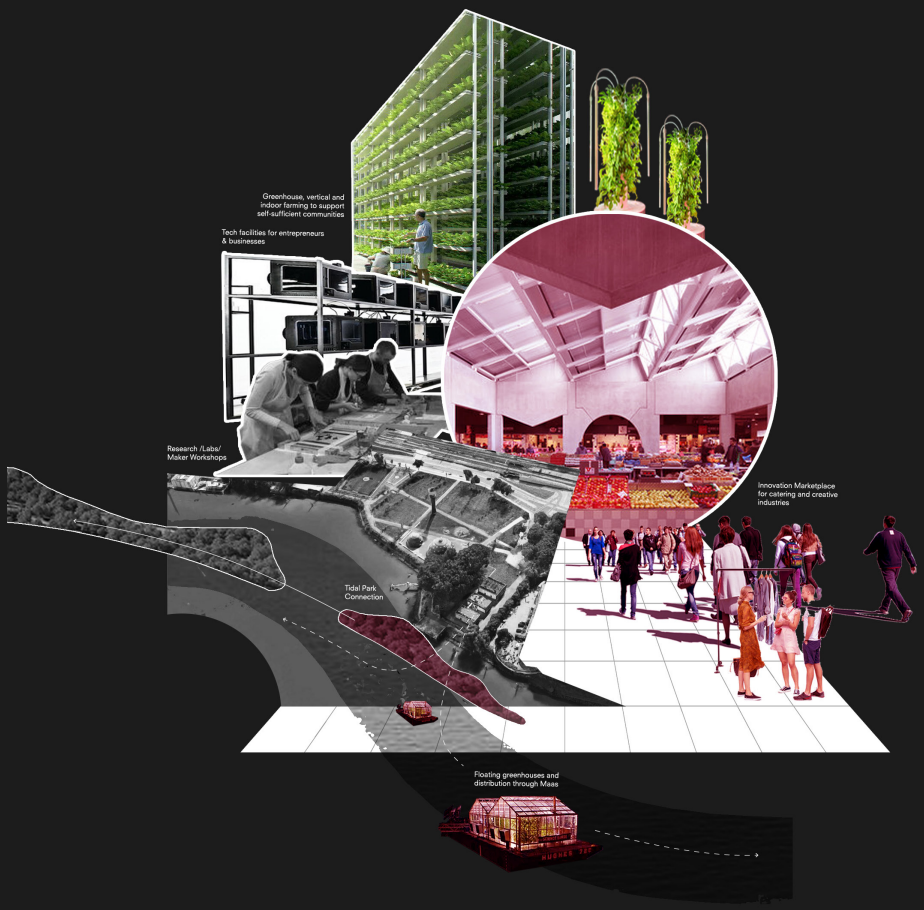


AR3A010 Research Plan

THE MIGRATION OF MARKETPLACE:

A PRODUCTIVE MARKETPLACE

Farian Anwar | 5125014

"HOW CAN THE **MARKETPLACE** BE **REIMAGINED** TO FACILITATE LOCAL **INNOVATION, PRODUCTION** AND **EXCHANGE,** WHILST PROMOTING SUSTAINABLE VALUES AND **SOCIAL COHESION?**"

Abstract

The marketplace has established itself, since the beginning of ancient trade, as an arena for economic, social and cultural exchange. Throughout history, markets have played an important role as the mediator in the trading of both globally and locally produced commodities. However, global logistics and consumption have highlighted the increased environmental pressure that consumer culture has placed on the world's resources. As Rotterdam shifts its focus to improving entrepreneurship through innovation and creating more sustainable local economies, this research investigates the potentials of "pro-sumerism" in creating more self-sufficient communities within the Feijenpoort site. The research further aims to address and revitalise deprived neighbourhoods, characterised by low employment, income and education. By investigating the "Migration of Marketplace", the article explores the potential for producers, innovators and entrepreneurs to coexist and thrive through the sharing economy. It proposes alternative programmes for "A Productive Marketplace", that promotes local industries such as catering and crafts by using innovation and technology as a catalyst. Moreover, it envisions the marketplace as a resource for Feijenpoort, offering entrepreneurial education and opportunities through collective and inclusive market spaces, encouraging local production and sustainable consumption.

*The author declares no conflict of interest

Front Cover:
Figure 1: *A Productive Marketplace Collage (Anwar, 2020)*

CONTENTS

A PRODUCTIVE MARKETPLACE

Reinterpreting the Market Typology as a tool for sustainable, productive opportunities

1 Introduction

Defining the "Migration of Ideas":

Migrated ideas are adopted and evolve continuously, allowing for concepts to both transform and influence new phenomena, in a recurring process over time. The origin of these ideas can change form and direction, as a reaction to external influences such as historic discoveries. Therefore, the "Migration of Ideas" can be described as a process of evolution, whereby social, cultural and political ideas are influenced by significant events or movements that shape society.

The concept of the "Marketplace" can be observed as a migrated idea, which has evolved into an urban spatial typology through notions of socio-cultural interactions and exchange. The term "market" can be defined as the regular gathering of people for the purchase and sale of provisions, livestock and other commodities, or as an arena in which commercial dealings occur (Market, 2020). Throughout Rotterdam's history, markets have been the main points of trade for centuries (CGR, 2020). Various market types exist within the city, each catering towards different lifestyle needs of its diverse demographic. They range from locally produced organic and craft markets, to permanent commercial architecture such as Rotterdam's Markthal, which depends largely on global imports. The Port of Rotterdam plays a significant role in international trade and facilitates the input of global products into local market supply chains. This has highlighted the challenges of sustainably managing our resources and the outcomes of our consumption. Research into Rotterdam's "Next Economy" has demonstrated the city's ambitions for a shift from the current model of "economic growth", towards a "transition to a sustainable macro-economy" (Pauli, 2012). Moreover, Rotterdam is emerging as an innovation capital for Europe with a large focus on technological interventions in agriculture and circular product creation, through the "Makers Movement". This further aligns with the Netherlands goals to achieve a circular economy by 2050 (Circular Economy Netherlands, 2016). Through exploring new approaches for sustainable production and consumption, the "Migration of Marketplace" aims to investigate how the market can allow for the creation of more transparent food and product chains whilst enabling self-sufficient local communities.

By researching the origins and function of the marketplace as a platform for exchange, the project seeks to understand how a new "migrated" market typology can offer sustainable economic growth for the deprived neighbourhoods within the research scope of the Feijenpoort site. The project identifies the prevalent industries on the site, including catering and crafts (Gemeente Rotterdam, 2020), and aims to establish how the recent trends towards urban agriculture, innovation and making within Rotterdam can impact the site and benefit its communities. It strives to minimise the ecological impacts of society and maximise localised production, providing inclusive entrepreneurial opportunities for the region. Existing research has already been carried out on the topic of the market and its impact on public space, income generation and urban renewal. Moreover, the advantages of local production and the consequences of 21st century consumption have further been researched in the global and regional context. This project aims to build upon and apply this research, addressing Rotterdam's current shift towards sustainable solutions to inform a new purpose for the Market. It investigates the intervention of revised functions for the traditional market typology, aiming to reimagine its potentials as a "Productive Marketplace" and resource for Feijenpoort.

2 Problem Statements

This chapter investigates the problems faced both by the Feijenpoort site and within a wider Rotterdam and Global scale. The outlined problem statements will further reinforce the projects need to impact and intervene within the given context, and to develop how the project can appropriately address the prevalent issues.

2.1 Sustainability and Consumption (Global to City Scale)

Globalisation has allowed for the world to be more connected than ever before. Global imports and exports through Rotterdam's port and mass consumption have meant that goods and services

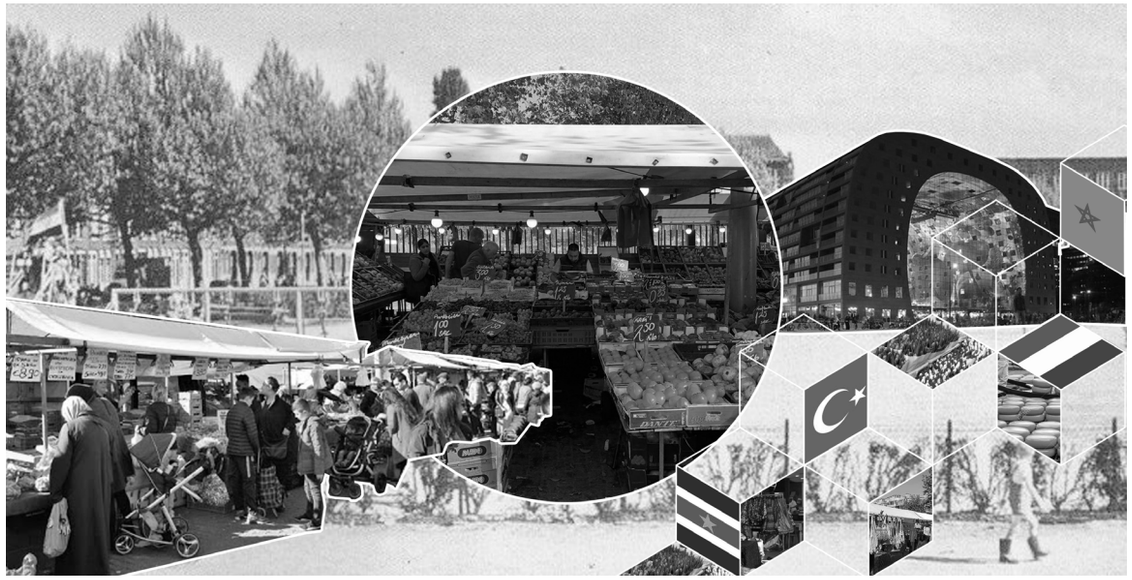


Figure 2: *Dutch Markets and Diversity Collage (Anwar, 2020)*

Figure 3: *Map of Rotterdam Markets (Anwar, 2020)*

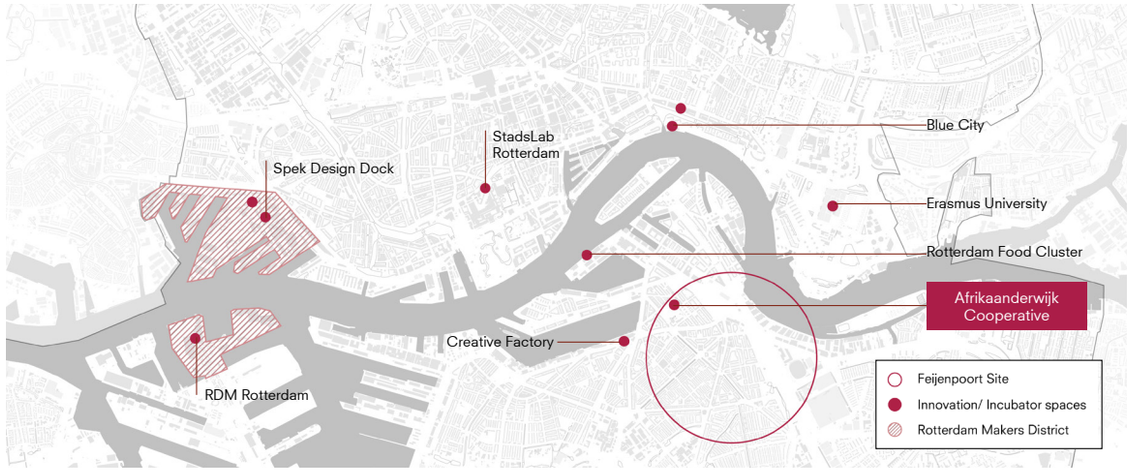


Figure 4: *Map of Rotterdam Innovation/ Incubator Spaces (Anwar, 2020)*

are produced where the lowest costs can be achieved (Jun, 2012). This has meant that as the world becomes "increasingly small and supply chains become ever longer" (Jun, 2012), the process of consumption is becoming further disassociated from the point of production and manufacture. Moreover, critical consumption combined with the worlds increased focus on economic growth have resulted in cities placing more pressure on the environment and its resources. This is emphasized in Tim Jacksons book, "Prosperity without growth" where he expresses that "infinite growth is impossible on a finite planet" (Meyer, 2018). Within the context of this research, sustainable approaches towards the production and movement of goods sold at retail markets should be considered to reduce consumption footprints, pollution and the exhaustion of raw materials. Furthermore, the UN estimates that the world's population will increase to nearly 10 billion people, with 70% living in cities by 2050 (Oyuela, 2020). As cities such as Rotterdam become increasingly urbanised, more sustainable and decentralised methods for food production must be realised to ensure food security and less water and land consumption (Van Bijsterveldt et. Al, 2013). Future marketplaces and retail outlets must consider more circular strategies to manage their waste and provide more local, transparent supply chains for creating and obtaining goods.

