

SuperZuidas Super Dutch Design Report

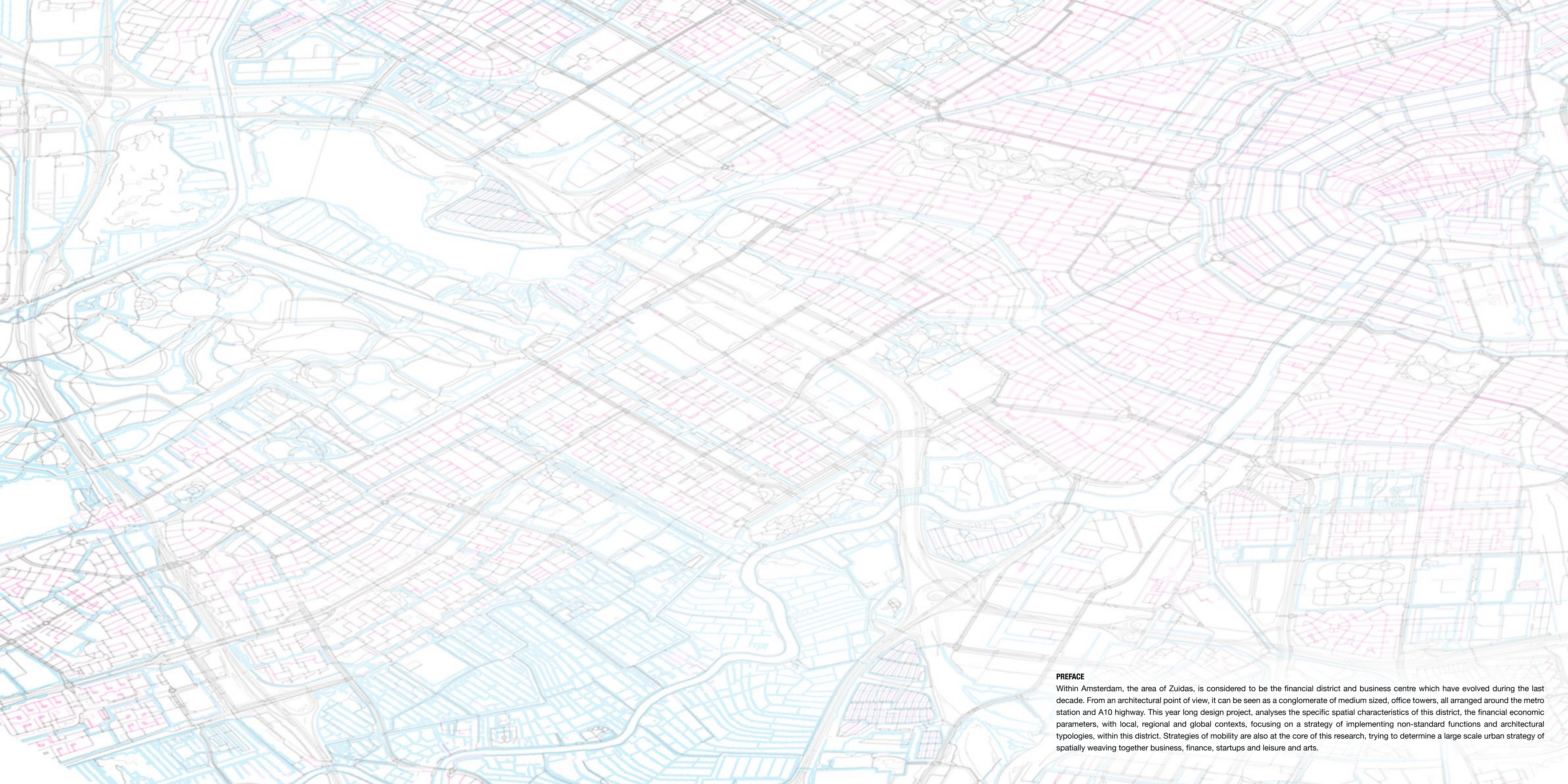
Azmina Gulamhusein
ESALA 19/20



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PREFACE

Within Amsterdam, the area of Zuidas, is considered to be the financial district and business centre which have evolved during the last decade. From an architectural point of view, it can be seen as a conglomerate of medium sized, office towers, all arranged around the metro station and A10 highway. This year long design project, analyses the specific spatial characteristics of this district, the financial economic parameters, with local, regional and global contexts, focusing on a strategy of implementing non-standard functions and architectural typologies, within this district. Strategies of mobility are also at the core of this research, trying to determine a large scale urban strategy of spatially weaving together business, finance, startups and leisure and arts.

ABSTRACT

Randstad can be defined as a polycentric urban area within the Netherlands, and comprises of the largest Dutch cities: Amsterdam, Rotterdam, The Hague and Utrecht. These cities are arranged around Groene Hart, a green zone dedicated to agriculture and leisure that is designed to act as a buffer between the above listed urban nodes. Although Randstad only covers 20% of the Netherlands land area, at least 40% of the Dutch population live there and a major proportion of the national income is earned within its boundaries. Consequently, the economic development has a huge impact on the economic development of the entire Netherlands. The Randstad as a whole generates income per capita that is 6% higher than that for the Netherlands as a whole. While the Randstad is best known for its role as the logistics hub of Europe, with the largest European port located in Rotterdam, it has a diverse economy that includes other strong competitive sectors such as business and financial services, trade and logistics, horticulture and the creative industry.

There is a high concentration of financial and business services in Randstad as well as the in the urban regions immediately surrounding it, however financial services are most concentrated in Amsterdam and its surrounding municipalities, making Amsterdam the internationally orientated centre of the Randstad.

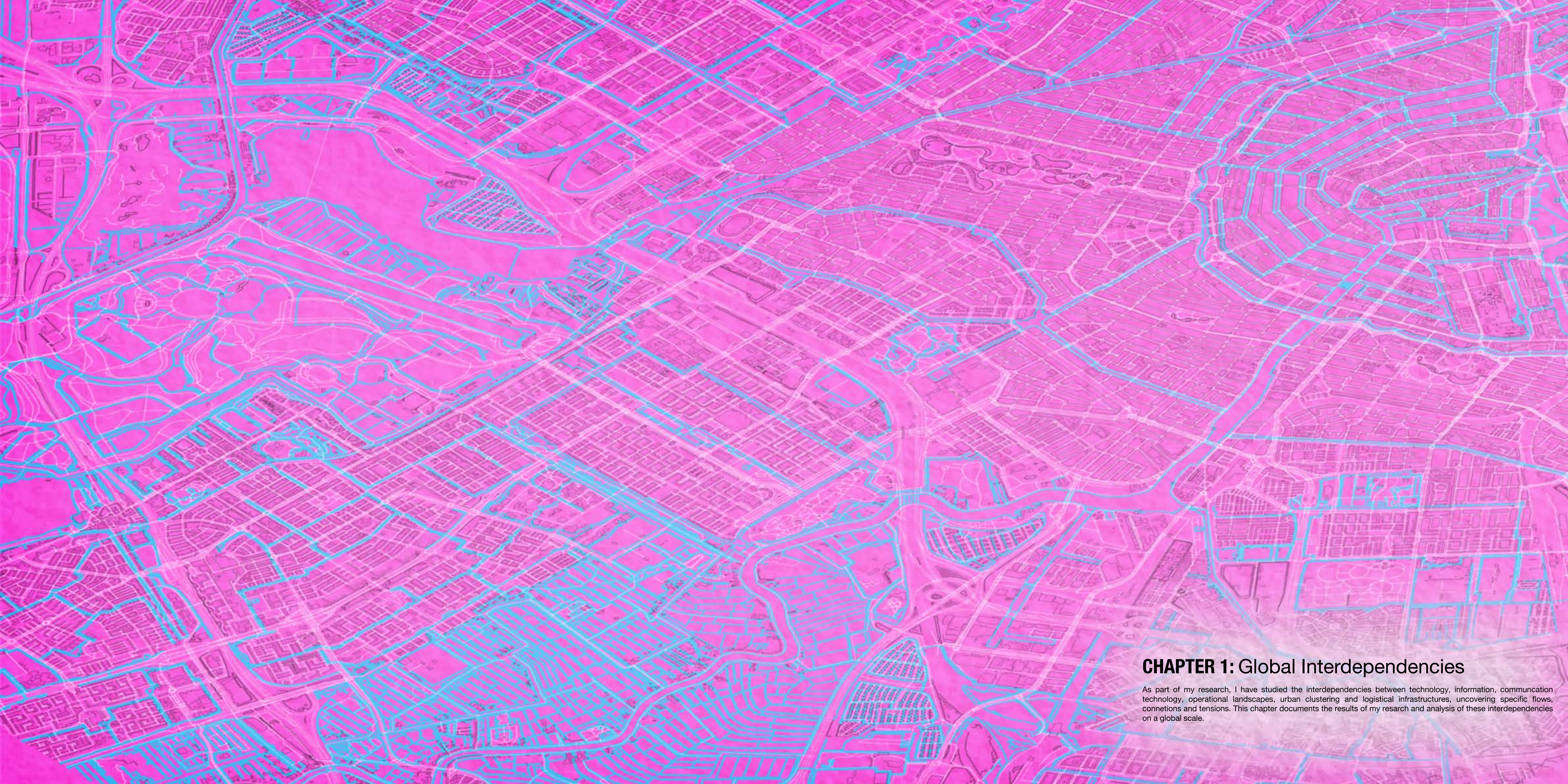
The Amsterdam City Council predicts that up to 150,000 inhabitants are expected to migrate into the city by 2040. This prediction has mandated that planners rethink the economic, physical and social structure of Amsterdam, in order to prepare for the influx of new people. Consequently, to develop the Amsterdam City Council has introduced the 2040 master plan, which includes developing office districts into mixed-use residential communities, redeveloping industrial riverfronts and building more high-rises, windfarms and public transport networks. The primary goal is to densify existing communities and build new suburban business, commercial and residential districts that maximise space as efficiently as possible within the A10 ring road surrounding the city. The 2040 Structural Vision Amsterdam masterplan includes six key 'Spatial Tasks.' These are: densify, transform, public transport on a regional scale, high quality of public space, invest in the recreational use of green space and water and converting to sustainable energy.

Structural Vision Amsterdam 2040 calls for the continued growth and upgrade of Zuidas, Amsterdam's central business district. This has prompted an enhancement to its buildings and transportation. Rem Koolhaas designed the recently completed Amsterdam RAI hotel which comprises of staggered cubes around a vertical axis, PLP are developing an extension to the World Trade centre, and Dutch architects Dam & Partners HourGlass, a new office building inspired by the work of Romanian sculptor Constantin Brâncuși. Most notable, however, is MVRDV's The Valley, a multifaceted building accommodating office, retail, residential and catering facilities, whose green facades and patios, give it the look and feel of an exuberant green valley. In the heart of Zuidas, the Amsterdam Zuid train station, currently under construction, is going to be the second largest transport rail hub in the city, linking together Amsterdam's neighbourhoods with each other, the rest of the Netherlands and a large part of Western Europe. This project, entitled Zuidasdok also involves the widening of the A10 motorway and making the station area a lot greener.

This document shows an investigation into the future scenario for Zuidas and details the development of an architecture which aims to rejuvenate the district alongside the Structural Amsterdam 2040 and Zuidasdok vision.

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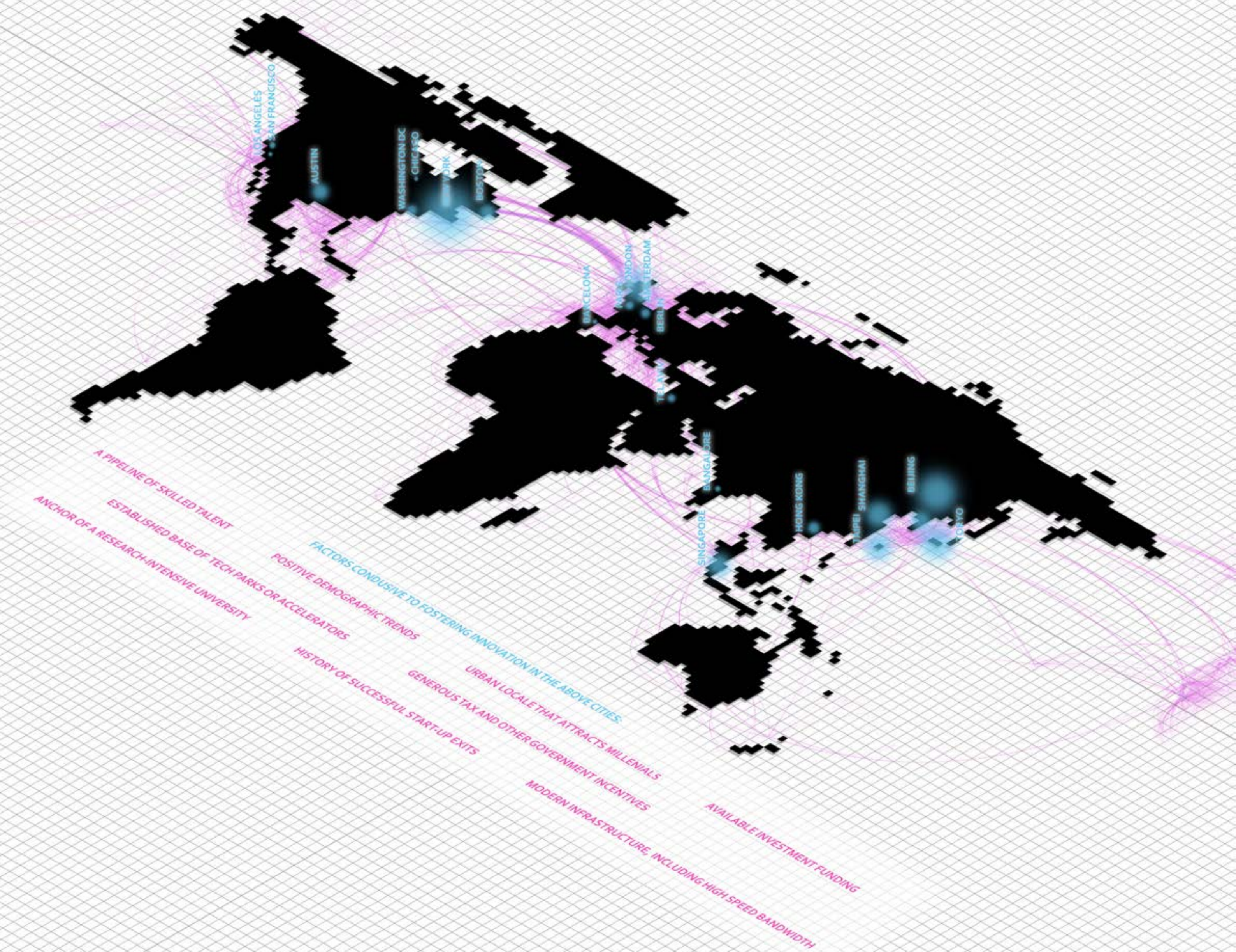


CHAPTER 1: Global Interdependencies

As part of my research, I have studied the interdependencies between technology, information, communication technology, operational landscapes, urban clustering and logistical infrastructures, uncovering specific flows, connetions and tensions. This chapter documents the results of my research and analysis of these interdependencies on a global scale.

These are the global cities outside of Silicon Valley that are seen as leading technology hubs over the next four years according to KPMG's global Technology Industry Innovation Survey 2019.

Amsterdam ranks 16th in this list



The Savill's Tech City Index measures what makes a successful Tech City and rates each city on 100 different individual metrics that are grouped into six categories, detailed below.

Amsterdam ranks 4th according to this index

- 

Business Environment

 - Investment
 - Size of finance and business services sector
 - Ease of starting a business
 - R&D/ innovation
 - Physical linkages
 - Cost of doing business (regulations, taxes, pay)
- 

Tech Environment

 - Venture capital
 - Size/ value of tech sector
 - Tech infrastructure
 - Tech engagement
- 

City Buzz & Wellness

 - City Wellness
 - City Buzz
 - Cost of living
- 

Talent Pool

 - Higher Education
 - Immigration & talent attractiveness
 - City youthfulness
- 

Real Estate Costs

 - Cost of renting commercial and residential property
 - Cost of coworking space
- 

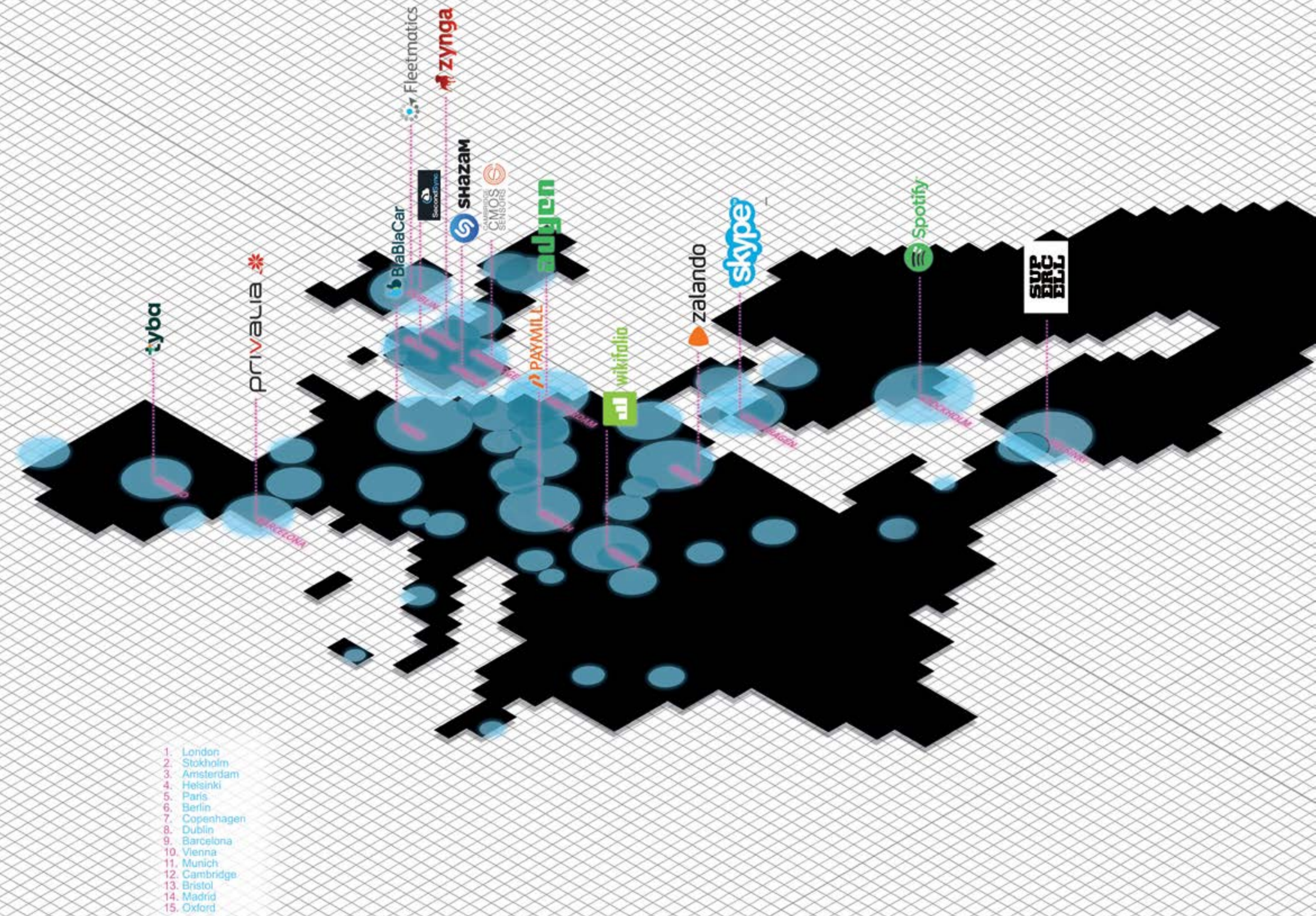
Mobility

 - Shared mobility services
 - Metro system
 - Quality of urban infrastructure



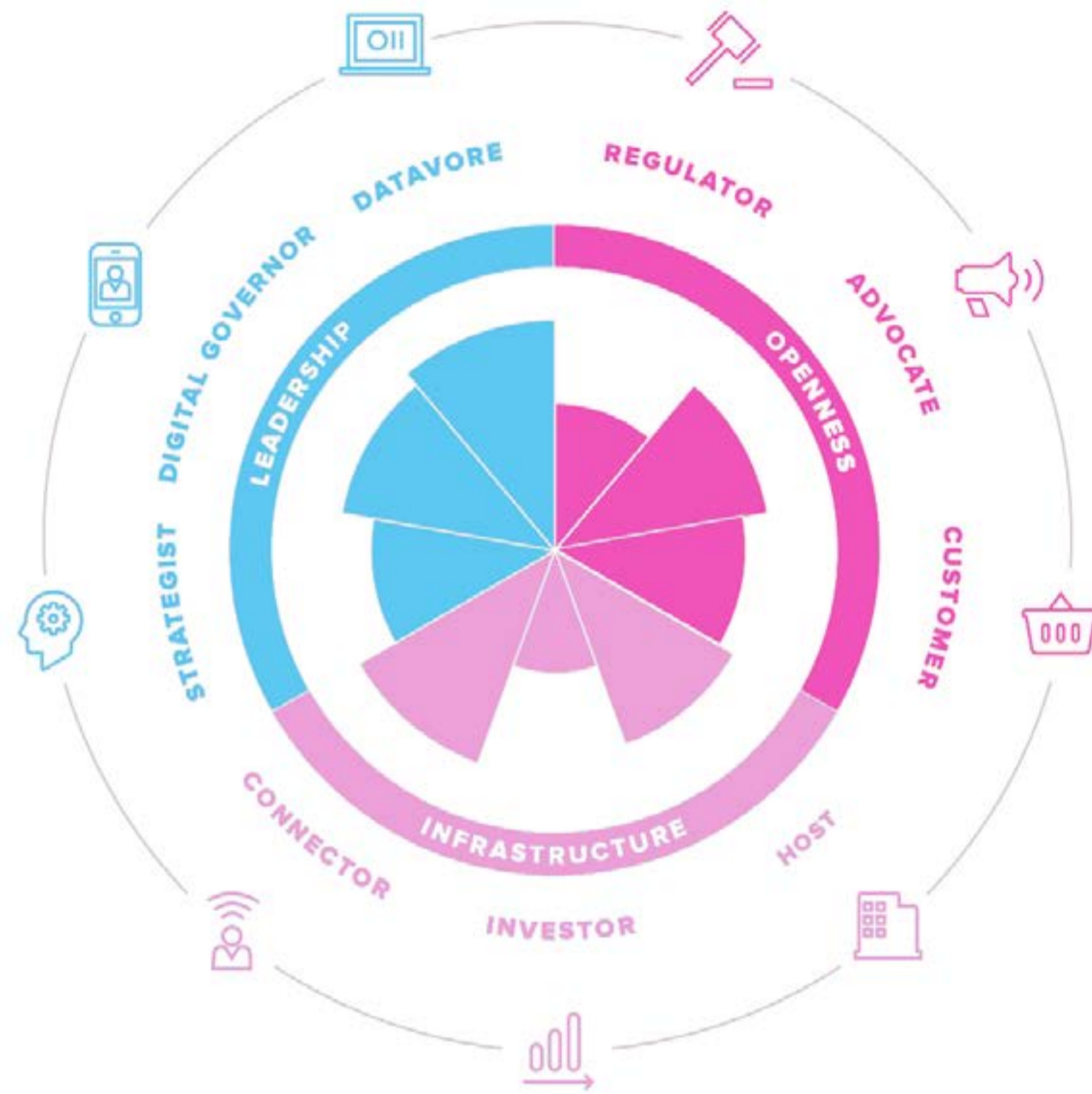
The European Digital City Index shows how well different European cities support digital entrepreneurship. The map below highlights the top 20 cities ranked for Start Up readiness and shows their respective successful Unicorns and Exit Companies. This is appropriate for very young companies and individual entrepreneurs.

Amsterdam ranks 3rd according to this index



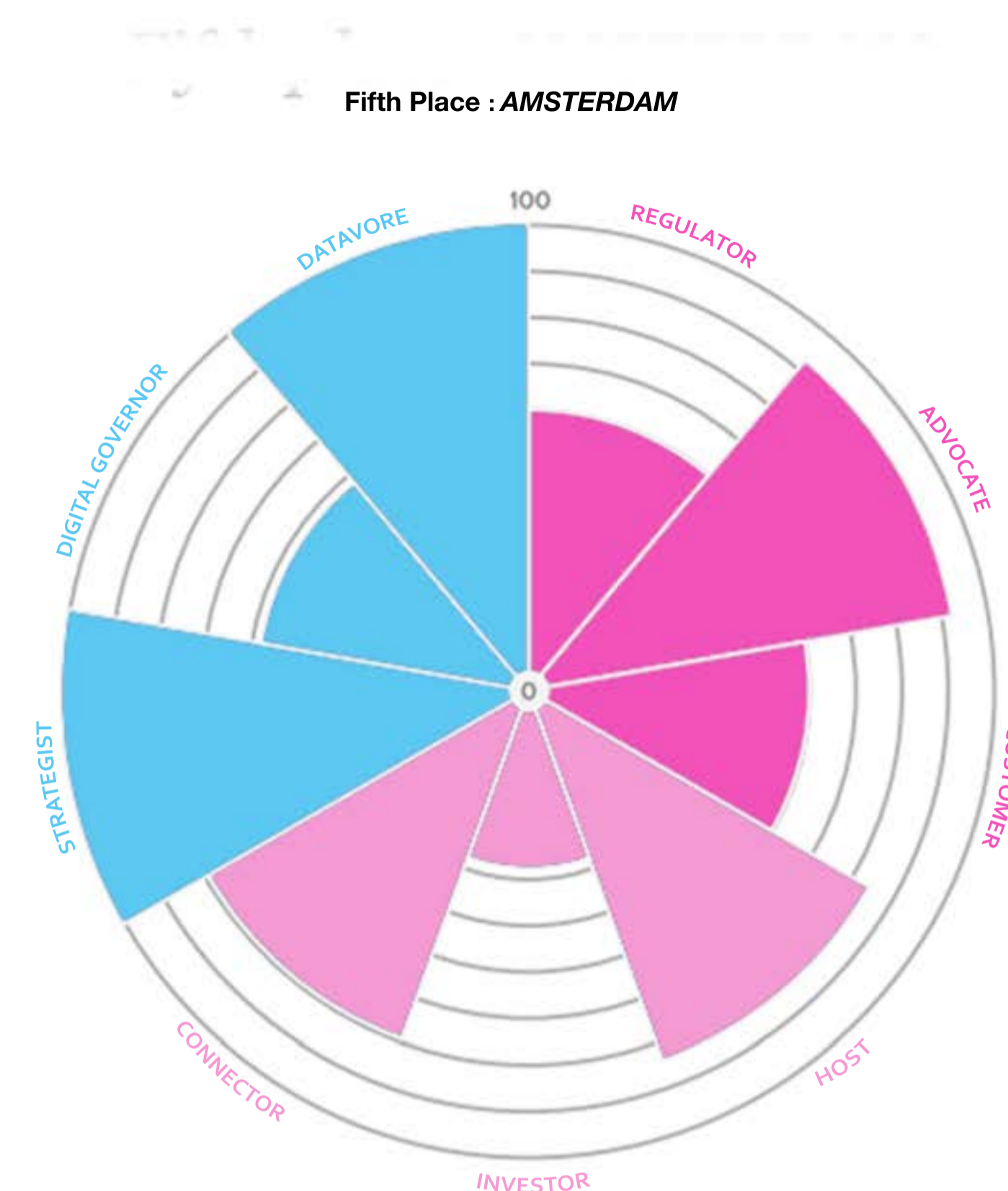
CITY INITIATIVES for TECHNOLOGY, INNOVATION and ENTREPRENEURSHIP

City Initiatives for Technology, Innovation and Entrepreneurship (CITIE) is the product of a partnership between Nesta, Accenture and the Future Cities Catapult. CITIE framework is an assessment of 40 global cities against a framework of policy levers, that city governments can use to support innovation and entrepreneurship.

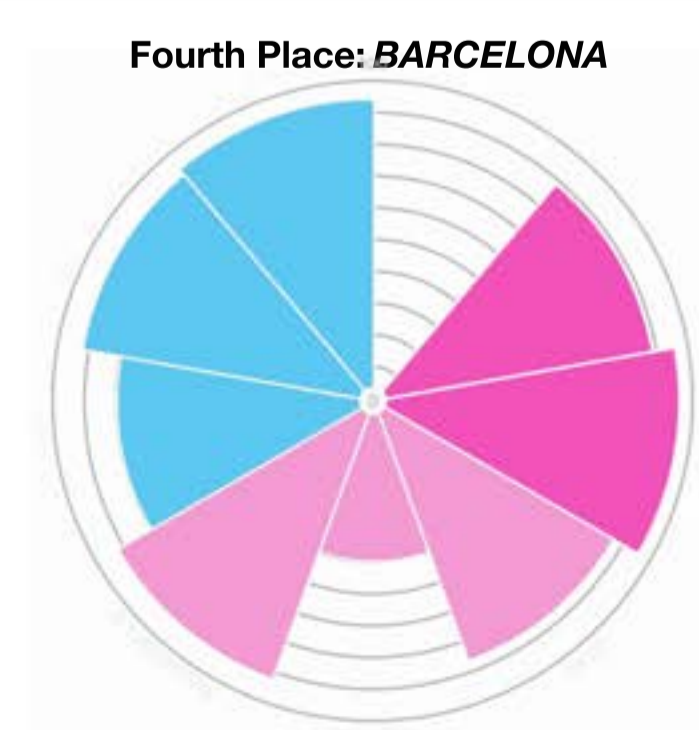
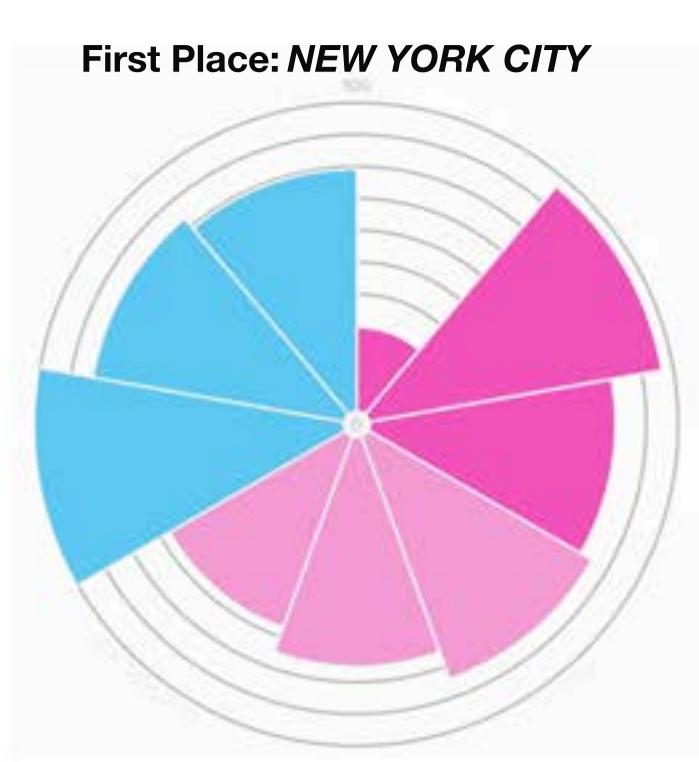


How open is the city to new ideas and businesses? How does the city optimise its infrastructure for high-growth new businesses? How does the city build innovation into its own activities?

- REGULATOR** (gavel icon): How does the city regulate business models in a way that allows for disruptive entry?
- ADVOCATE** (megaphone icon): How does the city promote itself as an innovative hub and its new business community to the outside world?
- CUSTOMER** (shopping cart icon): Is procurement accessible to small businesses, and does it actively seek out innovation?
- HOST** (storefront icon): How does the city use space to create opportunities for high-growth companies?
- INVESTOR** (bar chart icon): How does the city invest in the skills and businesses required for innovation?
- CONNECTOR** (Wi-Fi icon): How does the city facilitate physical and digital connectivity?
- STRATEGIST** (gear icon): Has the city set a clear direction and built the internal capability required to support innovation?
- DIGITAL GOVERNOR** (smartphone icon): How does the city use digital channels to foster high-quality, low-friction engagement with citizens?
- DATAVORE** (laptop icon): How does the city use data to optimise services and provide the raw material for innovation?



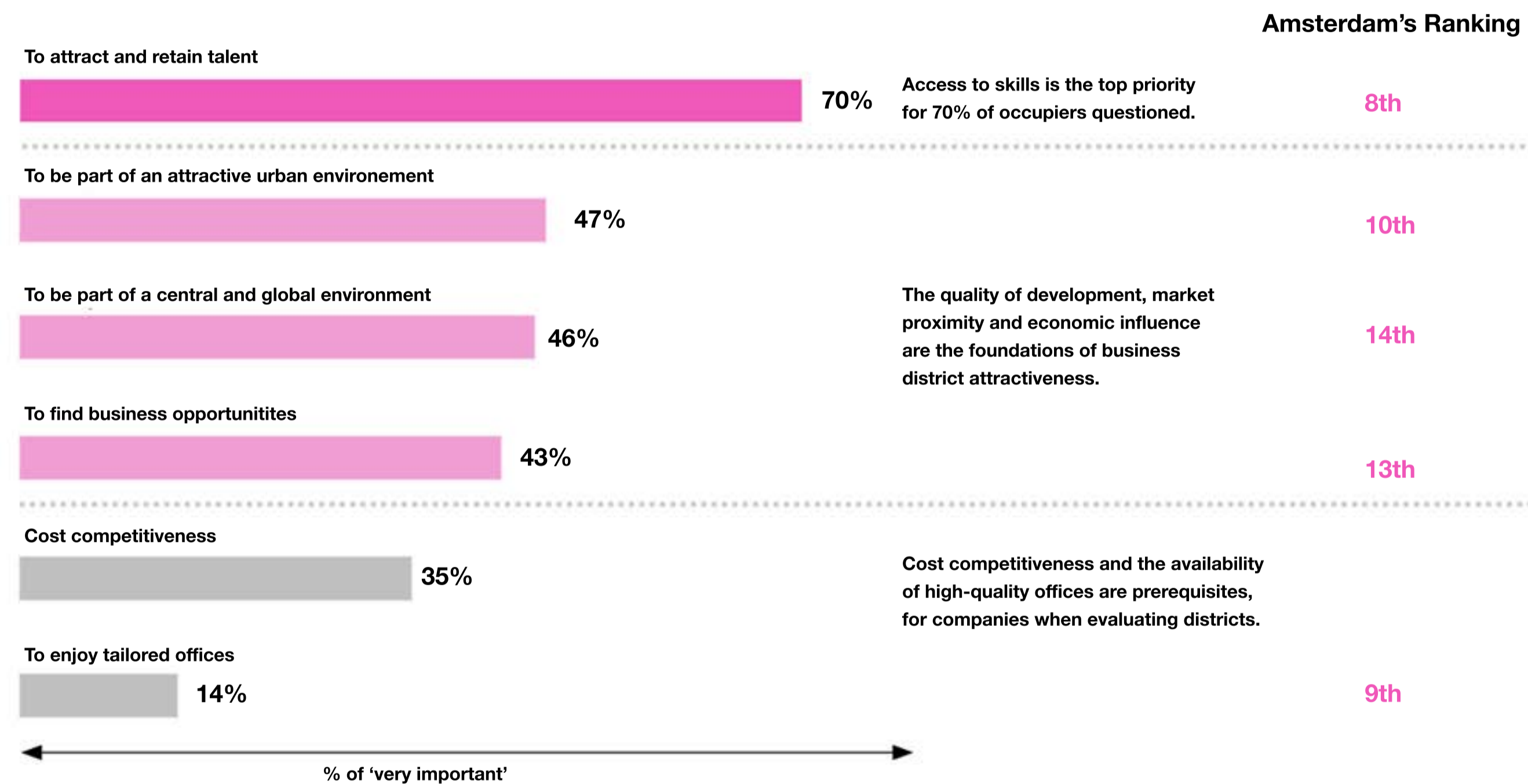
Amsterdam further demonstrates that sometimes the medium-sized cities are more capable of experimenting and developing the right policy conditions for innovation and entrepreneurship to flourish. With the most varied performance of any city in the top 5, Amsterdam's strength comes first and foremost from its leadership where it scores highly as Strategist and Datavore. The appointment of the city's first chief technology officer (CTO) in 2014 is increasing the momentum to break down silos and support the coordination of citywide innovation projects, providing the strategic direction for how technologies will be utilised to improve the livelihoods of Amsterdam's residents. All civil servants are encouraged to become innovators and changemakers, and to work with the CTO's team to learn new skills and create better linkages across city hall. Amsterdam's ambition to reinvent how the city hall delivers services and engages with its residents can also be seen in the Amsterdam Smart City initiative. Through this, the city is applying an open problemsolving approach. Like Barcelona, Amsterdam also uses urban assets to provide a 'living lab' that startups, like Quby, have used to test new products in live examples. The city recently launched a new StartupAmsterdam vision and four-year action programme. Successful delivery of the comprehensive set of initiatives laid out in the programme has the potential to improve the city's relative weakness in policy roles such as Investor and Digital Governor, and catapult the city to the top of these rankings next year.



Appendix
Design Proposal
Typological Studies
Urban Strategy
Radical Technology
Hack in Zuidas
Zuidasloek 2040
Logistical Interdependencies
Territorial Interdependencies
Global Interdependencies

EY'S 'THE ATTRACTIVENESS OF WORLD CLASS BUSINESS DISTRICTS' REPORT

The survey measures the comparative attractiveness of 17 leading business districts around the world. Conducted by EY and ULI it is based upon a global online survey of 226 members of the ULI network, and 35 in-depth interviews with experts in the 17 selected business districts. Participants of the survey were asked to rank the importance of the following drivers when deciding to establish activities in a business district and each district was ranked accordingly.



The map below shows the 17 business district and their locations that were surveyed as well as where they ranked overall.

Amsterdam ranks 12th overall.



ACCORDING TO THE SURVEY THESE ARE THE TOP 5 TRENDS SHAPING THE FUTURE OF GLOBAL BUSINESS DISTRICTS

- Business districts are becoming ever more closely interlinked with their host city
- Business districts are becoming "places to be."
- International companies remain the main target clients for business districts, but start-ups increasingly form part of their ecosystem.
- The search for flexibility is transforming the way costs are perceived.
- Perceptions of some business districts fail to recognize their strong underlying performance.

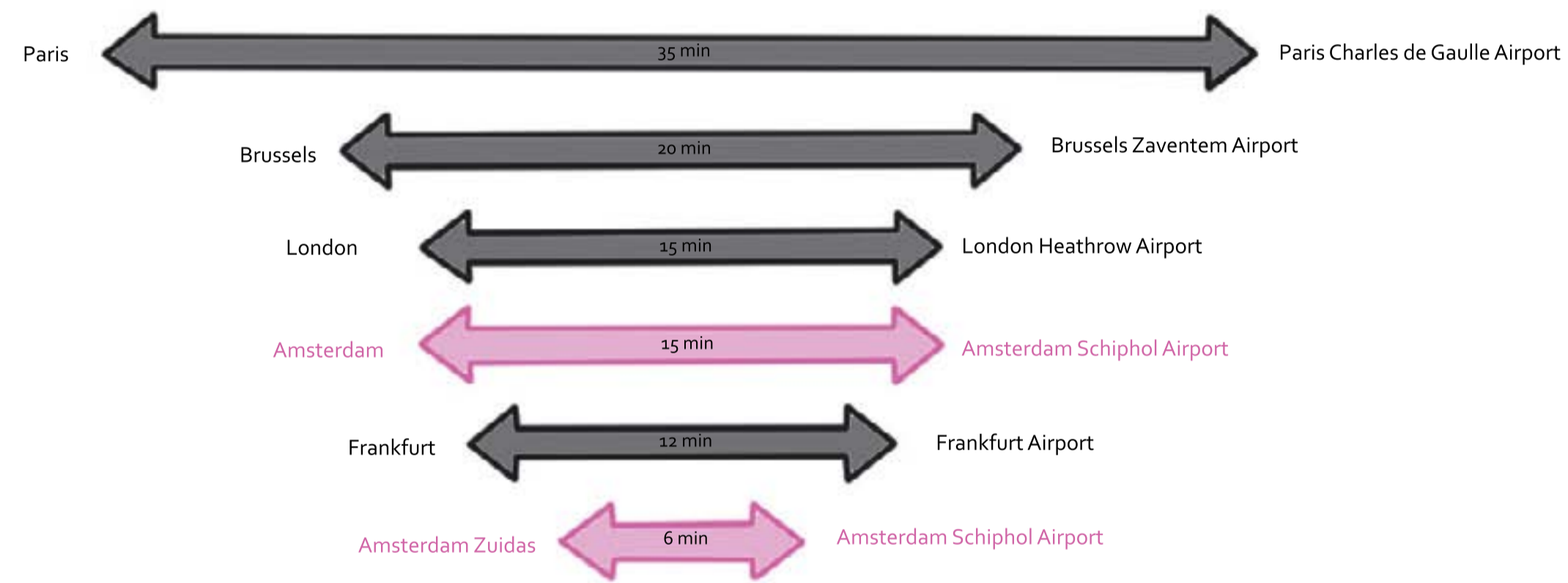
"Business districts need to attract start-ups too"

The presence of start ups in business districts is an effective way to attract big companies which are constantly seeking new sources of growth and innovation. Their presence also demonstrates the ability of a business district to innovate and enhances its image.

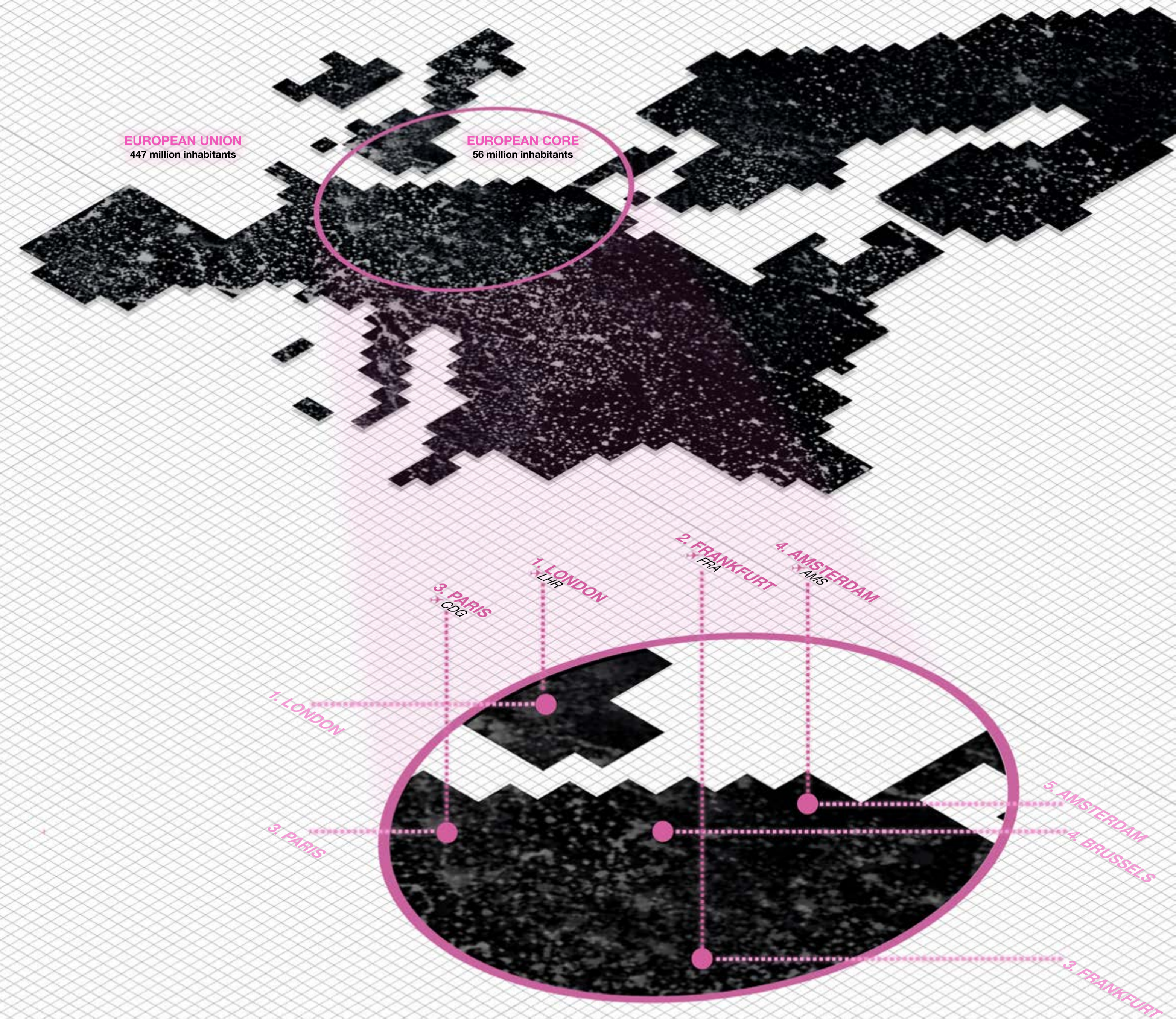
42% of experts surveyed believe starts ups are critical to the future development of business districts. Therefore, business districts need to adapt their culture by not only offering more affordable but also more appropriate workspaces with more flexible leases and a more attractive working environment.

**EUROPE'S TOP 5 BUSINESS CENTERS
AND
EUROPE'S TOP 4 MOST FREQUENTED AIRPORTS**

"Exchange of goods rather than production is becoming crucial for the economy of Europe. Therefore, proximity to the major hubs of trade and information is most crucial for the location of businesses, from small scale offices to headquarters to multinational cooperations."¹



The distance in time between city centres and their respective airports, in comparison to the distance between Zuidas and Amsterdam Airport.

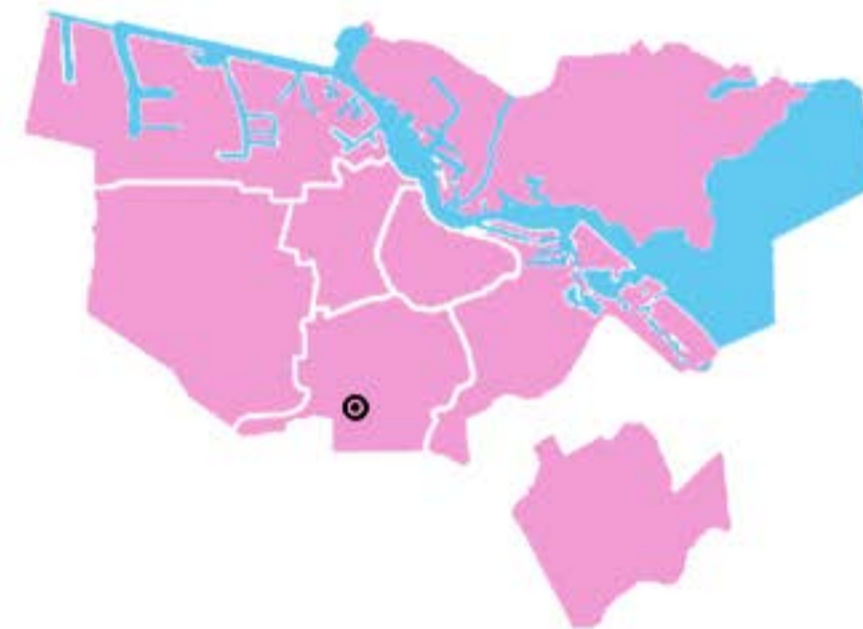


CANARY WHARF
LONDON



Area: 0.34 km²
Creation Year: 1987
Employment: 90,000 pax

ZUIDAS
AMSTERDAM



Area: 3 km²
Creation Year: 1998
Employment: 24,000 pax

LA DEFENSE
PARIS



Area: 4 km²
Creation Year: 1958
Employment: 180,000 pax

LOCATION AND TRANSPORT

- Located within 20 minutes from their respective city centres.
- Built away from the old core to preserve the morphology of the centre and make use of cheaper land prices in the periphery
- Massive transport infrastructures including expressways, subways and railways make them when connected.

MODES OF TRANSPORT AVAILABLE AT CANARY WHARF



MODES OF TRANSPORT AVAILABLE AT ZUIDAS



MODES OF TRANSPORT AVAILABLE AT LA DEFENSE



INDEPENDENT MANAGEMENT

- Each CBD has its own respective dedicated development and management body
- These organisations responsibilities include: planning, development, promotion, land sale and management.

EFFICIENT SPACE

- Large scale buildings meet the needs of large scale companies, as they consolidate work forces in a single place and improve internal management.
- Human needs of the employees are met with plenty of cafes and restaurants for lunch time options as well as gym to maintain health and fitness.
- All the above elements are efficiently organised thanks to the rational of masterplans and vision documents.



Figure 1: Canary Wharf



Figure 2: La Defense

FUNCTION

- All three districts are mainly monofunctional, specialising in tertiary industries including finance
- Strive to attract the headquarters of multinational corporations
- There are also residential and commercial functions, but lack public facilities such as museums and government buildings
- La Defense and Zuidas also have universities

MONO FORM

- The CBDs are solely composed of large scale buildings
- Although the land prices are cheaper, the large size and newness of CBD buildings make them expensive places with high rent prices, accomodating high end users.
- This corresponds to the notion of a CBD being seen as corporate space and a seperated island dedicated only for the white collar.
- The special form and limiter user profile prevent CBDs from seamlessly merging together with the rest of the city.

"There's a degree of inhumanity in Canary Wharf. One of the joys of the City is the mix of streets, the different people, the independent shops."

- Senior Executive of Nomura London, to the Financial Times



Figure 3: Zuidas

STRENGTHS

Harmonious Organisation

Canary Wharf is the least affected by the presence of infrastructure. In contracts, both Zuidas and La Defense are fragmented by expressways. Although Canary Wharf has transport infrastructure running through the district, they don't obstruct the flow of the city as they are located on the periphery (expressway) or underground (the Jubilee line) or elevated (the DLR.) The DLR trains and stations are covered in glass arches that complement the simple forms of the skyscrapers to prevent them being eyesores. The underground shopping mall connects buildings and subway stations. The organisation of the district is owed to Canary Wharf's relative compactness compared to La Defense and Zuidas.

Aesthetic

Canary Wharf seems less distant than La Defense as it has less concrete floor and is relatively more closer to the human scale. The district is surrounded by water, which offers the district waterfronts and the room to appreciate the architecture of the district. The quality of the modern architecture is similar to the other districts however their intended symmetric disposition creates an urbanscape reminiscent of classical aesthetics

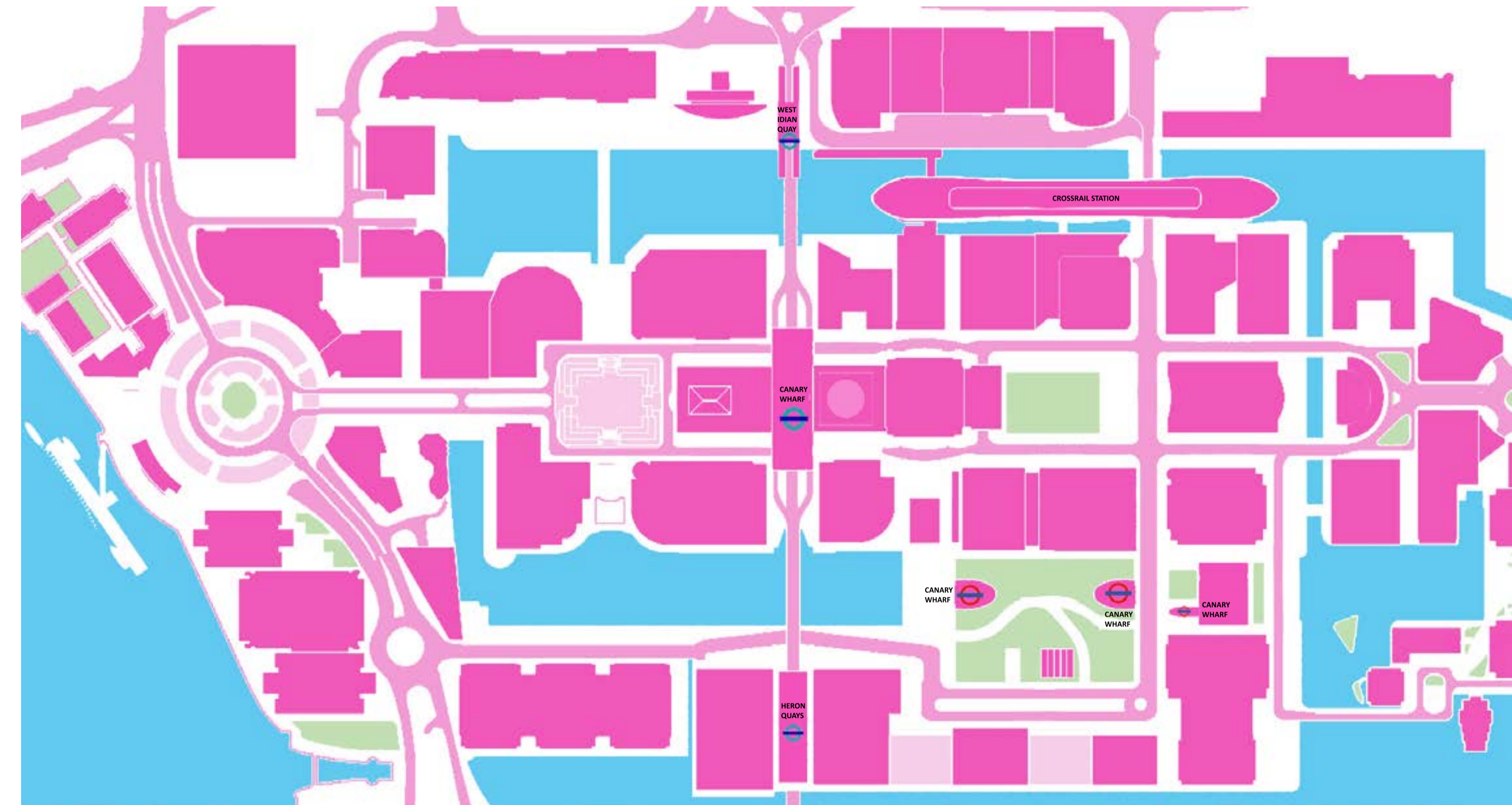
DLR and Expansion

Canary Wharf began as an island like site surrounded by dock waters and gradually expanded outward. Canary Wharf is suited for expansion along the existing lines and its position as another centre of London is reinforced by the reconfiguration of the DLR network, which radiates in four directions from Canary Wharf station, making Canary Wharf the centre of the network.

WEAKNESSES

Competition with Other Centres

London is the second global city after New York and the first financial centre in the world, far superior to Paris and Amsterdam. However, Canary Wharf is an enclave of The City. Canary Wharf was developed in the 1980s when The City got saturated with the office demand from financial industries, to accommodate the excess demand. Unlike other European cities where historic urban tissue is preserved in the city centres, The City is also able to expand vertically. This makes it a competitor to Canary Wharf. Due to the planning system of London, other inner city sub-centres such as Victoria Station area and South bank also act as competition and divide demand for large offices to several places.



STRENGTHS

Excellent Acces to the Centre and Airport

Zuidas is ideally located between the city centre and Schipol Airport. In addition it is directly connected to the airport by rail and bus unlike the the two other districts that are not only far from their respective airports but also inconvenient to reach. There is also an economic advantage that results from the existing infrastructure in Zuidas; unlike the other districts which had to dpend a large amount of money on the construction of transport infrastructure. In addition Zuidas is also home to other essential facilities for creative economic activities such as the World Trade centre, RAI Convention Centre and university.

Attractive Surroundings

Zuidas is bordered by Beatrix Park on the north and is crisscrossed by smalls canals as with anywhere else in Amsterdam. Green spaces and water significantly enhance the living and working quality of residents and employees, and such proximity to nature is impossible in the bigger metropolises of London and Paris.

Potential as an Eco City

Similar to the rest of the country, the use of bicycles in Zuidas is high, with 17% of commuters to Zuidas using bicycles. As a result the streets and square of Zuidas are lined with bikes and there is even underground bicycle parking. This makes Zuidas a true eco city in terms of transport but it needs to further develop the concept in other areas such as renewable energy and zero energy building.

WEAKNESSES

Small and Dispersed Agglomeration

Amsterdam less than one fifth the size of London or Paris, which means that it has lesser demand of space than the two cities. This limits the growth of Zuidas and as a result, the over-growth of Zuidas could destabilise the entire city taking demand from other parts to Zuidas. It is also difficult to find growing potential within Randstad due to its decentralised structure with many competing cores. As each core has its own different advantage, it makes it hard for any core to rise as a centre of the whole region. Randstad is beneficial for equal development of the national territory but hinders growth of a big metropolis and its CBD.

Divide Space

The infrastructure that links Zuidas to the city and the airport, divides the district exactly in the middle. The central location of Amsterdam Zuid Station provides efficient access to the station, but the overground expressway and railway hinders north -south communication and disrupts the cohesion of the district.

Frosen and Anonymous Atmosphere

There is often a frozen atmosphere in new CBDs, however it is more severe in Zuidas due to its short history and consequent low density. Company names and advertisements on building facades are either minimalistic or absent, which makes the space feel more anonymous. The lack of signs along with the modern appearance of the district, makes Zuidas a non-place that resembles SimCity.



STRENGTHS

Stability and Size

La Defense is the oldest and by far the largest out of the three districts, and it is still growing. Older skyscrapers and apartment builds are rehabilitated. La Defense is the modern facade of Paris is even a tourist attraction while maintaining its role as a business centre for large companies requiring huge spaces.

Concentration of Development

La Defense has the monopoly of skyscrapers in the Parisian region, due to the fact that Parisians are anti-skyscrapers. As a result, the majority of skyscrapers are concentrated in La Defense. In comparison, Canary Wharf competes with the City of London and Zuidas whose urban region follows the decentralised urban structure of Ranstad.

Car Free Environment

The trademark of La Defense, is its car free deck together with the Grande Arche. This gives freedom to pedestrians and offers a huge public space which would have otherwise been occupied by traffic. Some of the expanded public space is used for parks, ponds and small events however the majorite of it remains as empty concrete.

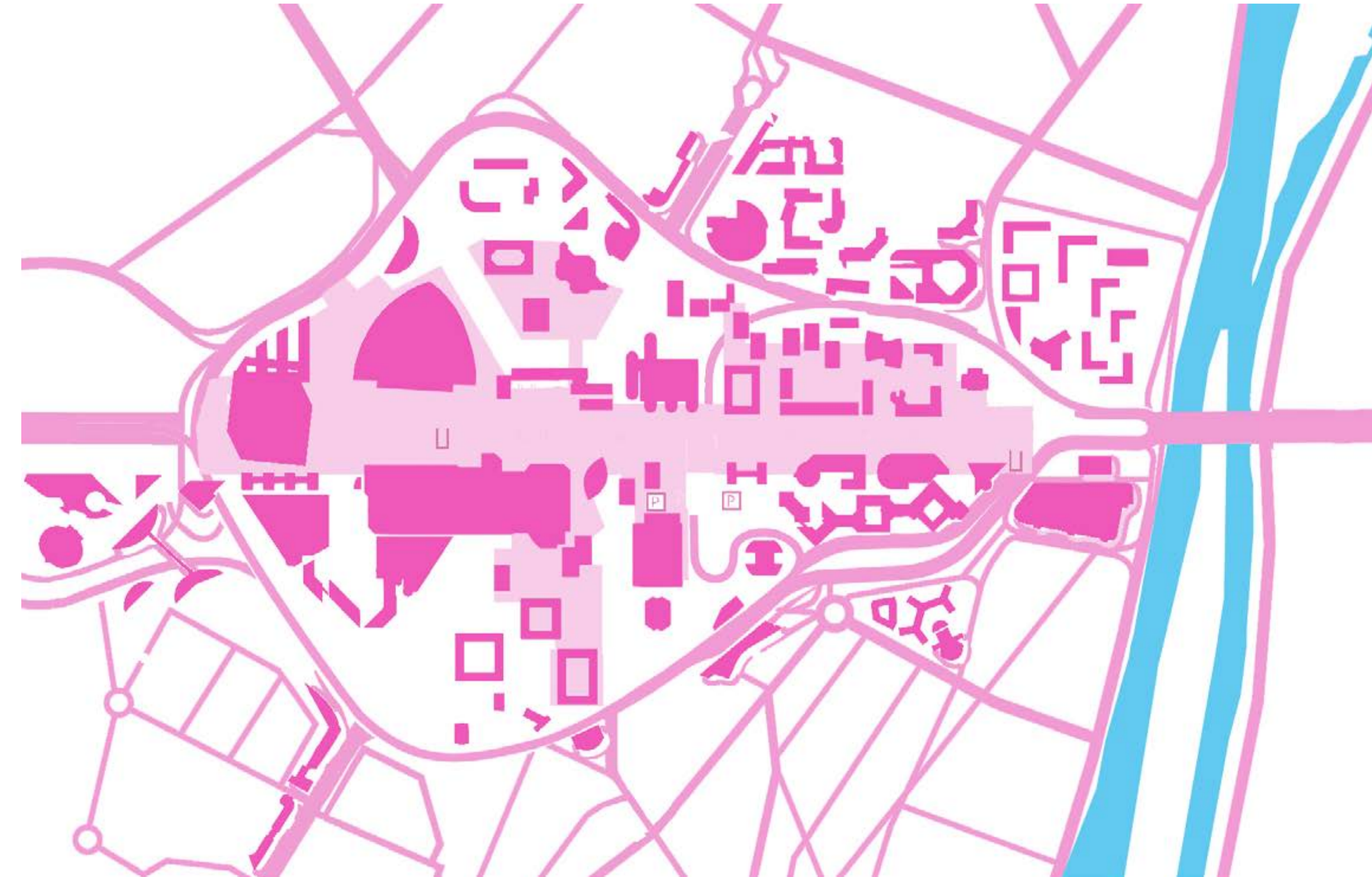
WEAKNESSES

Maintenance Cost

While the deck structure of La Defence has liberated pedestrians from cars, it has also created significant problems. It is difficult to use all of the widened public space for useful purpose, however even when it is used, the upkeep costs covering both the deck and underground are significantly higher than cities with no deck.

