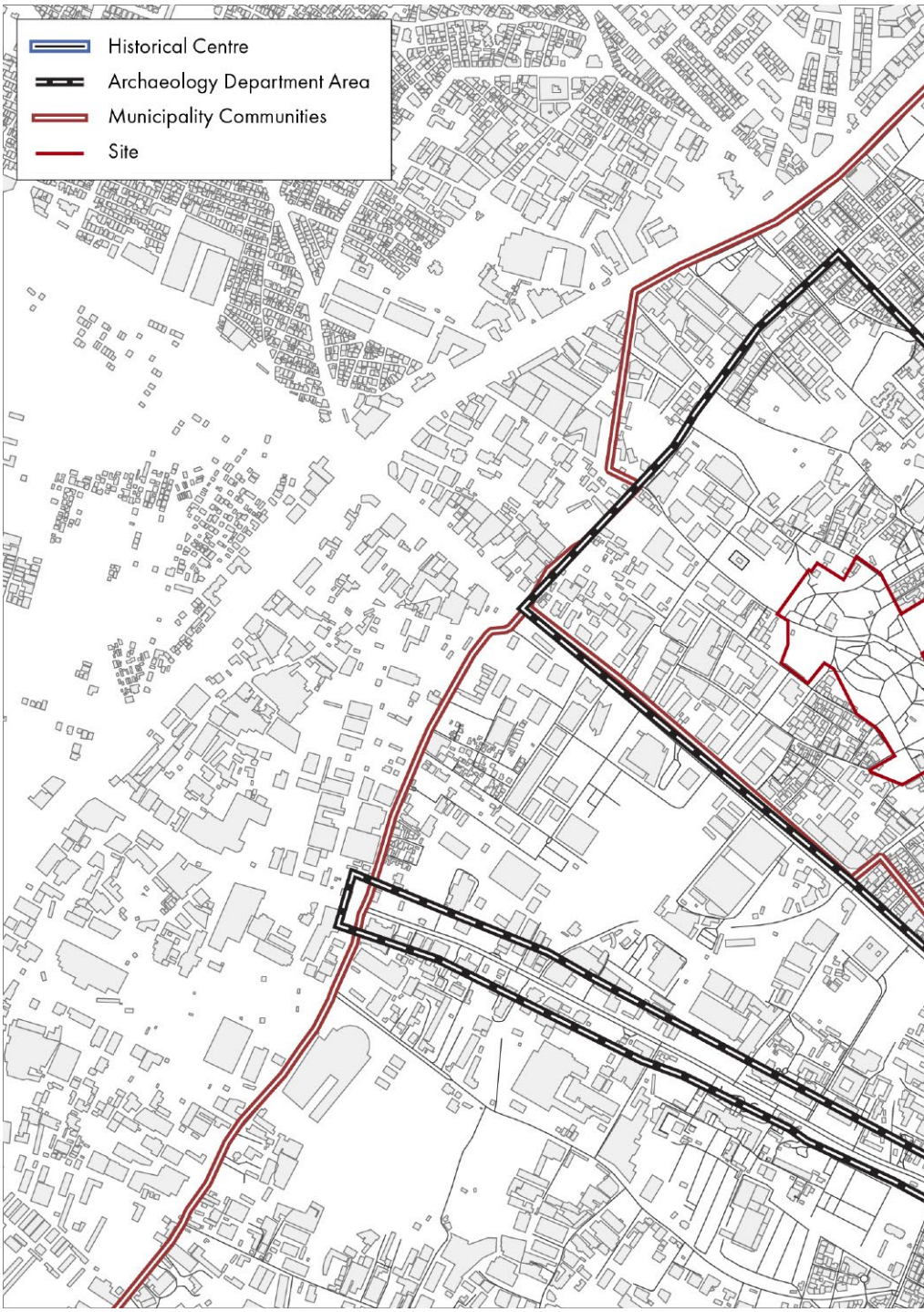


