GAME GROUNDS

Playgrounds for gaming
in the future city

TAI WEI KAN

TU DELFT
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COMPLEX PROJECTS
AMS MID-CITY

STUDENT
Tai Wei Kan

RESEARCH COORDINATOR
Manuela Triggianese

GRADUATION COORDINATOR
Hrvoje Smidihen

SEMINAR TUTORS
Manuela Triggianese
Sebastian Janusz

STUDIO TEACHER
Olindo Caso

BUILDING TECHNOLOGY TEACHER
Gilbert Koskamp

DELEGATE OF THE BOARD OF EXAMINERS
Jurjen Zeinstra

TEACHING ASSISTANT
Jelmer van Zalingen

Thesis Abstract

Game Grounds is an architectural project that through research seeks for answers how a gaming hub could be like in the year 2100. The context is set by the trends analyses, which depicted that experiences and services are more valued than ownership and products. With the leisure industry having a significant impact on future society, video gaming naturally fits into this segment, since gaming has been a growing industry since its introduction in the 70s. Gaming, however, will be more than just leisure at this point. In 2100, video games are considered to be the equivalent of physical sports, with ecosystems of professional leagues and a large entertainment and merchandise branches. Furthermore, it will also influence in the education and healthcare sectors making it one of the most critical industries.

New technologies such as augmented reality, holograms, and zero gravity machines will have altered the spatial and social relationship we have nowadays. The screen where we see play video games on is extended as far as our vision reaches, and zero gravity makes it possible to utilise the vertical planes of spaces, resulting in walls and ceilings becoming floors. Socially the formal arrangement that exists in theatre and stage typologies that are commonly used for screening eSports competitions will get more blurred because augmented technology extends the field of action to everywhere and holographic technology makes it easy to emerge the spectator into the action itself.

Spaces with a formal arrangement in spectators and actors such as theatres and arena are merged with gaming spaces into more multi-functional spaces. By providing a framework of gaming chambers categorised in four gaming personalities, the visitor can choose which game he wants to play. The chambers come in different sizes for solo or multiplayer games and can be arranged differently depending on the demand or special events.

The future gaming hub will combine the competitive, production and consumer segments of the industry in one high tech building. The three different users can reinforce each other's workflow creating a synergy of gaming in one place. Besides the building being the mecca for future gaming, its spatially has a vital role in mediating travellers from the A10 boulevard and the Amstel (p)leisure park. The gaming hub of 2100 will be a vertical playground containing a universe of games.

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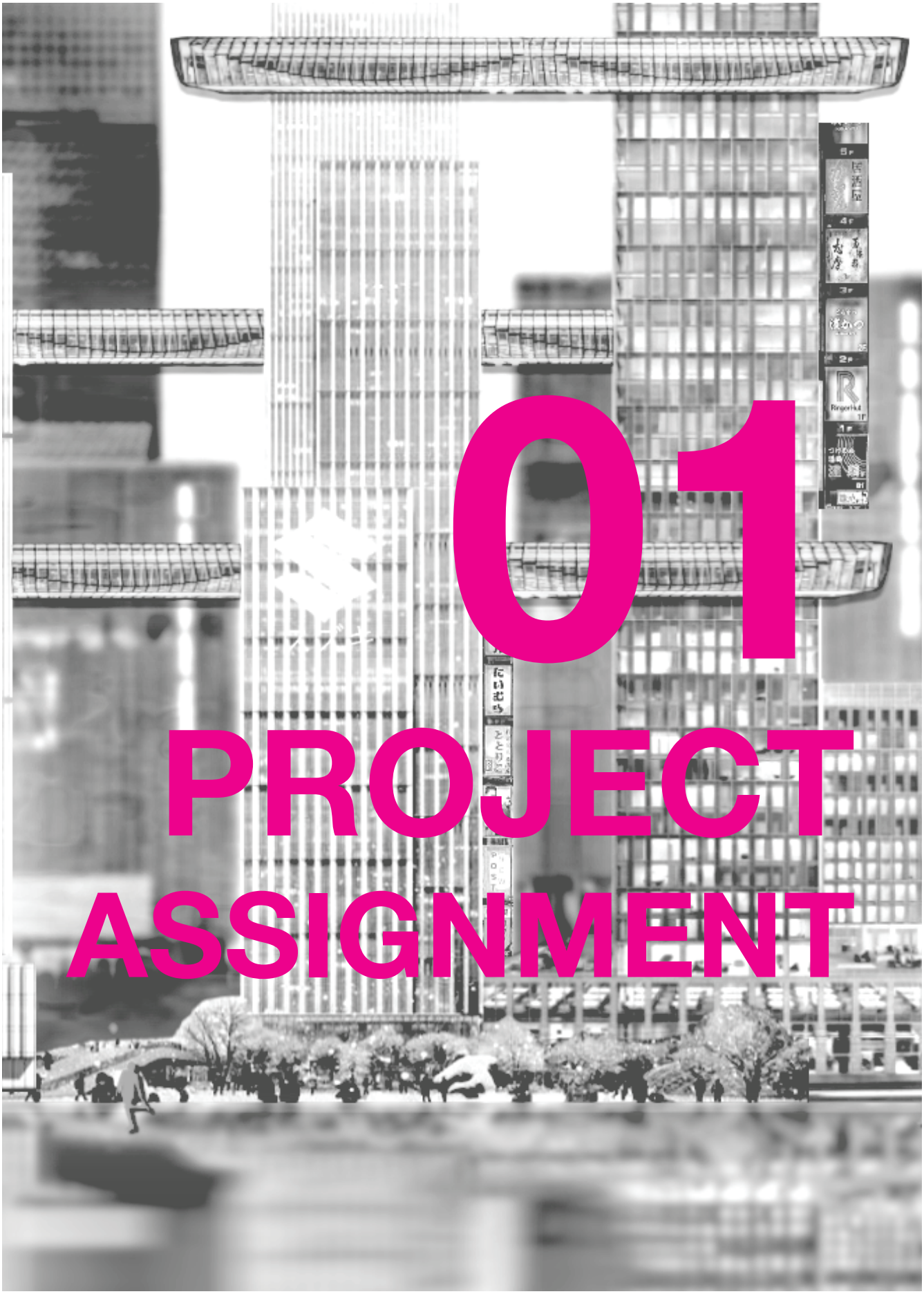
しゃぶしゃぶ にいむら
新宿東宝ビル店



01
PROJECT ASSIGNMENT

Assignment

With the forecast that in 50 years more than half of the world's population will live in urban areas, a place like Amsterdam will be no different. A city with a great heritage and rapidly developing surrounding areas like the north-side of the IJ, the old Houthavens, the internationally growing Zuidas and many other areas defines it to be an interesting candidate to take it a step further. By the year 2100 technological innovations will have significantly changed our infrastructure, productivity, health, housing and our social life. And we haven't said anything about the influences of the changing climate yet. All these factors will influence how humanity will live but what will life be like in Amsterdam in 2100? What kind of future are we aiming for, and how can these futures be translated into a spatial reality? The complex projects graduation studio 18/19 focuses these questions on the specific sites in Amsterdam: Centraal Amsterdam, Amstel area and Zuid-oost. This thesis presents a possible outcome for the scenario in the Amstel area in the year 2100.

Image 1. Amsterdam Complex projects sites
(Complex projects, 2018)


centraal
amstel
zuid oost

Future vision

The relocation of the heavy industry opened space for the growing need of dwellings in the city of Amsterdam. This will be one of the major places for densification inside the city's ring. The new city will house 110.000 new residents in 2050, they will be housed in mixed function residential building combining work, living and production together. Between all this densification public space is also preserved with most iconically the square park in the center of Amstel.

In the future 2100, Amstel strives for prosperity in the forms of health and well-being. New technologies have altered our cultural and personal values, they have shifted from the material based society to experience and social culture. Leisure is the next leading economy in future cities, by which the entrepreneurial productive attitude and servicing of the informational city (DIY, 3D printing and manufacturing, Industry 4.0) will evolve in the production of wellness (social cohesion and well- being, mental wellness, health is wealth, local entertainment, open air living etc.). It will be a life-embedding condition, for which different urban and architectural solutions have to be envisioned.

Pleasure and leisure related to the new values will be introduced in the Amstel area, evolving Amstel's productive attitude and servicing label to the production of wellness rebranding Amstel as the (P)leisure city of Amsterdam. The architectural interventions(individual projects) will reinforce this brand with themes such as, healthcare cen- tres, leisure universe, cohabilitation and working, gaming community center and a transport node that joins everything together. The projects are focused around the park which transforms the green square to a (p)leisure hotspot. Whereas the historic center has the museum park, Amstel city's green square will be redeveloped into the (p)leisure park.

20th Century

“The best way to predict the Future is to make it”.

Alan Kay

(The future 2017)

050 2100

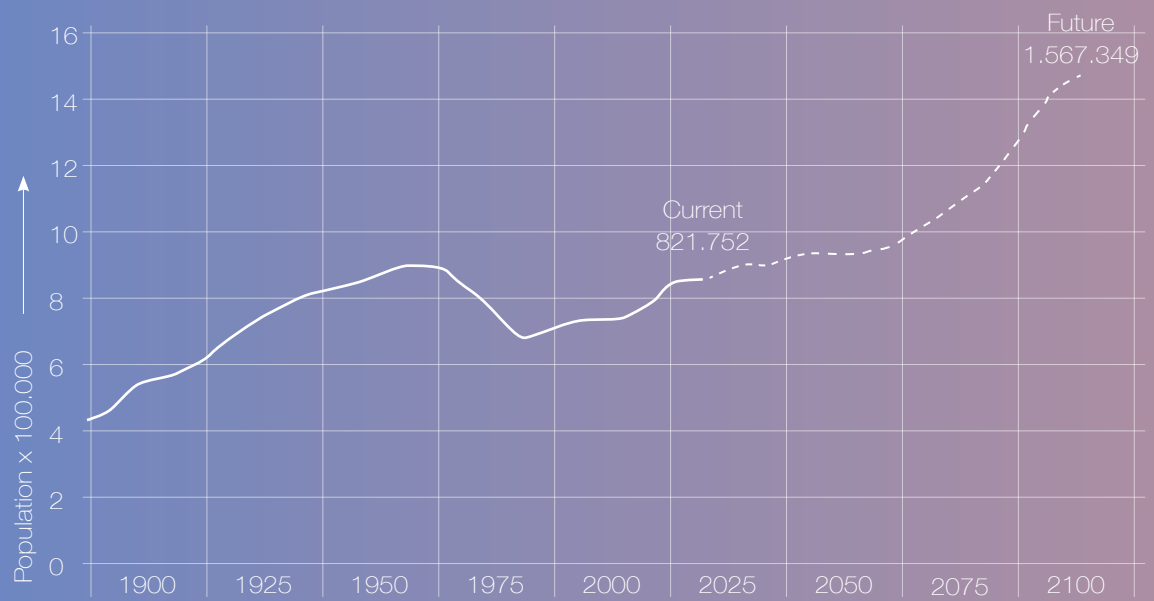
Future society

Today we live in a world where great inequality exist in how our wealth is distributed, studies have shown that the richest 1% own up to more than half of the world's total wealth. At the other side of the spectrum, 3.5 billion of the working aged population earn just 2,7% of the global wealth. (Nete, 2017)

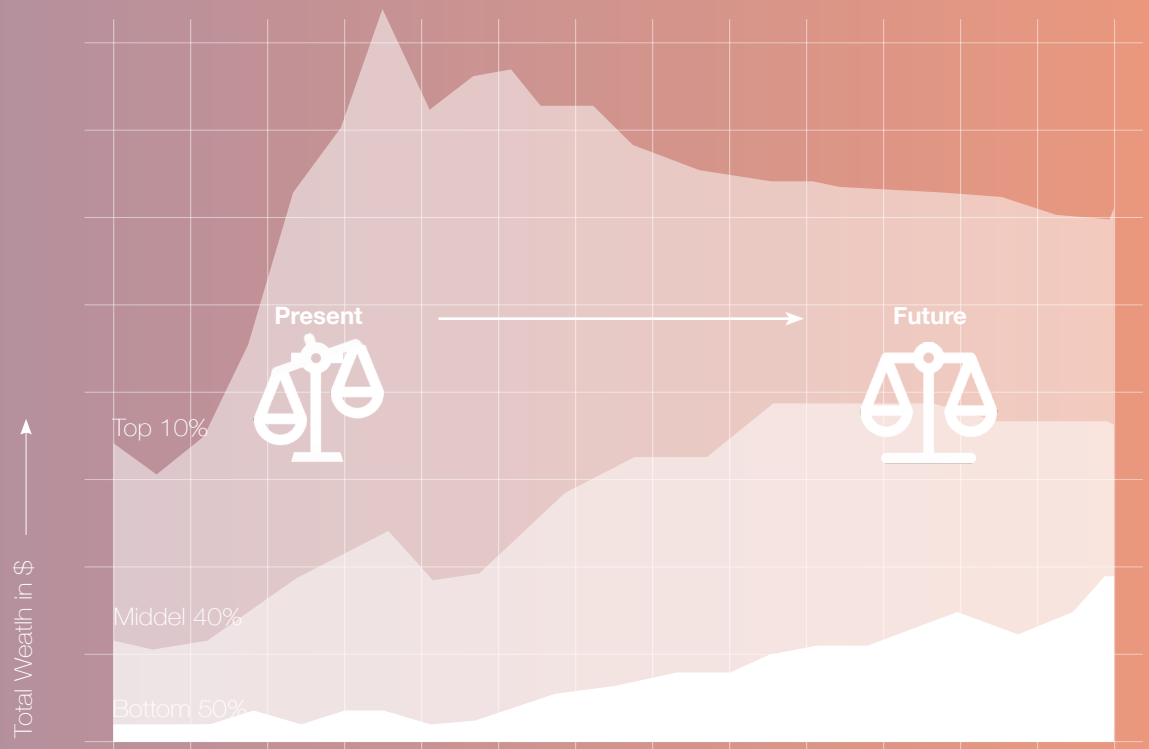
With the rise of automation and artificial intelligence technology, jobs that require mechanistic work (which are mostly low wage jobs) will be occupied by robots. Corporations that own the automation machines and artificial intelligence technology (which are generally the wealthiest) will grow even richer. The wealth gap phenomenon is also present in the Netherlands, whilst the income inequality the Netherlands is ranked in the middle of the western countries, the wealth division between the richest and poor is ranked second behind the US. With the top 10% of the population owning 68% of the total wealth in the country. Whereas in the US, 10% of the population owns 79% of the country's wealth. If the current tax system and laws aren't adjusted and executed we might soon live in a world where a small handful of individuals own the world. (OECD, 2018)

In recent years the universal basic income concept has gained popularity among governments, to combat this inequality. Several countries have already implement experiments on universal basic income model and many are testing its viability on a small scale. (Lant, 2017) This model is based on a periodic payment that is unconditionally given to all individuals without means, test or work requirement. Everybody receives a basic income that guarantees people to have their basic necessities like food, occupancy, education and healthcare. The current welfare system requires the poor to apply themselves to receive the benefits, however the application of it often happens in a bureaucratic process making it difficult to obtain. Furthermore, many of the poor people get stuck

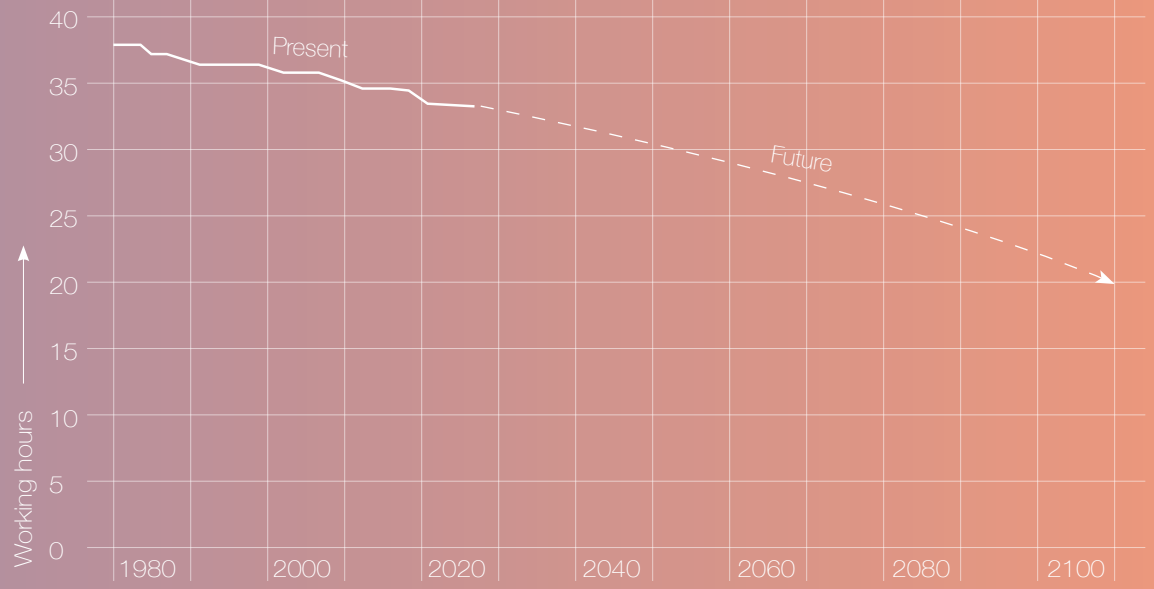
Population growth in Amsterdam



Balance in global and national Wealth distribution



Decrease in average working hours



in the welfare/unemployment trap meaning many people are better off on welfare than actually working, since the entry level jobs often have low wages and have unpredictable contracts. The bureaucratic system and the risks of entry level jobs refrain people of going to work. An universal basic income approach makes it easier to reach the (poor) people, especially in the future where money is becoming ever more digitized. The universal basic income ensures that all extra work done, no matter part time, full time or freelance is extra in- come for the person. This makes working still desirable because it is always more beneficial, a UBI model removes the existing discouragement to work that conditional welfare nowadays creates. (Eidem, 2017, pp. 2-7)

Implementing this model leads wto people being more flexible in how they arrange their life, one can stop working and pursue his educational goals or work part-time and spend the rest of his free time on leisure activities. The people are no longer forced to work repetitive or lousy jobs to ensure their existence. The amount how much we work has steadily been declining over the years

Materialism

Present

Cultural shift in lifestyle and economics

declining and if this trend continues the future employee is projected to work much less hours per week during the closing years of the 21st century.

The revolution of personal manufacturing spending on necessities like food, clothing, furniture and utilities will become producible on a personal and local scale. Working hours will slowly become a matter of choice rather than need. This new lifestyle combined with a decentralized production will result in a cultural shift in which personal free time and creative pursuits are more important than working (money) and material gain. The shift from a consumer economy to experience economy can already be seen among the millennials now. 78% of millennials rather spend money on an real-life experience than buying a desirable physical thing. (Boston Consulting Group, 2014) Real life experiences can be gained from musical performances and social events to sports, to cultural activities and events of all kinds. This cultural shift comes with a boost of creativity, entrepreneurship and self-care that will greatly change how our cities function.

Experiences

Future

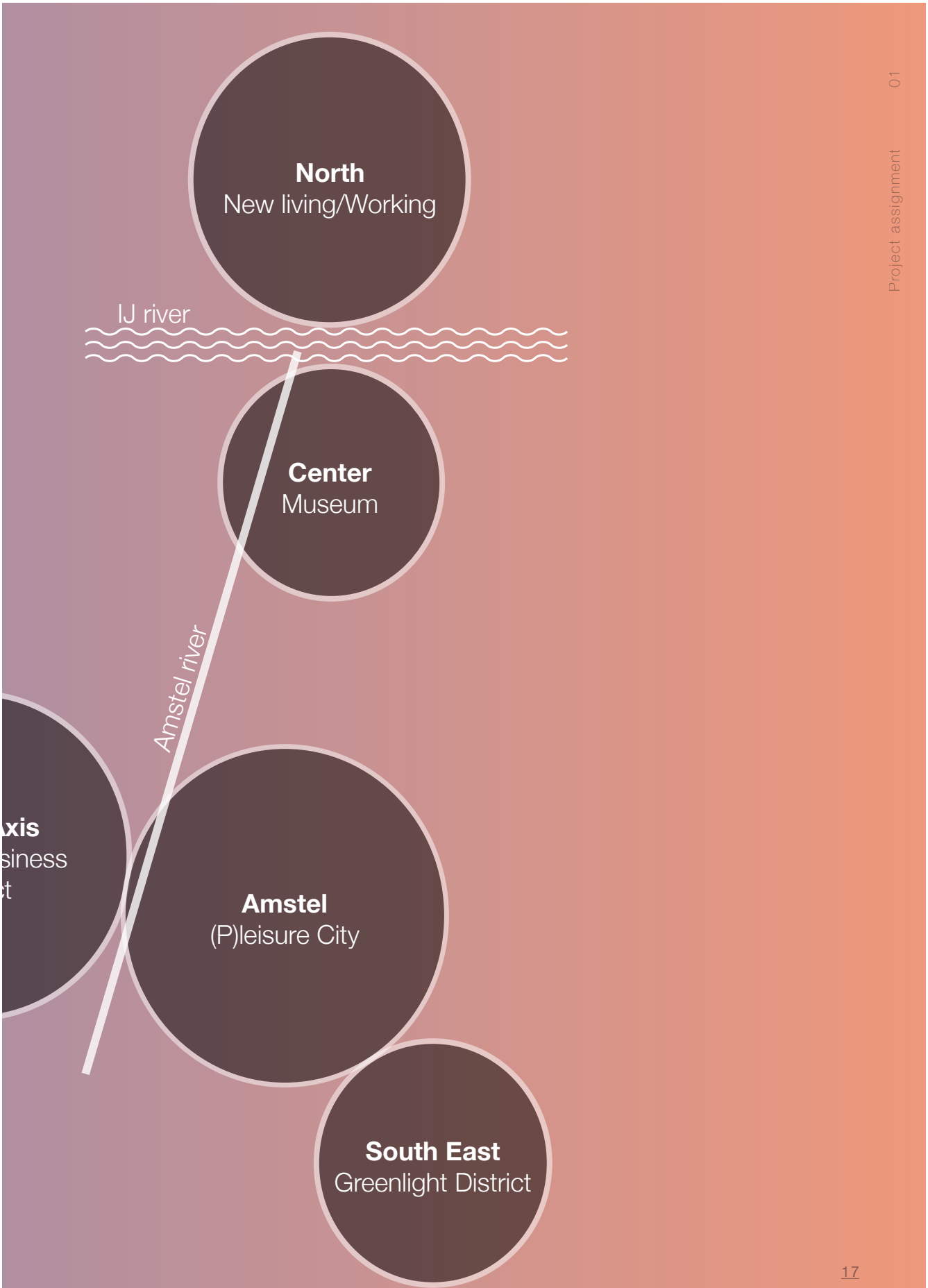
Identity
Amsterdam 2100

In year 2100, the city of Amsterdam will have surpassed 1,5 million inhabitants. The growing population and city development has changed different parts of the city. The city centre hasn't grown in density but has stabalized his crowdiness. The South business district on the other hand has grown into a large centered area because of the attractive business features and connections it has. The North district of Amsterdam has developed enormously because of stronger connections over the riverside. The Old city centre retains its identity as the the Museum area, hosting all the museums and other cultural heritage sites. The Southeast of Amsterdam has developed itself as Greenlight District of Amsterdam, developing a green urban environment for citizens who seek for nature in the city. The Amstel area places itself as the (P)leisure district of the city, where citizens can find (p)leisure in the abundance of different types of leisure activities.