Difficult Non-Vehicular Access

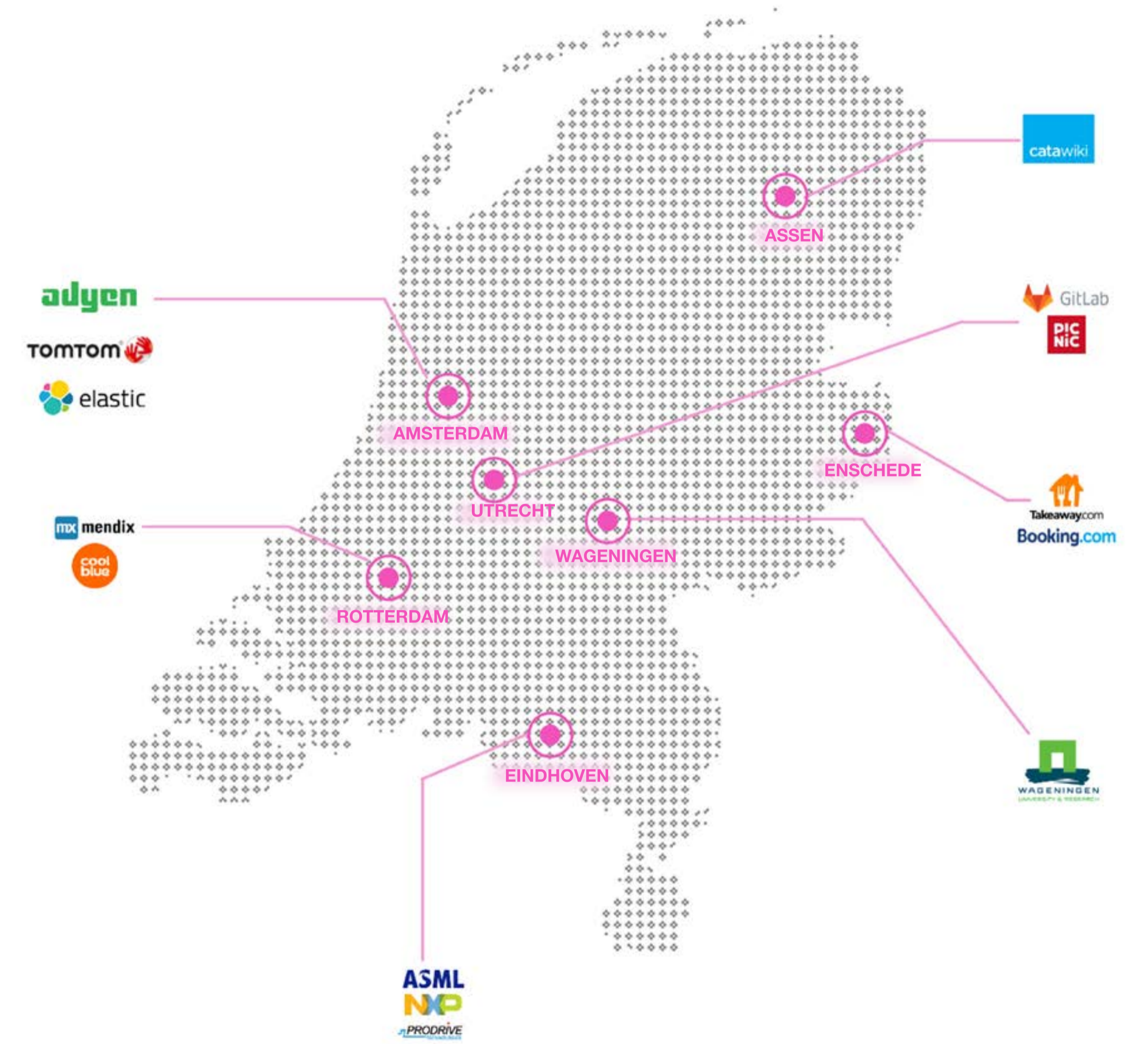
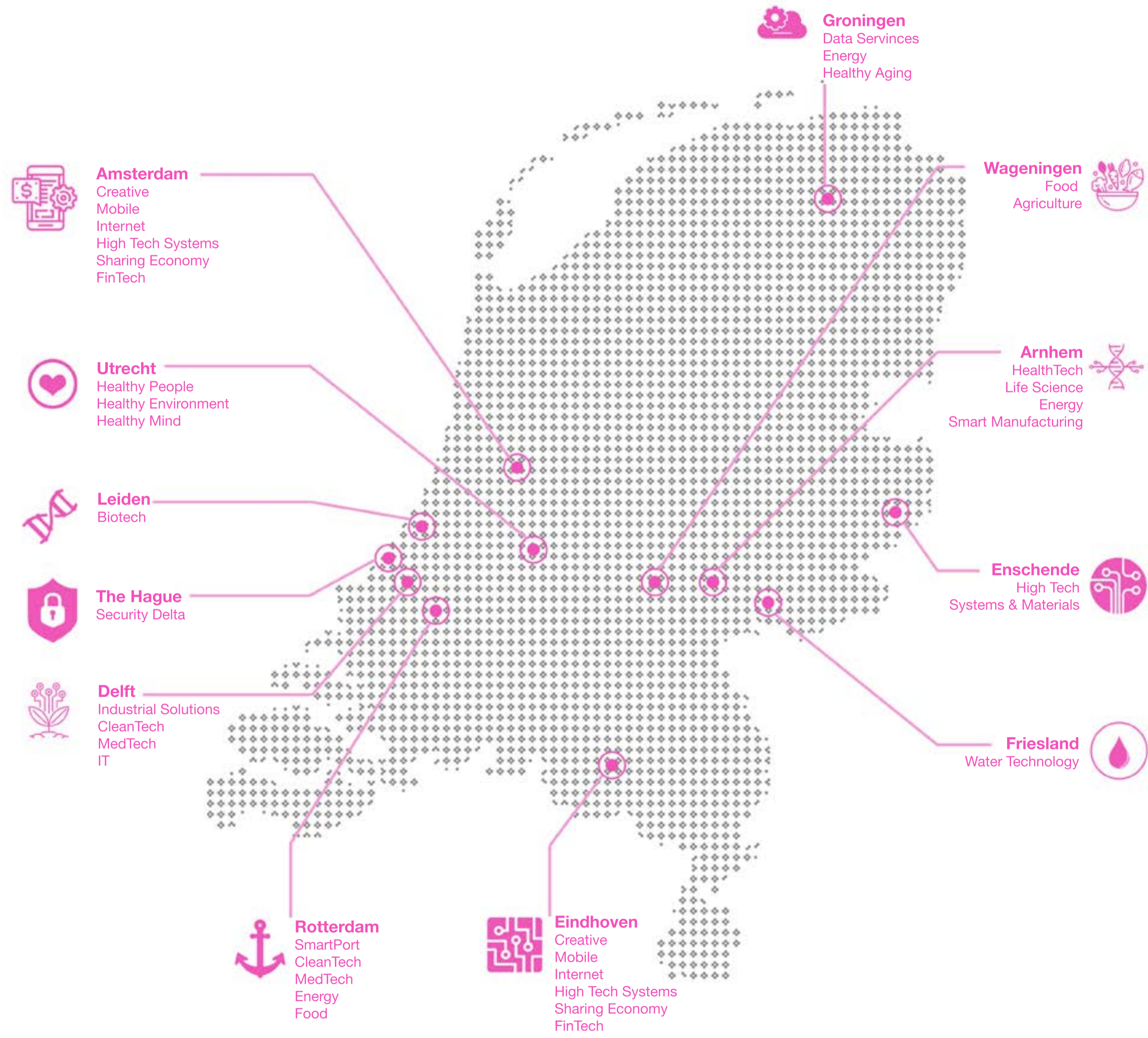
La Defense is the equivalent to dozens of subway stations in terms of the number of stairways. The site of La Defense is higher than its surroundings, and the deck increases this height difference even more. This results in an abrupt hieght gap at the border of the La Defense deck which means that the district is linked to the surroundings by ramps, elevators and stairways. This makes pedestriand and bicycler access difficult. Zones of La Defense are also created, by large uncovered expressways running through the middle, and bridges and stairs are used to cross between these zones.



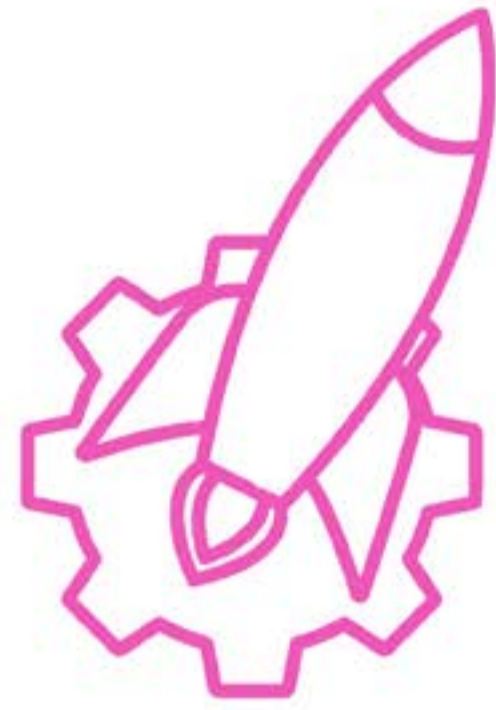


CHAPTER 2: Territorial Interdependencies

As part of my research, I have studied the interdependencies between technology, information, communication technology, operational landscapes, urban clustering and logistical infrastructures, uncovering specific flows, connetions and tensions. This chapter documents the results of my research and analysis of these interdependencies on a territorial scale, examining the Netherlands and consequently Amsterdam.



Appendix
Design Proposal
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Zuidasok 2040
Logistical Interdependencies
Territorial Interdependencies
Global Interdependencies



START UP

A young company that is in its first stages of operations such as determining the product market and experimenting with customer segmentation. Their goal is to acquire funding and grow to become a serious competitor in the market.



SCALE UP

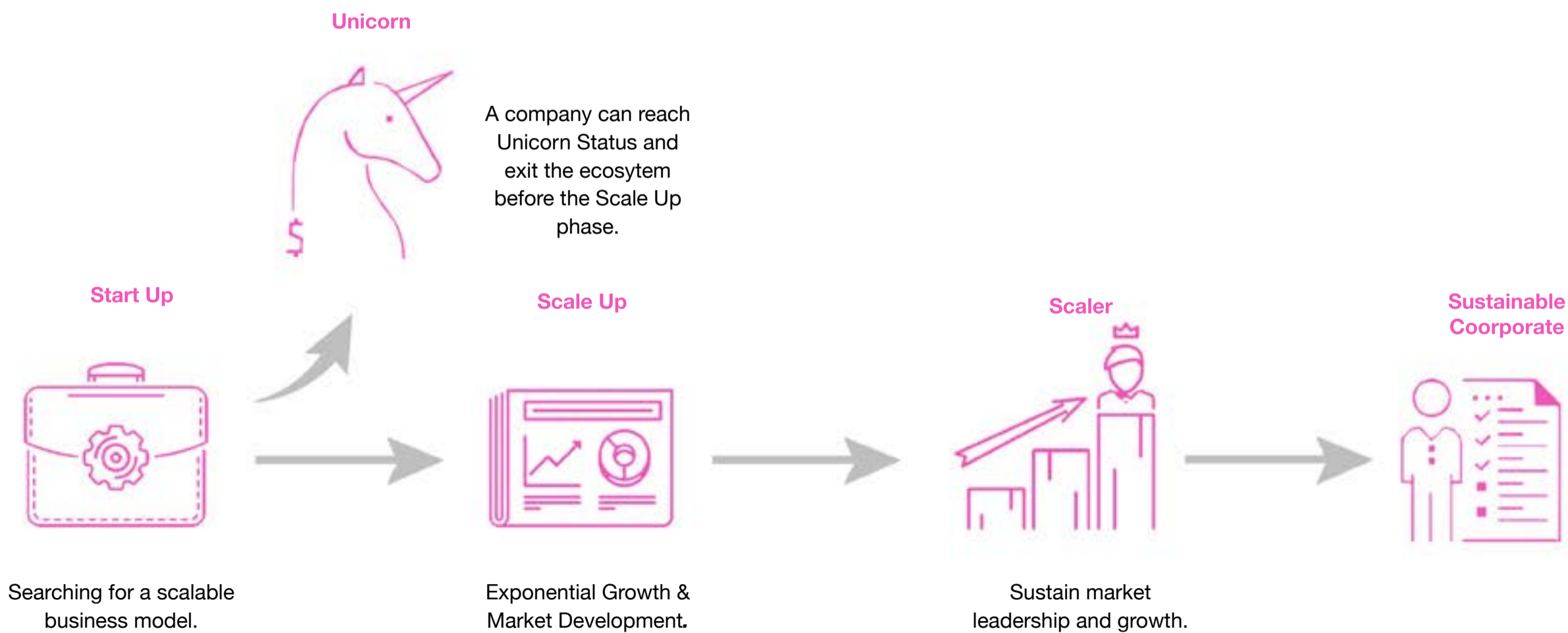
A company that has already validated its product within the market and proven unit economics are sustainable. A Scale Up grows at a rate of 20% per year, over the past 3 years, usually growing to more than \$10 million by their 5 year of revenue. Their goal is to reward investors by being acquired via M&A or IPO.



UNICORN

Founder of Cowboy Ventures, Aileen Lee coined the term 'Unicorn' in 2013, in reference to the 39 StartUps that were valued at more than \$1 billion.

Therefore, a unicorn is a startup company, founded after 2003 which has a current valuation of more than \$1 billion.



4,311

Home Grown Tech Companies
Vast spectrum of startups from early stage startups to established tech companies.

66%

Dutch startup jobs located outside of Amsterdam
Despite this, Amsterdam is still the Dutch startup capital.

108k

Total jobs at tech companies
108,000 jobs created by these 4,311 tech companies in the Netherlands.

19%

Startups backed by venture capital
Venture backed startups scale 3x faster. It takes 15 years for a startup to reach 40 employees, while this takes only 5 years for a startup with €1 million in funding or more.

Over 19.7k

New jobs added in two years
This represents 11% annual growth.

58%

of Jobs created by younger startups
Startups younger than 10 years, which on average employ only 14 people

€ 44 bn

Startup value created since 2013
This is a combined value created by current, realised and potential future Dutch Unicorns.

43%

of Startups based in non-office buildings
A large number of startups reside in non-office buildings, such as residential buildings, educational use or communal venues.



SCHIOEVERS BUSINESS PARK AND ZUIDAS

Schioevers Business Park in Delft and Zuidas in Amsterdam both have a similar grid like layout.



Approximate area
 Schioevers Business Park: 918,255 m²



Approximate area
 Zuidas: 1,850,000 m²

DELFT - KNOWLEDGE, INNOVATION & BUSINESS CLUSTERS



THE HAGUE CENTRAL BUSINESS DISTRICT AND ZUIDAS

The **Central Business District** by the train station in The Hague and **Zuidas** in Amsterdam are similar in that they are both situated adjacent to railway infrastructure. However, in The Hague, the district appears much more compact and the area is about half the size of Zuidas.

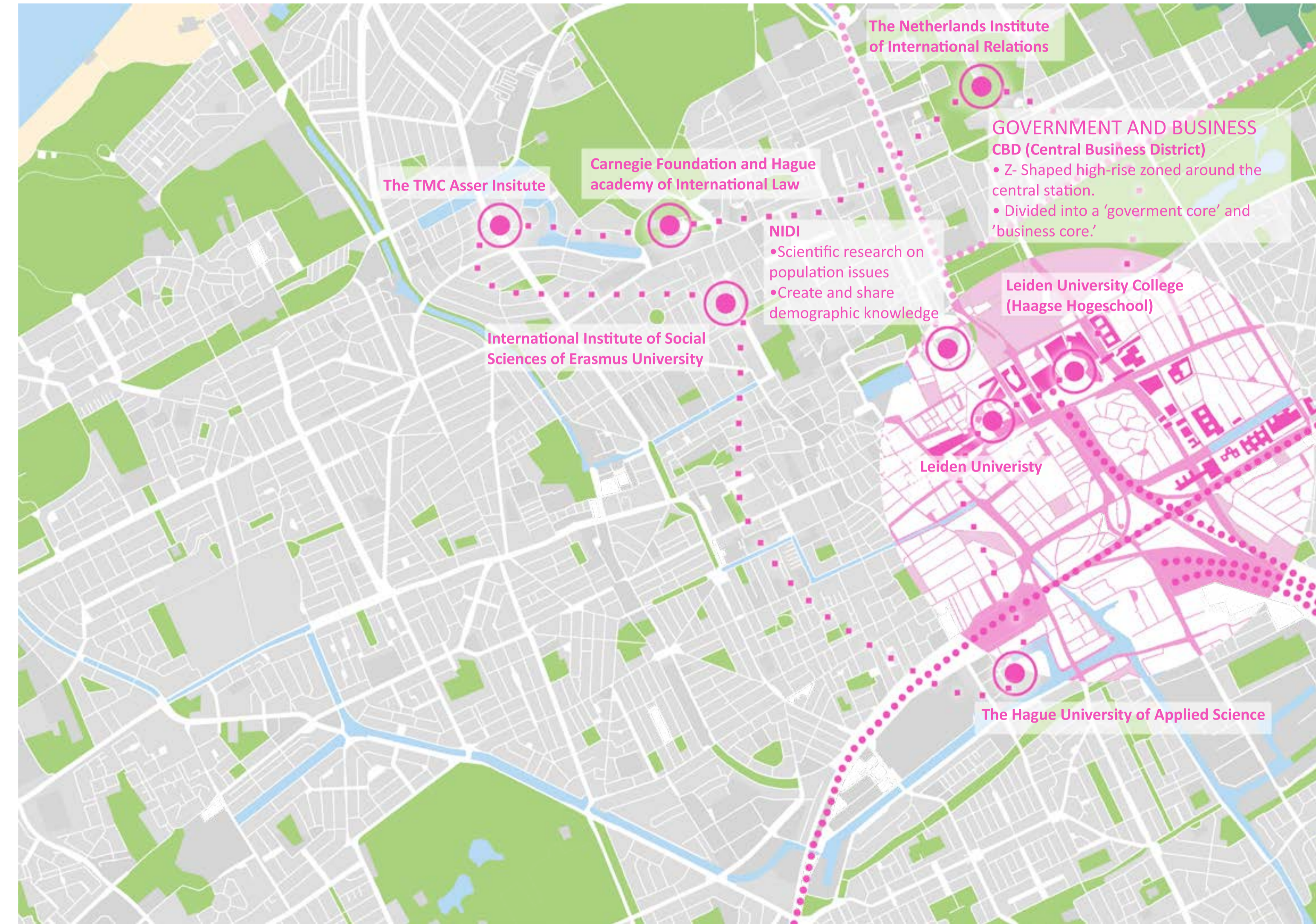


Approximate area
 Central Business District: 672,634 m²



Approximate area
 Zuidas: 1,850,000 m²

THE HAGUE - KNOWLEDGE, INNOVATION & BUSINESS HUBS



NEW OVERVECHT BUSINESS PARK AND ZUIDAS

Nieuw Overvecht Business Park in Utrecht and Zuidas in Amsterdam both situated by major highways, the A2 and A10 respectively. However Nieuw Overvecht Business Park is significantly smaller and much more compact than Zuidas.



Approximate area
Nieuw Overvecht Business Park: 440,000 m²



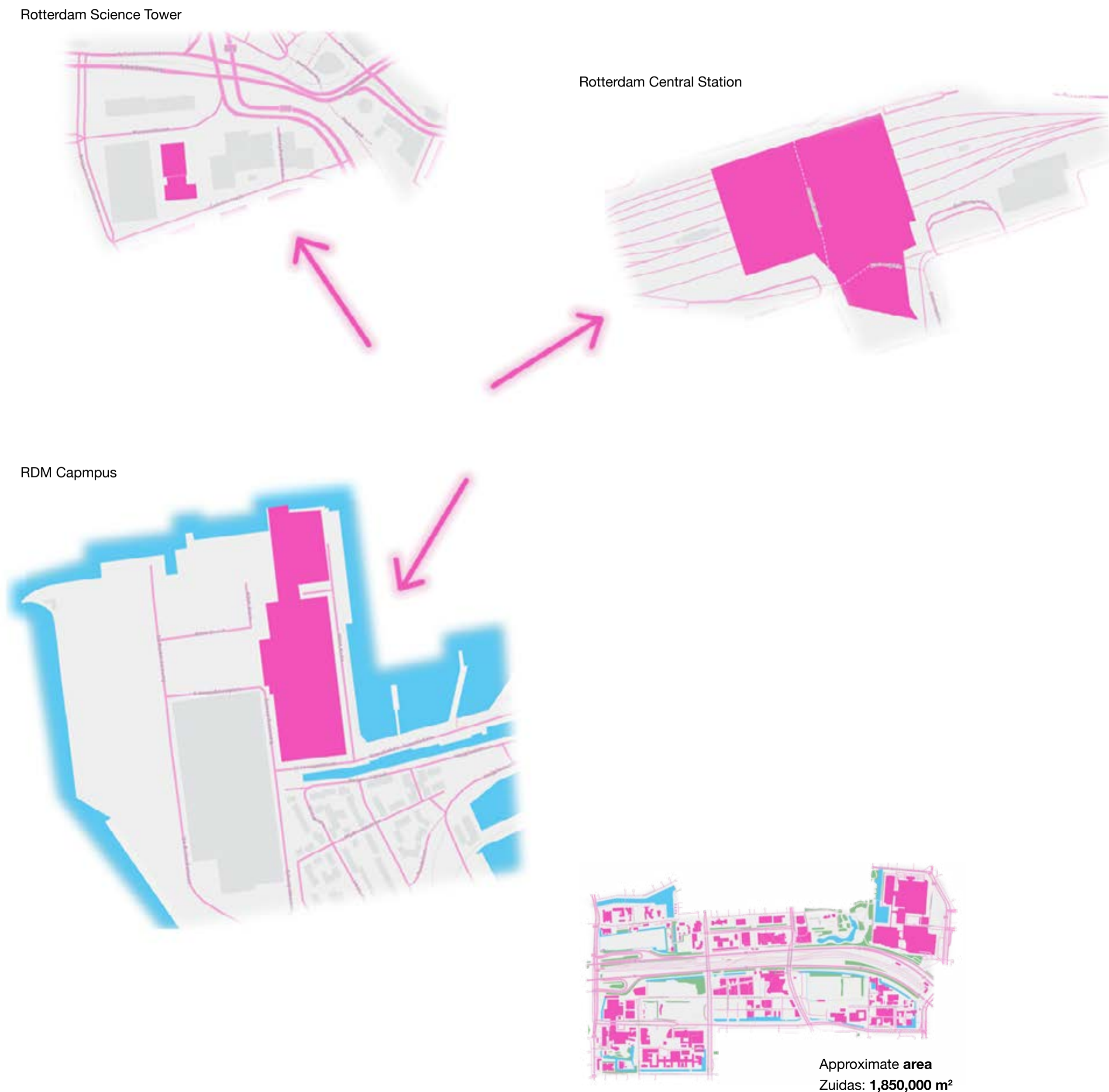
Approximate area
Zuidas: 1,850,000 m²

UTRECHT - KNOWLEDGE, INNOVATION & BUSINESS HUBS

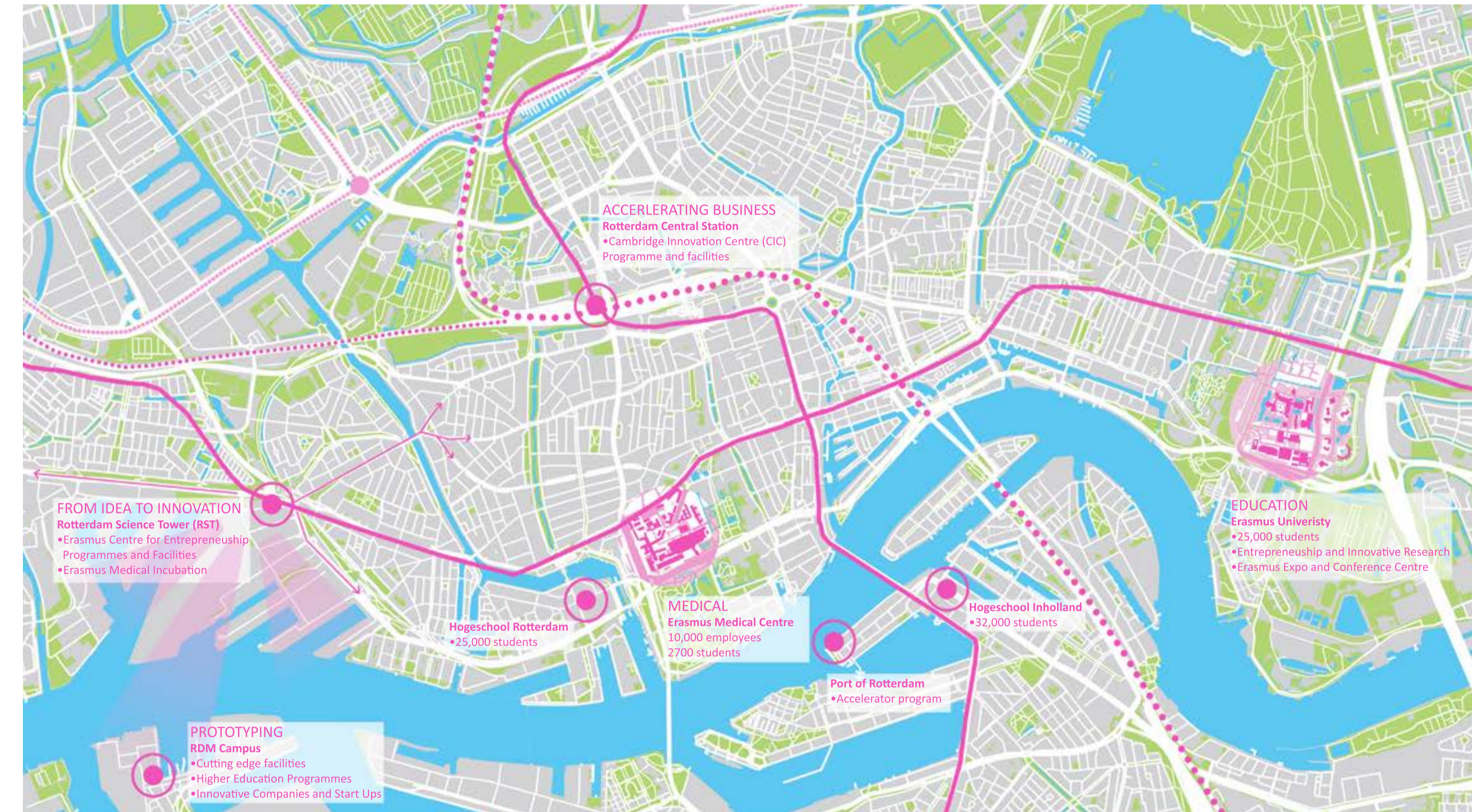


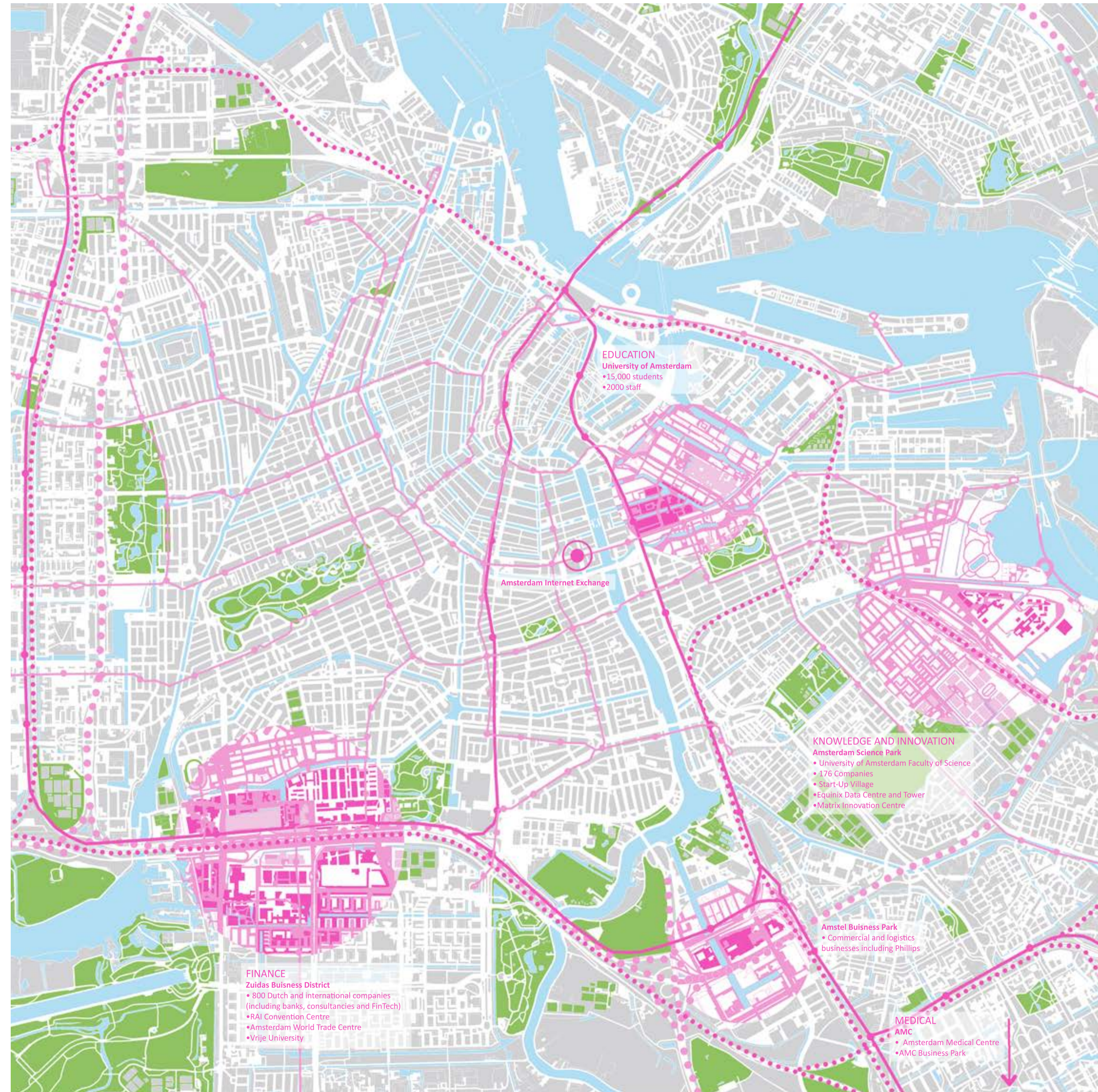
ROTTERDAM AND ZUIDAS

In contrast to the other cities in Randstad, Rotterdam doesn't really have a clustered business district and has different facilities such as the **RDM Campus**, the **Rotterdam Science Tower** spread out across the city.



ROTTERDAM - KNOWLEDGE, INNOVATION & BUSINESS HUBS







1200

Start Ups
(ParkBee, Crisp, BridgeFund, Dott...)



20+

StartUp & Coding Academies
(DELITELAB, Growth Tribe, Nomad Academy, Iron Hack...)



128

Scale Ups
(MessageBird, BUX, Ticketswap, Picnic, Swapfiets...)



5

Home Grown Unicorns
(Adyen, Takeaway, Booking.com, Elastic, TomTom)



1660
315 of which are foreign

Tech Companies
(Uber, Netflix, Tesla, Microsoft...)



30+

Accelerators/ Incubators
(B. Amsterdam, TQ, Epicentre, StartUp Village...)



50+

Co-Working Hubs



2000

Tech & Start Up Events annually

#1 Global Green Finance Index 2018



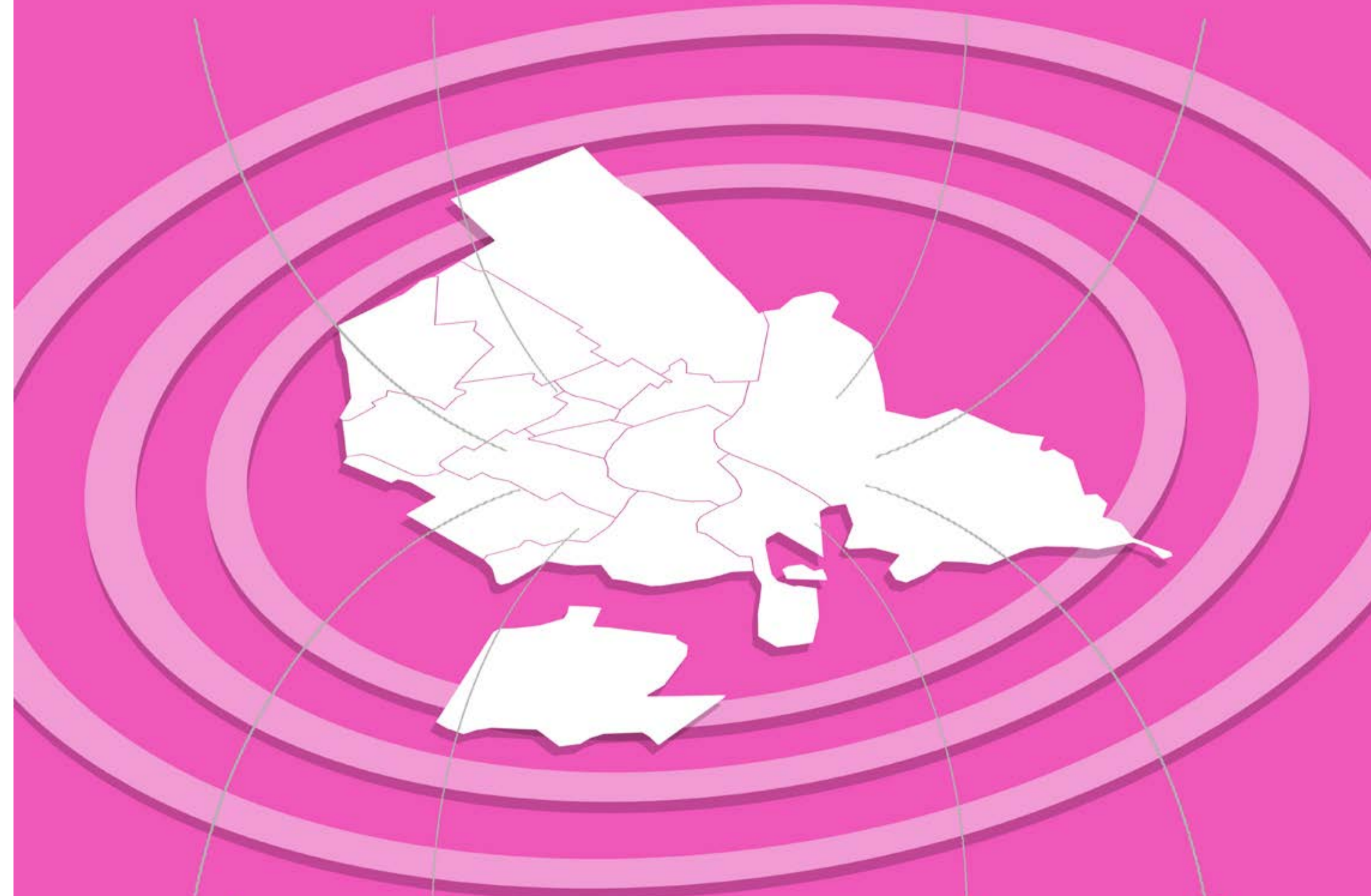
#1 Worldwide in language skills



200,000 jobs in finance and FinTech



30% tax advantage for highly skilled migrants



Home of world's first stock exchange



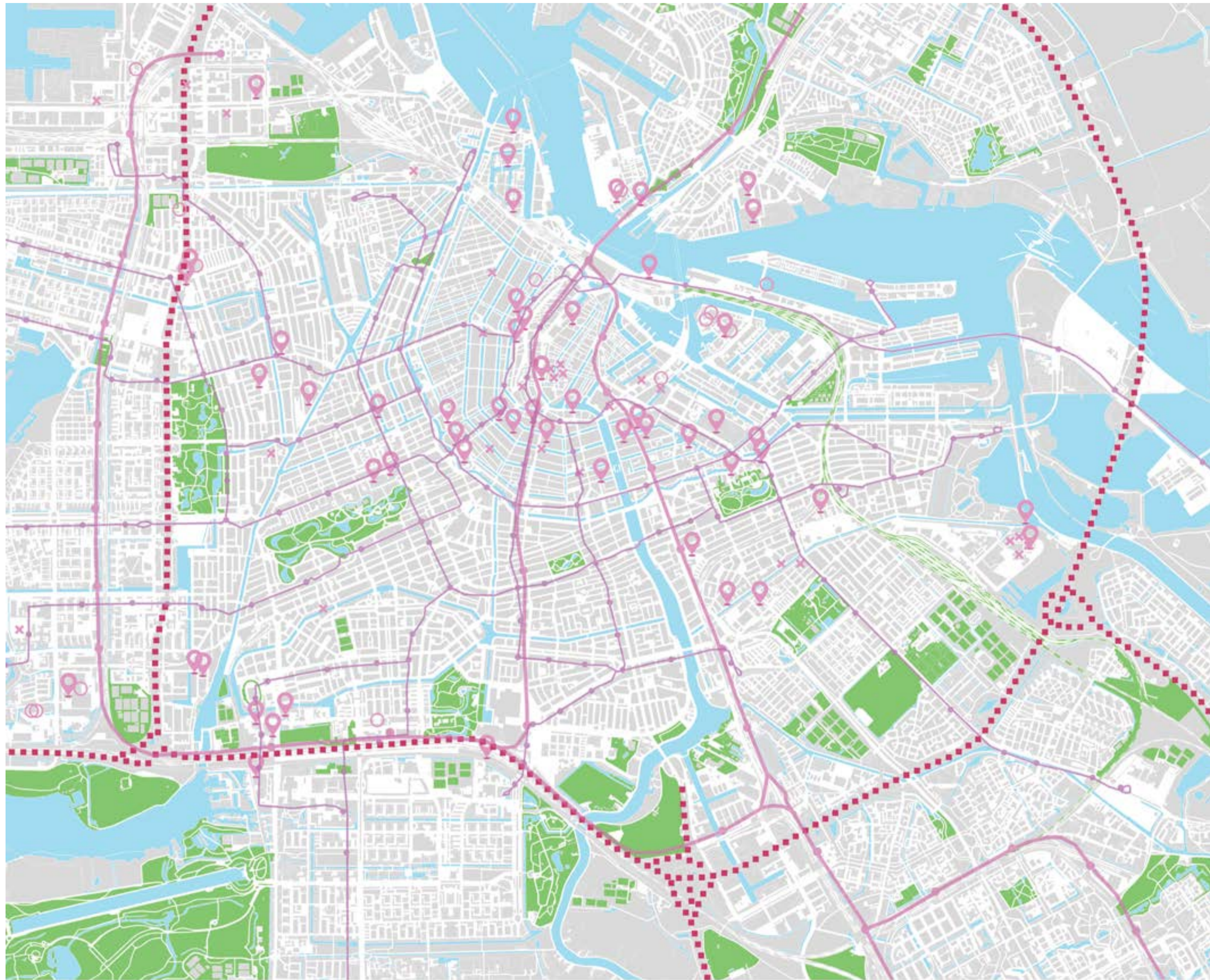
Home to the largest data transport hub in the world, the Amsterdam Internet Exchange (AMS-IX)



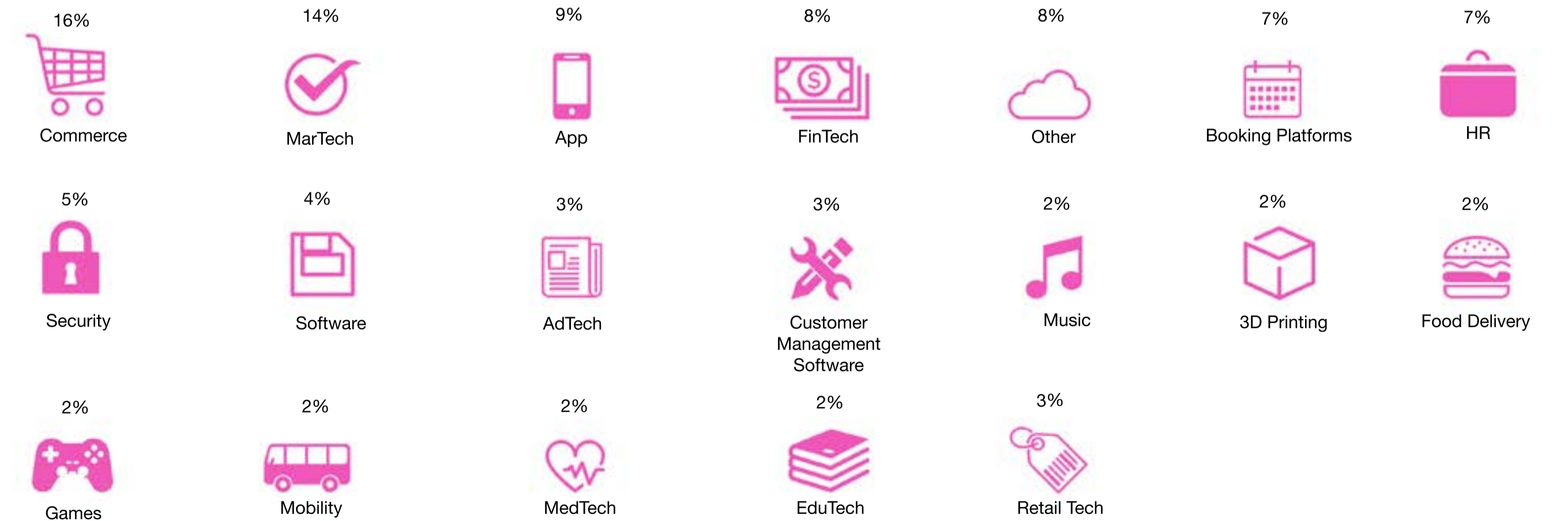
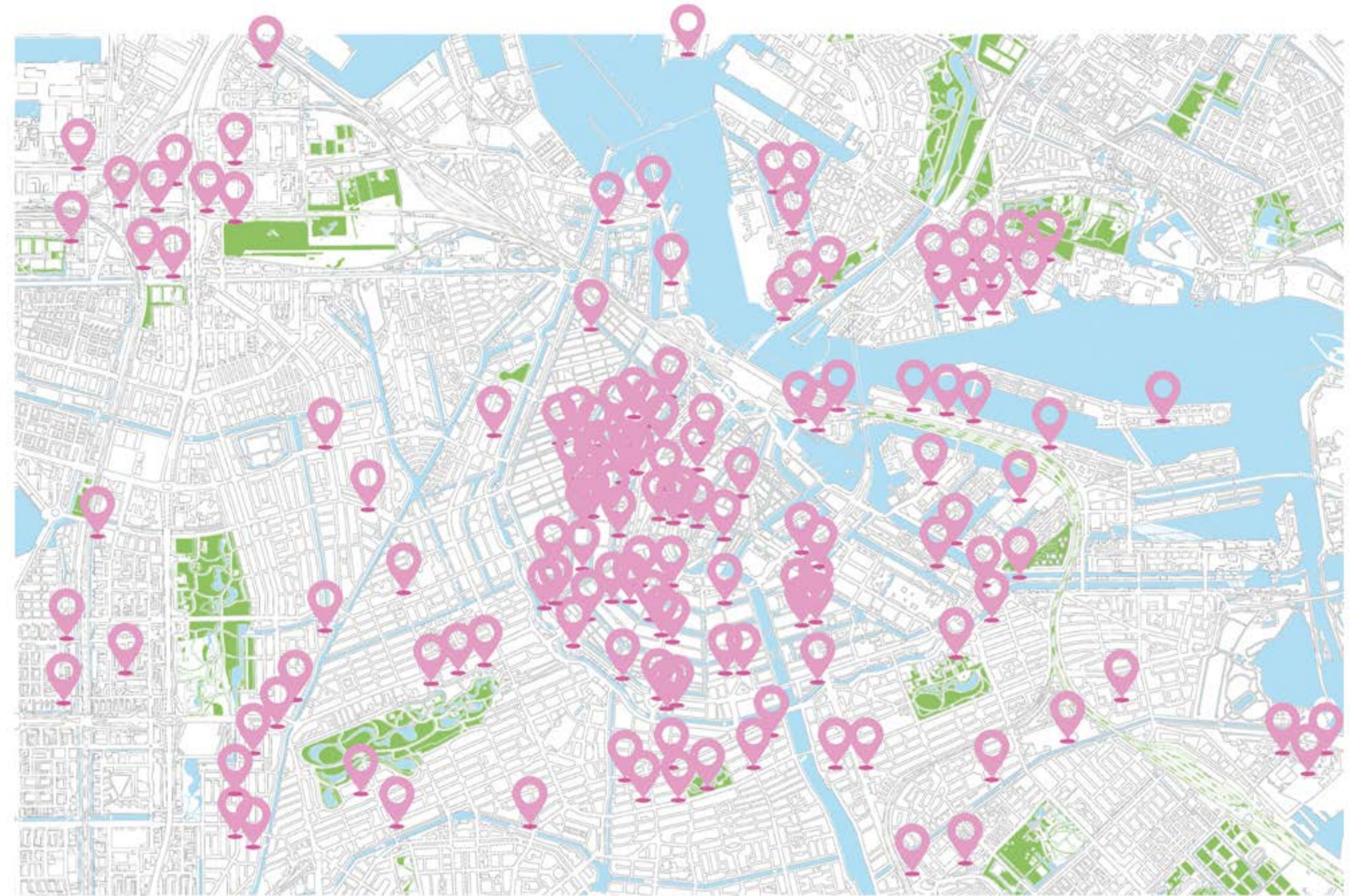
Home to HQ of Dutch banks ABN AMRO and ING as well as 50 more international banks.

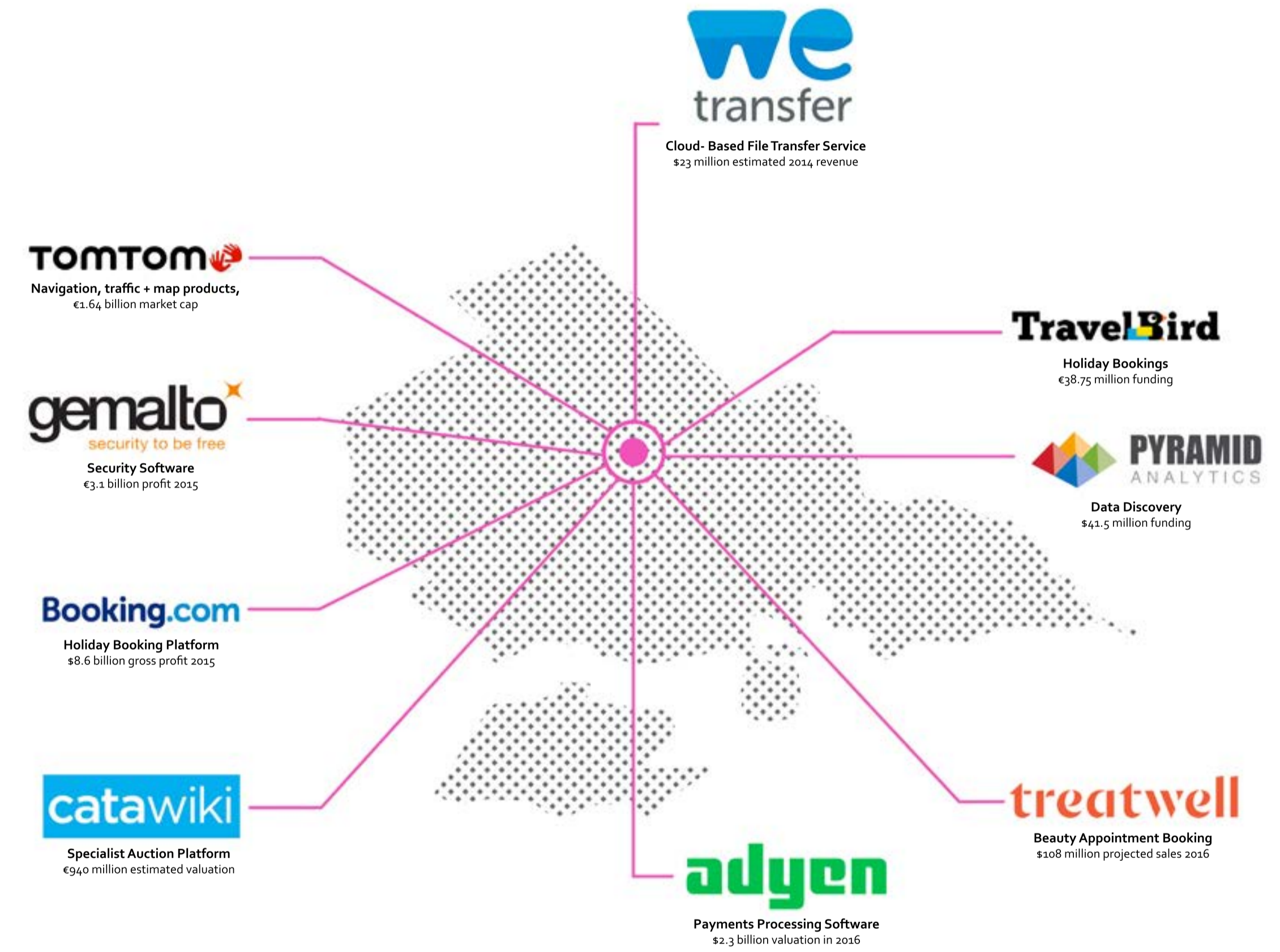
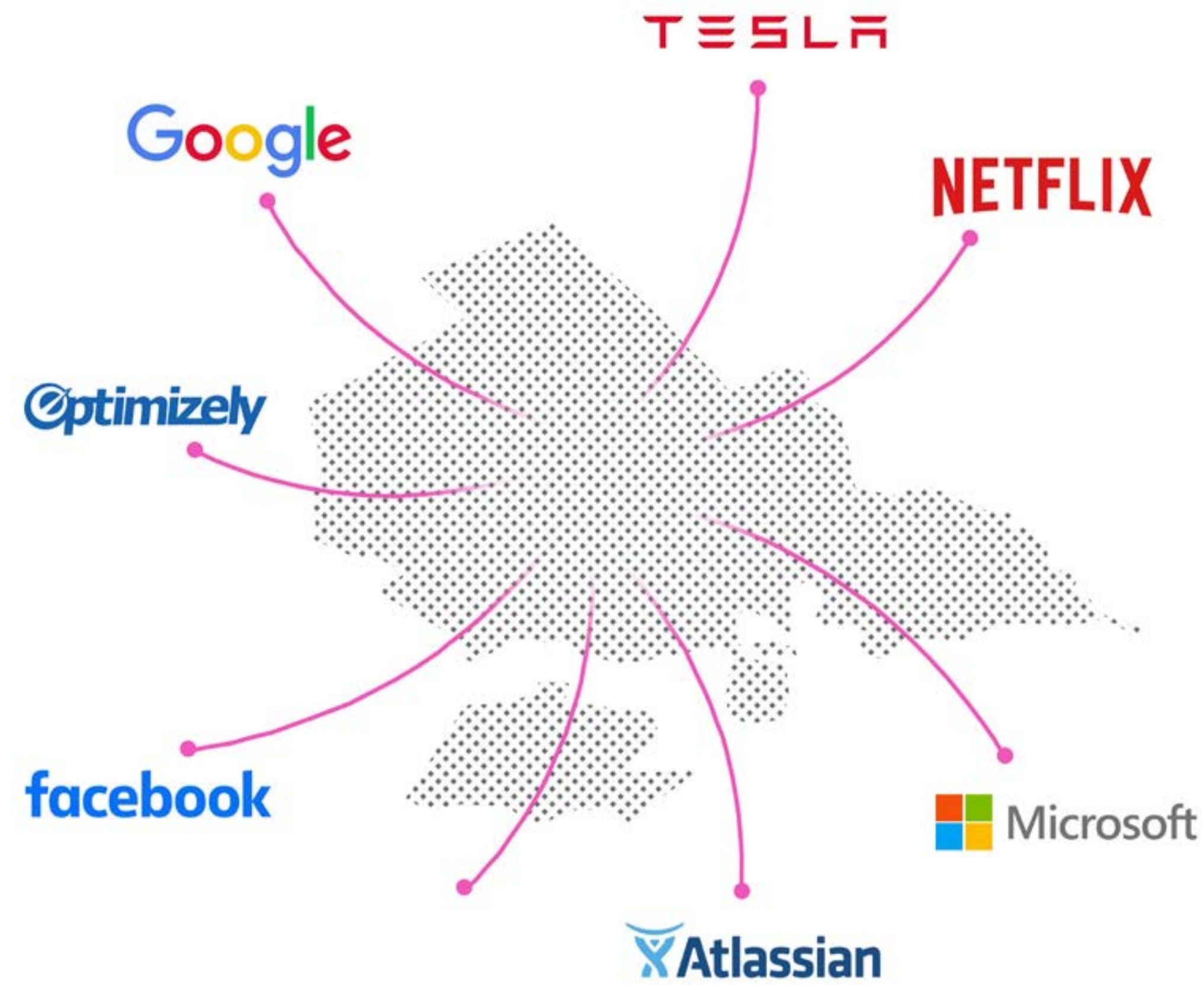


Well connected to Europe by high speed rail and air, with flights to 300+ locations from Schiphol Airport.



📍 Co-Working Spaces
✕ Accelerators
○ Incubators
— Tram
- - - Main Road
— Metro





RENTAL ANALYSIS OF AMSTERDAM'S OFFICE DISTRICTS

This page shows the predicted rental each district and the map on the following page, highlights the facts and figures of each district.

Amsterdam Zuidas

The business district where the highest rents in Amsterdam are currently realised. Originally a mono-functional office area, Zuidas has become more lively through the addition of housing and other amenities.

OCCUPIER TYPE

Mainly financial, legal and business services such as Houthoff, Accenture, Google, ABN AMRO and Savills.



Amsterdam Central

Lively atmosphere in a very mixed and historic area. In contrast to all other areas, buildings in the centre are mainly built on privately owned land, rather than leasehold.

OCCUPIER TYPE

Mixed (FinTech, Creative agencies, law firms and startups); Booking.com, Tom Tom, Adyen, MediaMonks, W+K, Deliveroo



Amsterdam Oost

Lively area: combined residential/work area, also home to Hogeschool van Amsterdam University of Applied Sciences (HvA).

OCCUPIER TYPE

Mixed, with a large proportion of financial services. For example, UBER, Amazon, Groupon, Equinix, Rabobank, Royal Philips.



Amsterdam Zuidoost

Originally a monotonous office area dominated by the financial sector.

OCCUPIER TYPE

Banks and (financial) back office services, including ING, Deutsche Bank, Nuon, Stryker, Adidas and Huawei.



Amsterdam Teleport Sloterdijk

Originally exclusively an office area with large-scale office occupiers

OCCUPIER TYPE

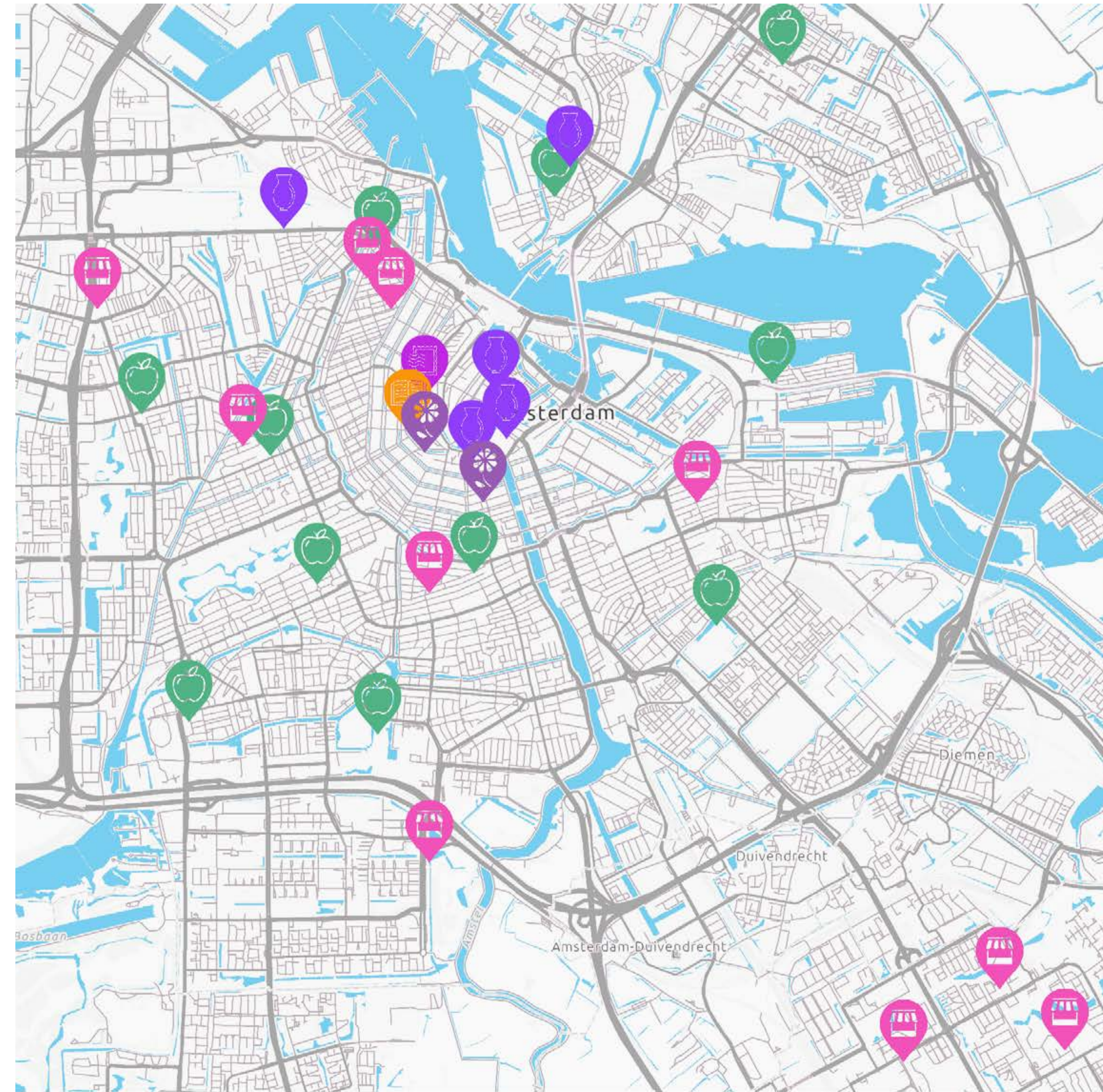
ChipSoft, Netflix, KPN, Reed Elsevier, Alliander, Belastingdienst, Kadaster, UWV.



MARKETS ACROSS AMSTERDAM

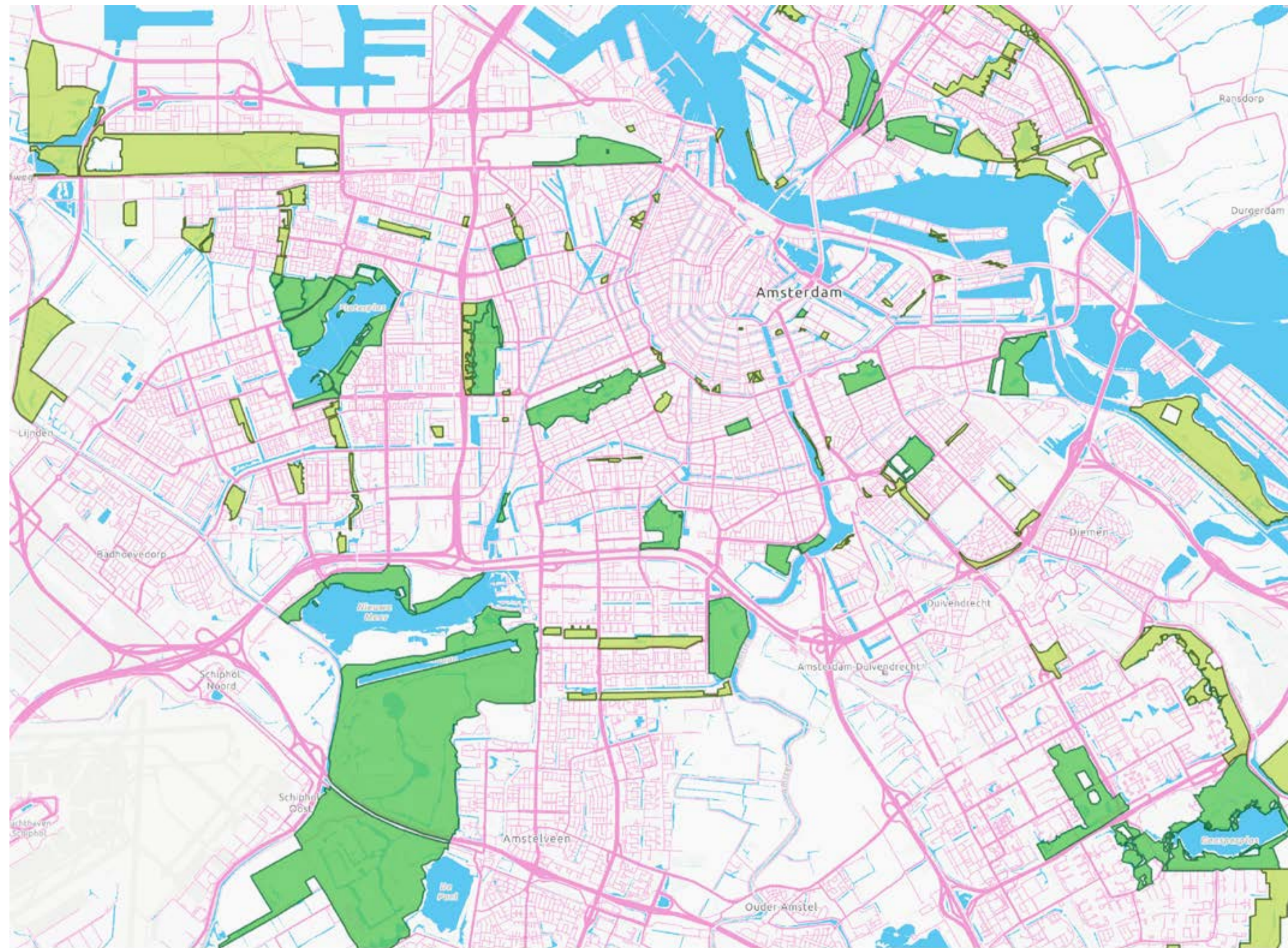
The map across shows the different types of market and their locations across Amsterdam.

- General Ware
- Farmer's Market
- Flowers and Plants
- Books
- Stamps and Coins
- Art and Antiques



CITY PARKS AND PUBLIC GREEN ACROSS AMSTERDAM

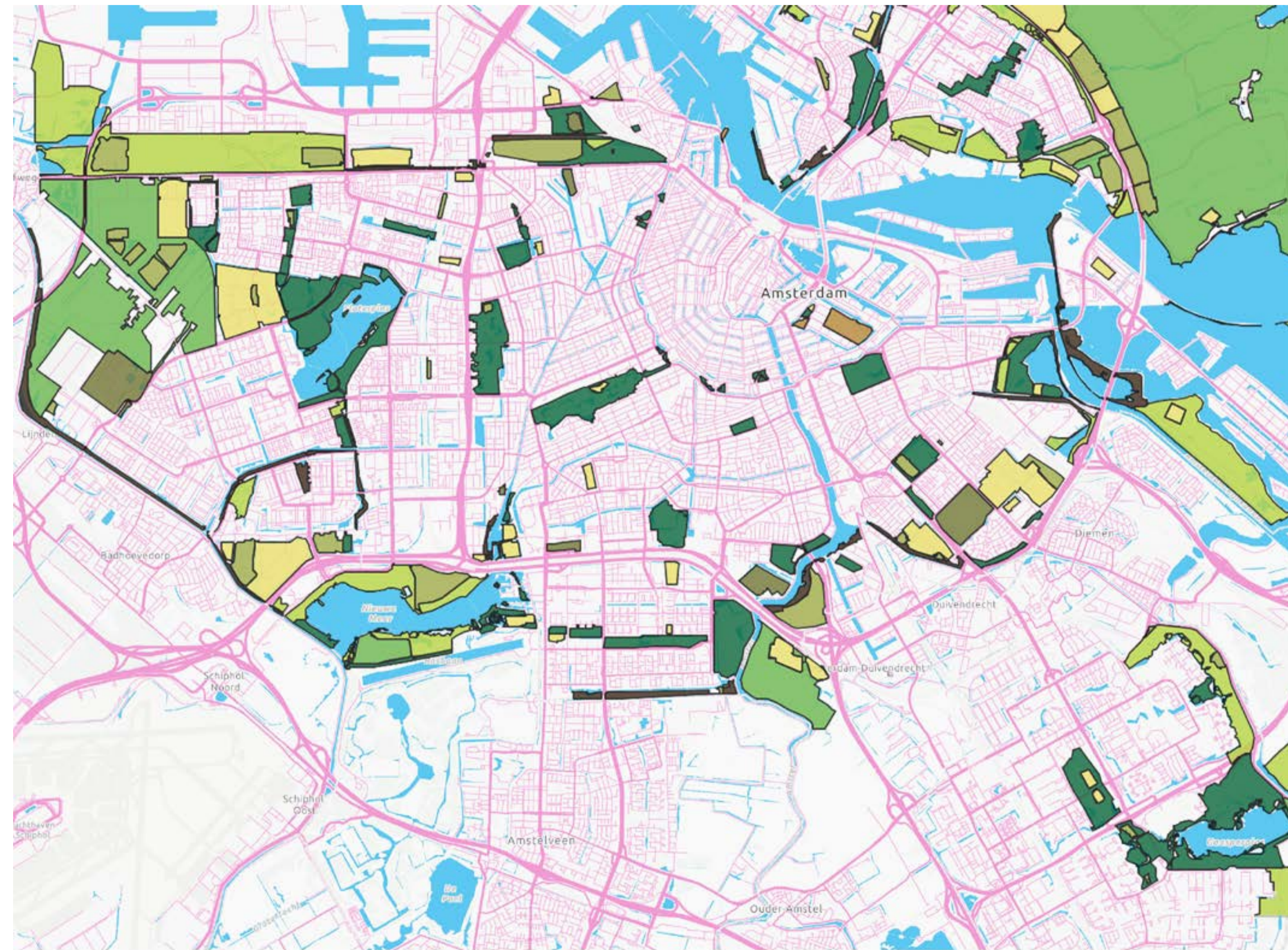
This map shows specifically the city parks and other green recreational spaces across Amsterdam.



- City Parks
- Other Green Recreational Areas

MAIN GREEN SPACES IN AMSTERDAM

This map shows the various types of green spaces across Amsterdam and their locations.