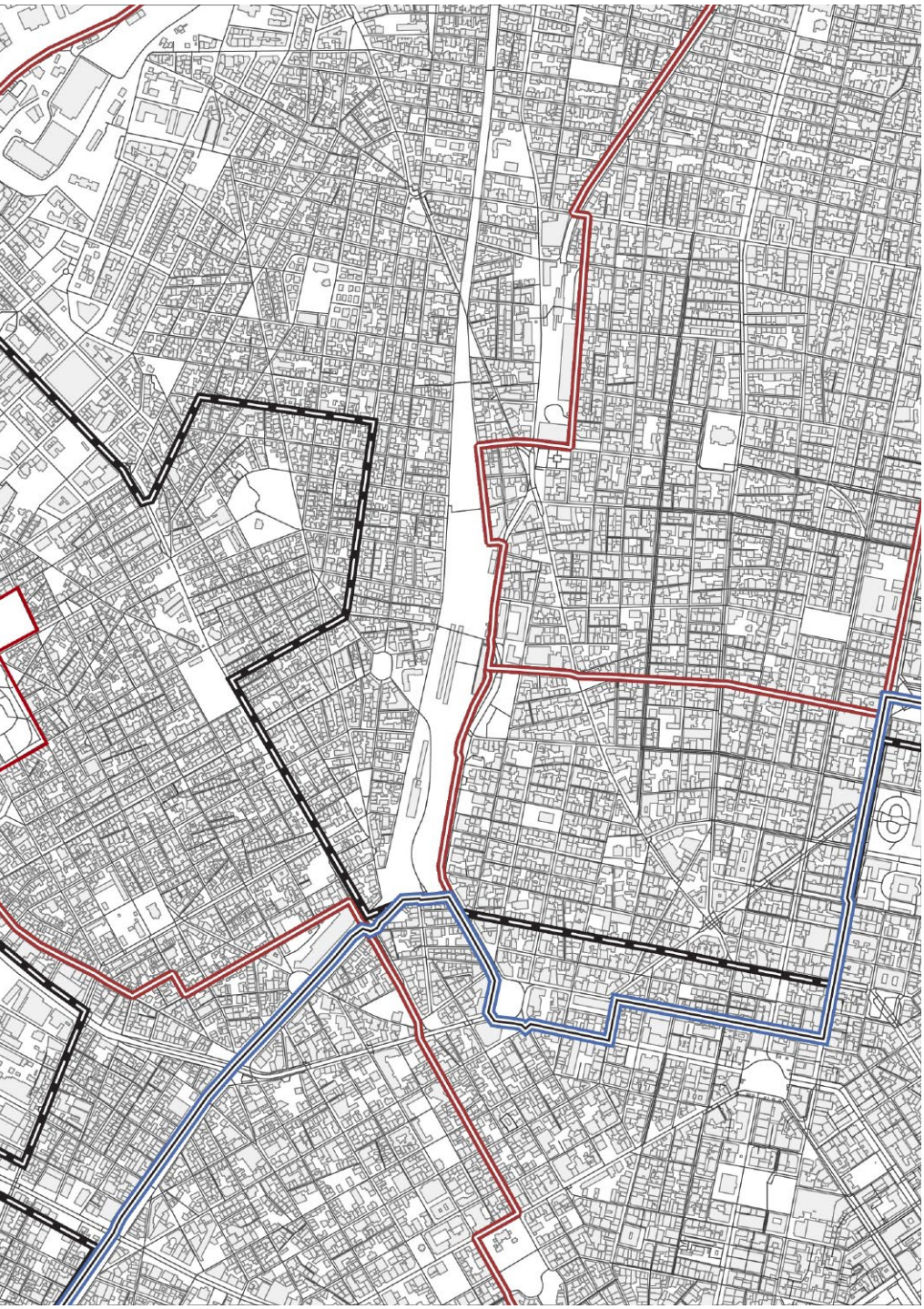
urban heatmap.