2.2 Social Barriers (Neighbourhood Scale)

The city of Rotterdam has encouraged the development of both native and migrant owned businesses through entrepreneurship policies with a strong focus on innovation, start-ups and the revitalization of deprived neighbourhoods within Rotterdam-Zuid. These policies emerged in recent years, coinciding with Rotterdam's long history of migration, influenced by its global position as a major Port city. Changes in migration policies subsequently resulted in the arrival of guest workers in the 1940s, which greatly shaped Rotterdam's migrant labour force and the ethnic composition of Feijenpoort.

The Feijenpoort site, positioned in the south east of Rotterdam, demonstrates a culturally diverse demographic. This is reflected in the diversity of businesses and entrepreneurs, both within the site's existing market in Afrikaanderwijk, and through its commercial and retail outlets. However, many of the neighbourhoods within the site, such as Bloemhof, Afrikaanderwijk and Feijenoord Wijk still face lower than average quality of life indexes, with scores of 20, in comparison to Rotterdam's average range of 90-109. Moreover, these neighbourhoods are faced with low income levels, employment and and low quality of education amongst both the younger and adult demographics. Furthermore, "Although the share of minority ethnic entrepreneurs is increasing (from 14% to 16% between 2007 and 2012), the proportion of entrepreneurs in the labour force is still higher amongst the Dutch" (Teersted, A. et Kempen, R.V, 2015). This demonstrates the need to integrate more inclusive systems for career development that can improve the prospects for Feijenpoorts residents. The economic goals of Rotterdam, outlined by its municipality, also highlight the need for an improved entrepreneurial climate for Feijenpoort's migrant population and to stimulate investments for Rotterdam-Zuid as a whole. Opportunities for learning and enrichment must be introduced within these neighbourhoods to reduce the disparities and division in education and income level, in comparison to the North of Rotterdam. By overcoming these barriers, the market has the potential to be a tool for social cohesion by providing shared facilities and engagement with emerging innovative industries.

Figure 5: *Feijenpoort Multi-Problem Neighbourhoods (Anwar, 2020)*

3 Research Question

In response to the current issues outlined within the problem statements, the project aims to address the following research question:

How can the marketplace be reimagined to facilitate local innovation, production and exchange, whilst promoting sustainable values and social cohesion?

4 Literature Review/ Methodology

To respond to the research question, the article will first investigate the "Migration of Marketplace" historically, demonstrating the evolution of the market typology in terms of form, function and its impact on social and economic interactions. Academic texts and articles will be used to inform the premise of the historical research and its application towards the "Productive Marketplace". Literature will then be reviewed outlining the cultural shift towards prosumerism, explored by Alvin Toffler in his book The Third Wave (1980). The research will then draw relations between Rotterdam's goals towards innovation and a new sustainable economy, in order to be applied towards a new market typology. A Qualitative and quantitative approach will be assessed of documents and reports from Rotterdam's municipality and port authority, in particular looking at the "Perspectives – Global vs. Local" 2012 Issue and "Rotterdam Cities of Making" reports. Furthermore, to address market interventions and entrepreneurship in the Feijenpoort scale, research gathered on local initiatives will be analysed to frame the existing strategies on the site. This will be utilised to further understand the value of markets to the city and its neighbourhoods. To address the key drivers of the "Next Economy" through local production, case studies will be introduced to investigate Rotterdam's increasing interests towards urban farming, maker spaces and collaborative concepts, that can be applied within Feijenpoort. The compilation of this research and previously outlined problem statements will form the basis for the design investigation and research contribution. Together they will address the possibilities for a new spatial program and function for the marketplace.

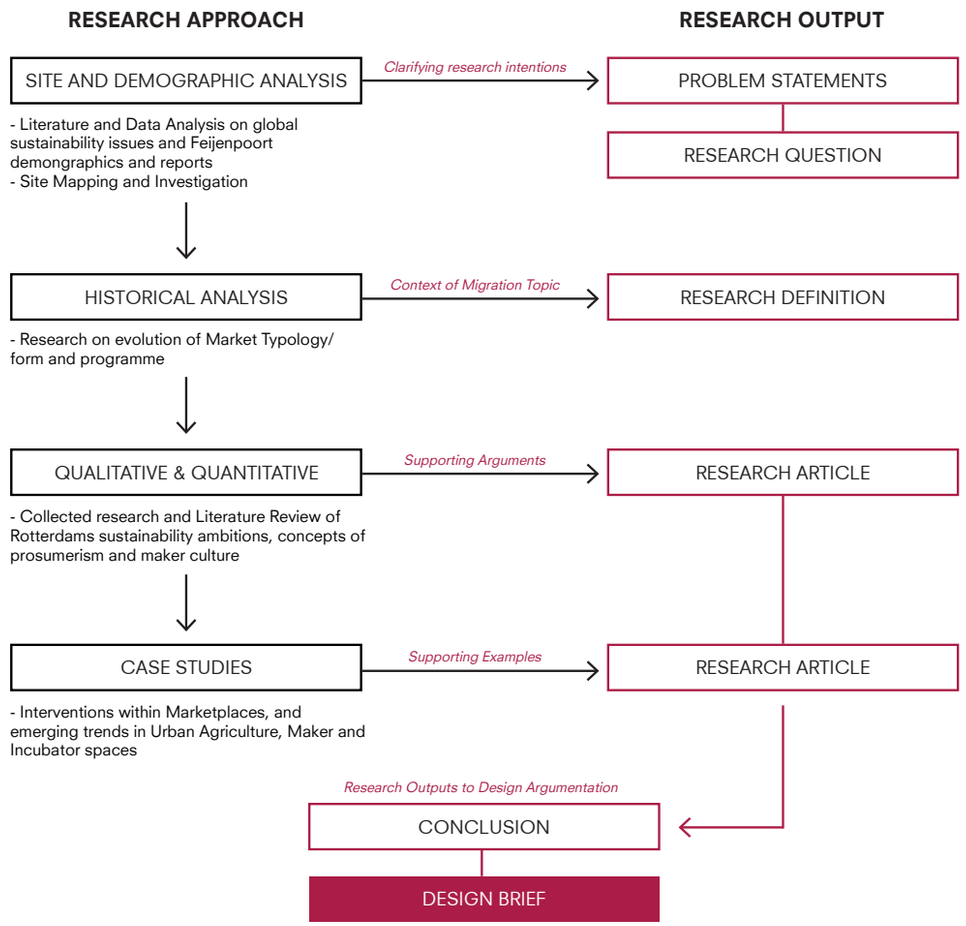


Figure 6: *Research Methods and Approach Diagram (Anwar, 2020)*

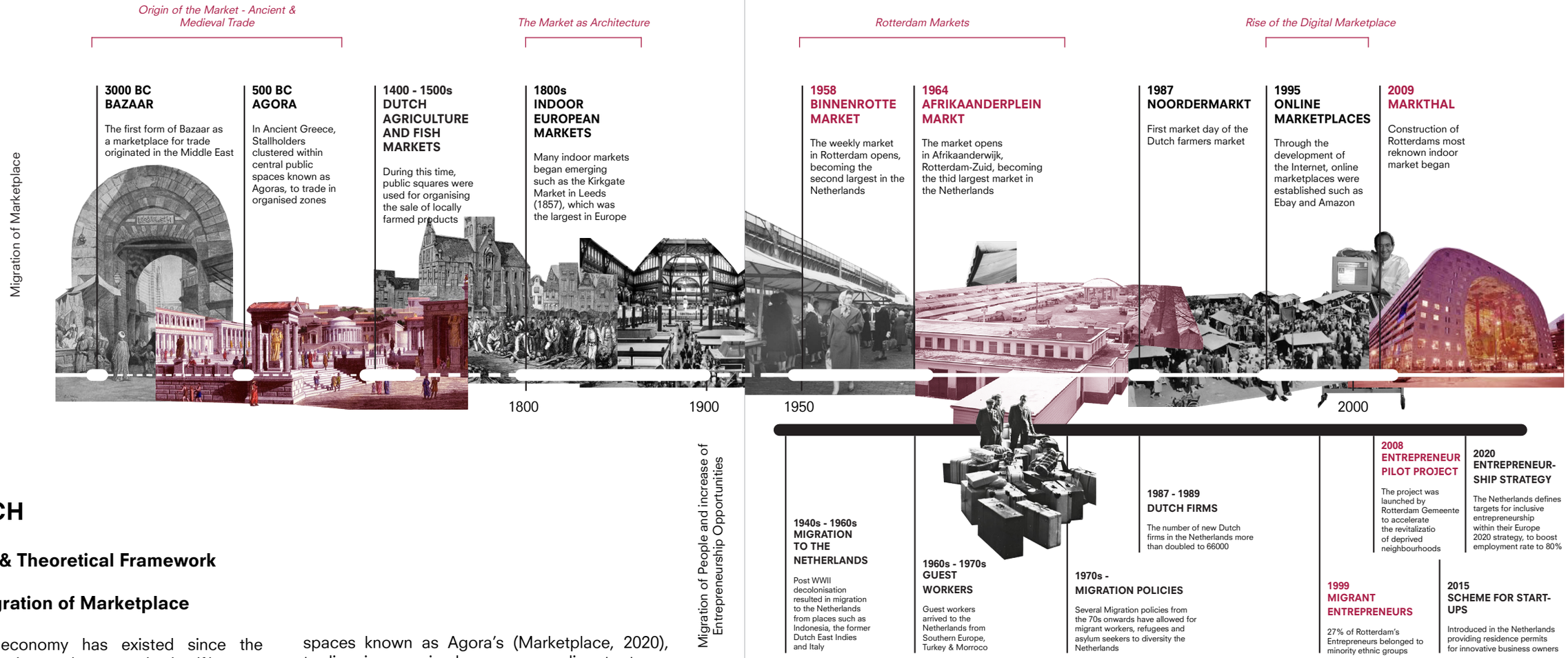


Figure 7: *Migration of Marketplace Timeline (Anwar, 2020)*

Figure 8: *Dutch Immigration and Entrepreneurship Strategies Timeline (Anwar, 2020)*

RESEARCH

5 Research & Theoretical Framework

5.1 The Migration of Marketplace

The market economy has existed since the beginning of ancient trade, presenting itself in many forms. The concept of the "Free Market" emerged naturally as a result of informal and unregulated modes of social exchange (Ross, 2019), whereby people traded items of subjective value. Eventually, monetary mediums of exchange were realised to help facilitate and formalise transactions, such as metallic coins which were first implemented in 1000 BC in China and Mesopotamia (Ross, 2019). This established a system which changed the prospects of businesses within markets through the economic value of trade.