- City Park
- Natural Environment
- City Outskirts
- Corridor
- Allotments
- Sports Park
- Cemetery
- Other

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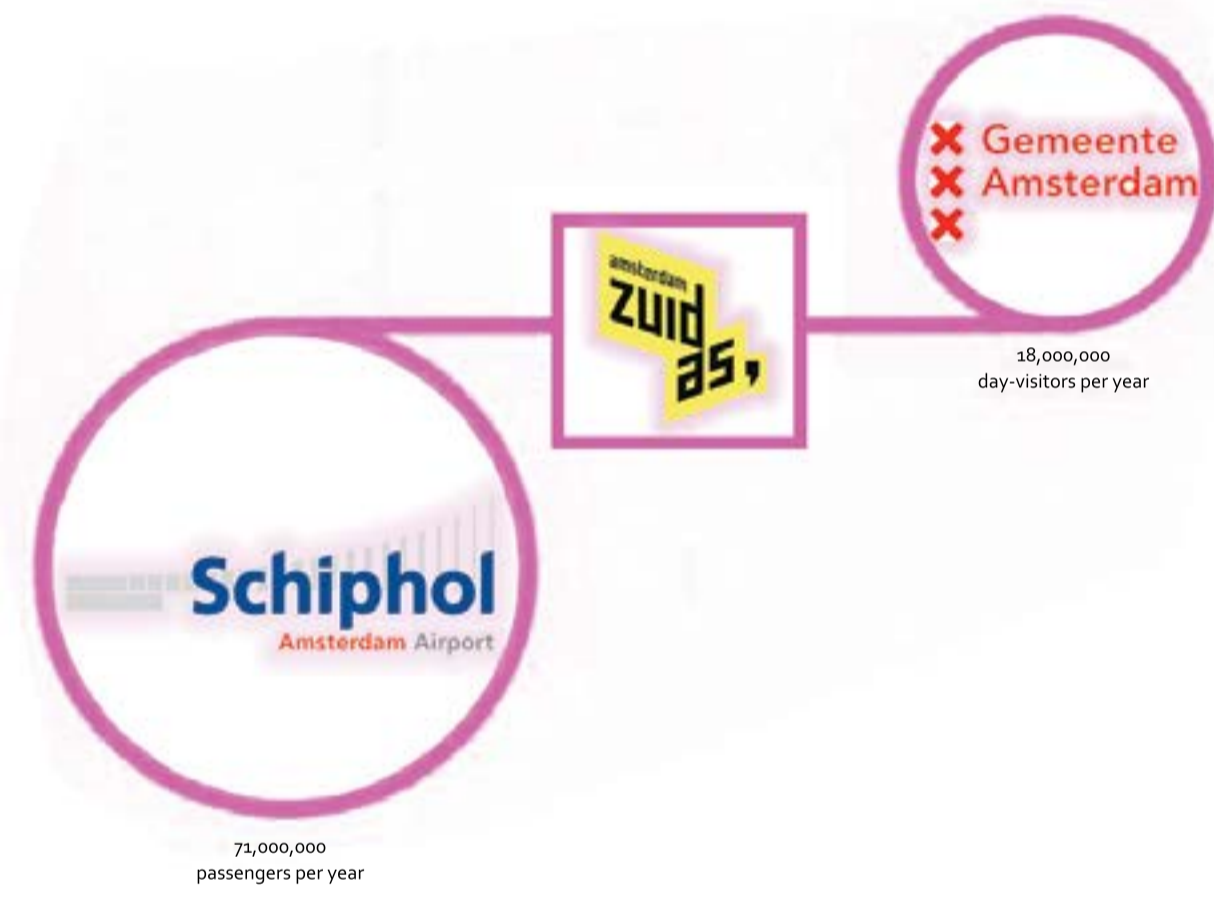


CHAPTER 3: Logistical Interdependencies

As part of my research, I have studied the interdependencies between technology, information, communication technology, operational landscapes, urban clustering and logistical infrastructures, uncovering specific flows, connections and tensions. This chapter documents the results of my research and analysis of these interdependencies on a territorial scale, examining Zuidas, the financial district in Amsterdam.

ZUIDAS LOCATION IN AMSTERDAM

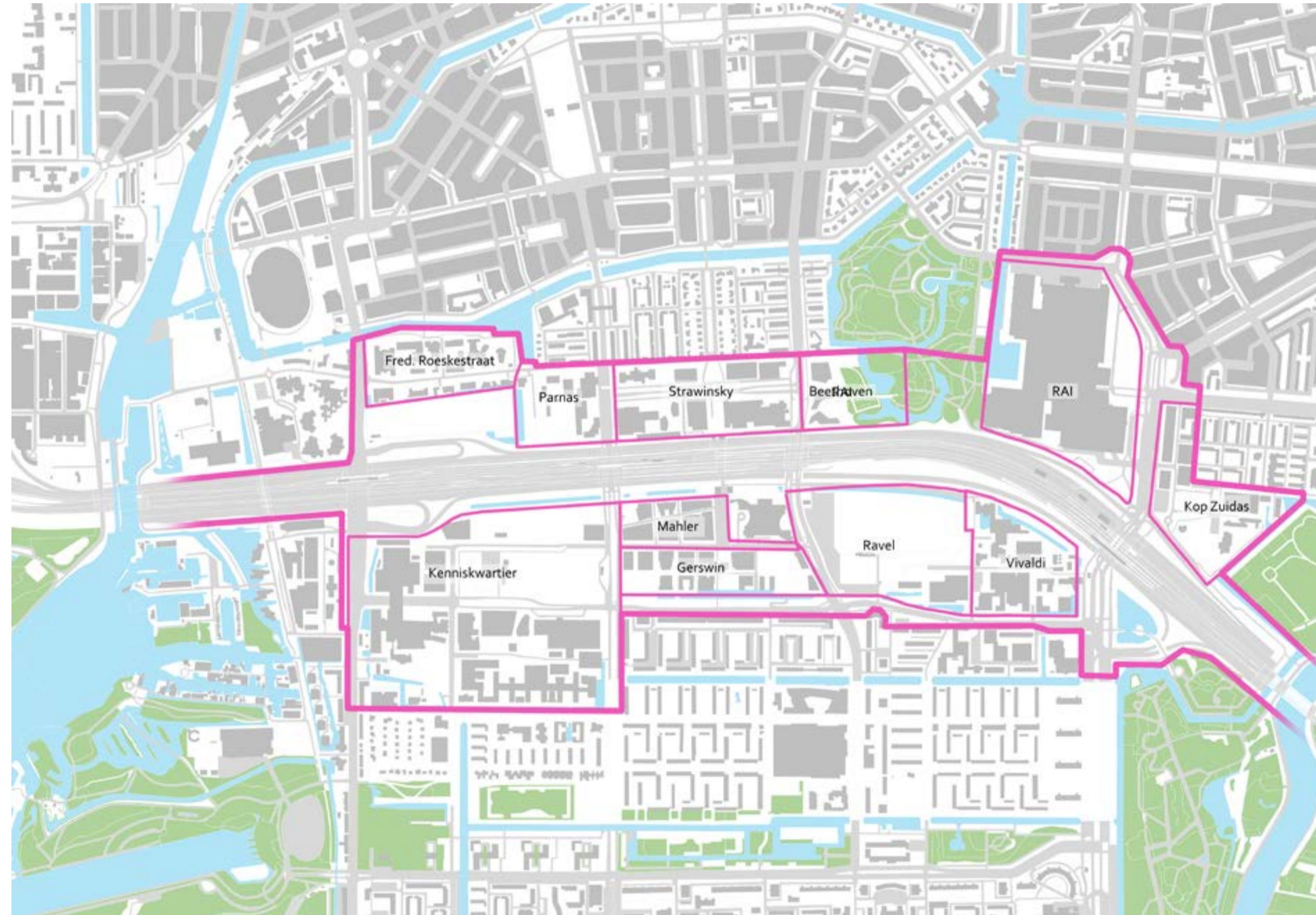
Zuidas is the Netherlands' international business centre. It lies close to Schiphol Airport and is within minutes of Amsterdam's city centre. The district has gone through strong economic and spatial development for several years. Various transport flows such as the A10 highway, railway and metro lines converge here and as a result the existing infrastructure is under strain. The map below shows Schiphol Airport, Zuidas and Amsterdam City Centre in relation to each other.



The Zuidas, located between Schiphol, the 4th largest airport of Europe, and the city centre of Amsterdam, represents the perfect example of a global business location. It is perfectly connected by all modes of transport to any destination in the world and is imbedded within the culture of a small historical city.

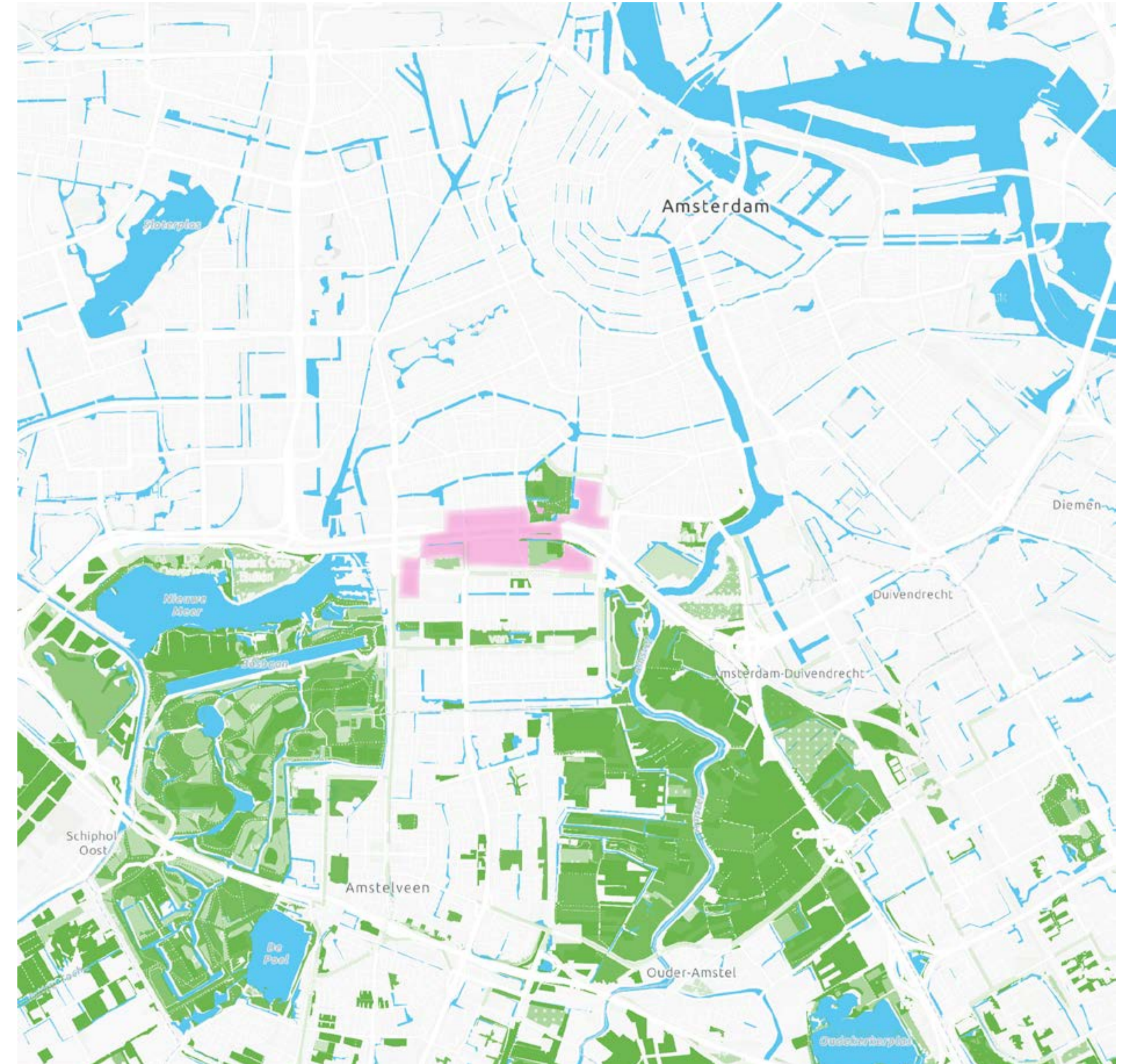


MAP OF SUB DISTRICTS WITHIN ZUIDAS



ZUIDAS SURROUNDING LANDSCAPE

Zuidas is embedded within the surrounding landscape and is part of the local water management structure. To the left is the Amsterdamse Bos (woods), Amsterdam's largest open park and to the east, Zuidas is bounded by the meadowlands alongside the River Amstel.

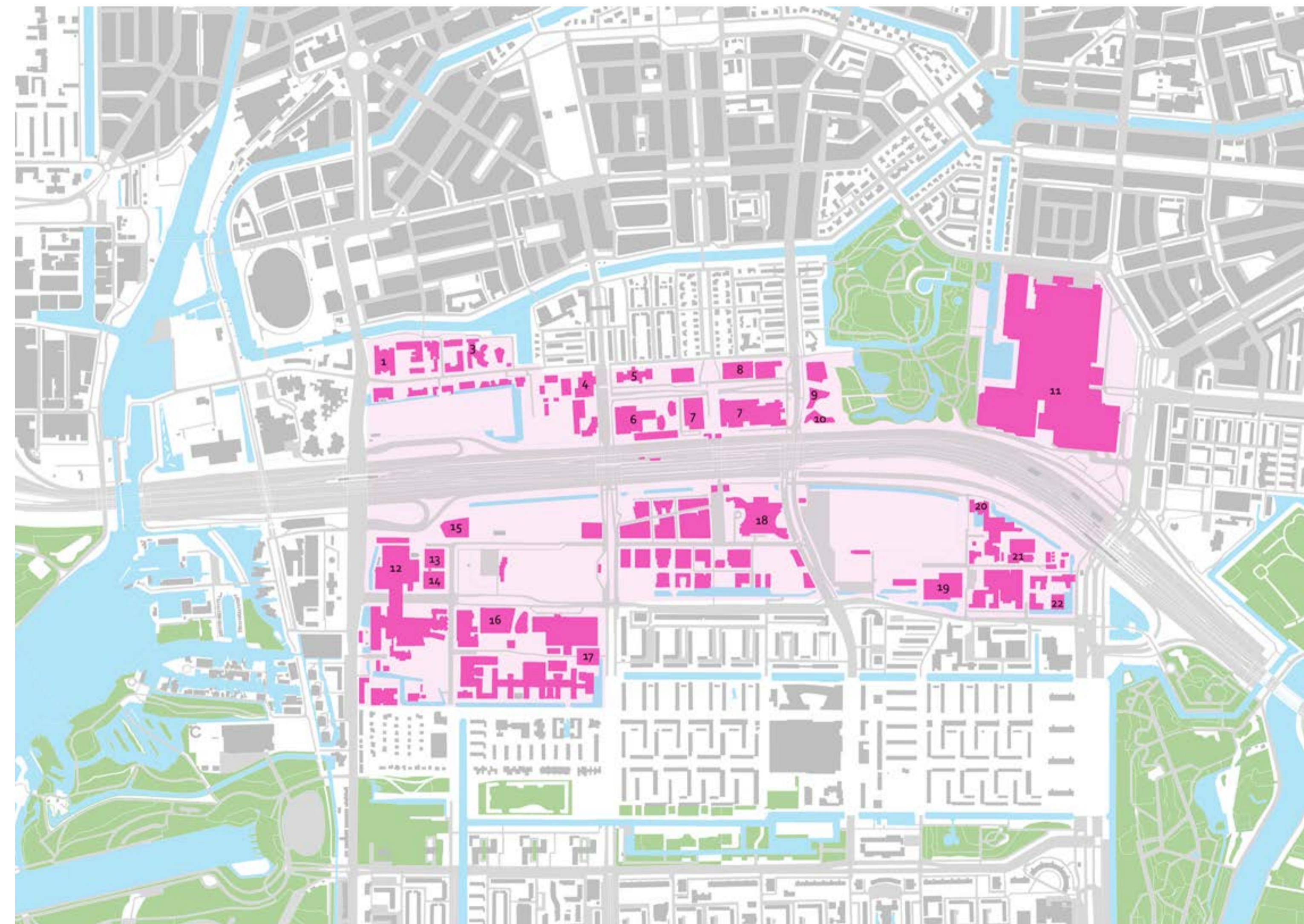


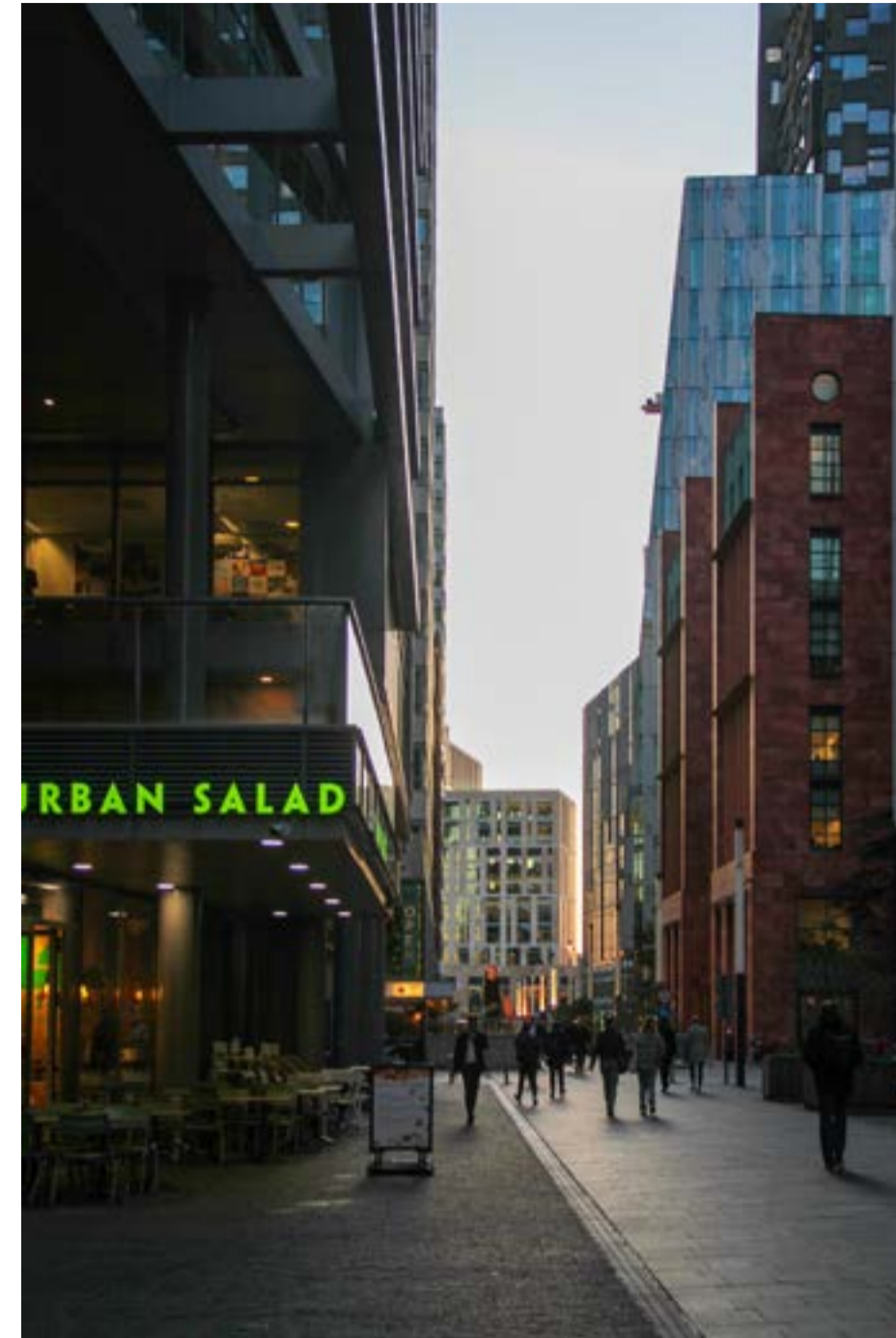
ZUIDAS MAP

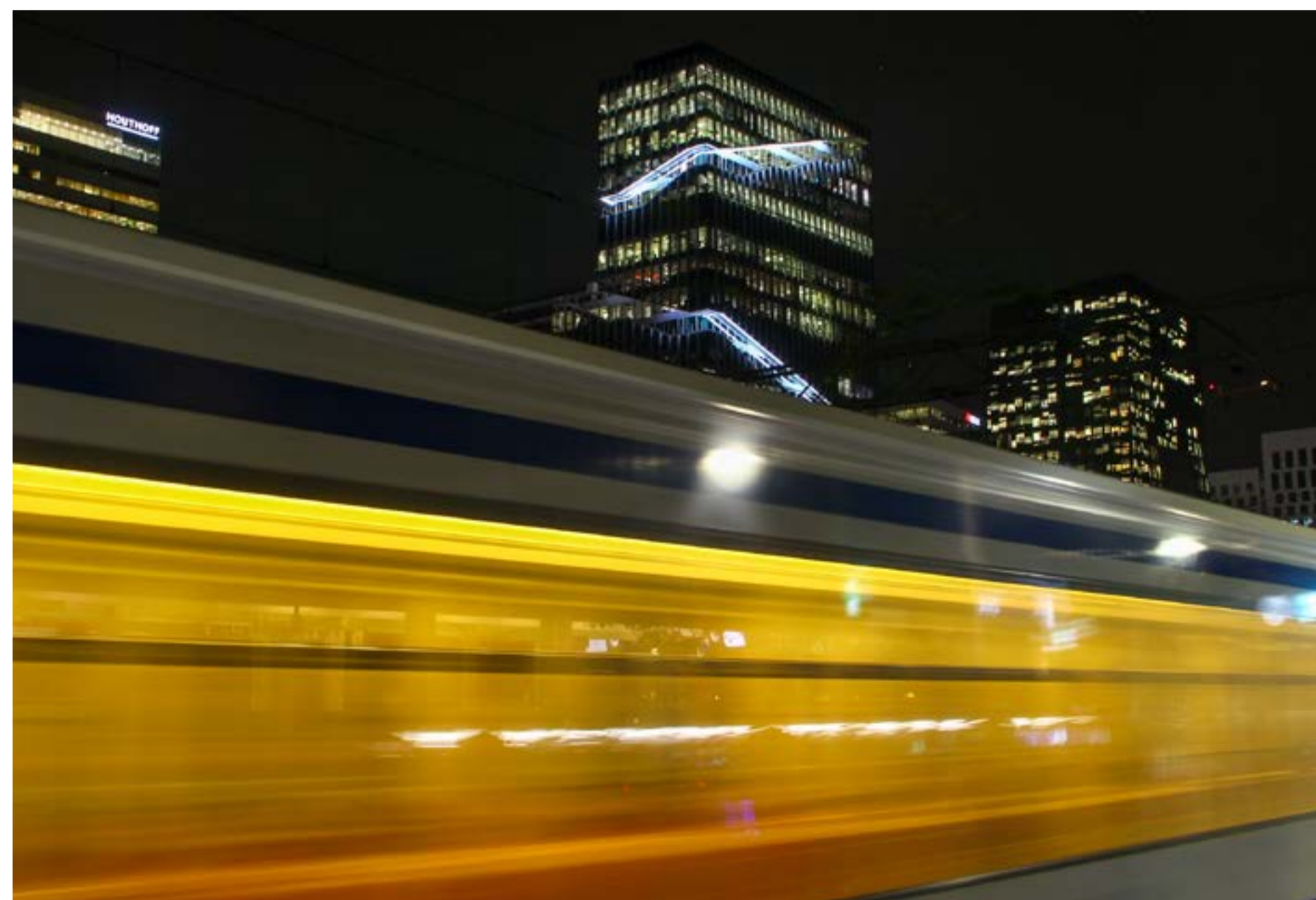
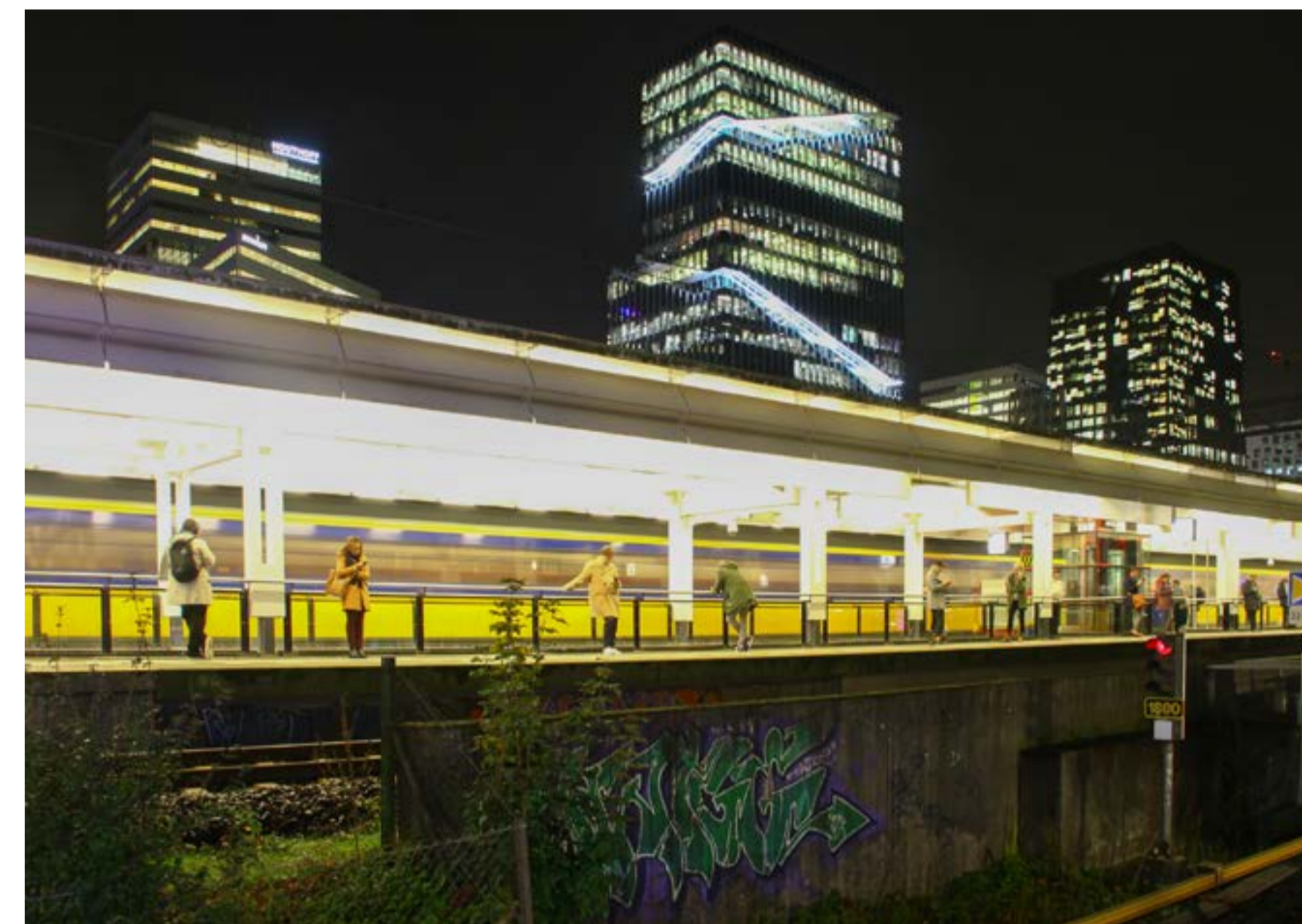
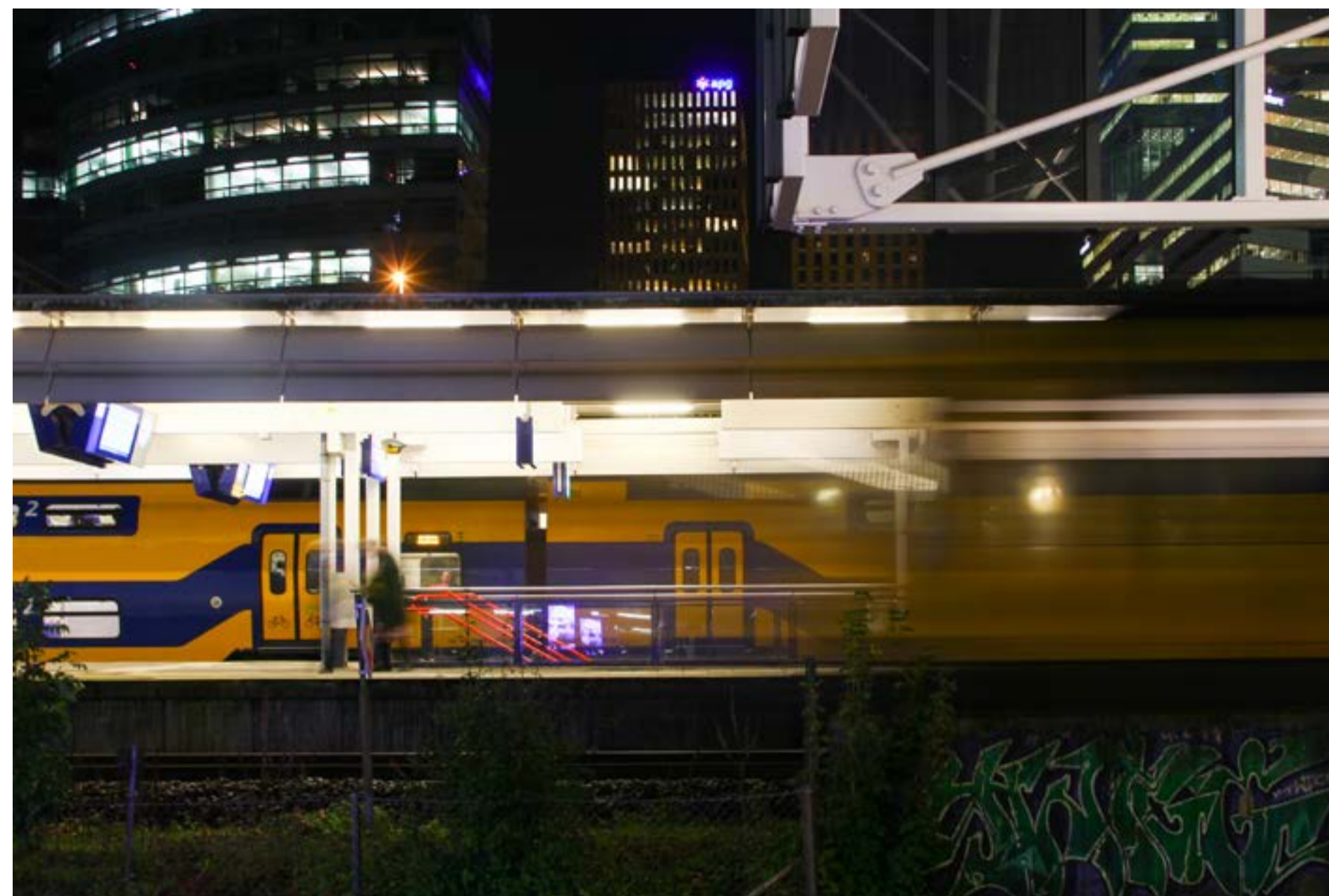
The financial district of Zuidas in Amsterdam has developed into a successful business centre. There are around 800 Dutch and International companies currently based in and around Zuidas. These include, banks, FinTech businesses, consultancies and financial, legal and business services companies. Additional facilities for economic activities also located in Zuidas are the RAI Convention Centre and the World Trade Centre. The Vrije University, one of Amsterdam's two main universities is also located here. Another important function of Zuidas is of a medical and life sciences hub. This is made up of the University Hospital, Amsterdam UMC, the Academic Centre for Dentistry Amsterdam (ACTA) and the newly opened head office of the European Medicines Agency (EMA).

The map across highlights all the buildings within the Zuidas district, highlighting any notable buildings and their functions

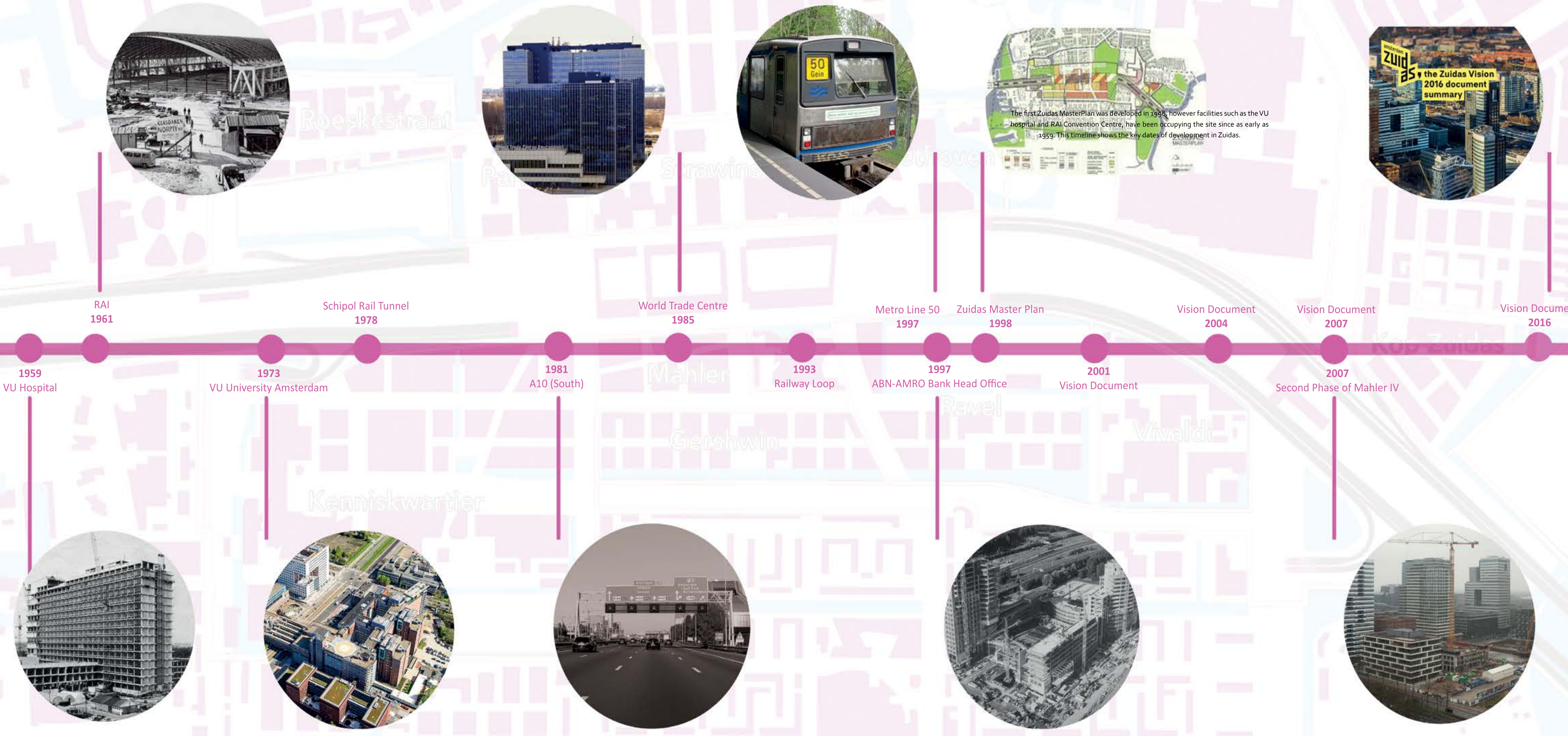
1. *Loyens and Loeff Lawyers Offices*
2. *The British School of Amsterdam Education*
3. *Geert Groote College Amsterdam Education*
4. *Rechtbank Amsterdam Bank*
5. *Amsterdam International Community School Education*
6. *The Atrium Zuidas Offices*
7. *World Trade Centre Offices*
8. *KB Notarissen Public Notary*
9. *Stibbe HQ Lawyer's Offices*
10. *AkzoNobel Centre Manufacturer's Offices*
11. *RAI Convention Centre*
12. *Amsterdam UMC Hospital*
13. *ACTA Dental Institute Medicine/ Education*
14. *O2 Building for Human Life Sciences Education*
15. *Deloitte Consultant Offices*
16. *Hogeschool Inholland Amsterdam Education*
17. *Vrije University Education*
18. *ABN Amro HQ Bank*
19. *Ravel Residences Residence*
20. *EY Consultant Offices*
21. *XS4ALL Data Centre*
22. *Holiday Inn Hotel*





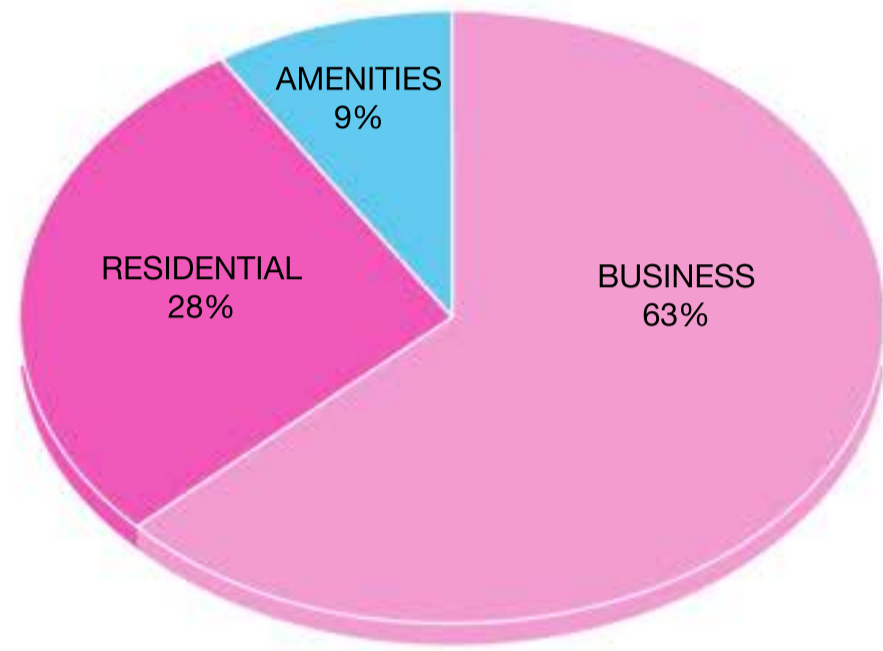


ZUIDAS TIMELINE

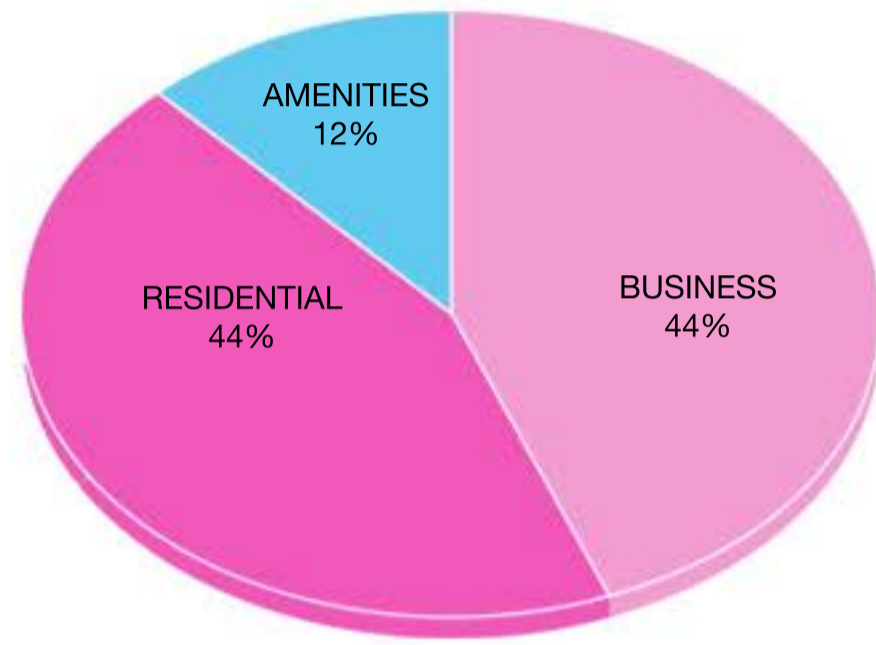


ZUIDAS FUNCTIONS

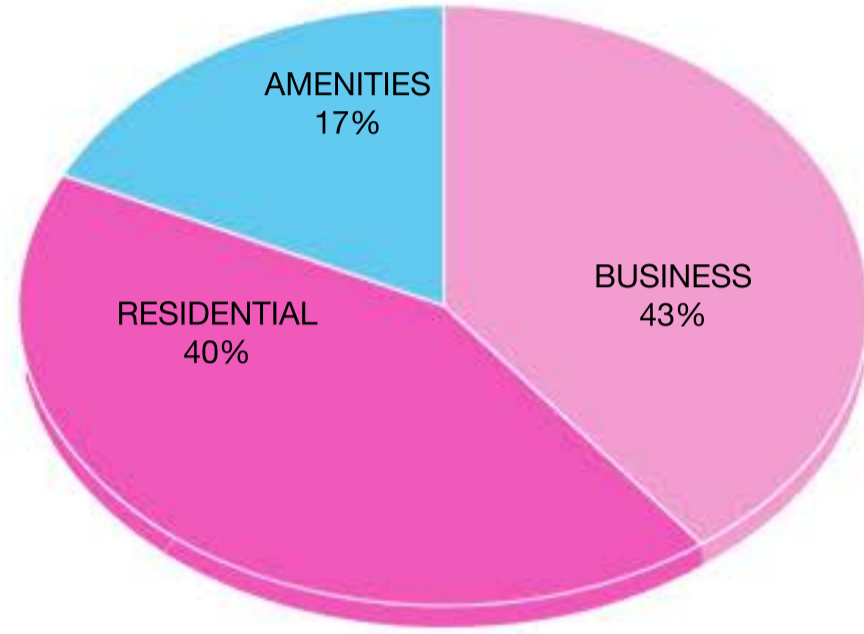
There have been a series of Vision Documents created for since the initial document in 1998. In each consecutive document, a larger amount of land was planned for, and the percentage of residential, amenities and business functions varied. The graphs below illustrate this.



2000
 Concept Vision
 1 956 000 m2

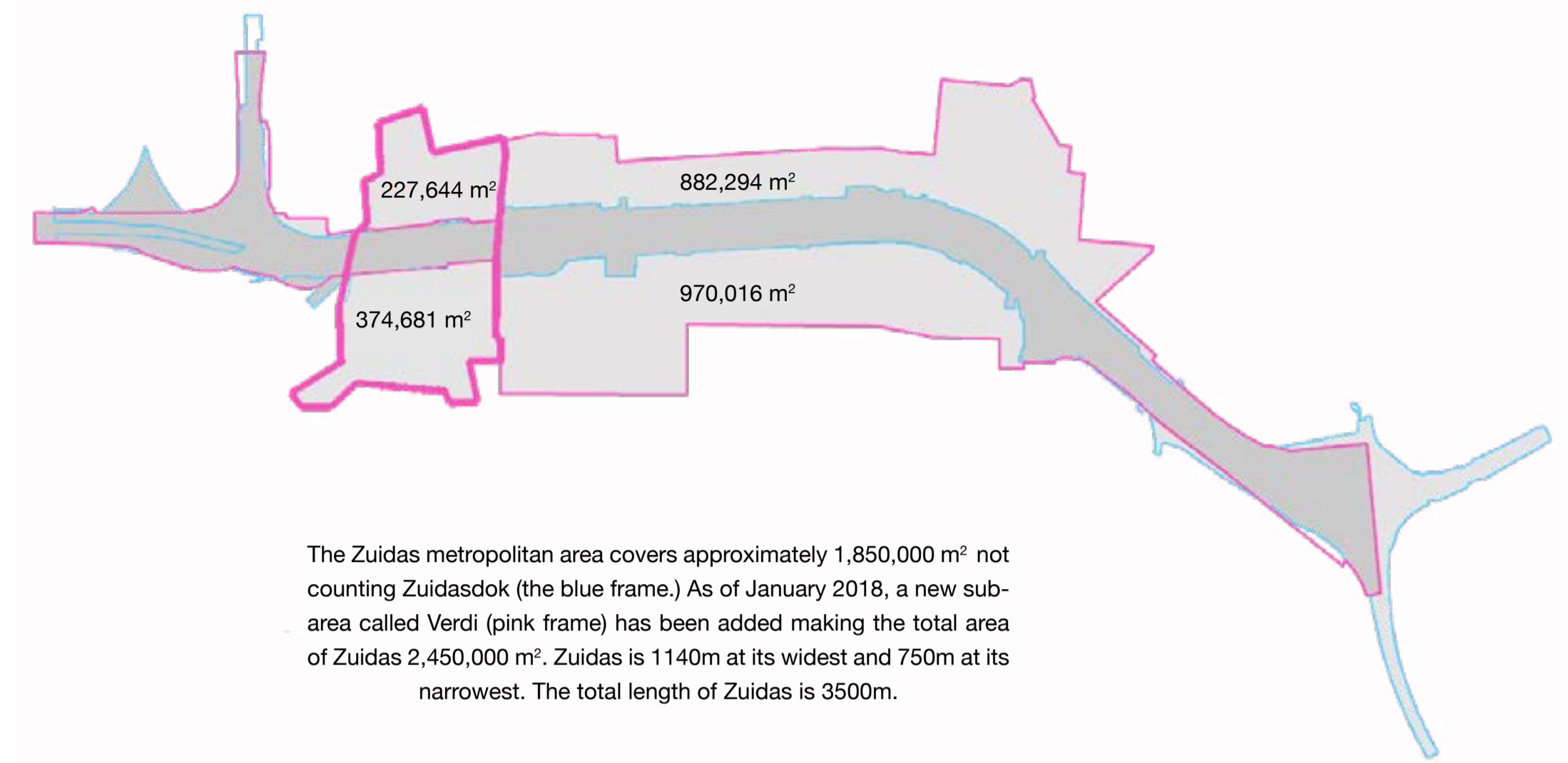


2001
 Vision
 2 252 000 m2

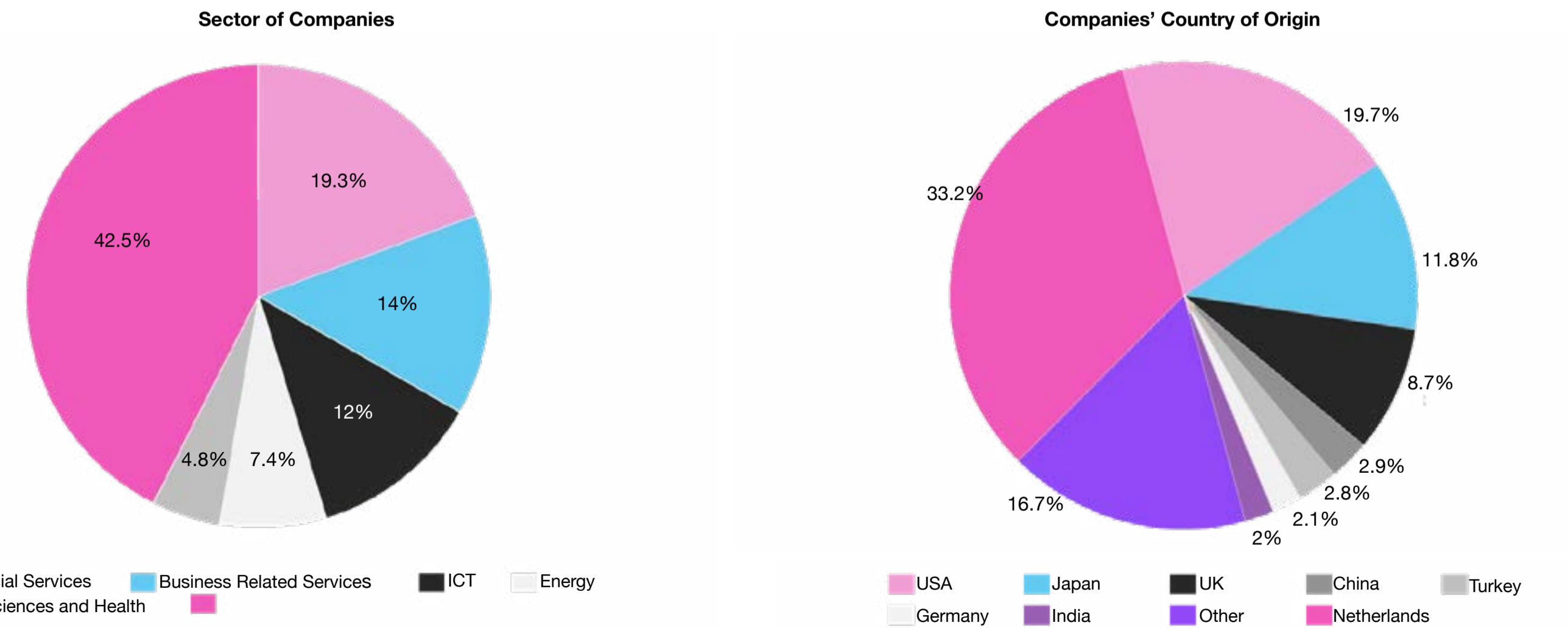


2004
 Vision
 2 748 420 m2

ZUIDAS FACTS AND FIGURES



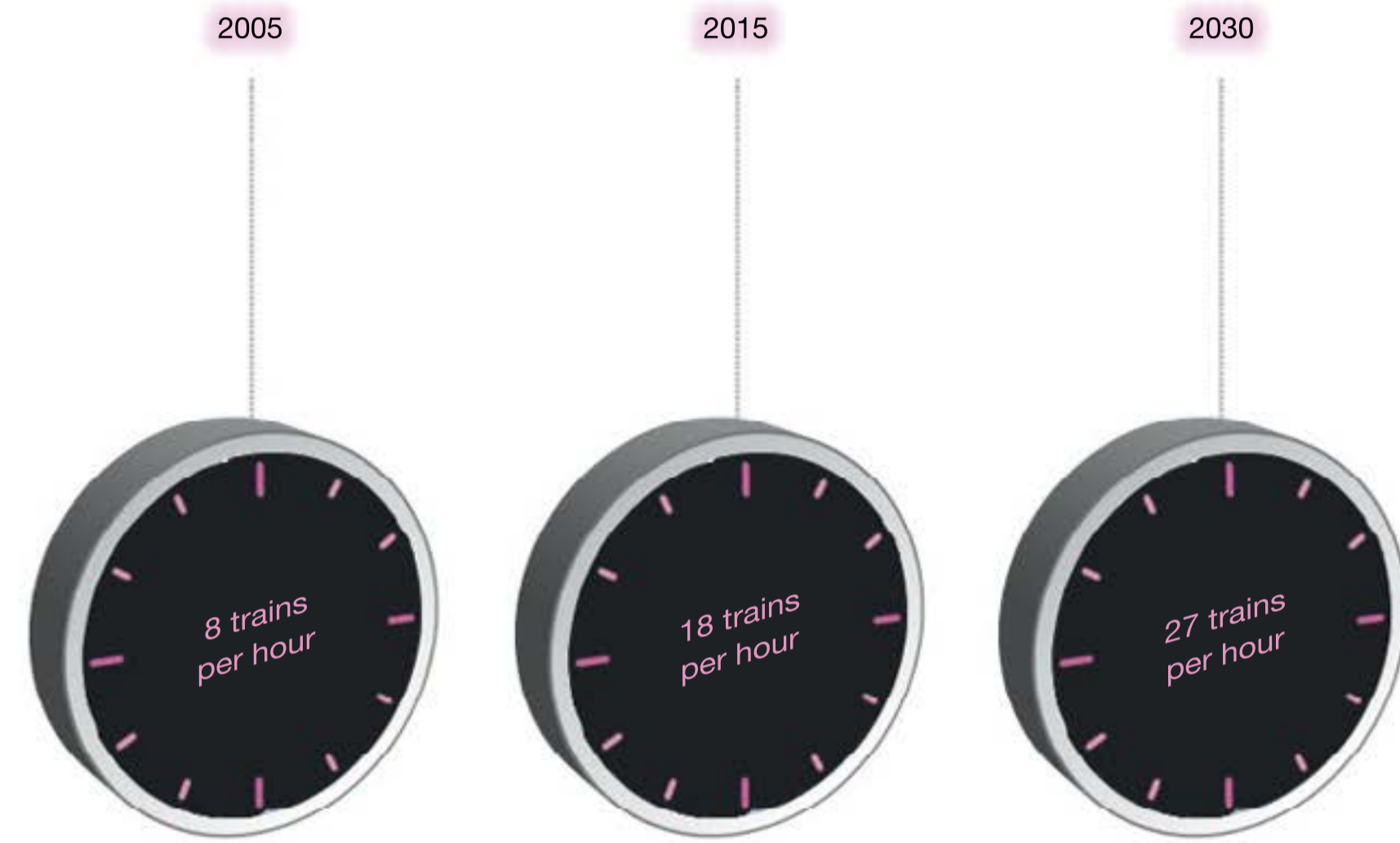
Current statistics for business residential and educational functions in Zuidas.



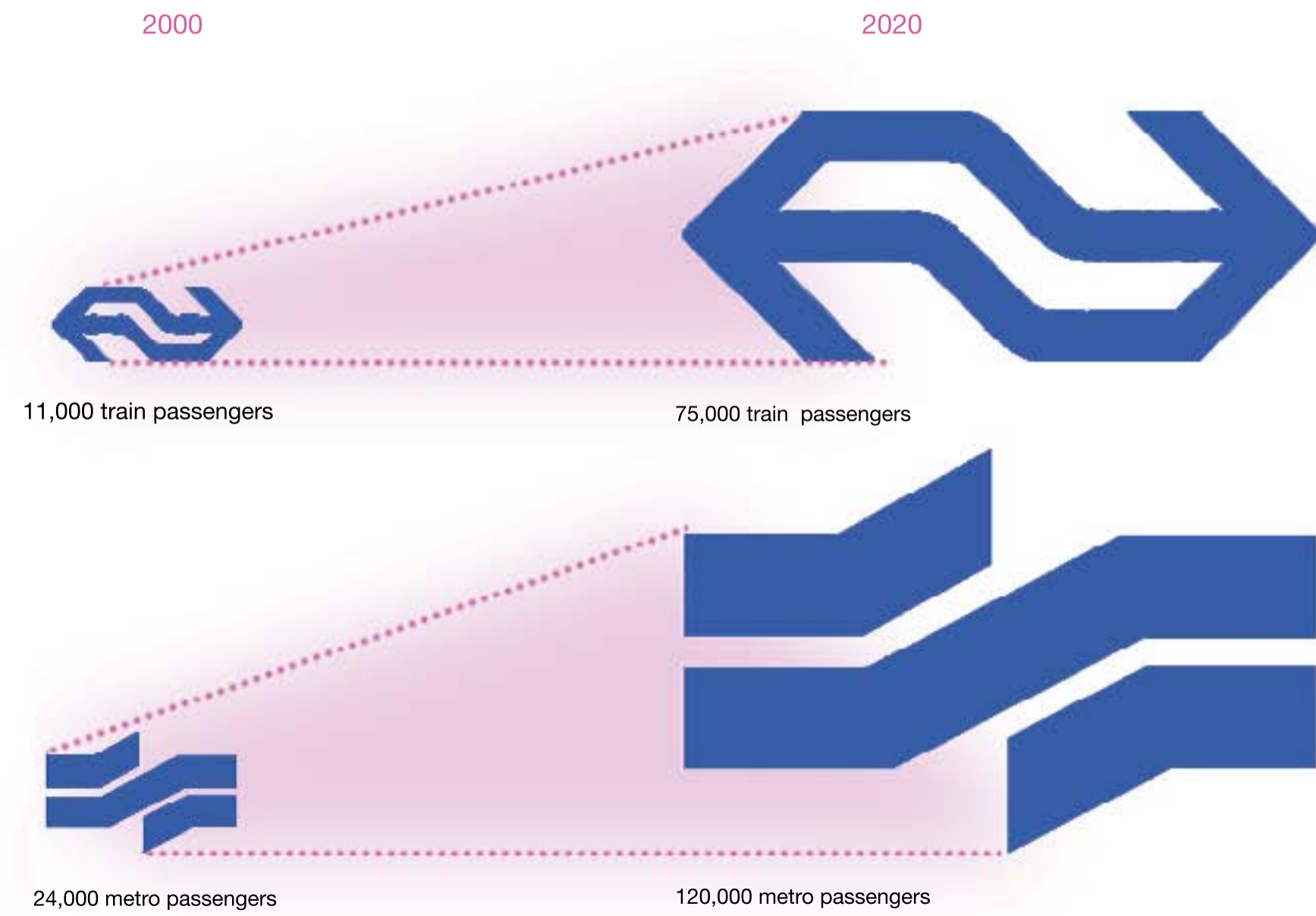
INFRASTRUCTURE AT ZUIDAS STATION

In order to serve the future needs of Zuidas, the existing infrastructure needs to be improved. Frequency of trains will increase drastically, and as a result the passenger movement is expected to rise to more than 5 times the current rate. Extra highway lanes as well as train tracks are therefore needed to support the influx of people movement.