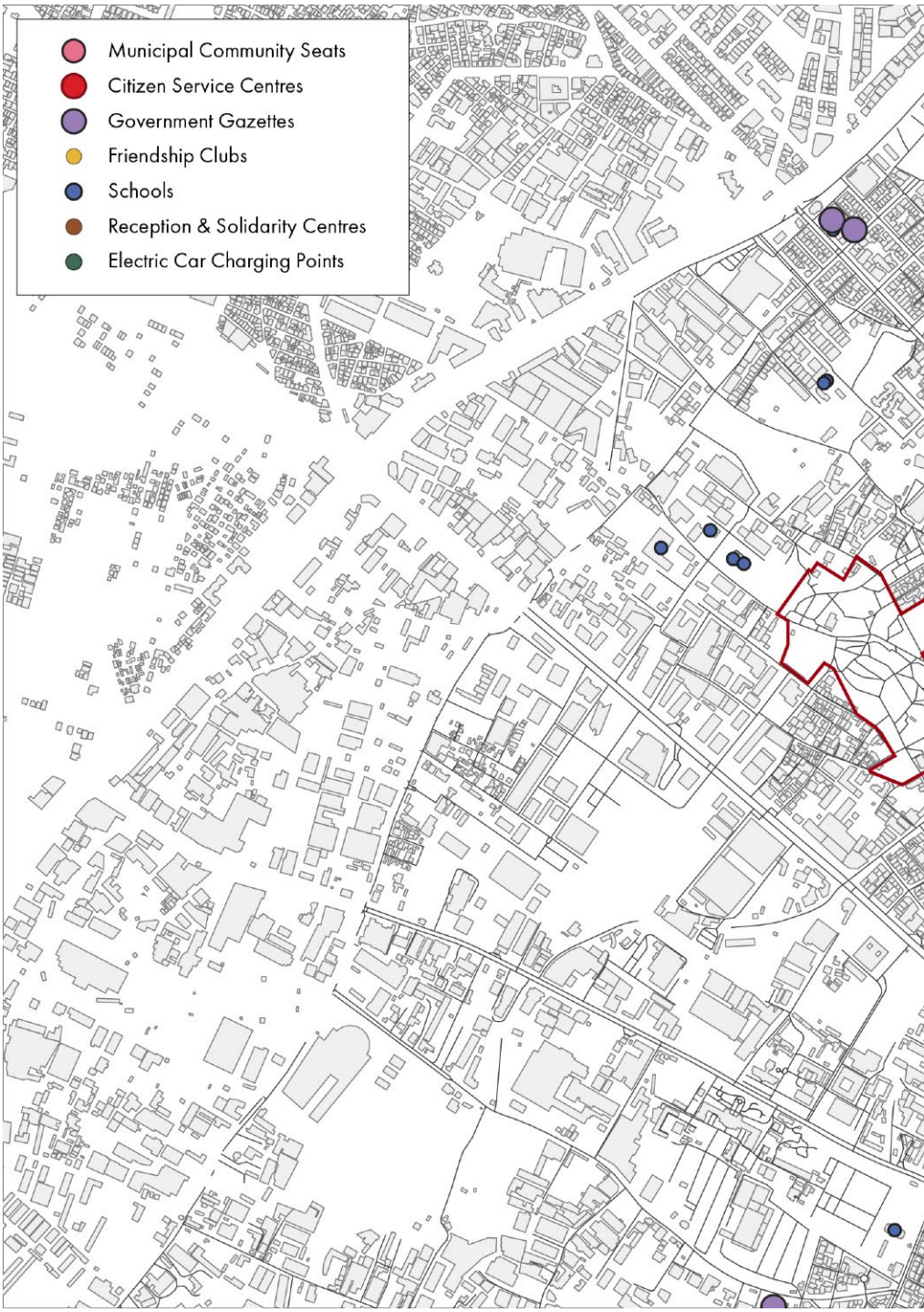


site layers.