The first form of a physical marketplace originated in the Middle East in 3000BC, known as a trading Bazaar. The world's oldest and largest existing example is the Grand Bazaar in Istanbul, constructed in 1455. The market consists of 61 covered streets (Goran, 2016), forming a permanent spatial layout that hosts the trading of textiles, spices and cultural artefacts. By 550BC in Ancient Greece, stallholders clustered within central, public spaces known as Agora's (Marketplace, 2020), trading in organised zones according to types of goods. These markets consisted of both fixed and flexible, tented stalls, with permanent shops erected around the periphery of the open square (Thompson, 1954). The central space was used for various activities such as for civic announcements. The main marketplace of the Agora was an area where both merchants and retailers traded and craftsman created their products (Mark, 2019). This made the Agora a dynamic place with several overlapping programmes. Between the 15th and 16th century, many urban markets began emerging in Europe (Miller, 2020). During this period in the Netherlands, "agriculture and fishing formed the basis of the dutch economy" (Harreld, 2020), with local markets setting up to sell fresh fish and produce. Moreover, public squares were used for organising the sale of locally farmed products such as in the Alkmaar Cheese Market (n.a, 2020). By the 1800s, more indoor markets began emerging in Europe, creating an architectural, spatially organised setting for the sale and consumption of goods. Today, various market typologies exist globally, from open, flexible and more temporary organisations, to covered, permanent structures and programmes. Moreover, they differ in the nature of the goods being traded and can exist both physically and virtually, through online marketplaces. Within urban settings, markets not only act as important gathering spaces for economic, cultural and social encounters, but play a key role in the creation of employment and entrepreneurship opportunities for local communities (Charamaschi, 2014).

The market as a facilitator for Exchange:

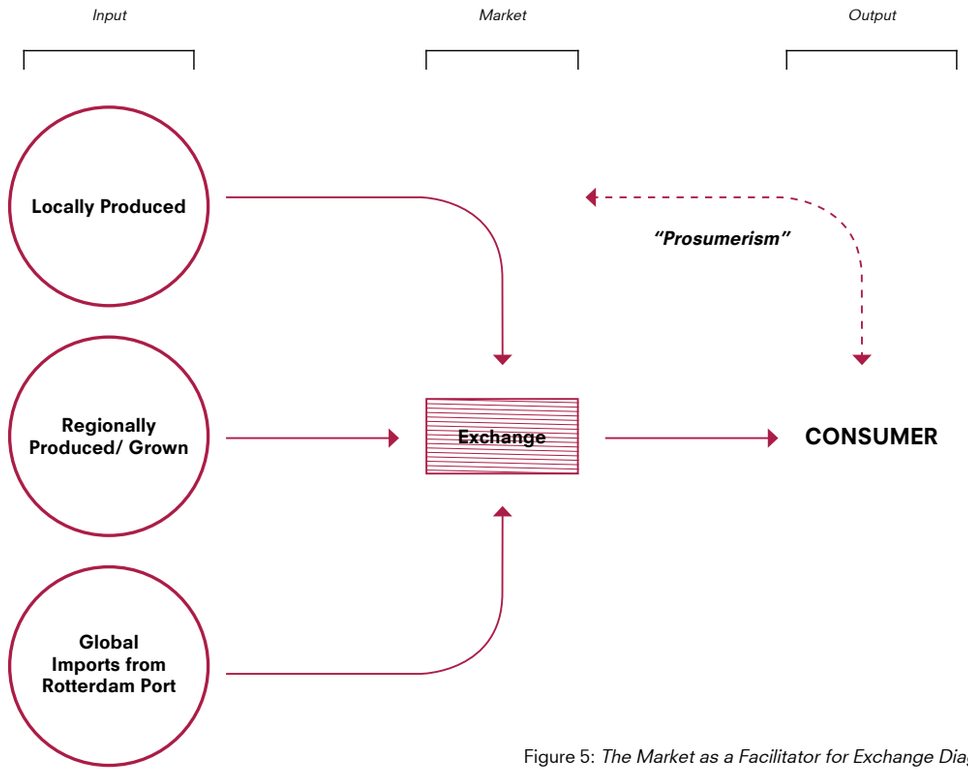
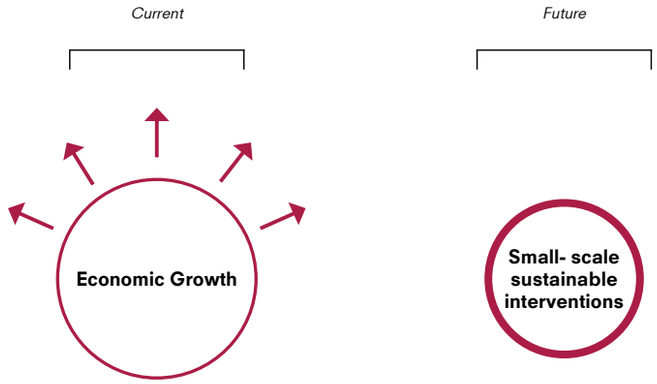


Figure 5: *The Market as a Facilitator for Exchange Diagram (Anwar, 2020)*

Rotterdams Next Economy?:



"The current economic system is based on continuous economic growth...There is a rising voice opposing this, which demands attention for a transition to a sustainable macro economy" - Port of Rotterdam, *Global Economy Trends*

The next economy: Small scale, locally organised networks of producers and consumers, based on a collaborative and circular economy

Figure 9: *Rotterdam's Next Economy Diagram (Anwar, 2020)*

5.2 A Shift Towards "Prosumerism"

Taking from the historical research of the marketplace and the function of the ancient Greek Agora, the potential for the market to combine activities of consumption and production in one setting can be observed. The Migration of this concept can be applied in relation to Rotterdam's sustainability ambitions and emerging trends in local production.

The "Next Economy" is a concept founded by economic and social theorist Jeremy Rifkin, which explores new forms of urban economy under the framework for a third industrial revolution (Meyer, 2018). Research on Rotterdam's "Next Economy" has highlighted the key sectors of Agro-Food, Life Sciences/Health, and Cleantech when considering the future of the city. It not only sees a vision for hi-tech interventions in production, but also realises a place for traditional forms of making through industries such as crafts, that can provide opportunities for the development of new jobs.

In addition, it envisions small scale, locally organised networks of producers and consumers based on a more collaborative, distributed and circular economic framework (Meyer, 2018). This coincides with Alvin Toffler's definition of "Prosumerism", (Alderet, 2017), which looks at how critical consumption and local production can turn consumers into producers (Pauli, 2012). Through addressing the demands for sustainable production, the consequential need for shorter transport routes is highlighted, greatly improving the efficiency through which products reach their users. By applying this concept to the supply of marketplaces, issues such as transportation emissions, transparency in food and product chains and food security can be addressed.

Moreover, the city has enabled for new opportunities in entrepreneurship through initiatives and organisations aligning with the "Makers Movement". This movement can be defined as a cultural trend that places value on an individual's ability to be both a creator and consumer of things (Tech Target, 2017). The Makers Movement has greatly shaped the future vision of the city, promoting "social innovations and new organizational modes that invest in people and their skills" (Meyer, 2018). A new market typology that fosters the values of social movements such as those stated, can aid in relieving the deprivation in problematic neighbourhoods in Feijenpoort.

5.3 A Market For Entrepreneurship

On a national scale, initiatives have been placed to encourage the growth of ambitious start-ups through the Netherland's "Ambitious Entrepreneurship Plan". This scheme provides entrepreneurs with the necessary access to capital and knowledge, allowing individuals and small businesses to thrive. On the other hand, within the neighbourhood scale, successful initiatives that align with the makers movement, such as the Afrikaanderwijk Cooperative, have been established. Created in 2008, the Cooperative operates out of the existing Afrikaanderplein market in Feijenpoort. Similarly, to the rest of the site, Afrikaanderwijk has a high population of inhabitants with a migratory background, at 85%. Moreover 56% of the neighbourhood's population is on social security or unemployed. Despite this, the demographic consists of many young people that are skilled in creative and traditional modes of making (Patti, 2016). The Cooperative capitalises on these skills, focusing it's projects on the most prominent industries of the site including catering, foodstuff and craft. It aims to provide small scale interventions and facilities for local businesses to progress through social organisations and collaborative workspaces (Patti, 2016).

The initiative saw the urban renewal of the market whilst having a greater impact on the surrounding communities. One example of a successful businesses that developed through the program was the Wijkatelier op Zuid, which connected Dutch fashion designers to local residents who are knowledgeable in the craftsmanship of textile making (Meyer, 2018). Another business that thrived through the market is the Rotterdam Mint, which developed a fresh herb garden which grows and sells produce for Rotterdam based catering companies. These examples demonstrate the way that the market can facilitate local production and entrepreneurship whilst addressing social barriers such as high unemployment.

5.4 A Market For Innovation, Production & Exchange

5.4.1 Urban Farming

Another way through which prosumerism can contribute to the realisation of a Productive Marketplace, is through the integration of urban agriculture and indoor farming methods. The Netherlands is the second largest agricultural exporter in the world after the US, (Rintoul, 2020) and is a global supplier for the most successful agro and food innovation companies (CBS 2015. Currently, two thirds of the Netherlands total land area is used for agriculture with over 6 million hectares catering towards Dutch consumption (Blonk 2007). With 75% of the Netherlands population living in urban areas, there is an increasing need for better and more secure food production. Through the introduction of urban farming, urban city dwellers can benefit from the provision of increased green space, energy, education and recreation opportunities (Jansma et al. 2020).

Since the industrial revolution, and over the last 150 years, the point of production and consumption for food has increasingly drifted apart (City of Rotterdam, 2012). Urban farming introduces agriculture into urban metropolitan areas. This can be in the form of community gardens and plots or modern indoor farming towers. One form of urban farming is through greenhouses. Greenhouses were formerly located in rural areas, but are emerging closer to urban centers, integrated both within buildings and on rooftops. They were originally designed for tomato production but are now used for a variety of produce including leafy greens, microgreens and herbs (Stein, 2020). Farming through greenhouses has proven to be an efficient and cost-effective way to produce with three main methods implemented to enhance growth. This includes traditional hydroponics, which utilises a nutrient rich water solution to replace the need for soil. Aquaponics adopts a similar method however the water is sourced from a fish tank that provide rich plant nutrients to its wastewater. (Brand Genetics, 2018). Thirdly, aeroponics suspends the plants roots in the air whilst nutrients are provided through a fine mist. Advantages of these methods include a higher crop yield, smaller space requirements and more transparency for consumers.

Another method for implementing urban agriculture is through technology-aided vertical farms. This method is used entirely indoors, utilising LED light technology and optimised environmental conditions for the production of leafy greens. Indoor farms can be arranged in vertical towers or through multi-tier, stacked growing systems (Stein, 2020) which are extremely space efficient and consume significantly less water than traditional farming methods.