Frequency of Trains at Zuidas Station

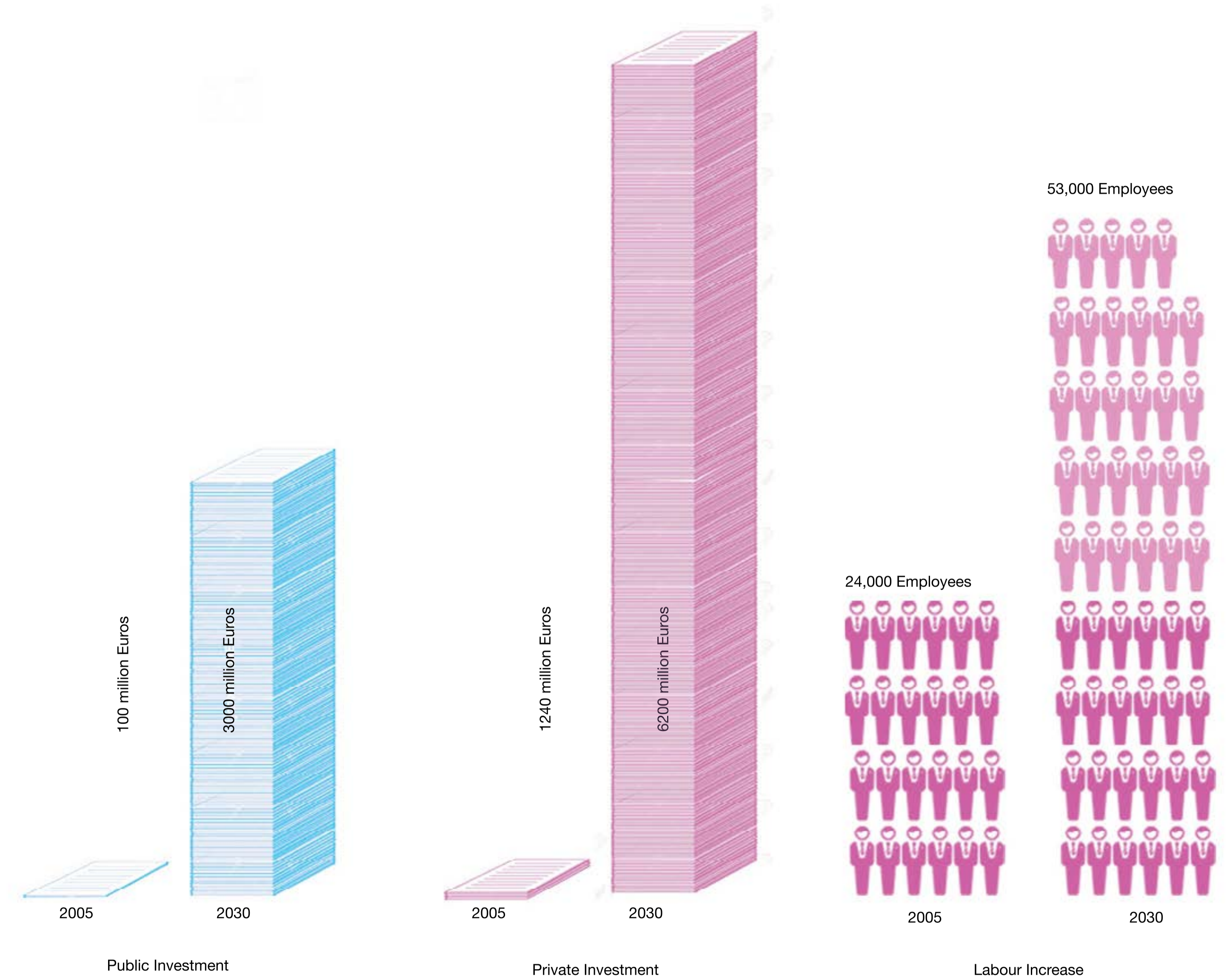


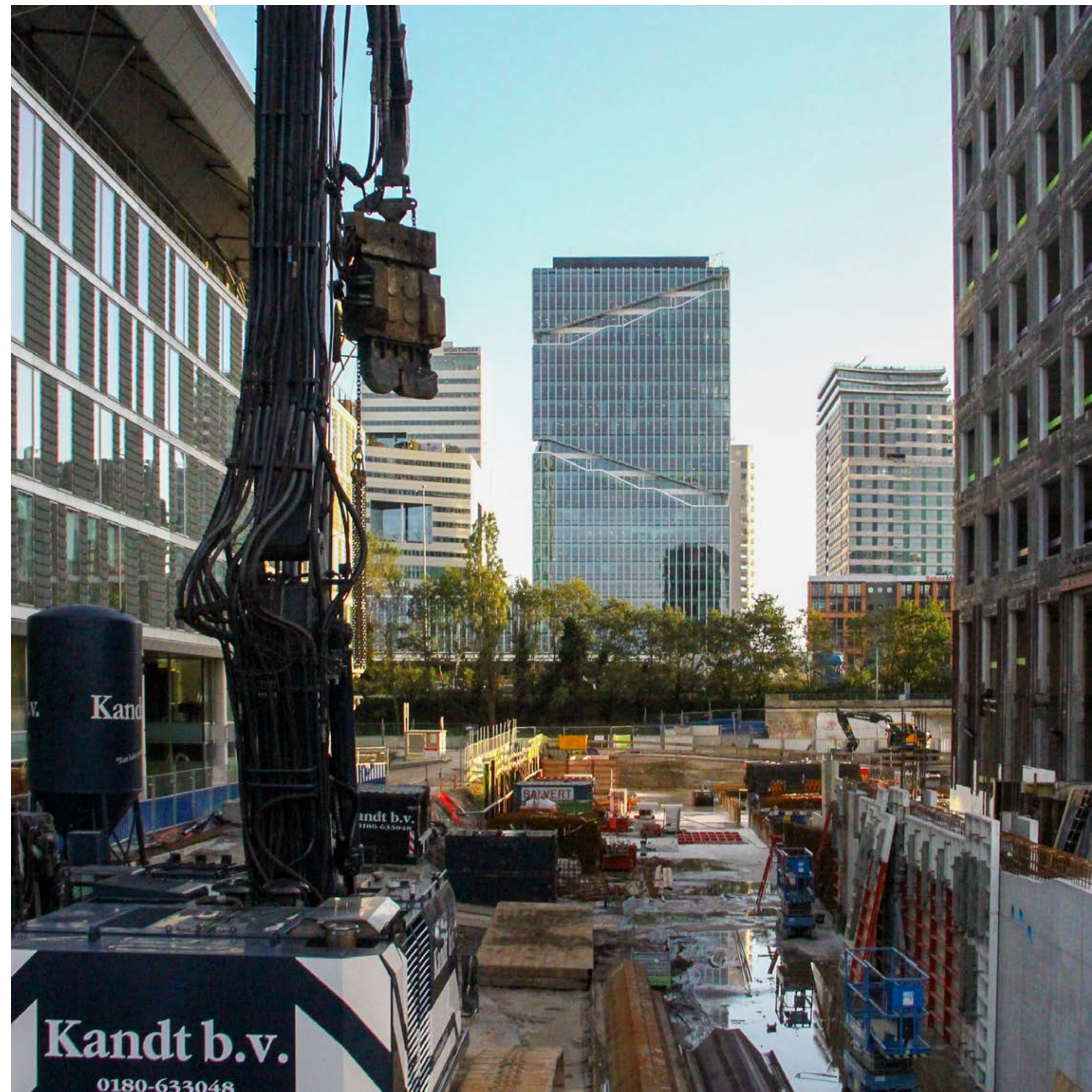
Passenger Movement at Zuidas Station

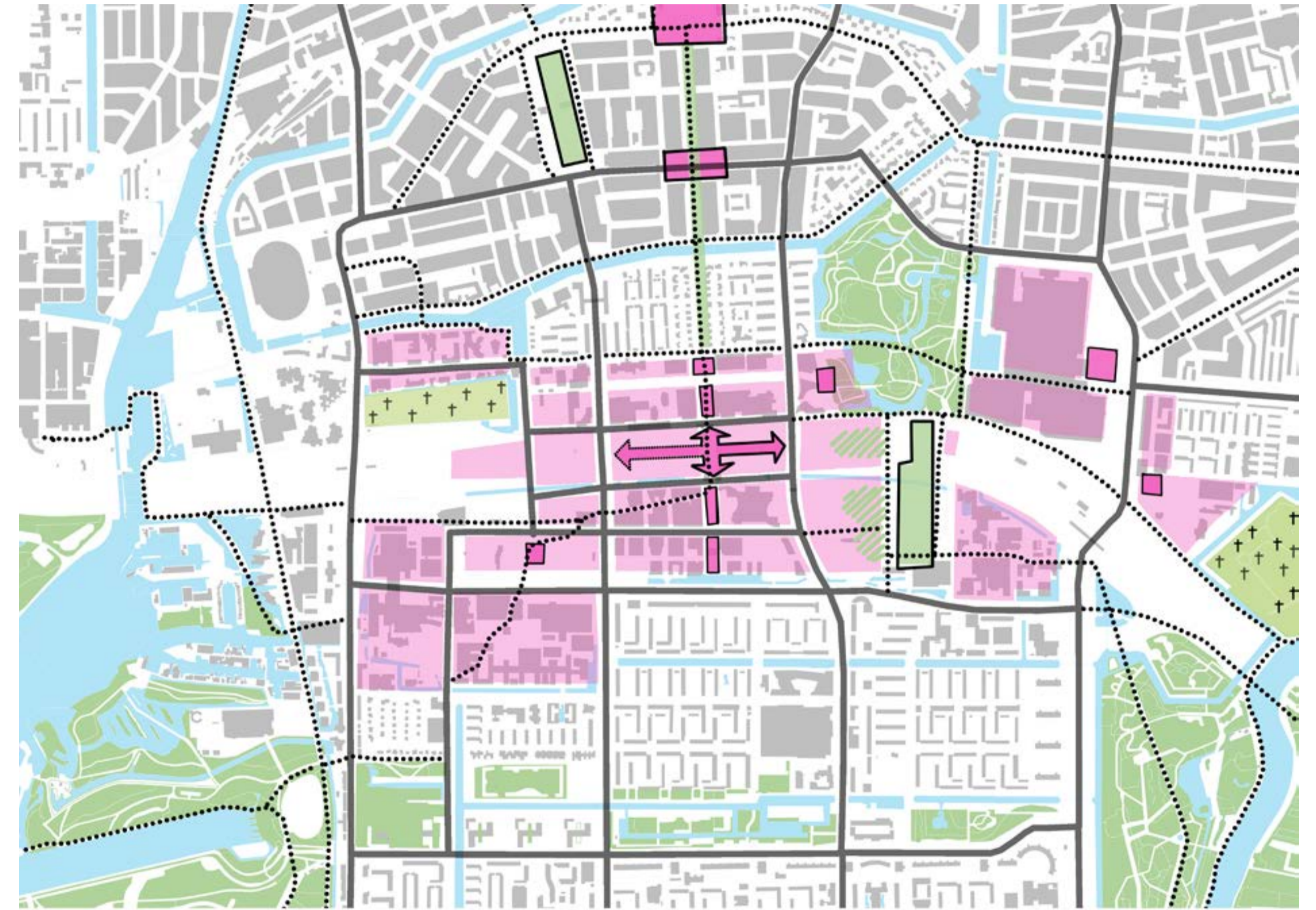
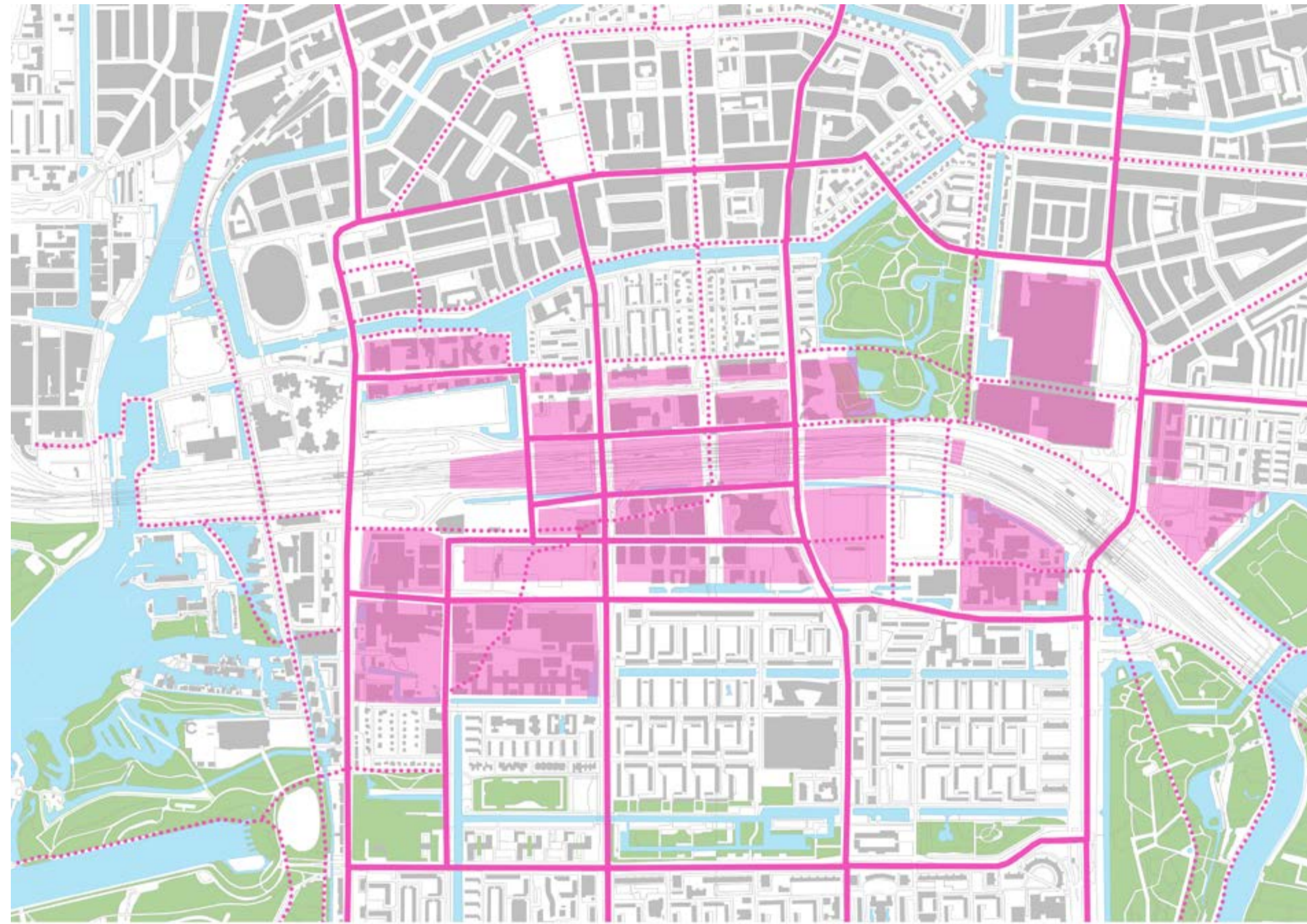


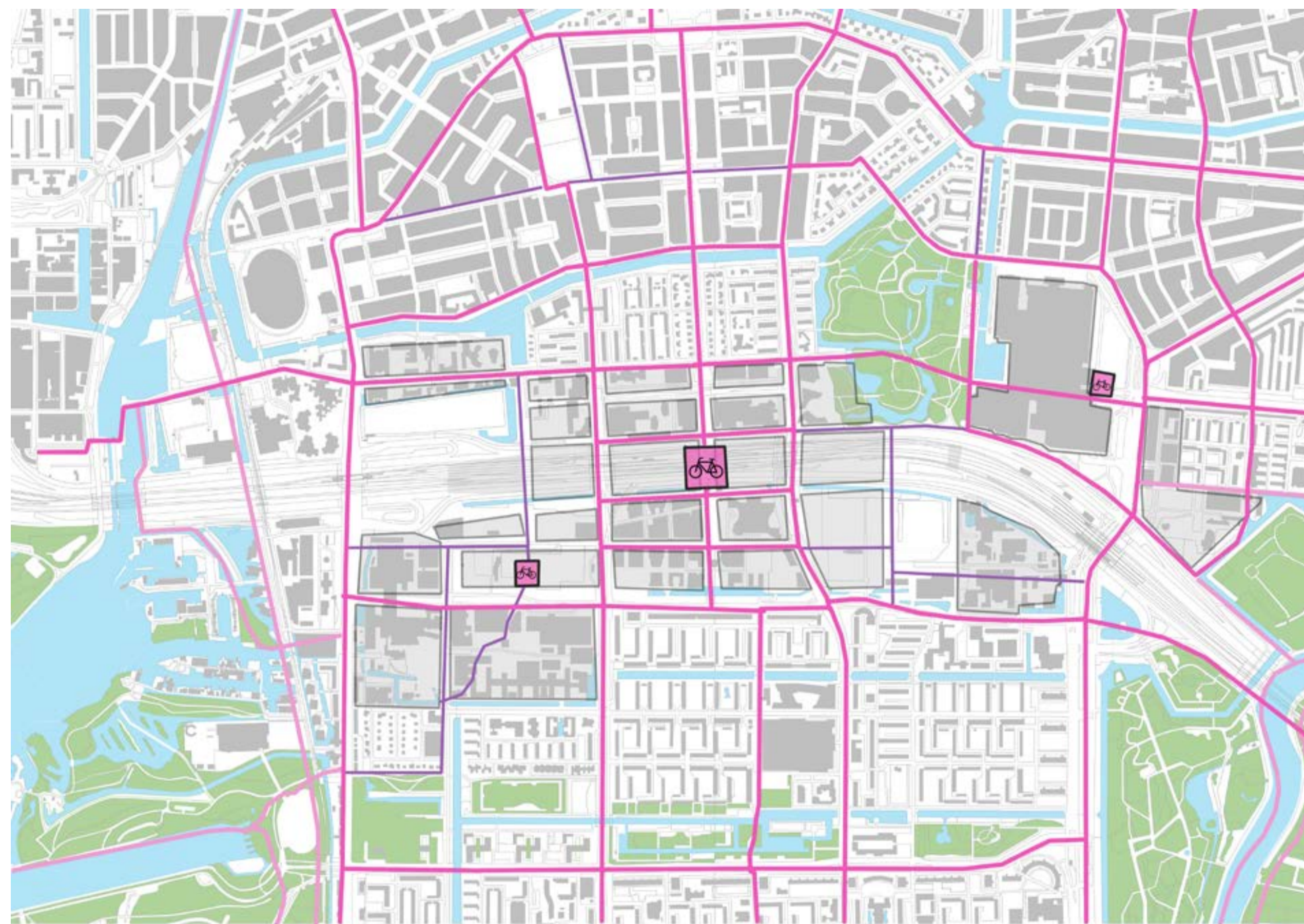
ZUIDAS FUNDING AND JOBS

Most of the development of Zuidas is privately funded, however the Dutch government finance the majority of the infrastructure, with an investment that makes up one third of the total amount. An increase in functions and facilities at Zuidas will lead to various new jobs.

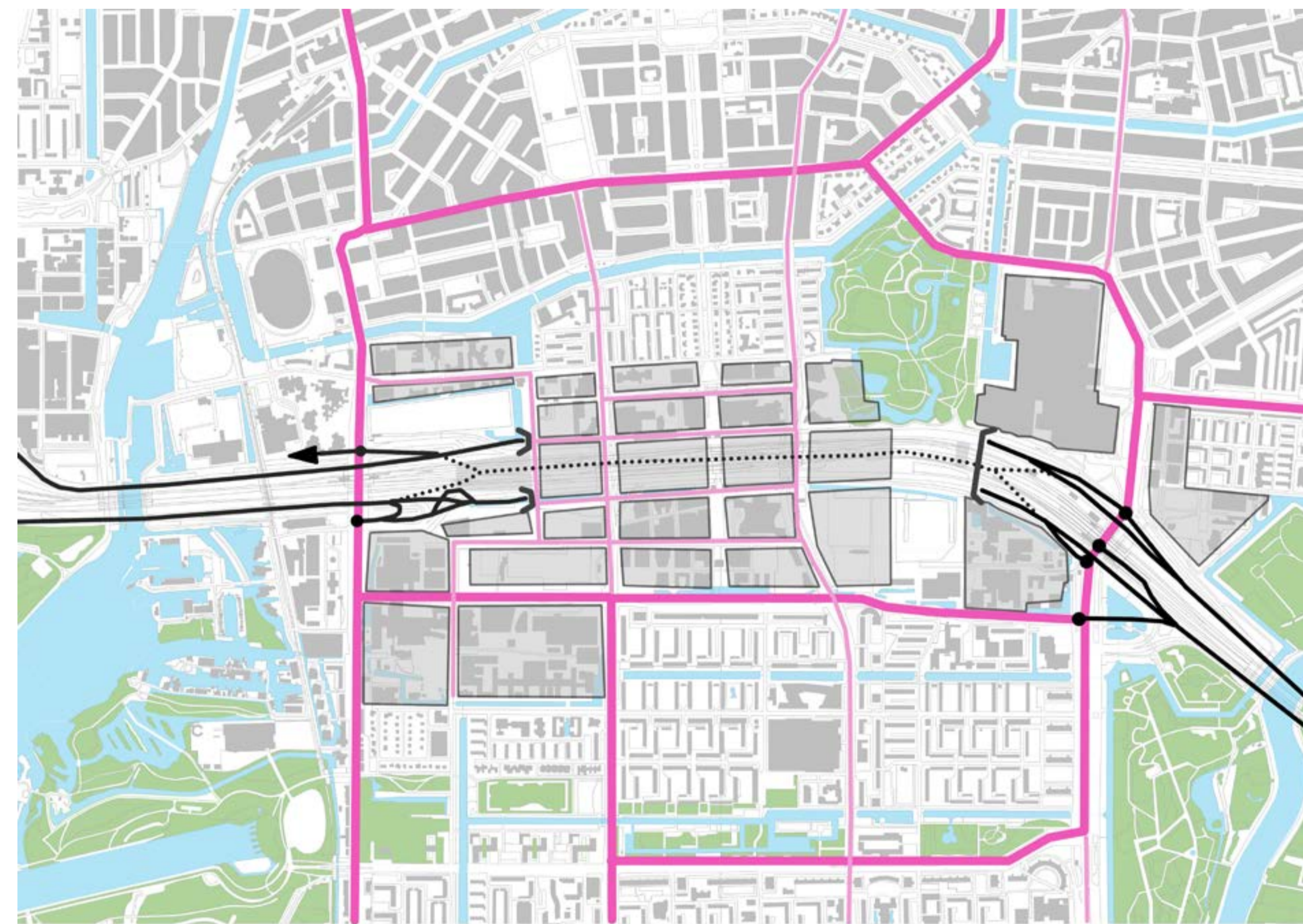






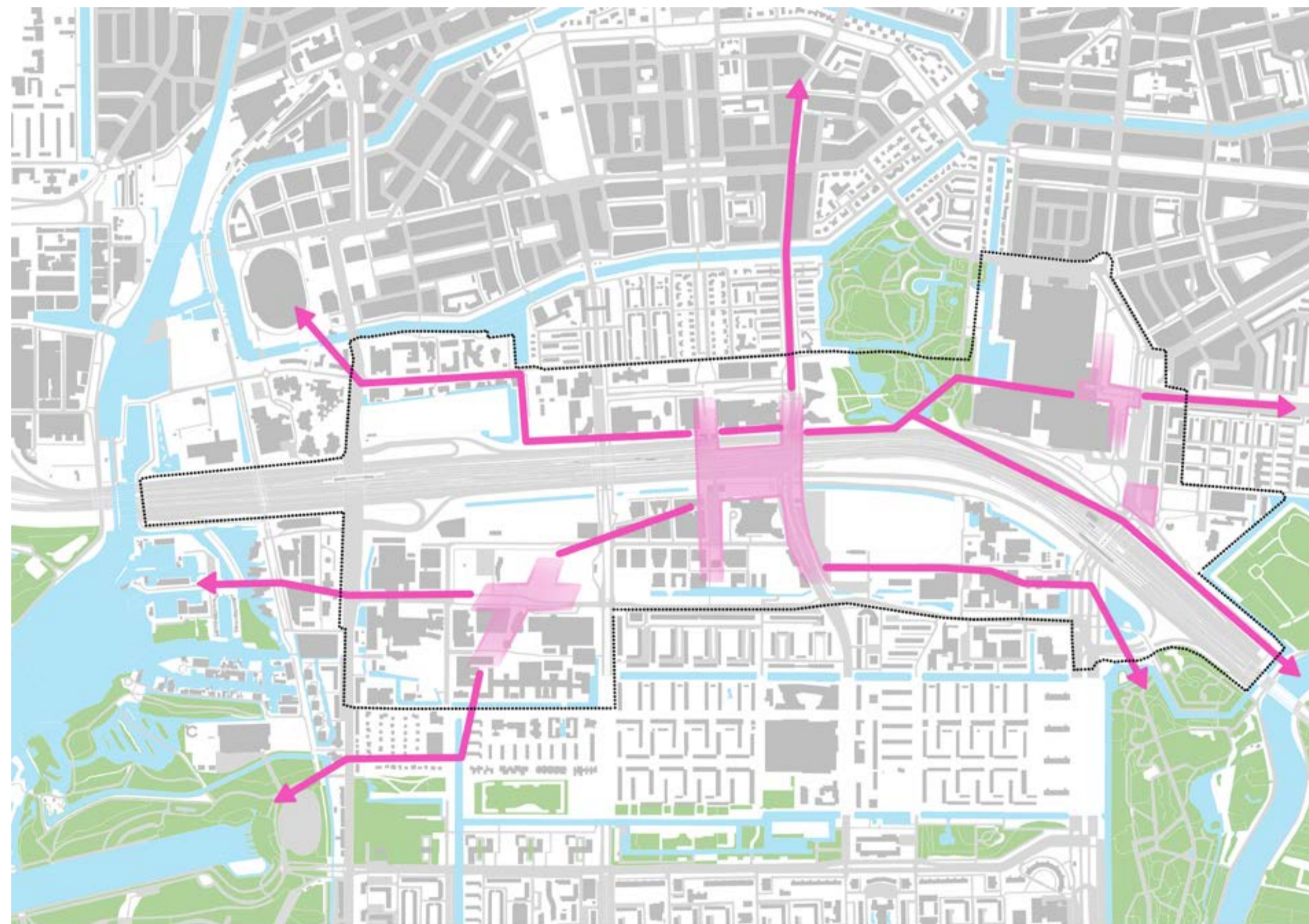


— Main City Network
 — Recreational Routes
 — Internal Routes
 🚲 Cycle Storage

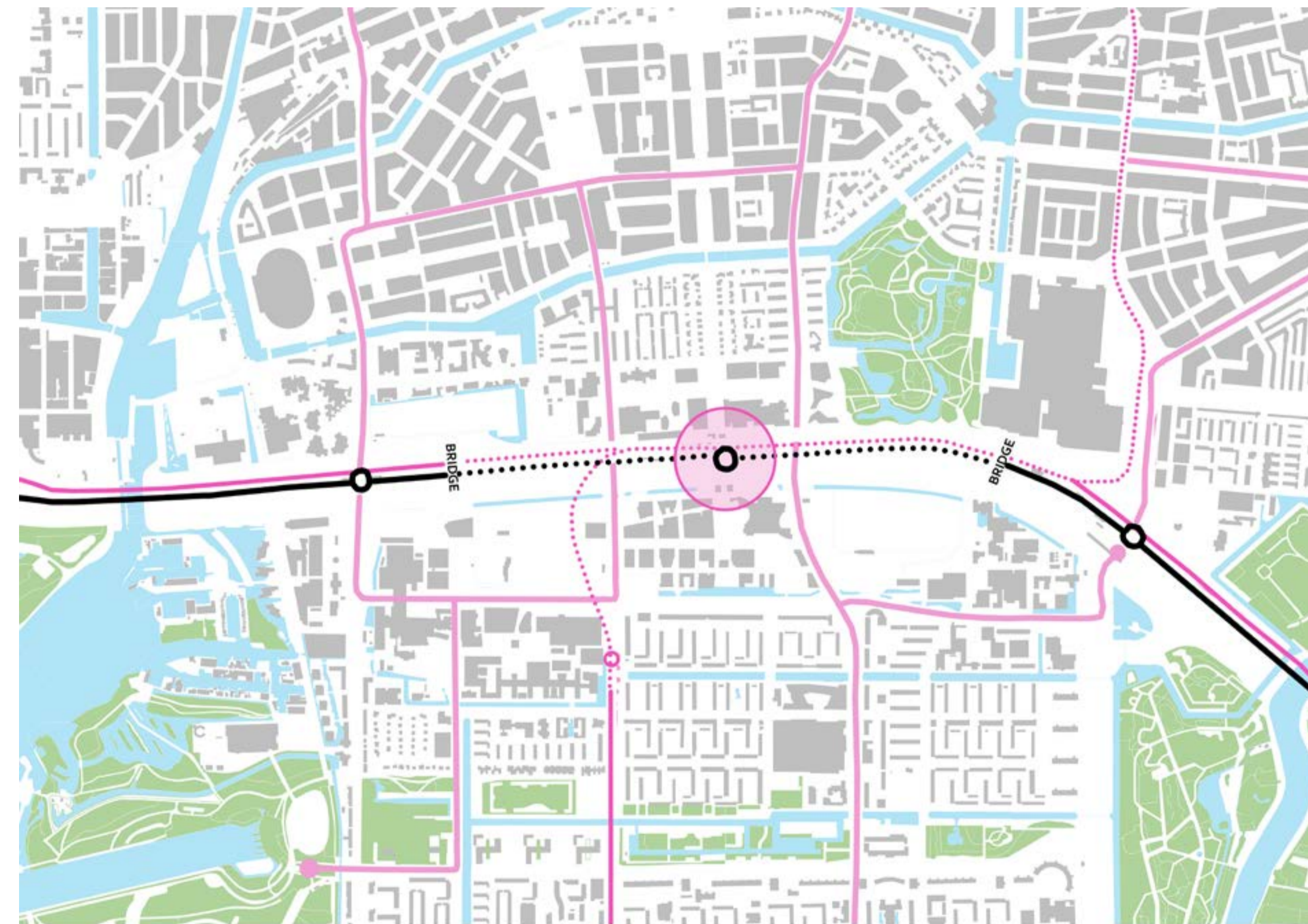


— A10
 — Main Roads Network
 — Urban Streets
 Underground Access Road

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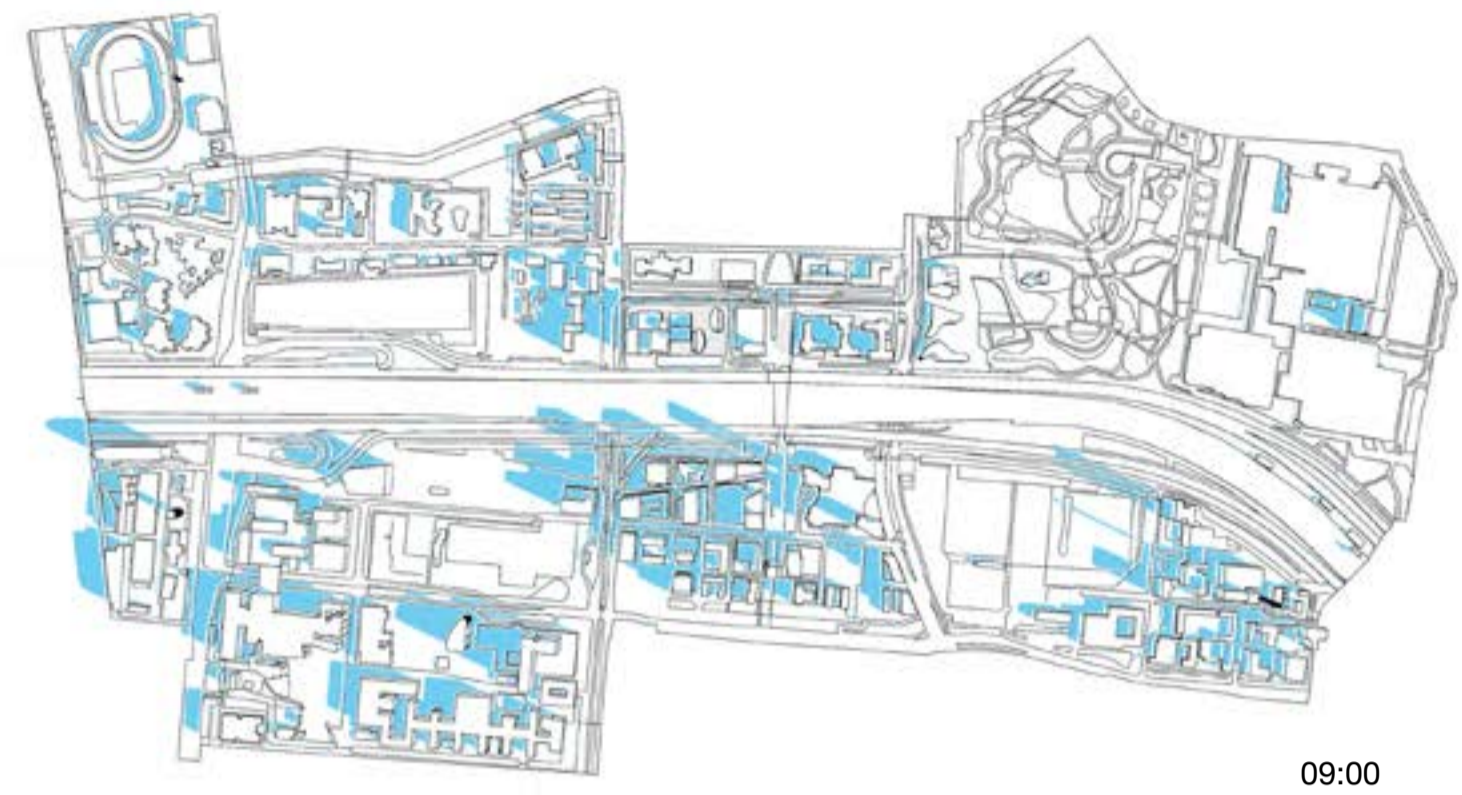


Dynamic Areas Main routes for slow moving traffic



Railway Nord-Zuid line and Metro Loop Station Zone Station Tram Lines

SPRING EQUINOX SHADOW ANALYSIS



09:00



12:00



17:30

SUMMER EQUINOX SHADOW ANALYSIS



09:00



12:00



17:30

AUTUMN EQUINOX SHADOW ANALYSIS



09:00

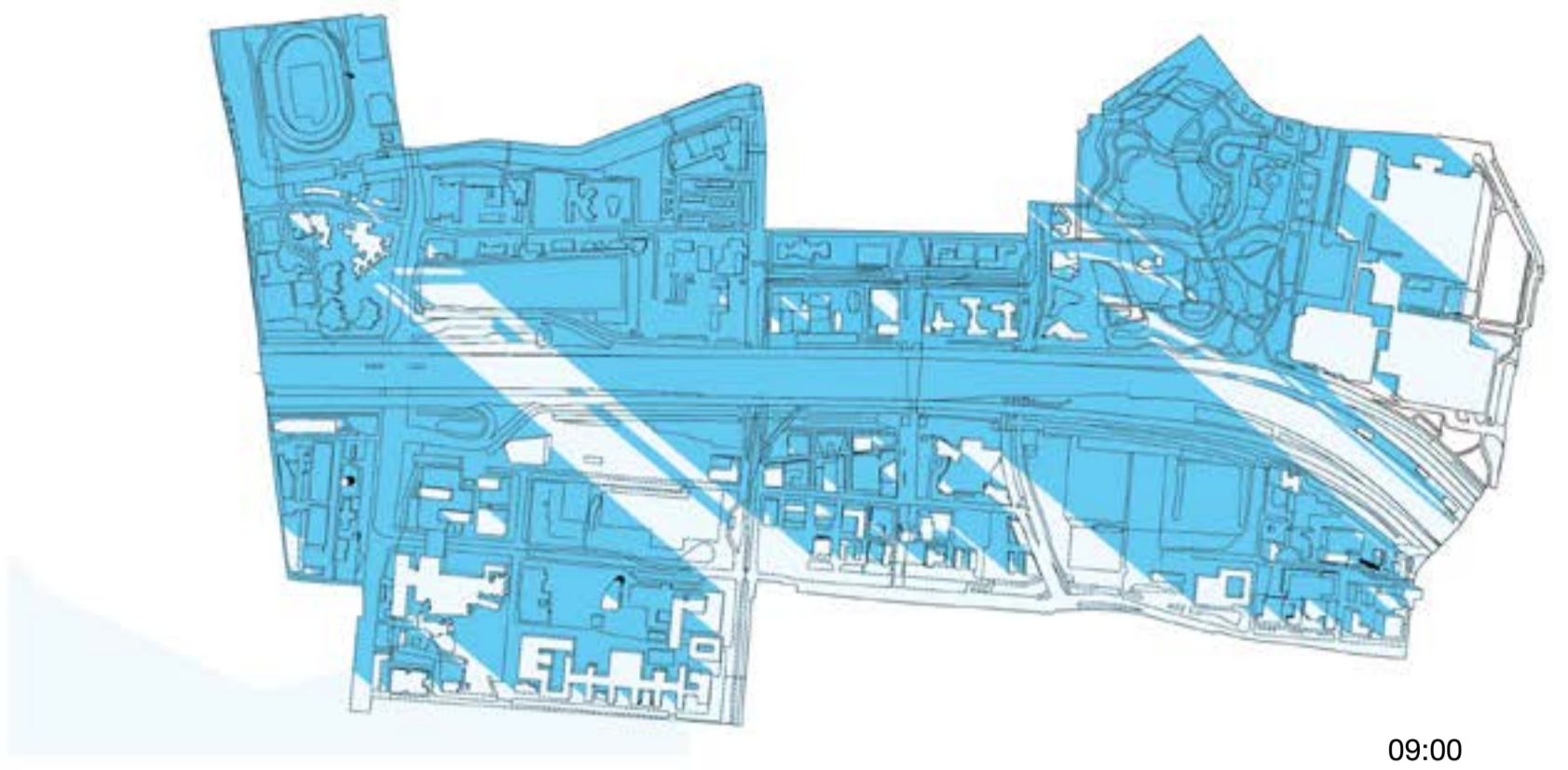


12:00

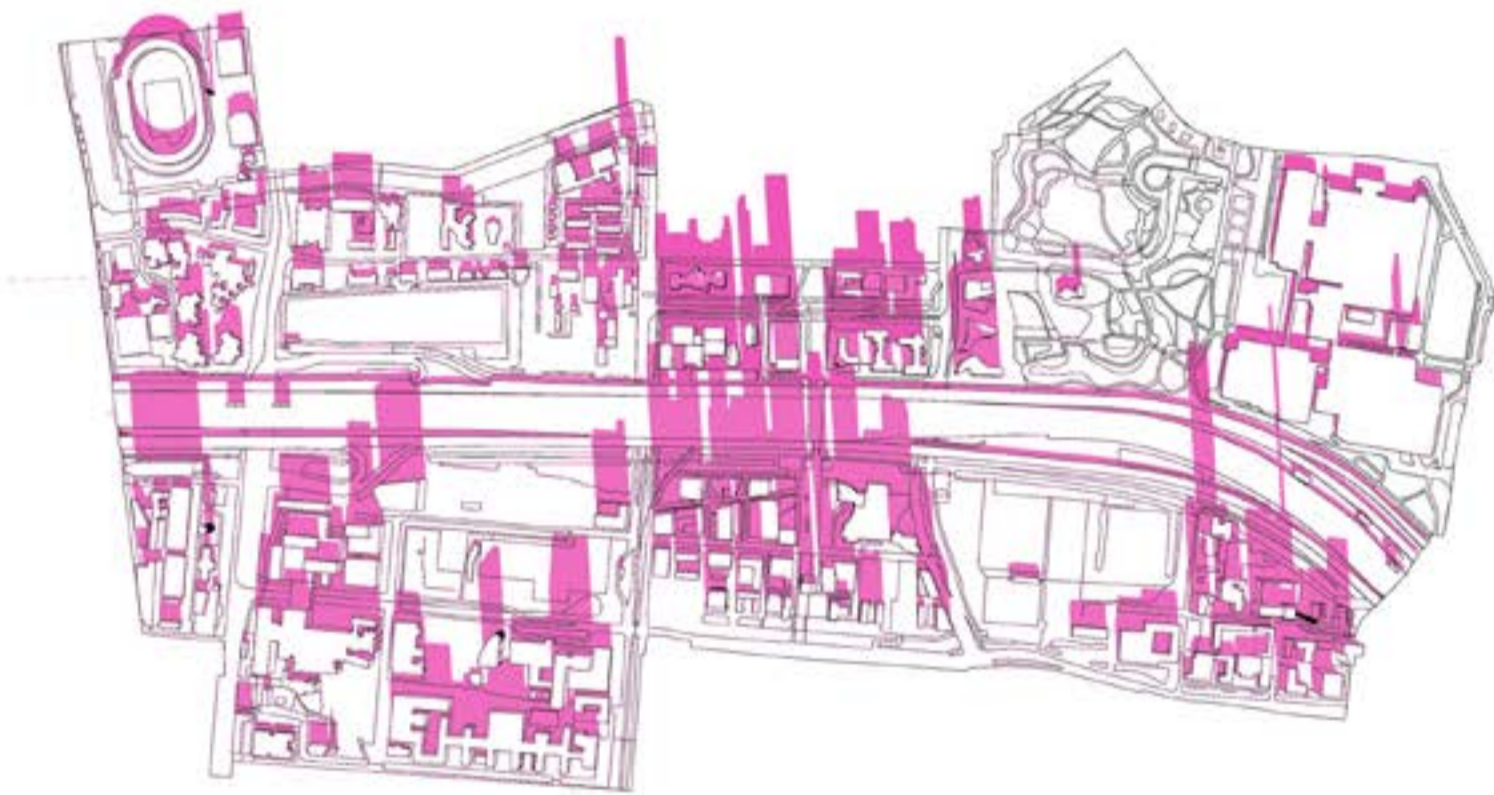


17.30

WINTER EQUINOX SHADOW ANALYSIS



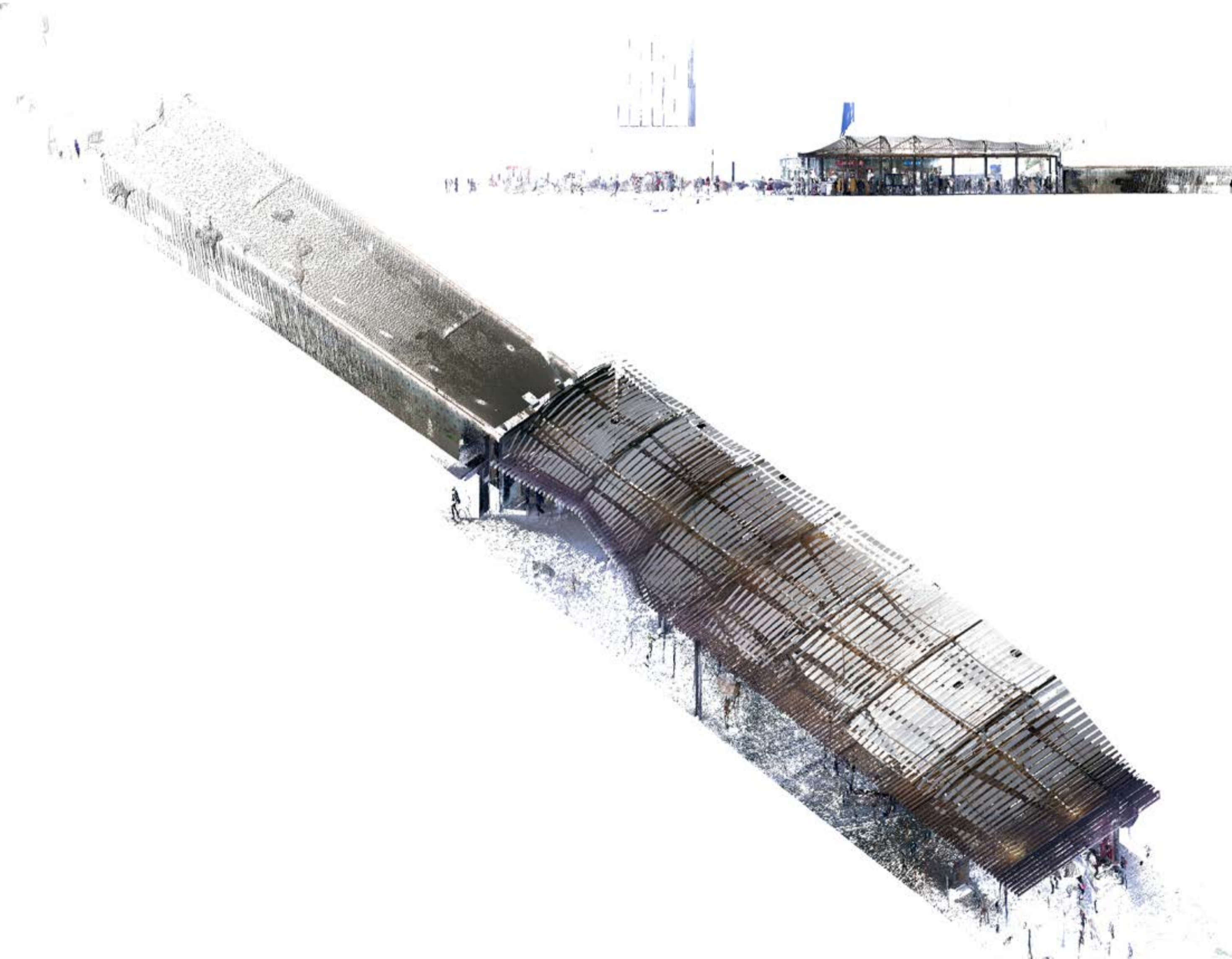
09:00



12:00



16:00





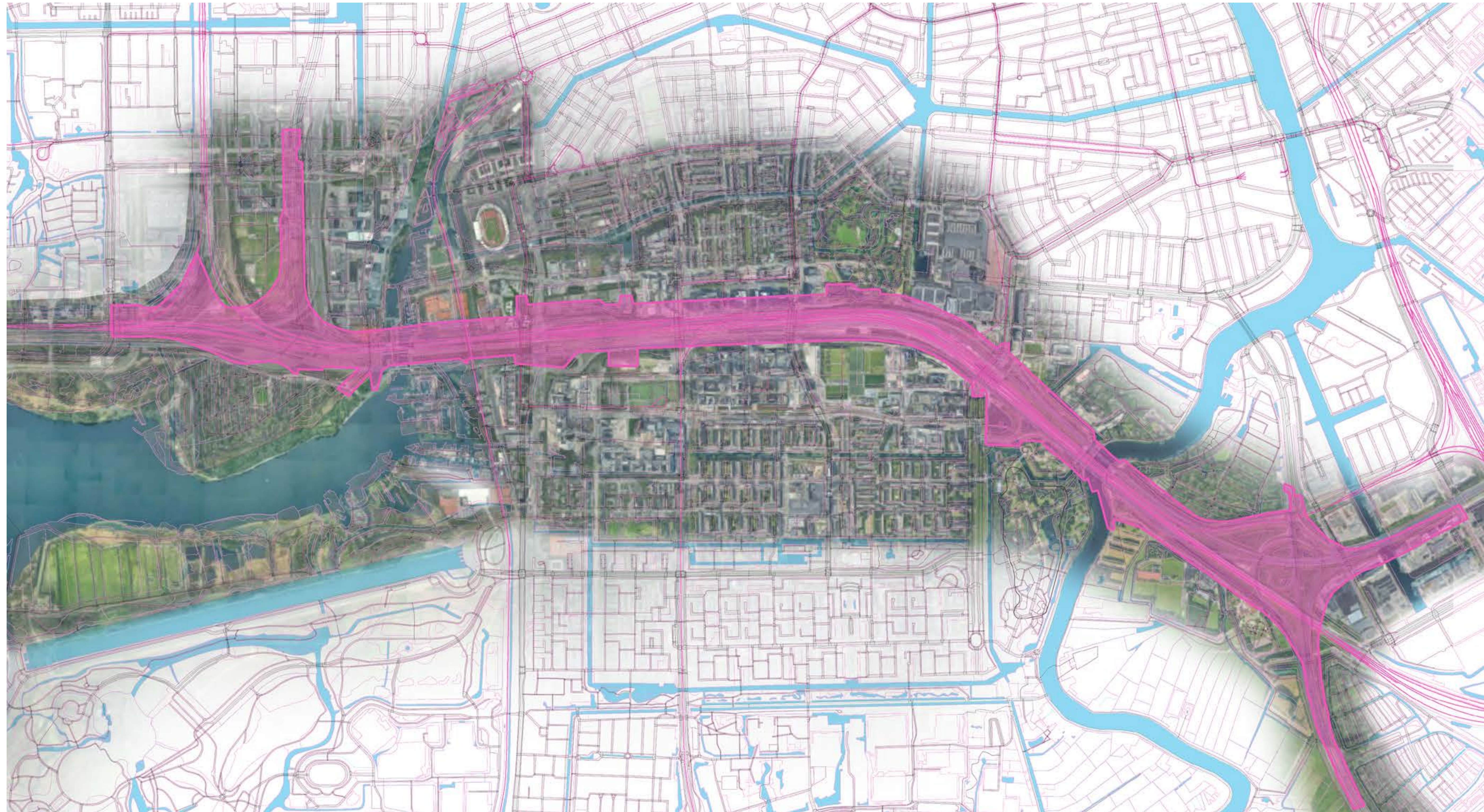
CHAPTER 4: Zuidasdok 2040

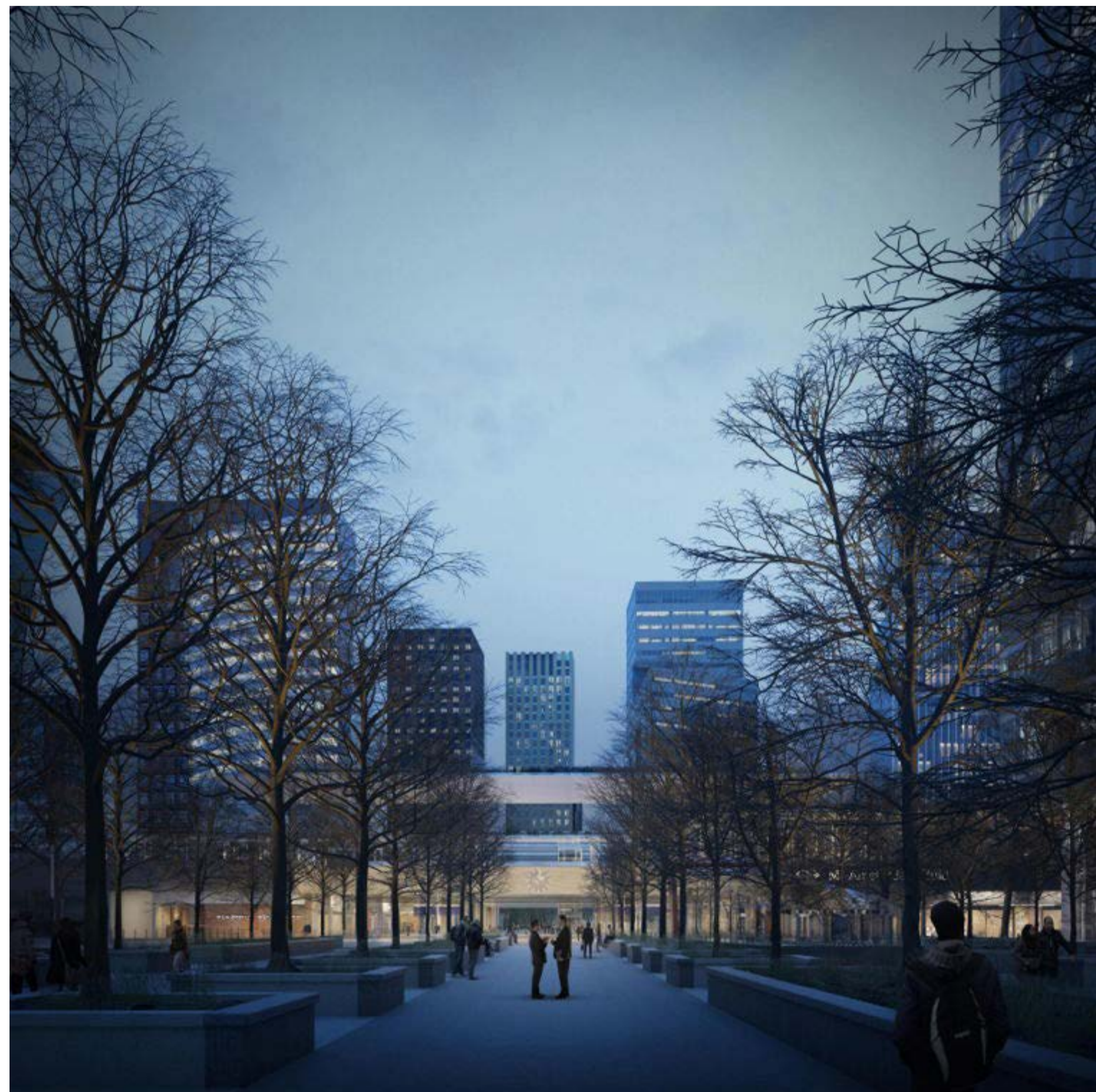
The aim of Zuidasdok, one of the largest infrastructure projects in the Netherlands, is to improve the accessibility of the Zuidas district in Amsterdam and in Randstad, by road and public transport.

ZUDIASDOK MASTERPLAN

The project involves expanding the Amsterdam Zuid station into a multifunctional public transport terminal: buses, metro, trams, trains and taxis will be brought together in a single, contemporary, compact station; widening the southern stretch of the A10 orbital motorway and rerouting the section of the A10 underground that runs adjacent to Zuidas.

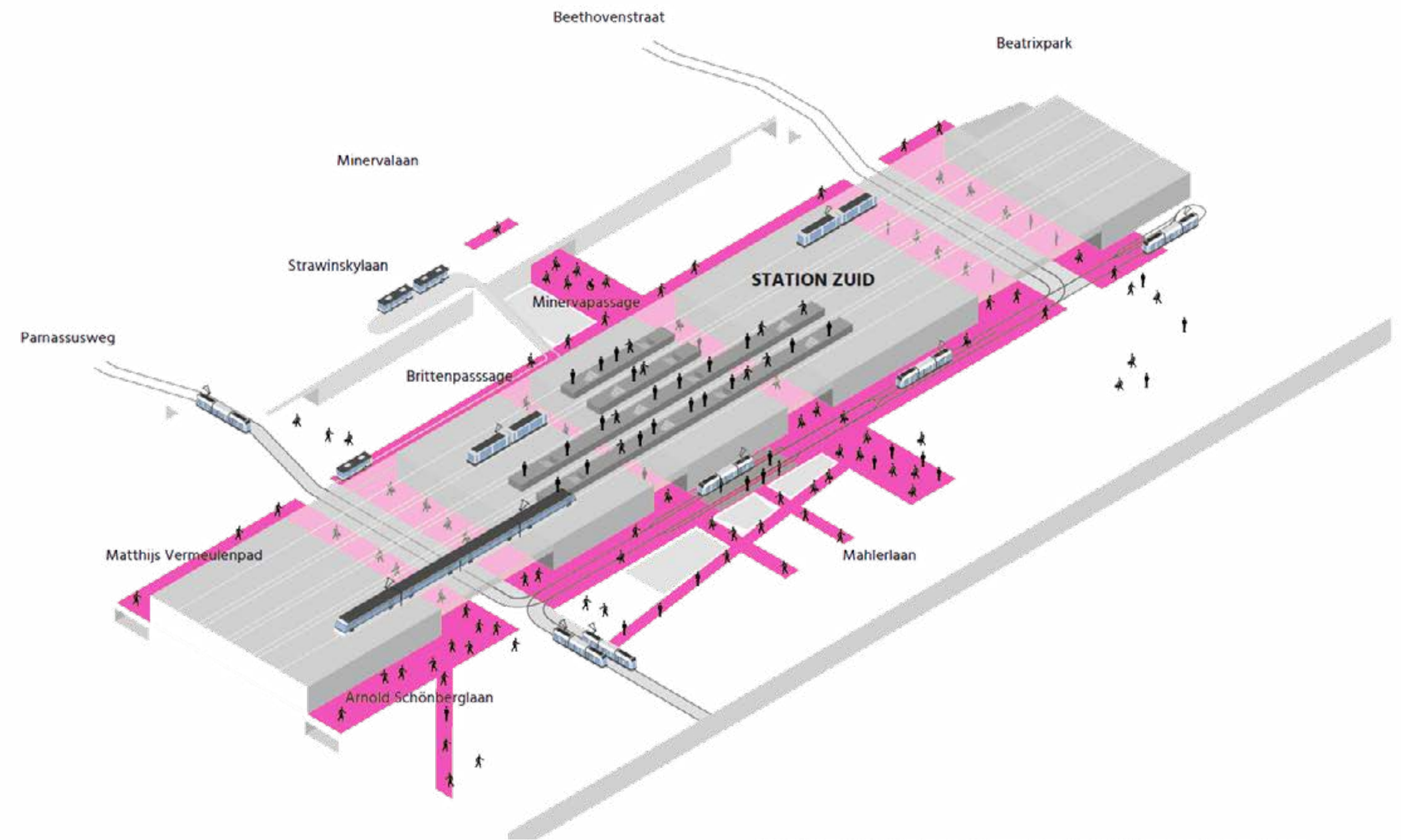
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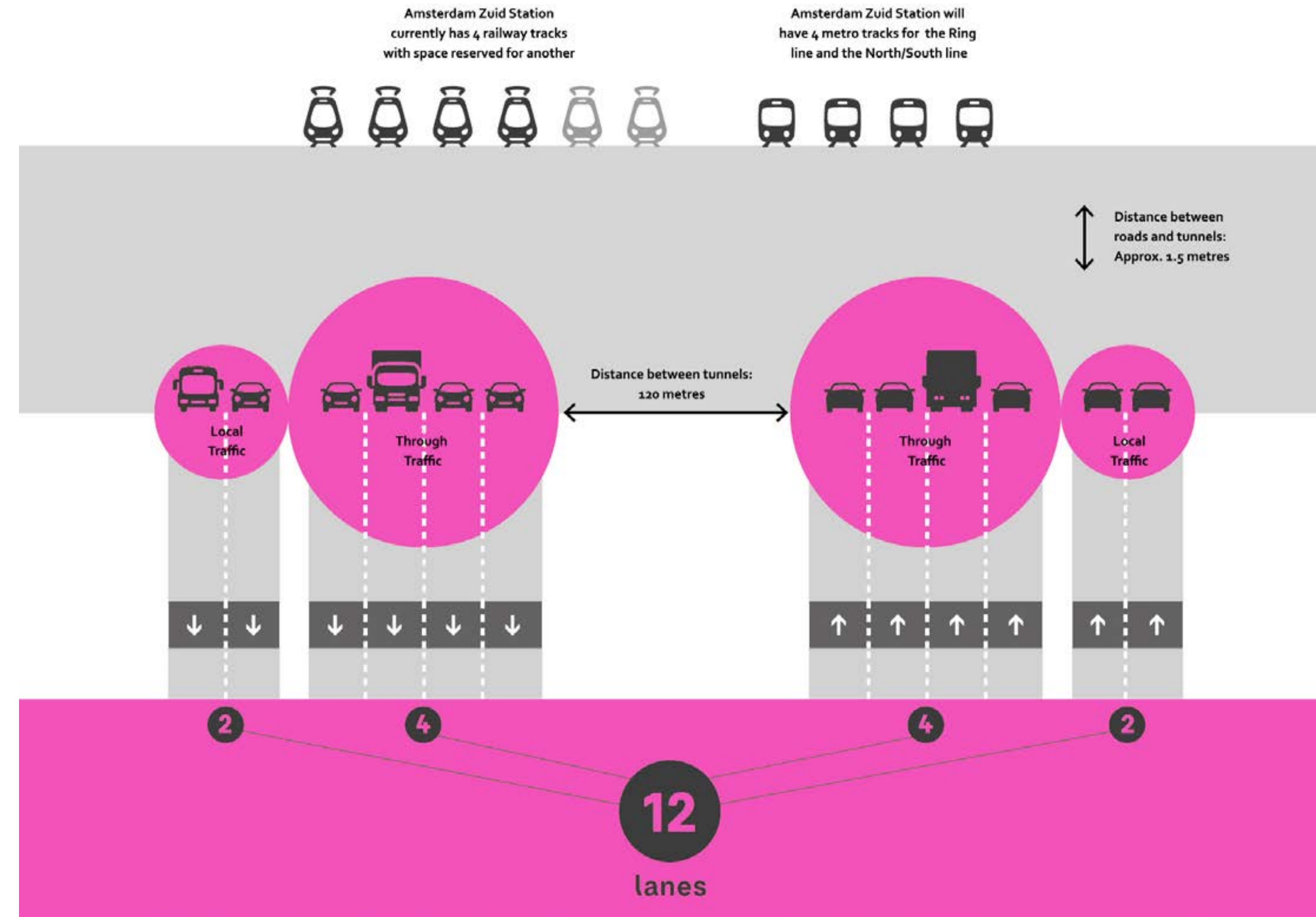
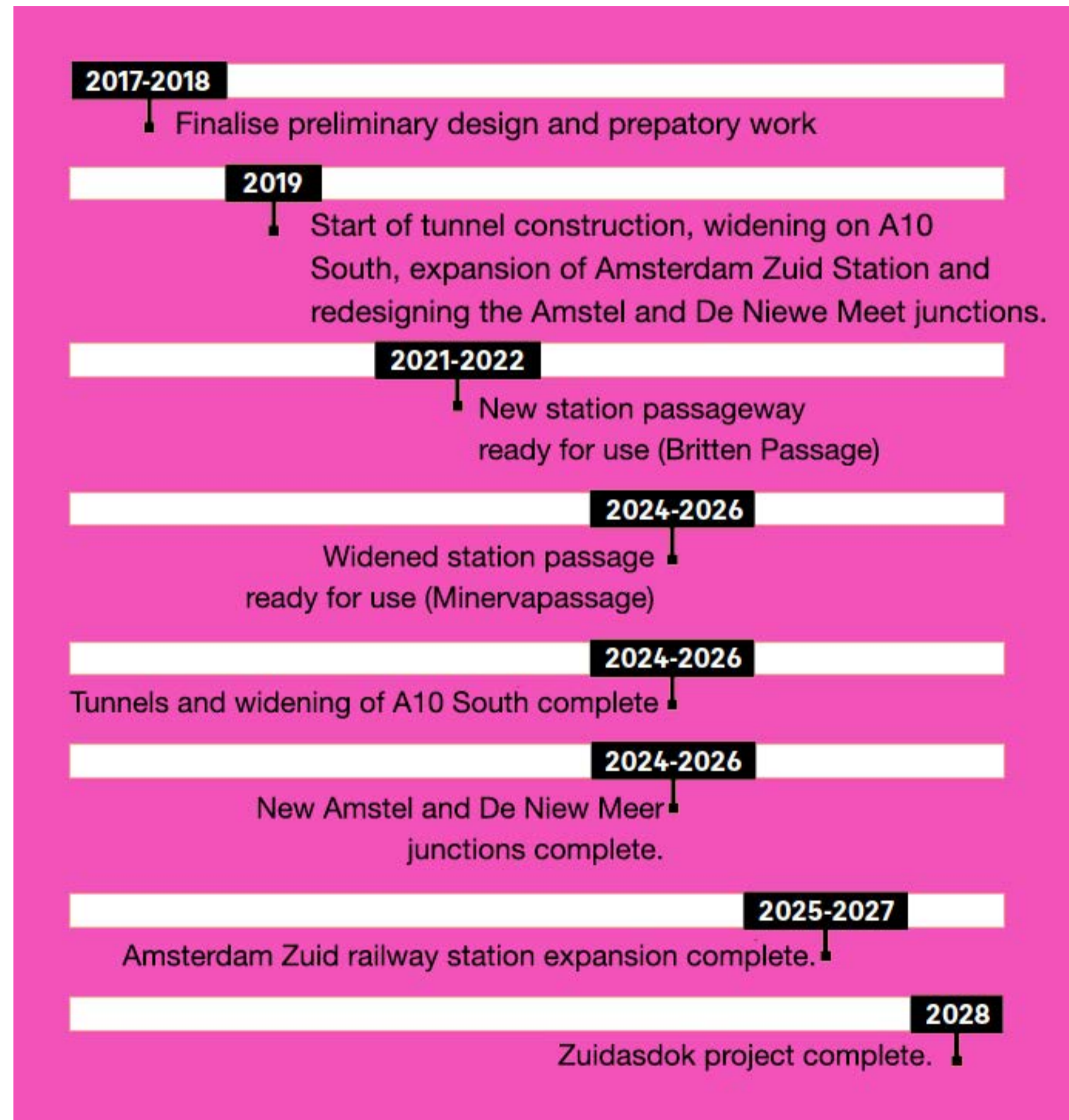




The principal aim of the Zuidasdok project, is to achieve greater spatial quality of the area. This will be done by: giving the motorway the appearance of a 'green corridor' when view from either side; making all underpasses safer and more attractive and creating a single, continuous 'Zuidas floor' throughout the central zone, therefore creating a seamless connection between the various areas of Zuidas as a whole.

Within the Zuidasdok project, the extension and upgrading of Amsterdam Zuid station is an extensive project in its own right, as it is set to become the second gateway to Amsterdam. As the A10 motorway disappears underground, the Amsterdam Zuid station will replace it as a connecting element of the district. The Britten passage is a new underpass that is to be constructed while the existing Minerva passage is to be widened. There will be a greater number of shops, service points and other outlets in both passages to make the passengers journey more interesting. In the interest of social safety, the underpasses will be orderly and well-lit. All metro and rail platforms are to be widened and an additional platform serving the Noord/Zuid line is to be constructed.





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CHAPTER 5: Hack

This chapter explores my script and spatial narrative that is a result of the above undertaken research, resulting in the the design of a 'hack.'

As mentioned in the previous chapters, the most recent Vision Document for Zuidas was published in 2016 proposing strategies to improve Zuidas in the years leading up to 2030. These are as follows:

- *Zuidasdok: the widening of the motorway and its relocation into a tunnel, as well as the above-ground construction of a new public transport terminal.*
 - *Growth of Amsterdam Zuid station to become Amsterdam's second station.*
 - *Priority for pedestrians, cyclists and public transport in order to keep Zuidas accessible.*
- *Continued growth towards a mixed neighbourhood in which to live and work, as part of the Amsterdam's DNA.*
 - *Focus not only on the final vision, but also on the path leading to it.*
- *The development of Zuidas as a joint assignment of all the parties that are active in the area.*¹

The overall aim is for Amsterdam Zuid Station to grow into *the gateway to Amsterdam*.¹ Key is to improve the urban quality and access to the Zuidas district therefore the station is a big element of it.

However, this is a long-term project, and the first phase of Zuidasok is only due for completion in 2028.

Current issues that could be addressed sooner are:

Divided Space: Overground railway and railways disrupts north-south communication. Therefore, there is a **lack of centre** due to the **infrastructure occupying the middle of Zuidas**. Instead, Zuidas has two centres Zuidplein and Gustav Malherplein.

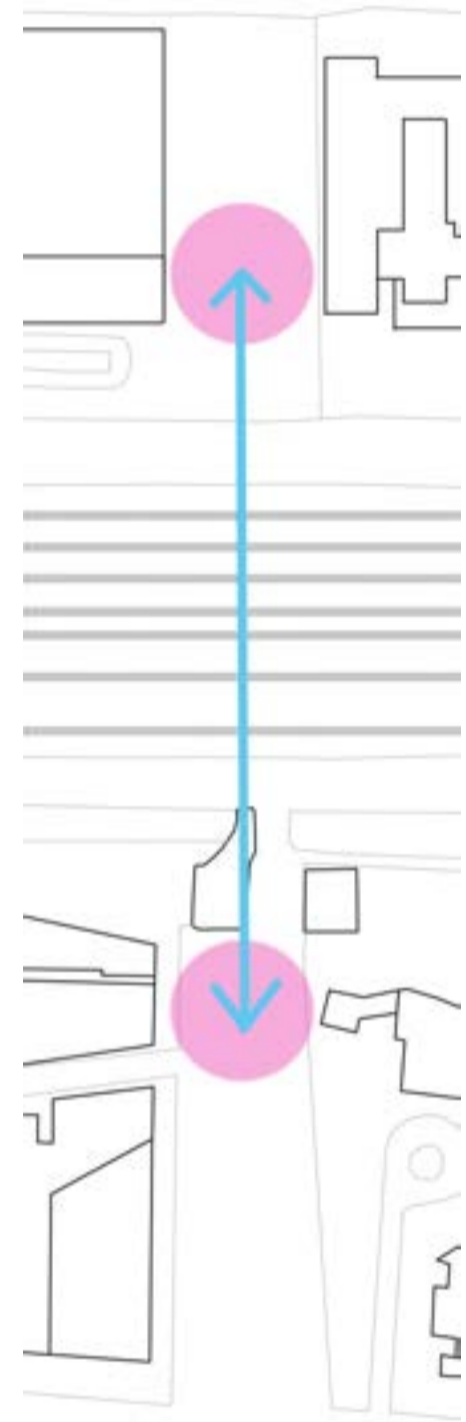
-Frozen atmosphere: This is due to Zuidas's short history and consequent history. There is also a **lack of shopping and retail**. The **anonymity** is a result of the lack/minimalism of company names on building facades. The lack of signs and the modern appearance of the district making Zuidas a non-resembling space. Furthermore, the area is still very much a business district so ends up being **deserted on holidays and after office hours**.

-Very transitory: The whole district revolves around the station and the area functions as a public transport centre. Therefore, everything is designed to **quick and fast paced- get a cup of coffee or a sandwich and move on**. Therefore, **there is very little reason for people to stay in the area for a prolonged amount of time**.

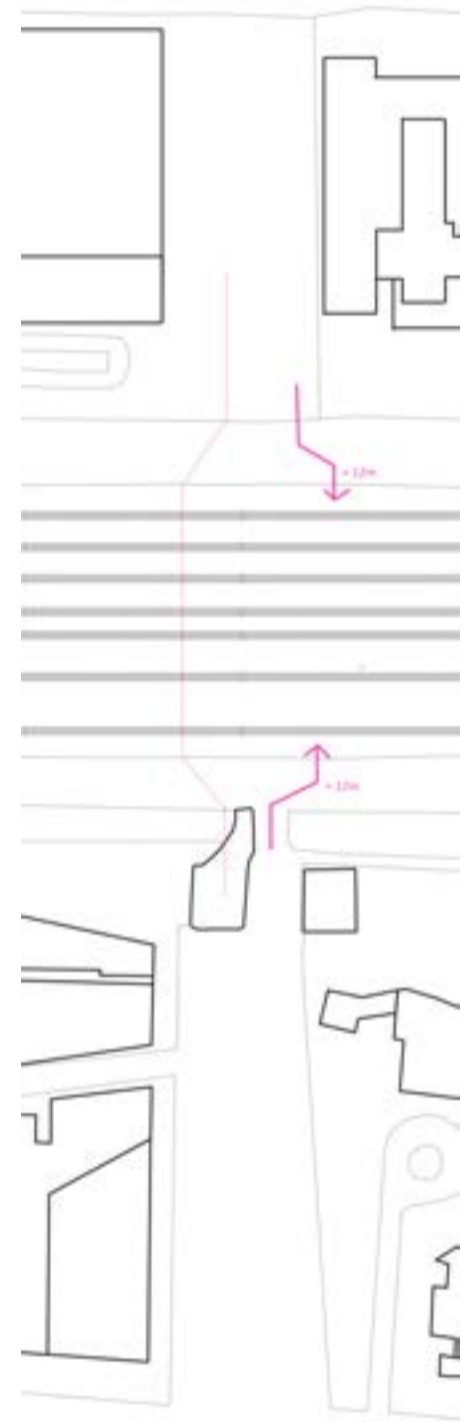
-High Rent Prices: The district of Zuidas has the **highest rents** out of anywhere in Amsterdam, and while big corporations and international companies can afford it, **smaller companies and Start Ups are unable to**. These means that the majority of Startups and coworking spaces are **located outside of the Zuidas business district**.