IJ river

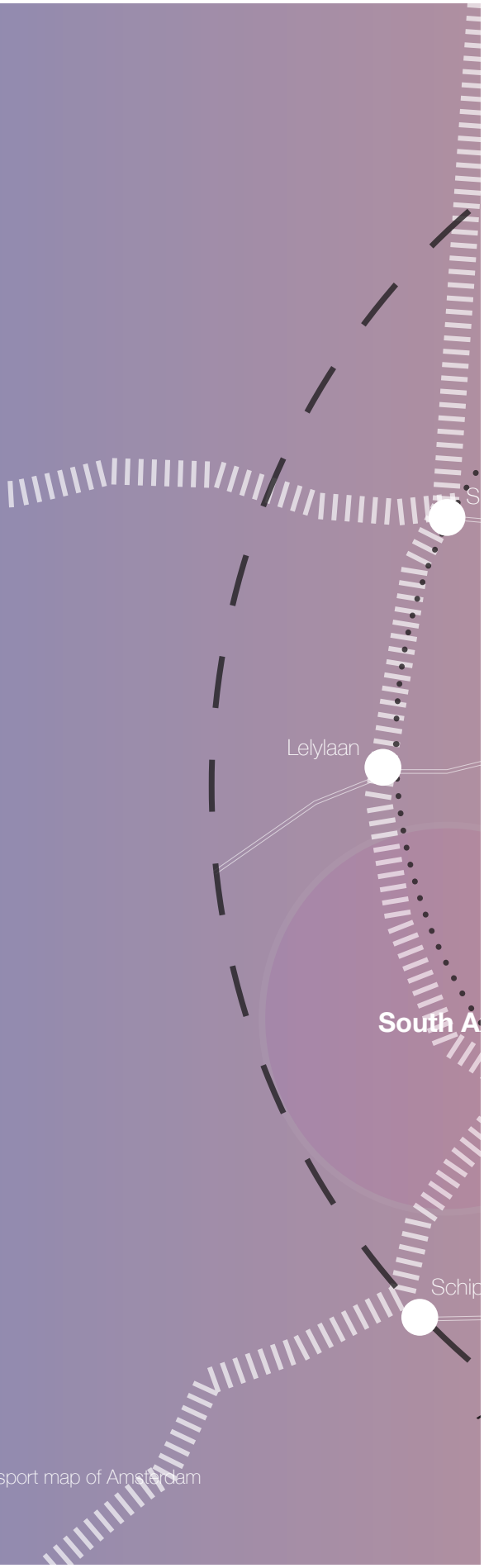
Amstel River

Identity map of districts in Amsterdam


North
New living/Working
IJ river
Center
Museum
Amstel river
xis
siness
t
Amstel
(P)leisure City
South East
Greenlight District

Mobility
Amsterdam 2100

The old ringway the A10 is developed into a green city boulevard, taking away the historic pressure and spatial border characteristics it used to have. With the A9 highway replacing the function as the city ringroad. With the termination of trains and highways at the A10 boulevard, the fragmentation segregated consequense of the infrastructure are suspended. Further developed of tunneled metrolines result in creating succes into all the connected areas, making the city grow in several areas.



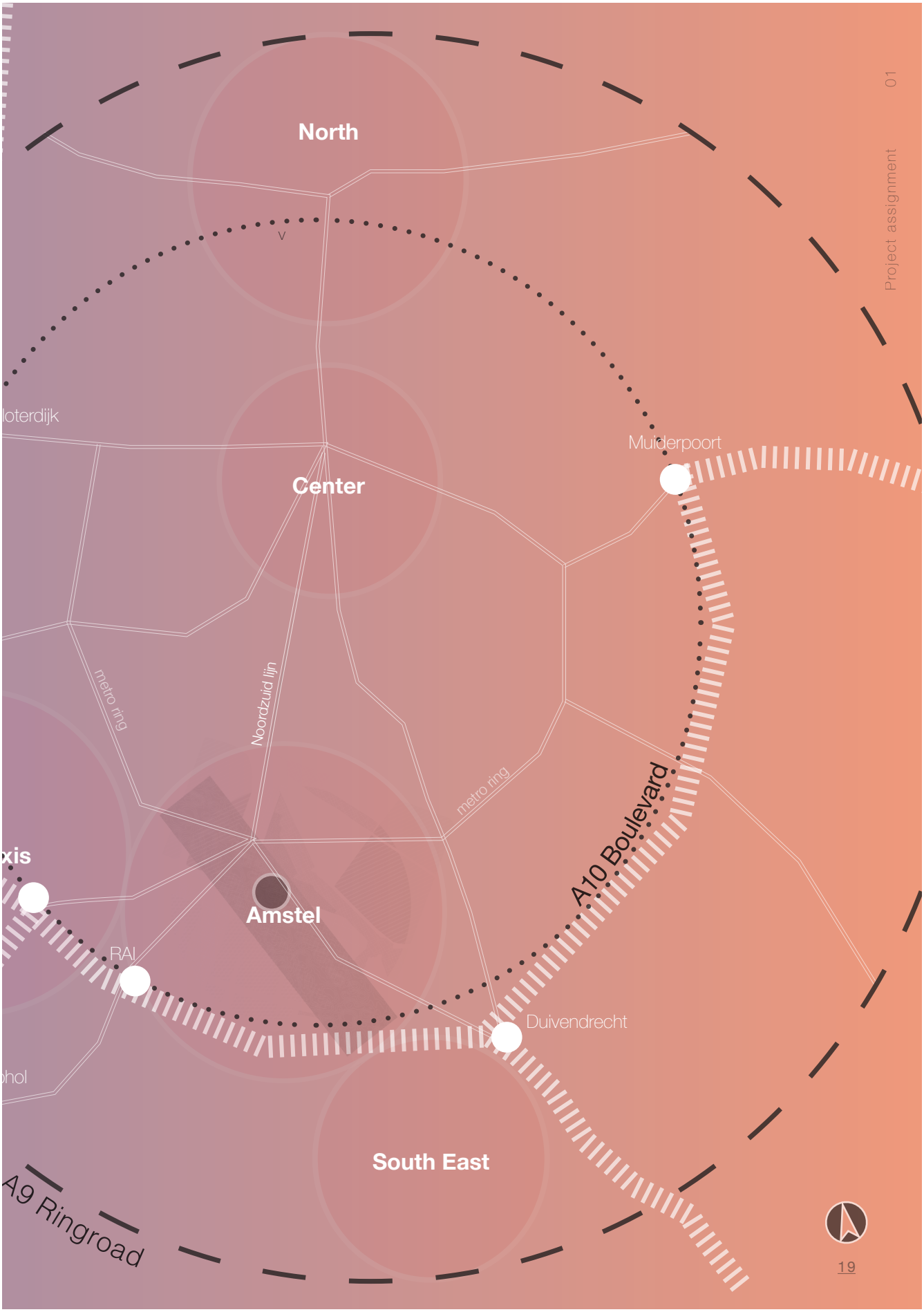
A10 City Boulevard

A9 City Ringroad

Main Metro lines

Main Train connections

Transport map of Amsterdam


North
Center
South East
loterdijk
Muiderpoort
metro ring
Noordzuid lijn
metro ring
A10 Boulevard
xis
Amstel
RAI
Duivendrecht
hol
A9 Ringroad

(p)leisure city
Amstel 2100

The relocation of the heavy industry opened space for the growing need of dwellings in the city of Amsterdam. This will be one of the major places for densification inside the city's ring. The new city will house 110.000 new residents in 2050, they will be housed in mixed function residential building combining work, living and production together. Between all this densification public space is also preserved with most iconically the square park in the center of Amstel.

In the future 2100, Amstel strives for prosperity in the forms of health and well-being. New technologies have altered our cultural and personal values, they have shifted from the material based society to experience and social culture. Leisure is the next leading economy in future cities, by which the entrepreneurial productive attitude and servicing of the informational city (DIY, 3D printing and manufacturing, Industry 4.0) will evolve in the production of wellness (social cohesion and well- being, mental wellness, health is wealth, local entertainment, open air living etc.). It will be a life-em- bedding condition, for which different urban and architectural solutions have to be envisioned.

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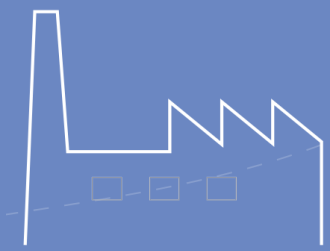
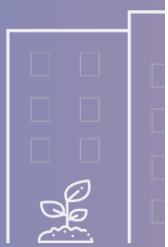


20th Century

Industrial



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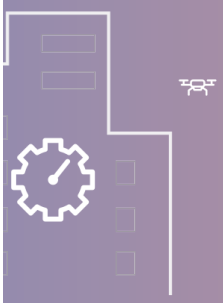
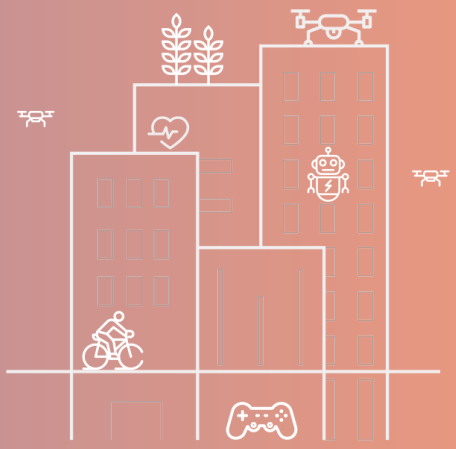
Prod





050

uctive

2100

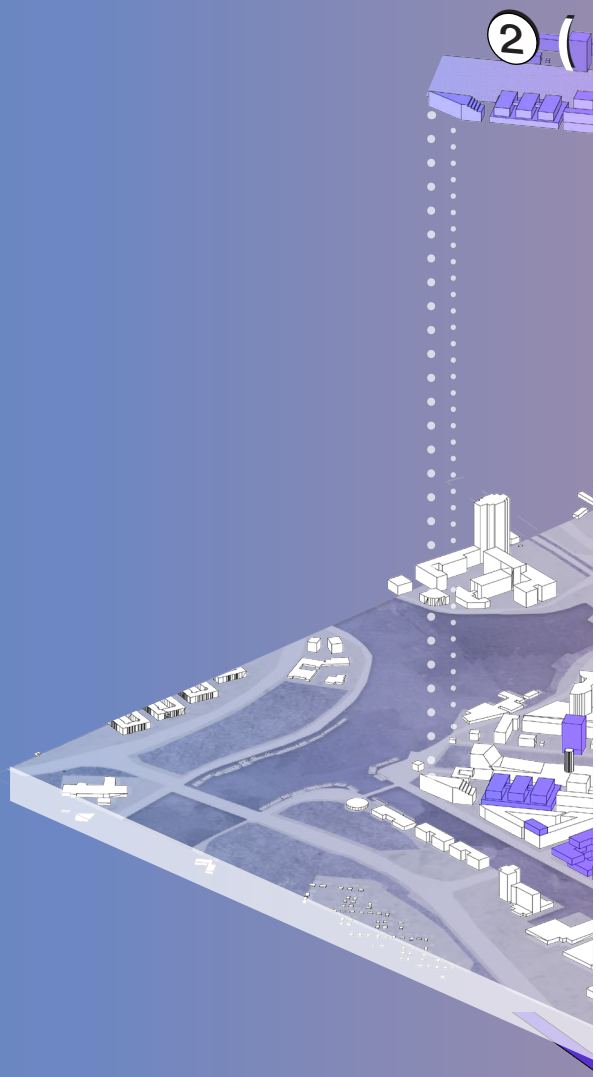
(P)leisure

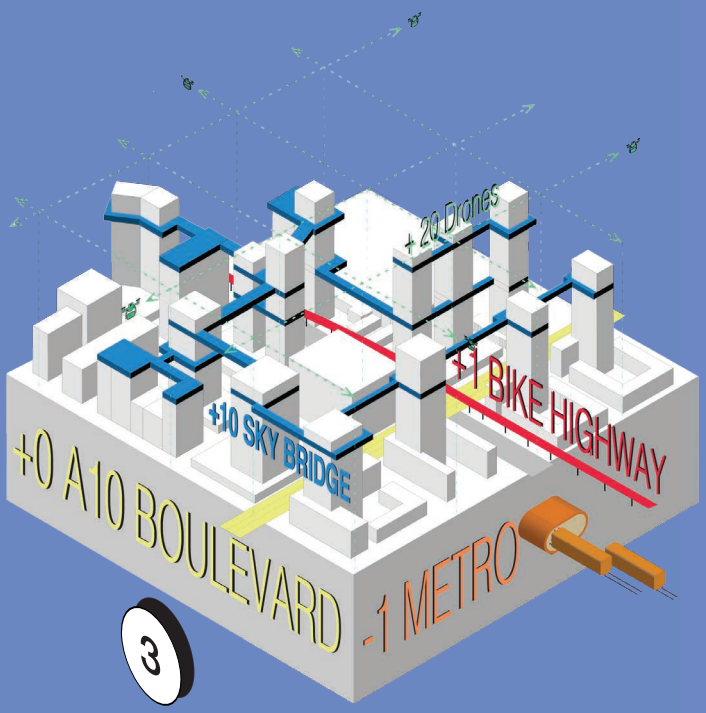
Goals
Amstel 2100

1 The dykes are leveled and metro lines are tunneled in order to gain space for the expected densification and also improving the spatial relationship between the neighborhoods.

2 The densification happens with goal of reinforce existing qualities in the area in order to emphasize local identity and hierarchy.

3 Prepare for the vertical city and 3D urbanism. Mobility wise the city will function on multiple levels, opening new possibilities of entering buildings.






p) leisure Park
1 Dykes leveled
Metro lines tunneled

Strategy
Amstel 2100

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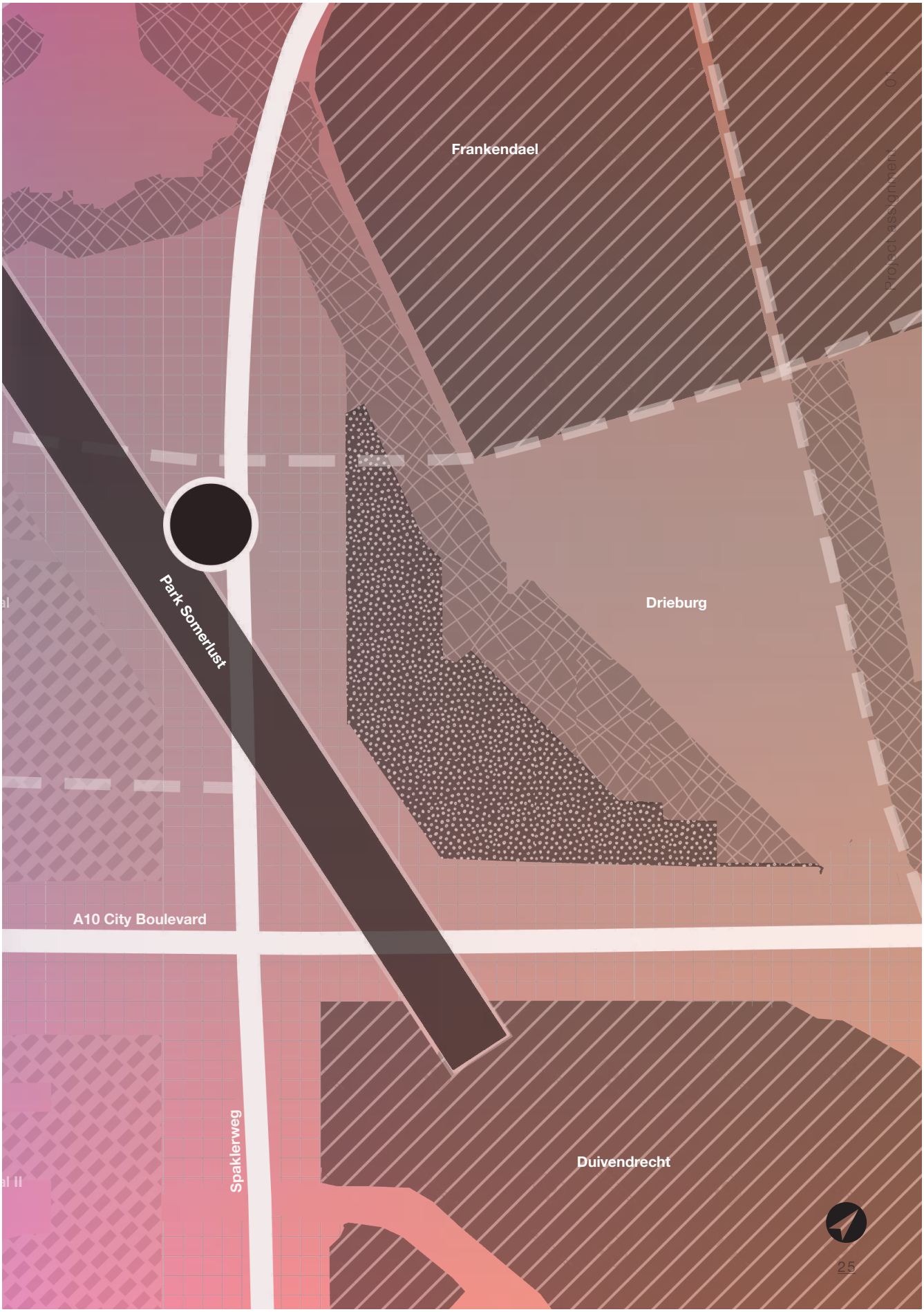
Schematic Map of Amstel area in the year 2100


Frankendael
Drieburg
Park Somerlust
A10 City Boulevard
Spaklerweg
Duivendrecht


Player 938
Player 456
Player 291
Player 291
Player 902
Player 13

02

SOCIAL DIGITIZATION

SOCIAL DIGITIZ

ATION

digitization | dɪdʒɪtʌɪˈzeɪʃ(ə)n | (also digitisation)

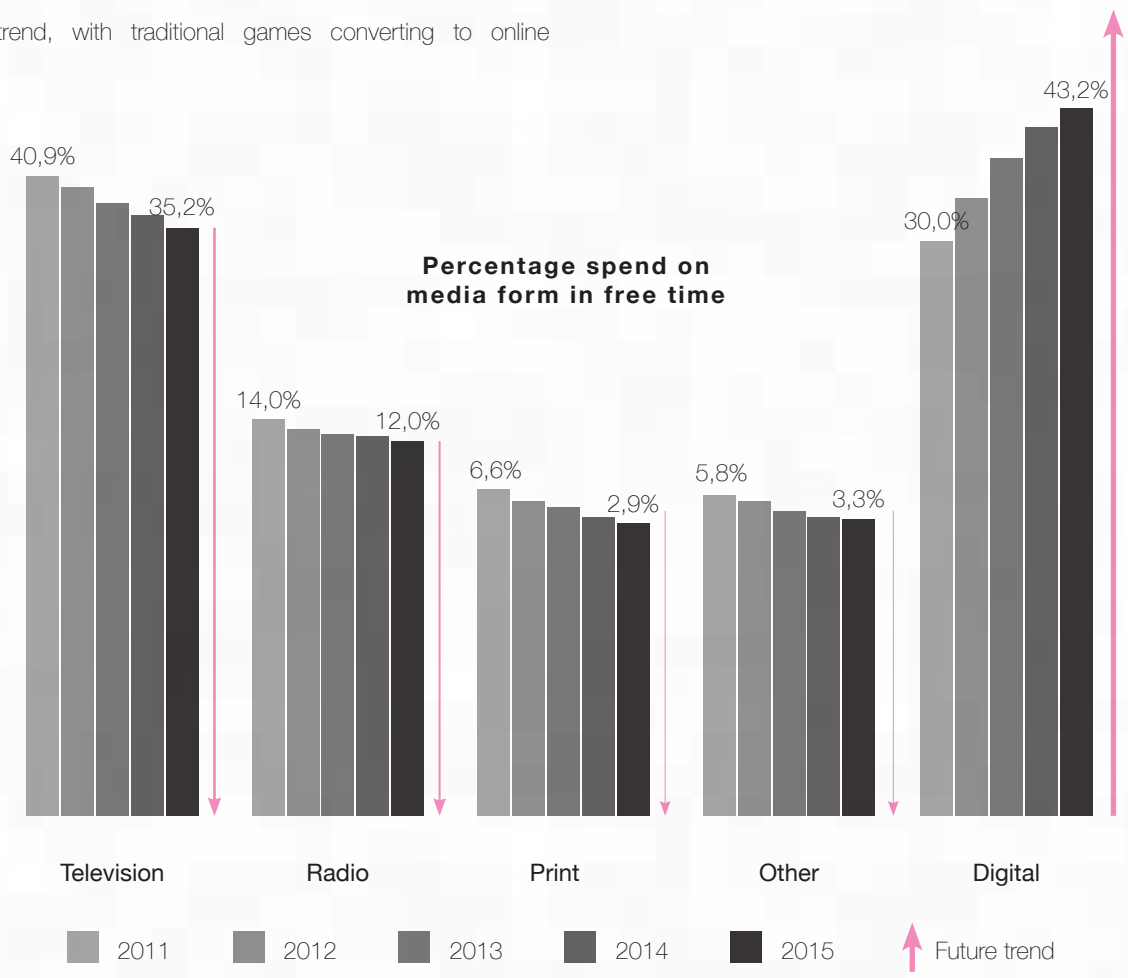
noun *[mass noun]*

the conversion of text, pictures, or sound into a digital form that can be processed by a computer: *the digitization of the rare map collection at the library* | *[as modifier] : digitization projects of archival material.*

Media Consumption

Society is digitalizing, people from young to old are rapidly adapting Internet in our lives, this can be witnessed in the shift in the form of media we consume. Whereas most of civilizations existence, newspapers and books where the dominant form of media, this got replaced by television and radio in the 19th century. With the invention of the Internet these forms of media have slowly been converted to digital platforms.

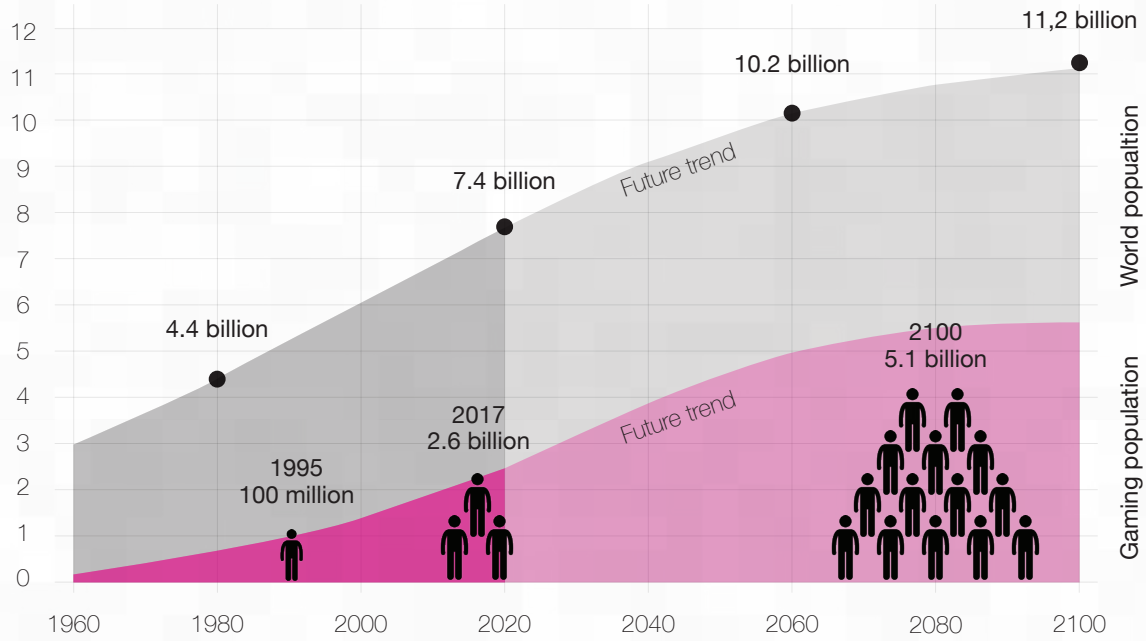
A clear trend is visible in the amount of time people are spending online, whether this is on a mobile device or computer. Games also play a large role in this rising trend, with traditional games converting to online platforms making more accessible, resulting in the gamer community expanding rapidly in recent years. The total revenues from the gaming industry in 2016 has greatly surpassed both the music and film industry combined. With the amount of casual gamers reaching almost 30% of the global population in 2017, the act of gaming is something that is tightly intertwined in the future society of leisure.