The Netherland's position as a hotspot for urban agriculture can be demonstrated through the Westland cluster. Located 30km from Rotterdam, the area consists of the largest number of greenhouses in the world (City of Rotterdam, 2012). Although urban farming methods cannot produce at such a large scale, there is a growing demand for more sustainable local resource production, that reduces the pressure of global farming and food systems. A study towards the potential scope of production through urban and vertical farming for the Marketplace and Feijenpoort site has been included in the Appendix of this research. Examples of successful innovations in the Dutch agricultural space include the introduction of indoor farming in the Dutch supermarket Albert Heijn, as well as Rotterdam's sustainable floating farm that utilises circular waste systems (Rintoul, 2020). By implementing new, innovative approaches for urban farming into the programme of the future marketplace, production can occur using fewer resources, less water and will require less distance to be travelled.

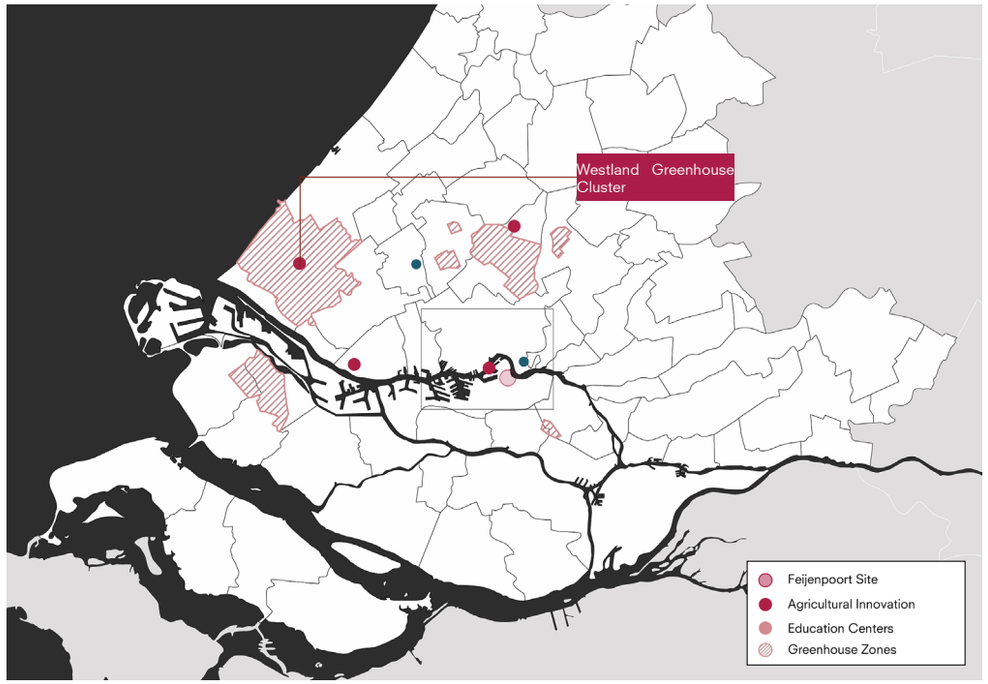


Figure 10: *Map of Agriculture and Innovation in Zuid Holland (Anwar, 2020)*

Figure 11: *Rotterdamse Munt, Feijenoord (StadsTuinieren, 2020)*
Source: https://stadstuinieren.nl/inspiratie/rotterdamse-

Figure 12: *Aerofarms Vertical Farming (TIME, 2020)*
Source: https://time.com/5556132/singapore-airlines-aerofarms/

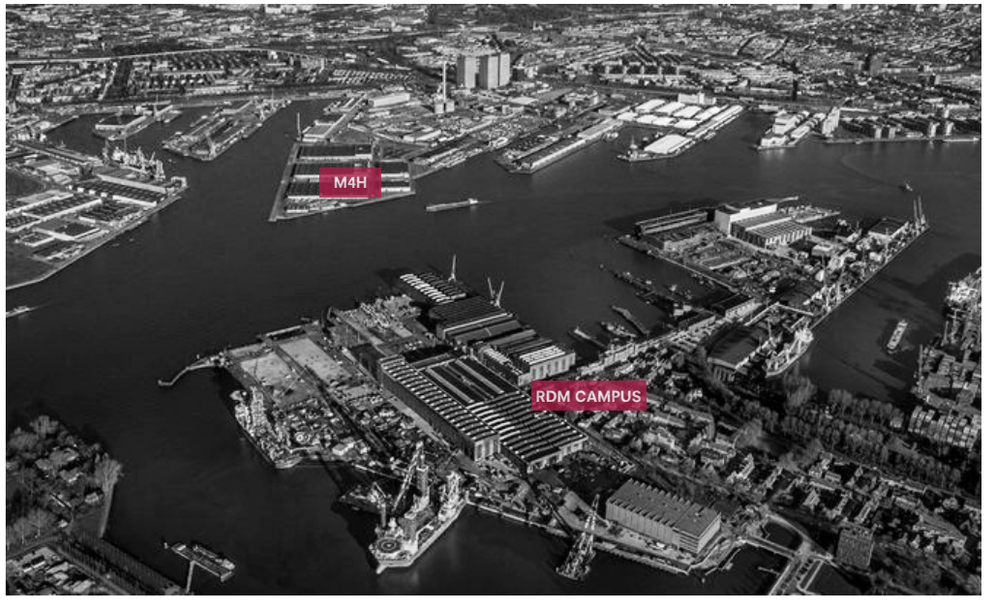


Figure 13: *Aerial of Rotterdam Port and Makers District (Port of Rotterdam, 2020)* Source: https://www.portofrotterdam.com/en/news-and-press-releases/rdm-rotterdam-and-m4h-rotterdam-together-form-the-makers-district

Figure 14: *Waag Textile Lab, Amsterdam (Circl, 2020)* Source: https://waag.org/en/article/experimenting-alternative-textiles

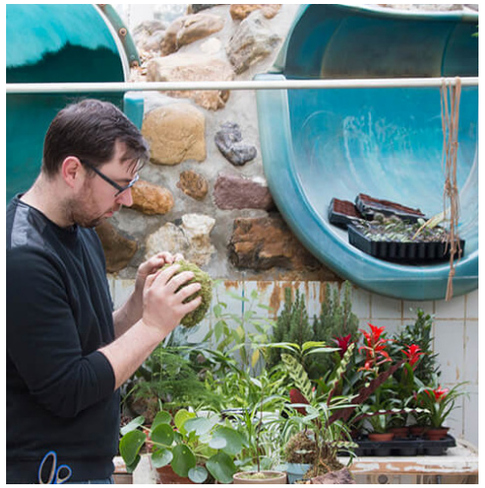


Figure 15: *Blue City Labs, Rotterdam (BlueCity, 2020)* Source: https://en.rotterdampartners.nl/stories/bluecity-circular-playground-with-balls/

5.4.1 Maker Labs

Apart from food production, more self-sufficient and resourceful communities can be realised through Maker spaces and labs for circular product creation. Recent research has been carried out regarding the potentials for recycled waste and bio-based material in the production of consumer goods, such as clothing and craft products. Food waste and matter, bacteria and enzymes can be used to develop innovative materials such as Nullarbor and Woocoa that can be made readily available for use as fabrics. Moreover, food and crop waste can be utilised for the creation of dyes and a variety of sustainable products "from insulation panels to phone cases" (Hitti, 2019). Furthermore, 3D printing technology has changed the way that products can be efficiently and locally manufactured, with sustainable materials for printing being researched and developed. Examples of thriving and innovative maker spaces within the city include the Rotterdam Maker's District, located near the Port. The district showcases technological approaches towards manufacturing, robotics and material science as well as flexible spaces for the co-creation and production of innovative developments. Another example within Rotterdam include the BlueCity, which promotes the blue economy, zero waste and circular lifestyles. BlueCity opened the world's first circularly grown organic lab for the development of "materials and products of the future" using biocircular design and biobased technologies (BlueCity, 2020). The labs are supported by workshops, enabling innovators to design and create products.

6 Conclusion & Global Relevance

To conclude, the historical and case study research can be integrated to inform a new typology for the marketplace. The investigation into the Migration of Marketplace establishes the possibility for a new function of local production and exchange through the market, by migrating the concept of the ancient Agora as a space for both craftsman and merchants. The research further establishes how the new programmes of urban farming and making can be integrated within a hybrid market typology to demonstrate the sustainable values of prosumerism. The adopted programmes tackle the wider global issues of unsustainable consumption and resource depletion whilst addressing Feijenpoort's local issues of neighbourhood deprivation. Furthermore, by understanding the interventions within the existing Afrikaanderplein Market on the site, entrepreneurship strategies within the Productive Marketplace can be better informed and interventions can be developed to support the existing Market. The new Marketplace can therefore establish a migrated programme that integrates enriching spaces for sustainable growth, research labs, workshops, incubator spaces and a retail market hall. Through the research, the project envisions a system that facilitates social cohesion, the exchange of knowledge, culture and innovation and aims to form the basis for a new model for Productive Marketplaces. These interventions can be implemented globally to promote the use of sustainable resources and business opportunities in regions that are faced with poor socio-economic conditions. Through this, the project further aims to provide the people of Feijenpoort with new potentials for employment and community engagement.

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Images:

[Figure 11] Rotterdamse Munt: https://stadstuinieren.nl/inspiratie/rotterdamse- munt/

[Figure 12] Aerofarms Vertical Farming: https://time.com/5556132/singapore-airlines-aerofarms/

[Figure 13] Aerial of Rotterdam Port and Makers District: https://www.portofrotterdam.com/en/news-and-press-releases/rdm-rotterdam-and-m4h-rotterdam-together-form-the-makers-district

[Figure 14] Waag Textile Lab: https://waag.org/en/article/experimenting-alternative-textiles

[Figure 15] Blue City Labs: https://en.rotterdampartners.nl/stories/bluecity-circular-playground-with-balls/

DESIGN BRIEF

Project Ambitions

Based on the research conclusions, the project aims to realise "A Productive Marketplace", by aligning with Rotterdam's ambitions for the "Next Economy". It aims to react to the problems of unsustainable consumerism and economic growth, by proposing a shift towards a more productive society that aims to maintain and sustain resources. On the local scale, the project aims to tackle social barriers of the deprived neighbourhoods within the Feijenpoort site such as the project location of Feijenoord Wijk, by providing job opportunities, skills development and social enrichment.

By "Migrating" the functions of the Ancient Agora as a market for both craftsmen and merchants, the project proposes the **A**(**GRO**W) Marketplace, which explores the potential of producers, innovators, makers and small businesses to coexist and thrive in a shared market environment. The programme seeks to realise the future of the prominent local industries of Catering and Crafts within the site, introducing facilities for urban farming, makerspaces, research labs and a market hall.

The project draws on previous historical research to inform an indoor market that proposes both fixed and flexible stall arrangements. Morover, it sees the market hall as a thriving indoor public square, that facilitates social and retail exchange. The building aspires to act as a landmark on Feijenpoorts waterfront, by not only showcasing its function, but through providing engaging public spaces for recreation. It aims to activate the adjacent Mallegat Park and introduce more urban greenery through feature greenhouses, accessible to visitors.

User Ambitions

The target users include the local population of Feijenpoort, which the market aims to provide for through produce and consumer goods. The project also aims to attract visitors to the site from a national and international scale. It also aims to attract job seekers, small businesses, universities and educators from surrounding areas.

Client and Development Ambitions

The development of the **A**(**GRO**W) Marketplace will take place under the Rotterdam Gemeente, which will act as the main client for the project. The market will collaborate with partners such as Blue City and Waag Society. Blue City Rotterdam, is an incubator space with a focus on the circular product creation. Waag Society is a non profit organisation that operates a series of research labs and collaborative workshops. The collaborators can allow for a sharing of resources and connections to new businesses for the market.