In response to the previous research, my speculative scenario and my script, the hack that I have designed is a habitable pedestrian and cyclist bridge, that connects together the currently divided north and south areas of Zuidas. It is suggested that this bridge is a temporary solution, during the ongoing Zuidasdok 2040 works. At the centre of the bridge, sits an urban courtyard surrounded by two buildings. The first building houses a co-working and collaboration space to be used by young companies, start-ups and entrepreneurs, whilst the second building accomodates leisure areas such as a games room, a lecture hall and street food market stalls.

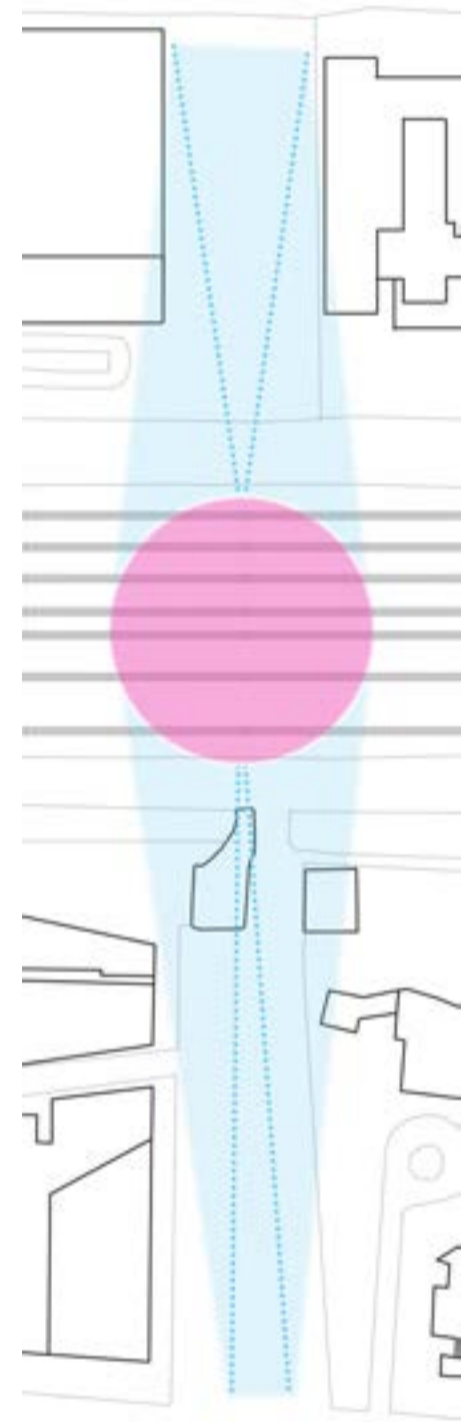




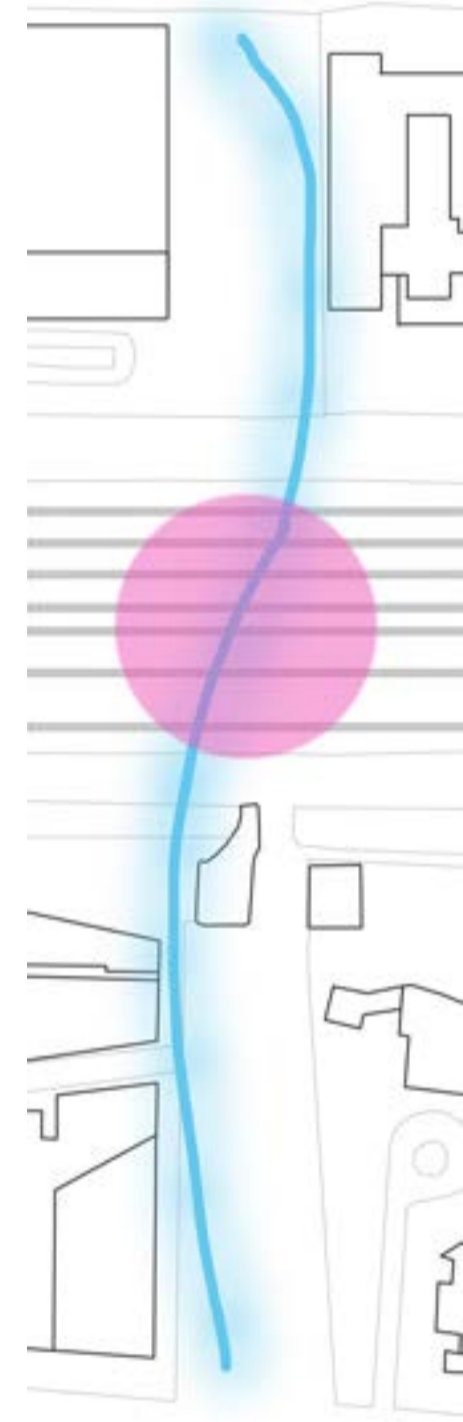
BRIDGE TO ACCOMODATE THE MOVEMENT OF CYCLISTS AND PEDESTRANS FROM ONE SIDE OF THE STATION TO THE OTHER.



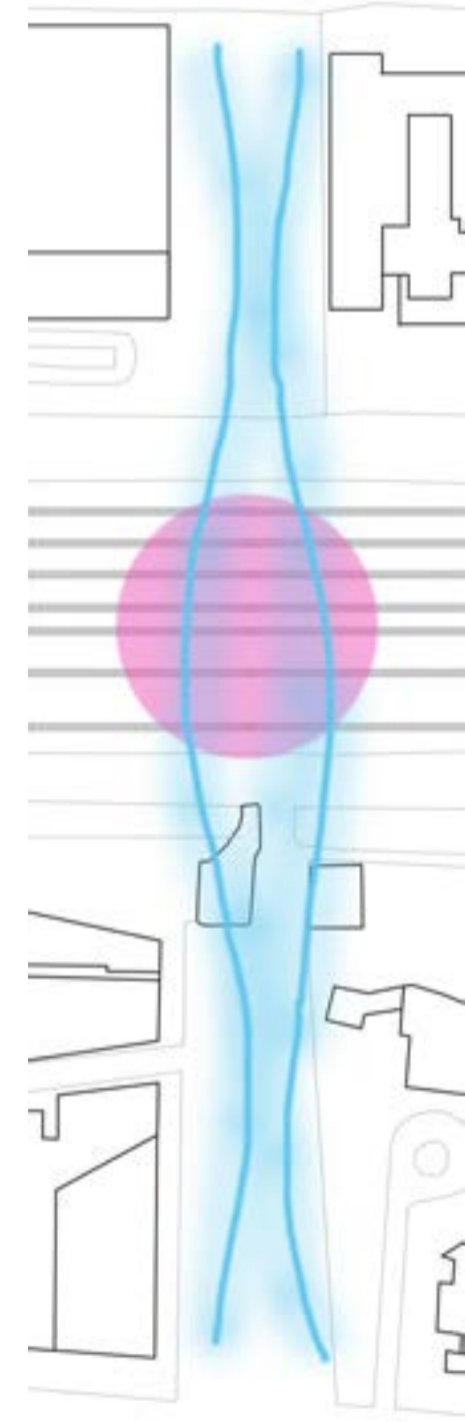
HEIGHT INCREASE TO GET OVER THE STATION BUILDING TRACKS AS WELL AS THE TRAIN TRACKS.



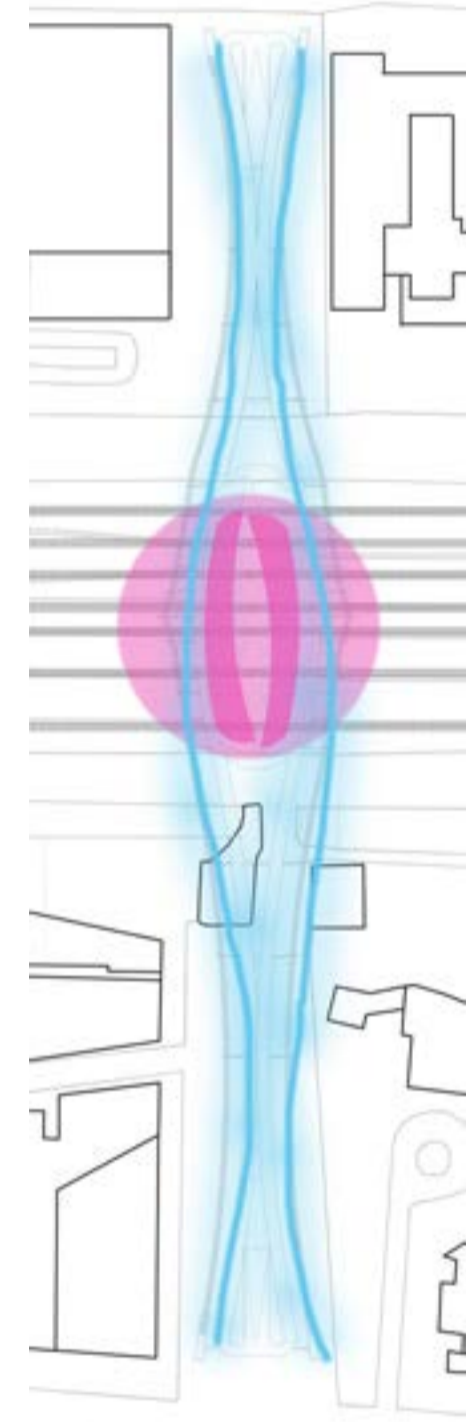
EXTEND THE BRIDGE ONTO THE WHOLE SITE TO ACCOMODATE THE HEIGHT INCREASE.



CURVED ORGANIC SHAPE TO MIMIC THE IMAGE OF FLOWING PEOPLE.

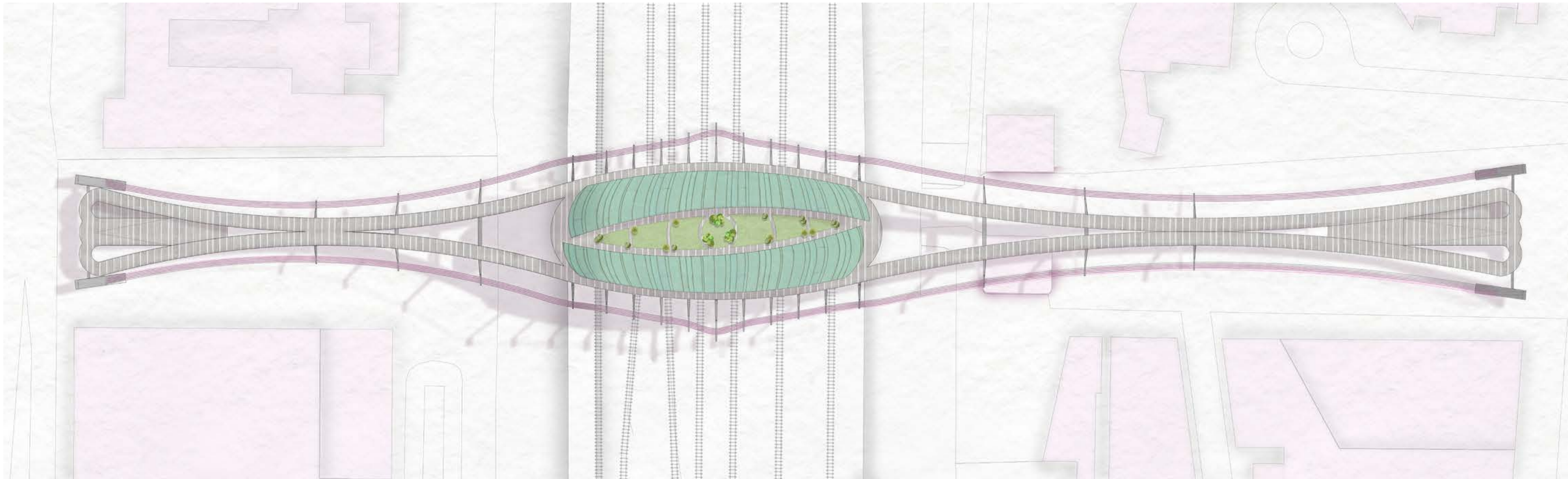


SEPERATE THE CYCLIST FROM THE PEDESTRIAN TRAFFIC TO RESULT IN TWO CURVED PATHS.

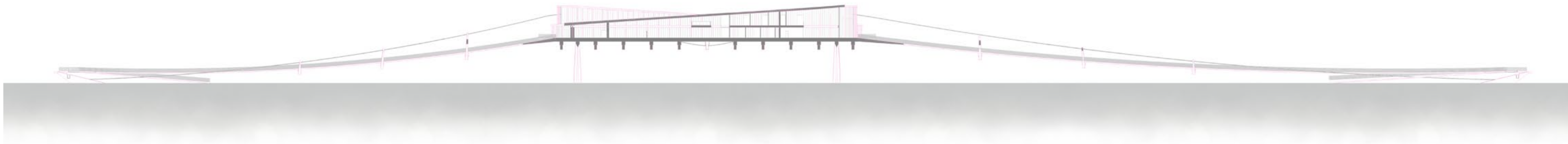


BUILDING IN THE CENTRE OF THE BRIDGE TO ACCOMODATE A FUNCTION.

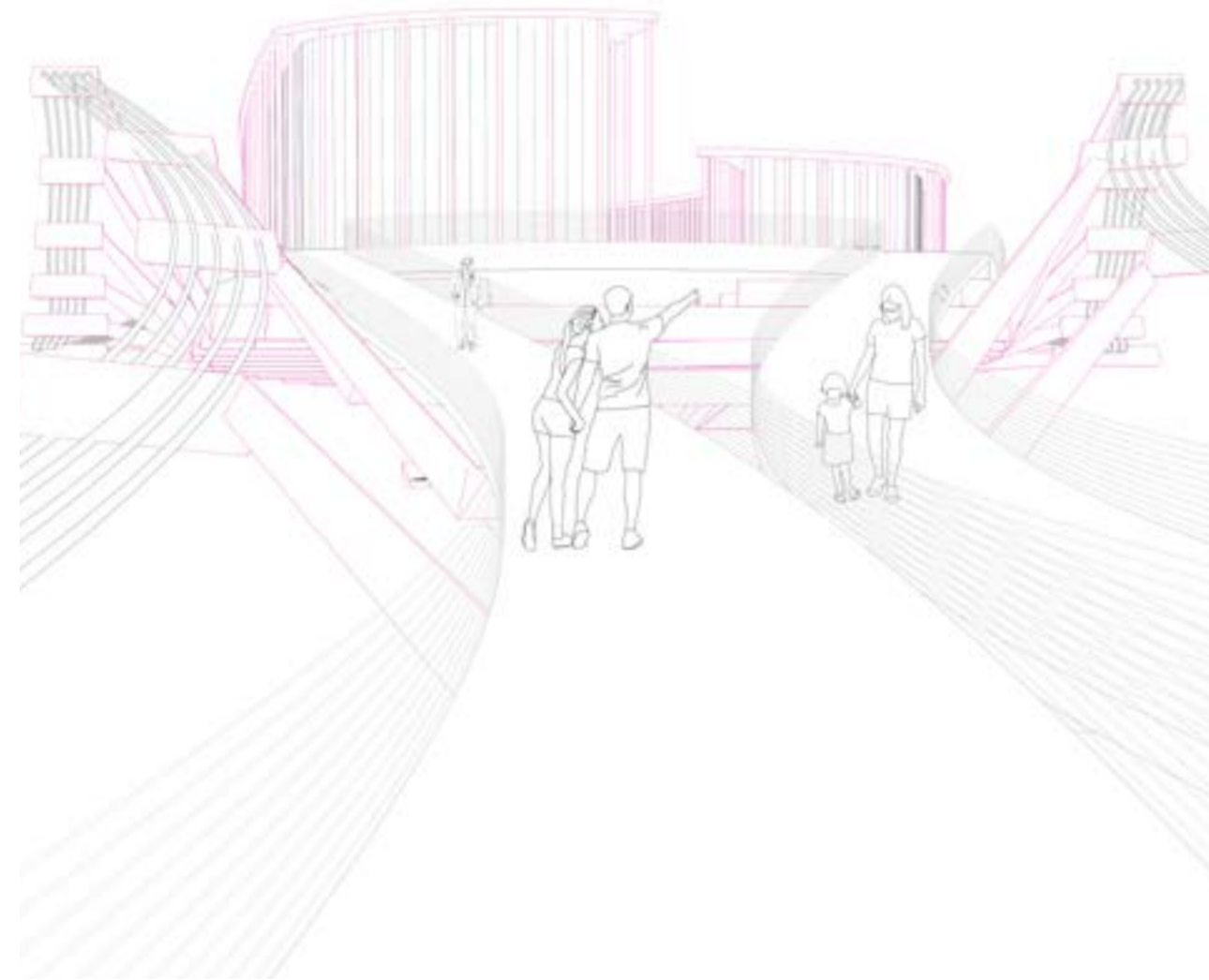
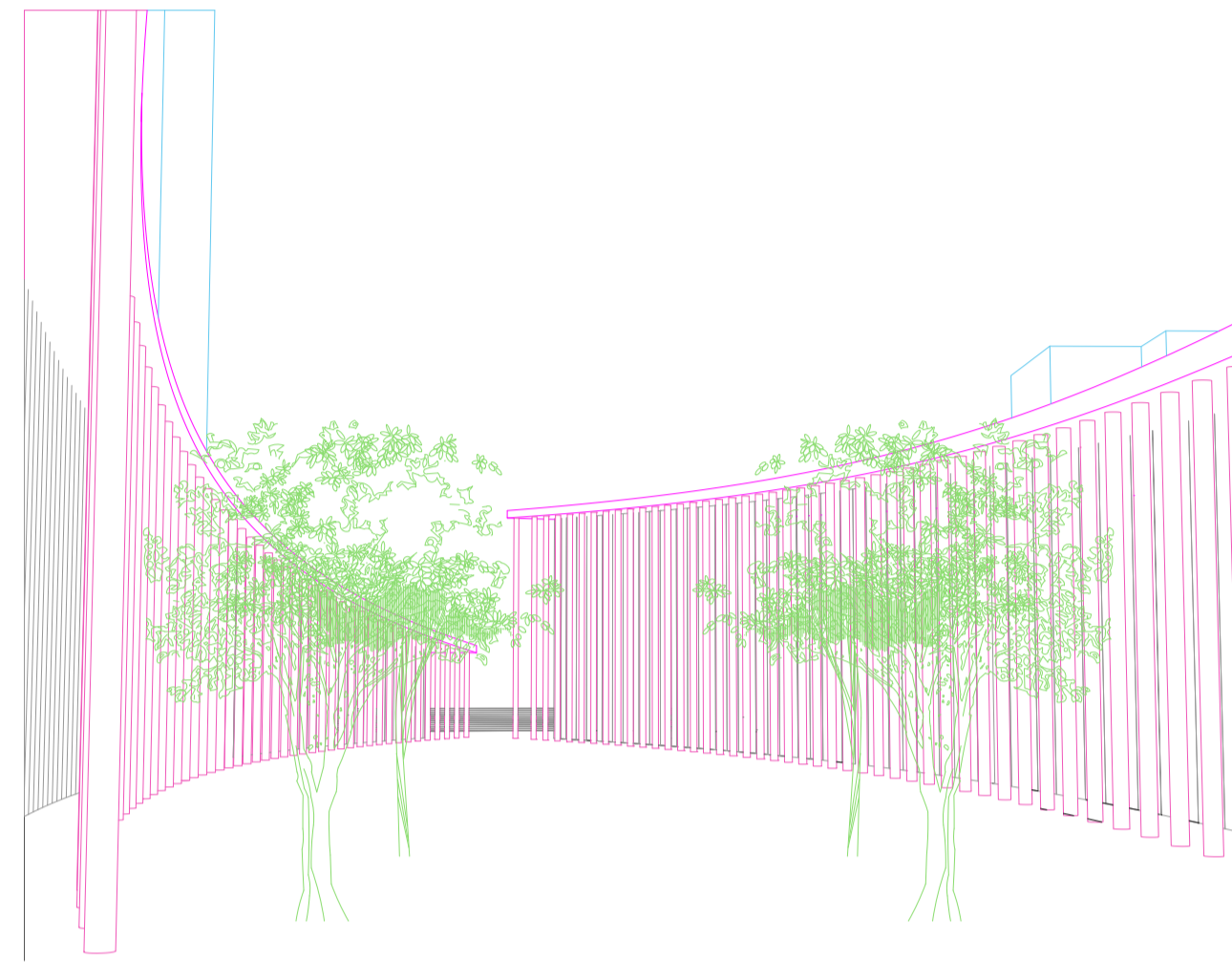
SITE PLAN @ 1:1250



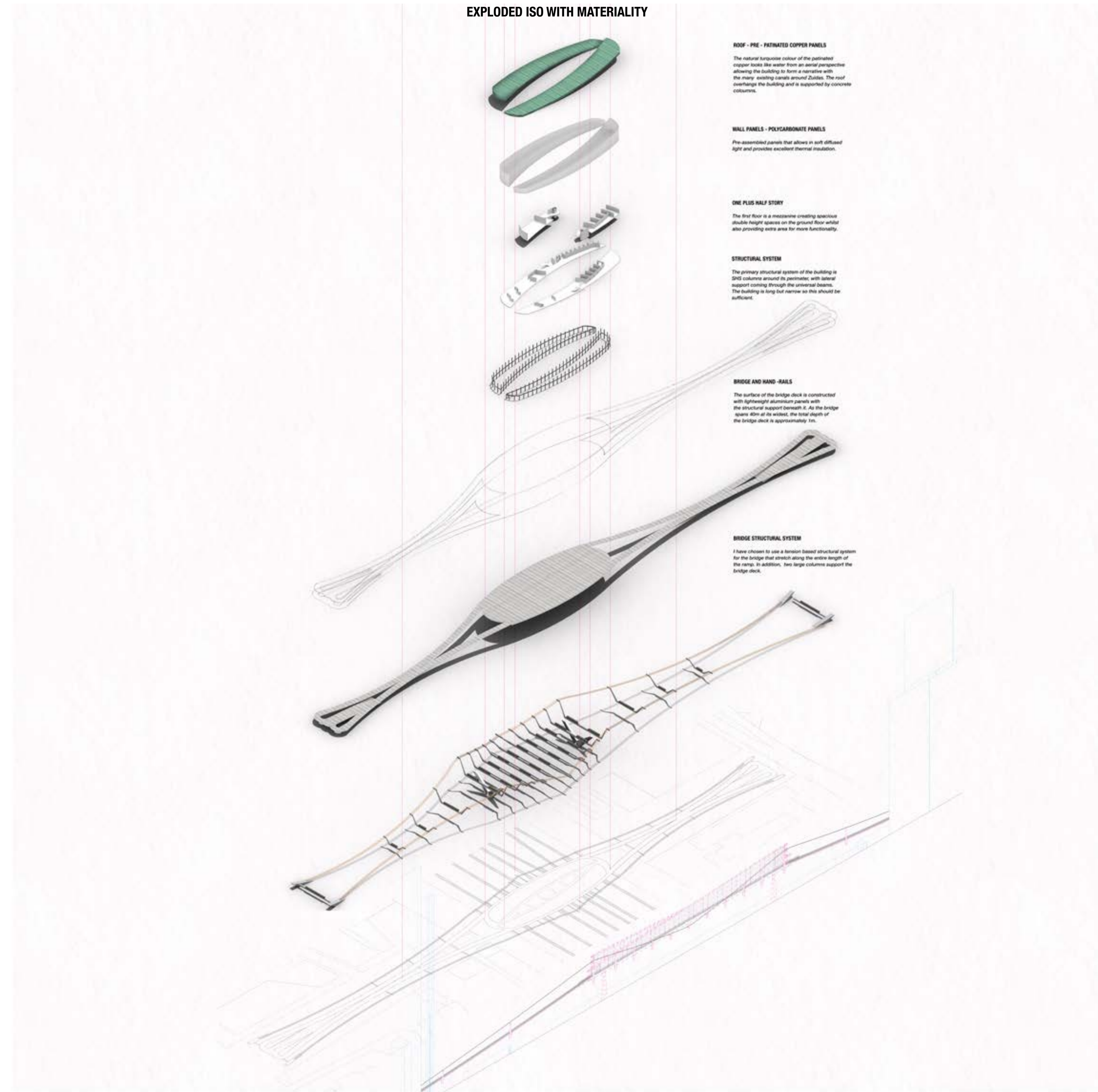
LONG SECTION @ 1:1250



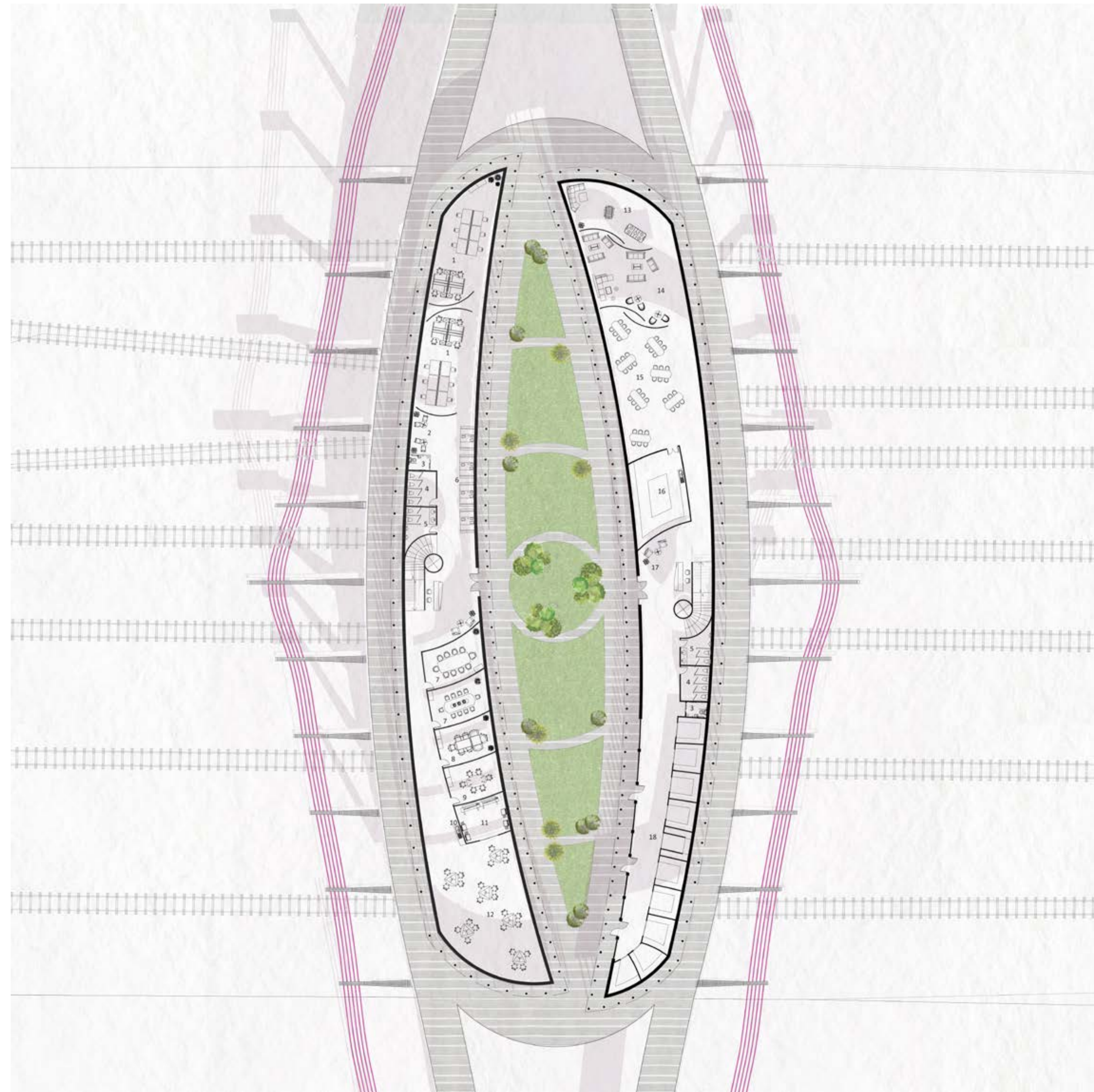
PERSPECTIVE VIEWS



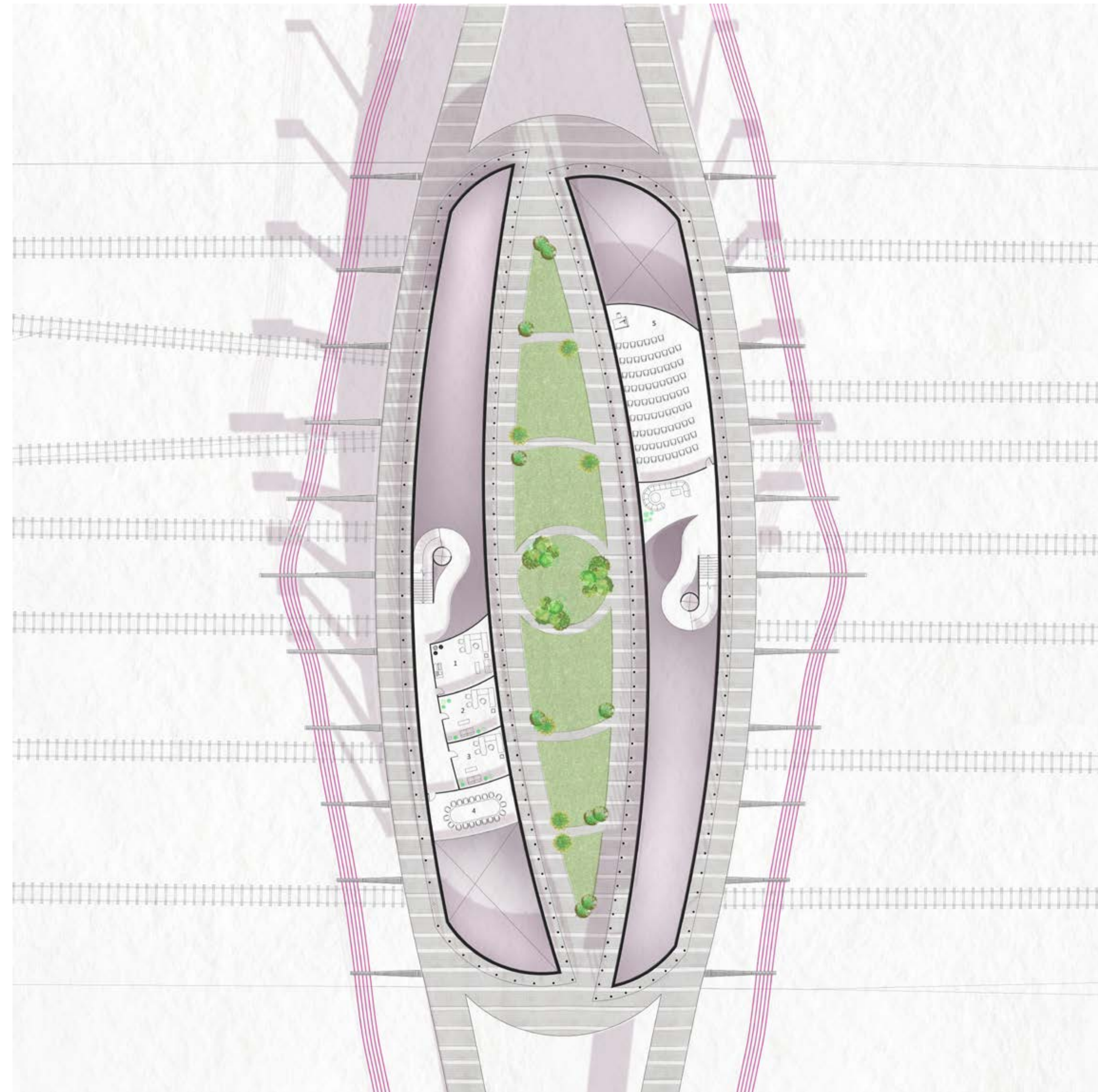
EXPLODED ISO WITH MATERIALITY

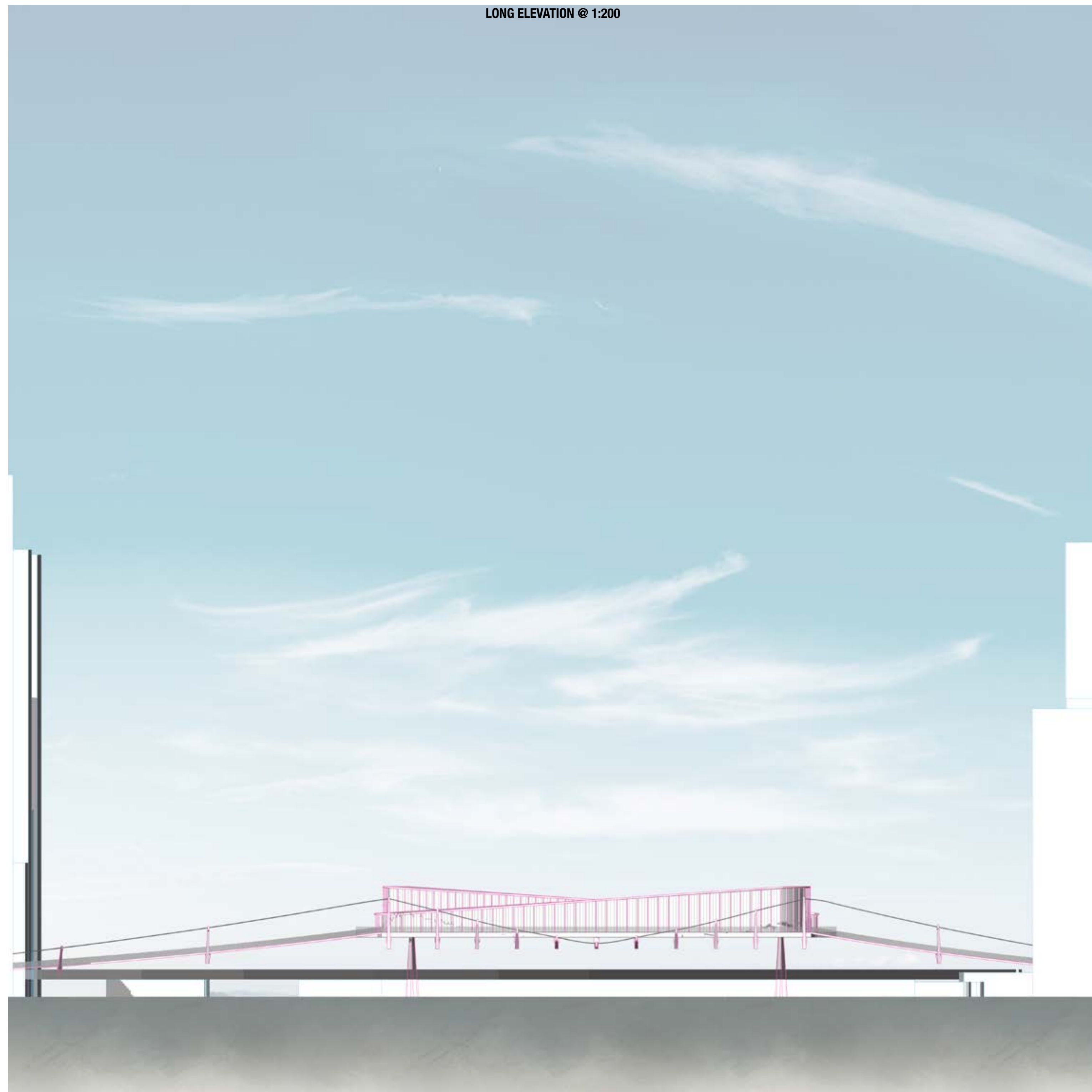


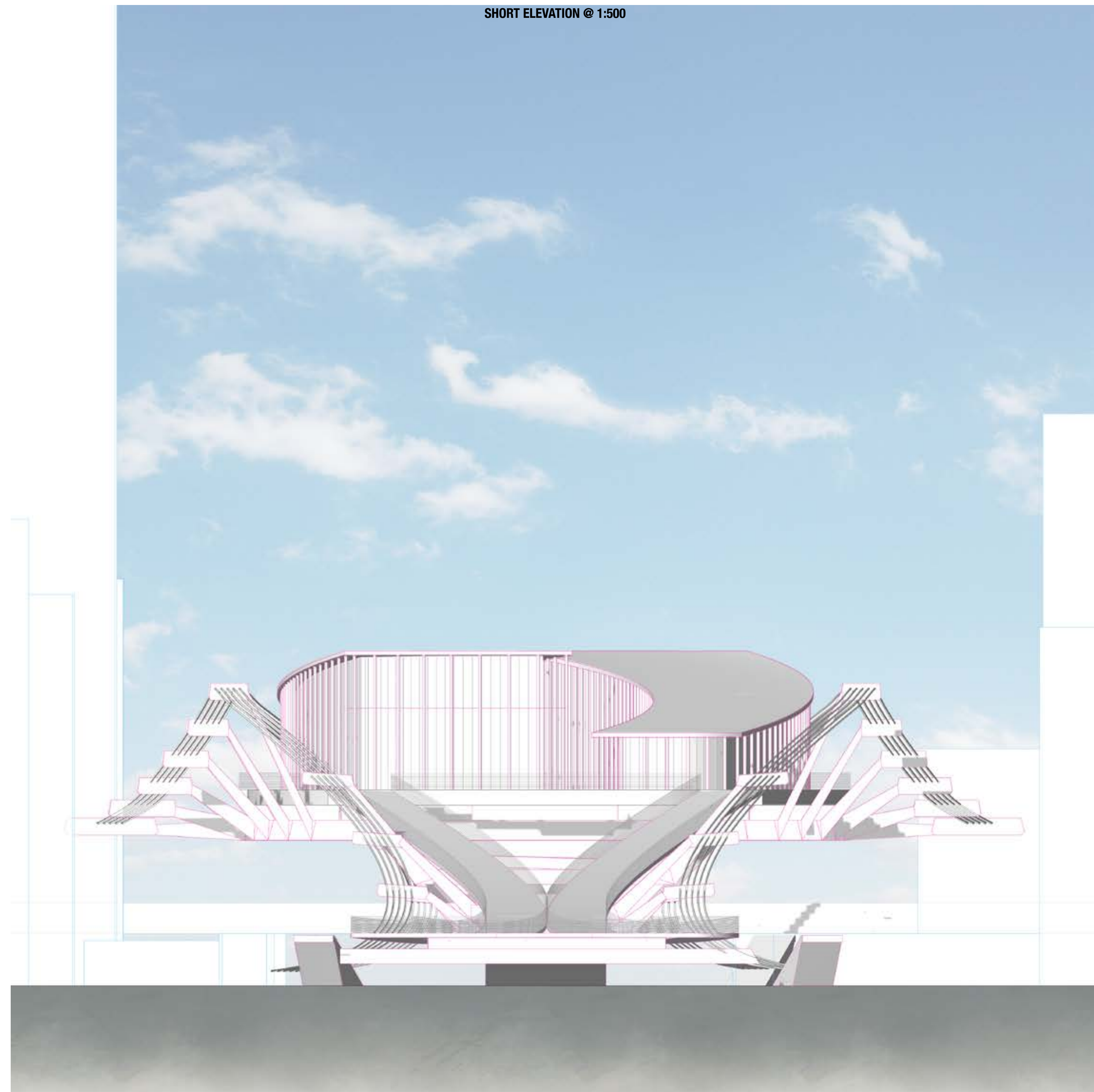
1. Hot Desks
2. Waiting Area
3. Disabled WC
4. Female WC
5. Male WC
6. Private Pods
7. Large Meeting Room
8. Medium Meeting Room
9. Small Meeting Room
10. Kitchenette
11. Printing Zone
12. Open Co-Working Area
13. Games Room
14. Lounge Area
15. Dining Area
16. Kitchen
17. Waiting Area
18. Street Food Market Stalls



- 1. Large Private Office
- 2. Medium Private Office
- 3. Medium Private Office
- 4. Meeting Room
- 5. Lecture/ Presentation Room





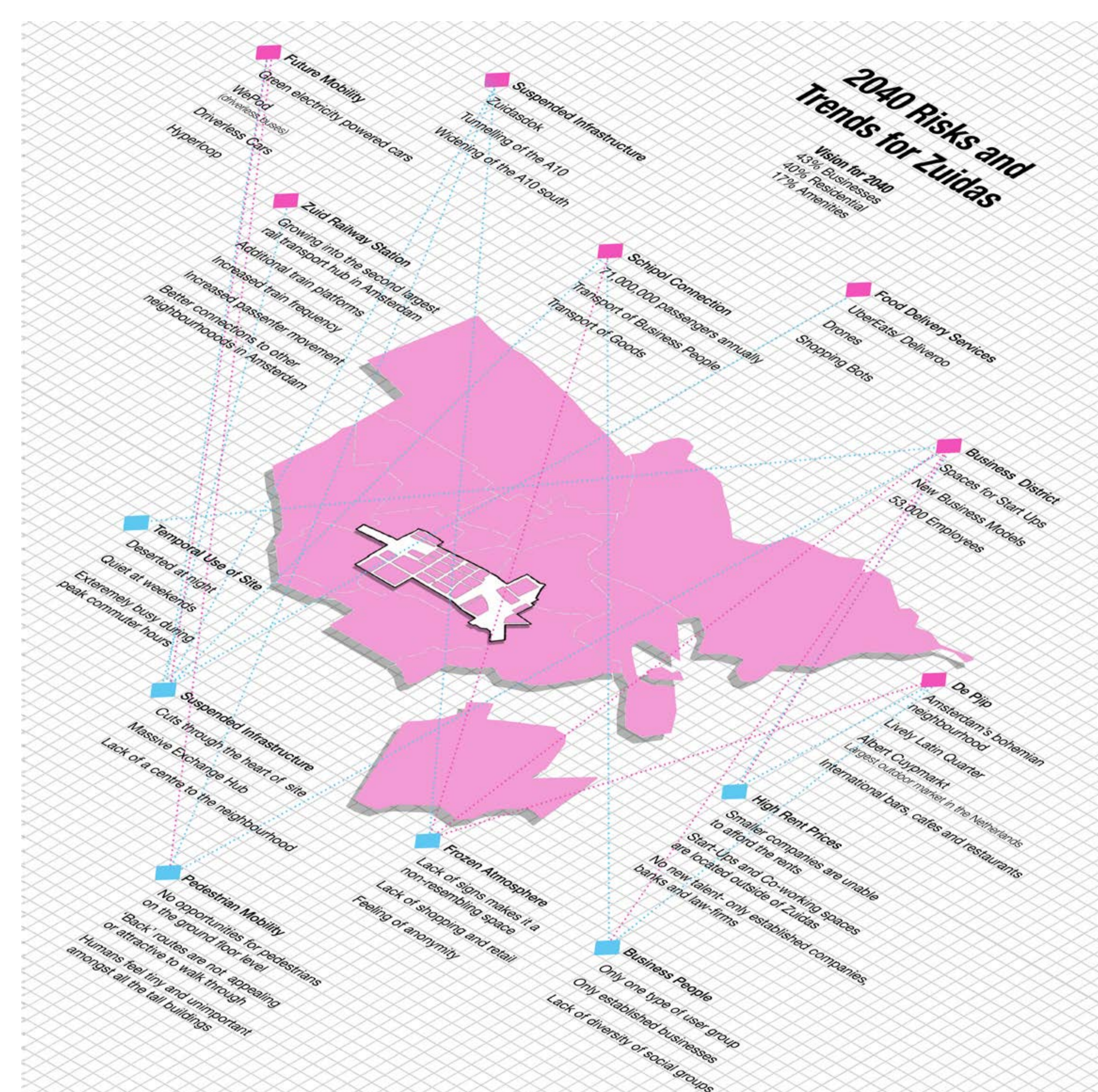
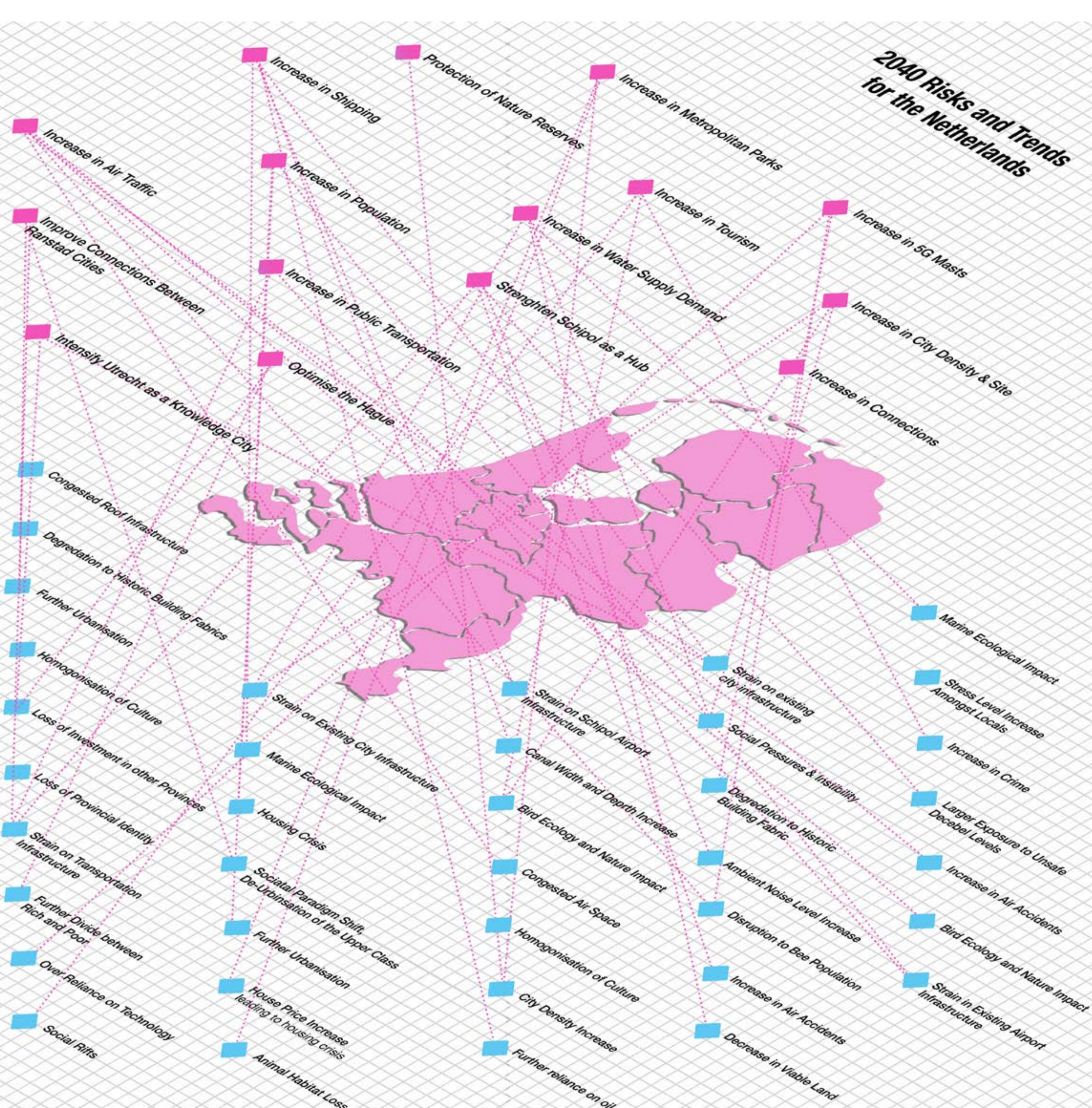


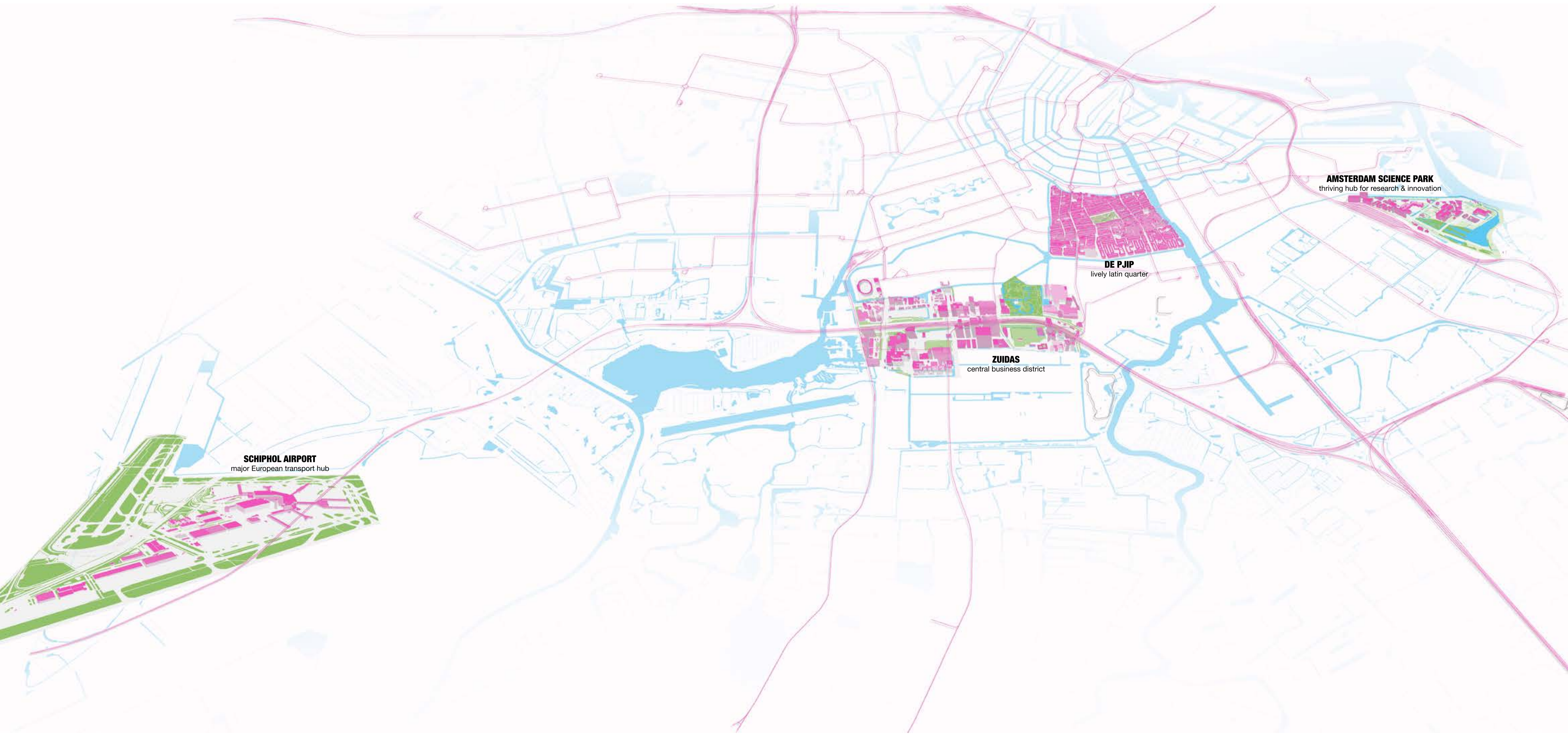


CHAPTER 6: Radical Technology

Using the research undertaken in Semester 1 as a foundation, this chapter develops and refines my scenario, which tells the story about the type of future I believe we will inherit by 2040. This scenario is anchored in my chosen radical technology: mobility.









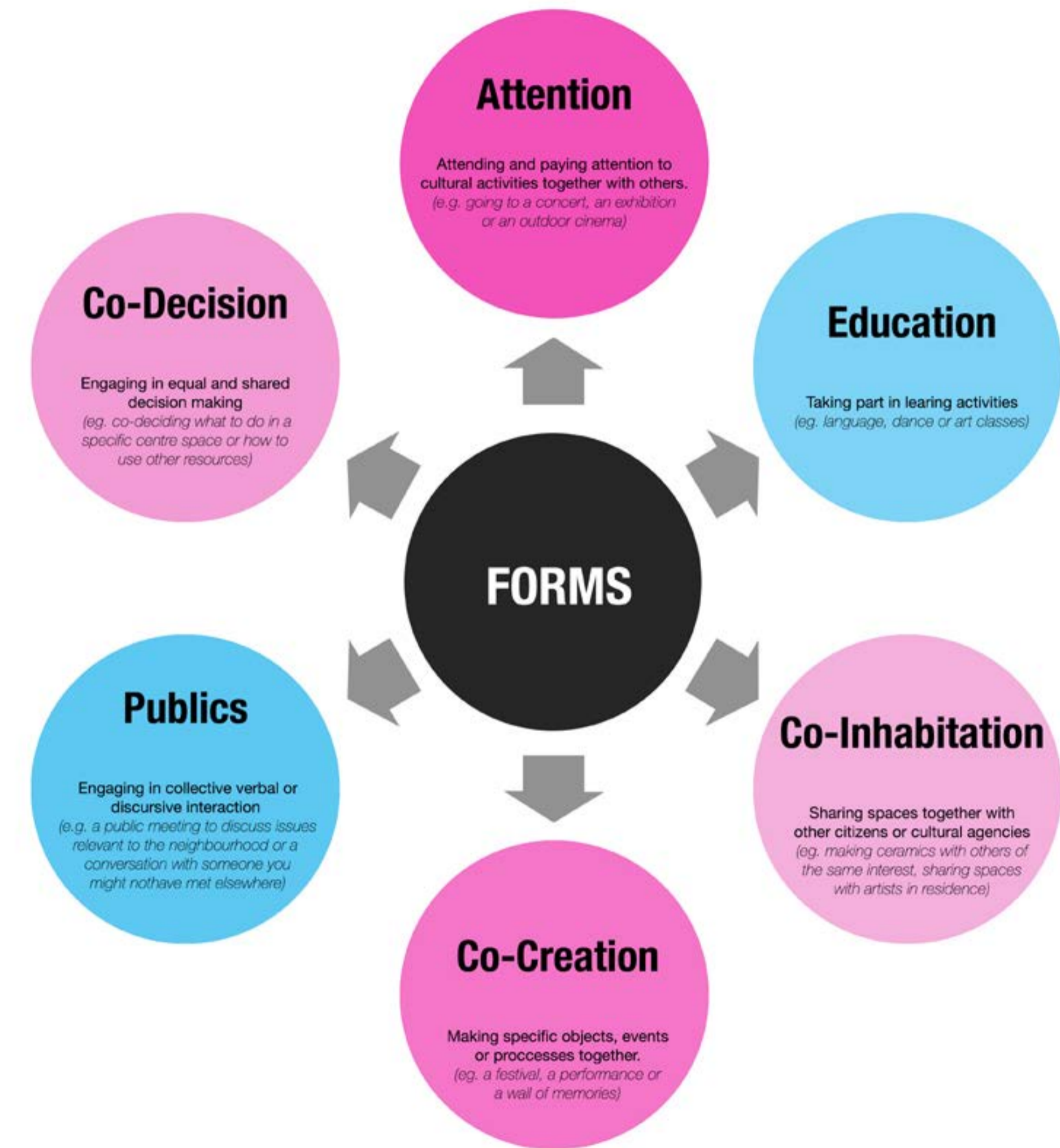
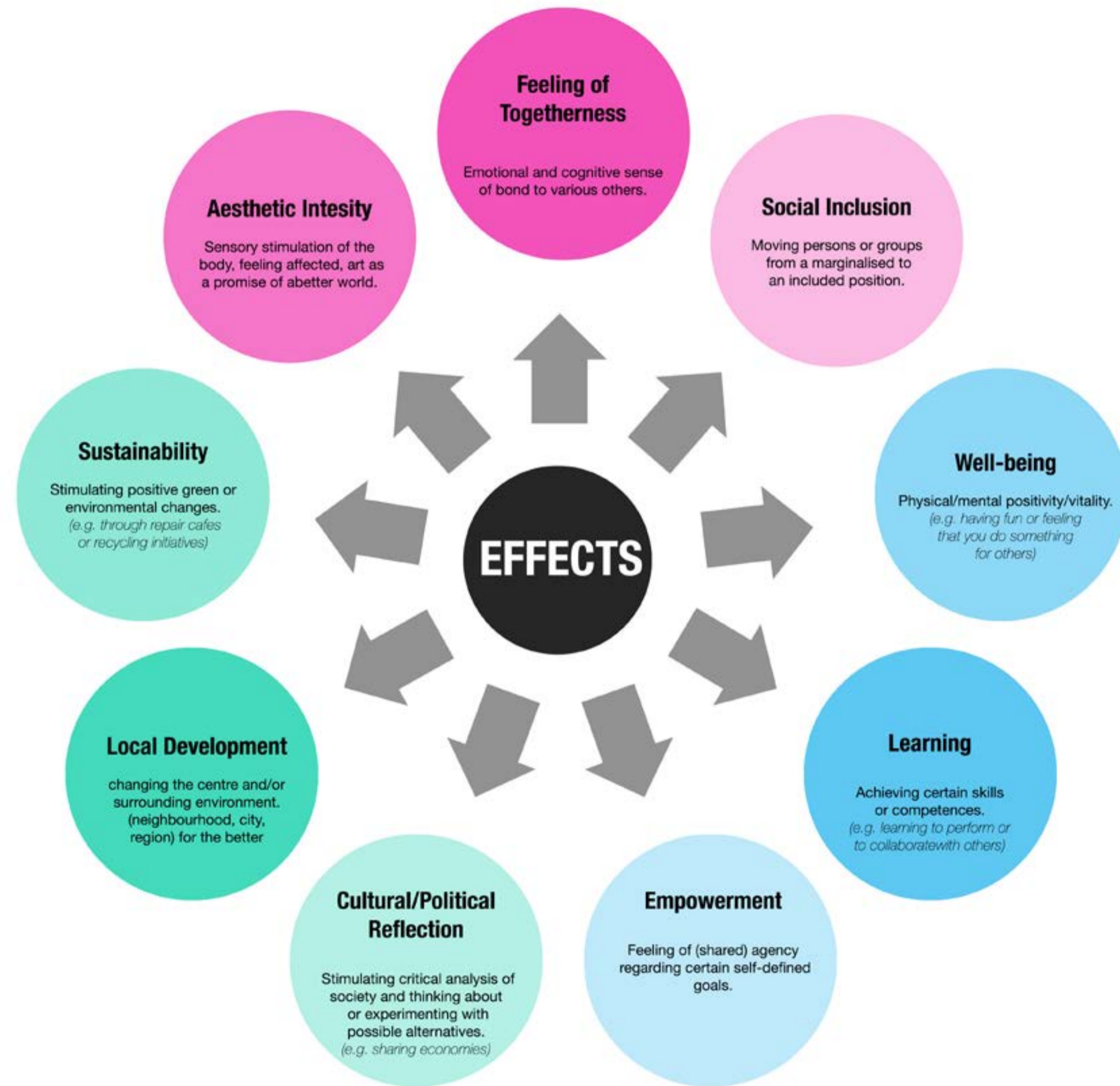
education administration
information **recreation** scientific cognitive
exhibitions **cultural**
social organisation coordination
research international cooperation

Functional Palette of a cultural centre

public space
administrative rooms block study circle rooms
food facilities exhibition halls
conference halls cinematic and concert halls
shopping facilities **library**
lecture auditoriums household rooms

Nomeclature of projected functions for a cultural centre.







CHAPTER 7: Urban Strategy

The urban strategy, addresses the subject of mobility around Zuidas as whole.