(The IFPI, The motion picture Association, Digital entertainment group, Newzoo 2016)

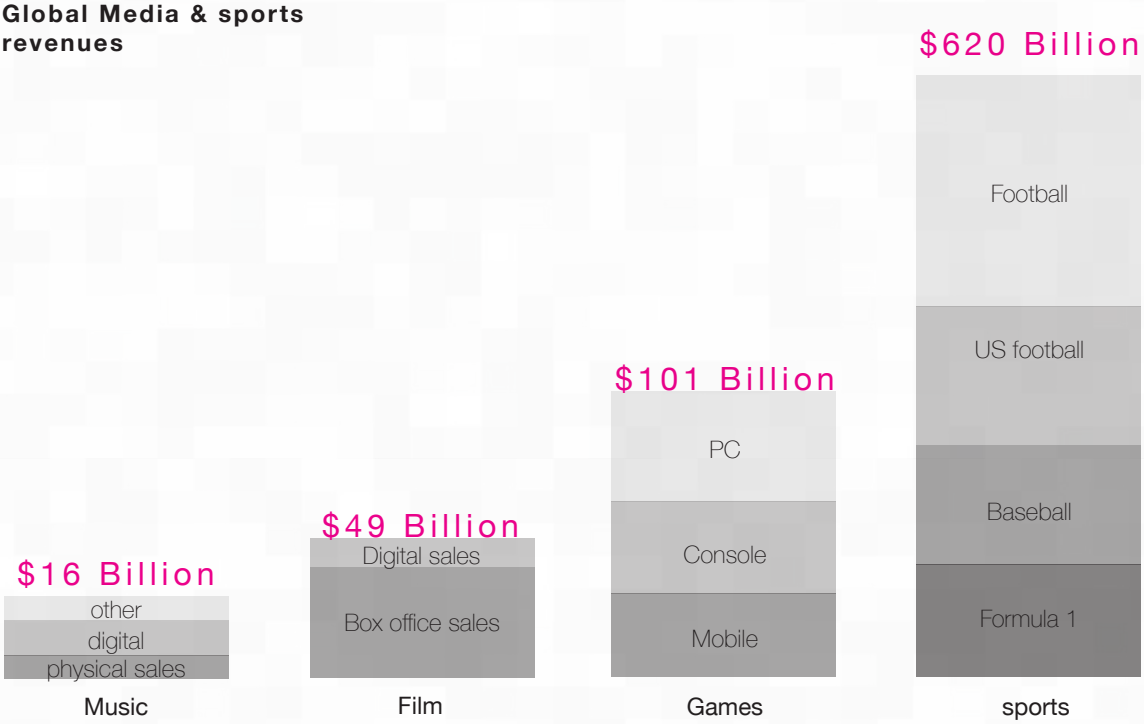
Gaming

World population and amount of gamers



(UN medium vertility variant 2018, Electronic arts 1995, Unity 2017)

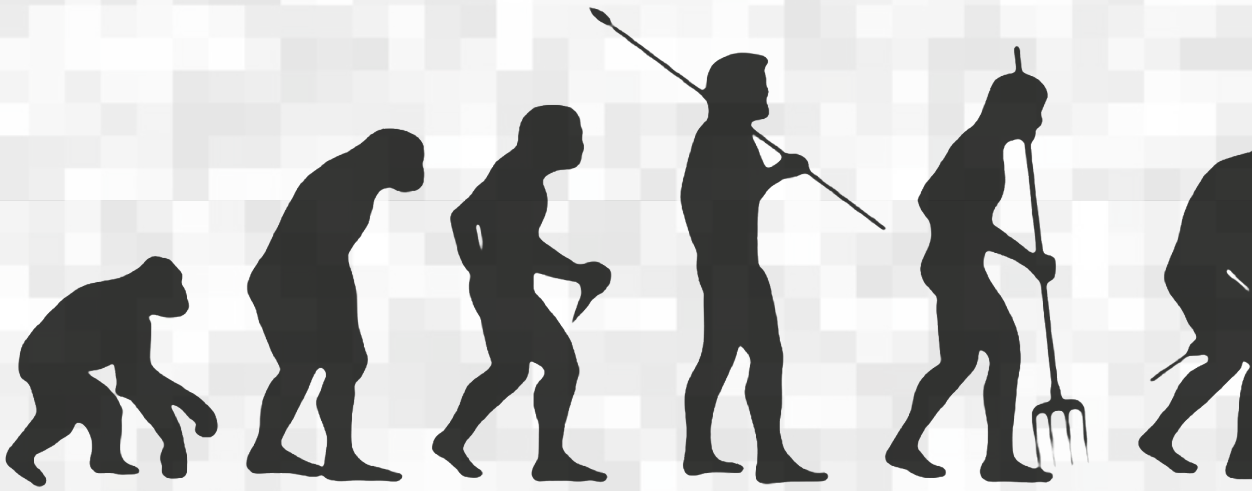
Global Media & sports revenues

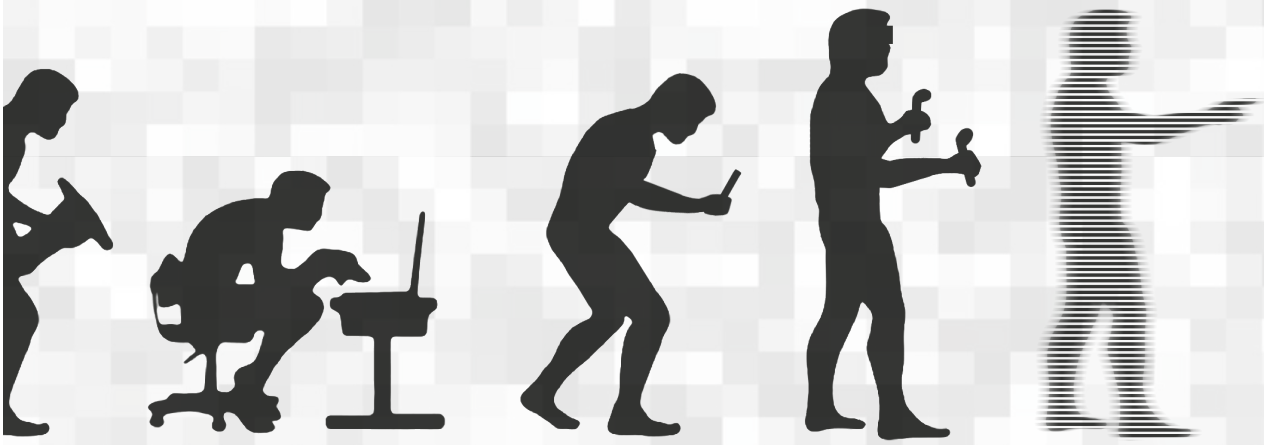


(The IFPI, The motion picture Association, Digital entertainment group, Newzoo 2016, AT Kearney)

PEOPLE WILL BEGIN TO LIVE MORE OF THEIR LIVES IN DIGITAL COMMUNITIES

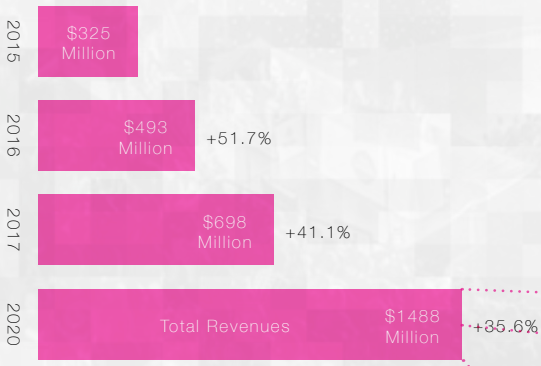
(Forbes 2018)



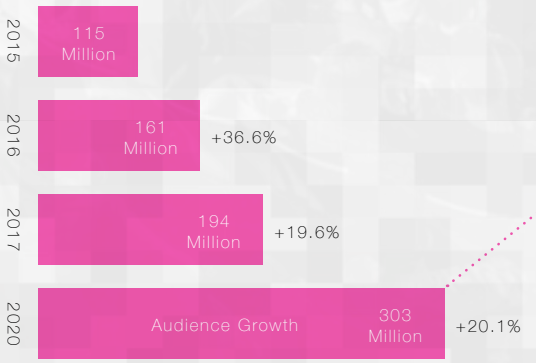


Gaming industry

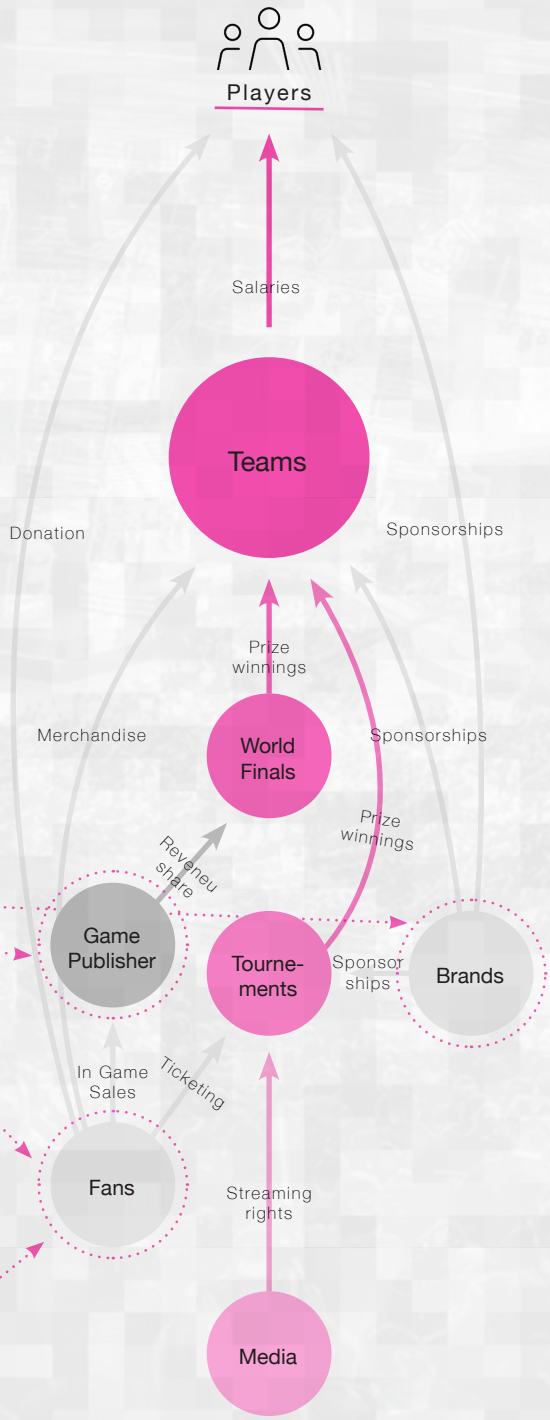
Gaming is becoming more popular among all ages and is not only limited as a leisure activity. eSports means electronic sports and is a form of organized, competitive gaming between professional gamers. Competitions are organized by several local or international organizations around the world, and the sport is rapidly growing in size. (Moneypod, 2018) The ecosystem how electronic sports is organized is similar to traditional sports, with professional leagues, teams, coaches, broadcasters and fans.



(Newzoo, *Global eSports market report.* 2017)



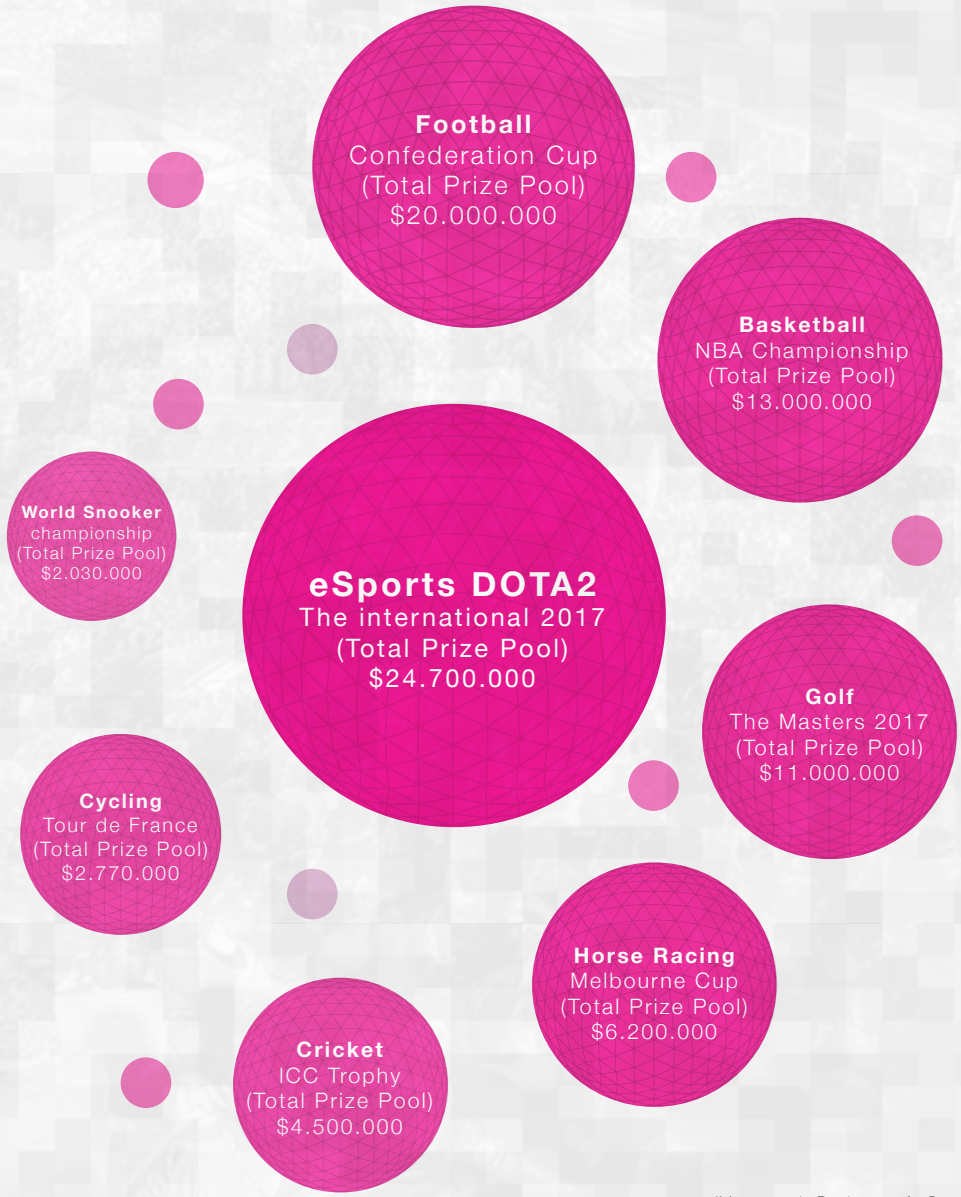
(Newzoo, *Global eSports market report.* 2017)



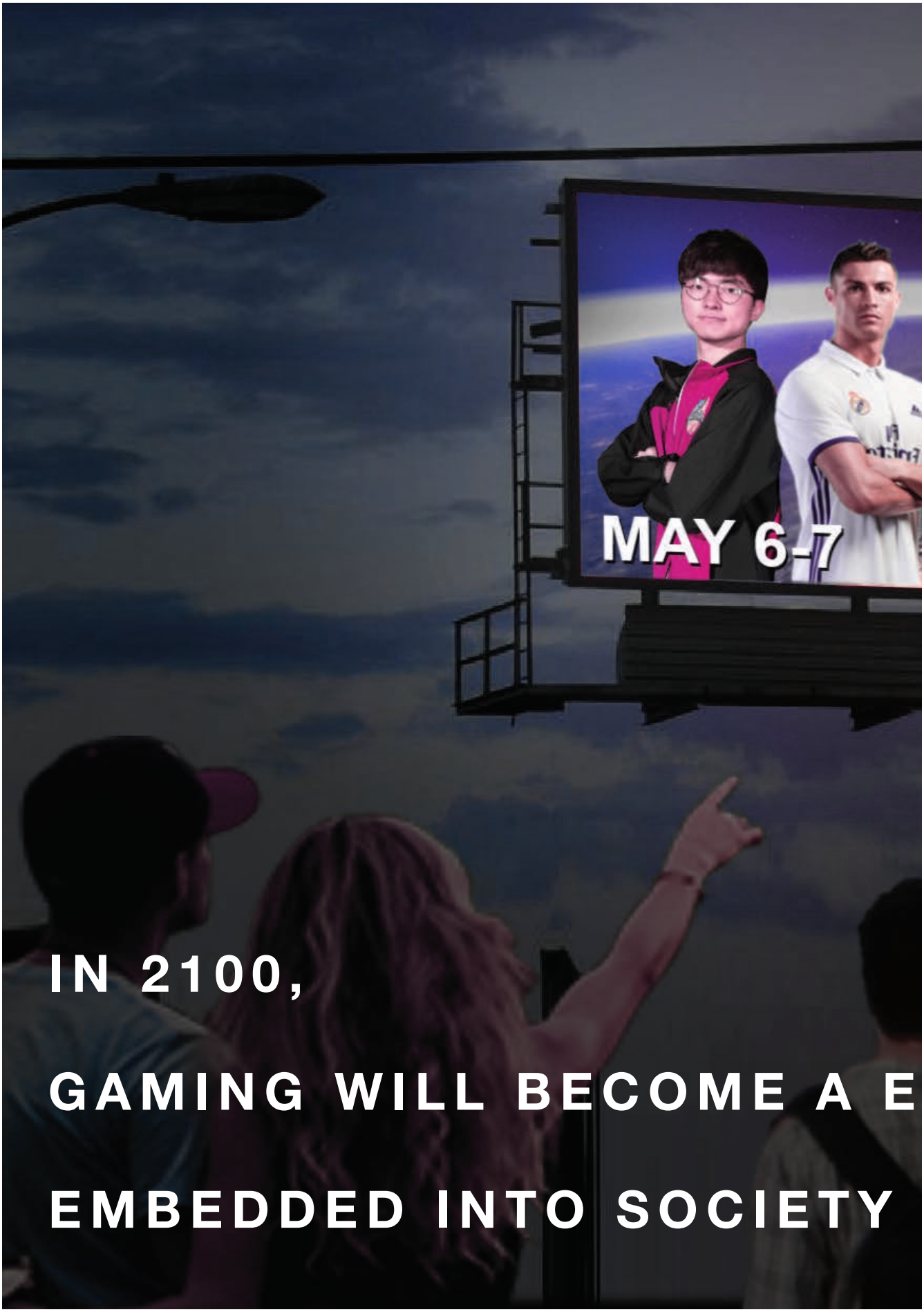
(The Nexus, *Future of eSports.* 2015)

e-Sports

Putting it into perspective, the still relatively young market already have tournaments with prize money that surpasses the prizes of NBA and Tour de France combined. In the future the market of eSports and gaming will be as big or even surpass traditional sports.



(Moneypod, *Business of eSports.* 2018)



IN 2100,

GAMING WILL BECOME A E

EMBEDDED INTO SOCIETY

CONOMY THAT IS

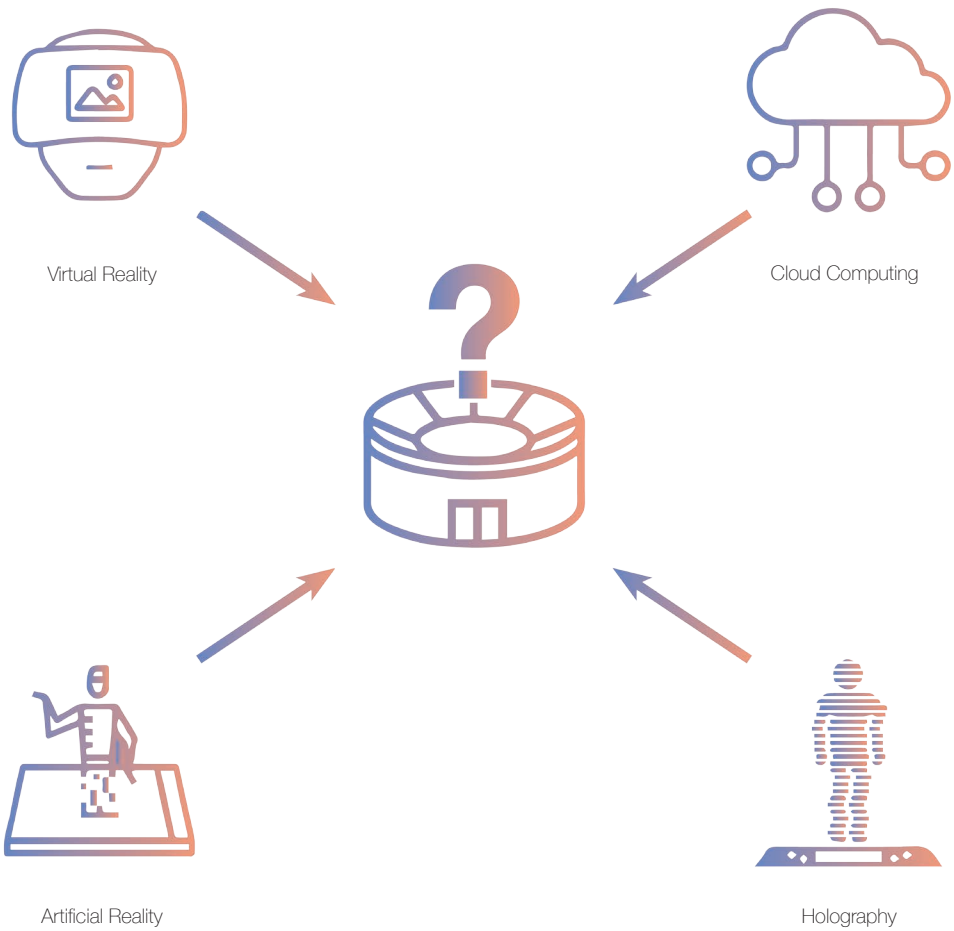
Problem statement Research question

Leisure is digitalizing, gaming has grown rapidly in recent years and is overtaking traditional types of free time spending such as television and radio. The shift in media consumption impacts how the user experience it, rather than experience it in real-life this new media mostly take place on the Internet. Online accessibility continues to increase together with the gaming industry, which has already surpassed the music and film industry combined. With VR, AR, cloud computing and other technologies becoming more mainstream, gaming will certainly be more compelling, however the way we interact with gaming will be much different in the future. There has been tendency for gaming devices to become smaller and mobile, this trend alters the fundamental spatial relationship one has with its surrounding. Whereas one was bound to a certain space, gaming can now occur everywhere. On the competitive side of gaming there exist a huge community that is ever increasing, with ecosystems that is similar to traditional sports. (competitive leagues with team accompanied with managers, coaches, sponsors and fans). These events can be streamed and viewed online, however there is no real substitute for attending a physical venue. Just like traditional sports people want to be together cheering with thousands of people and catching a glance of their idols. Architecture can contribute to the user's experience of the cultural moment, in the future city of (p) leisure the gaming hub is an essential contribution to the identity of Amstel. From this problem statement the main research question emerged which will be answered by solving the sub-questions proposed below.

" How will future gaming technologies impact the design of a Gaming hub for Amstel area in 2100?"

- Which users will make use of the gaming hub?
- What are the future developments in gaming?
- What are the spatial implication as a result of development in gaming?
- What programme is required for a gaming hub?
- What are the design requirements for Amstel 2100?

How will future gaming technologies impact the design of a gaming hub for Amstel area in 2100?



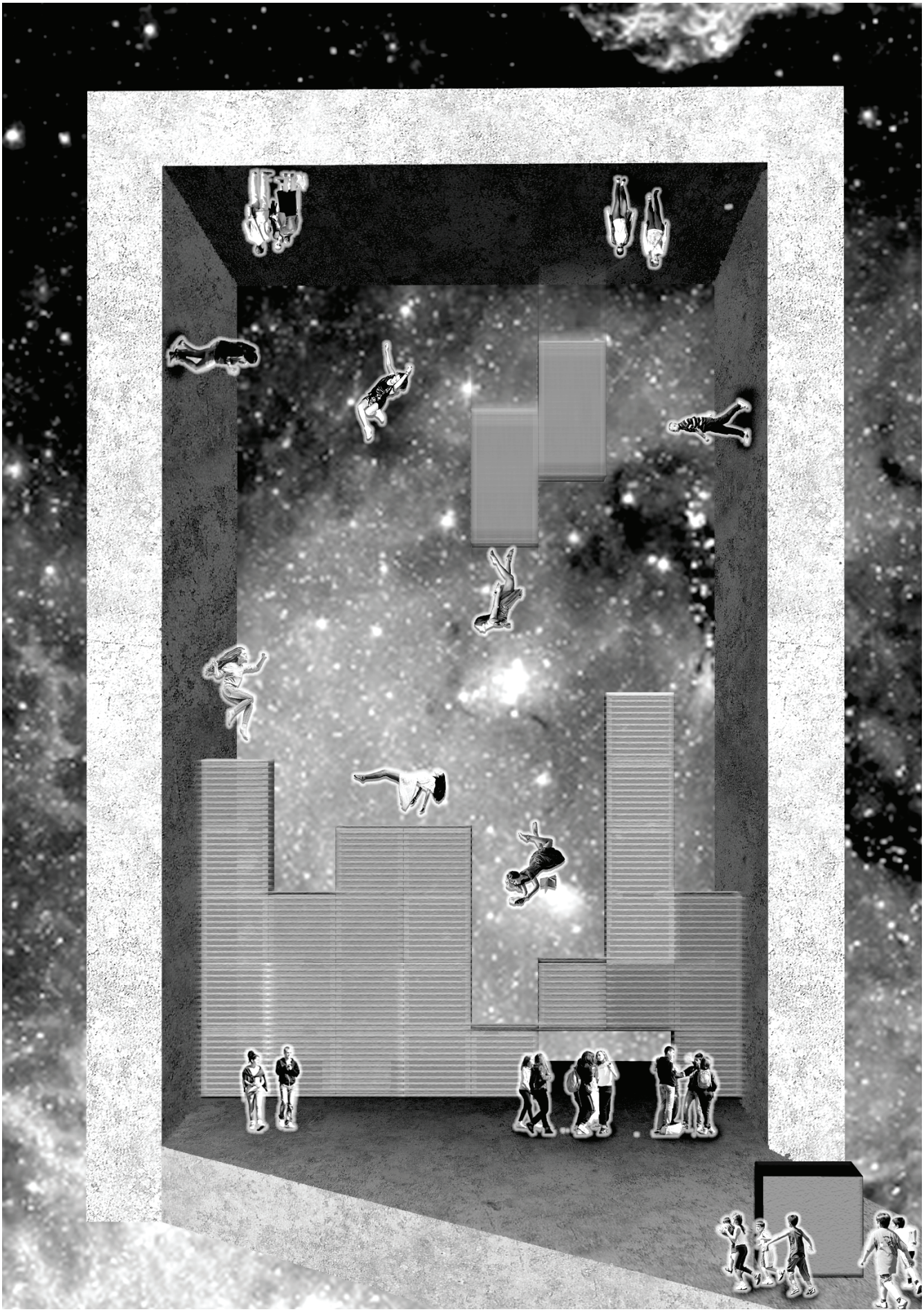
Project Ambition

The ambition is to use architecture specifically to contribute to the gamers experience of the cultural moment of playing or viewing the game. Now sports stadium and event halls are used for eSports events, but there is a big difference in how the spectators view traditional sports and eSports. During an eSports event, most of the action happens on screen, thus sitting further away provides a better view. The orientation and layout of seating will have to be reorganized to optimize viewing angles to the screen. In 2100 New technologies like VR, AR and holografics will alter the relation between actor and spectator, being able to bring together the physical and digital realm will play a huge influence on how the spectator experience the games. How- ever, the biggest challenge is that the spectator can also watch the game online from his home for free. The building needs to provide something the eSport fan and average gamer cannot get at home. A full-on immersive, engaging, activity that leaves the consumer with a memorable experience through architecture is what ultimately is desired in this project.