Urban Ambitions

The chosen site is ideally located near the main transport hub of the Feijenpoort urban strategy. This will enable easy accessibility between the project and wider connections such as Blue City and Rotterdam's Maker District. Its proximity to the new stadium means a larger footfall of visitors can be drawn in. Its position creates a relationship between the south and north of Rotterdam, reinforcing Feijenpoorts role as a "Gateway" to the wider city, and the Marketplace as a focal point between the Feyenoord City Development and Feijenoord Wijk.

A new proposed bridge allows for a north-east connection across the river to Erasmus University. Moreover, the east-west connection of the plot links the new marketplace to the existing Afrikaandermarkt and the waterfront, enabling the supply of goods through river and ground transport. The project makes use of both the park as well as the island proposed by OMA. The island will be utilised for the functions of the **A**(**GRO**W) Farm and Make spaces. Furthermore, the site connects to the new tidal park and green belt loop, linking the marketplace to the green and leisure ambitions of the site strategy.

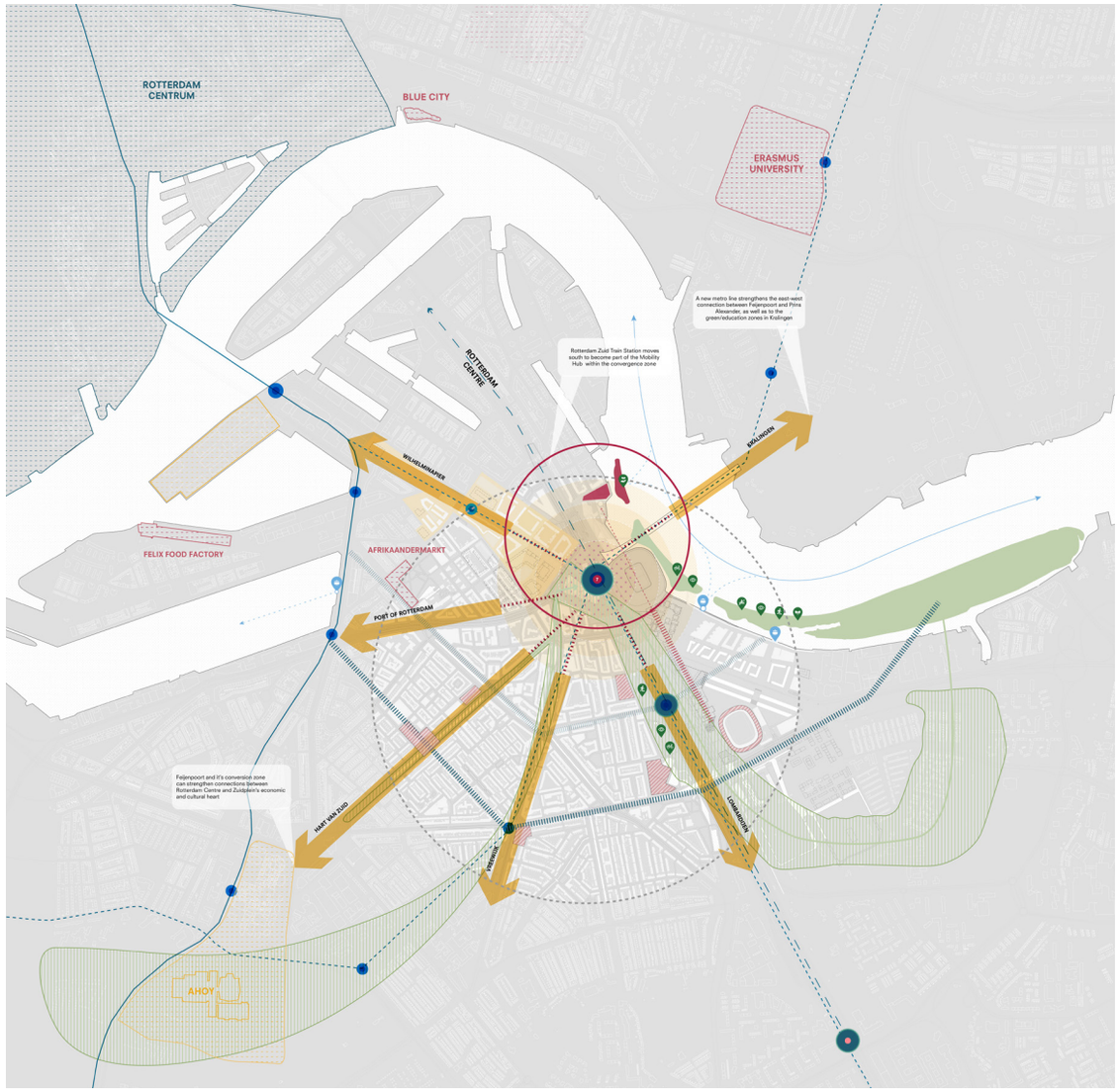
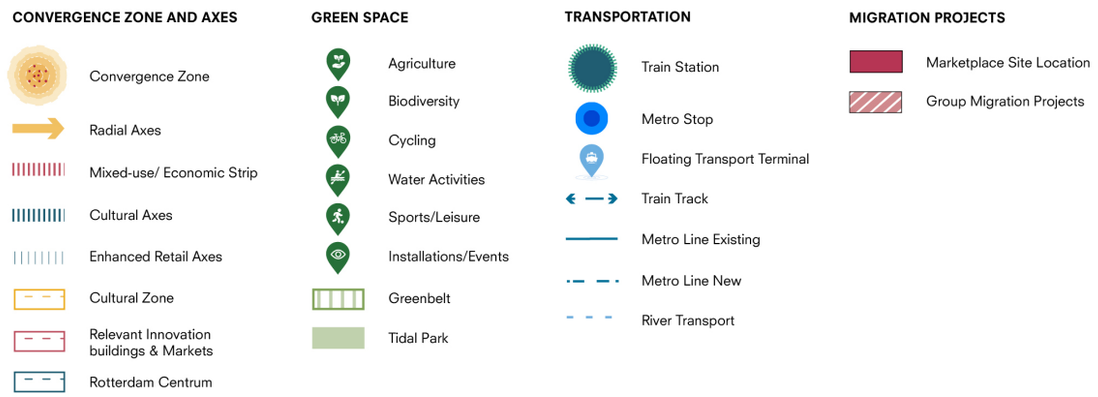


Figure 1: *Feijenpoort Site Strategy (Anwar, 2020)*



Programme Ambitions

The programme ambitions of the **A**(**GRO**W) Marketplace are to divide its function into three main categories. This includes the **A**(**GRO**W) Market, **A**(**GRO**W) Farm and **A**(**GRO**W) Make. The Market hall aims to function as the main public space of interaction and exchange, where produce and goods are sold whilst innovative designs are also showcased. Moreover, the space will host various small businesses, retail spaces and restaurants for public use. A Flexibly adaptable Market space will also host events and conferences.
The Urban Farming programme will be divided into areas for growth such as greenhouses and technology-aided indoor farming systems. These spaces will have a semi-private function, with supporting service and storage spaces. They will also feature classrooms for engagement and learning, to educate the public about new methods of agricultural production. Moreover, the greenhouses will have a public function towards the waterfront, where visitors are able to take tours and learn about how produce is farmed efficiently.

The Make areas will feature labs and studios where shared facilities such as bio 3D print farms and material research development labs can be utilised by ambitious start-ups. The Make programme will have a semi-private function, acting as an incubator with offices and meeting areas, whilst the labs activities can be visibly showcased to the public. Furthermore, the marketplace incorporates back of house loading and distribution spaces that can allow for produce that is grown to be distributed to surrounding areas through the waterfront and by ground transport.

Building Ambitions

The buildings ambitions are to create a monumental presence on the waterfront, through a use of both heavy and lightweight contruction and materiality. Its position aims to complement the new Feyenoord Stadium whilst creating a new identity for lifestyle and recreation within its site.

The construction and technical ambitions will have a sustainable and circular focus. Due to the technical requirements for greenhouses, indoor farming and maker labs, the design will accomodate climate control strategies for optimum growth for produce as well as implement systems for waste/ rain water collection and distribution. The greenhouses will also require an optimum orientation for natural sunlight, but will be further supported through technology aided systems.

Figure 2: *Programme Ambition Collage - The New Agora Marketplace (Anwar, 2020)*

Figure 3: *Building Ambition Collage - Park Access (Anwar, 2020)*

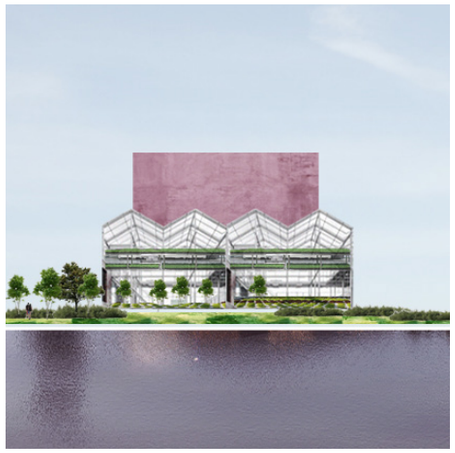


Figure 4: *Building Ambition Collage - Waterfront Appeal (Anwar, 2020)*

Figure 5: *Programme Ambition Collage - Productive Urban Farming with Visitor Access (Anwar, 2020)*

Figure 6: *Building Ambition Collage - Dynamic Market Hall (Anwar, 2020)*

Site Location and Qualities

The chosen site on Mallegat Park is situated by the waterfront and positioned on the boundary of Feijenoord Wijk and the new Feyenoord City Development. The project aims to bridge Feijenoord Wijk, with the new proposed developments along De Veranda, consisting of high rise residential, sports and leisure facilities. By acting as a threshold that aims to soften the duality of the site's prominent urban fabric, the new Marketplace seeks to introduce more greenspace and recreational events to rejuvinate its adjacent neglected public spaces. As the project is oriented towards the Maas River, it provides the opportunity to connect to a proposed waterfront promenade and distribution harbour by Mallegat Park.

In the future plan for Feyenoord, a new highrise residential tower is currently proposed on the project site location. This proposed tower creates a further division between the new development and adjacent low rise residential fabric. Therefore, the project argues that the location is more ideally suited for the **A**(**GRO**W) Marketplace, which aims to bridge the social disparities between the two neighbourhoods, through providing jobs for its neighbouring area. It therefore proposes that the tower be relocated or absorbed by future housing projects of Feijenpoort.