1:5000 SITE MODEL

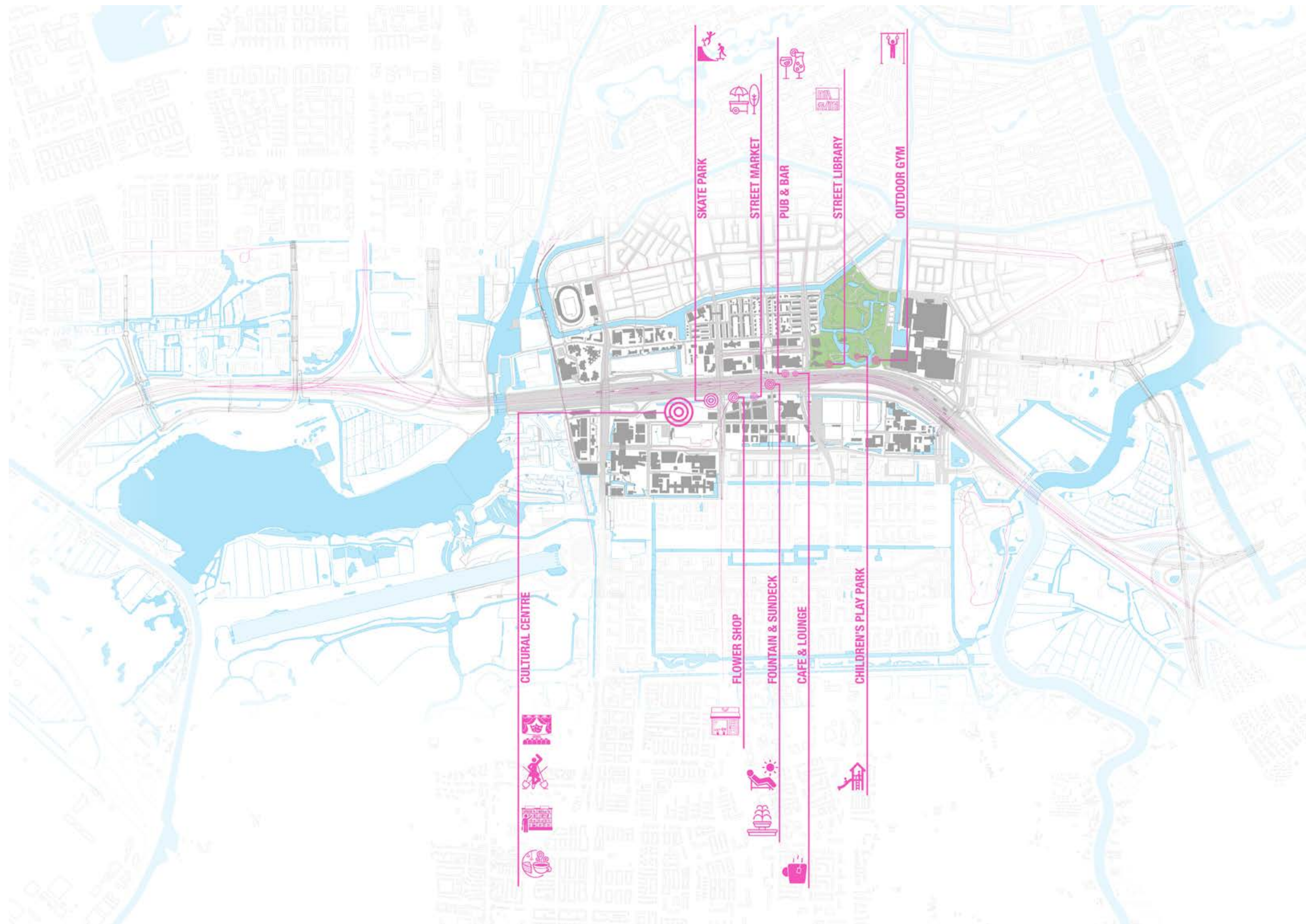


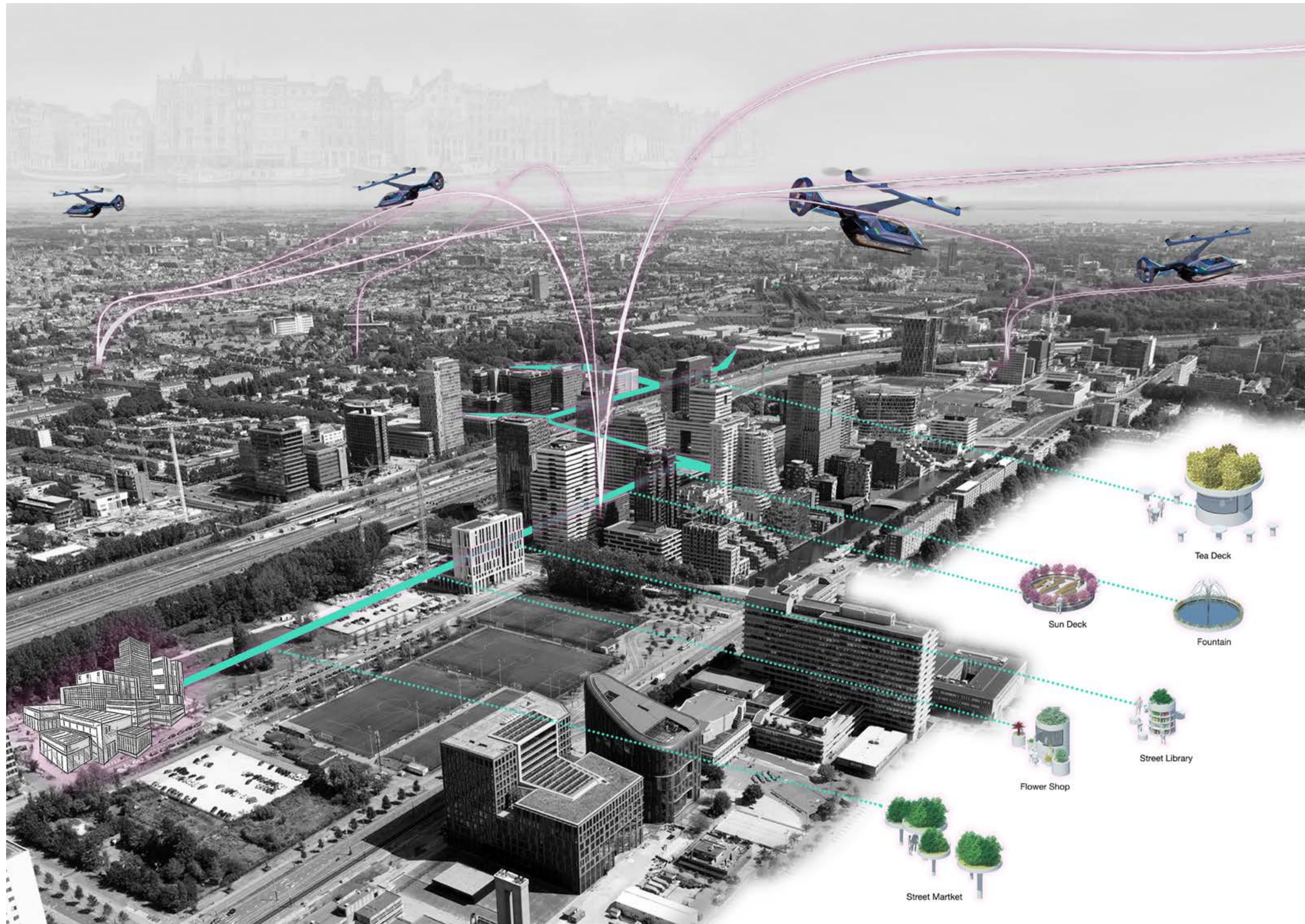
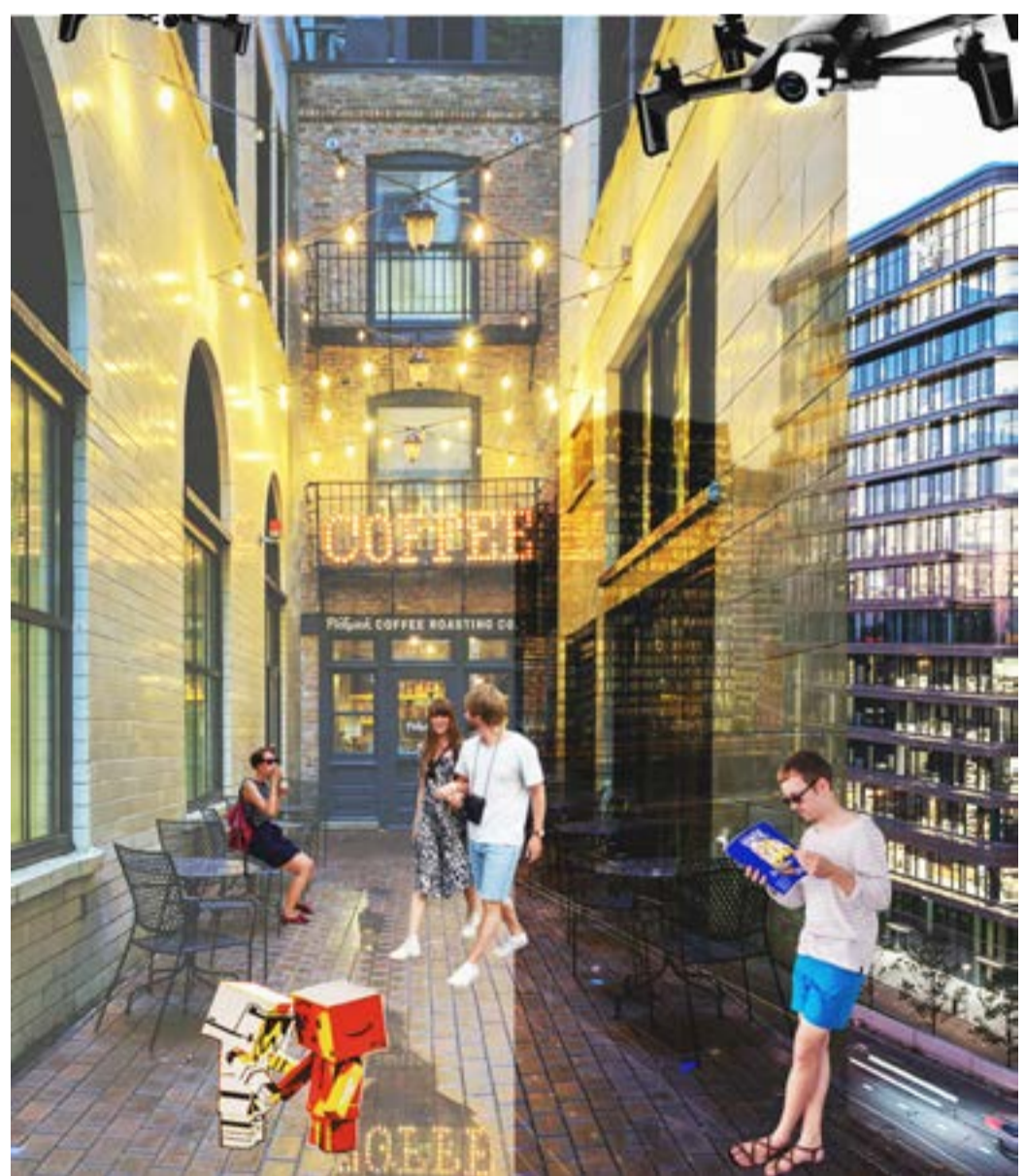


URBAN STRATEGY PROPOSAL

In order to address the issues highlighted thus far, the purpose of my design would be to add something that attracts people to the area, and more importantly, makes them want to stay there - multiple points of urban acupuncture that cater to all ages groups from children to the elderly.

This map demonstrates the multiple functions and programmes that I propose. Each of these are connected by a pedestrian bridge that not only ties the programmes together but also addresses the divide of the district. The main architecture that I propose to design, is a cultural centre that sits at the west end of this pedestrian bridge.









CHAPTER 8: Typological Studies

In order to develop my design, it was necessary to track relevant historic and present examples of my chosen typology: cultural centres and theatres. This chapter examines precedent examples, particularly focusing on their circulation and zoning strategies.

Ku.Be House of Culture in Movement by MVRDV + ADEPT

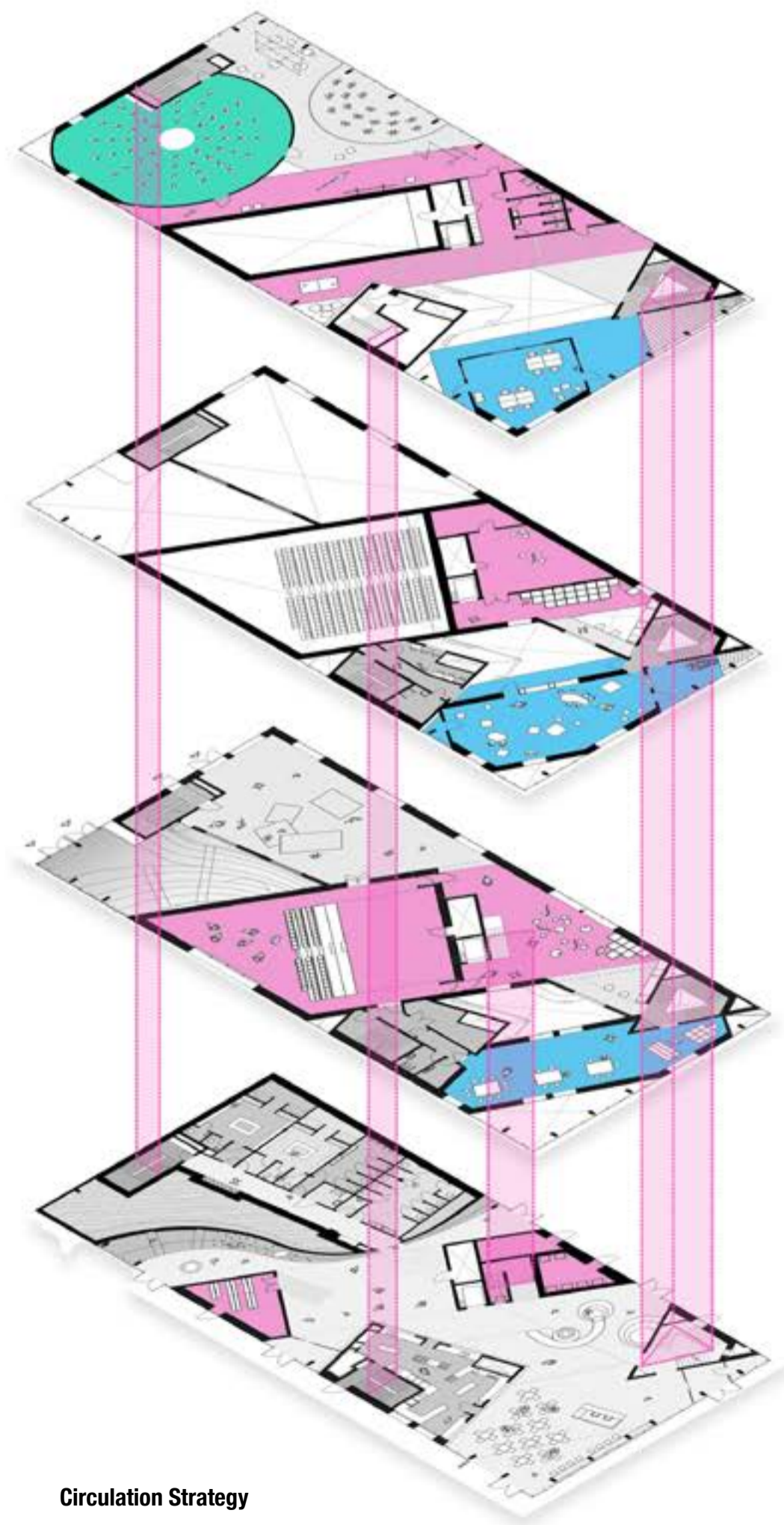
Location: Frederiksberg, Denmark

Year: 2016

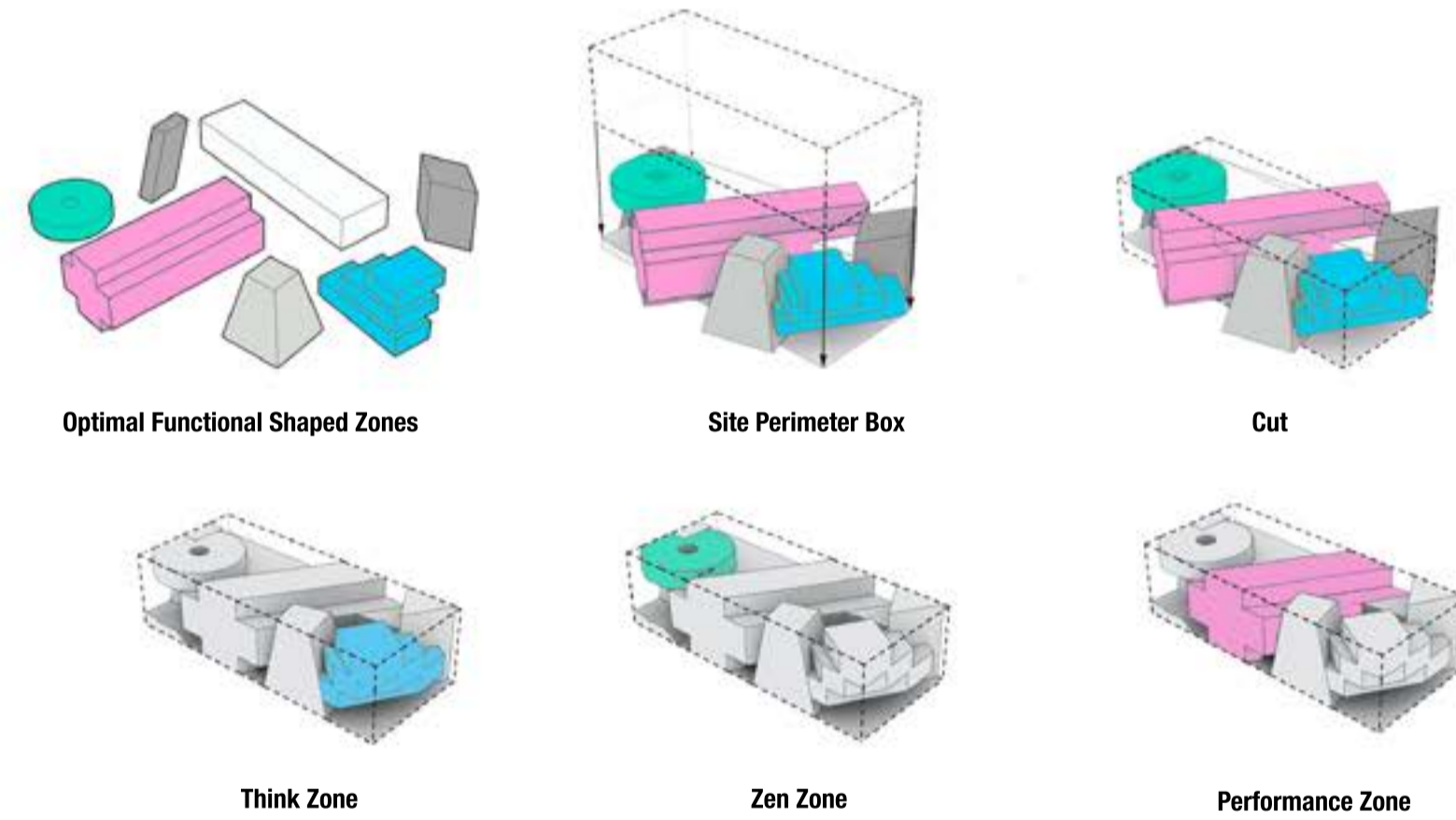
Total Area: 3200 m²

Theatre Area: 350 m²

The brief called for building that stood as the focal point for the community that would bring people together and improve the quality of life. The resulting project is a building that blends **theatre, learning** and **sport** into a space where body and mind are activated to promote a more **healthy life** for all **ages, abilities and interests.**



Circulation Strategy



Optimal Functional Shaped Zones

Site Perimeter Box

Cut

Think Zone

Zen Zone

Performance Zone

Arauco Cultural Center by Elton Leniz

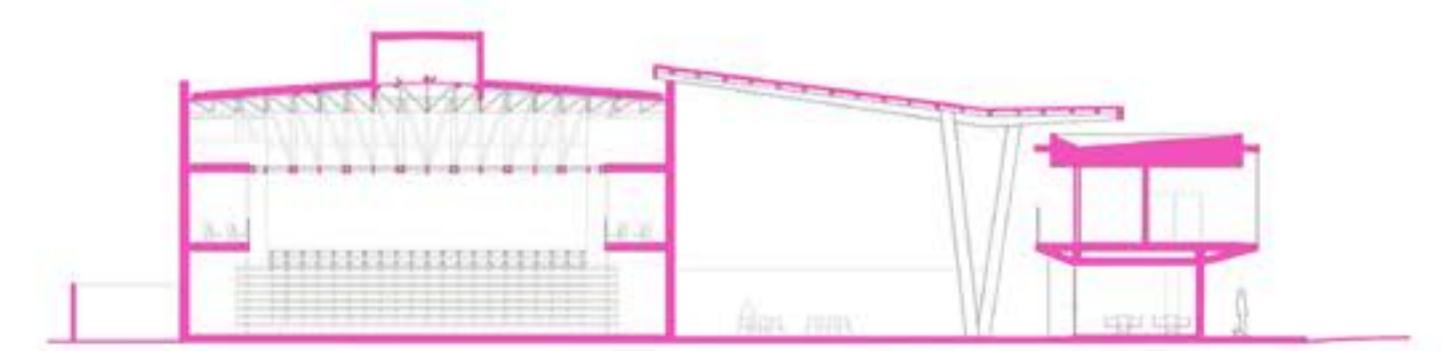
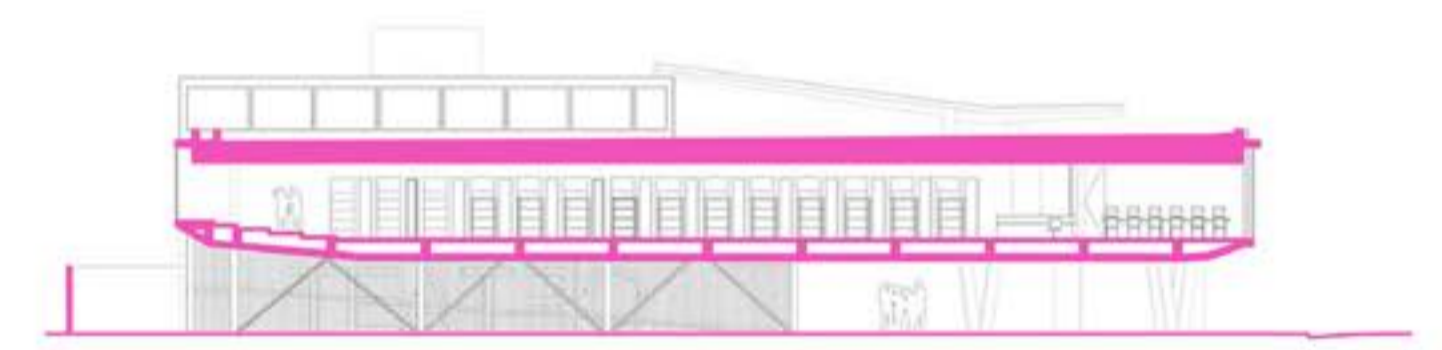
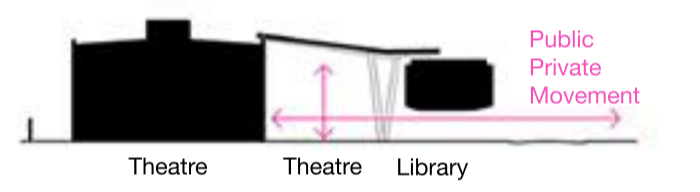
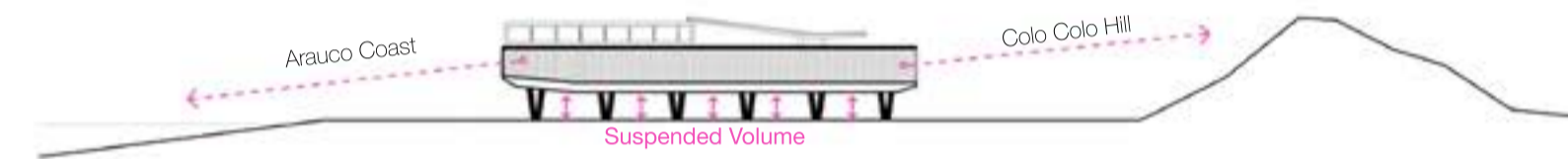
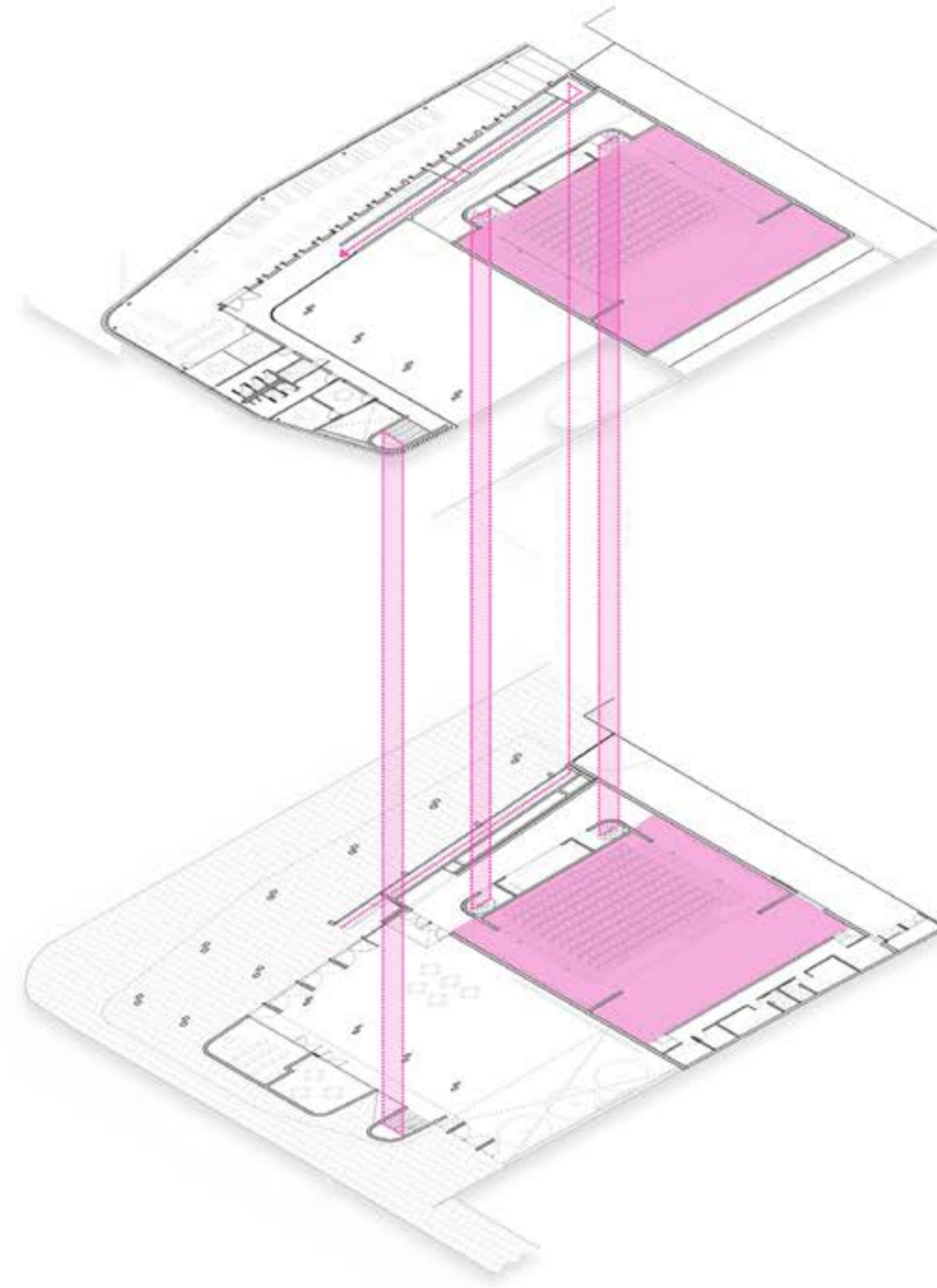
Location: Arauco, Chile

Year: 2016

Area: 1400 m²

Theatre Area: 415 m²

The Arauco Cultural Centre is a place of encounter, participation and expression of all cultural and artistic manifestation. The building behaves as part of the public space, therefore all mass activities take place on the street level. The theatre, cafe, exhibition rooms and stor open out onto the covered patio. The more controlled environments, the library and administrative spaces are located on the first floor.



Section A-A

Les Quinconces Cultural Center by Babin + Renaud

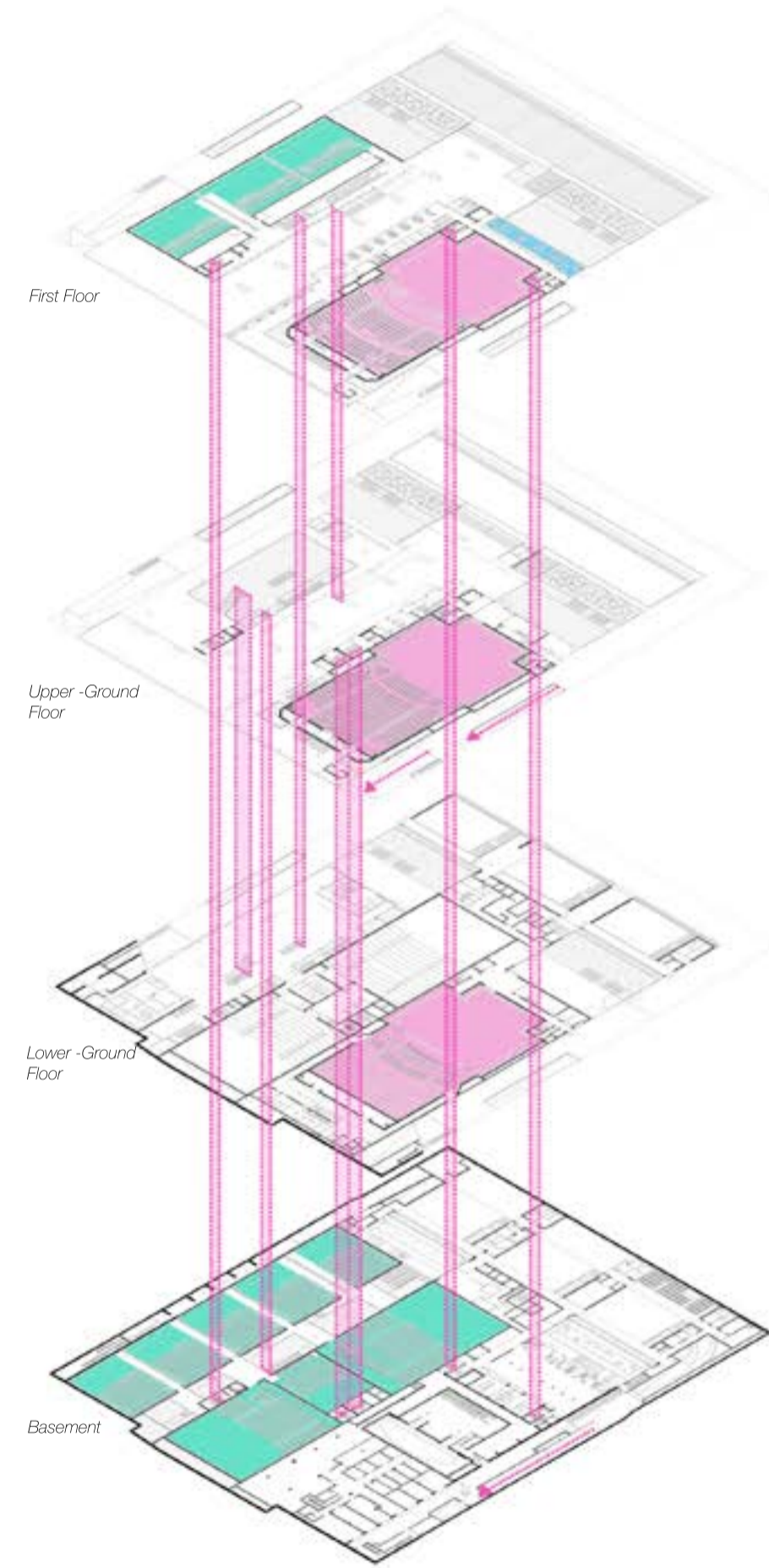
Location: Le Mans, France

Year: 2014

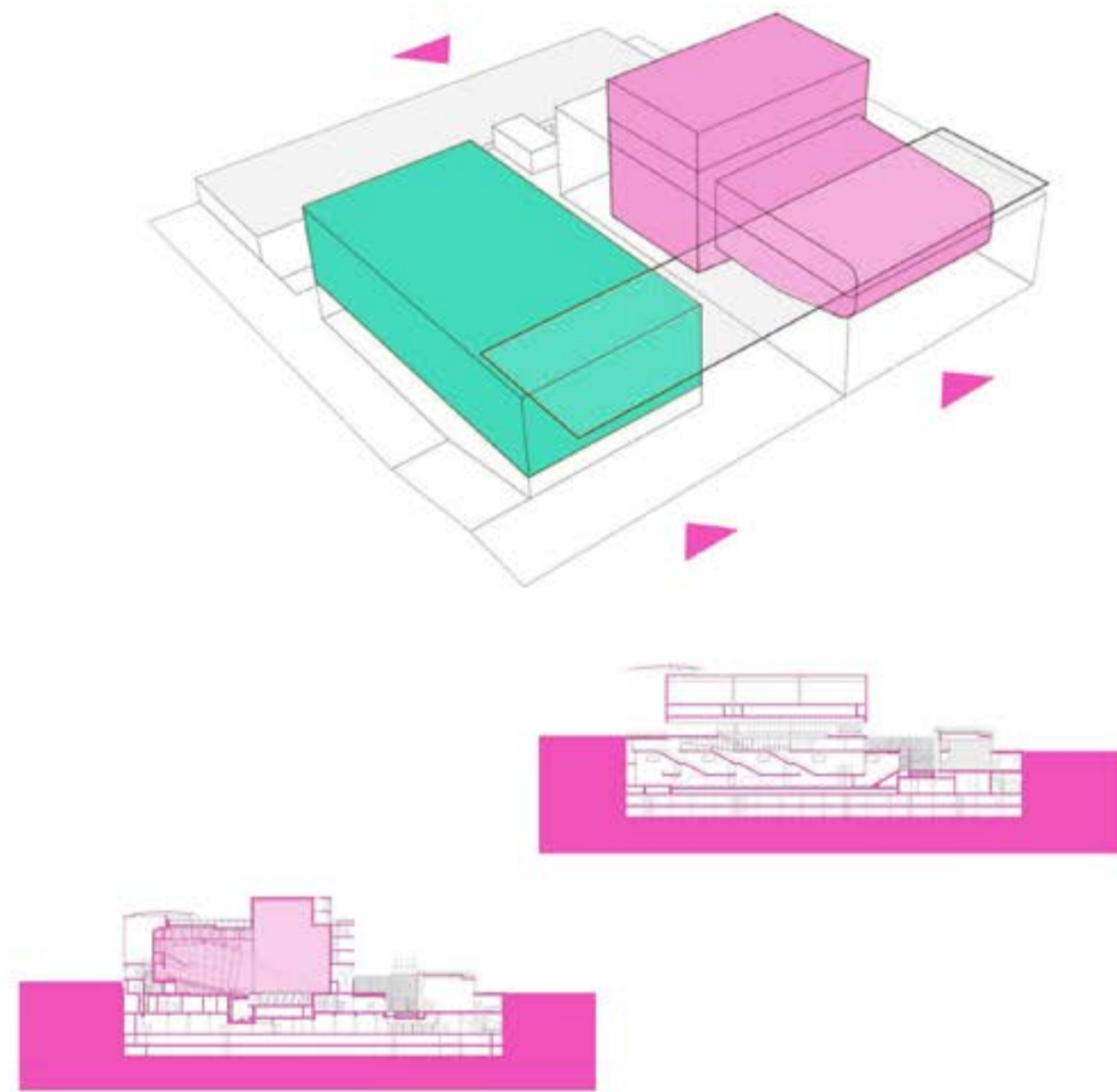
Area: 28,198 m²

Theatre Area: 500m²

The building is composed of two volumes under a single roof. The municipal theatre stands on the right and the visible part of the cinema multiplex on the left. The theatre building can be accessed directly from the plaza, and also houses and exhibition gallery and meeting room. The cinema complex houses 11 movie theatres which are located underground and connected by an inner corridor.



Circulation Strategy



■ Theatre
■ Cinemas
■ Meeting Rooms

Akiha Ward Cultural Center by Chiaki Arai Urban and Architecture Design

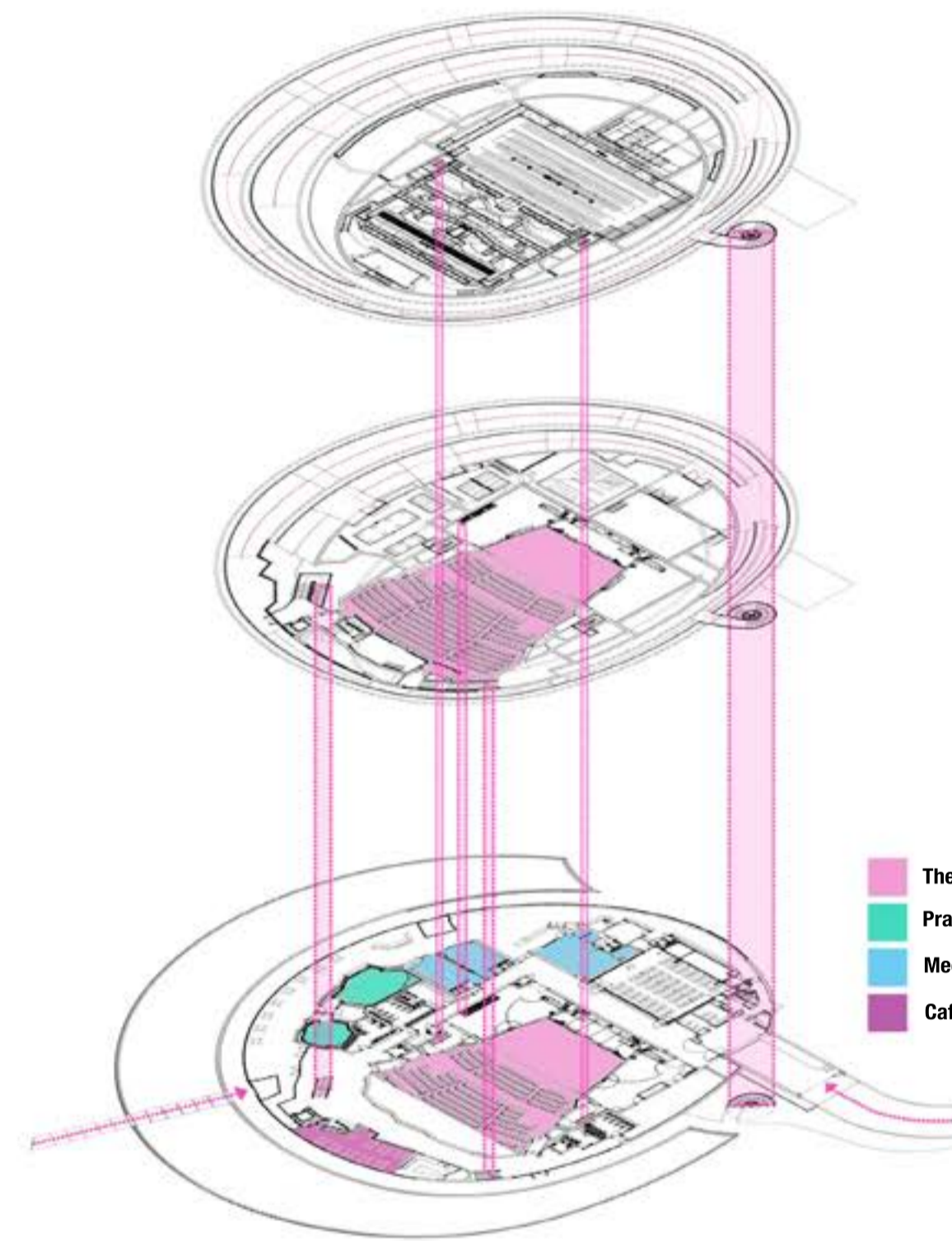
Location: Niigata, Japan

Year: 2013

Area: 2997 m²

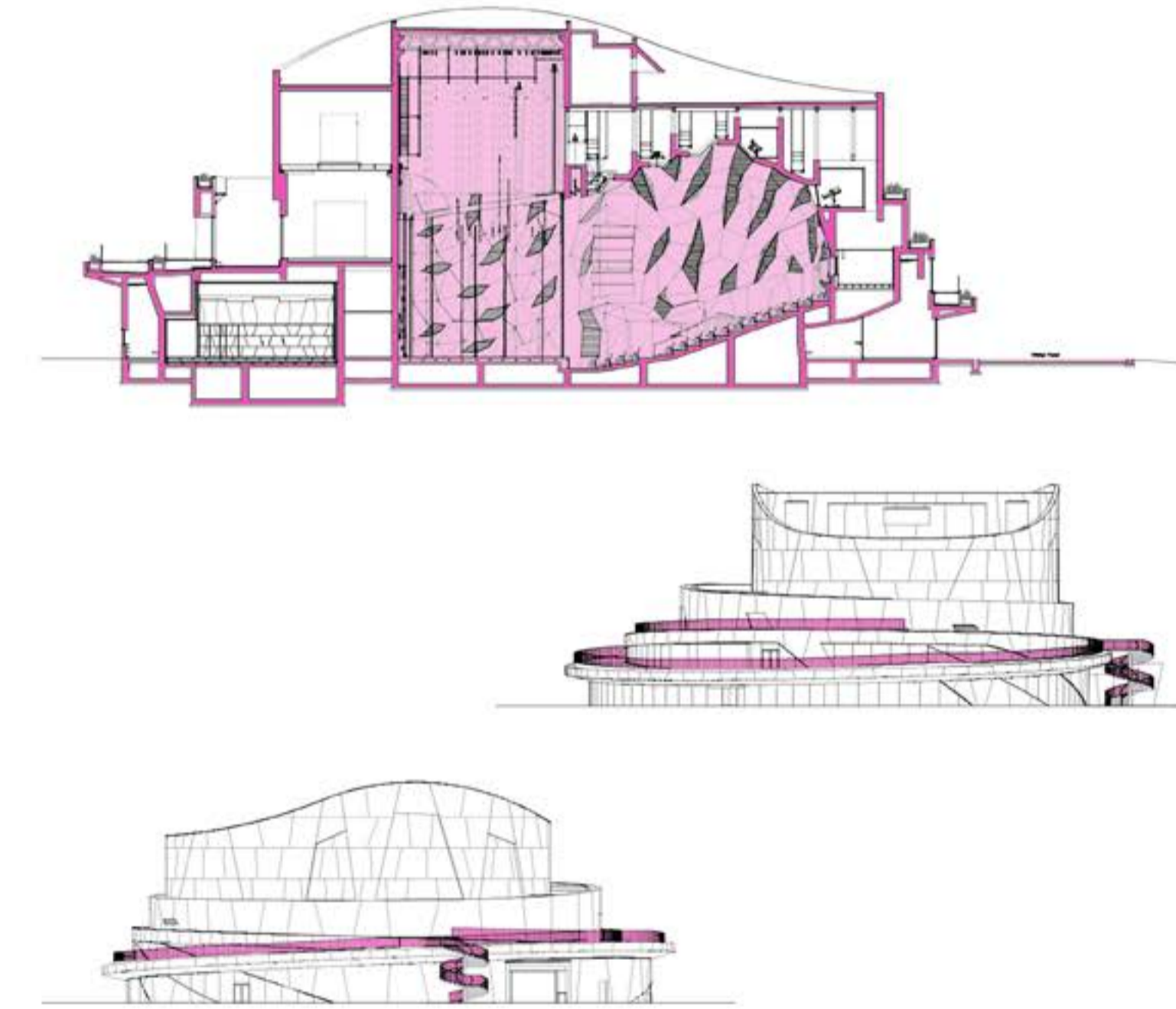
Theatre Area: 300m²

The building outline is composed of 46 different arcs. The planning diagram of the building is arranged in the order of exterior corridor, entrance lobby, function rooms, backstage corridor. Several function rooms such as practice rooms and dressing rooms are accessible from both the entrance lobby and backstage corridor, which improves operational availability.



Circulation Strategy

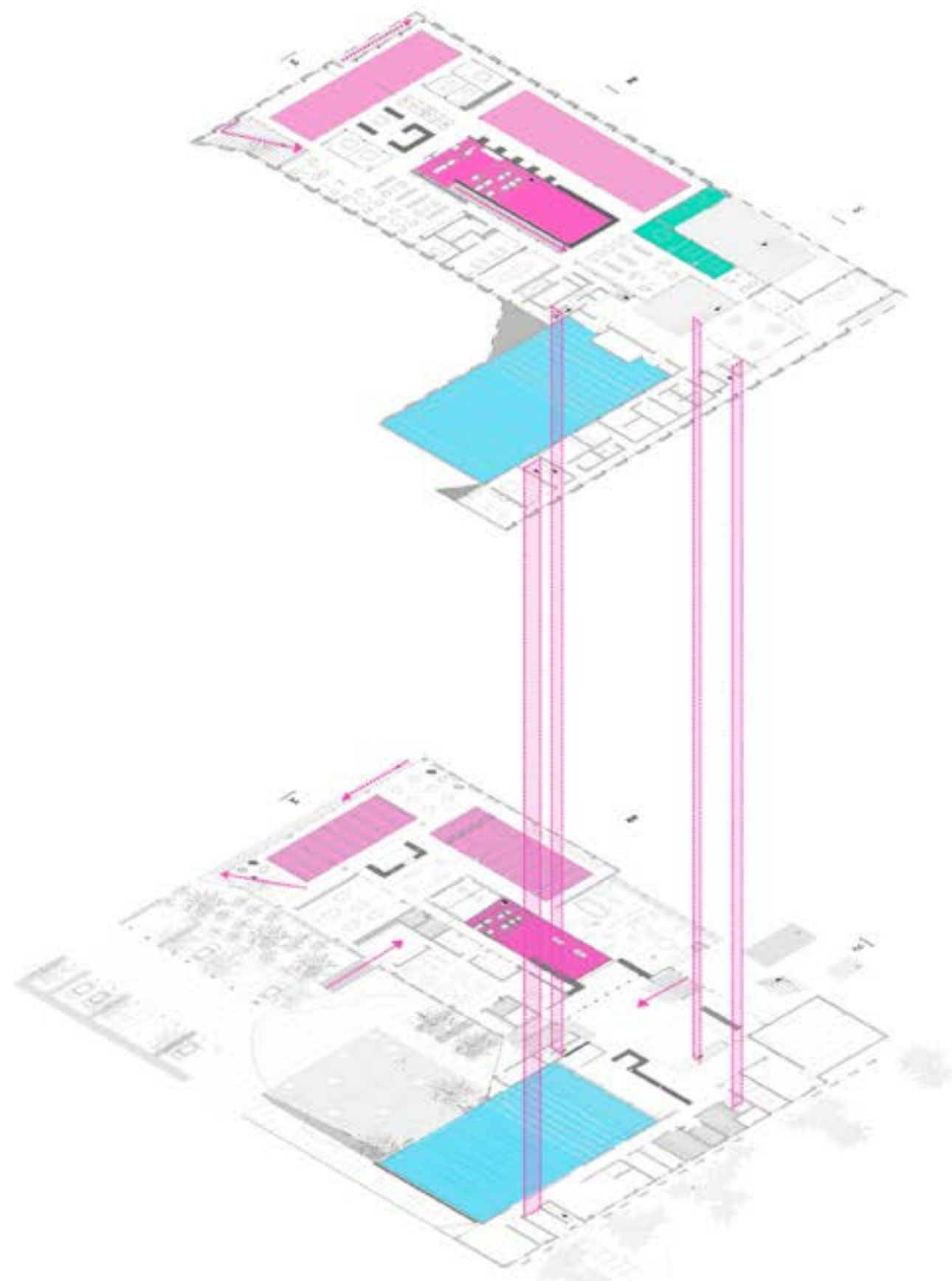
■ Theatre
■ Practice Spaces
■ Meeting Rooms
■ Cafe



Centre Culturel de Notre Dame-de Grace by Atelier Big City + L'OUEF

Architects
 Location: Montreal, Canada
 Year: 2015
 Area: 4500 m²
 Theatre Area: 490 m²

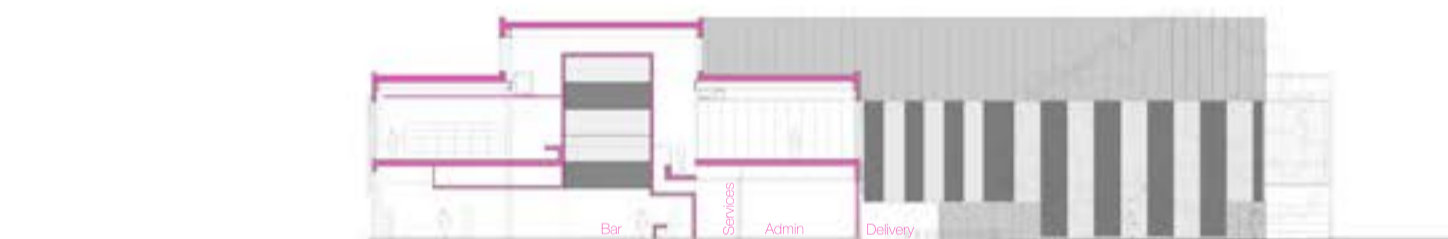
The brief called for a 'third space' library that was socially and digitally accessible and engaged. The CCNDG, is a communal space about learning and discovering, that brings together all generations and user groups. The continuous and generous circulation allows all of the user groups to migrate and interact easily.



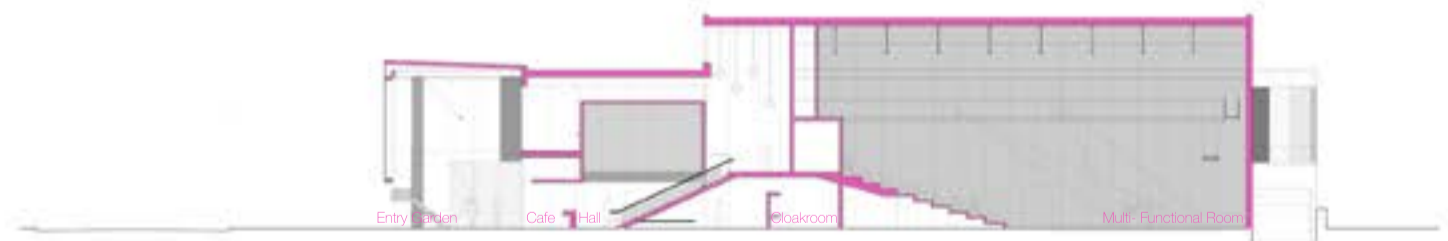
Circulation Strategy



Section AA



Section BB

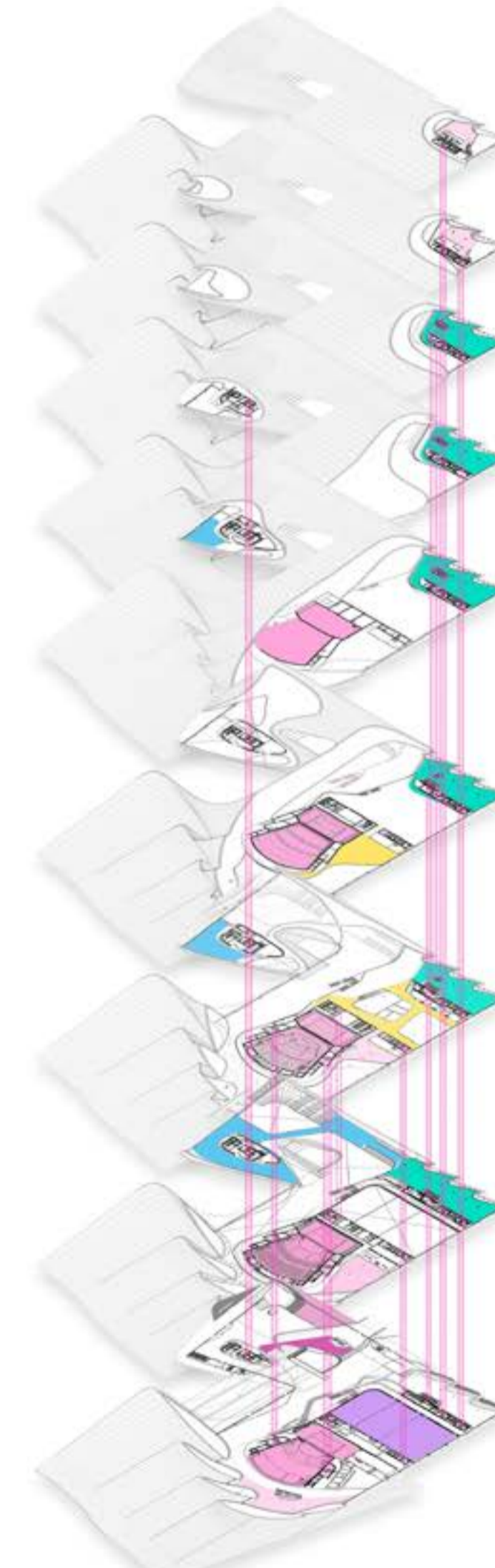


Section CC

Heydar Aliyev Centre by Zaha Hadid Architects

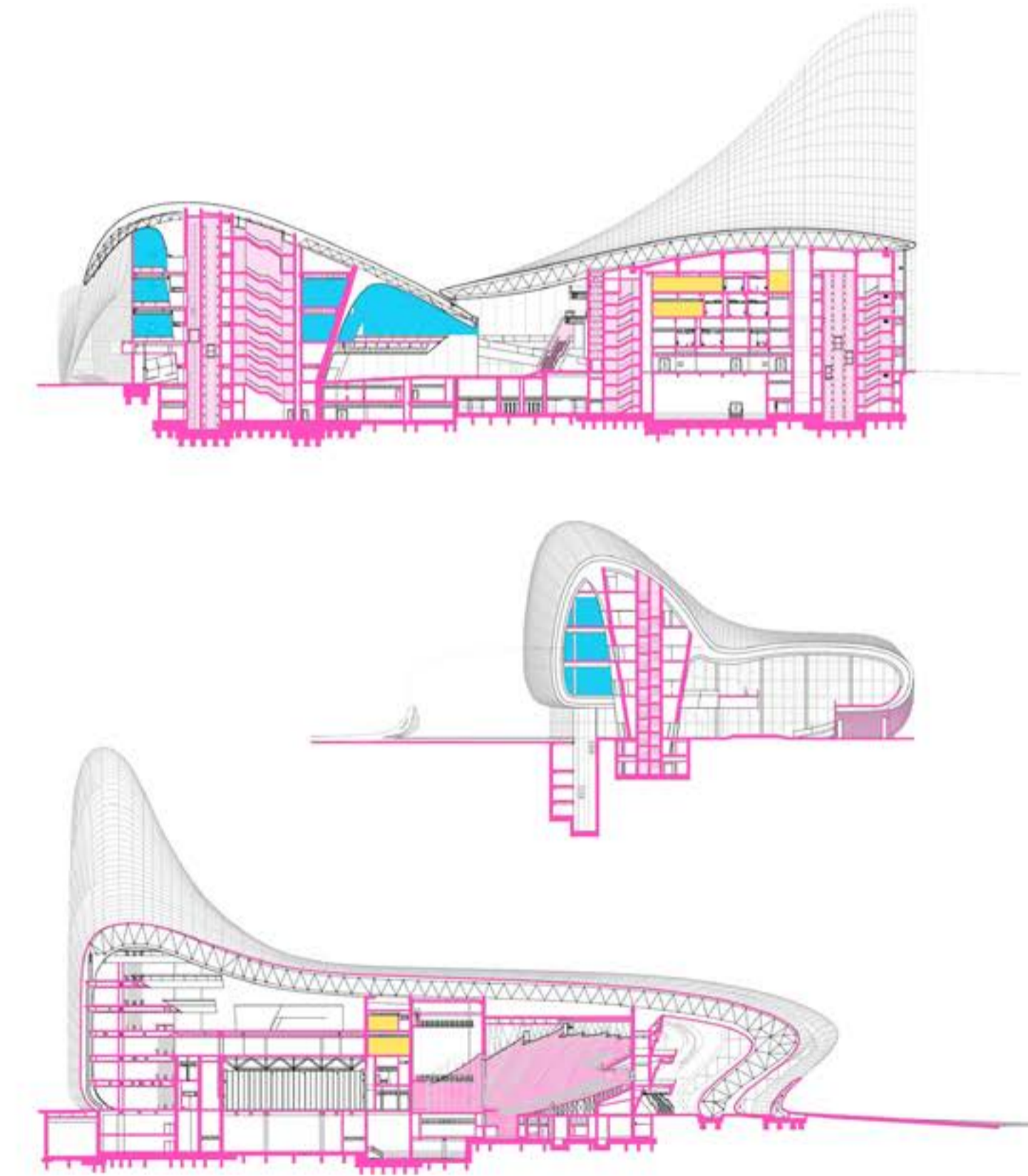
Location: Baku, Azerbaijan
 Year: 2015
 Area: 101,801 m²
 Theatre Area: 20,000 m²

This building is designed to creating a continuous relationship between the surrounding plaza and its interior. The public plaza, which forms part of Baku's urban fabric, rises up to envelop an equally public interior space and define a sequence of event spaces dedicated to the celebration of the country's culture.



Circulation Strategy

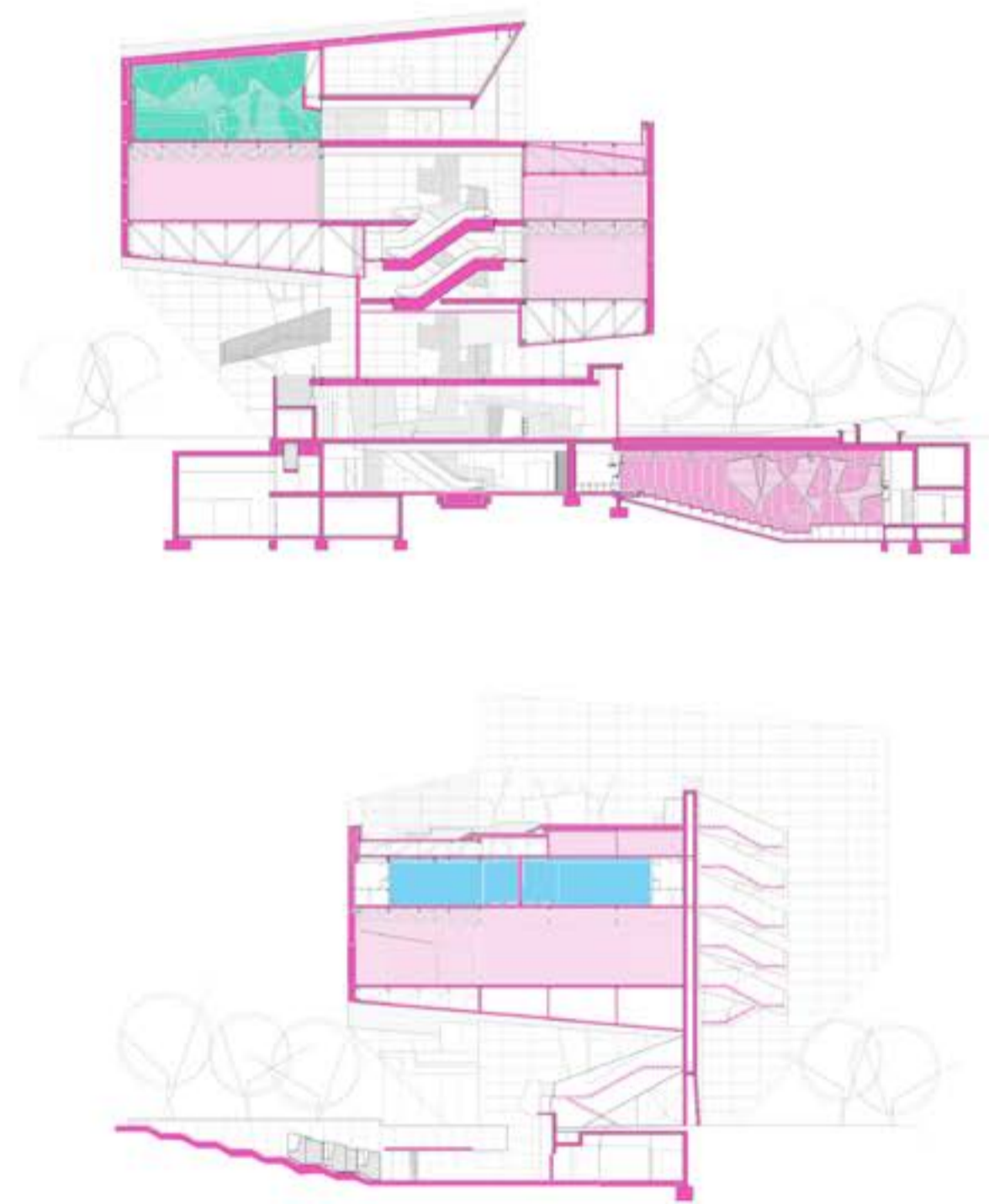
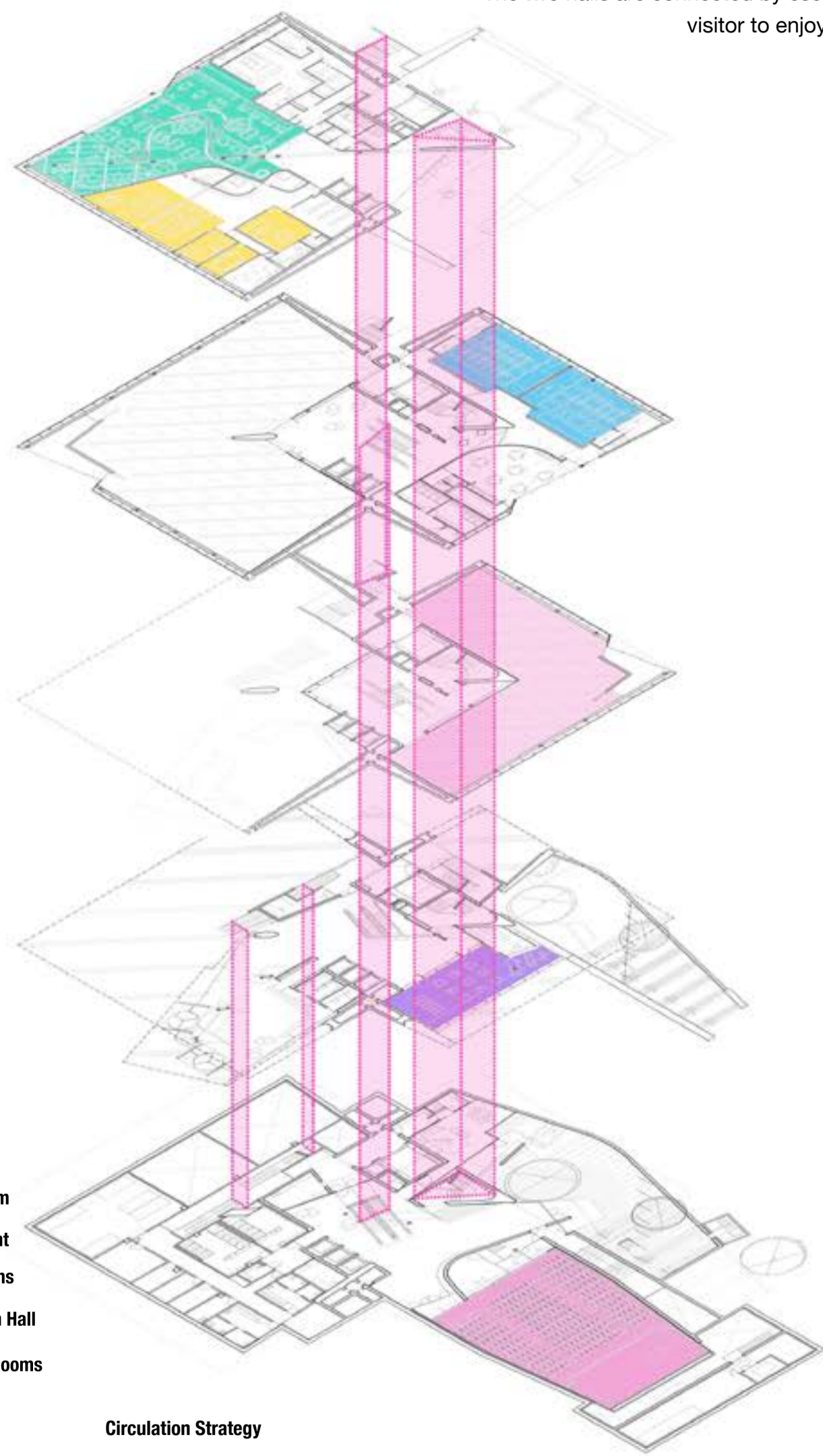
- Auditorium
- Library
- Art Gallery
- Bar/ Restaurant
- Meeting Rooms/ Offices
- Multi Purpose Hall
- Cafe
- Bookstore/ Gift shop



CaixaForum by Estudio Carme Pinos

Location: Zaragoza, Spain
 Year: 2014
 Area: 4407 m²

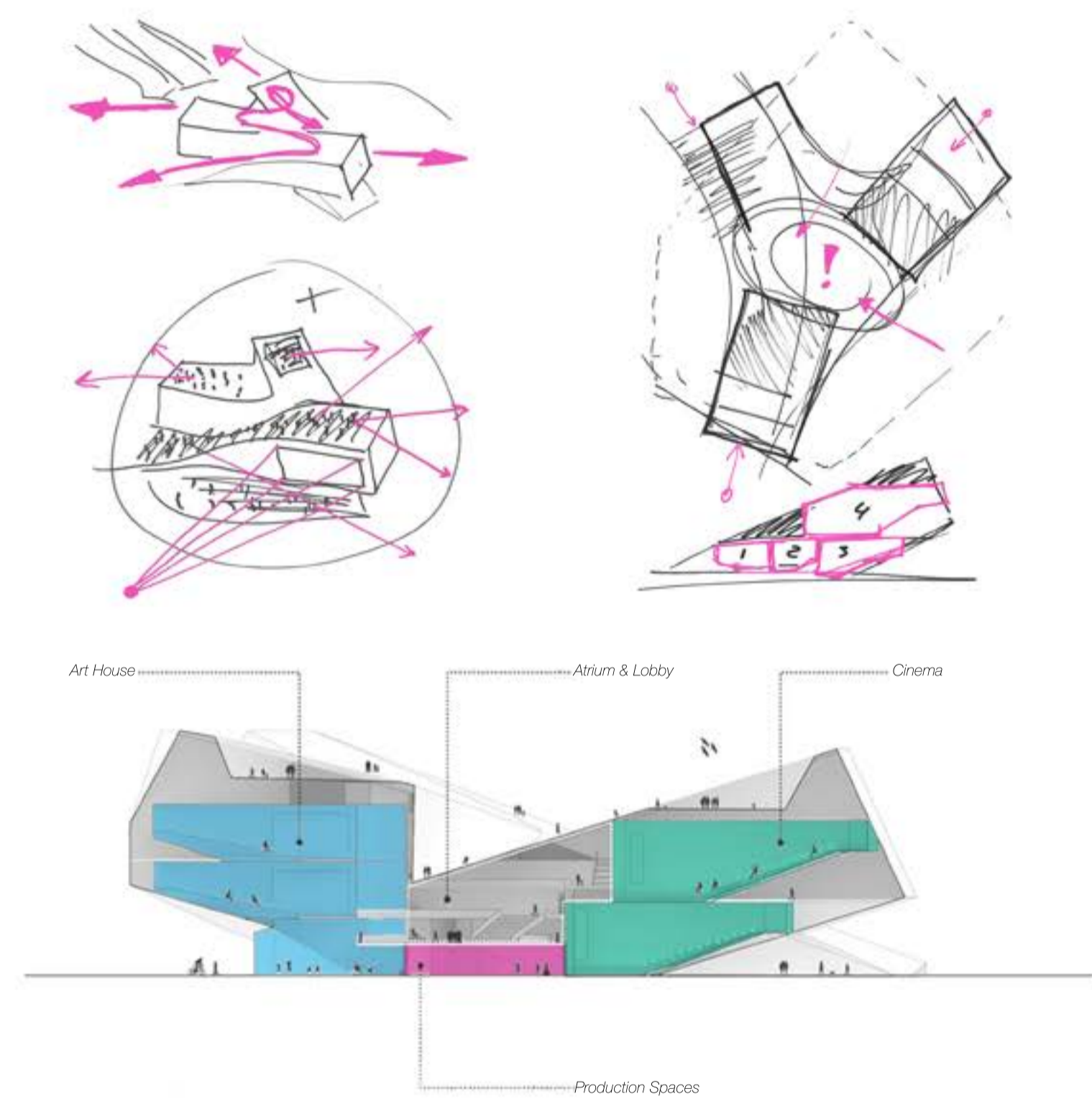
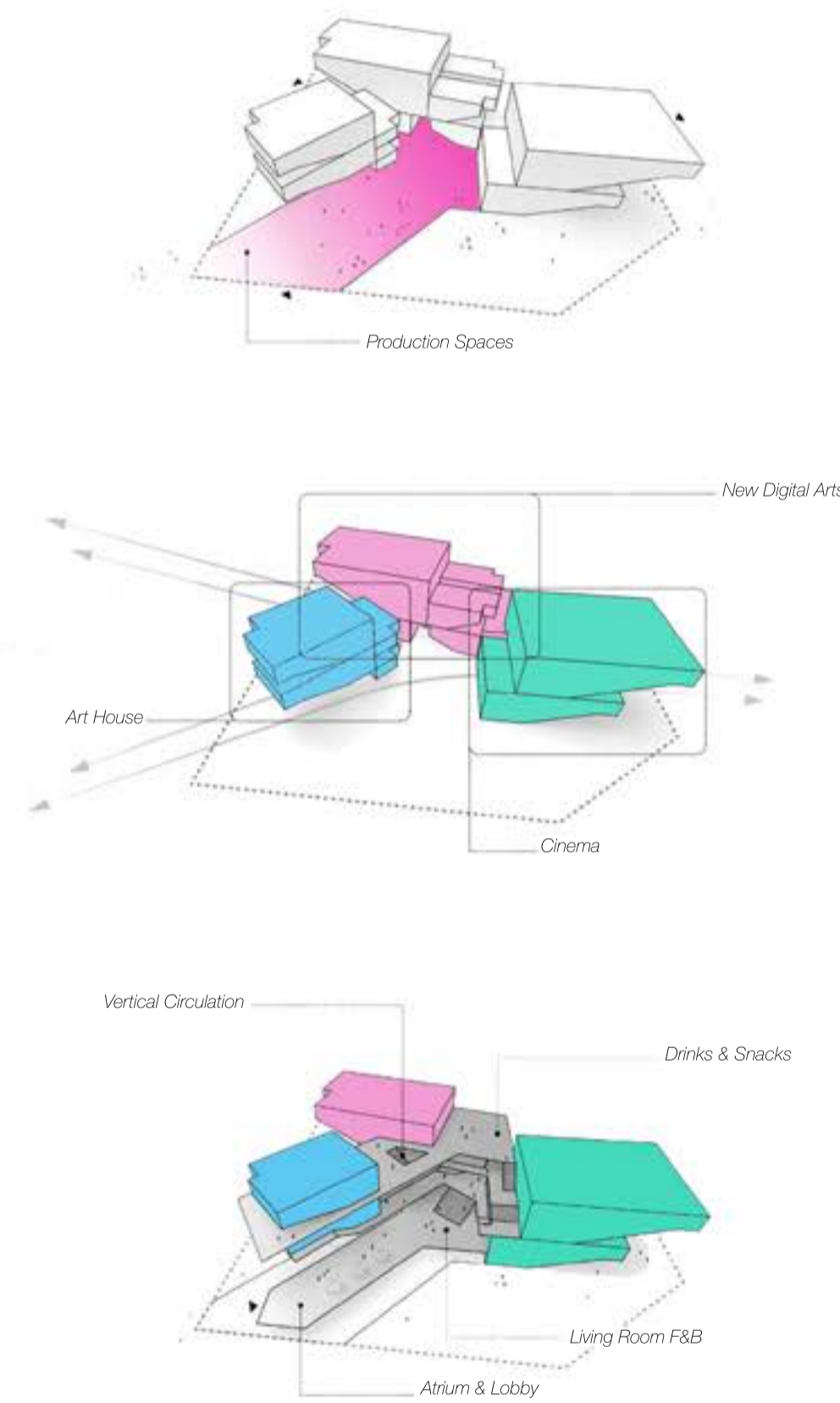
By raising the level of the two halls, allowed the freeing of the ground floor, allowing the neighbouring park to extend into the city by passing under the building. The two suspended halls face each other at different levels, so that the visitor who exits one hall has a view of the city below the other hall. The two halls are connected by escalators offering a journey that allows the visitor to enjoy the distant views.