[1] A place where gamers of different generations can come together to play an spectate games

[2] Provide an exclusive gaming experience that cannot be achieved at home

[3] Providing new technologies that utilizes the landscape of the city as the platform for gaming




03
GAMING
DEVELOPMENT

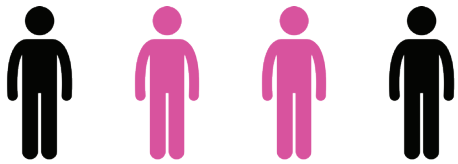
Demographics of Gamers

Which user make use of the gaming hub?

Intergeneration gaming

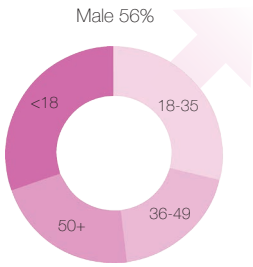
Based on studies by the entertainment software association, 51% of the American population occasionally play video games. The average age of the gamer is 34 years old and is slowely continuing to rise because of a surge of gaming among senior people. With seniors becoming a part of the gaming community, intergeneration gaming will be more common. Heavy gamers make up 40% of the gamers, placed in the context of the Netherlands this means that the country roughly has 3,4million avid gamers.

51% of the population play video games

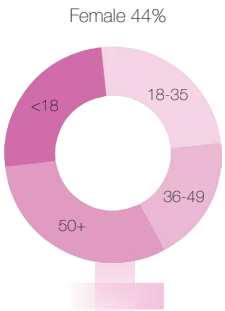


(ESA, 2018)

Average male gamer is 32 years



Average female gamer is 36 years



<18 years	17%
18-35 years	16%
36-49 years	12%
50+ years	11%

<18 years	11%
18-35 years	13%
36-49 years	8%
50+ years	12%

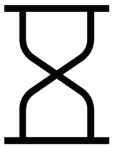
(ESA, 2018)

40%

Average gamer

Heavy gamer

Time spend on games



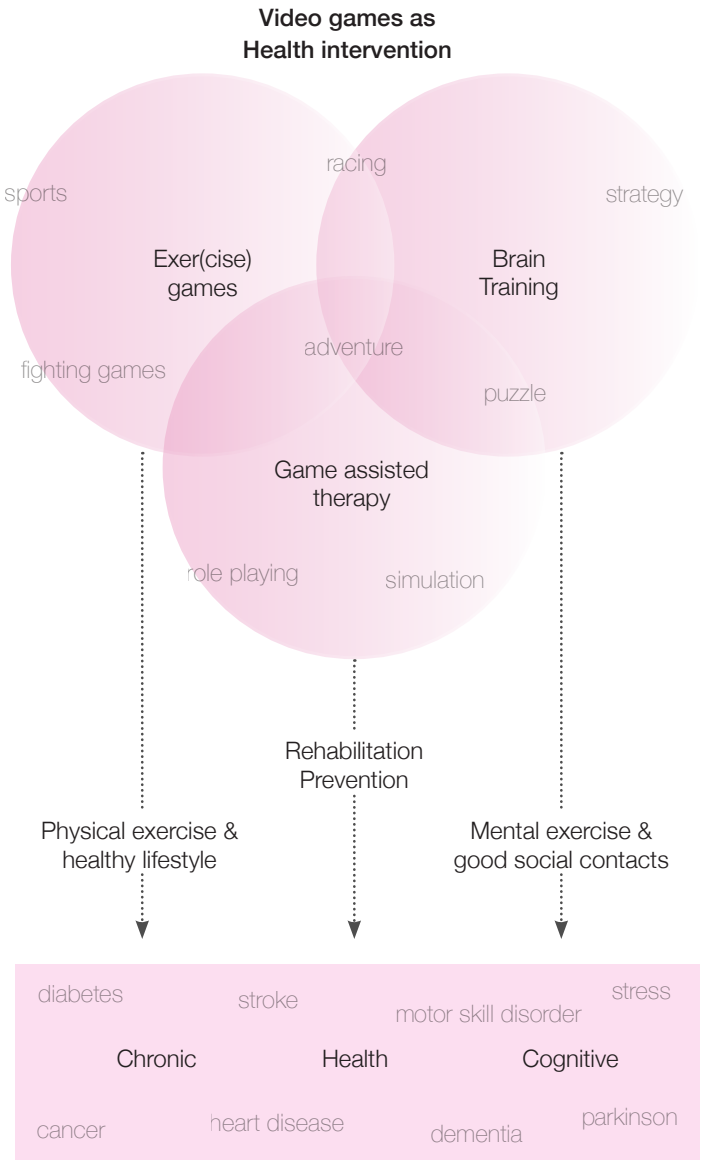
24min

1 hour +

(Verto analytics, 2016)

Gaming more than leisure

The number of elderly playing video games are increasing, in the future this particular sector will also play an important role in the gaming industry. Already there has been games that are specifically targeted towards preventing and curing chronic and cognitive diseases that are commonly related to elderly. (Frontiers in Psychiatry, 2018) Gaming can be more than just a leisure activity, in the future more of cognitive and physical games will be implemented as a replacement for school and physical sports. Therefor gaming can be used as a tool for social interaction.



(Frontiers in psychiatry, 2018)

Identity transformation

The term gamer are often associated with teenagers that hide in their game caves with energy drink and junk food. This stereotype is however changing more and more, with the help of competitive eSports. As esports athletes, a balanced lifestyle can improve overall health as well as gaming performance. Exercise produces countless physical adaptations that can help players play reach a higher level—both physically and mentally. The three major adaptations include: improved endurance, an increased ability to cope with stress, and improved cognitive function.
(J. Middelton, 2018)

With technology development video gaming is able to become more physical and immersed with the reality. What if in the future of gaming will be practice as much as physical sports or even take of the industry? Currently 57% of Dutch practice a physical activity per week, this would result in 9,7million people playing video games regularly in the future.

"Improved mental and physical endurance develop from increased energy levels."

"improved ability to combat stress."

"improved cognitive functions like speed, attention and flexibility."

"Approximately 1,08 hours e-athletes daily training is physical exercise."

PHYSICAL

THE IMPORTANCE OF EXERCISE TRAINING FOR ESPORTS ATHLETES

JAKE MIDDLETON
@JAKEATESPL

Every time I work with new gamers, I always discuss the benefits of physical training. Specifically, how exercise can have a major impact on your gaming performance. Most people know that exercise is great for our overall health—there's plenty of research to support this [1].

As esports athletes, a balanced lifestyle can improve overall health as well as gaming performance. Exercise produces countless physical adaptations that can help players play reach a higher level—both physically and mentally. The three major adaptations include: improved endurance, an increased ability to cope with stress, and improved cognitive function.

Improved mental and physical endurance develops from increased energy levels. The cells in our body contain mitochondria which produce energy. As we incorporate exercise into our daily routine, the number of mitochondria will increase due to increased demand on the body. We will feel this increase in not only our muscles but also our brains [2]. This gives you a major advantage during tournament play when you need to raise the bar both physically and mentally for an extended period of time.

An improved ability to combat stress isthe second major adaption [3]. Exercise is its own version of stress on the body. However, instead of thinking about this as a negative, think about it as a positive. In the right doses, this "stress" will improve your ability to handle the emotional stresses of gameplay. In the end, this preps you to become a stronger opponent mentally.

We all know that exercise is great for the body, but it's also very good for the brain. This brings us to our third adaptation. Extensive research shows that exercise can improve cognitive function—speed, attention, and flexibility, as well as pumpup your hippocampus (responsible for learning and processing new information). Exercise has also been proven to improve motor function,such as reaction time and hand-eye coordination [4] [5] [6]. There are also many mental health benefits such as a decrease in stress, anxiety, and depression [7]. These benefits allow you to game at a higher level, leading to become a stronger competitor.

Additional research on exercise is beginning to shed some light on its effects for esports athletes. A study from the German Sports University examined the physical and mental demands of professional gamers during competitions [8]. The study found that esports competitors are exposed to physical strains just like conventional athletes.

Professor Ingo Froböse, GSU study lead, was impressed with these results. He had never seen this type of physical strain result in any other sport. The study showed the amount of stress hormone, cortisol, going through the players during competition matched those of race car drivers. In addition, esports players also had heart rates around 160-180 beats per minute (which is like running a mile nearly as fast as you can!) Unfortunately, many esports players don't realize the massive demands being placed on them, and therefore don't train for competition in a professional manner. This can lead to many problems that could be easily be prevented with adequate exercise in the esports world.

Another interesting research study titled "Do E-Athletes move? A Study on Training and Physical Exercise in Elite E-Sports" examined the training routines of 115 elite e-athletes, with a special focus on their physical exercise routines [9]. According to these 115 participants, e-athletes train approximately 5.28 hours every day year-round at the elite level. Approximately 1.08 hours of that daily training is physical exercise. More than half (55.6%) of these elite e-athletes believe that integrating physical

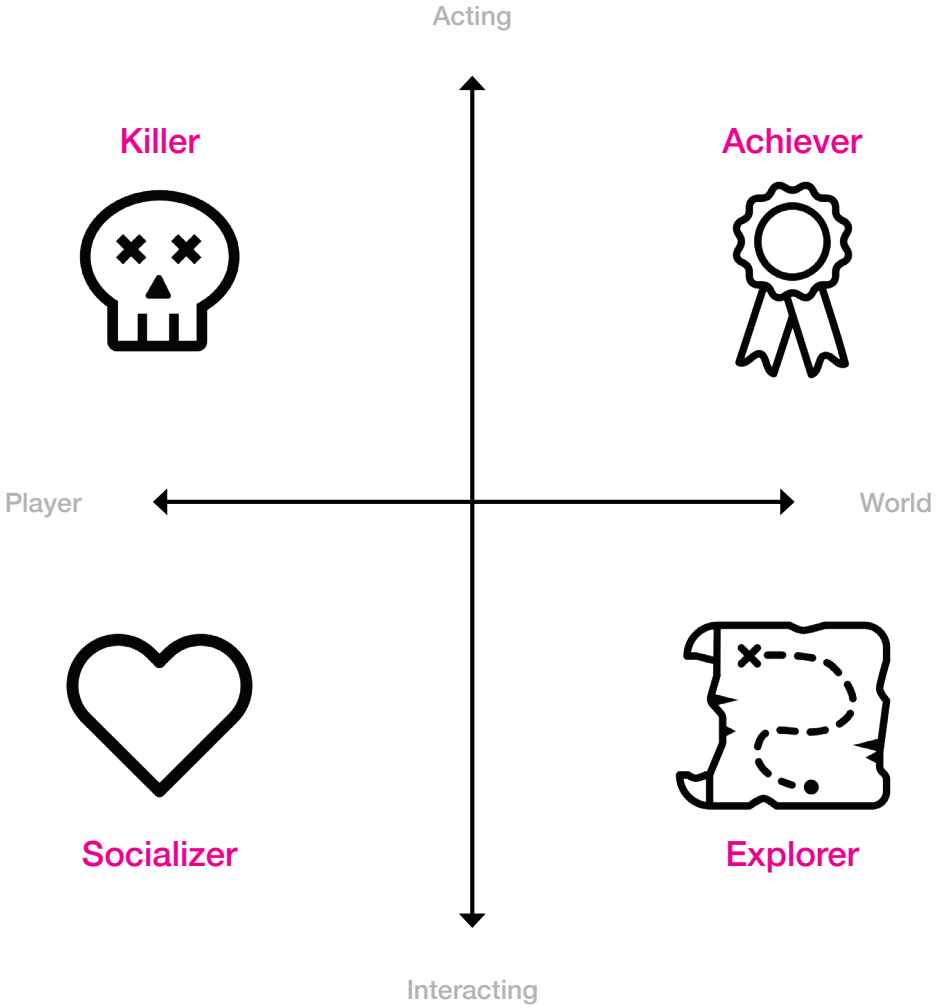
(Acer, 2018)

Type of Gamers

Richard Bartle developed a quadrant to classify four types of players based on their actions in video games. The quadrant consist of four characters: Killer, Achiever, Socializer and Explorer. These are depicted on a quadrant model where the X-axis represents the choice of players interacting with other players and the Y-axis the players choice of interaction or unilateral action. (Taylor, 2016) Since the Bartle taxonomy on player types, there have been expanded versions on his theory, however the original one is still regarded as the most simple and general one.

Killer	A focus on winning, rank and peer to peer competition.
Socializer	A focus on socializing and a drive to develop a network of friends and contacts.
Explorer	A focus on attaining status and achieving preset goals quickly or completely.
Achiever	A focus on exploring and a drive to discover the unkown.

Bartle taxonomy of player types



(Richard Bartle, 1996)

Gaming Technology in 2100

What are the future developments in gaming?

1950 | 1960 | 1970 | 1980 | 1990 | 2000

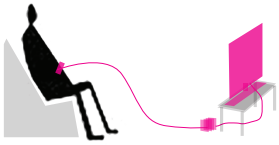
1972
Pong Arcade machine

The arcade machines where often situated in arcade rooms which required the user to go to a specific location to play the games.

1st gen
Gaming arcade

1977
Atari video game console

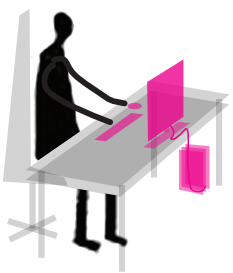
enabled gamers to play video games in their own home. Newer versions of these home gaming console are still widely popular nowadays.



2nd gen
Game console

1980
HP Workstation computer

The first home computer and internet allowed gamers to interact with each other in a digital world whilst still being inside.



3rd gen
Computer

1989
Nintendo Game boy

The Nintendo game boy provided a portable gaming experience with the screen and console built into a handheld format.

4th gen
Handheld

2010 | 2020 | 2030 | 2050 | 2070 | 2100

2010
Mobile device gaming

The proliferation of mobile devices such as ipads, and phones made mobile gaming more accessible to everyone and everywhere.

2040
VR & AR contact lens

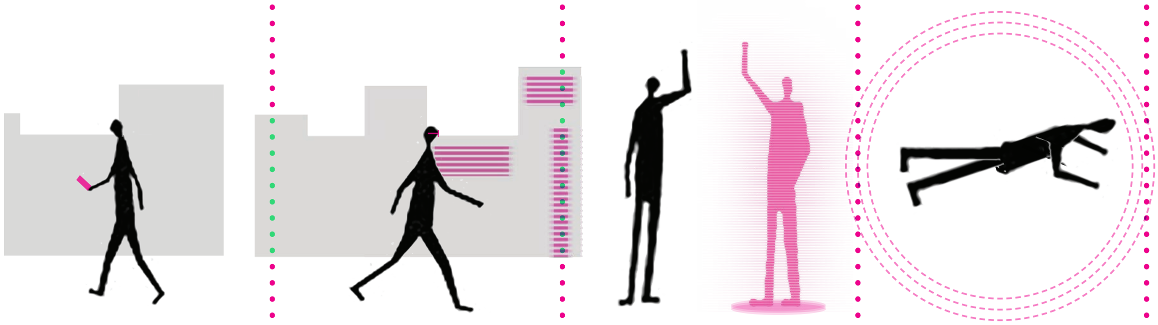
Virtual reality lenses widens the playing screen to the full field of vision of the player. Unlocking new platforms to play video games in.

2070
Holographic gaming

Life-like holographic projection makes it possible for games to play videos games in real life without wearing any device.

2100
Zero gravity technology

superconductor nano-tech clothing together with diamagnetic levitation. People will be able to experience zero gravity whilst on earth.

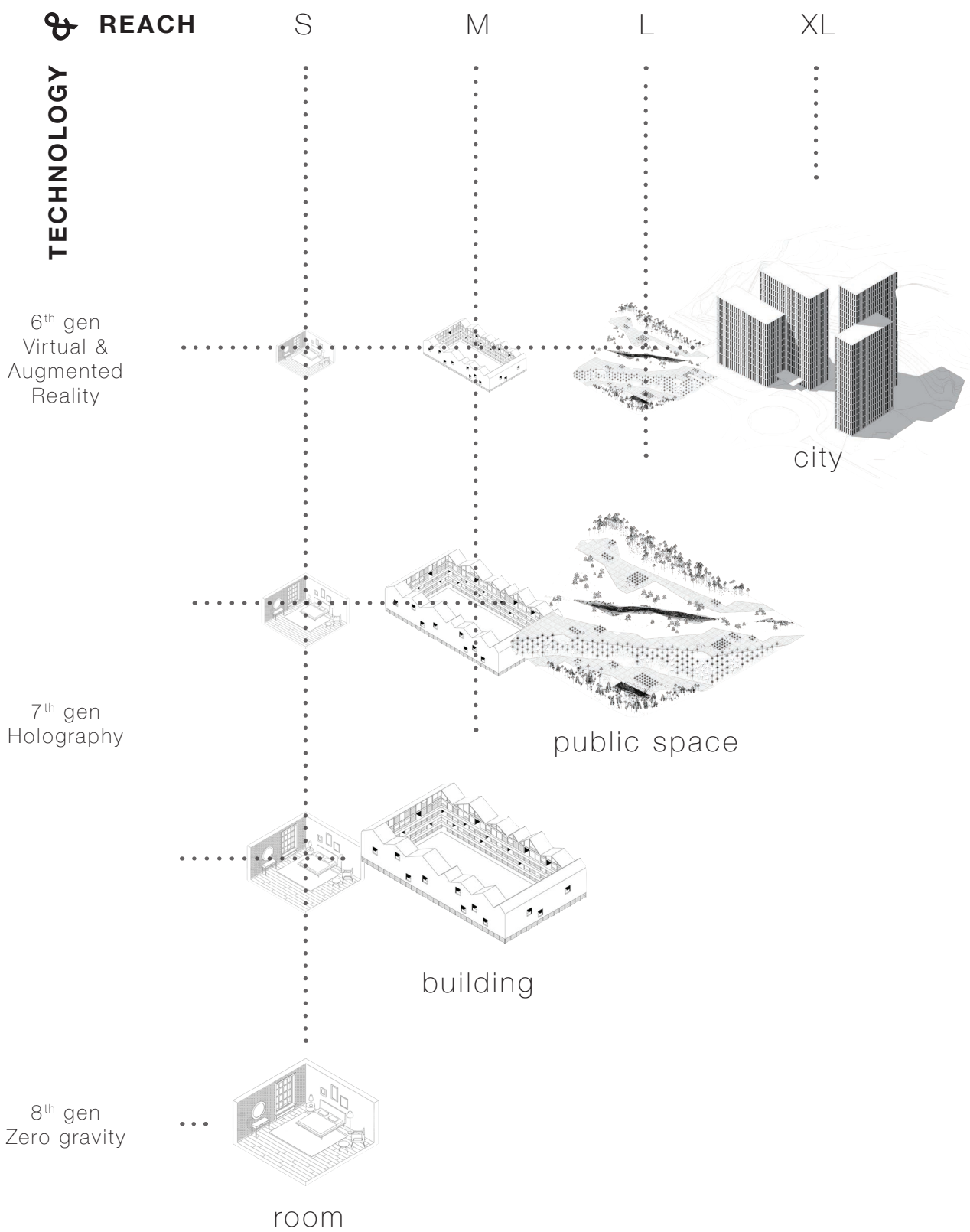


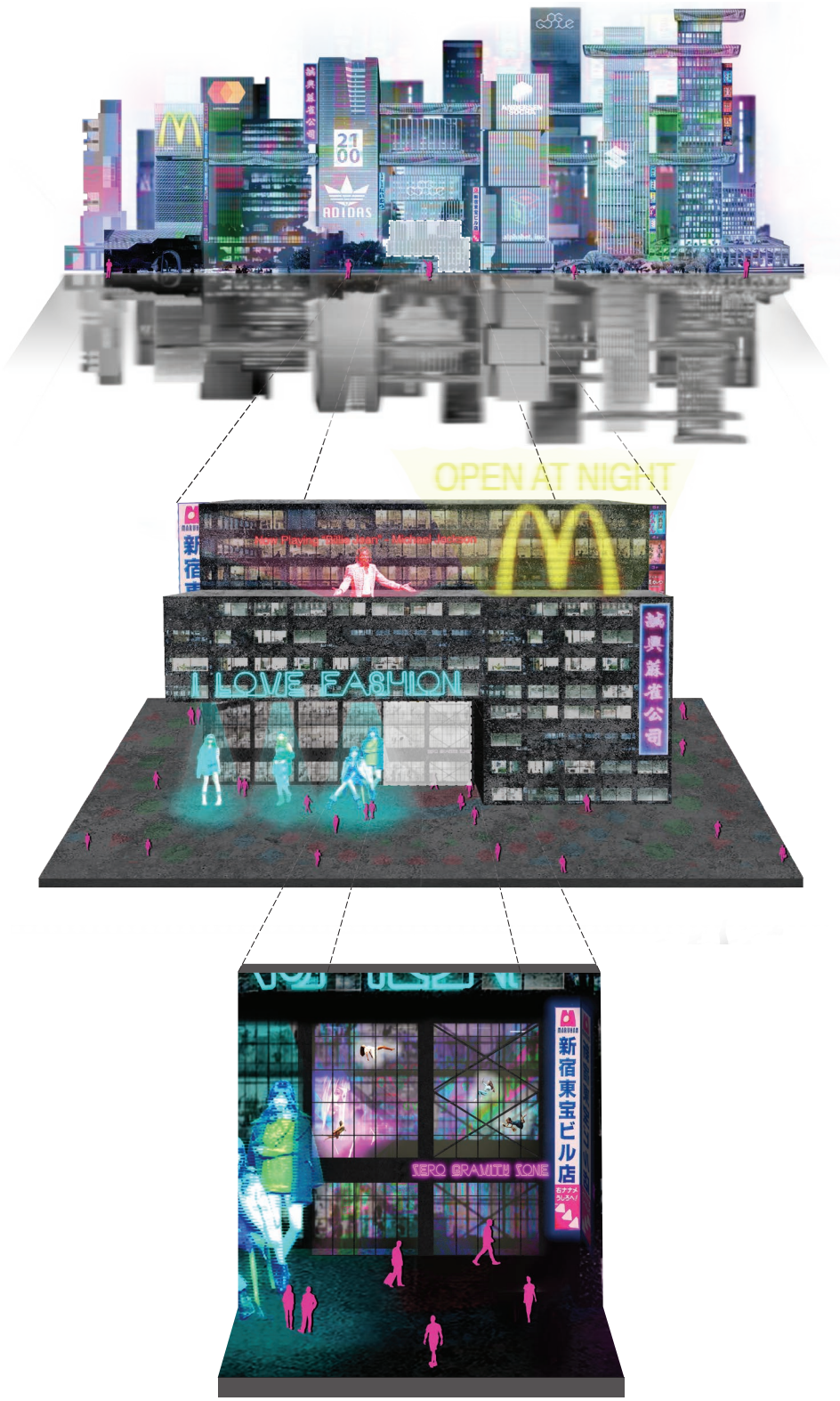
5th gen
Mobile device

6th gen
Virtual & Artificial Reality

7th gen
Holography

8th gen
Zero gravity


& REACH
S
M
L
XL
TECHNOLOGY
6th gen
Virtual &
Augmented
Reality
city
7th gen
Holography
public space
building
8th gen
Zero gravity
room



Augmented Reality society

24hour

Holographic advertisements and games

Nighttime

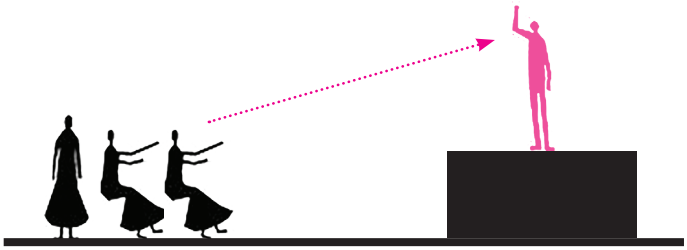
Zero gravity playgrounds

Hourly activity

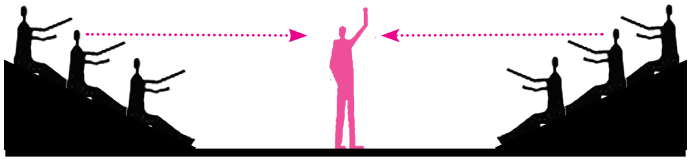
Social and spatial relation

What are the spatial implication as a result of development in gaming?