PROJECT SITE AMBITION

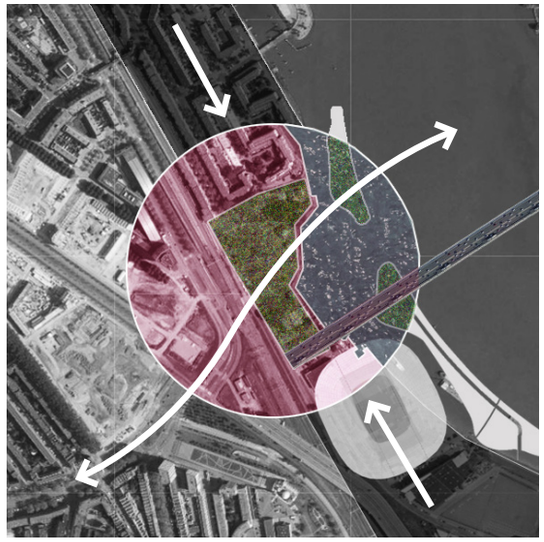


Figure 7: *Site Ambition Collage - Bridging Neighbourhood Boundaries (Anwar, 2020)*

PROJECT LOCATION

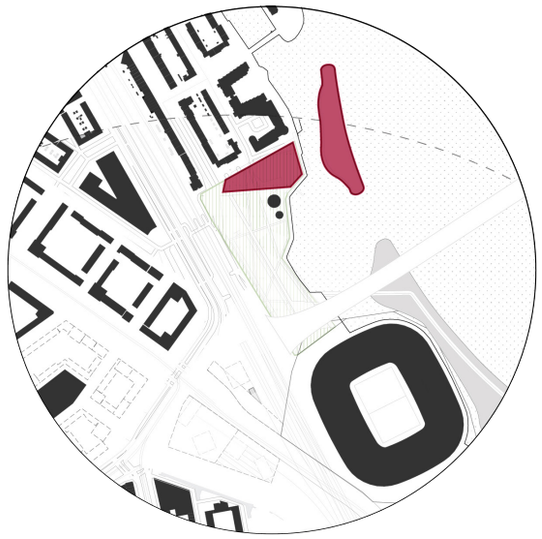


Figure 8: *Marketplace Site Location (Anwar, 2020)*

Figure 9 - 14 (Page Right): *Preliminary Urban Layers & Analysis (Anwar, 2020)*

Site Urban Layers

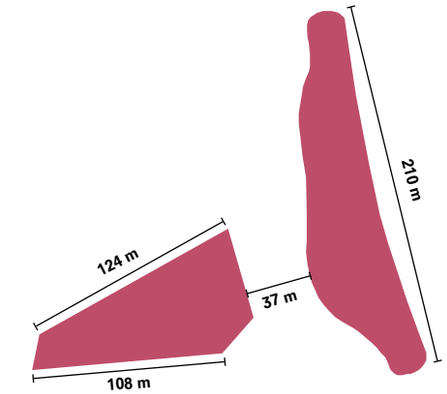


Fig. 9

BUILDING HEIGHTS

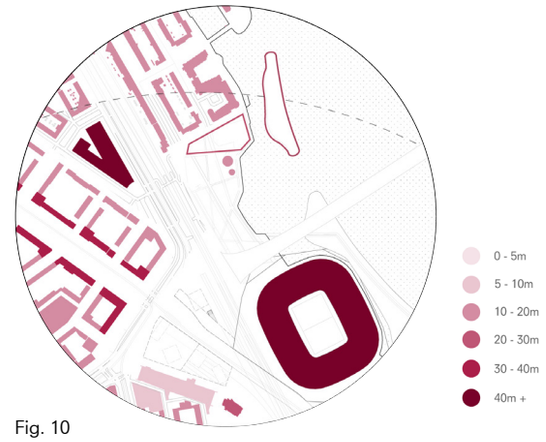


Fig. 10

BOUNDARIES

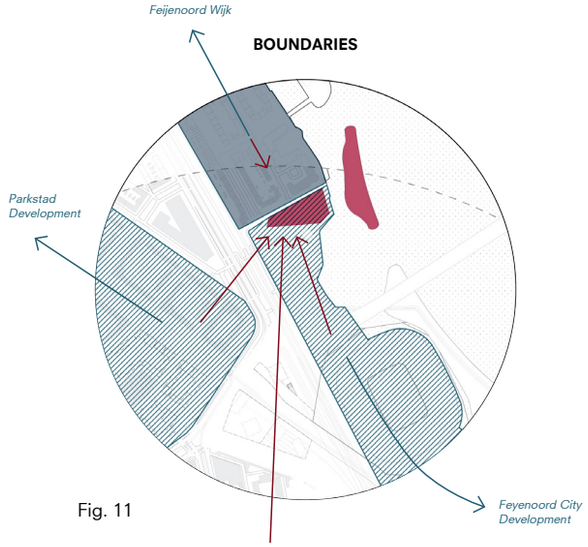


Fig. 11

ACCESSIBILITY AND APPROACH

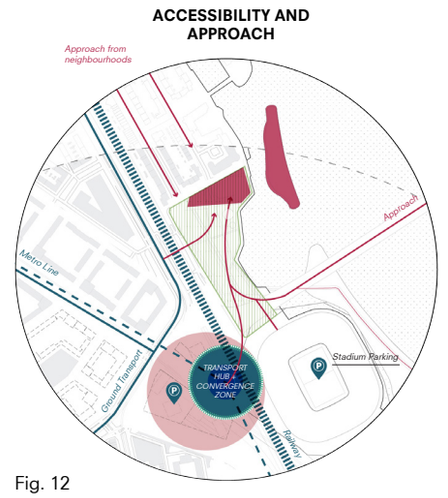


Fig. 12

TYPOLOGIES

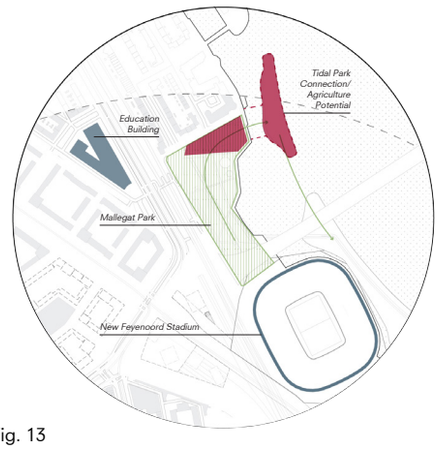


Fig. 13

CONNECTIVITY

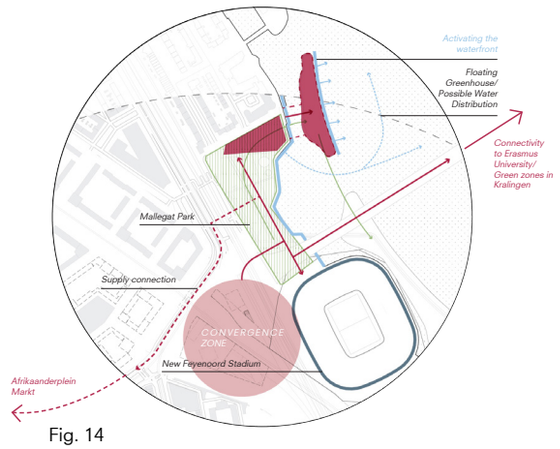


Fig. 14

Urban Rules

Mallegat Park Area: 17,468.5 m²
Site Area: 12,772 m²
Setback Requirement: N/A
(Setback from road: 5m)
(Current setback from waterfront: 7m)
GFA: 15,000 m²
Maximum Footprint: 9349 m²
Maximum Height: 80 m

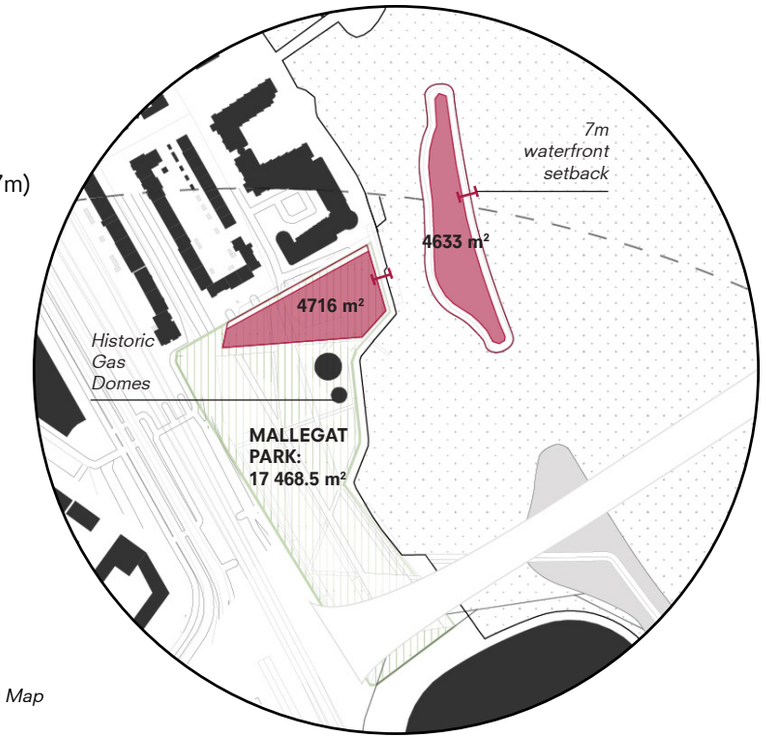


Figure 15: *Urban Rules and Site Specification Map (Anwar, 2020)*

Site Approach

Back of House/ Goods and Deliveries:
Feijenoord Wijk Neighbourhood

Front of House/ Public Entrance:
Mallegat Park

- Mixed Public and Private Use
- Front of House Access
- Back of House/ Loading
- Approach through Mallegat
- Approach through Orangeboomstraat

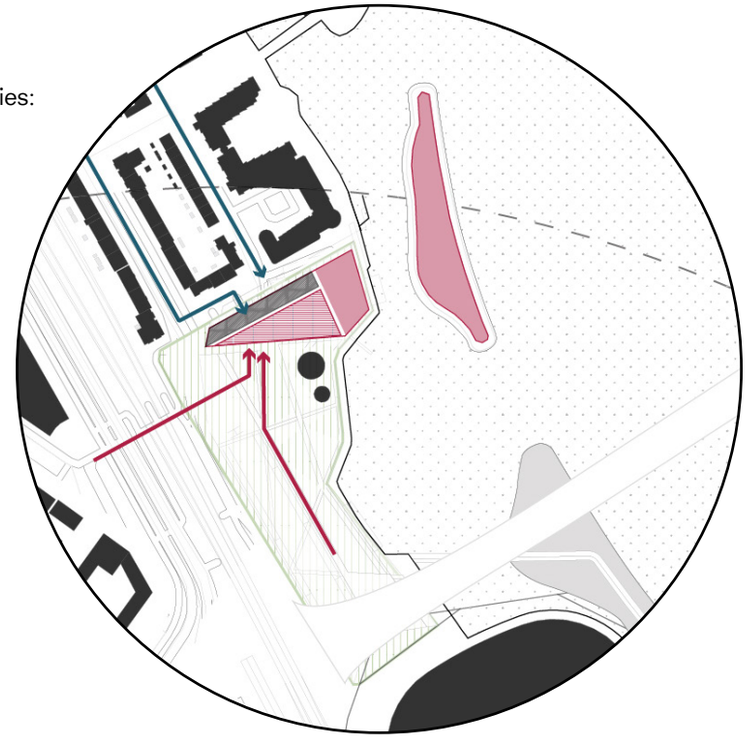


Figure 16: *Site Approach Map (Anwar, 2020)*

Maximum Height Feasability Study:

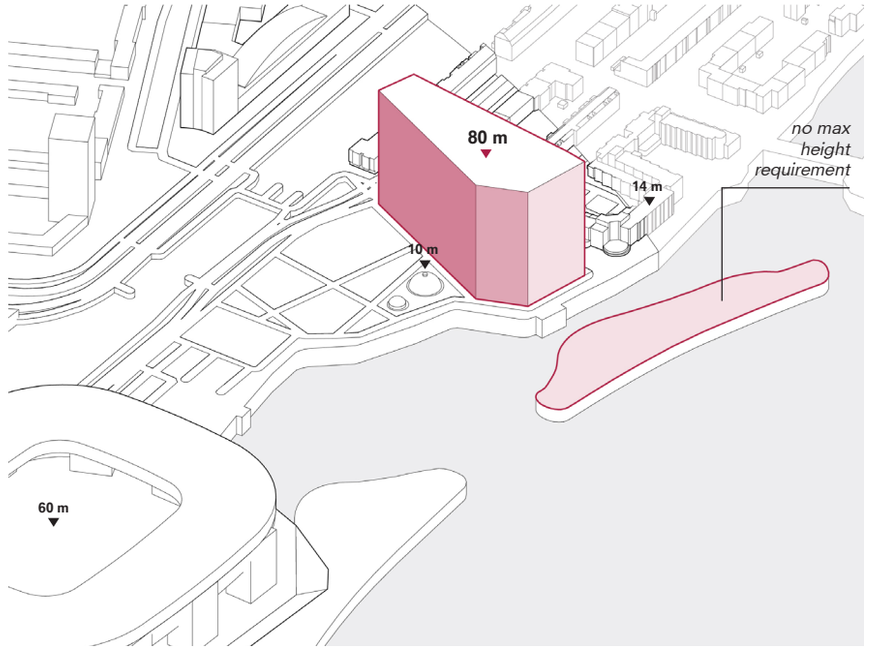


Figure 17: *Maximum Height and Footprint Massing (Anwar, 2020)*

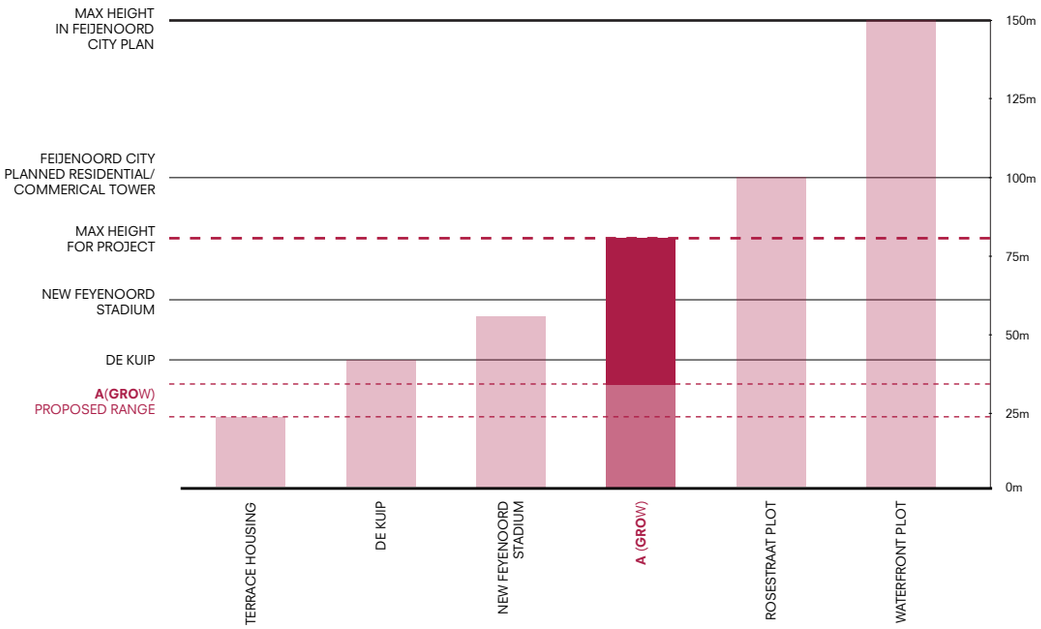


Figure 18: *Building Height Comparison Graph (Anwar, 2020)*

Programme Statement

The project proposes a Productive Marketplace that accomodates for the programmes of Market Hall (40%), Urban Agriculture (33%) and Maker Spaces (27%). The following areas have been benchmarked from a series of typology studies into existing incubator labs, urban farming spaces and market halls.

Total Area: 15,000 m²

A(**GRO**W) Market Area: 6000 m²
A(**GRO**W) Farm Area: 5000 m²
A(**GRO**W) Make Area: 4000 m²

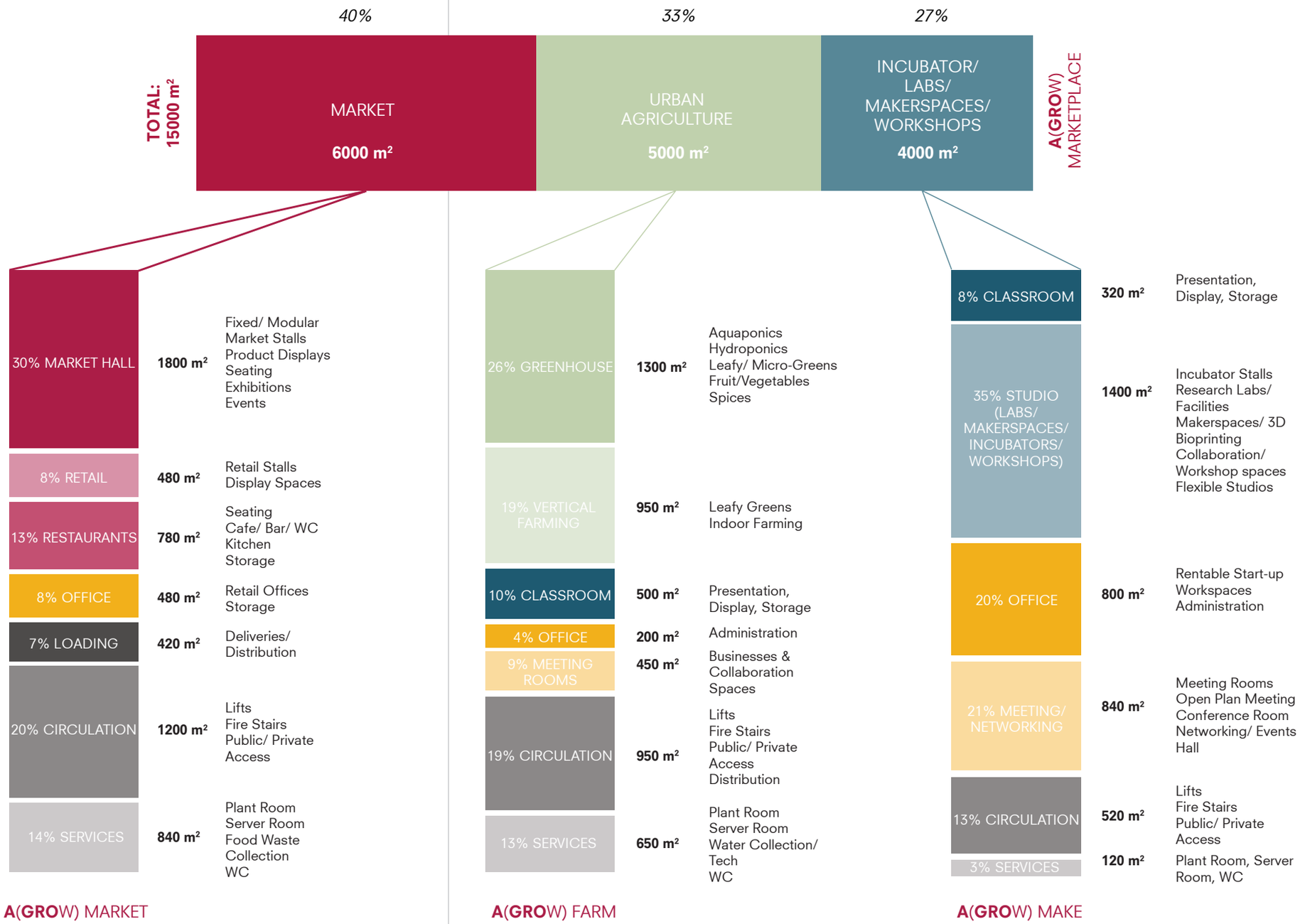


Figure 19: *Benchmarking Programme Area Bars (Anwar, 2020)*

Spatial Requirements/ Neuferts: A(GROW) Market

Small Commercial Kitchen: 32 m²

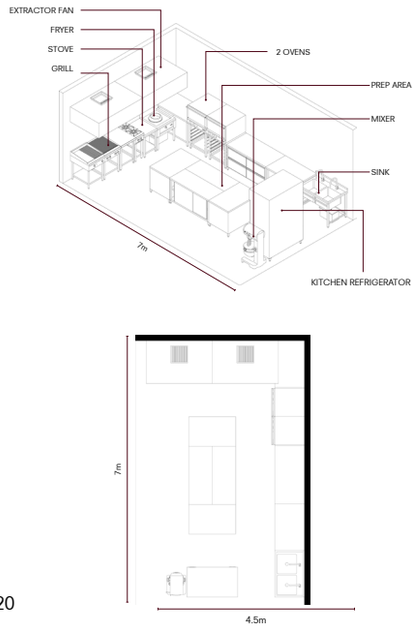


Fig. 20

Flexible Events/Conference Space: 156 m² (70 Seats)

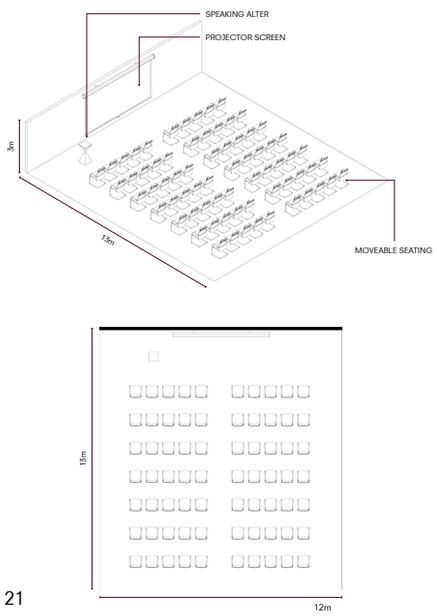


Fig. 21

A(GROW) Farm - Vertical Farming:

Aerofarm Technology:

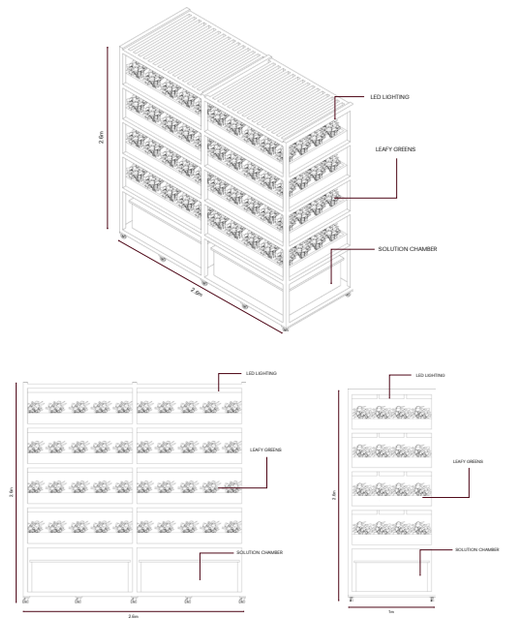


Fig. 22

Shelf Farming:

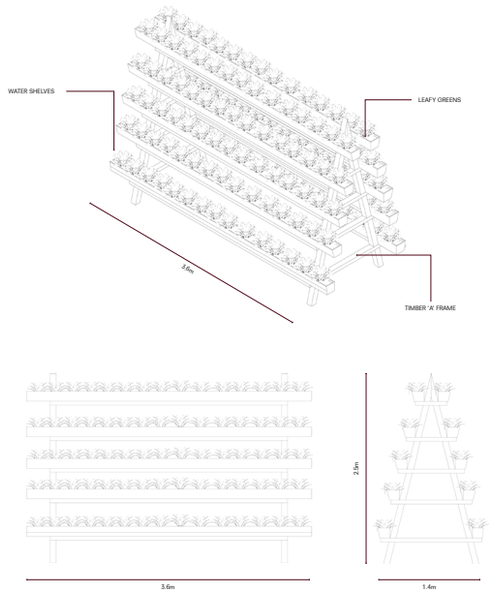


Fig. 23

A(GROW) Farm - Greenhouse Module:

Commercial Greenhouse Module: 112 m²

Fig. 24

Greenhouse Bench Layout/ Dimensions:

Fig. 25

Urban Farming Requirements

Average Dutch Fruit & Veg Consumption per Person/ Day: 0.25 kg

Population of Feijenoord Wijk: 7604

Feijenoord Wijk Average Fruit & Veg Consumption/ Year: 693,865 kg

Brightfarms Hydroponic Greenhouse: 26,000 m² = 907,185 kg/ year of leafy greens

Aerofarms Vertical Indoor Farming: 6503 m² = 907,185 kg/ year of produce

Estimation:

A(**GRO**W) Farm: 5000 m² = 697,512 kg/ year using Aerofarms Technology

Figure 20 - 30: *Spatial Requirements/ Neuferts (Anwar, 2020)*

A(GROW) Make - Laboratory:

Research Lab:

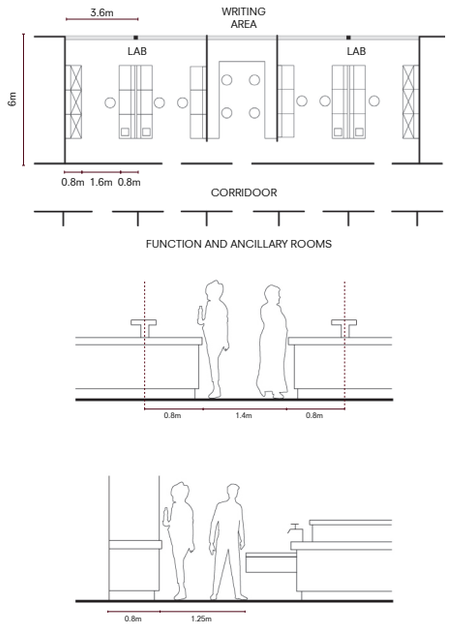


Fig. 26

Teaching Lab:

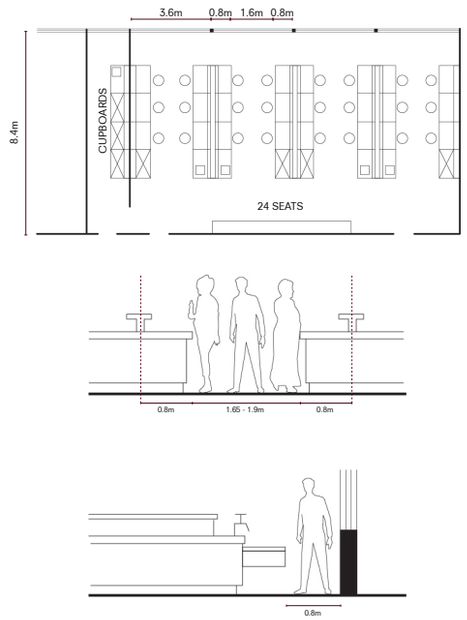
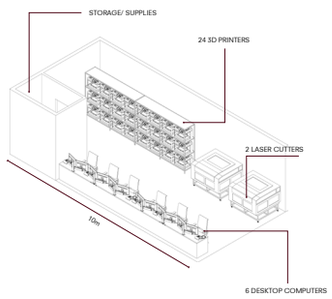


Fig. 27

A(GROW) Make - Workshop Spaces:

3D Print Lab: 48 m²



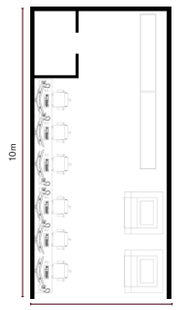
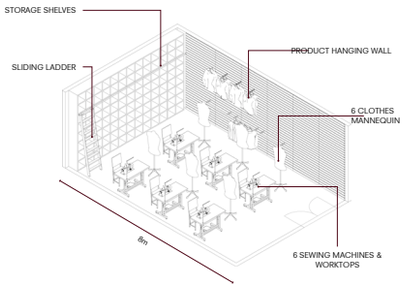


Fig. 28

Sewing Workshop: 40 m²



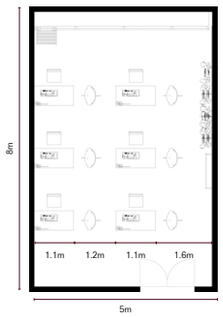
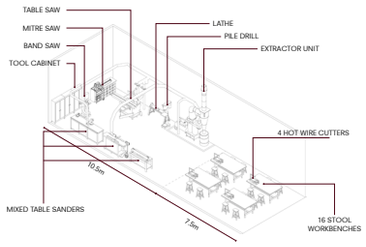


Fig. 29

Makers Workshop: 108 m²



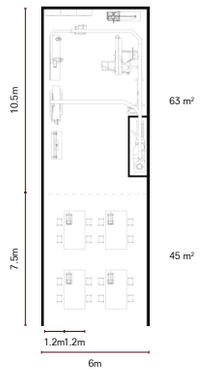


Fig. 30

Programme Relation

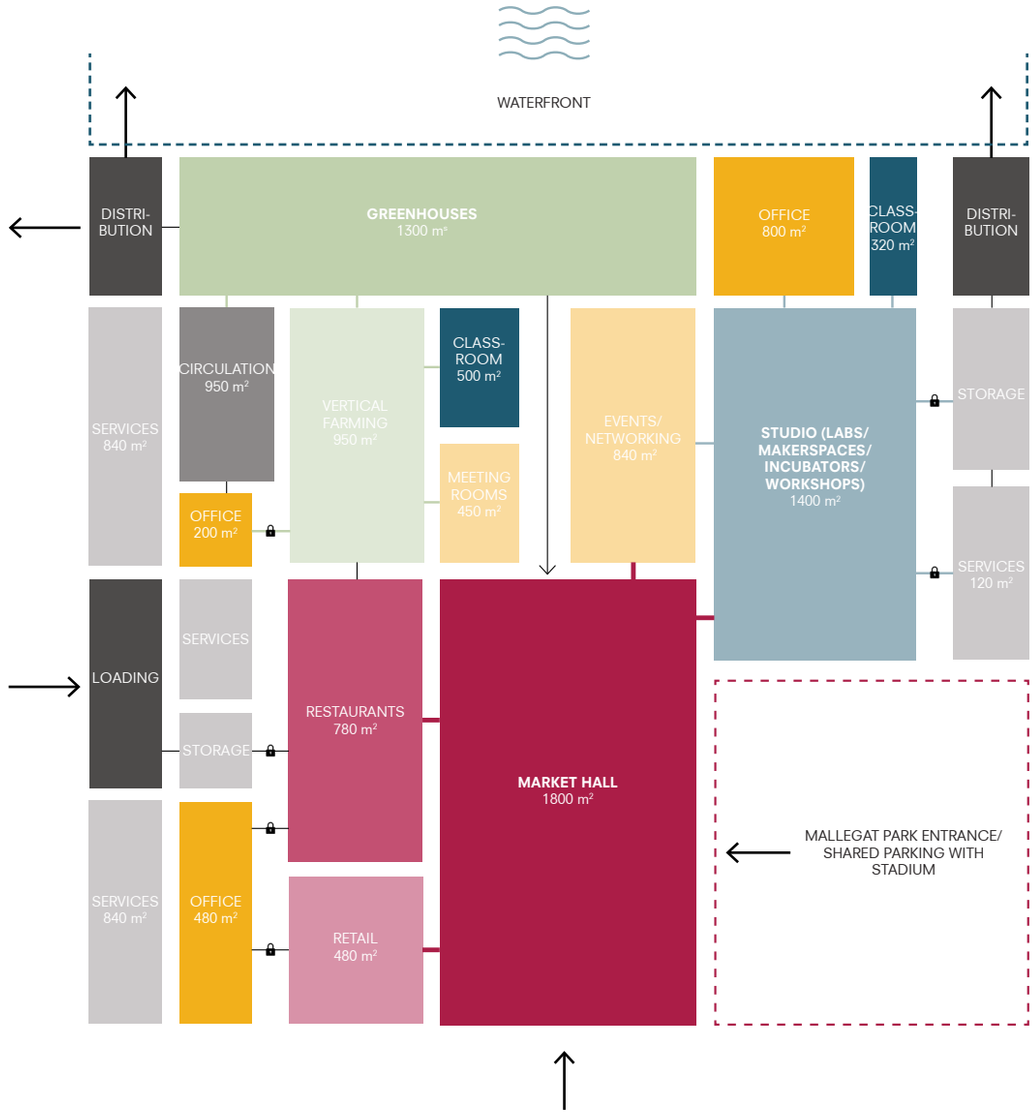


Figure 31: *Programme Relation Diagram (Anwar, 2020)*

PLAN OF APPROACH: MSC4 TIMELINE

Based on the Hotel New York Studio schedule, the following graduation plan structure will be used as a basis for the project outputs leading up to the P4 presentation.

CONCEPT

Following the P2 presentation, the focus leading up to the P2.5 deadline will be on strengthening the definition of the design concept for the project. This will be achieved through the development of preliminary massing and programme studies based on the design brief findings and site analysis, to inform a revised design vision with clear ambitions. This will include developing the integration of the three main programmes of market, make and farm.

	RESEARCH	DESIGN
W3.1	Site Analysis	Massing Options
W3.2	Program Analysis	Programmatic Options
W3.3	Analysis of Ambition	Design Options
W3.4	Analysis of Site Vision	Revise Design Vision

W3.5 P2.5 PRESENTATION

PRESENTATION OUTPUTS:

- Analysis of Design Brief
- Massing Concept
- Program Concept
- *Design Concept*

DESIGN

Leading up to the P3 Presentation, further design development research will take place to inform the Markets spatial arrangement and layout. This will be reinforced through design and structural references in order to strengthen the concept and begin drawing up plans and sections. Research on the spatial and technical requirements for urban farming and maker workshops is needed as well as an understanding of the market hall arrangement.

	RESEARCH	DESIGN
W3.6	Functional Research	Develop & Draw Plans
W3.7	Reference Research	Plans
W3.8	Structure Research	Develop & Draw Sections
W3.9	Reference Research	Sections

W4.0 P3.0 PRESENTATION

PRESENTATION OUTPUTS:

- Research Summary
- Concept Development
- Design Concept
- *Design Implementation*

MATERIAL

For the P4 presentation, the technical, structural and material aspects of the building should be researched to begin understanding the engineering and climate requirements as well as detail of the building form. This is important for the sustainable and climate control aspects of the marketplace program e.g. for growing produce. The materialization research will also help to define the facade and structural system of the building.

	RESEARCH	DESIGN
W4.1	Research on Materials	Developing Materials
W4.2	Research on Structural Systems	Developing Form Details
W4.3	Research on Facades	Developing Facade
W4.4	Research on Climate Systems	Integrating individual work into vision

W5.0 P4.0 PRESENTATION

PRESENTATION OUTPUTS:

- Research Summary
- Concept Summary
- Design Implementation
- *Design Development*

Post - production & Finalised Drawings/ Research

W5.5 P5.0 FINAL PRESENTATION