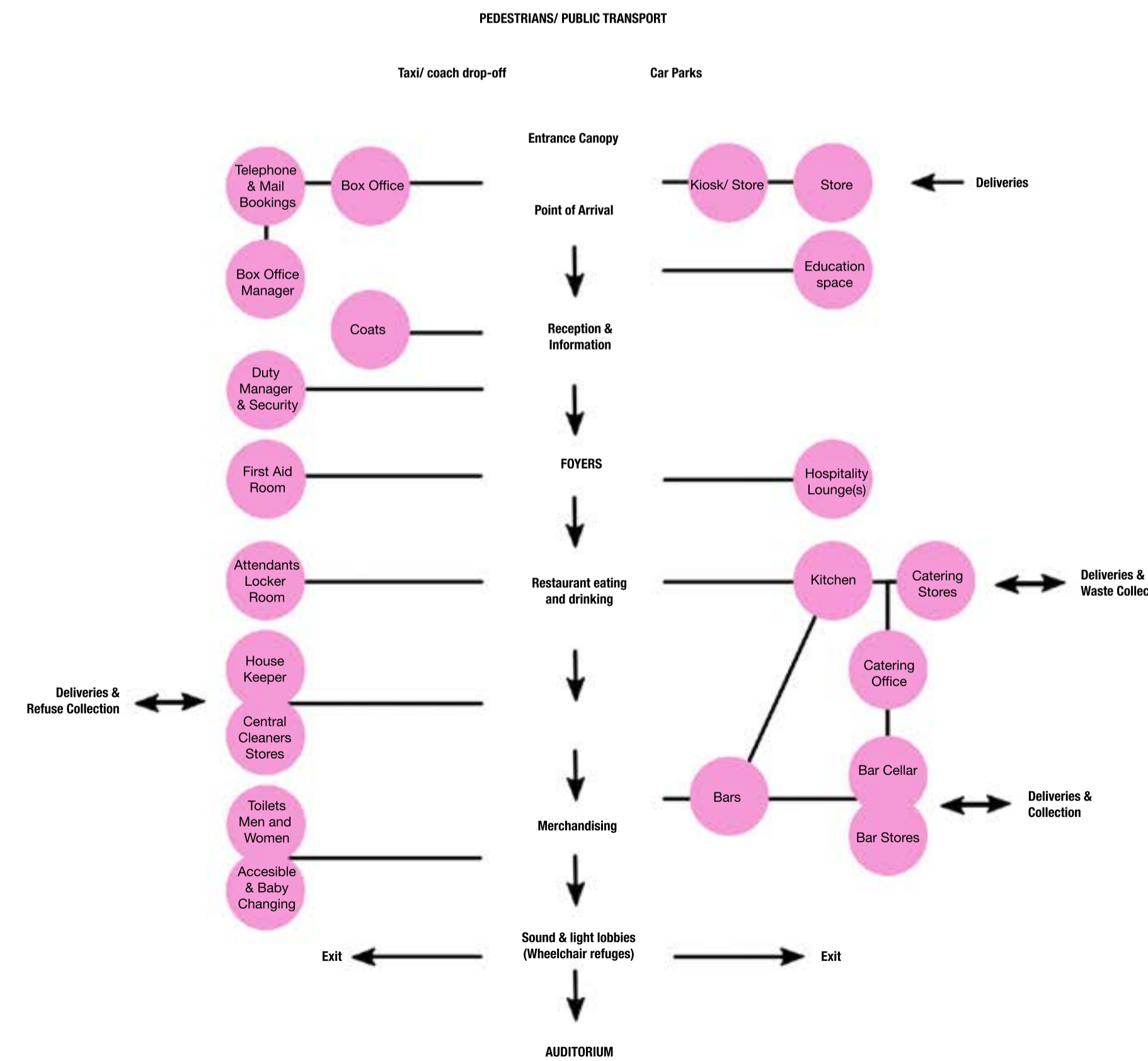
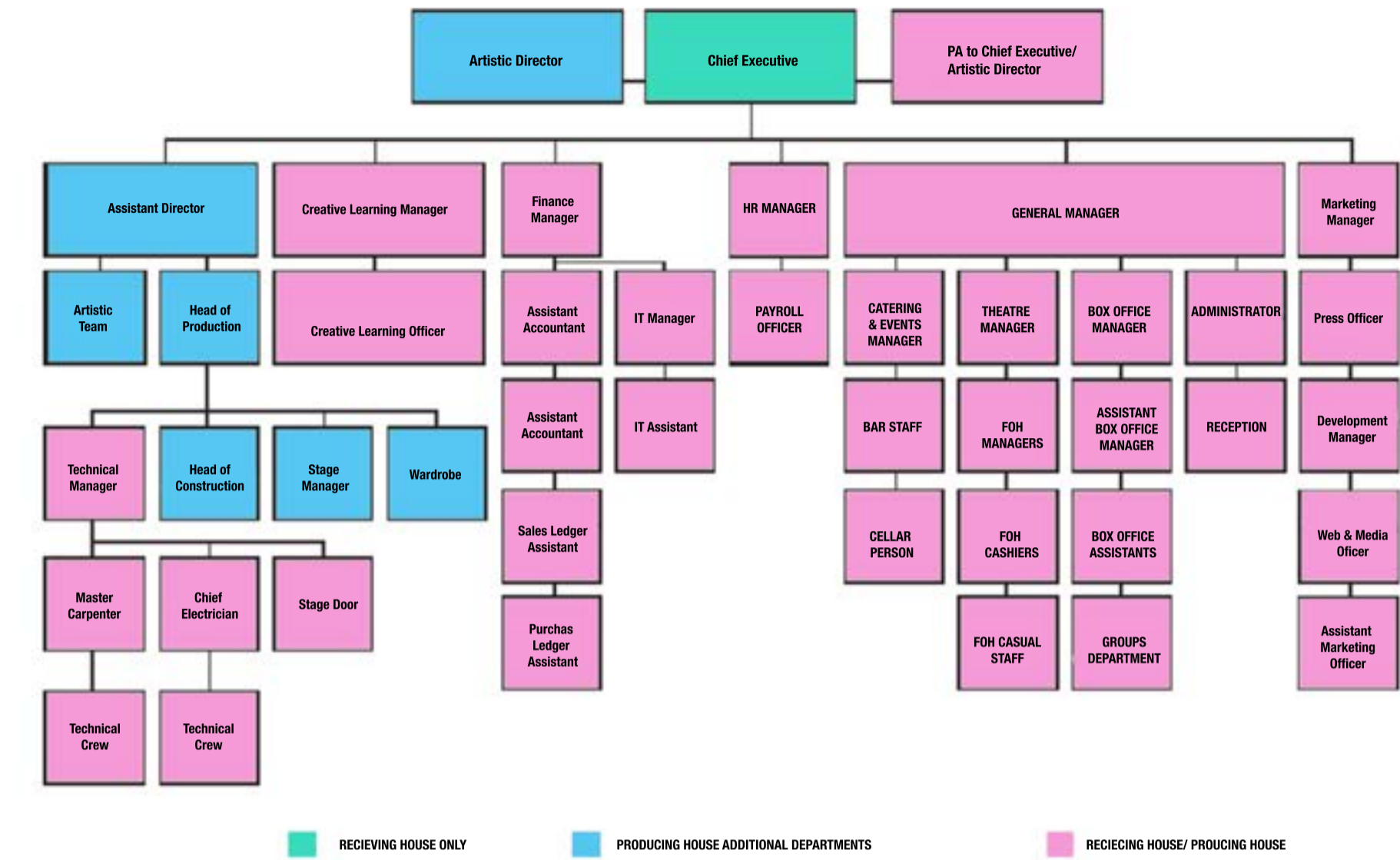
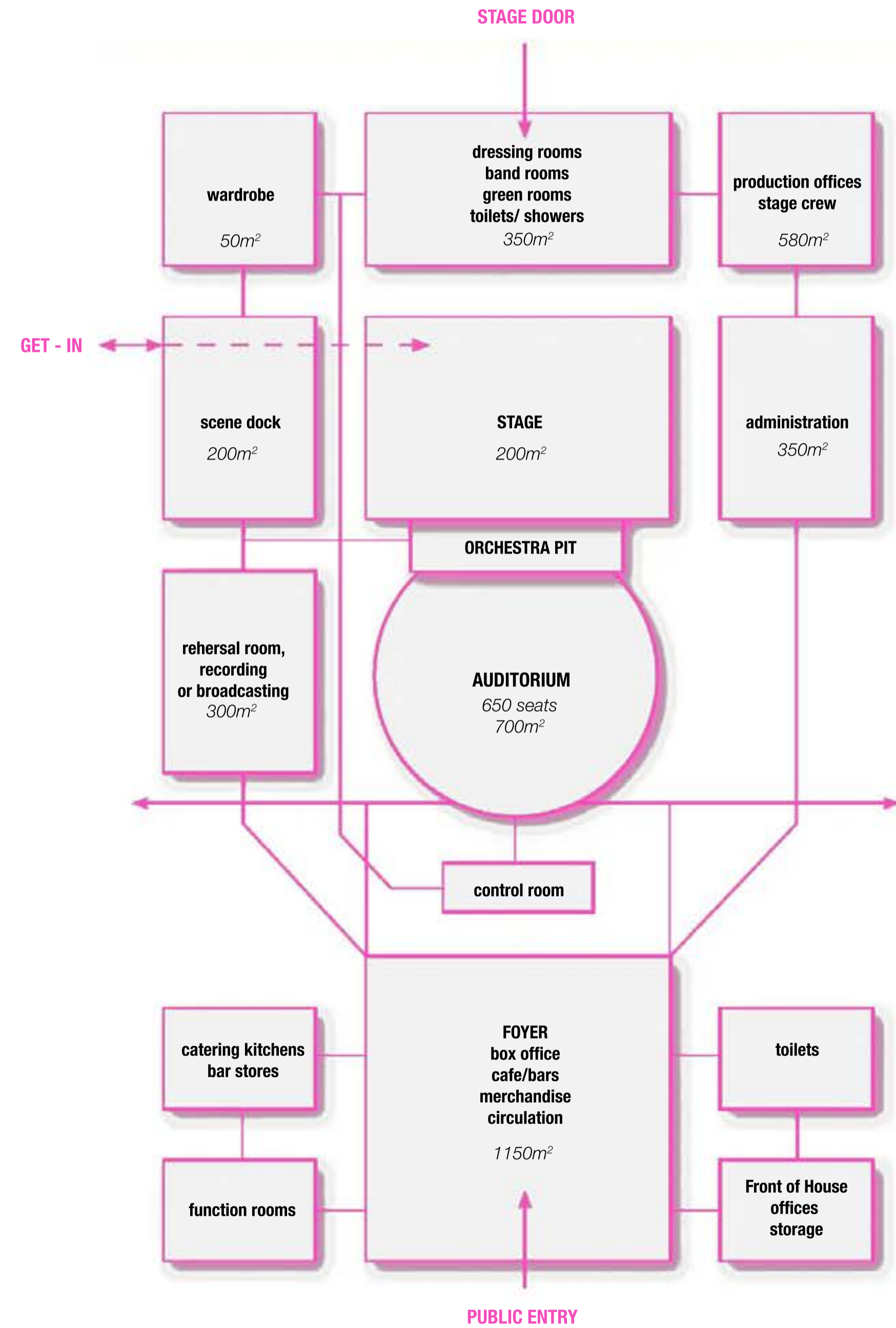


EuropaCity Centre Cultural Dédie au 7ème Art by UN Studio

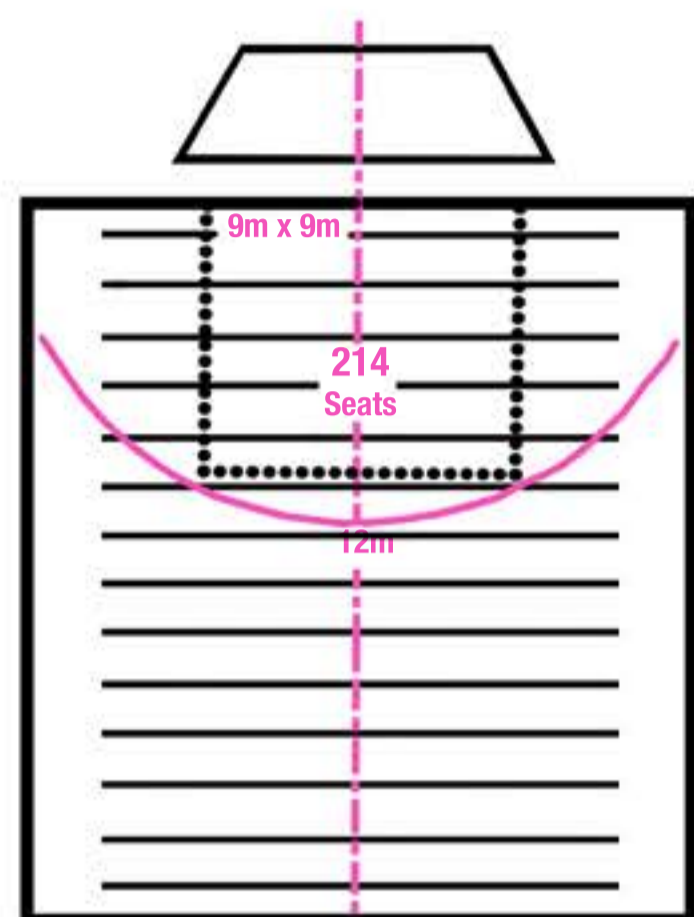
Location: Paris, France
 Year: Competition Entry Winner
 Area: 10,045 m²

This winning design aspired to create a new kind of cinema with an expanded programme that includes media and production facilities. It is designed as a cultural destination that celebrates the cinema experiences in a public way. The three blocks of the building are organised according to film genre, and they converge in a central foyer spaces. The production studios are located on the level below.

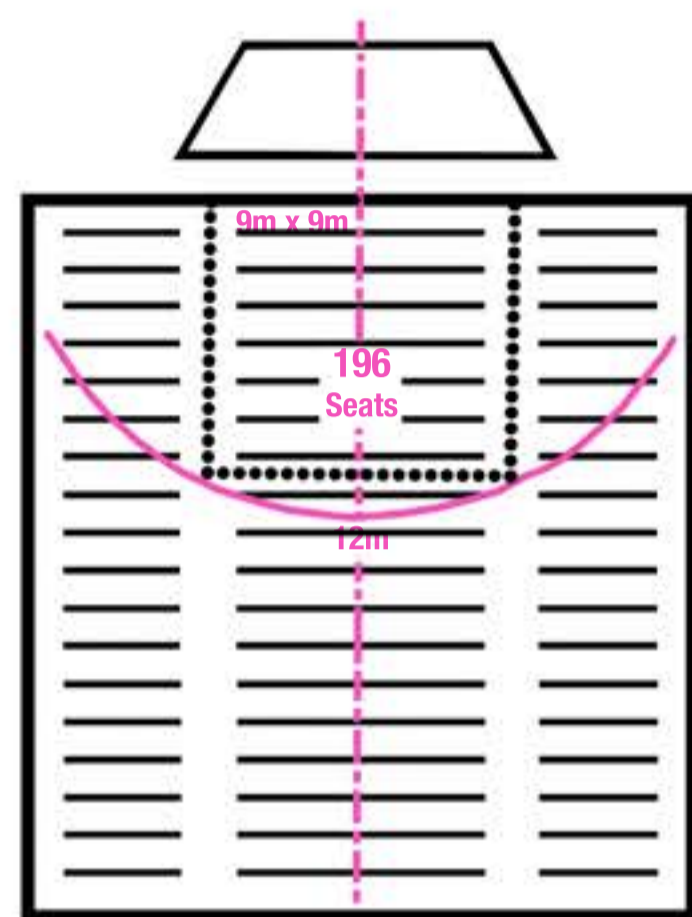




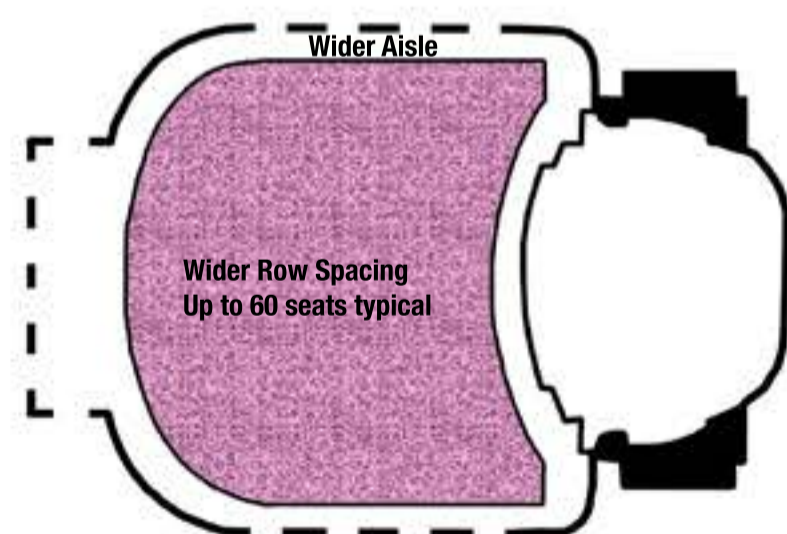
Appendix
Design Proposal
Typological Studies
Urban Strategy
Radical Technology
Hack in Zuidas
Zuidasloot 2040
Logistical Interdependencies
Territorial Interdependencies
Global Interdependencies



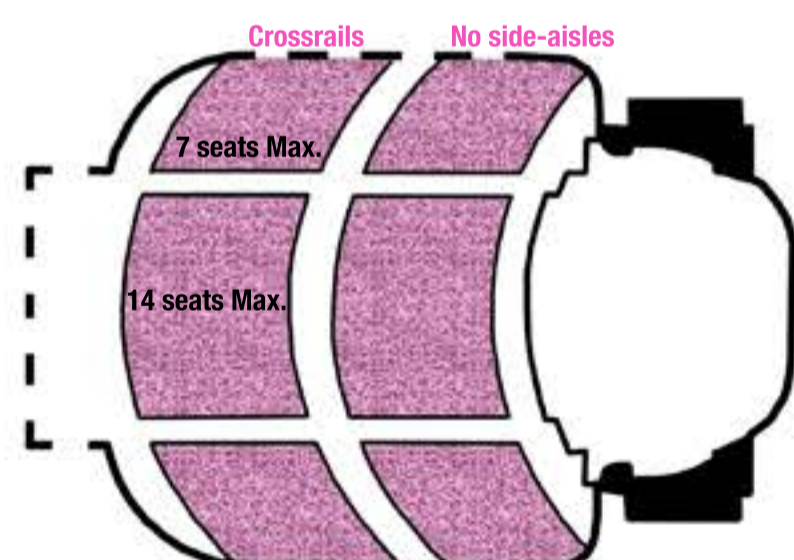
Continental
(More Seats Near Stage)



Conventional
(More Seats Centered)

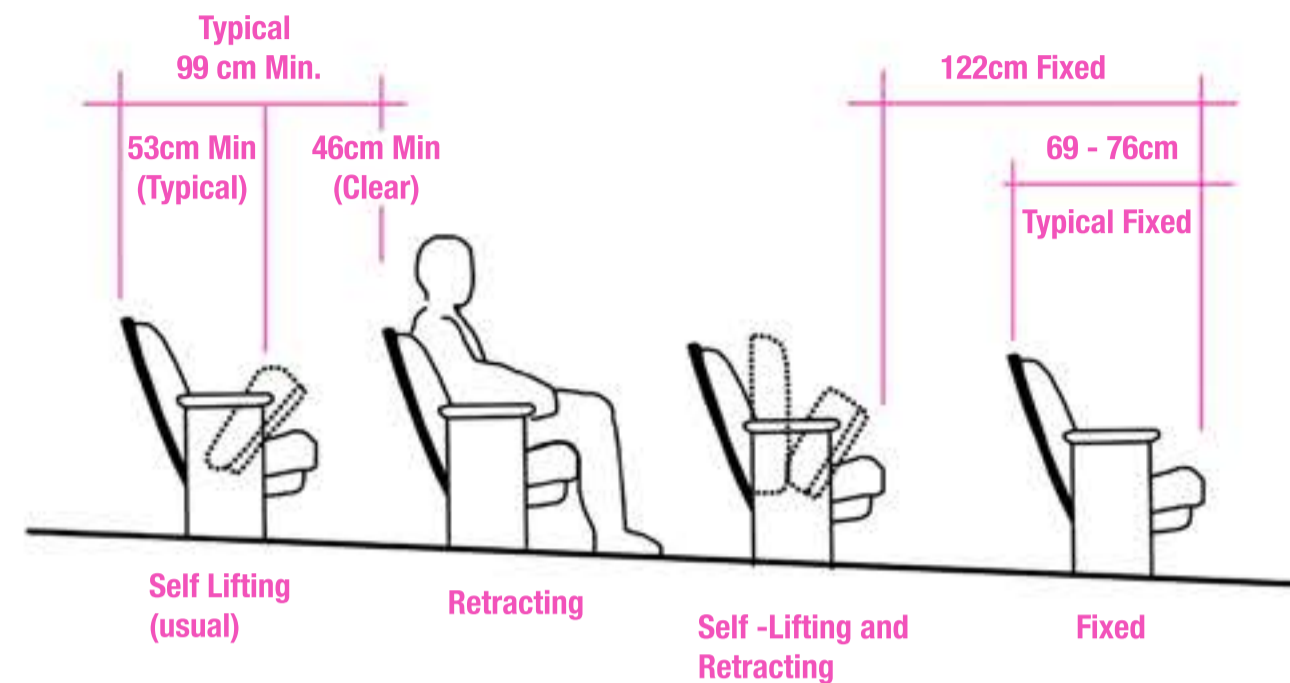


Continental
+ Economic use of space
+ More leg room
- Less comfortable seat access
- Numerous exit doors

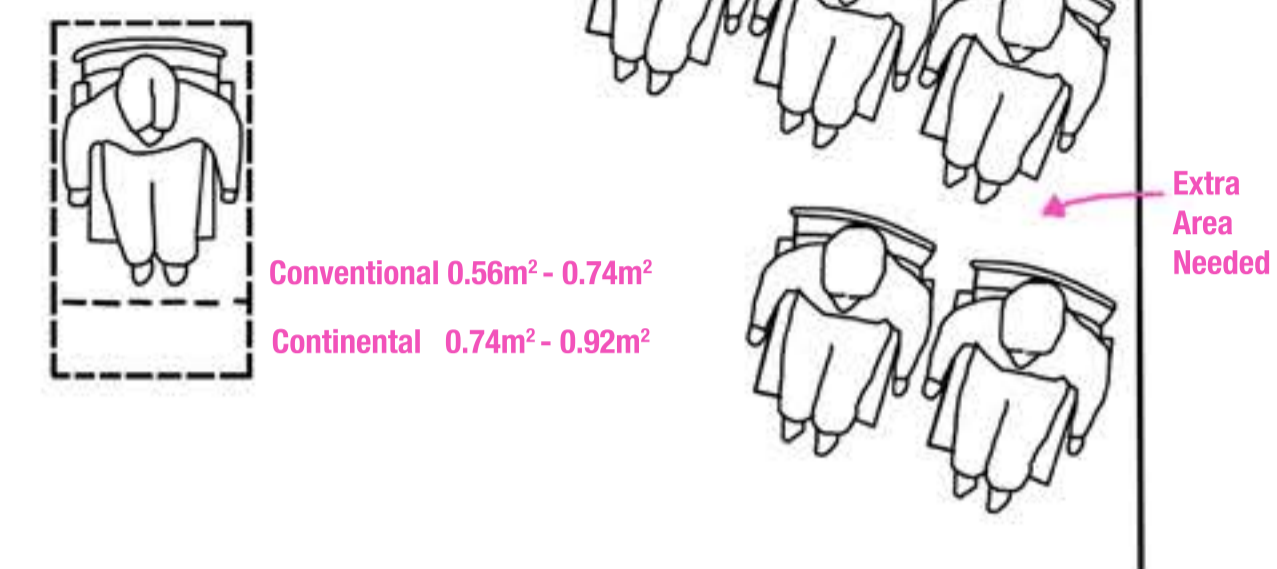


Conventional
+ Easy seat access
+ Fewer exits
- Less leg room
- Aisles take up spaces

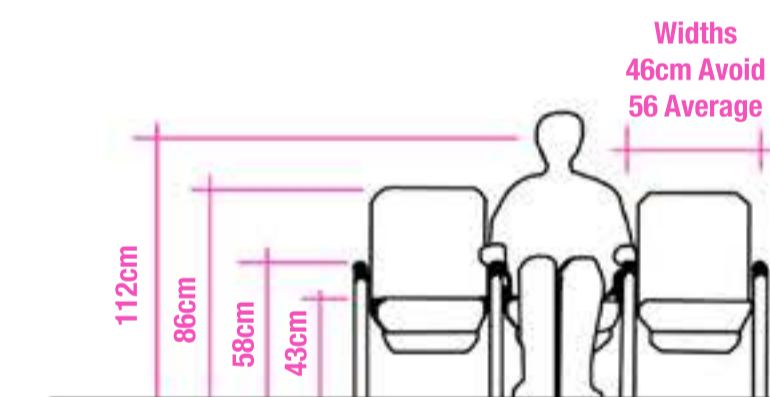
Continental Row Spacing



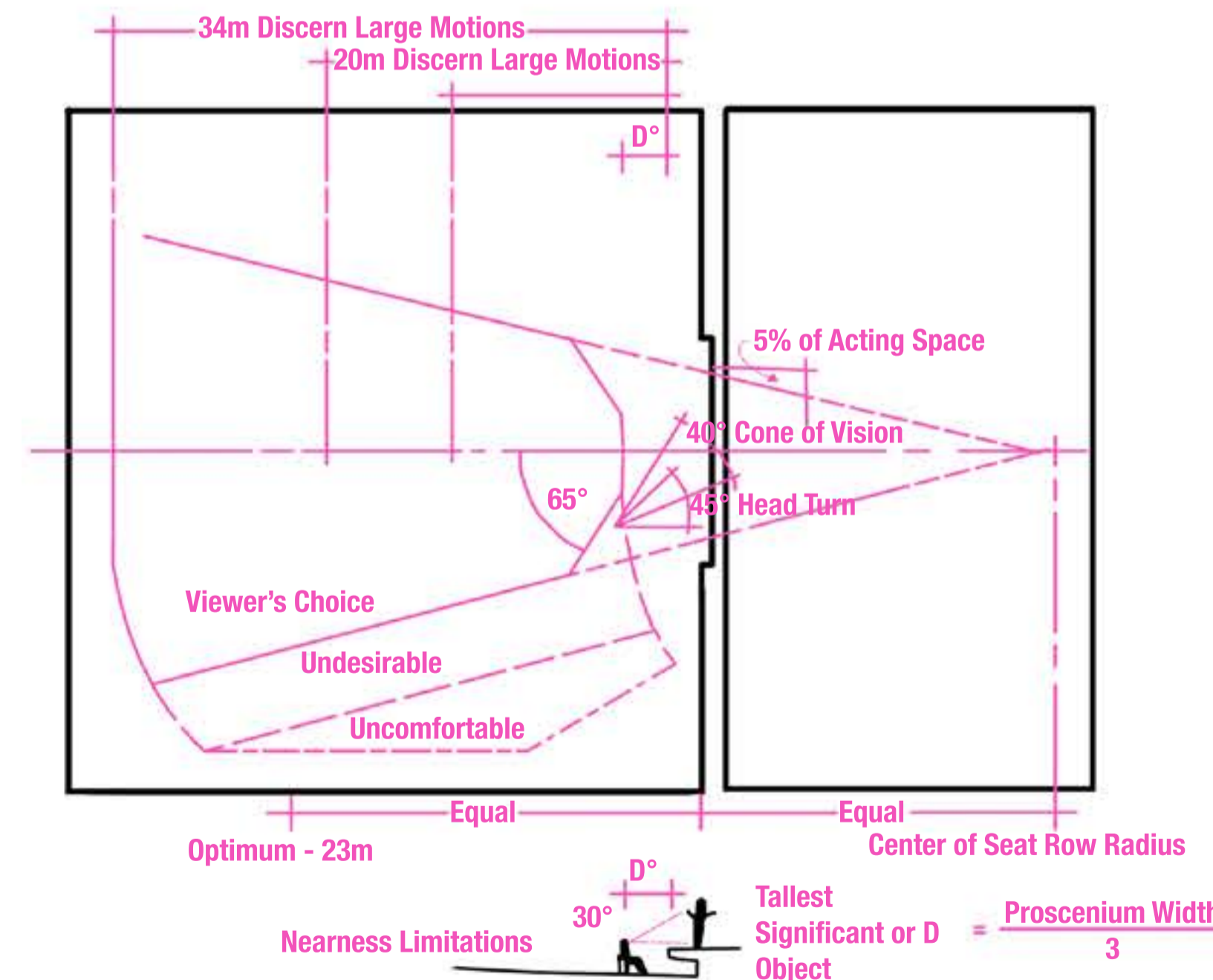
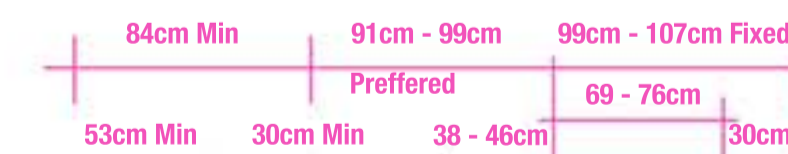
Area Comparison
(including 20% aisles)



Typical Seating Dimensions



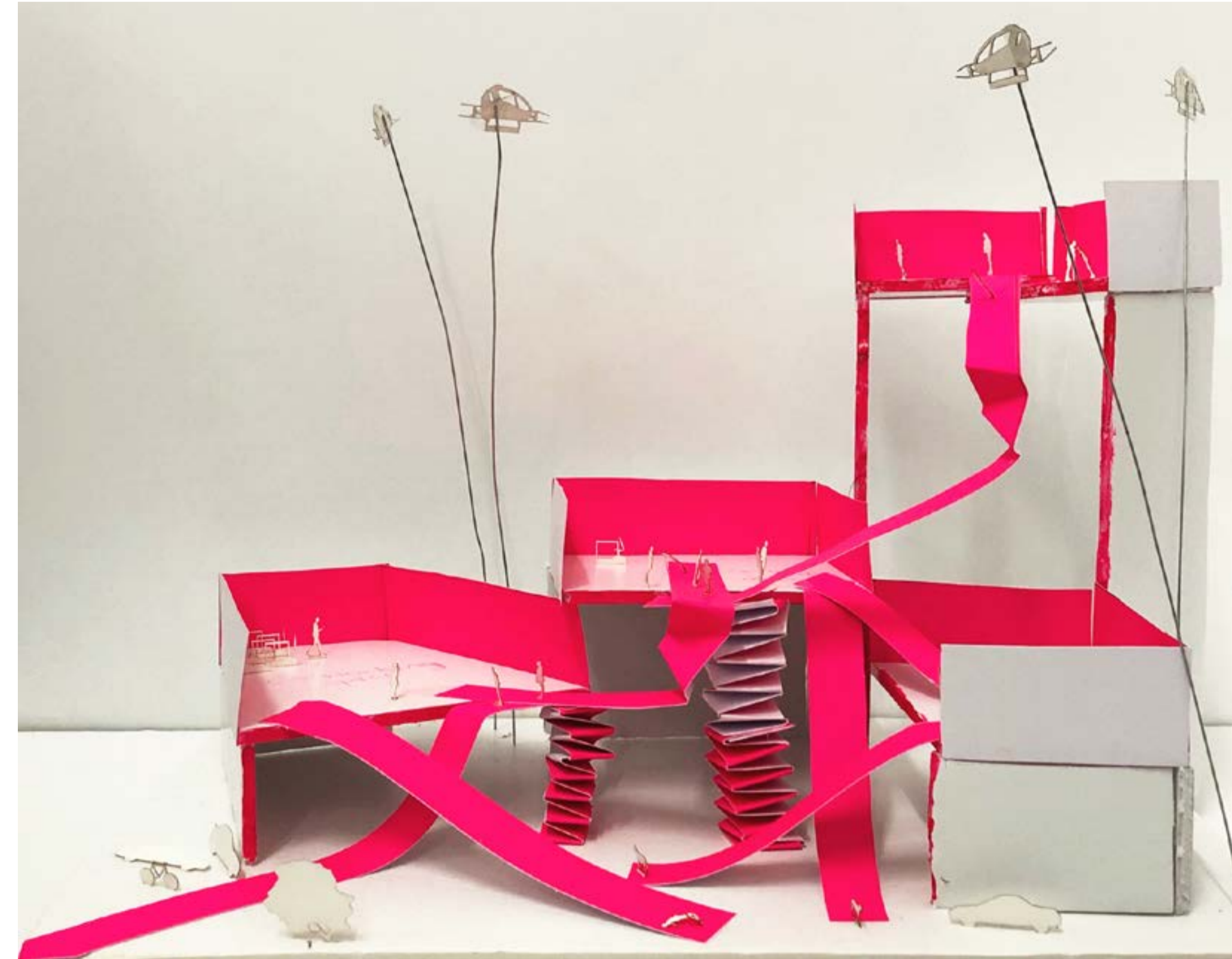
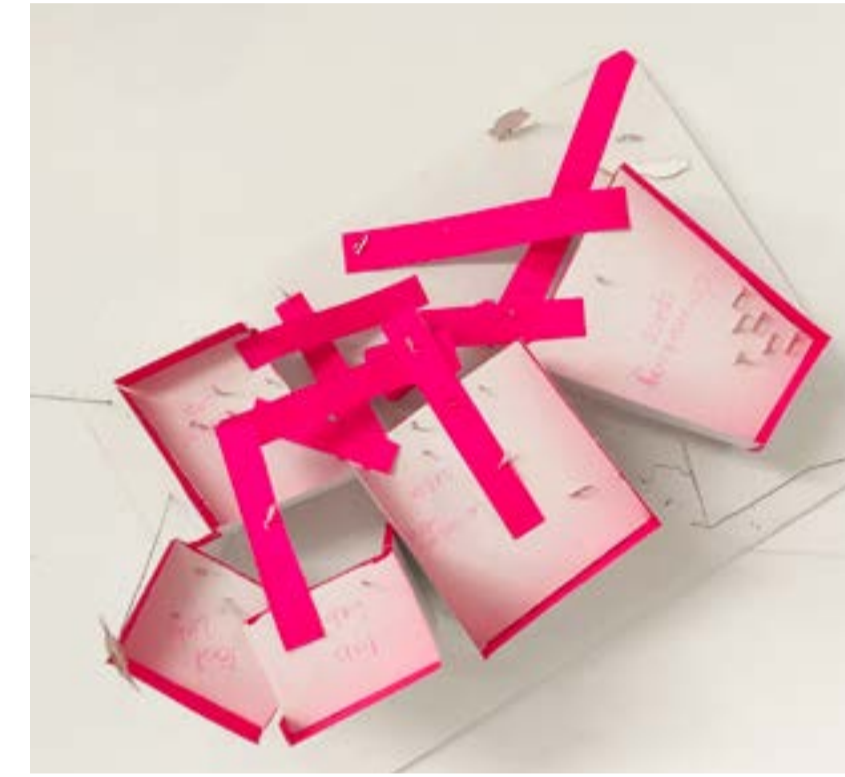
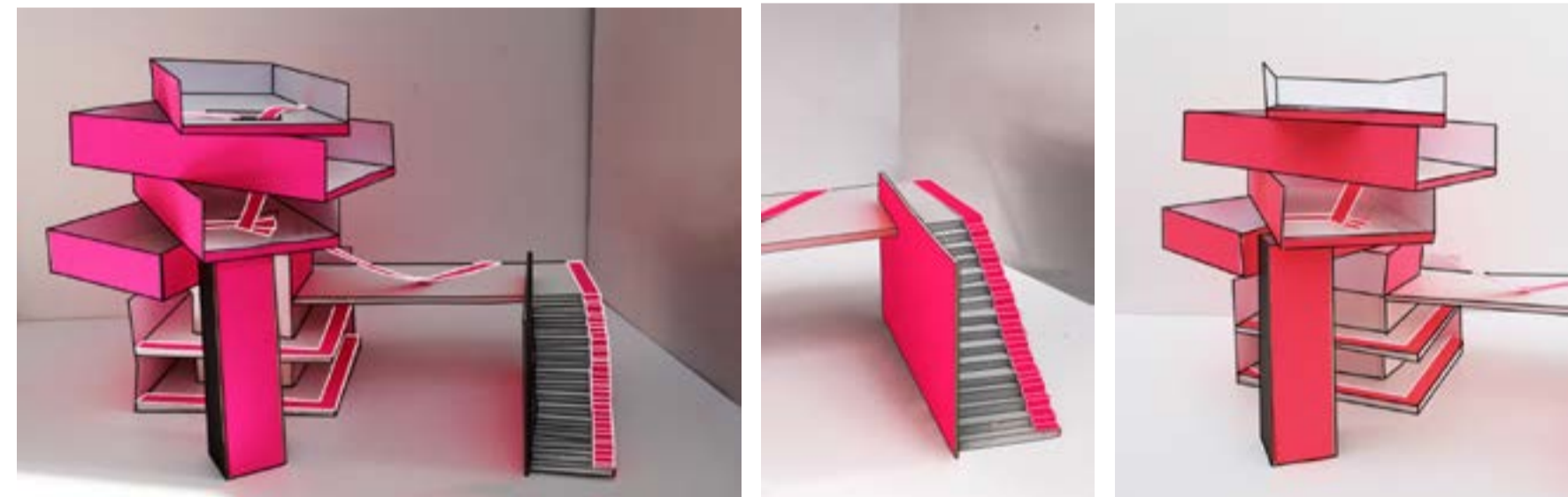
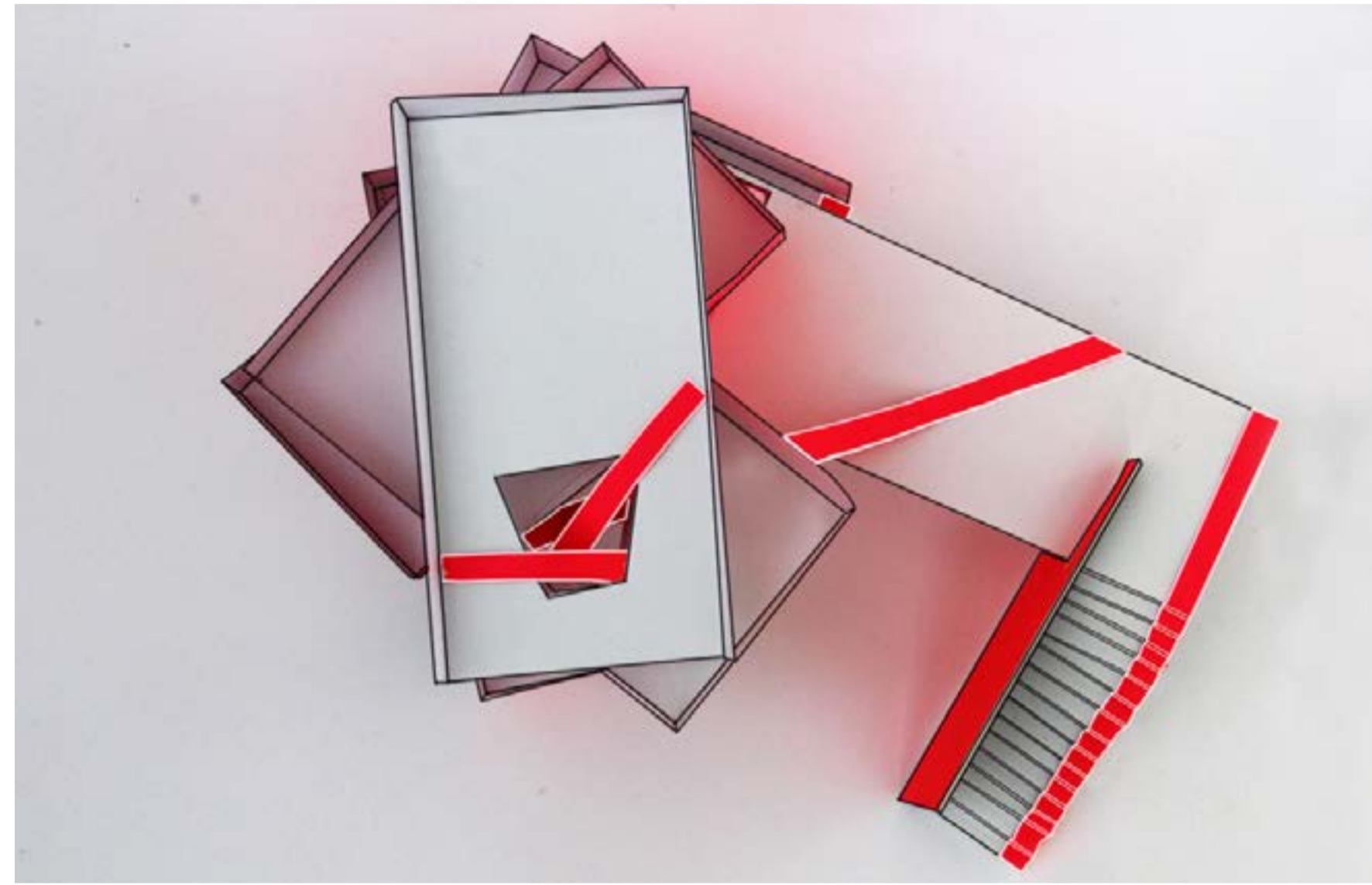
Continental Row Spacing



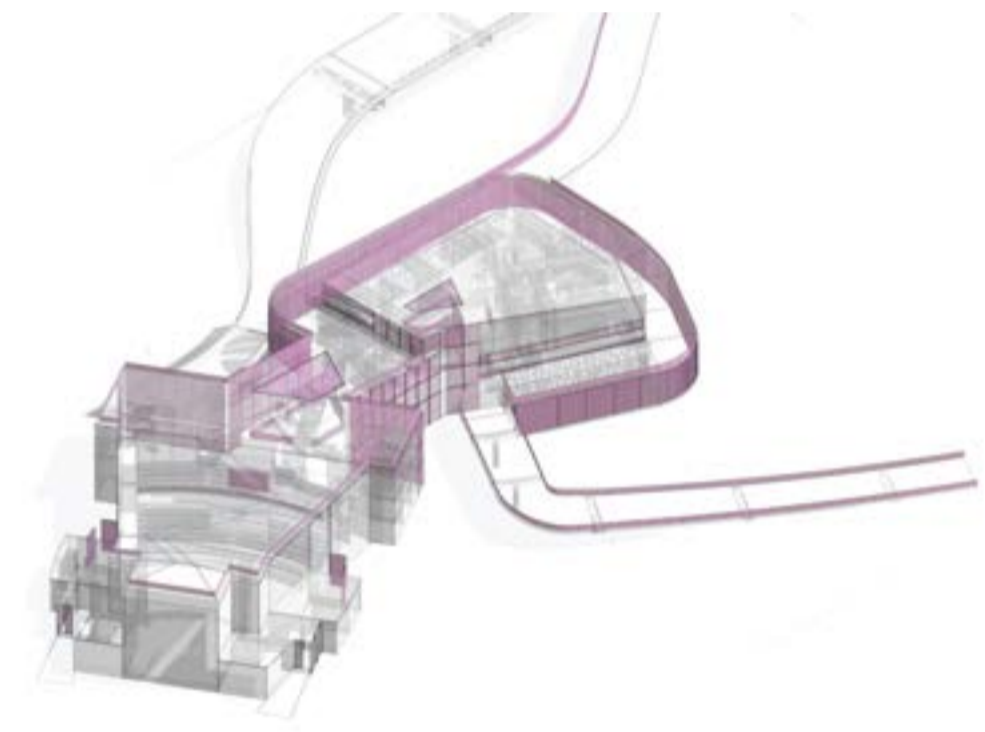


CHAPTER 9: Design Proposal

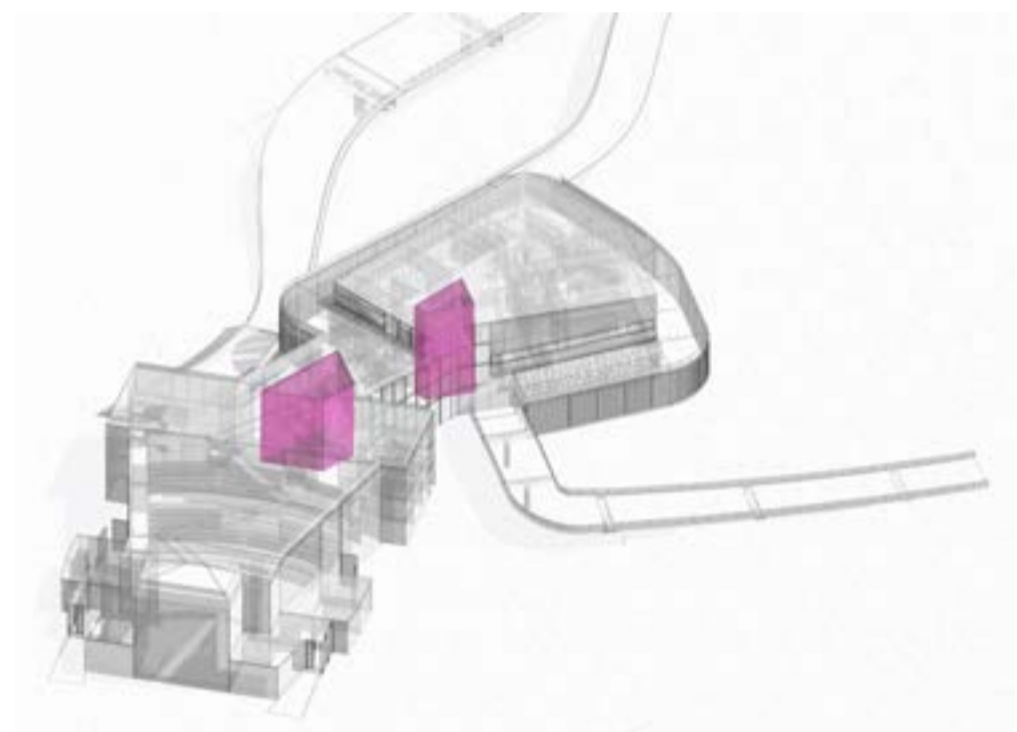
The conclusive design proposal illustrated in this chapter, is a combined result of my risk-trends map, my developed urban strategy, my scenario and the implementation the radical technology.



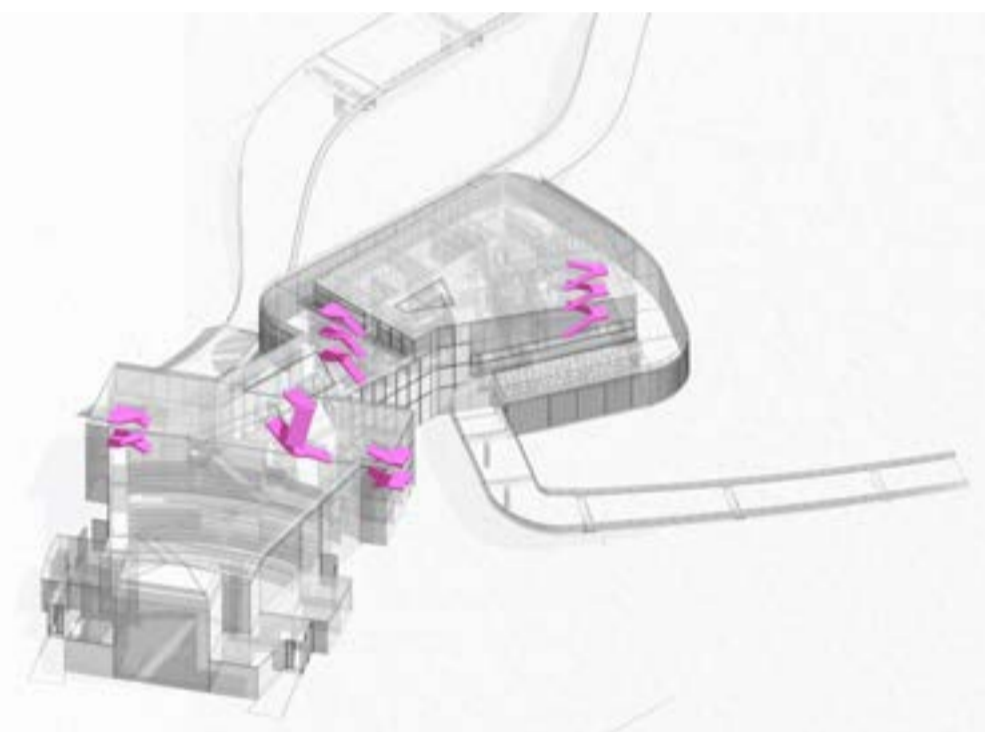
PARTI DIAGRAMS



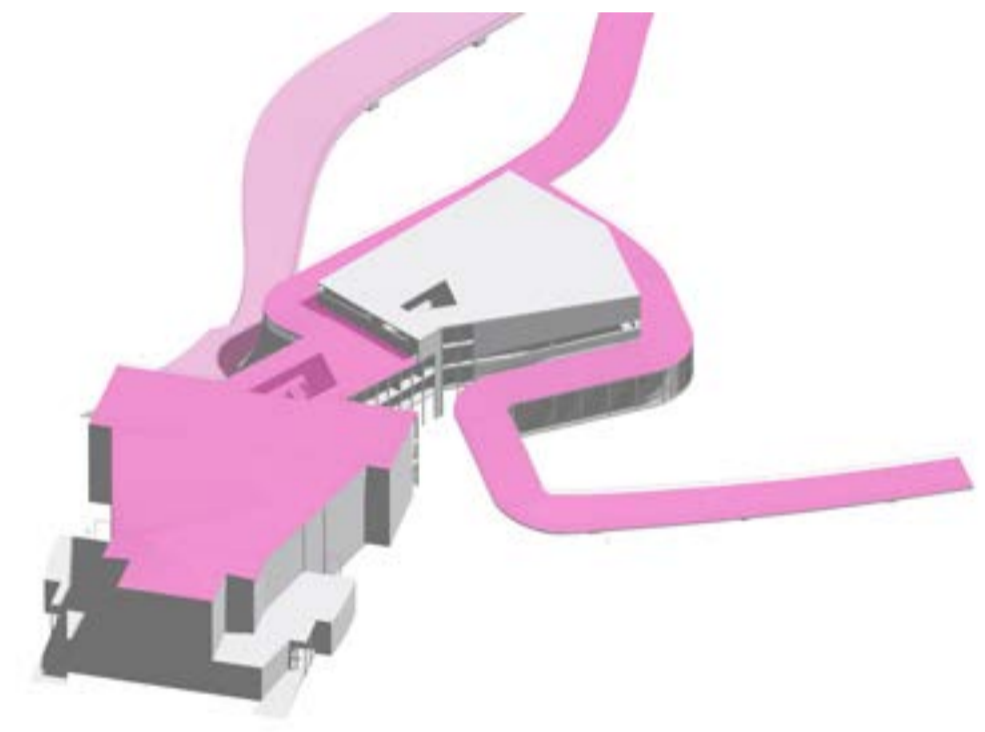
GLAZED FACADES



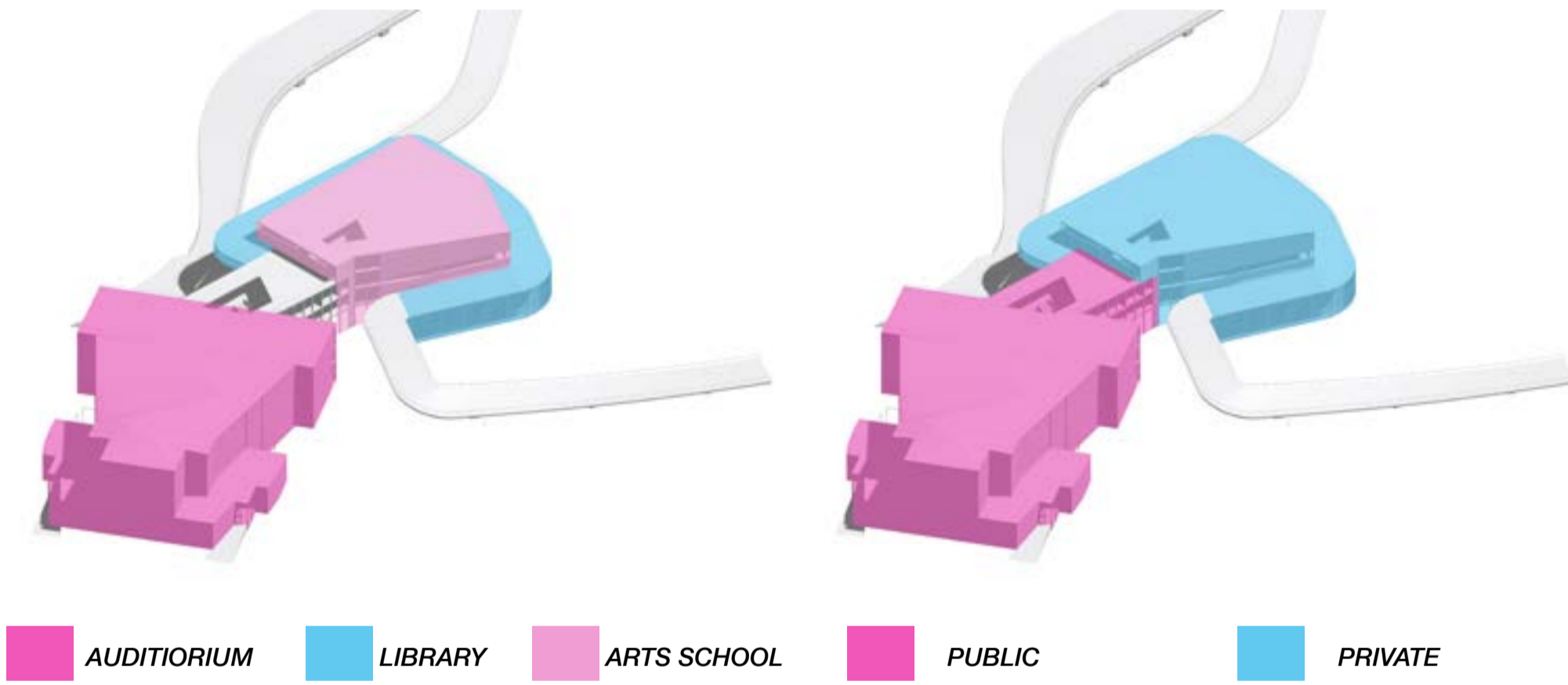
ATRIUMS

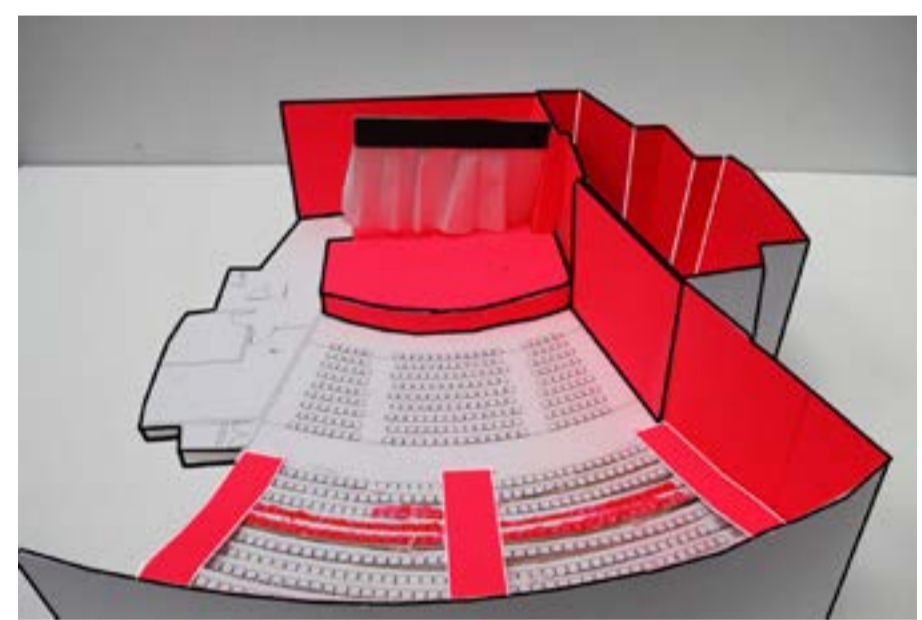
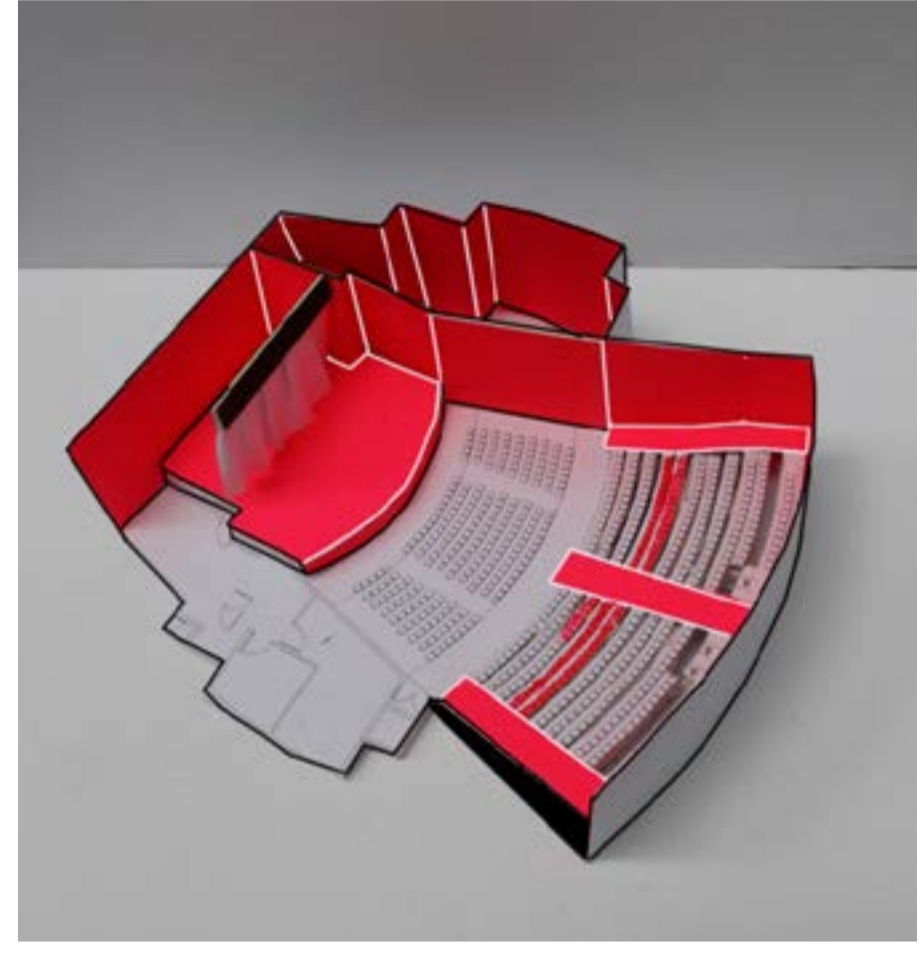
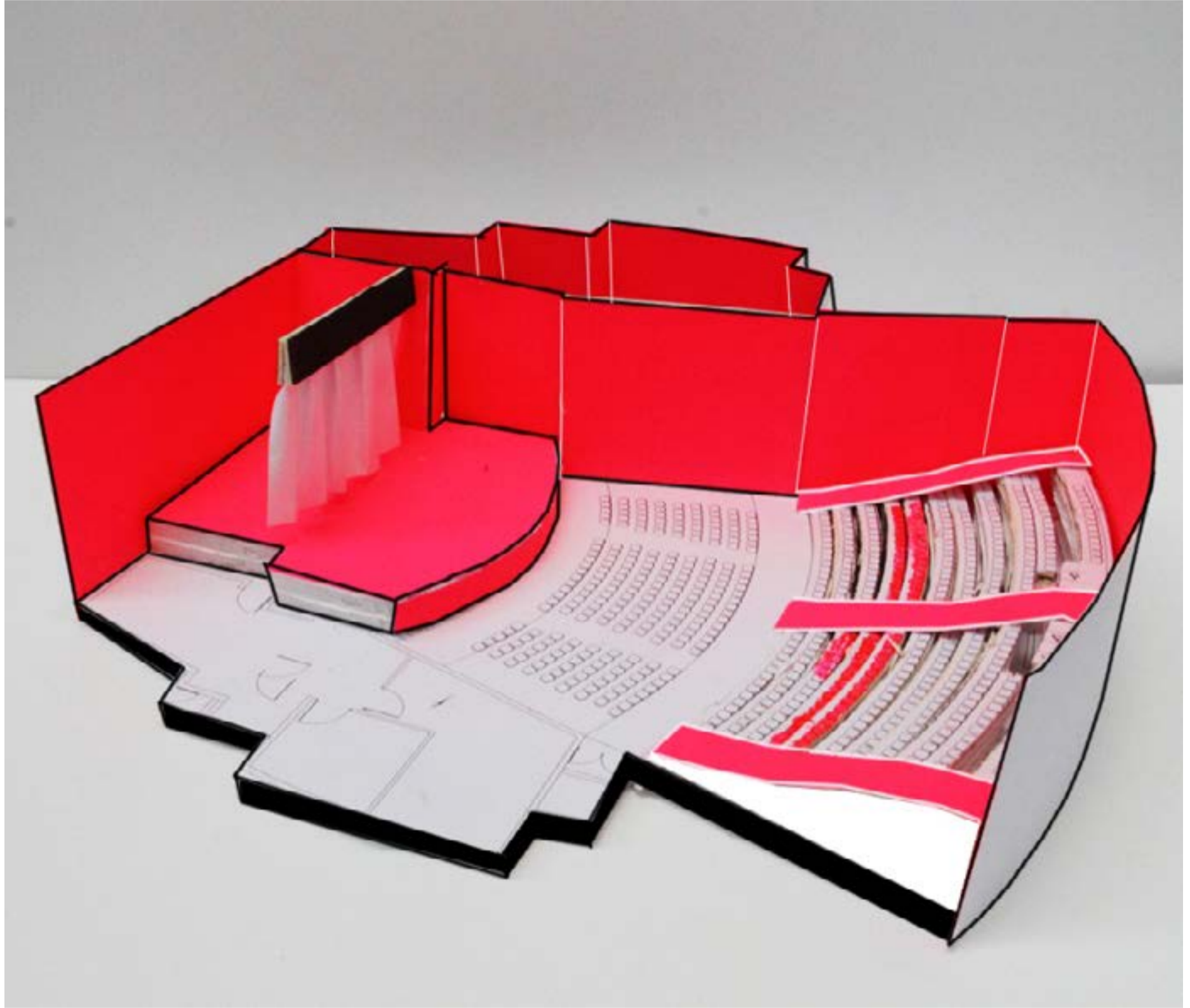