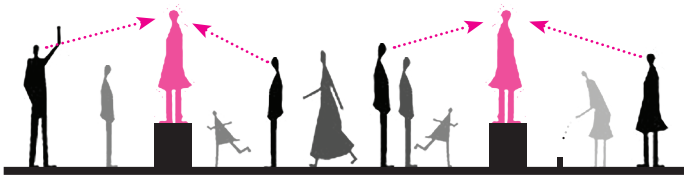
Traditional



End focus

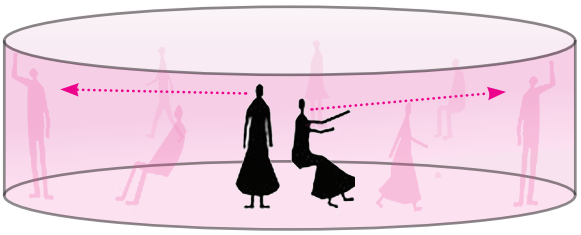


Center focus

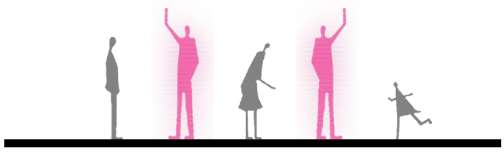


Mixed

Future



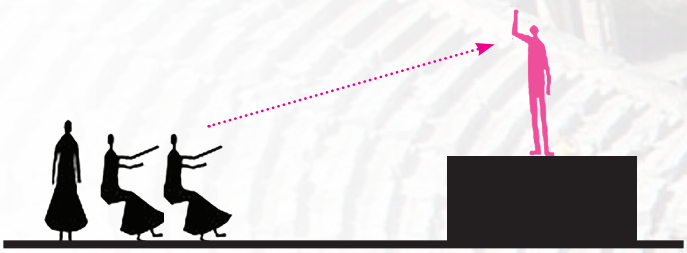
Augmented & Virtual reality
360 view



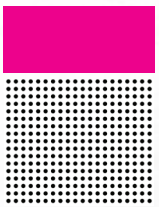
Hologaphy

Zero Gravity

Traditional
End focus

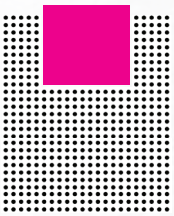


End stage



Proscenium stage

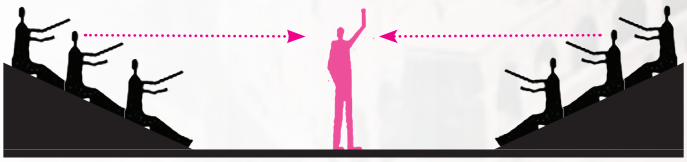
Thrust stage



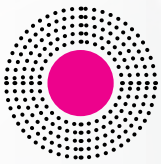
End stage + ring

Theatre of Epiduarus, Greece. 400BC

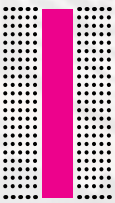
Traditional
Center focus



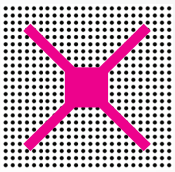
Round stage



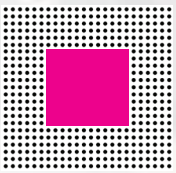
Traverse stage



Cross stage

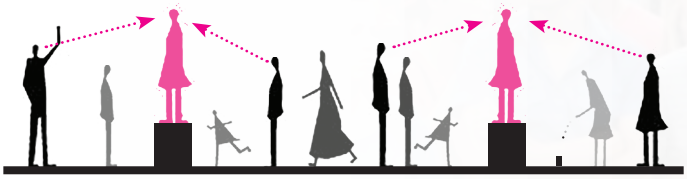


Square stage

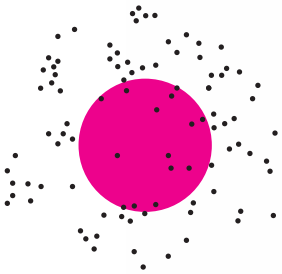


Amphitheater Coloseum, Rome. 80AD

Traditional
Mixed stage



Mixed centered

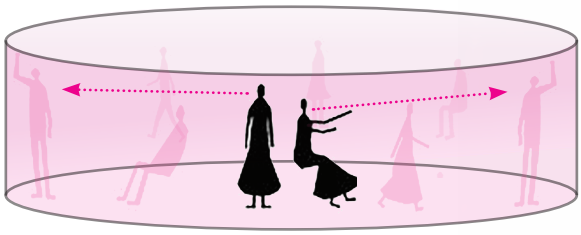


Mixed scattered

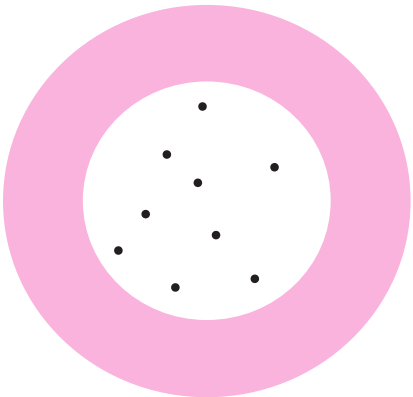
Dam square, Amsterdam. anno 2018

Future
AR & VR

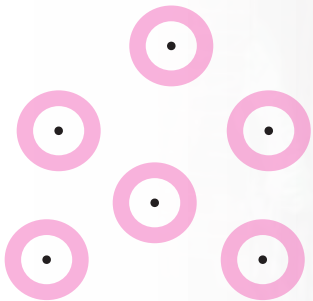
As far as the eye reaches



Communal augmented realities



Individual augmented realities

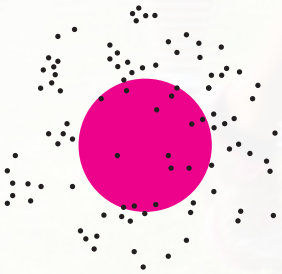


Hyperreality, Keiichi Matsuda. 2016

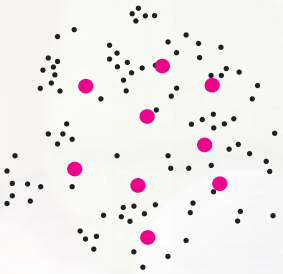
Future Holography

Around building and its nearby surrounding

Mixed centered



Mixed scattered

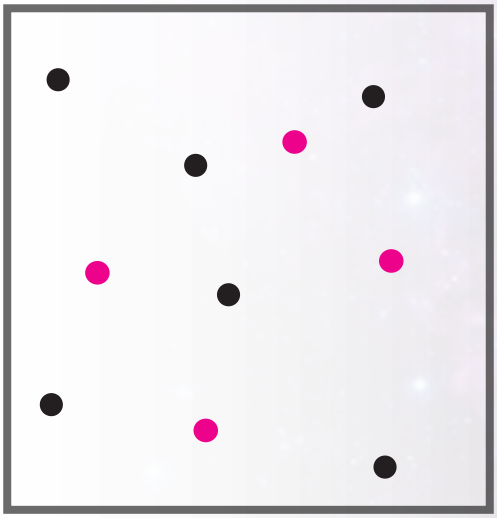


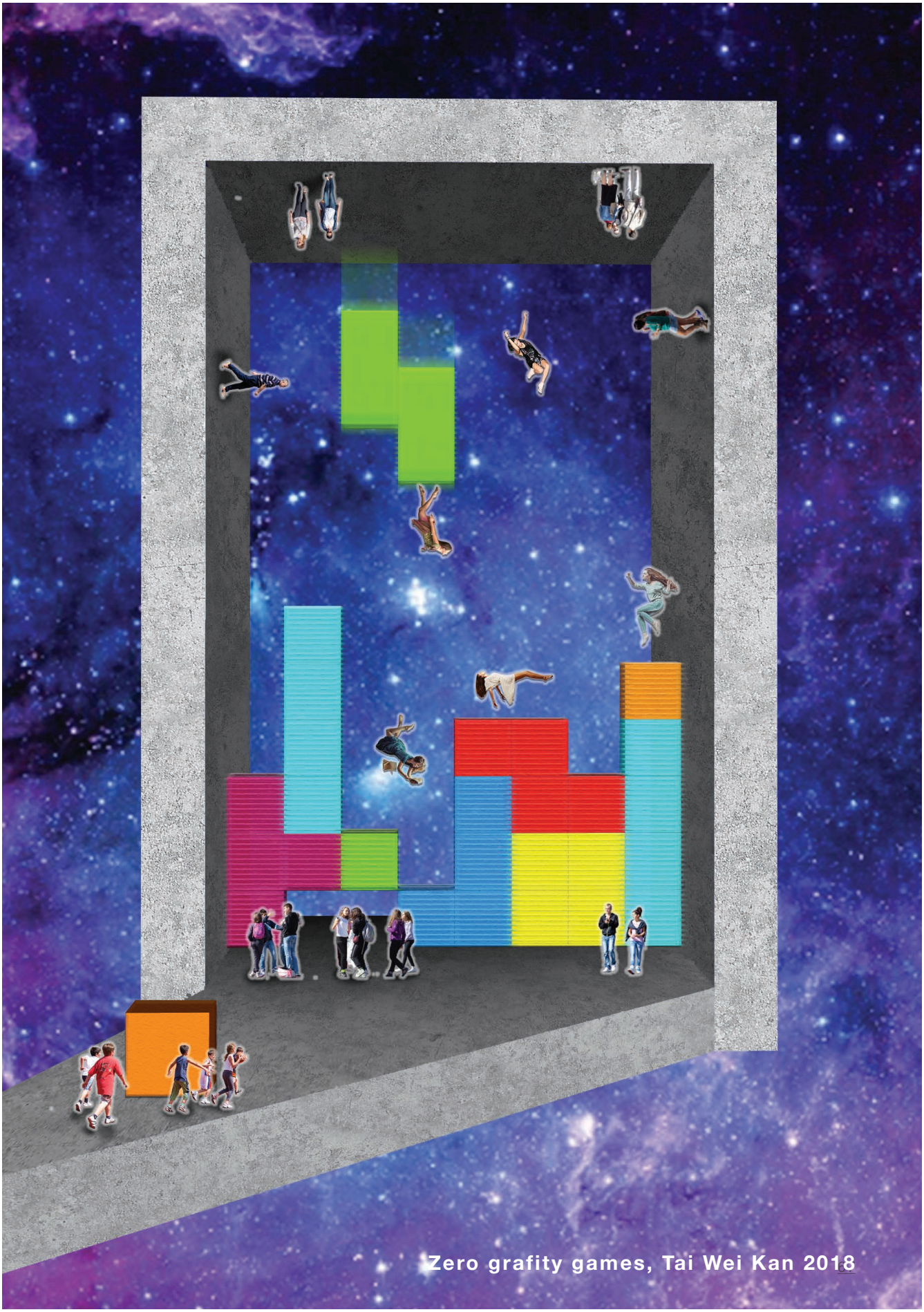
Girl footballing with NPC's, Tai Wei Kan 2018

Future
Zero Gravity

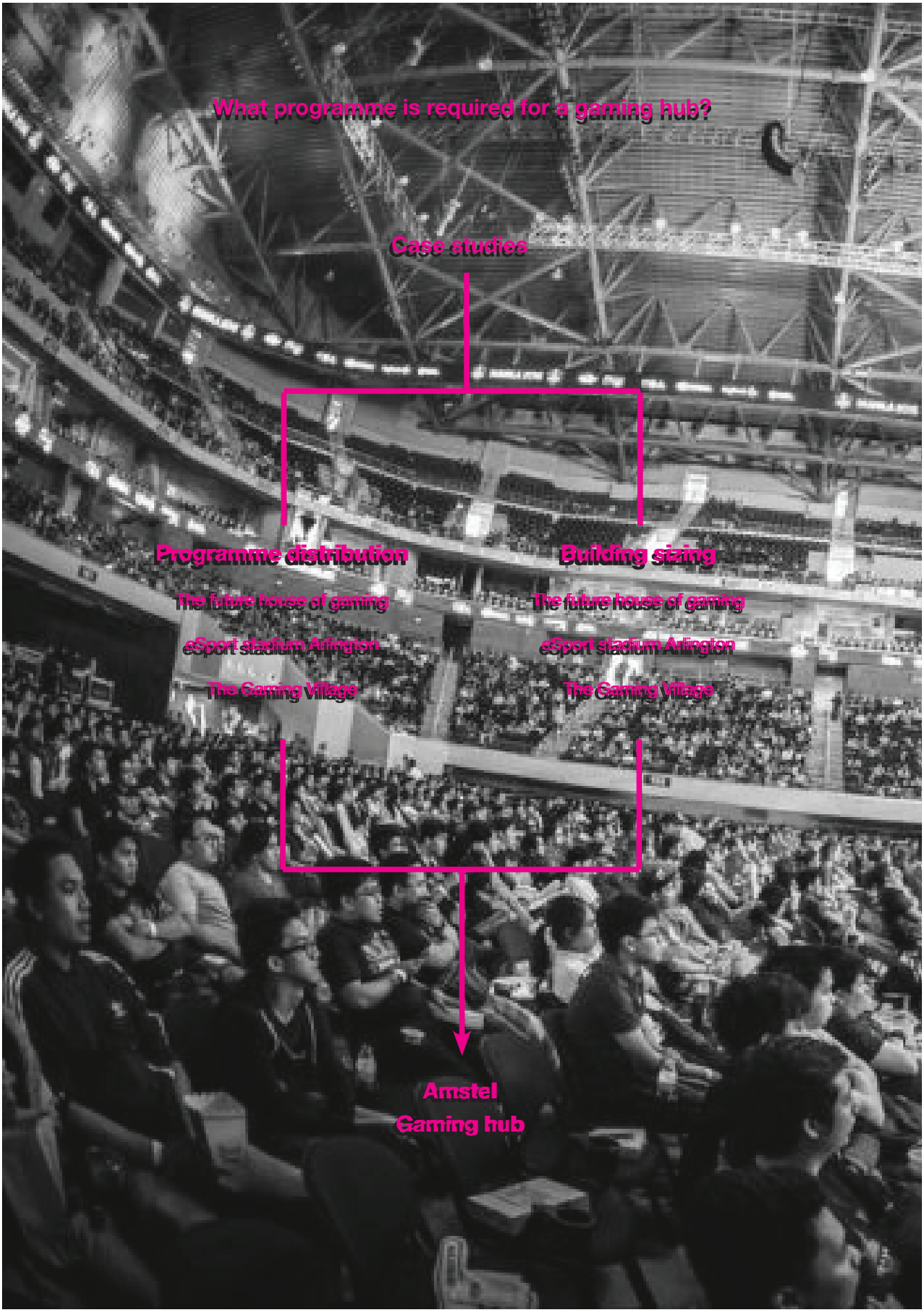
Room scale

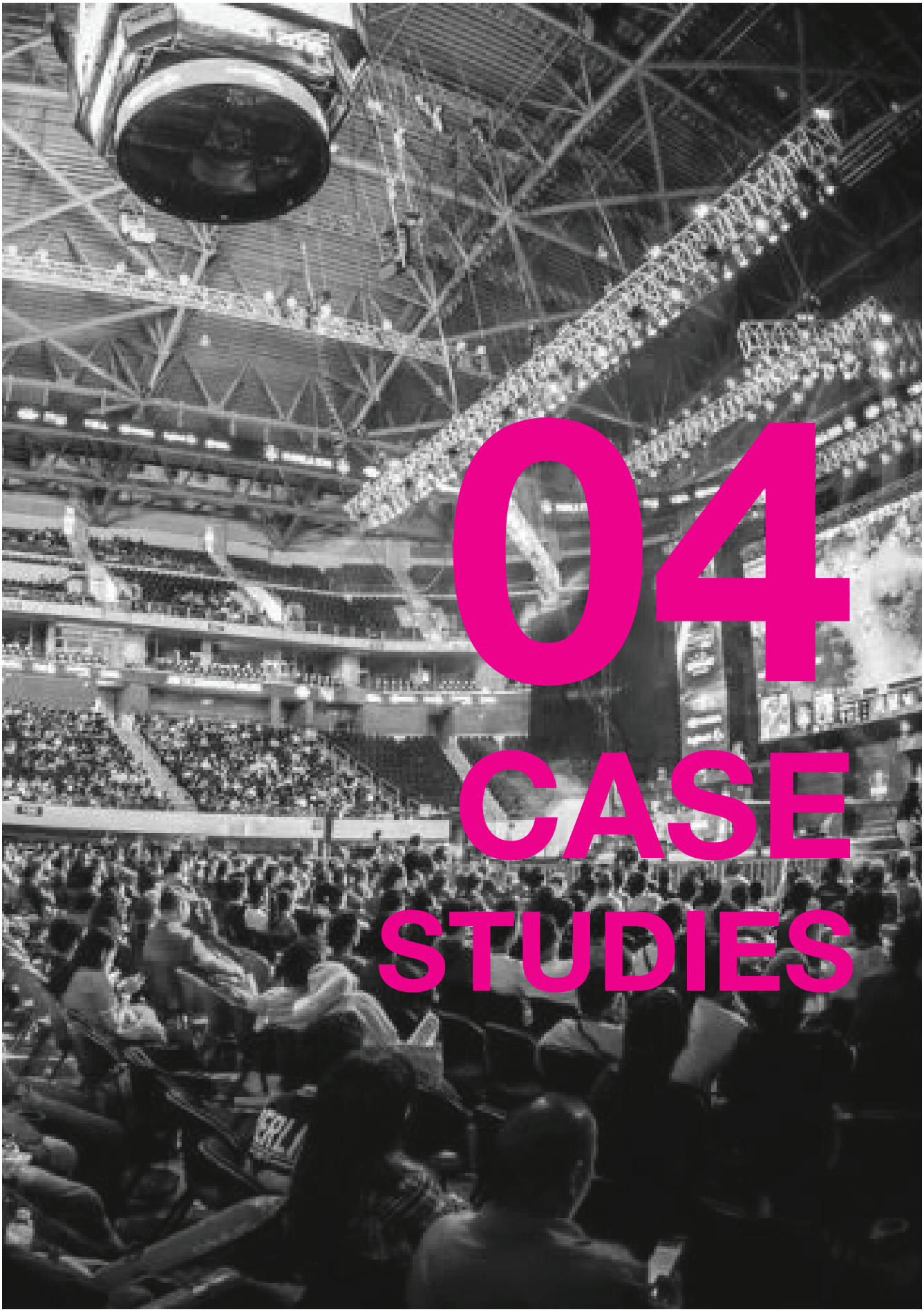
Mixed scattered (3D)





Zero grafity games, Tai Wei Kan 2018


What programme is required for a gaming hub?
Case studies
Programme distribution
The future house of gaming
eSport stadium Arlington
The Gaming Village
Building sizing
The future house of gaming
eSport stadium Arlington
The Gaming Village
Amstel
Gaming hub



04 CASE STUDIES

The Gaming House of the Future

AN ESPORTS TRAINING FACILITY

The gaming house of the future is designed to facilitate the athletes in a healthy work-life balance with a clear division between the training facilities and the relaxation areas. The gaming rooms are strategically lit to help the players focus while the living spaces are open and flooded with natural light. The building integrates the old with the new by incorporating two pre-existing buildings as part of their grand design. Reconfiguring the historic buildings into high tech event spaces and business headquarters. The building enhances the local area by providing a public podium together with a variety of hangout places that are integrated into the landscape.

Architect: Populous

Location: unknown

Year of design: 2018

Building size: approx. 6.800m2

Concept design

Building program

Public Interface ≈ 2200m²		- Integrated urban realm - Entrance portal - Funicular Elevator
Athlete facilities ≈ 1200m²	Residence wing	- Multi use activity hall - Private players quarters - Lounges & living spaces
	Performance wing	- Rooftop garden - Analysis and coaching - Primary training facility - Meeting & reviewing
	Wellness space	- Nutrition: kitchen & catering - Fitness: gym & swimming pool - Medical: team doctor & physio
Team operations ≈ 3500m²		- Public viewing gallery - Multi-purpose event studio - Retail & exhibition space - Team headquarter

Esports Stadium Arlington

THE LARGEST DEDICATED ESPORTS FACILITY IN NORTH AMERICA

The eSports Stadium Arlington gaming center is the premier gaming center and community hub for Dallas-Fort Worth Gamers can come in day-to-day to play all of the latest and greatest games on NVIDIA powered gaming PC's with 240hz G-Sync monitors, or Playstation 4, Nintendo Switch, and Xbox One consoles while engaging with other local gamers. Weekly meet-ups, tournaments, and other events further enrich the community experience, giving gamers from multiple communities touching points at the Stadium. While enjoying the Gaming Center, gamers can enjoy a variety of food, snacks, and beverages, as well as have full access to a full range of merchandise for purchase.

Architect: Populous

Location: Arlington Texas, USA

Year of completion: 2018

Building size: 9300m^2

Redevelopment project

Building program

Team area
1700m²

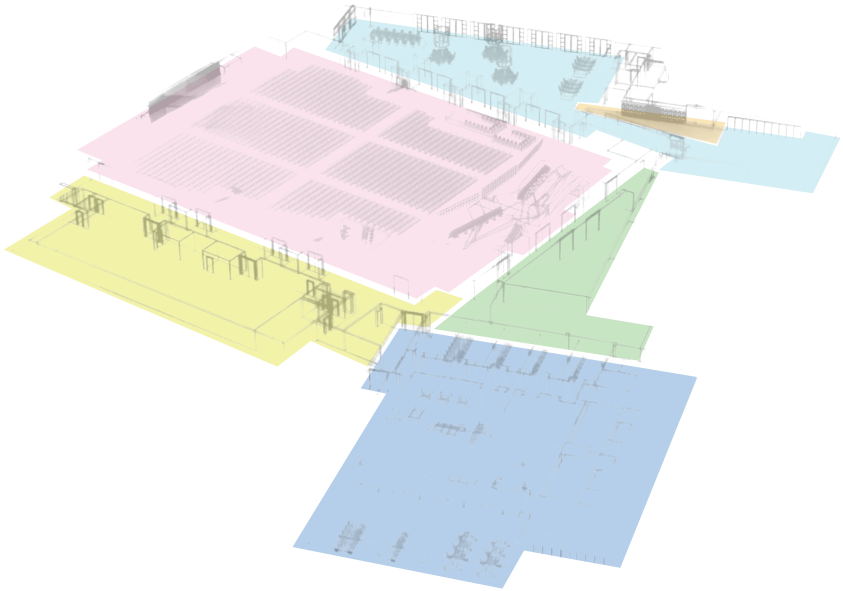
Retail store
100m²

Gamer gallery
1200m²

Competition arena
3800m²

Production studio
1100m²

Support area
1400m²



The Gaming Village

THE ESPORTS VENUE OF THE FUTURE

The gaming village is a venues that houses also a broader entertainment approach, instead of the being situated in isolation like other stadiums it has a large peripheral entrainment component that surrounds the envelop. The building is part of a broad mixed use entertainment complex for people to enjoy all sort of food and beverage experiences, to drone racing, hotel, elite training facilities, gaming labs and in addition a public plaza for outdoor type of events which are all related to eSports and gaming.