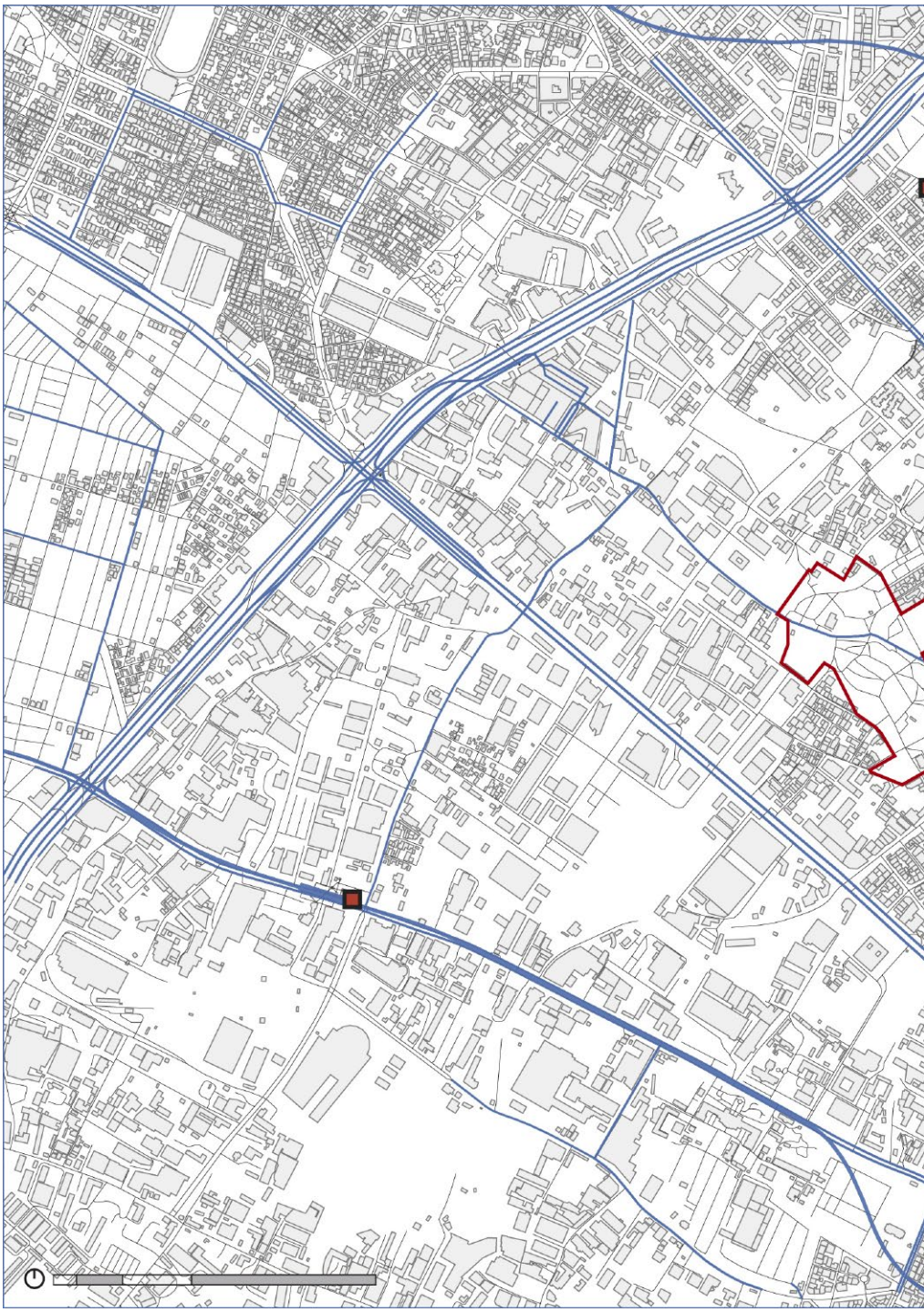

Historical Centre
Archaeology Department Area
Municipality Communities
Site



actors & buildings.



transportation overview.



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