INTERIOR CIRCULATION

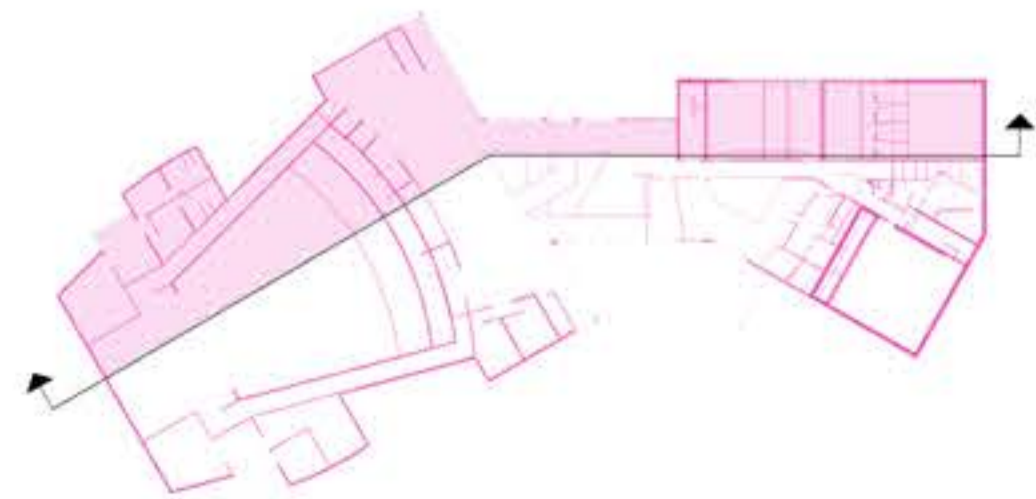
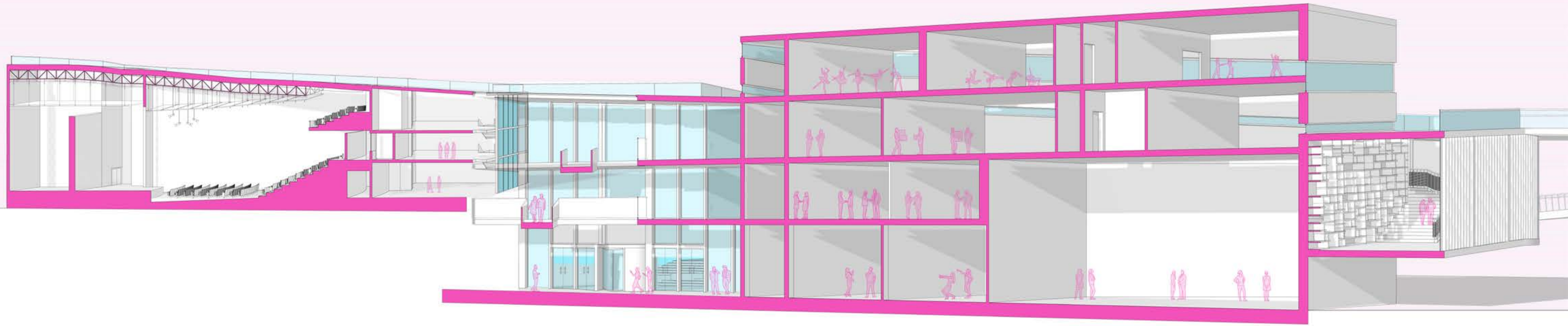


EXTERIOR CIRCULATION





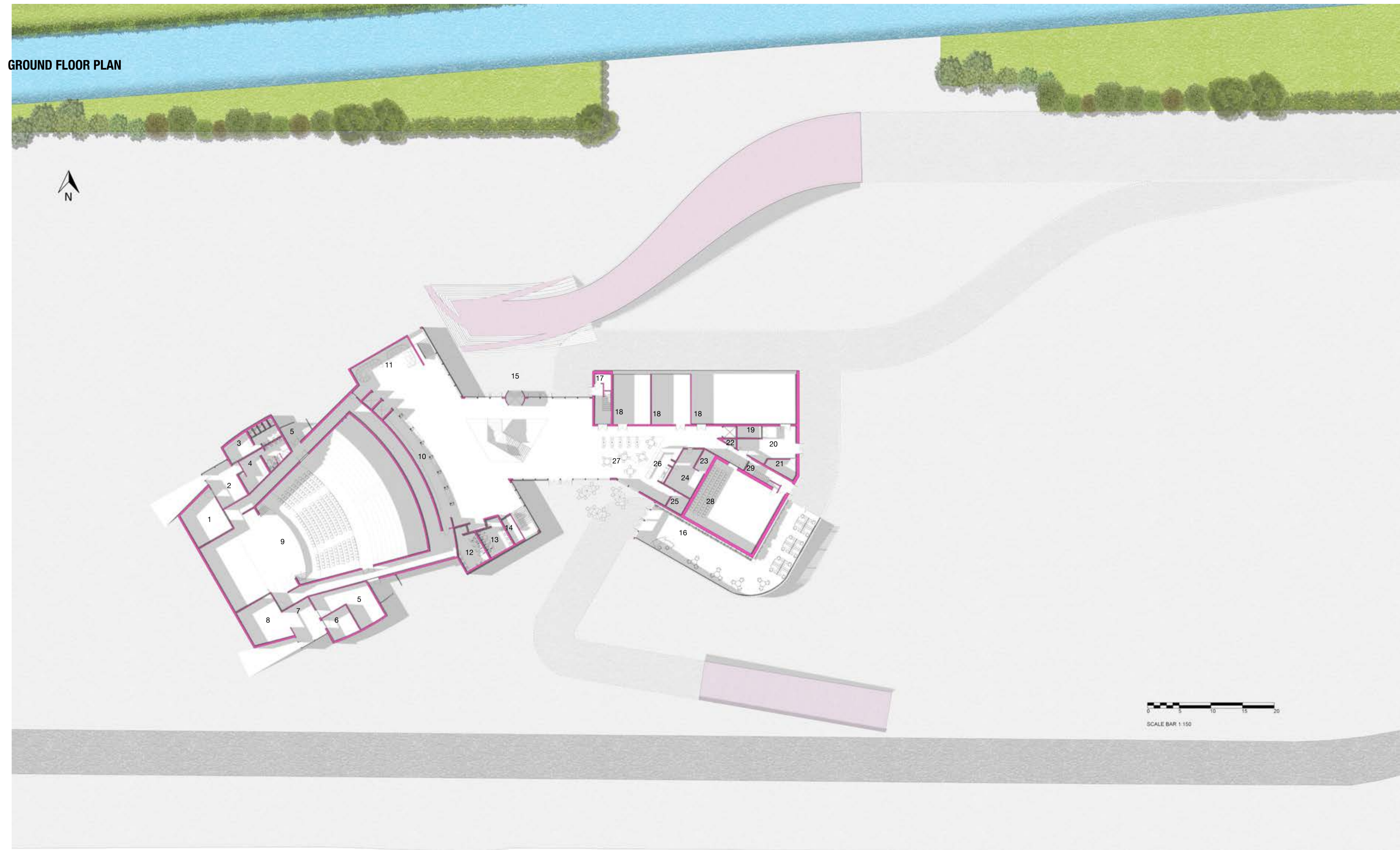
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GROUND FLOOR PLAN

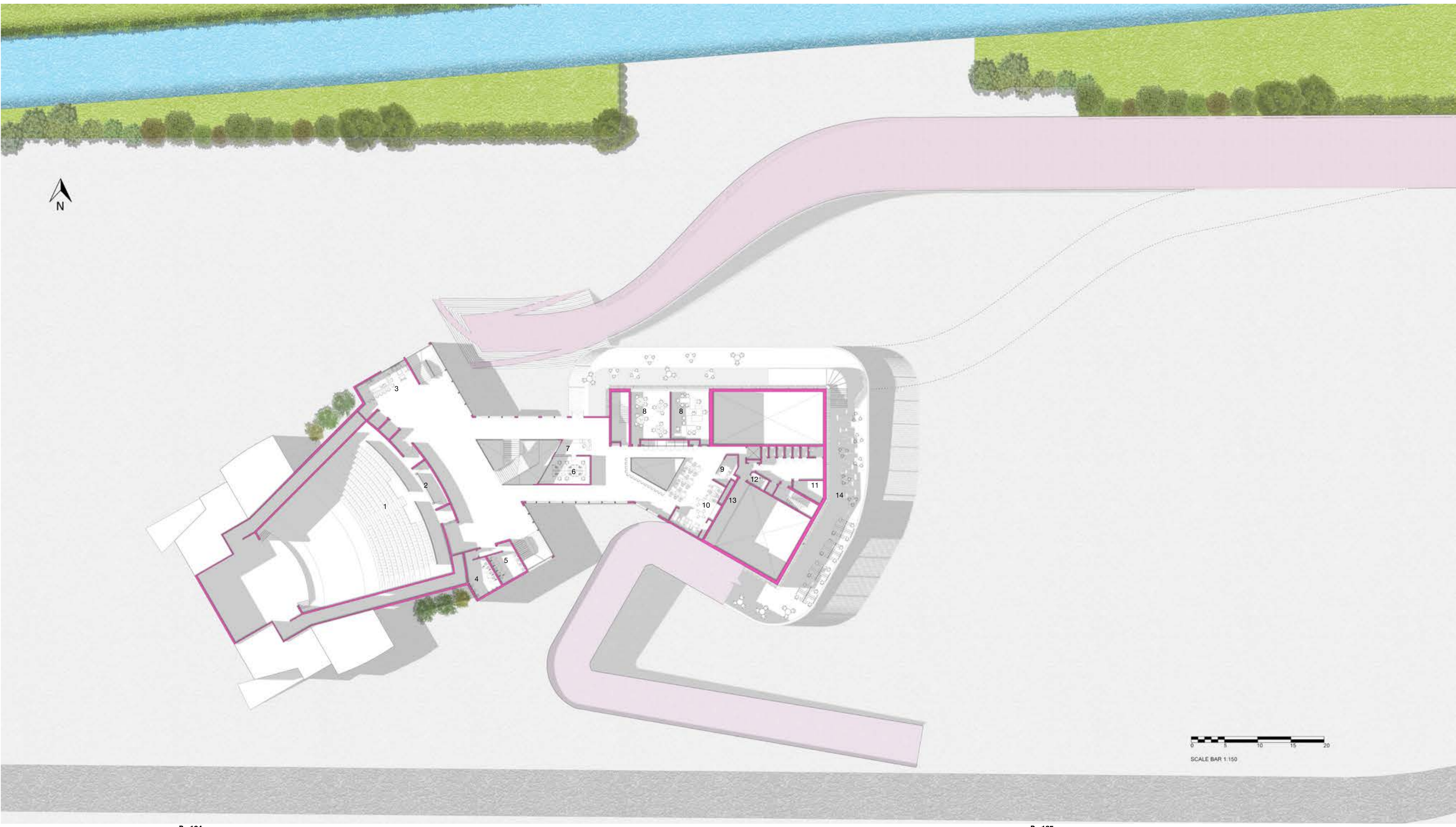
- Key
1. Wardrobe
 2. Green Room (Waiting area)
 3. Female Changing Room
 4. Male Changing Room
 5. Emergency Exit
 6. Rehearsal Room
 7. Recording & Broadcasting Room
 8. Stage Furniture Store
 9. Stage
 10. Box Office
 11. Lounge
 12. Male Toilets
 13. Female Toilets
 14. Cleaner's Store
 15. Main Entrance
 16. Library
 17. AV Store
 18. Art Gallery
 19. Art Gallery Store
 20. Art Gallery Workshop
 21. Changing Room
 22. Store
 23. Cold Store
 24. Kitchen
 25. Electric Switch Room
 26. Bar/ Server Area
 27. Cafe
 28. Performance Studio
 29. Store

GROUND FLOOR PLAN



FIRST FLOOR PLAN

- Key*
- 1. Upper Auditorium Seating
 - 2. Control Room
 - 3. Bar
 - 4. Male Toilets
 - 5. Female Toilets
 - 6. Executive Development Office
 - 7. Reception
 - 8. Executive Development Seminar Room
 - 9. Quiet Meeting Room
 - 10. Executive Development Breakout
 - 11. FM Office
 - 12. Kitchenette
 - 13. Balcony
 - 14. Library



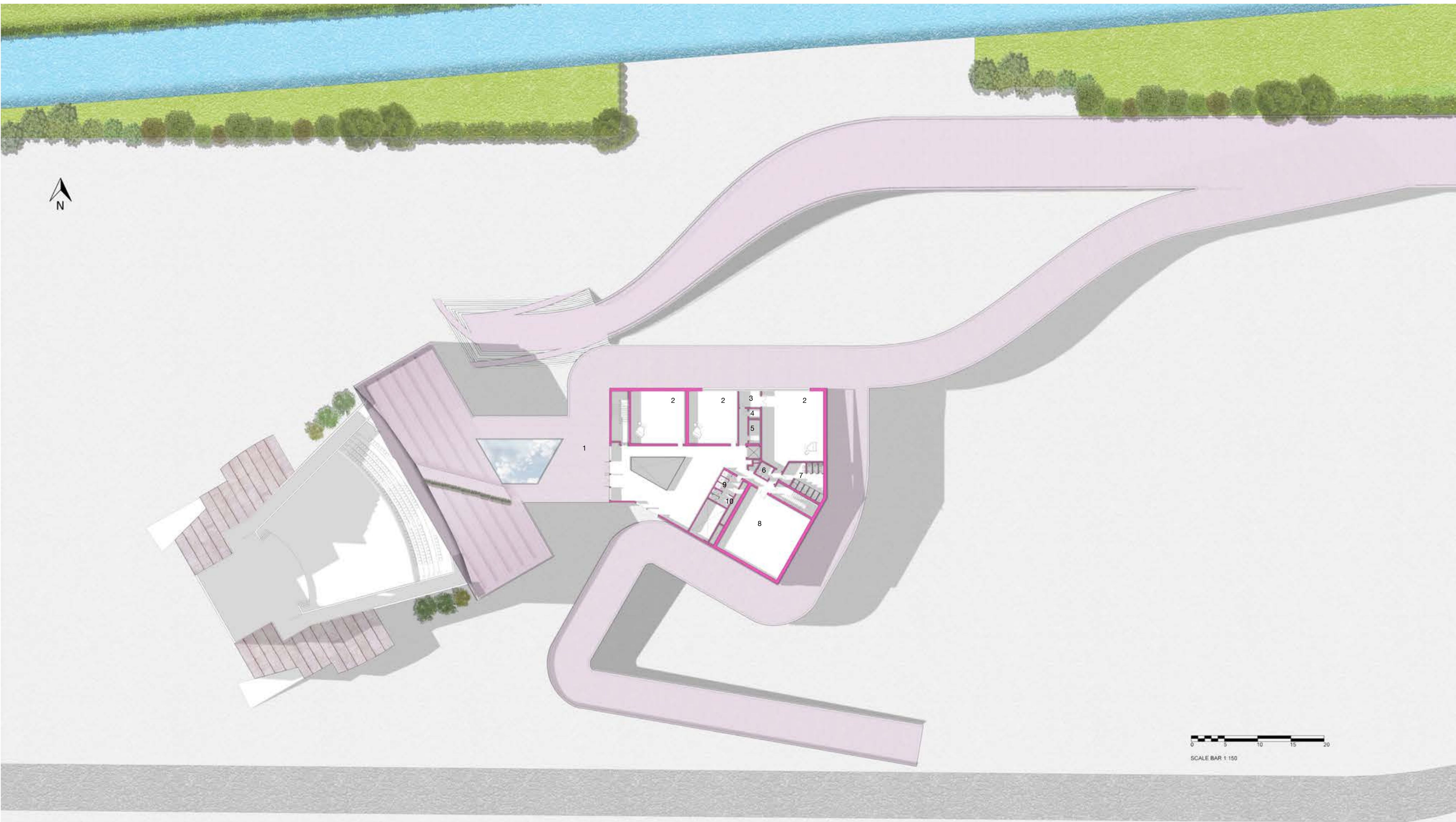
SECOND FLOOR PLAN

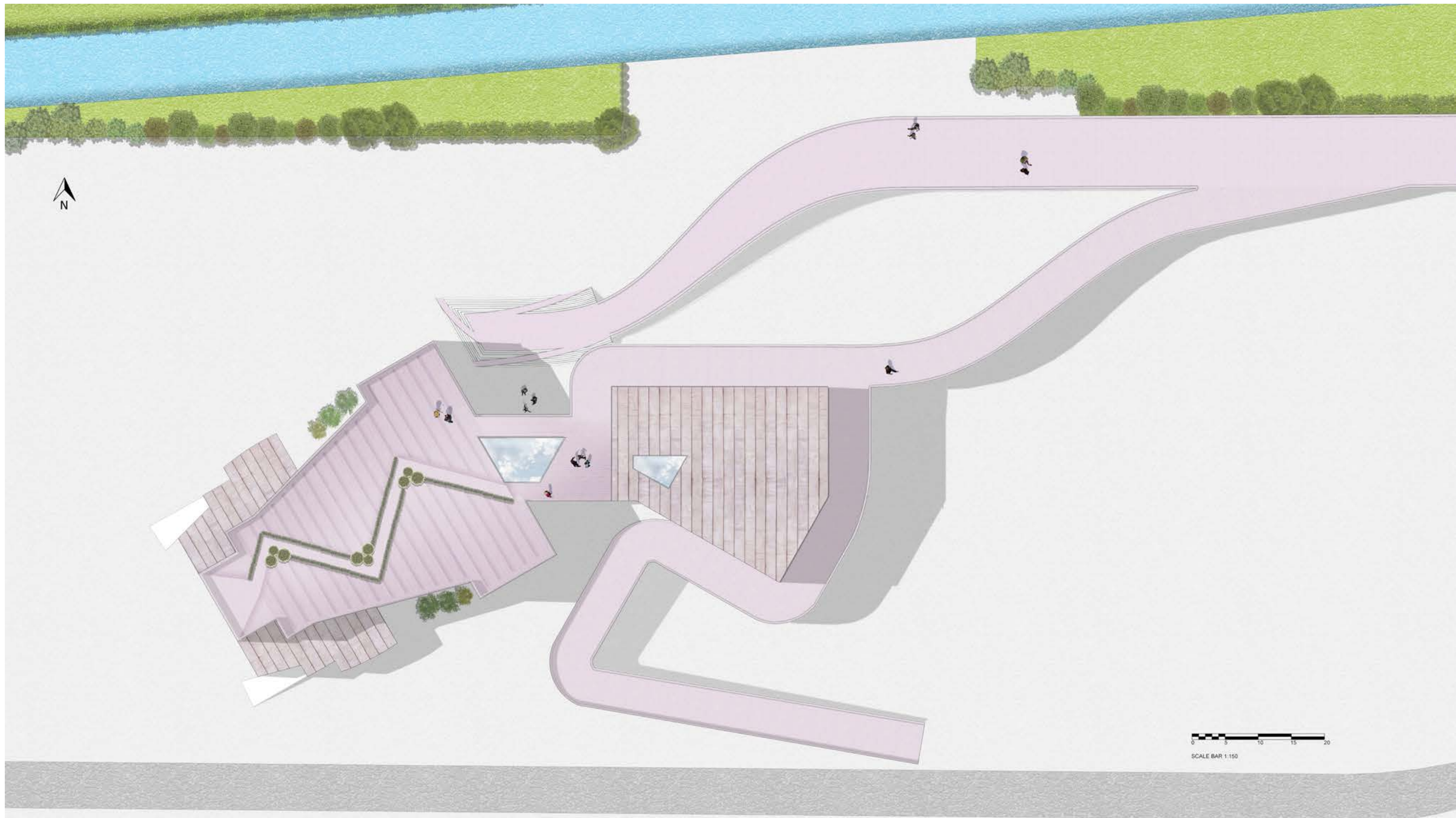
- Key
- 1. Auditorium Balcony Seating
 - 2. Bar
 - 3. Male Toilets
 - 4. Female Toilets
 - 5. Visual Arts Studio
 - 6. Lobby
 - 7. Music Practice Rooms
 - 8. Music Studio
 - 9. Music Practice Choir
 - 10. Amplified Music Practice
 - 11. Ensemble Rehearsal
 - 12. Meeting Space
 - 13. Chair Store
 - 14. Instrument Store
 - 15. Store
 - 16. Kitchenette
 - 17. Office
 - 18. Director's Office



THIRD FLOOR PLAN

- Key
- 1. Roof Terrace
 - 2. Dance Studio
 - 3. Store
 - 4. AV Store
 - 5. Coms Rooms
 - 6. Accessible WC/ Changing Room
 - 7. Female Changing Room
 - 8. Plant Room
 - 9. Male Changing Room
 - 10. Cleaners's Store

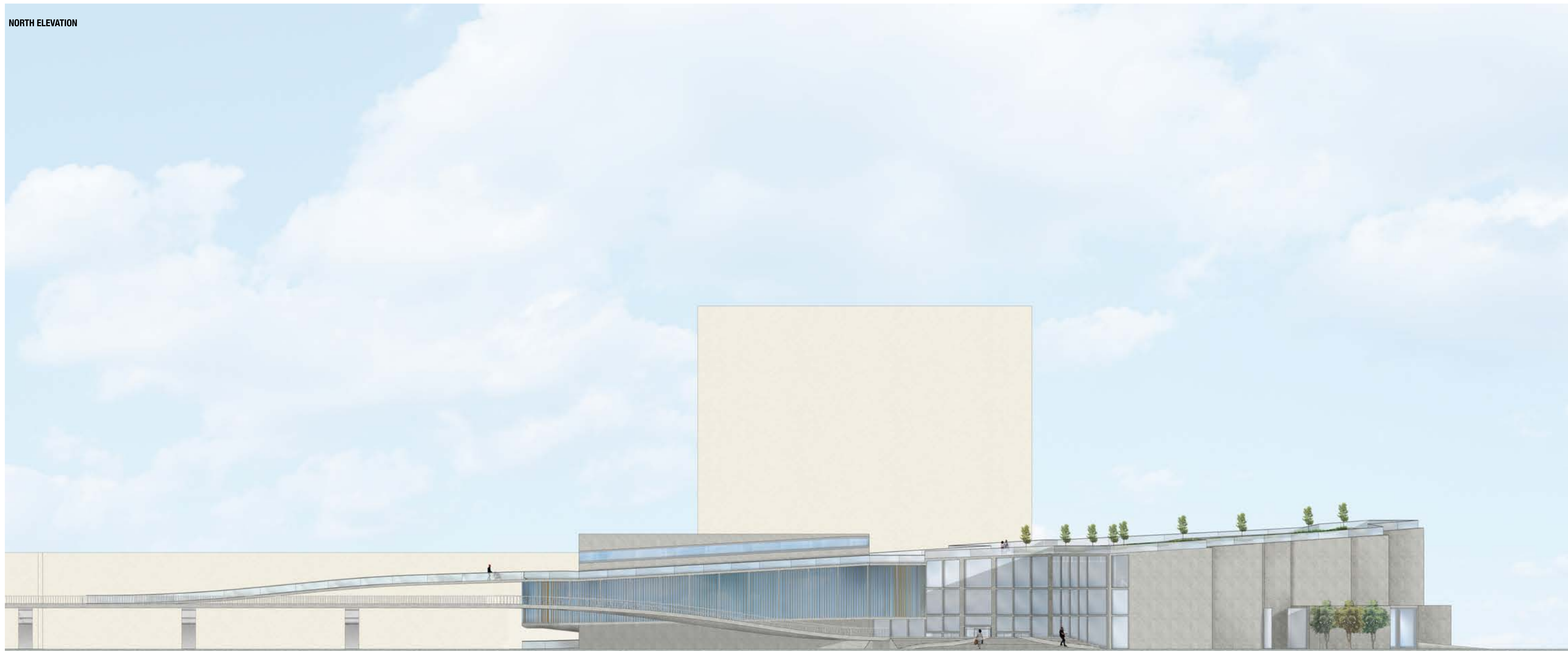




EXTERIOR VIEWS

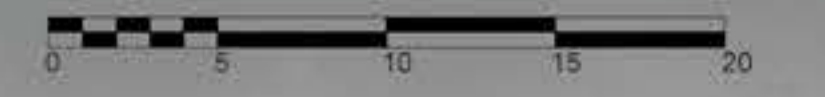
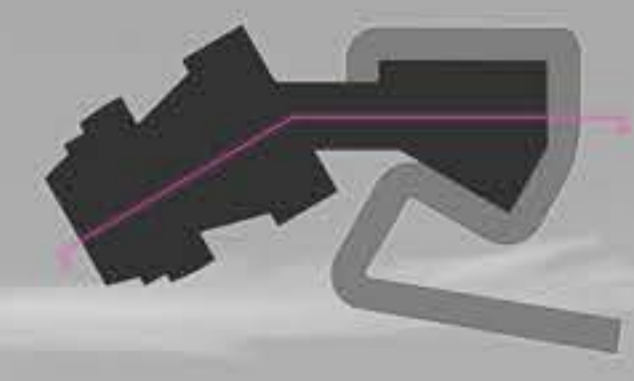


NORTH ELEVATION





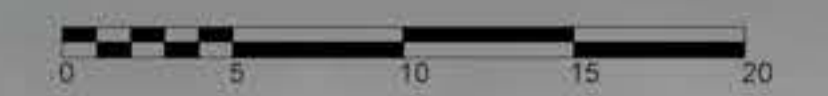
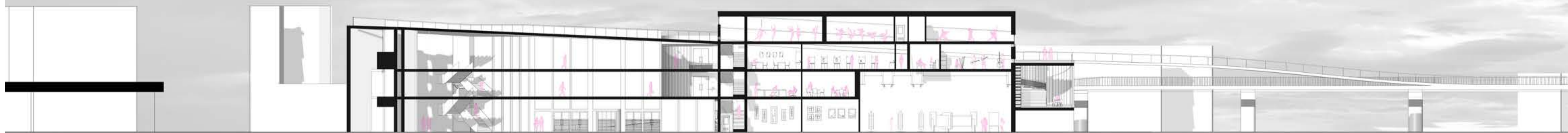
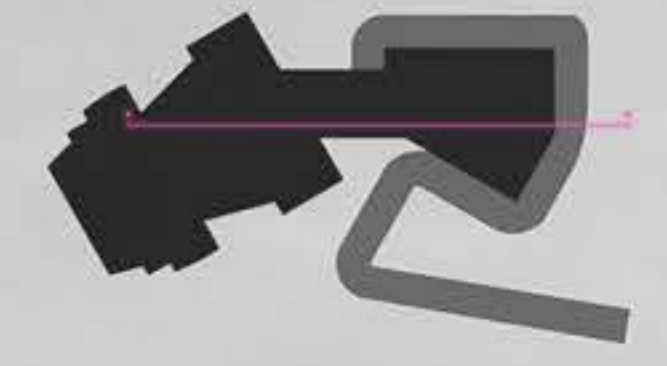
SECTION A-A



SECTION B-B



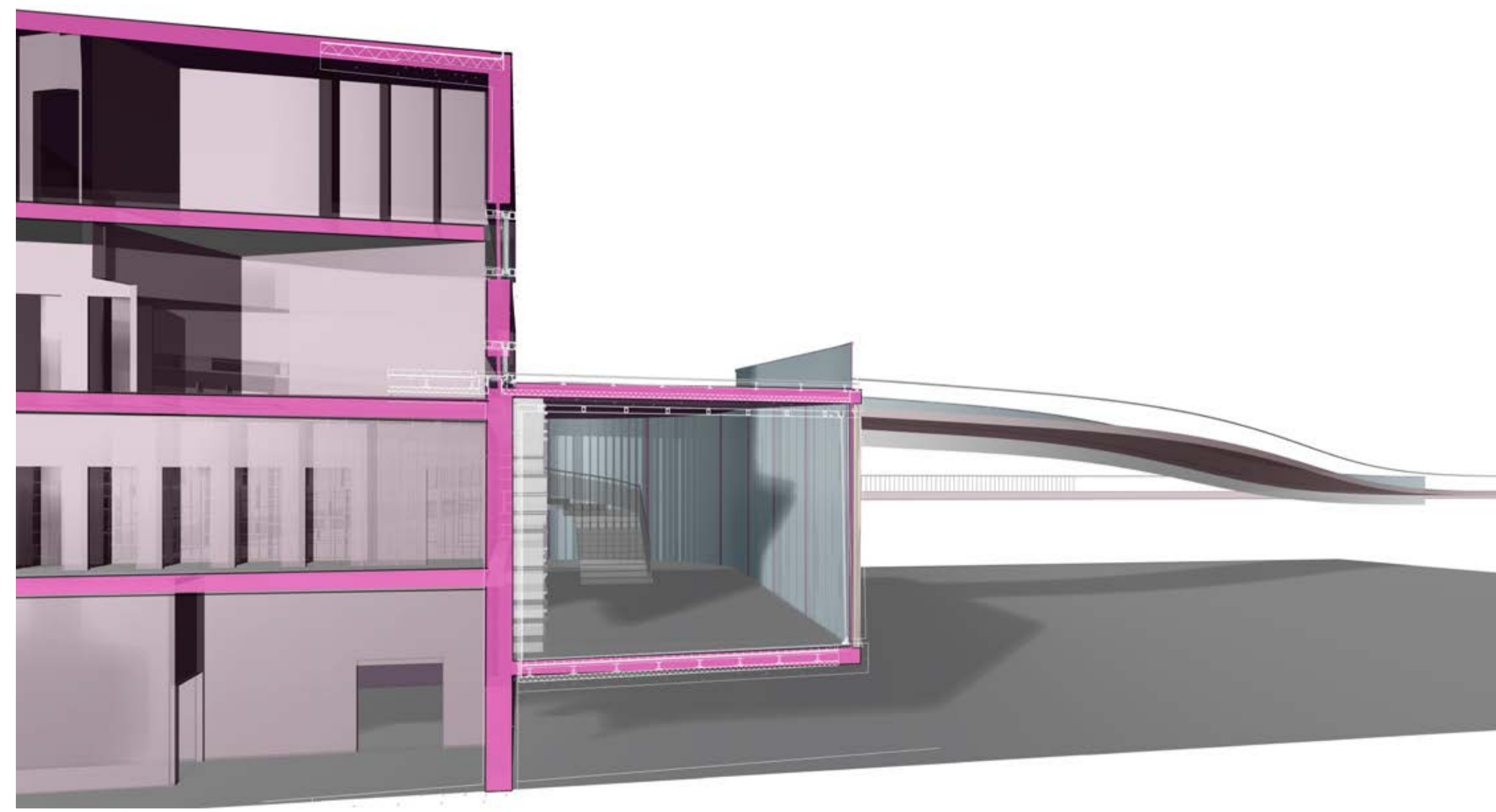
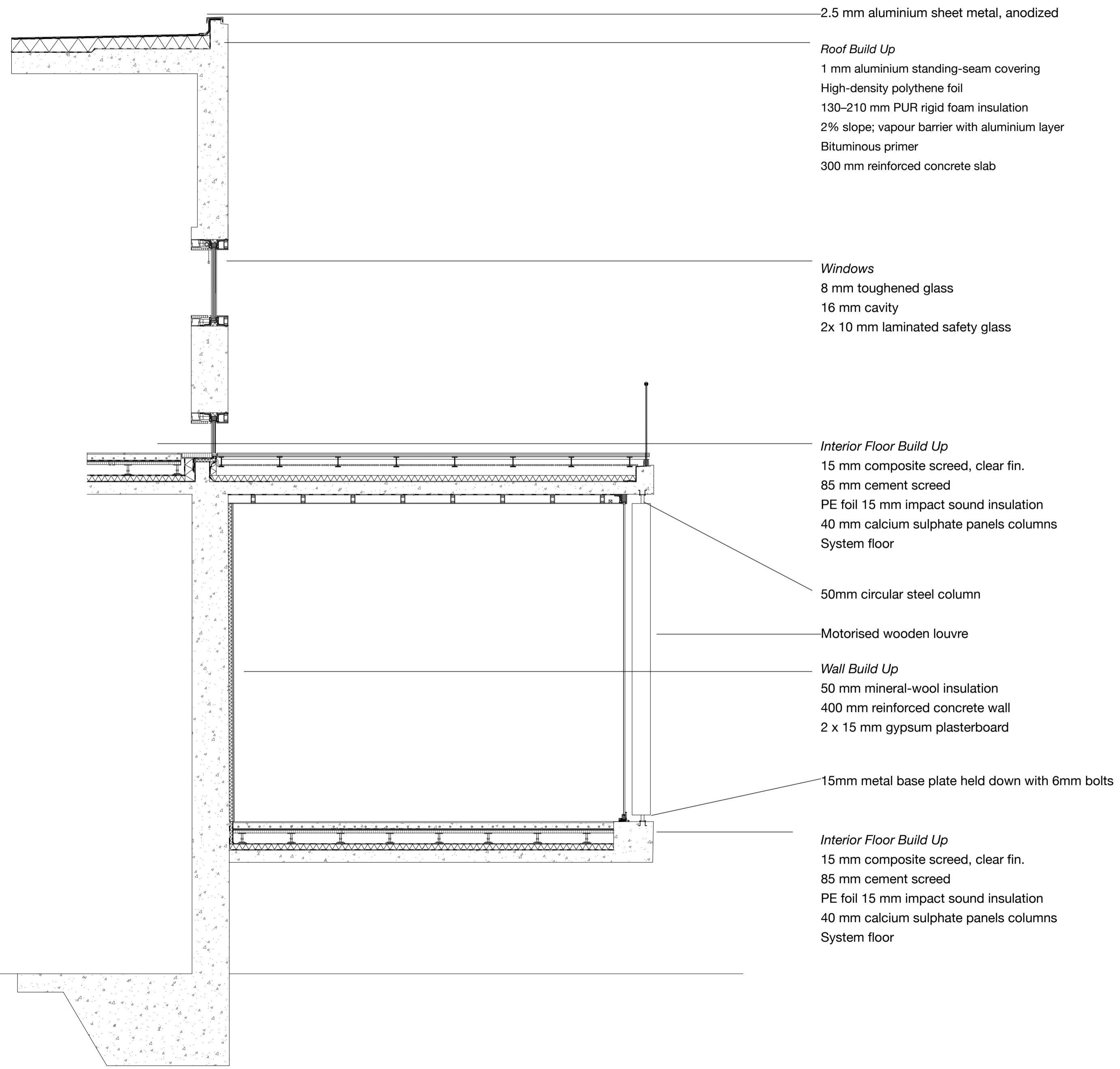
SECTION C-C





INTERIOR LIBRARY VIEW





ENVIRONMENTAL STRATEGY

The environmental strategy is fully integrated with the scheme resulting in a low energy and sustainable building. With regards to this, the building is separated into two zones which are each treated as individual elements.

The arts school with visual, musical and performance art studios is a cool unheated space as there is a lot of movement in these spaces. In contrast, the auditorium is made to be thermally comfortable for the audience to sit comfortably through shows.

Orientation

The building orientation is based on the path of the sun. This allows northern daylight to flood into the building while the solar panels embedded to the glazing on the south facade shields the interiors from the sun.

Facades

Each facade has been designed according to its orientation and purpose. Louvres on the glazed facade of the library that wraps round the North, East and South of the building are designed according to sun angles and can be rotated to provide less or more shading for the library, reducing solar heat gain.

Solar panels on the south facade provide sustainable energy to be used in the building.

The glazed atrium on the north facade allows plenty of daylight in. A thicker glass is used in order to reduce noise pollution from the A10 motorway and train lines.

Energy Resuse

The atrium is a buffer between the internal spaces and the external environment. Excess ventilation air from the studios and workspaces is reused to air condition the atrium space.

Rainwater resuse

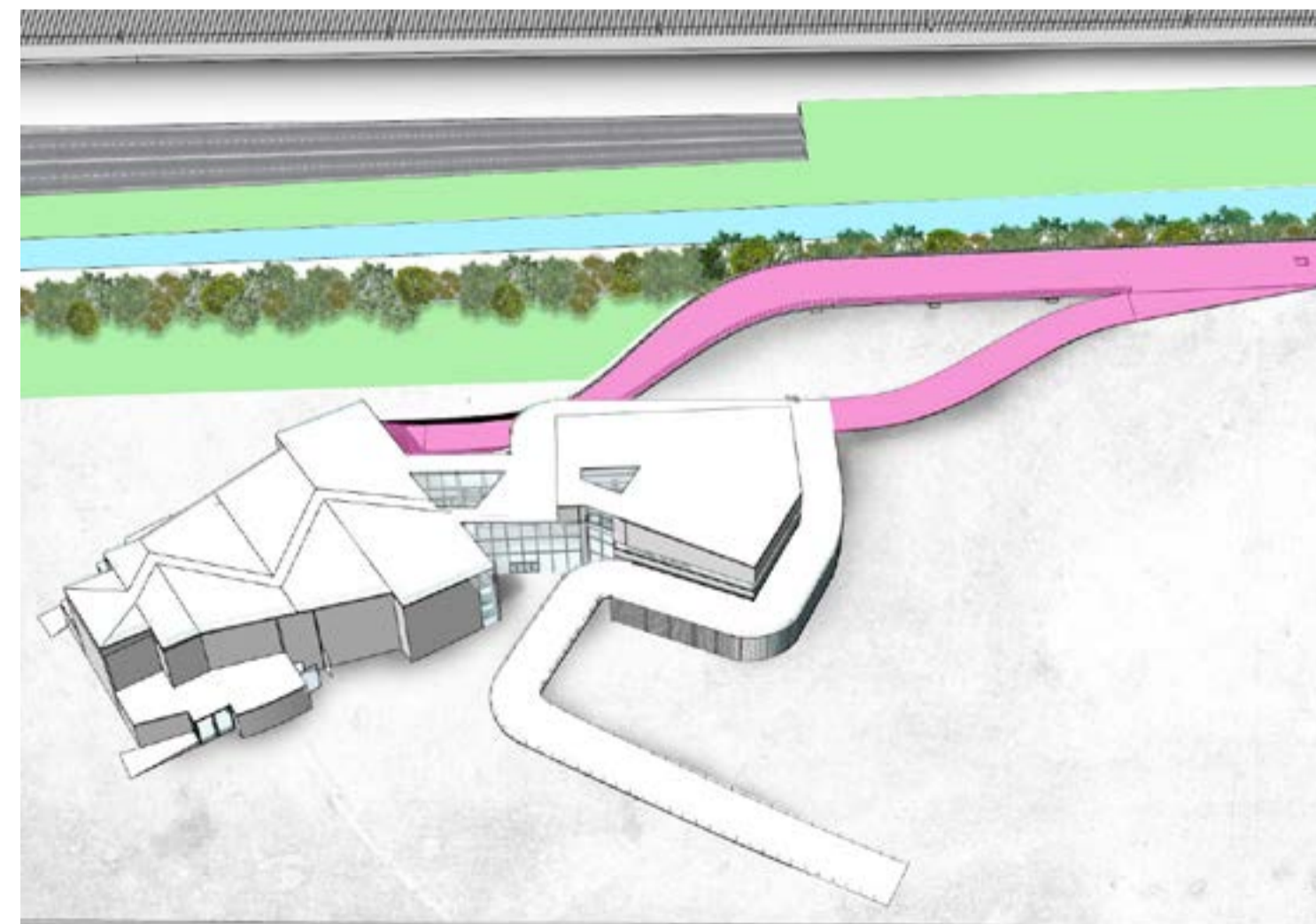
Rainwater is collected on the roof, and is reused to flush toilets as well as irrigate the planting on the roof and well as surrounding green spaces.

Green barrier

The green space separates the building from the motorway on the North side, acts as a buffer. In addition, it is an ecological corridor, allowing animals and insects to cross the site safely.

Transport

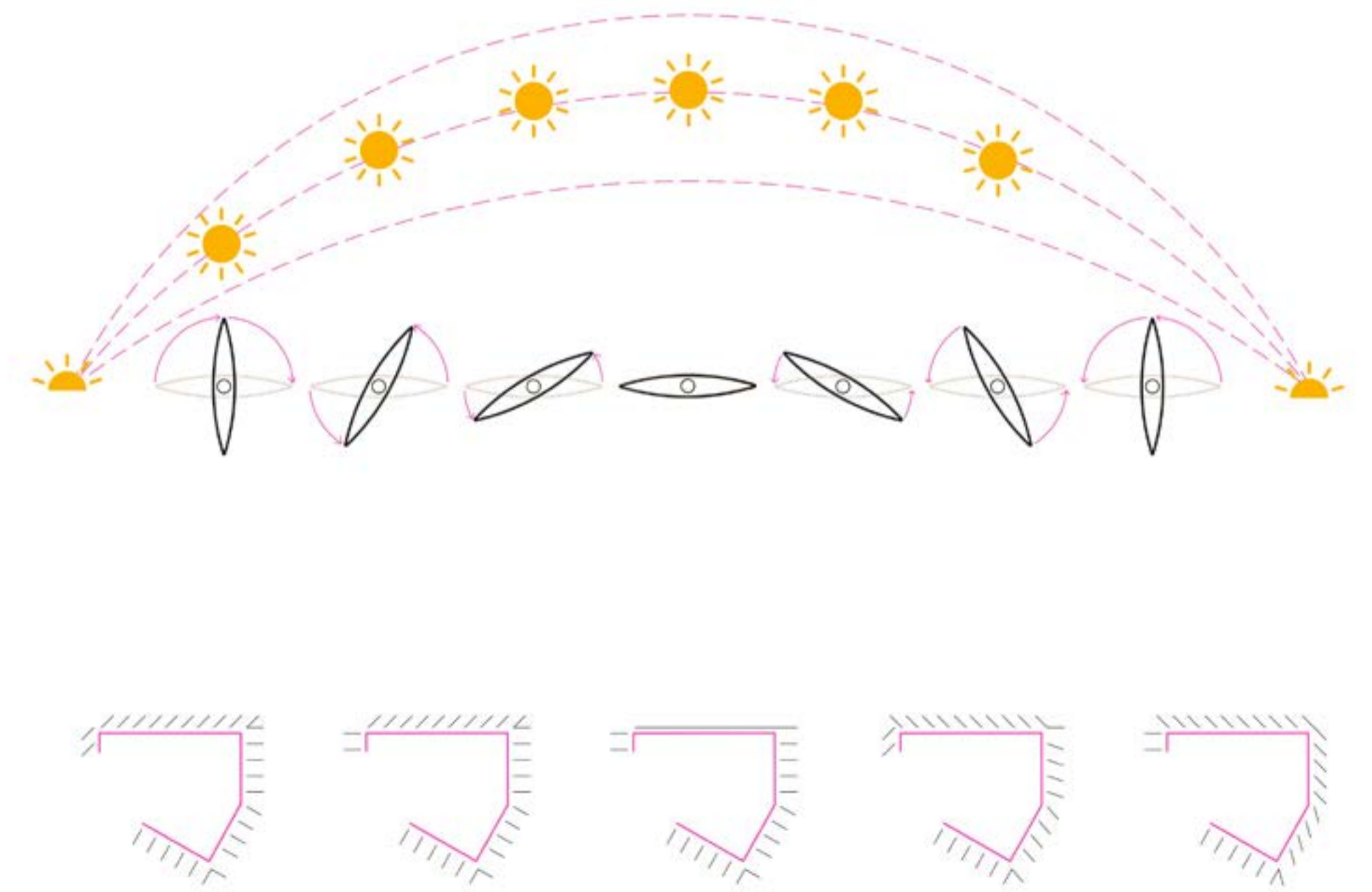
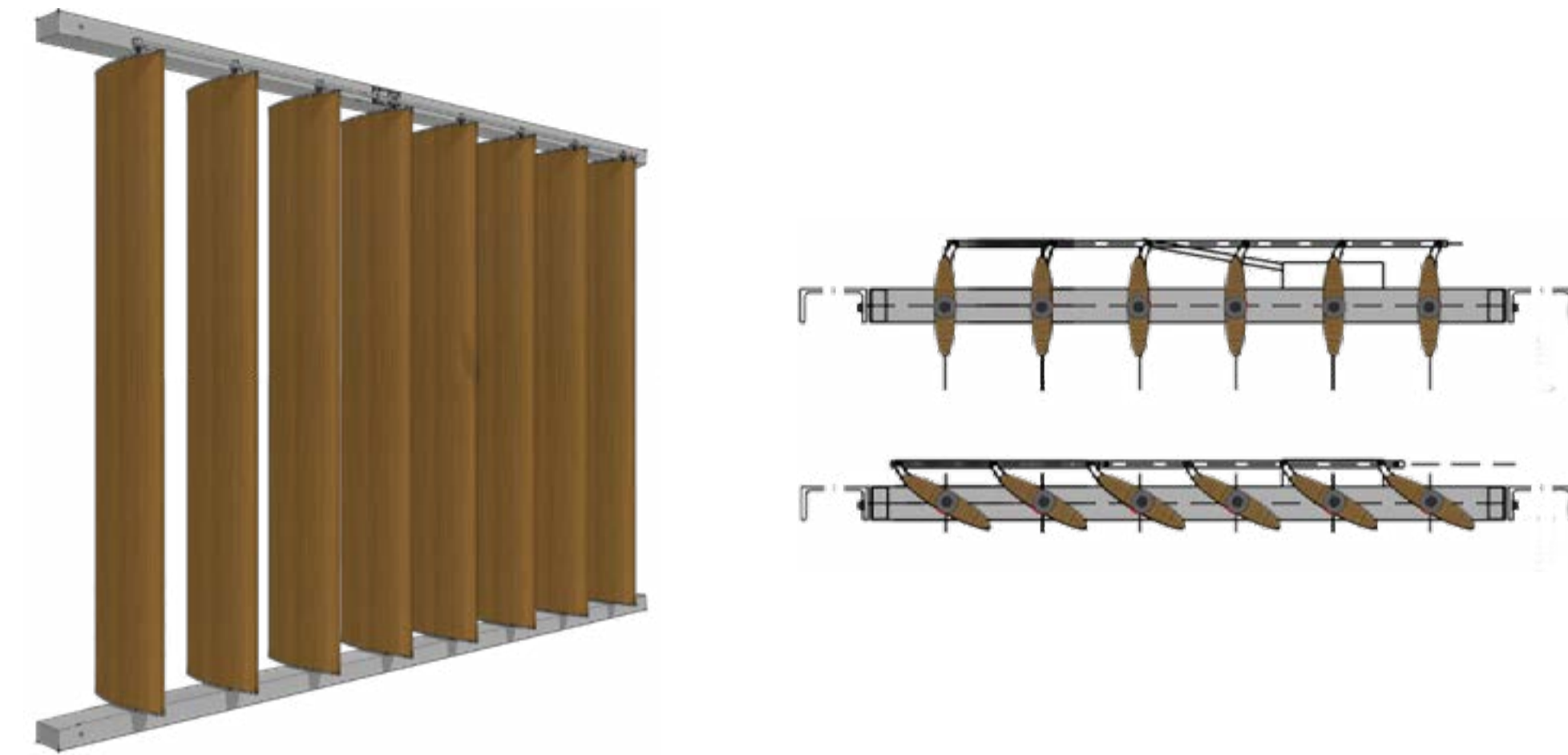
The pedestrian bridge that connects the building to the rest of Zuidas, encourages pedestrian traffic and reduces the number of visitors arriving by car.



LOUVRES ON LIBRARY FACADE

The wooden motorised louvre system along the length of the library facade, allow the blade to be adjusted with the flick of a switch. Alternatively the blades can be set to a predetermined programme and fully automated to maintain light and shade levels.

The louvres provide shade during the day while still allowing cross breezes to flow through the openings in the glazing. The blades can be tilted to the appropriate angle to regulate natural sunlight. They can be fully closed at night for privacy and security.



WINTER

All rooms in the building have adjustable underfloor heating to maintain optimal thermal comfort levels.

The scheme is divided into two distinctive climate zones.

Auditorium

The highly insulated walls will keep the space warm and comfortable in the cooler months. Therefore the ventilation system under the seating will provide warm fresh air.

Studio Spaces and Library

The high activity levels in these spaces will create some thermal gains, however, a heat recovery system is able to provide heating when necessary.

SUMMER

The building is predominantly naturally ventilated through the louvres in two skylights, that operate on a rotary motor, above the atrium. In addition, the skylights are triple glazed to reduce solar gains. However, there is a mechanical option for warmer months or when the stack effect is not cooling the building sufficiently. The surrounding canal is used as a heat sink for deep water source cooling the rooms when necessary.

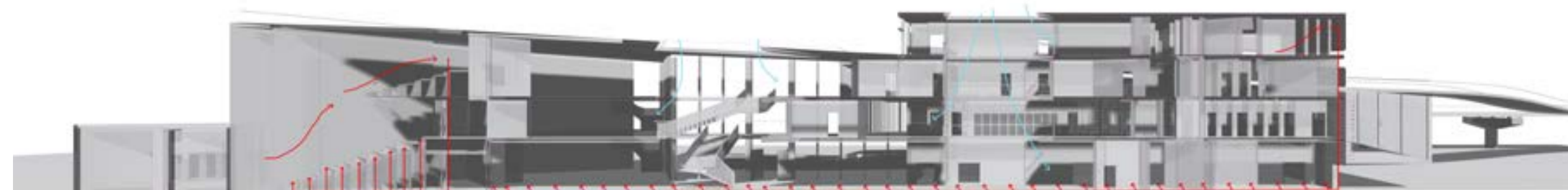
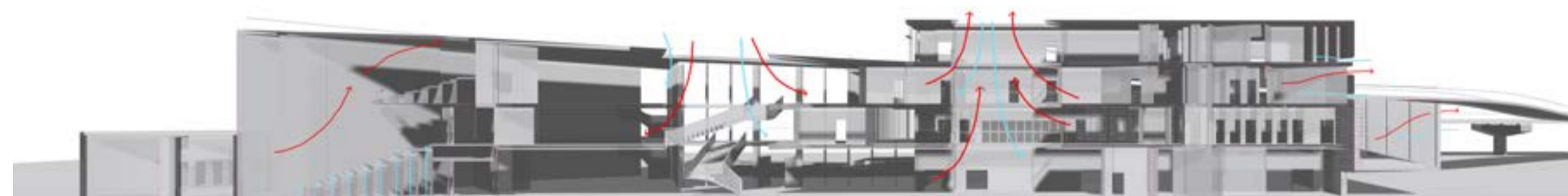
The scheme is divided into two distinctive climate zones.

Auditorium

Require a certain level of thermal comfort to suit the audience as well as the performers. The audience will be sitting still whereas the performers will be singing, dancing or performing for a couple hours at least. Therefore, the space is fully mechanically ventilated with air vents under the seating and the walls are highly insulated to maintain an optimum temperature.

Studio Spaces and Library

Due to the volume of people arriving and leaving as well as the high activity levels, these spaces need to be kept cool at all times. They are unheated interior spaces are naturally ventillted through openings in the facade.



For the most part the building is naturally lit by the two large atriums as well and glazing on the north facade.

Auditorium:

There is minimal glazing on the facades of the auditorium as the lighting in the main space must be mechanically controlled to appropriately suit the requirements of the performance on stage. However, the supporting rooms such as the green room and recording room have small windows allowing natural light in.

North facade:

The north facade is fully glazed with a thickened glass that reduces the noise levels from the motorway entering the building. This provides plenty of northern daylight into the building.

South facade:

While the south facade is also glazed, the panels of glass are mounted with solar panels that not only provide solar shading, but also generate electricity to be used in the building.

Library:

The library is a fully glazed space that wraps around the main building, however the mechanically operated louvres allow the amount of daylight entering the building to be controlled depending on the sun path.

Clerestory windows:

There are two windows, a tall one and a short one that wrap around the facade of the building, parallel to the roof of the library allowing daylight into the different studio spaces.

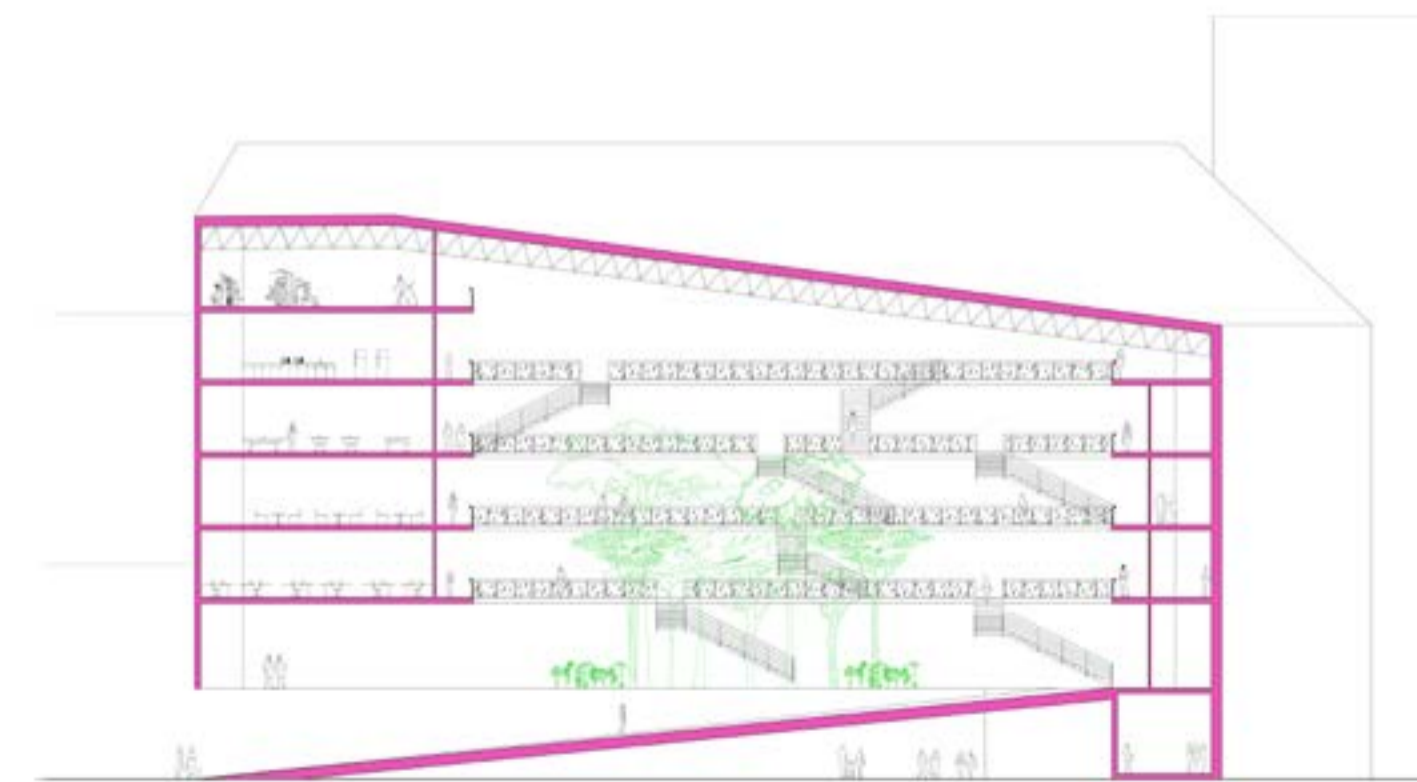
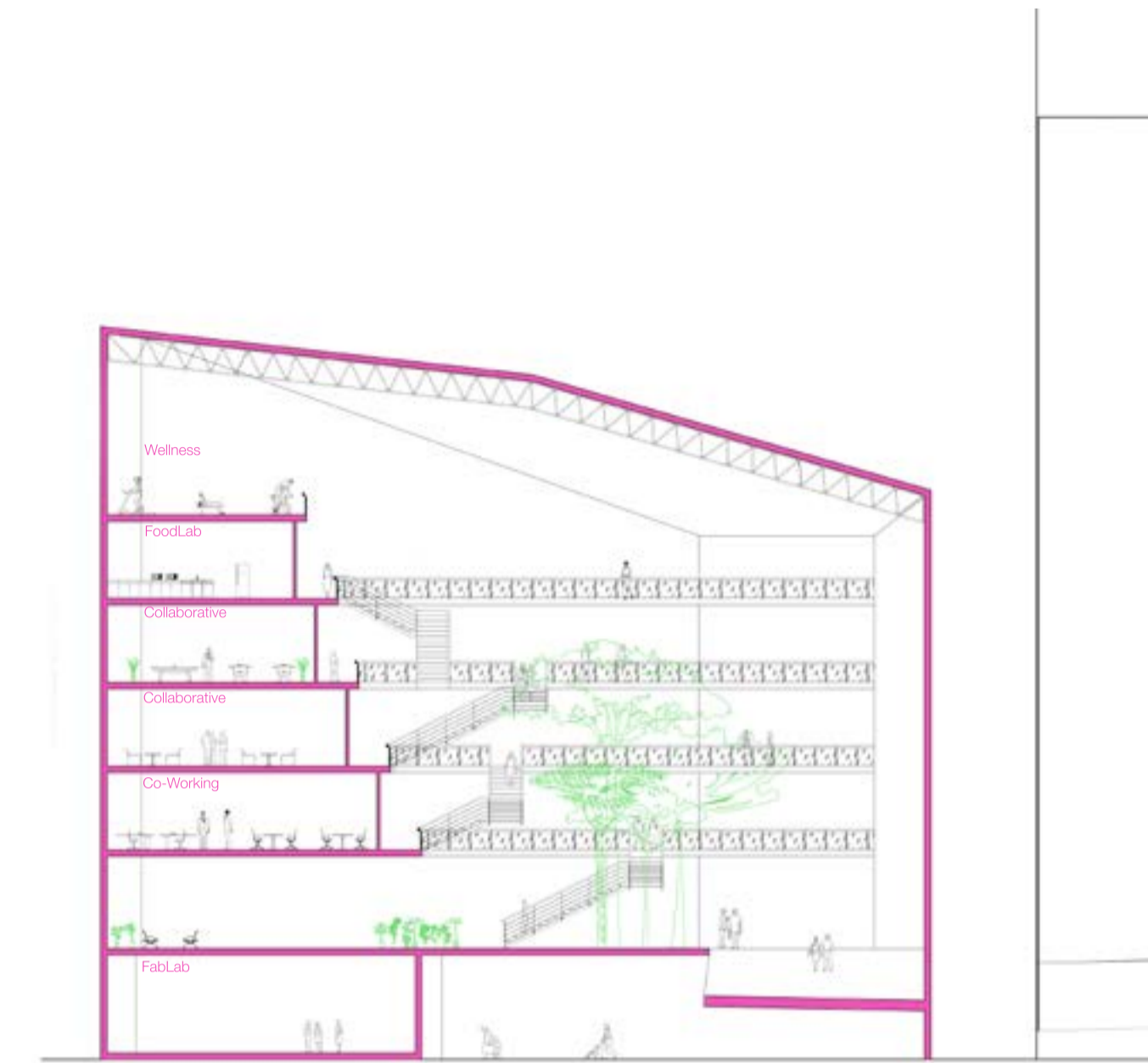
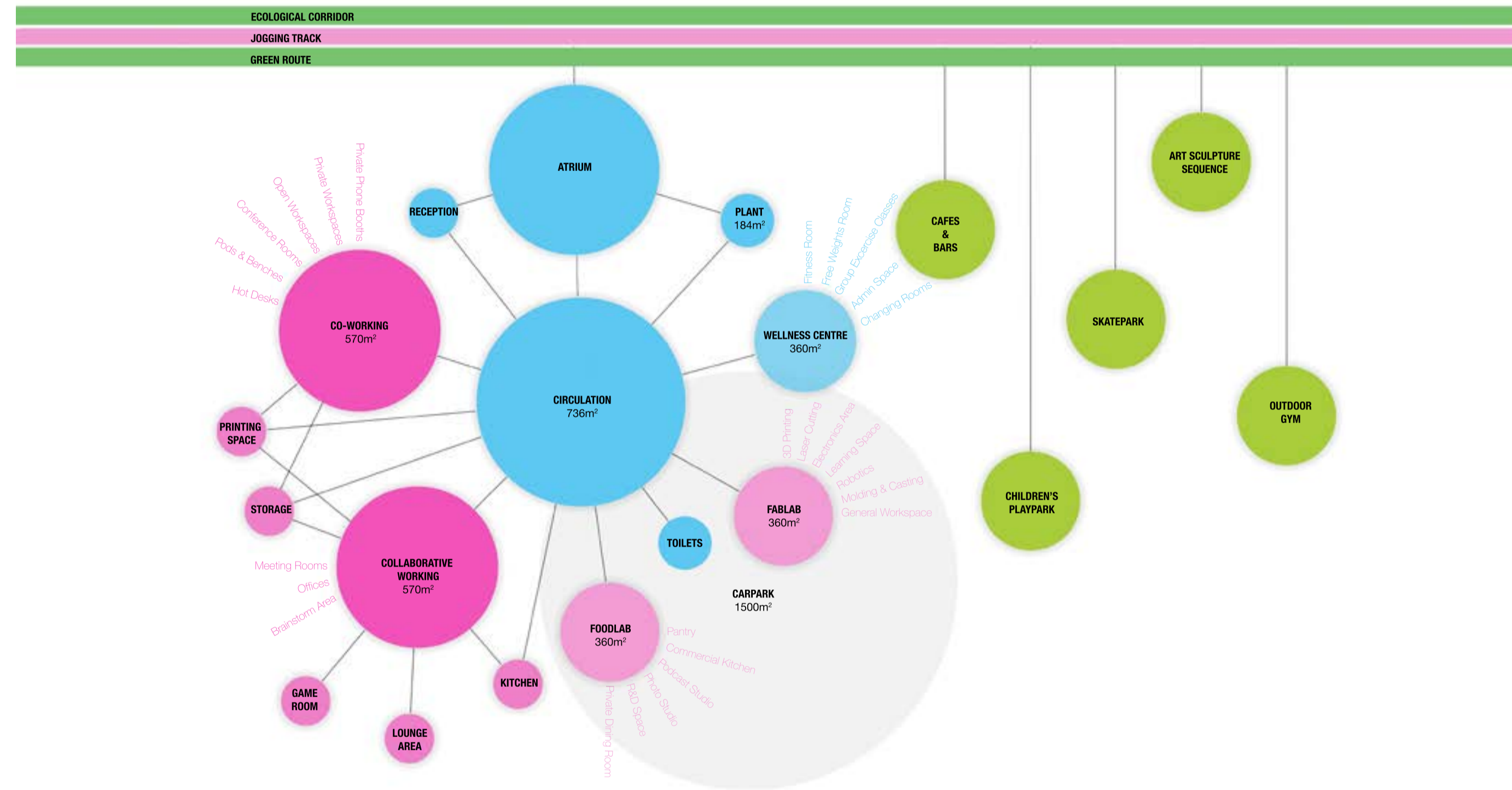




CHAPTER 10: Appendix

INITIAL DESIGN PROPOSAL

My initial research from semester one lead me to initially design a a coworking space, however after further thought and consideration of the feedback from this crit, I decided that a coworking space would end up being just another office building in Zuidas and I evolved away from this idea. These are the two sections I presented in the interim crit. I have clearly kept and carried forward some key concepts into my final design such as the atrium and incorporation of plants into the building.



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