Architect: Populous

Location: unkown

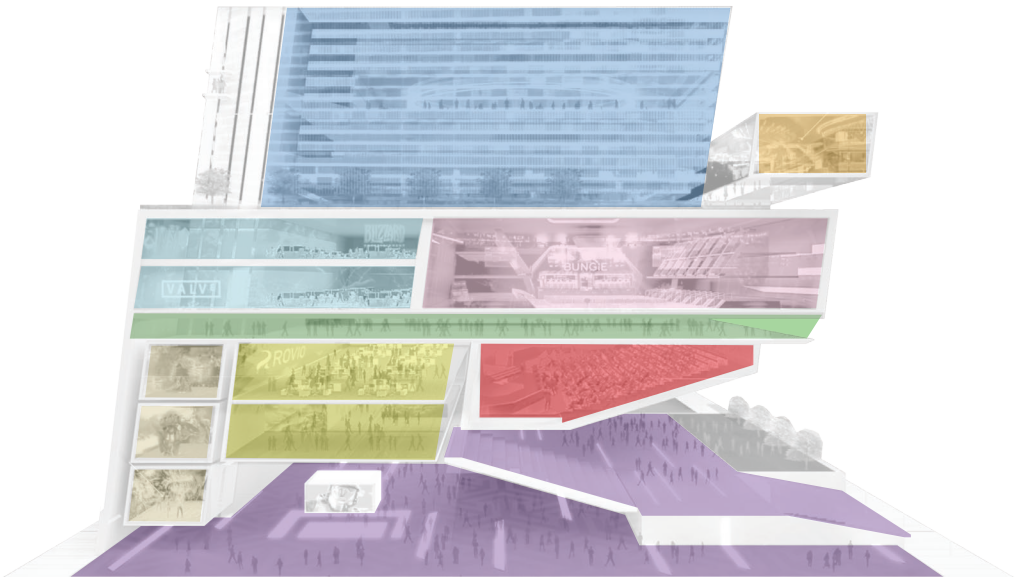
Year of design: 2018

Building size: approx. 39,600m2

Concept design

Building program

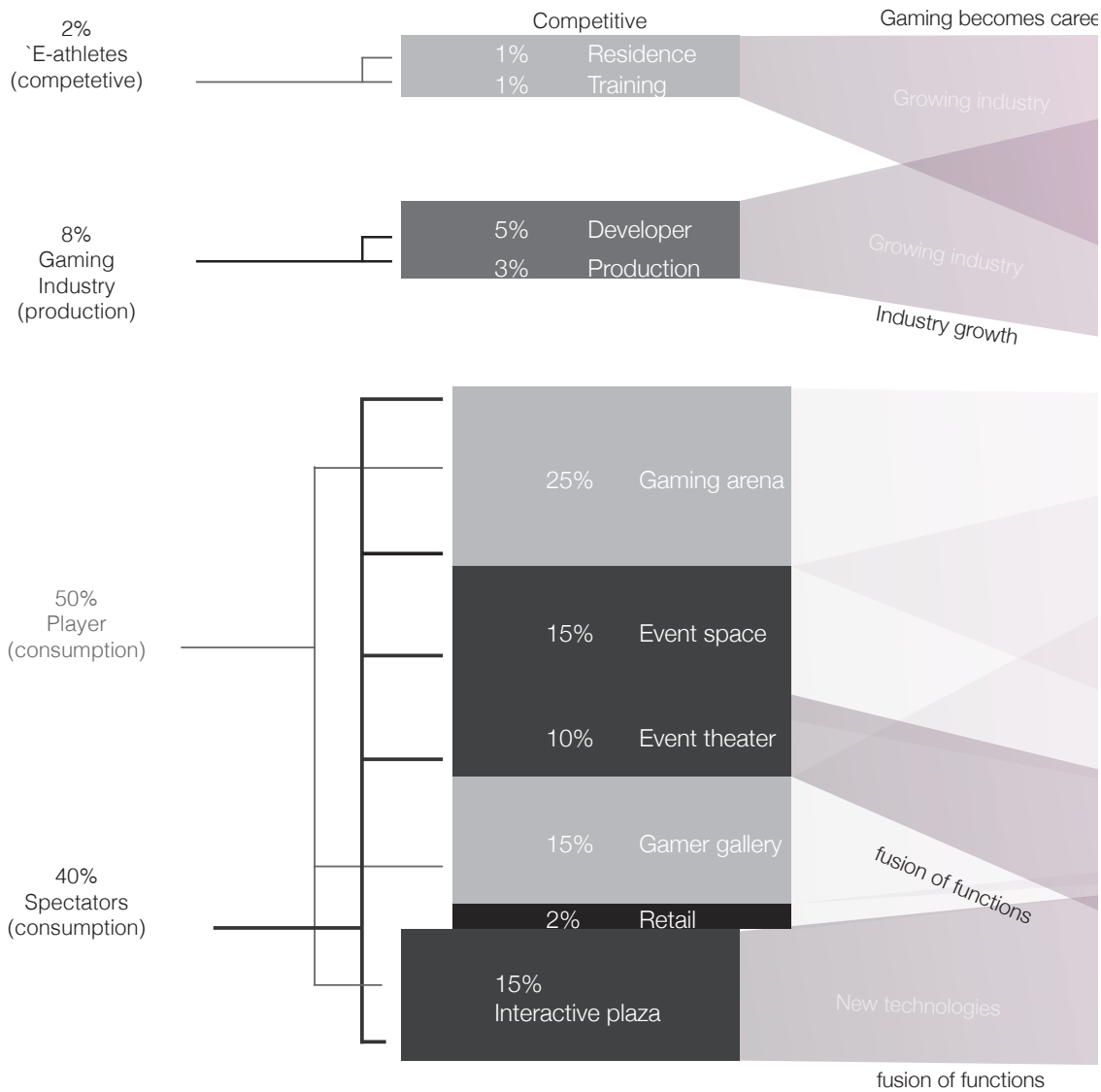
Hotel/Apartments 12.000m²	Developer research 3.000m²	Break/Circulation 500m²
Rooftop club 600m²	Gaming arena 6.000m²	Event spaces 3.000m²
Interactive plaza 10.000m²	Event theater 3,000m²	Interactive testing 1.500m²



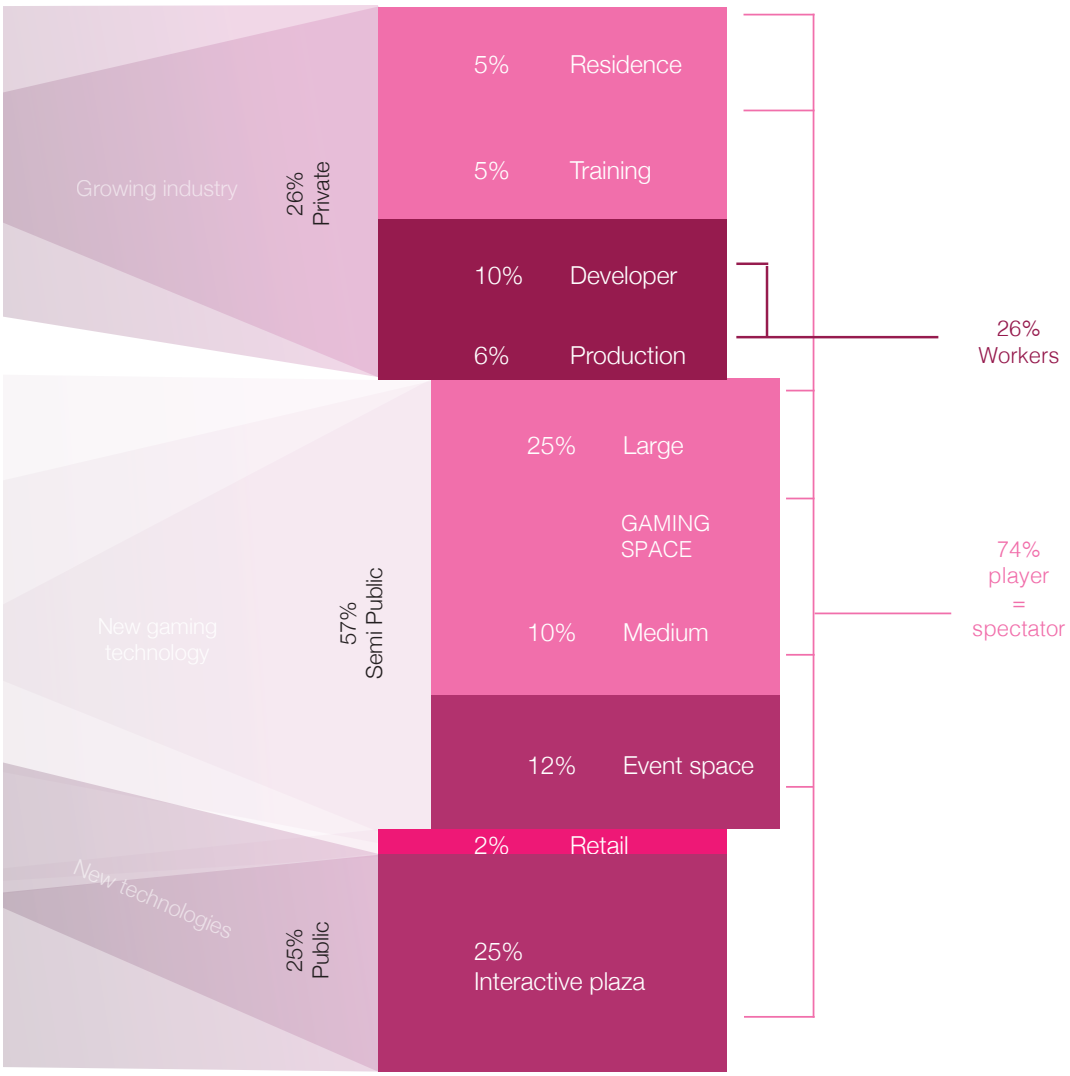
Programme distribution

In the current gaming industry the competitive, production and consumption are all separated in branches. The future gaming hub will provide the most high tech gaming experience, by integrating the different branches a synergy can be created for further growth and innovation.

CURRENT GAMING INDUSTRY

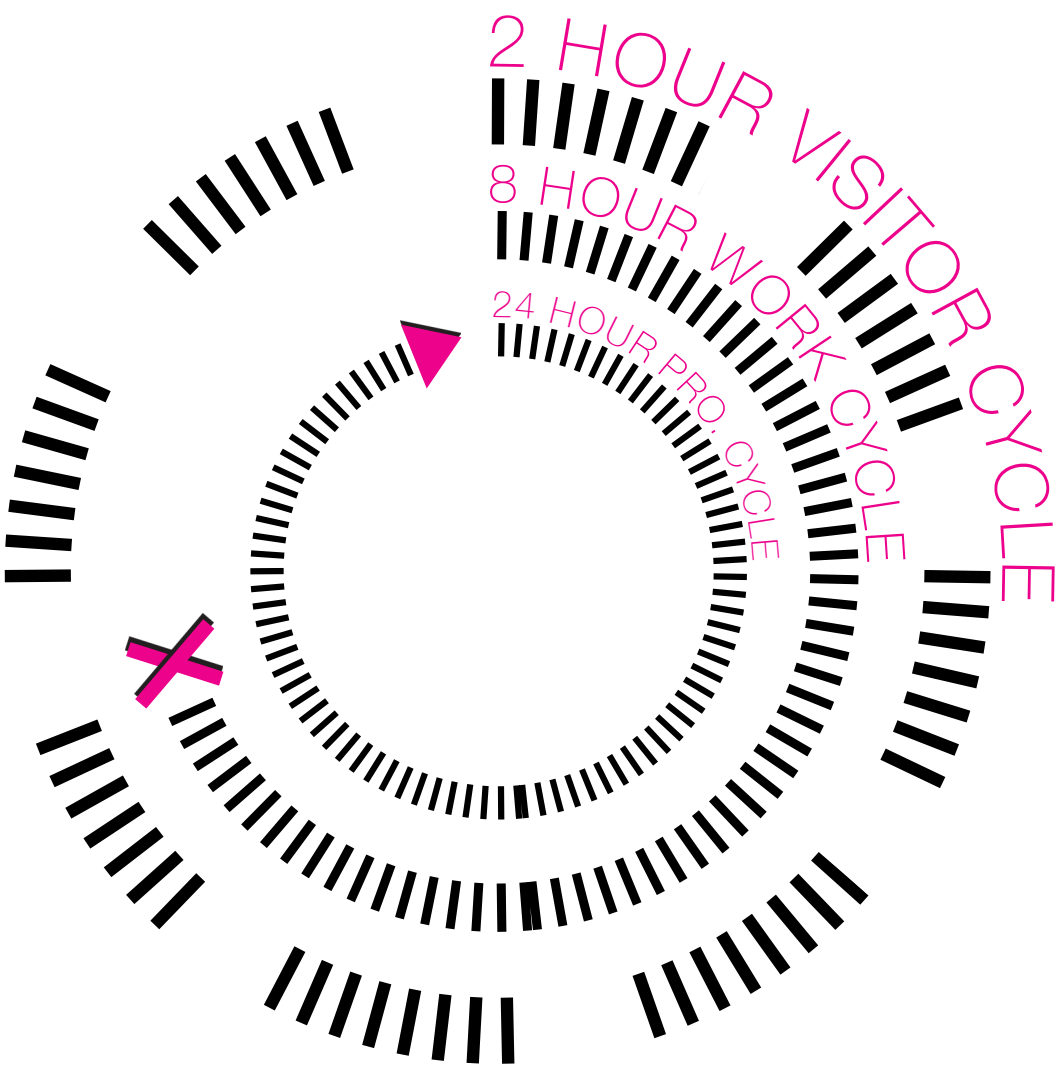


FUTURE GAMING HUB



User timeliness

The visitors, workers and occupants of the building all have a different schedule of using the building. Whilst the pro gamers live and train 24 hours in this facility, the casual gaming visitor will come here for a couple hours to enjoy their favorite games

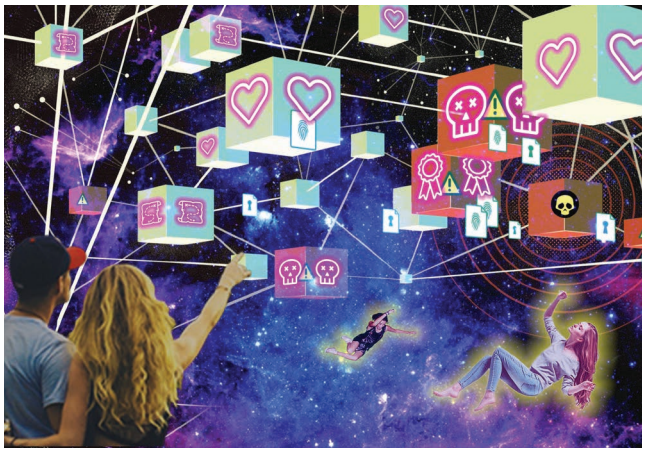


Visitor

Enter building

Changing room

Changing into superconducting nano tech clothing for zero gravity zone.



Game options

Visitors can choose one of the gaming chambers to play their game. The chambers are categorized into the 4 gamer personalities

The chamber

In the zero gravity zone different sized chambers are available for solo or multiplayer games.

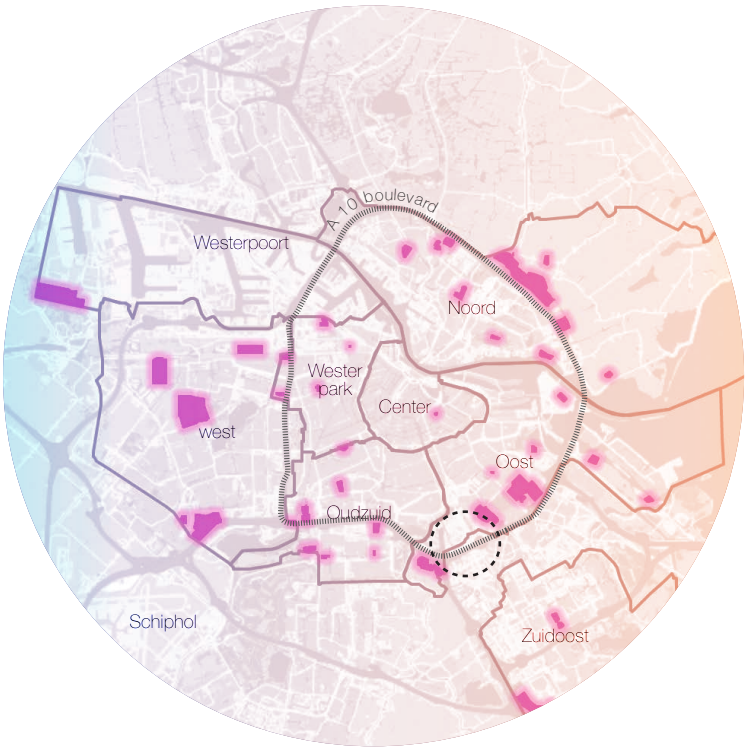
2 HOURS

Exit building

Building size study

Network of e-Sports

In the future esports typologies will have similar building typologies as the current ons we have with sports.

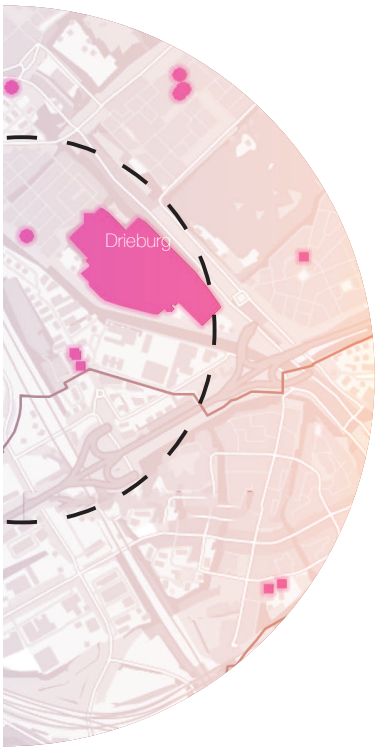


Amsterdam

Large public sport parks are concentrated along the edge of the city center. Traveling between the sports facilities is fairly easy since the majority are located alongside the A10 pedestrian boulevard.

Overa

Along the large sport and public sports relat The sports operation ir practitioners. Larger vie ed further from



ımstel

parks, smaller private
ed facilities fill the area.
ı this area are mainly for
ewing venues are locat-
the city center.

(P)leisure park

In the site Sportpark drieburg and the Activity Road are the largest sporting facilities. The gaming hub is placed opposite to the activity route to bring a contrast between traditional activity sports and modern gaming activity .

(e)sports in scale

Just like Sports, gaming will happen in different scales. From the personal device on owns at home to the large scale stadium where fans of the community come support their idol players. For amstel a gaming hub is required with sizing similar to presedent sports complex where players can participate in the game and occasionally watch games being played.

Sports c

Gym

Hometrainer

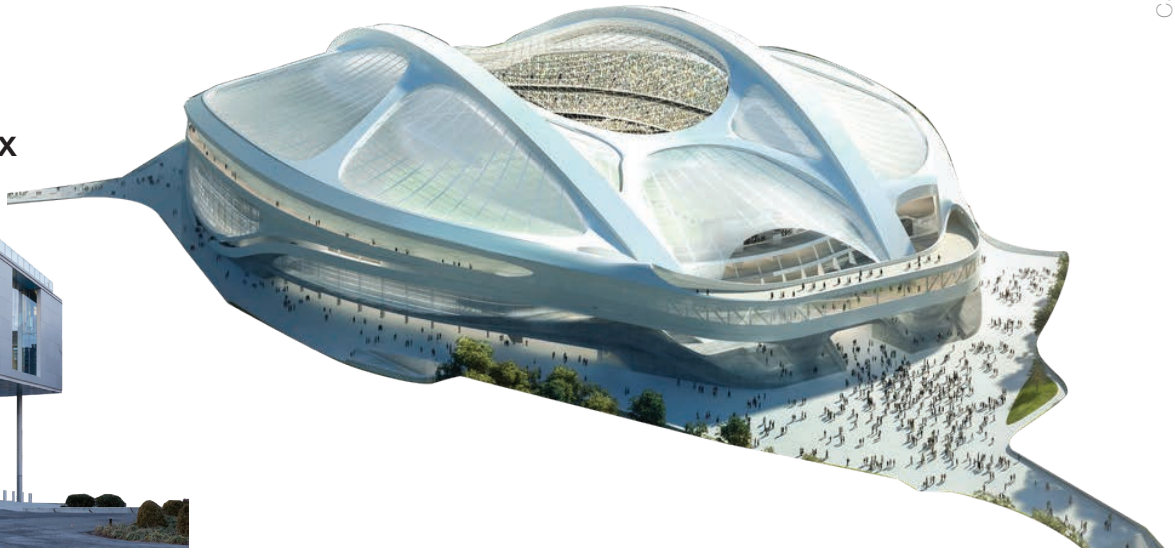
Home	Neighborhood	Am

Personal
gaming device

Internet cafe
PC bang

Gaming
com

Football Stadium



:complex

stel

Amsterdam

/arcade
plex

e-Sports Stadium

UFCSPA Campus Igara

FEDERAL UNIVERSITY OF HEALTH SCIENCES
OF PORTO ALEGRE SPORTS CAMPUS

Although the lot is small, we plan a campus with constant activity and public and fluid space. The Campus Igara is aimed at sport activities, thus, it is necessary to distribute classrooms, sport courts and social areas in the lot in a way that the space is safe and allows not only the carrying out of the activities, but also the mobility as well as the integration of the streets at the back and in the front of the campus.

Thinking of such mobility, the court is elevated and the space below is used to host the remaining academic functions, such as the classrooms. The turnstiles, which restrict the access, were placed in the entrance of each building, leaving the campus open and free for people to use it. The premise of the project is to articulate urban relations, making it more than a public institution, a public space. (OSPA, 2014)

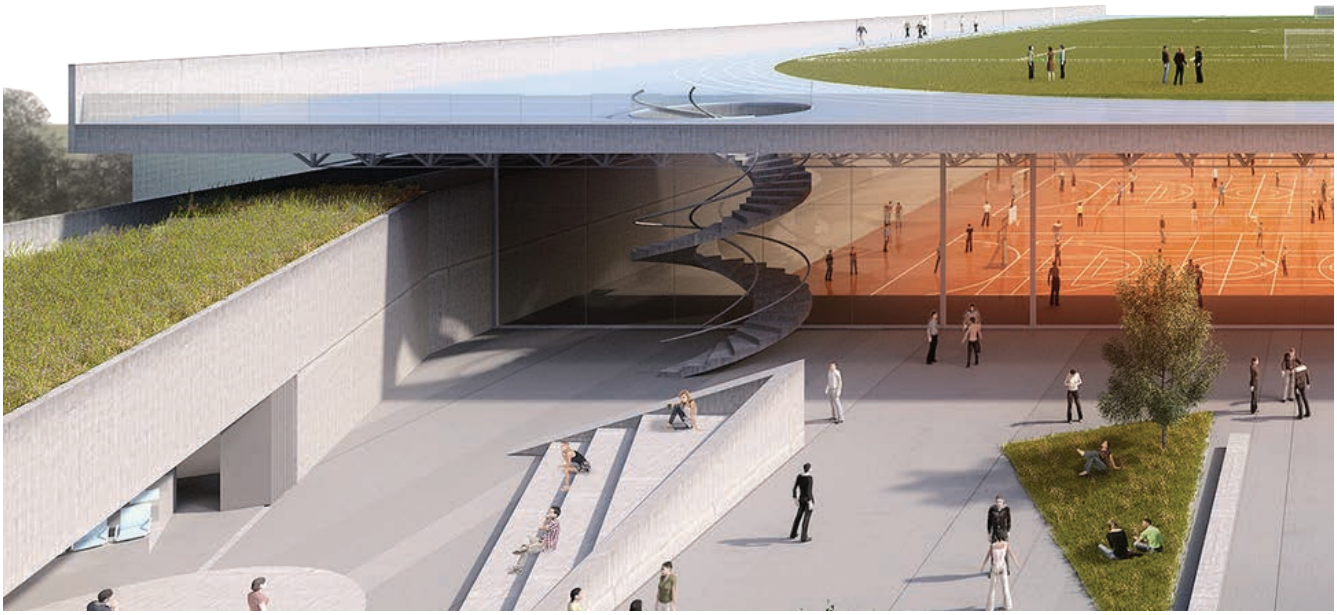
Architect: OSPA

Location: Canoas, Brazil

Year of design: 2014

Building size: 26.500m^2

sports campus



Building program

Sports
~14.000m²

Football field

3 Basketball courts

Swimming pool

Park
~1.500m²

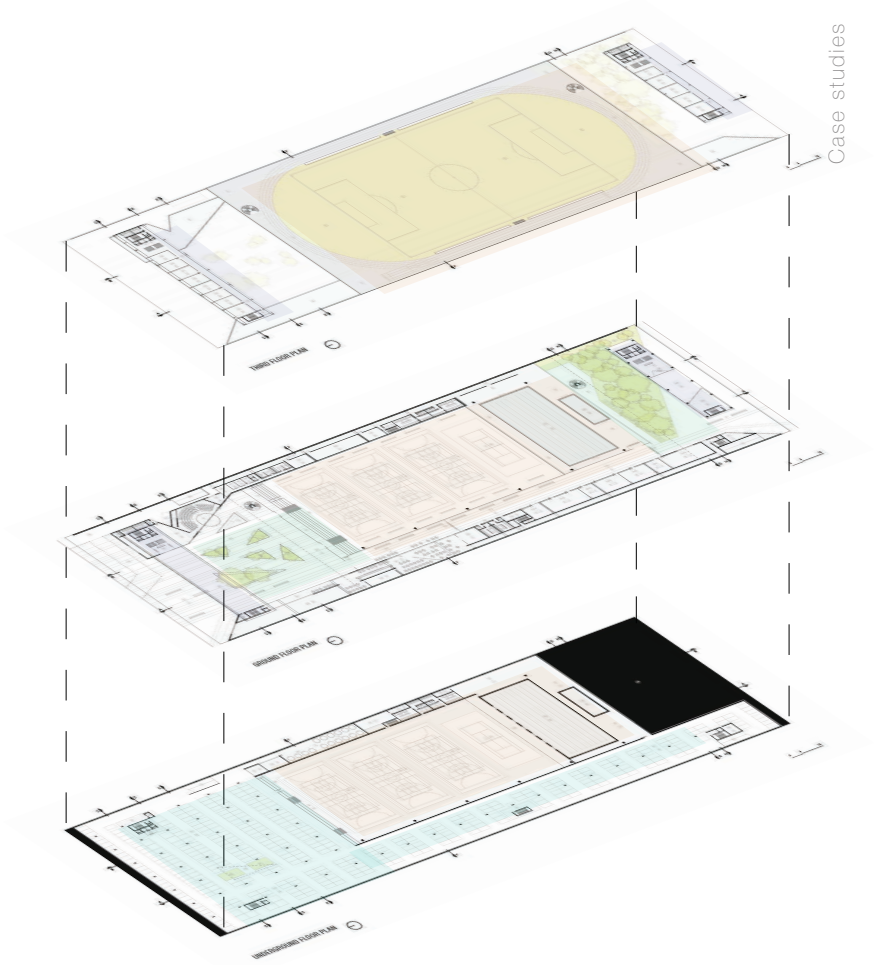
Nature area

Office
~6.000m²

2 office blocks

Parking
~5.000m²

470 parking spots



Sport Campus Zuiderpark

INNOVATIVE SPORTS CAMPUS

Sportcampus Zuiderpark is much more than a centre of excellence for sport and movement. Located at the heart of the historic Zuiderpark, the €50m sports campus is an innovative collaboration of alliances between education, sport, sport science and the community, for both the Municipality of The Hague and its private partners: the Haagse Hogeschool and ROC Mondriaan.

The overriding aim is to emphasize the importance of sport and exercise through learning and engagement, for the amateur as well as the elite athlete, using sport as the inspiration to deliver a healthier society. The sports campus includes a gymnastics hall, beach sports hall, spectator arena and a multi-purpose sports hall, as well as a variety of sports science and education spaces. (Faulknerbrowns, 2018)

Architect: Faulknerbrowns Architects

Location: The Hague, Netherlands

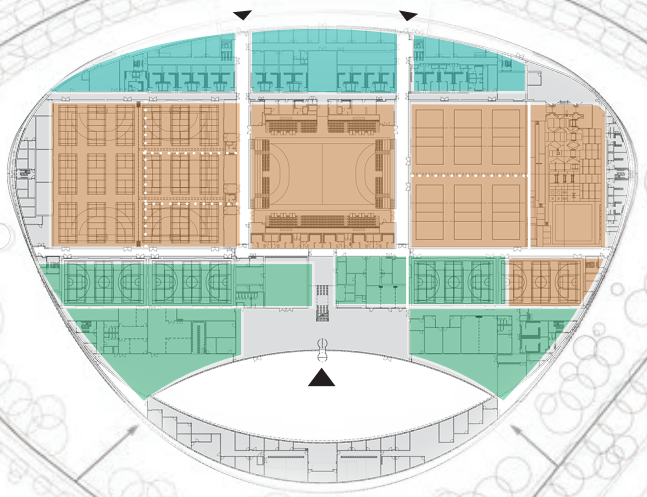
Year of completion: 2017

Building size: 33,000m^2

sports campus

Building program

Sportcampus Zuiderpark ~18.000m²	The Hague University ~10.000m²	Medical sports center ~5000m²
Main sports hall	4 College rooms	College room
6 Beach volleyball courts	8 Class rooms	3 physical therapy rooms
Gymnastics hall	3 Gyms	Revalidation room
2 multipurpose halls	Dance room	Offices
Sportservice	Dojo	
Restaurant		



YANGZHOU LI NING SPORTS PARK

Located within the Sports Park in Guangling New City, the project has broken the building volume into pieces by adopting the design philosophy of landscape architecture. As an integral part of the park, the buildings reflect Yangzhou's spirit of including both mountains and water in traditional parks by combining the artificial "built mountains" with the "natural water" in the area, which provides the city with a vibrant center with its sports culture. (PT Design, 2015)

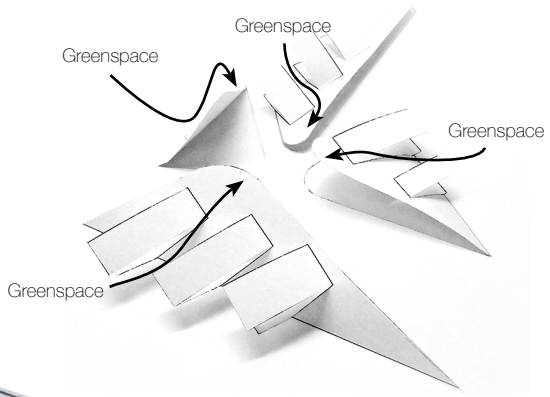
Architect: PT Design Consultants

Location: Yangzhou, China

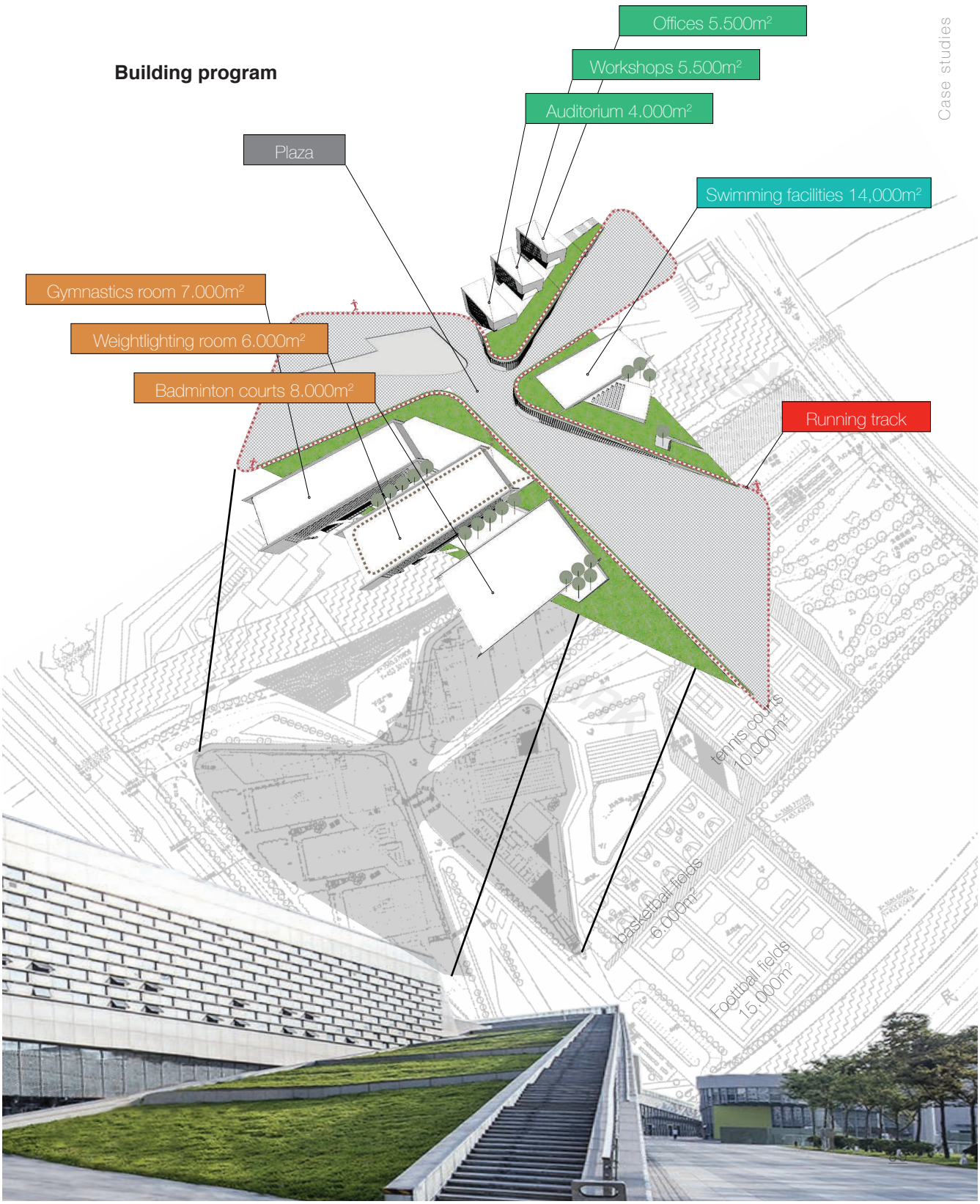
Year of design: 2015

Building size: 143.000m^2

Sports park



Building program



Gaming HUB Volume

Hanjiang District 1.050.000

67.900m²

The Hague 510,000

69.000m²

Canoas District 320.000

43.500m²

20.700m²

Amstel 150.000

20.475m²

+

9.705m²

POPULATION

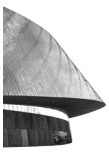
Li Ning Sports park

Sport Campus Zuiderpark

SIZE M²

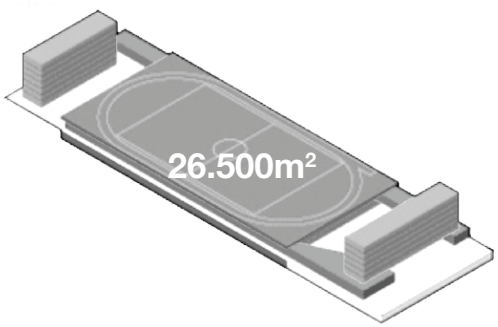
87.000m²

77.200m²



42.200m²

37.500m²



23.600m²

\+ 12.375m² /3 =

GAMING HUB

14.200m²

UFCSPA Campus Igara

Future Gaming Hub

Programme Synthesis

based on
Li Ning Park
20.475m^2

Based on
Zuiderpark
9.705m^2

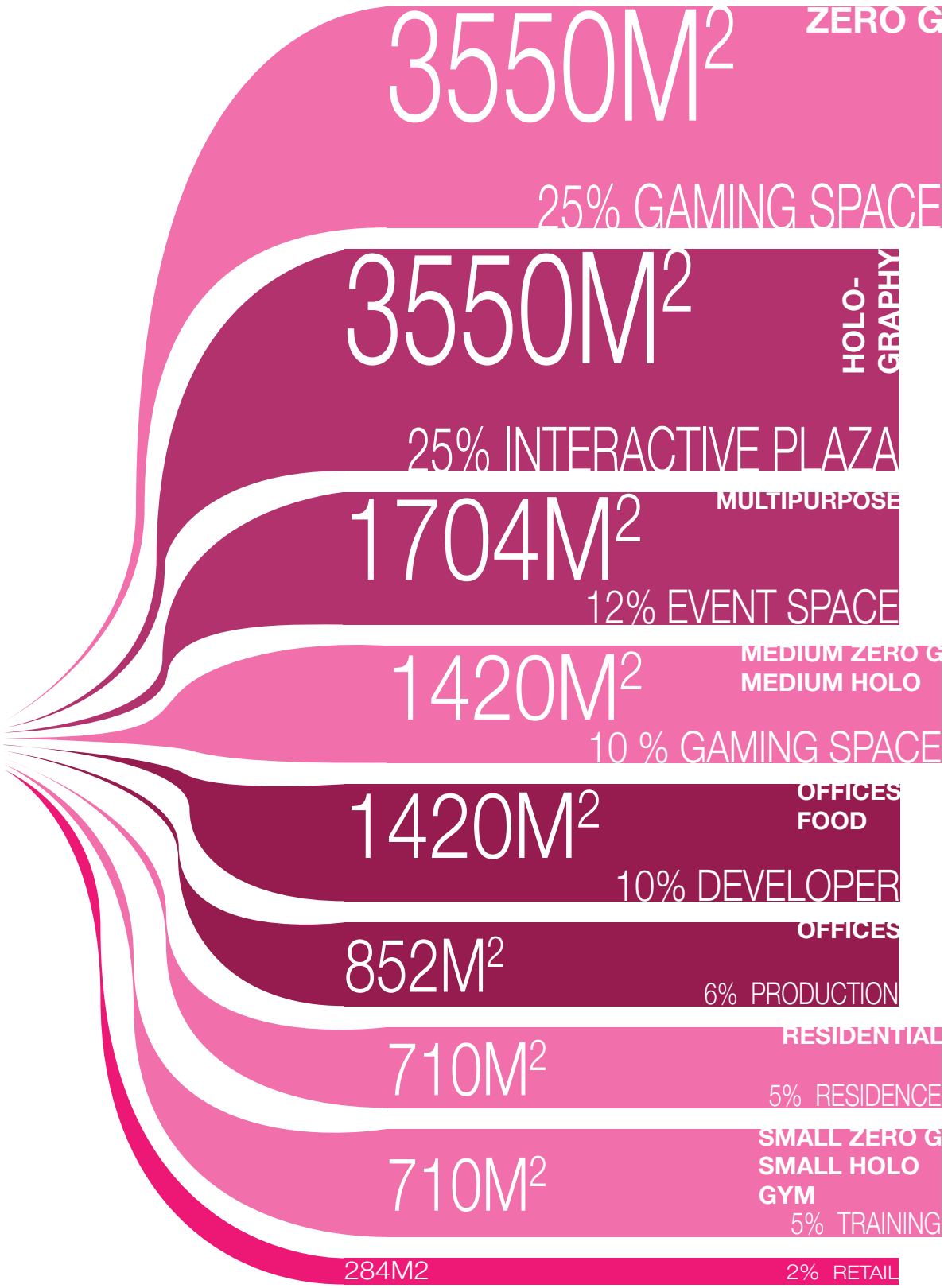
Based on
UFCSPA Campus
12.375m^2

combined

average

$$\frac{42.555}{3} = 14.200\text{m}^2$$

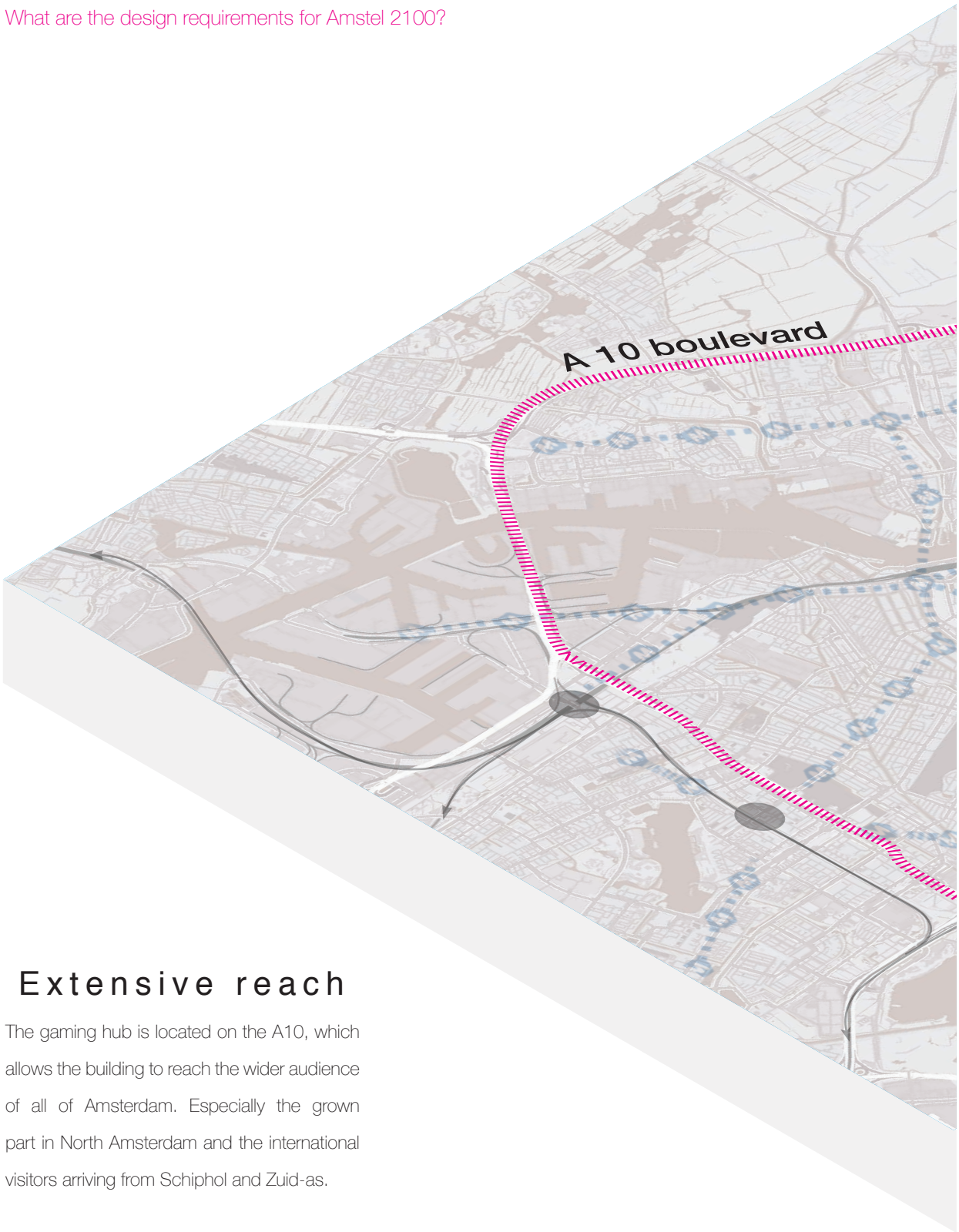
AMSTEL Gaming HUB


3550M²
ZERO G
25% GAMING SPACE
3550M²
HOLO-
GRAPHY
25% INTERACTIVE PLAZA
1704M²
MULTIPURPOSE
12% EVENT SPACE
1420M²
MEDIUM ZERO G
MEDIUM HOLO
10 % GAMING SPACE
1420M²
OFFICES
FOOD
10% DEVELOPER
852M²
OFFICES
6% PRODUCTION
710M²
RESIDENTIAL
5% RESIDENCE
710M²
SMALL ZERO G
SMALL HOLO
GYM
5% TRAINING
284M2
2% RETAIL

05 SITE ANALYSIS

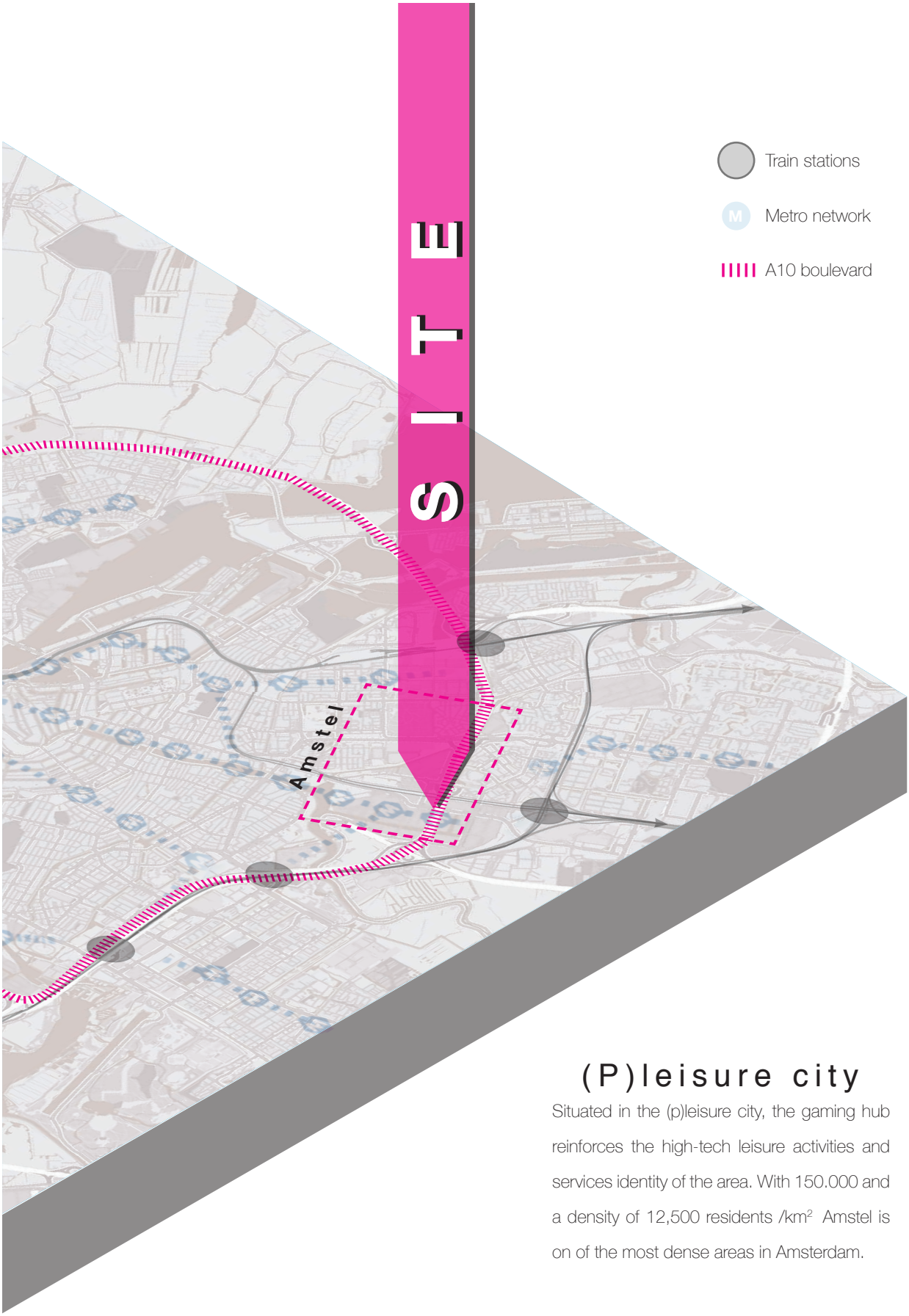
Amsterdam

What are the design requirements for Amstel 2100?



Extensive reach

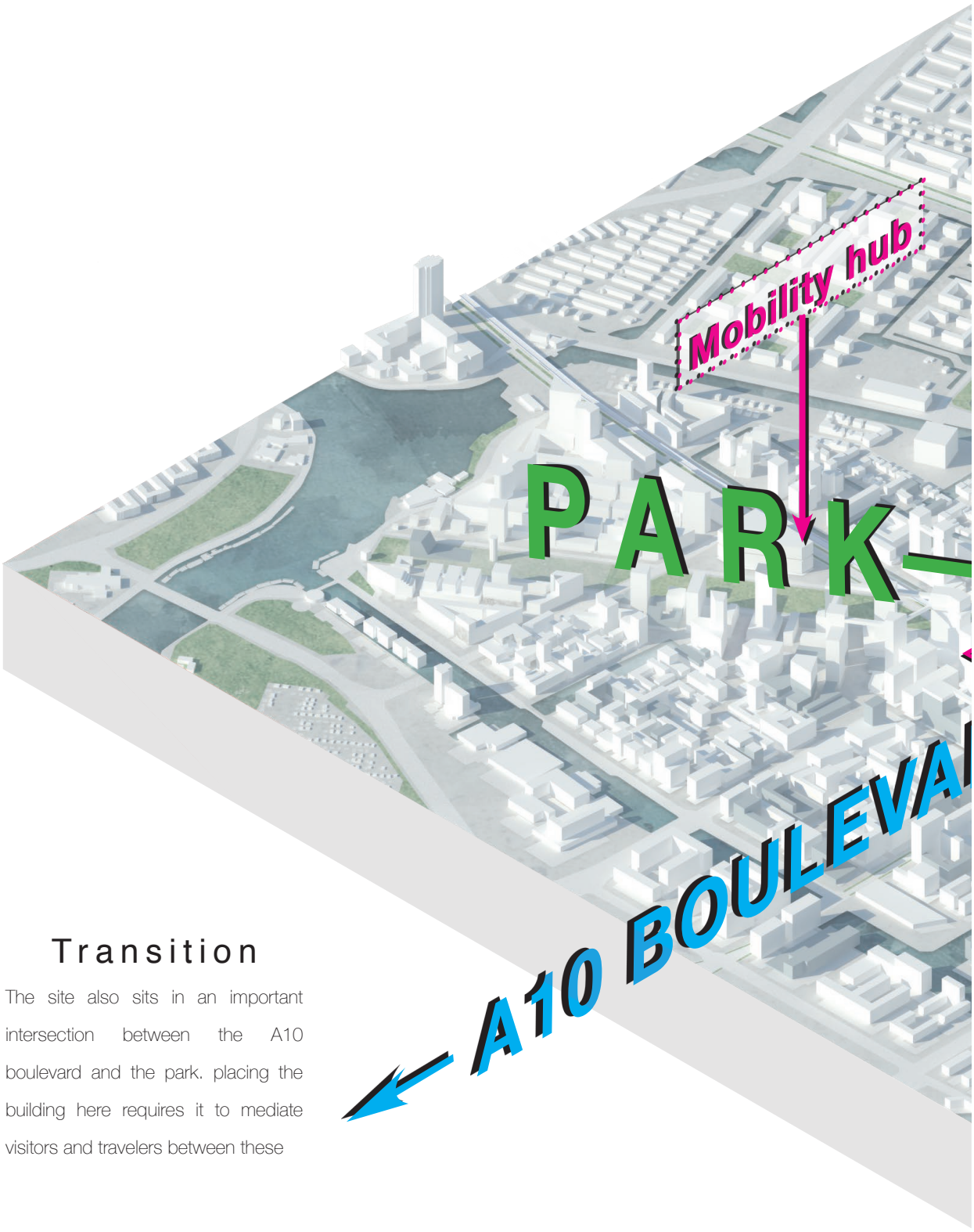
The gaming hub is located on the A10, which allows the building to reach the wider audience of all of Amsterdam. Especially the grown part in North Amsterdam and the international visitors arriving from Schiphol and Zuid-as.



(P)leisure city

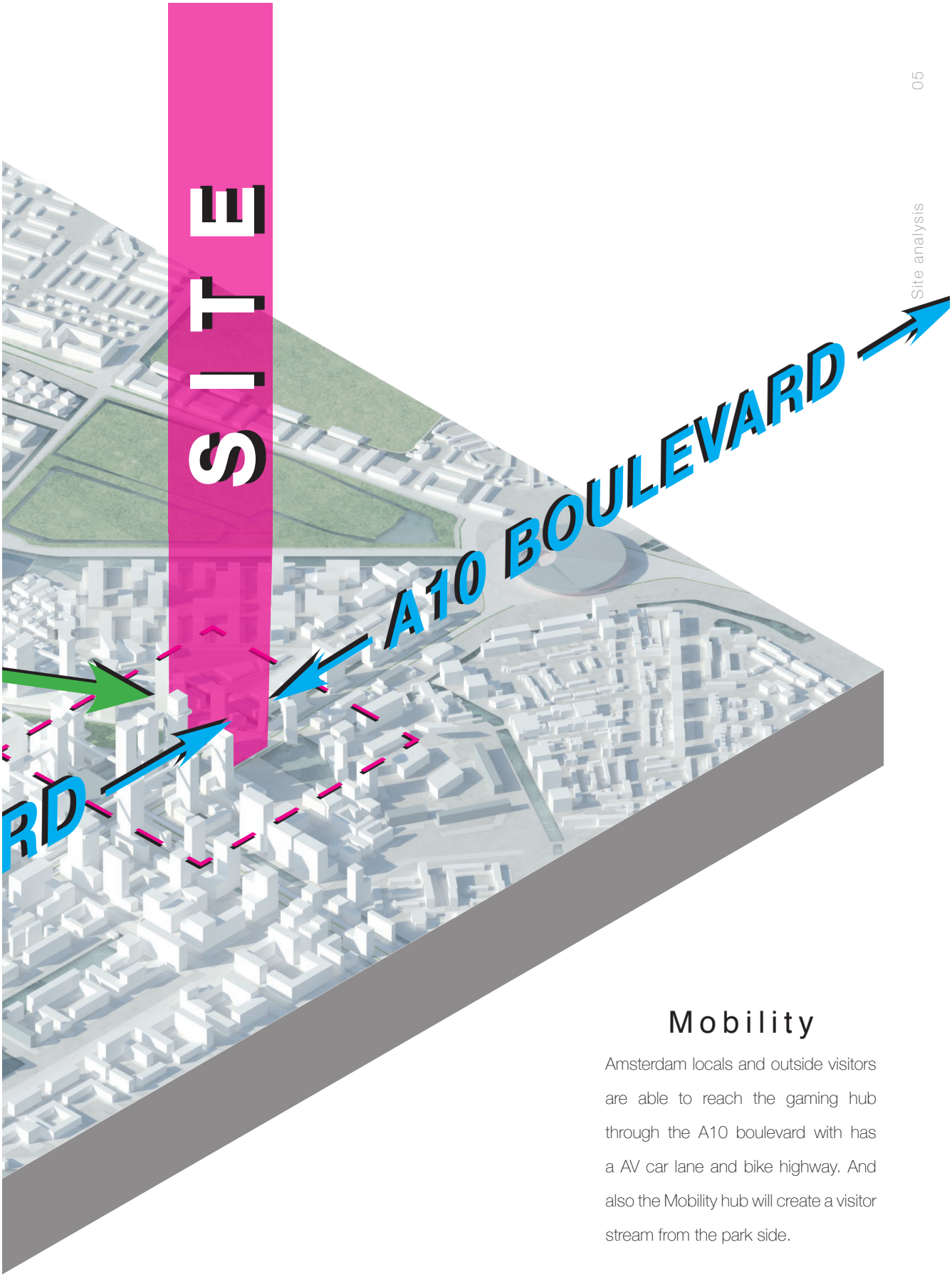
Situated in the (p)leisure city, the gaming hub reinforces the high-tech leisure activities and services identity of the area. With 150.000 and a density of 12,500 residents /km^2 Amstel is on of the most dense areas in Amsterdam.

SITE



Transition

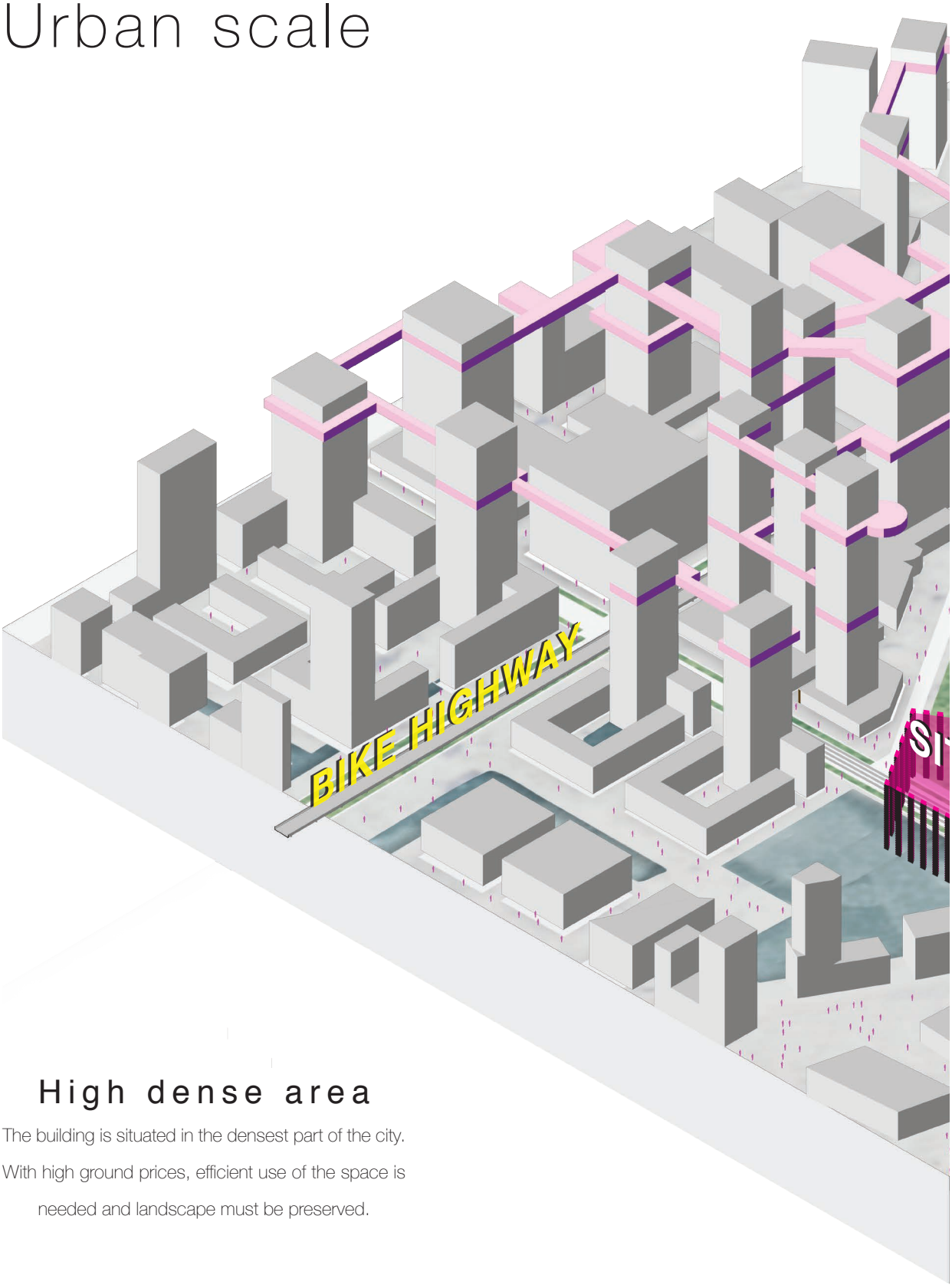
The site also sits in an important intersection between the A10 boulevard and the park. placing the building here requires it to mediate visitors and travelers between these



Mobility

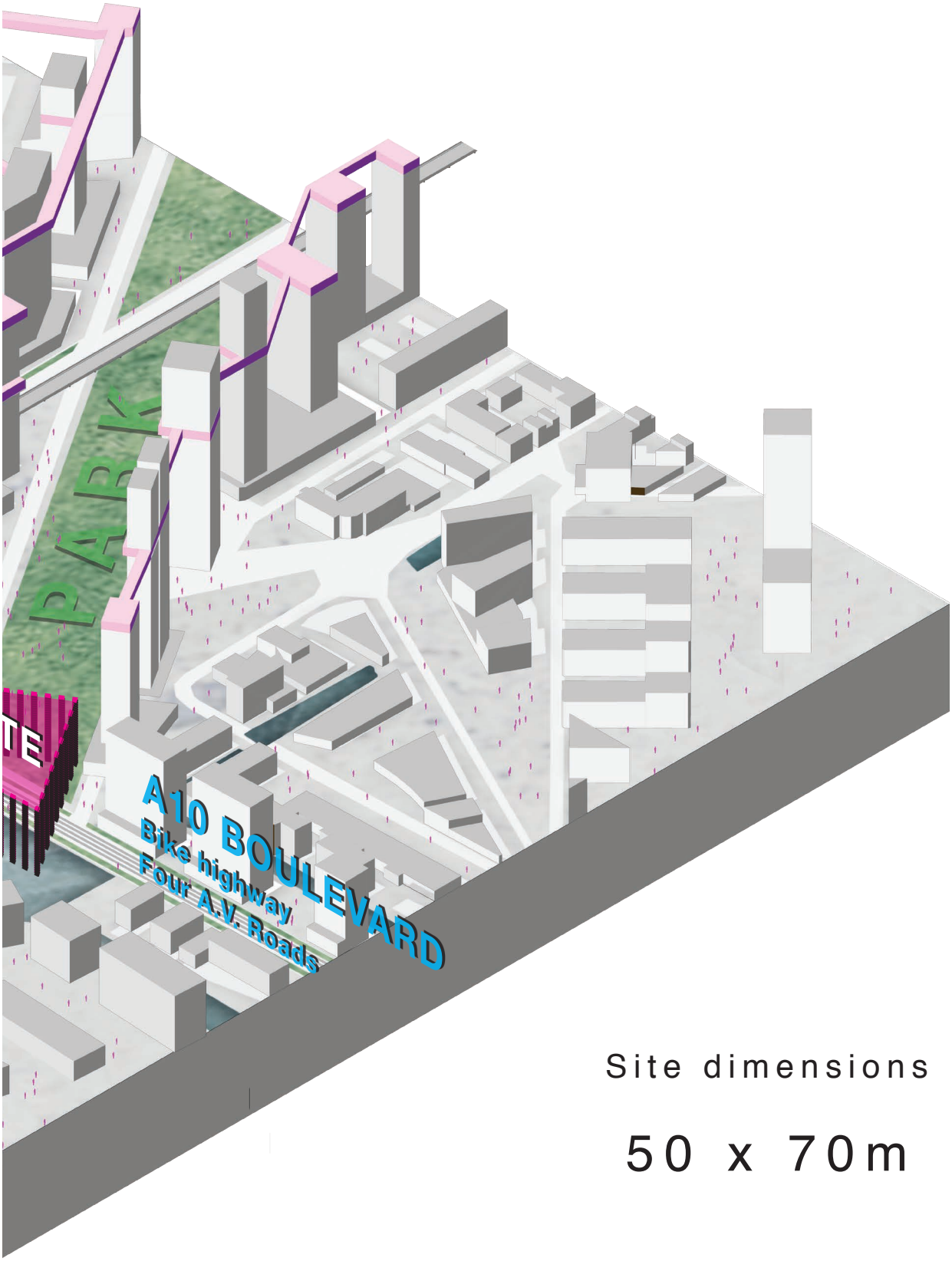
Amsterdam locals and outside visitors are able to reach the gaming hub through the A10 boulevard with has a AV car lane and bike highway. And also the Mobility hub will create a visitor stream from the park side.

Urban scale



High dense area

The building is situated in the densest part of the city. With high ground prices, efficient use of the space is needed and landscape must be preserved.



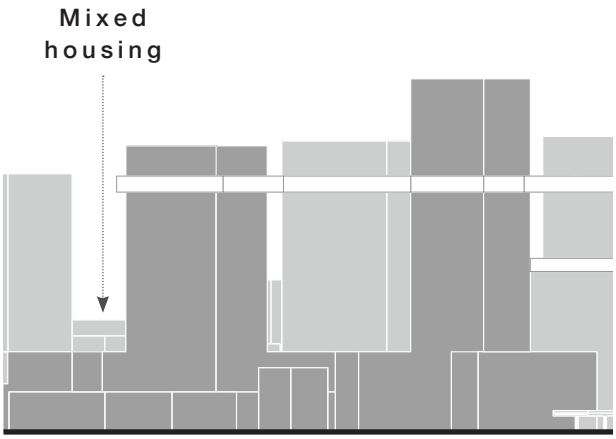
Site dimensions

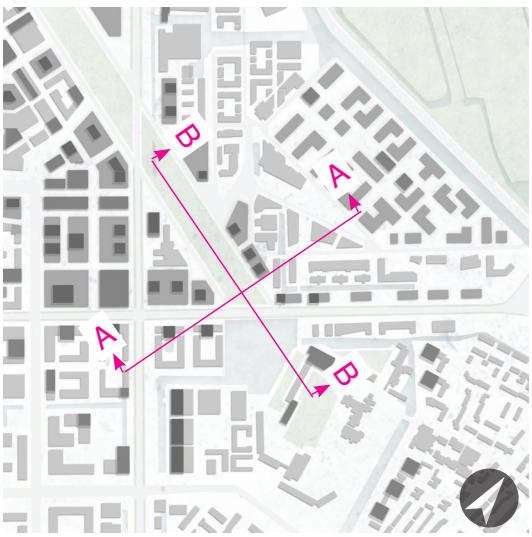
50 x 70m

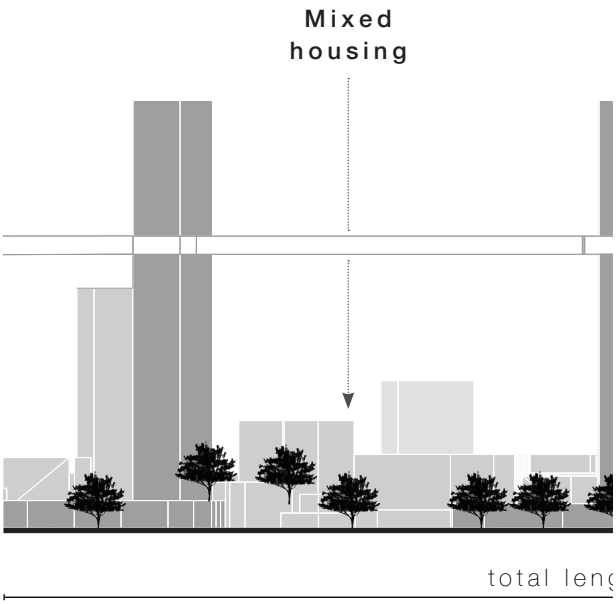
Urban scale

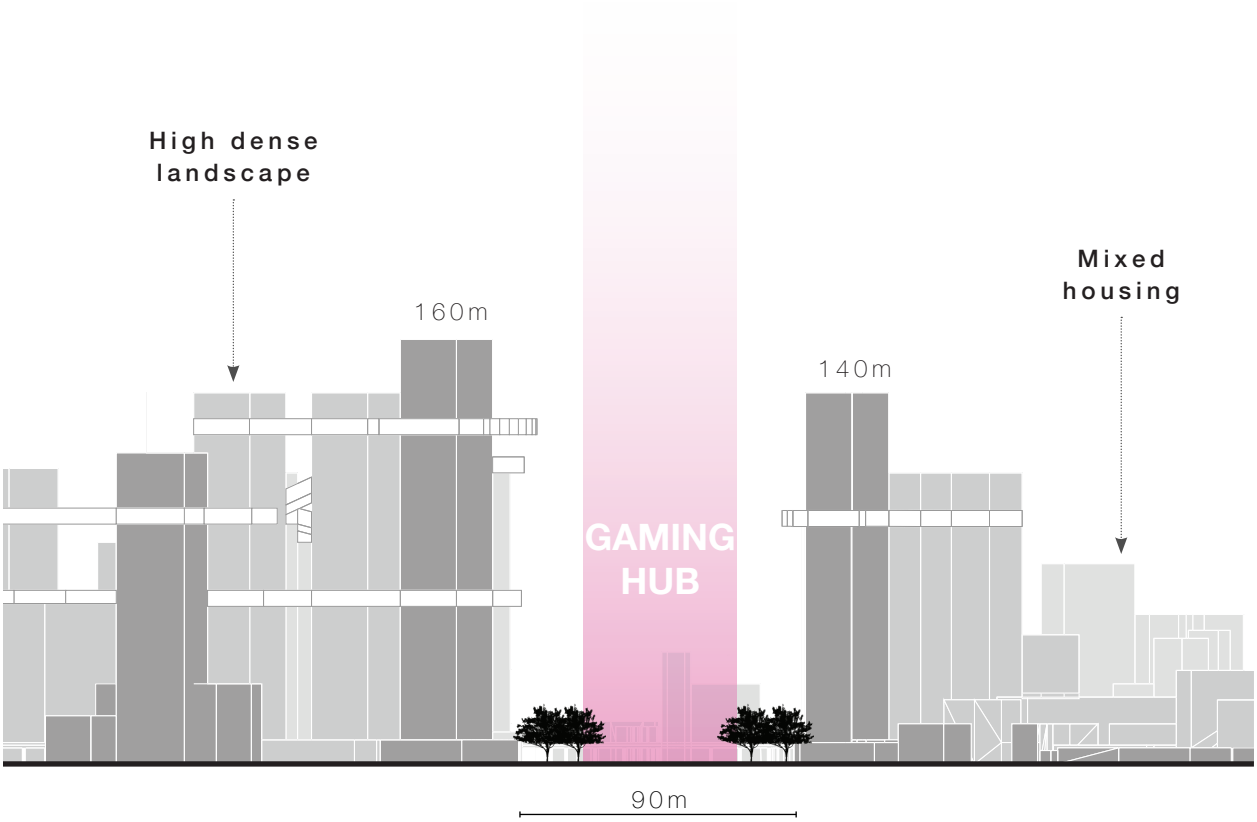
Site contours

The building is situated in the densest part of the city. With high ground prices, efficient use of the space is needed and landscape must be preserved.

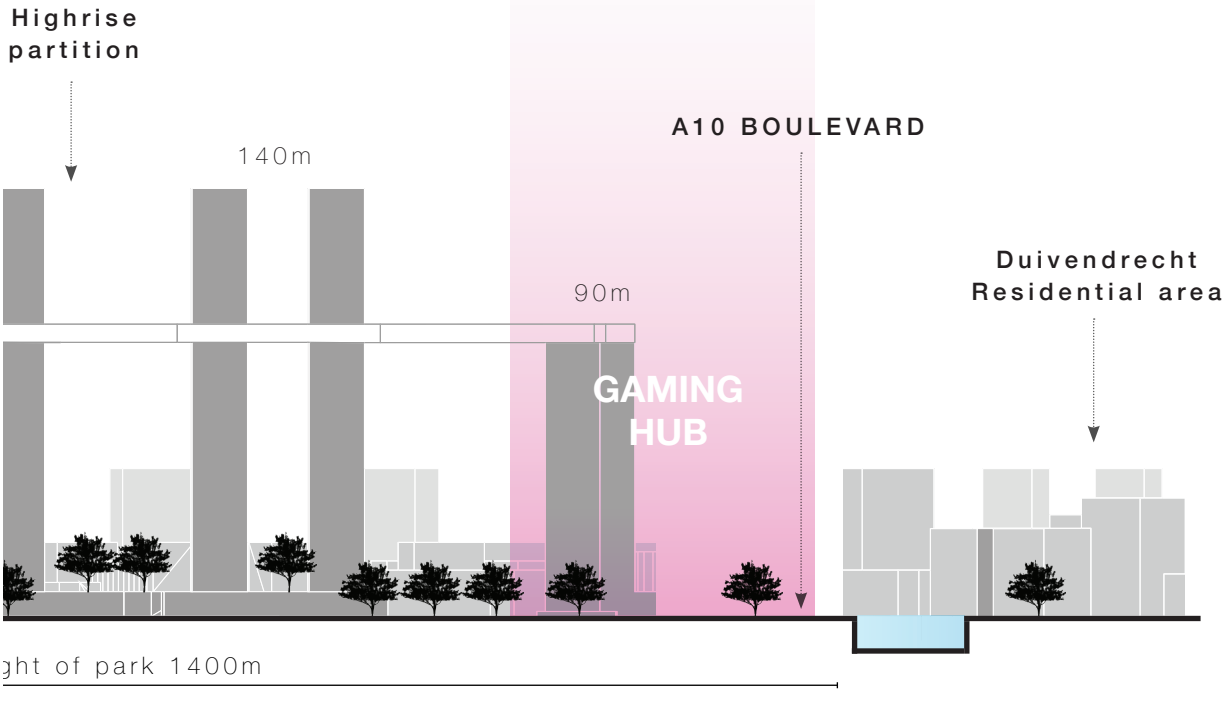






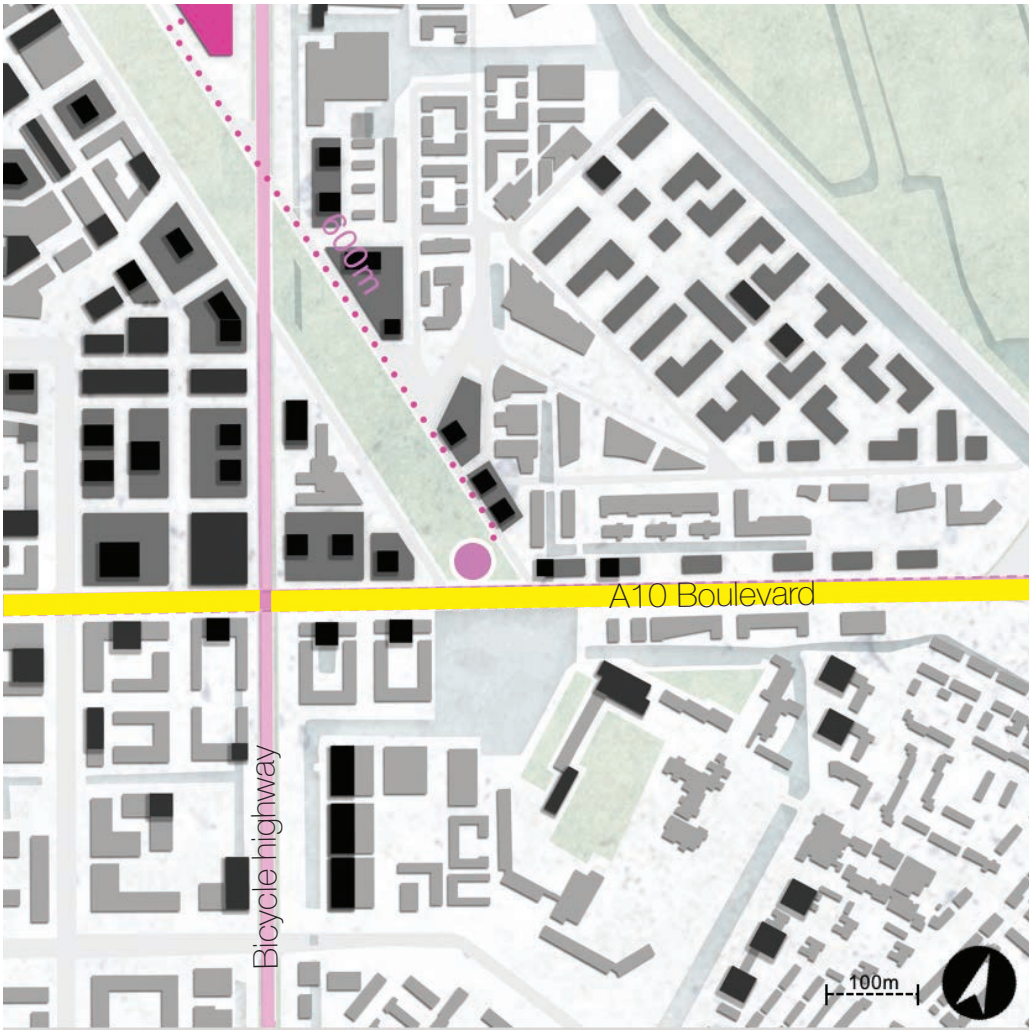


Section A-A



Section B-B

Urban scale



Mobility

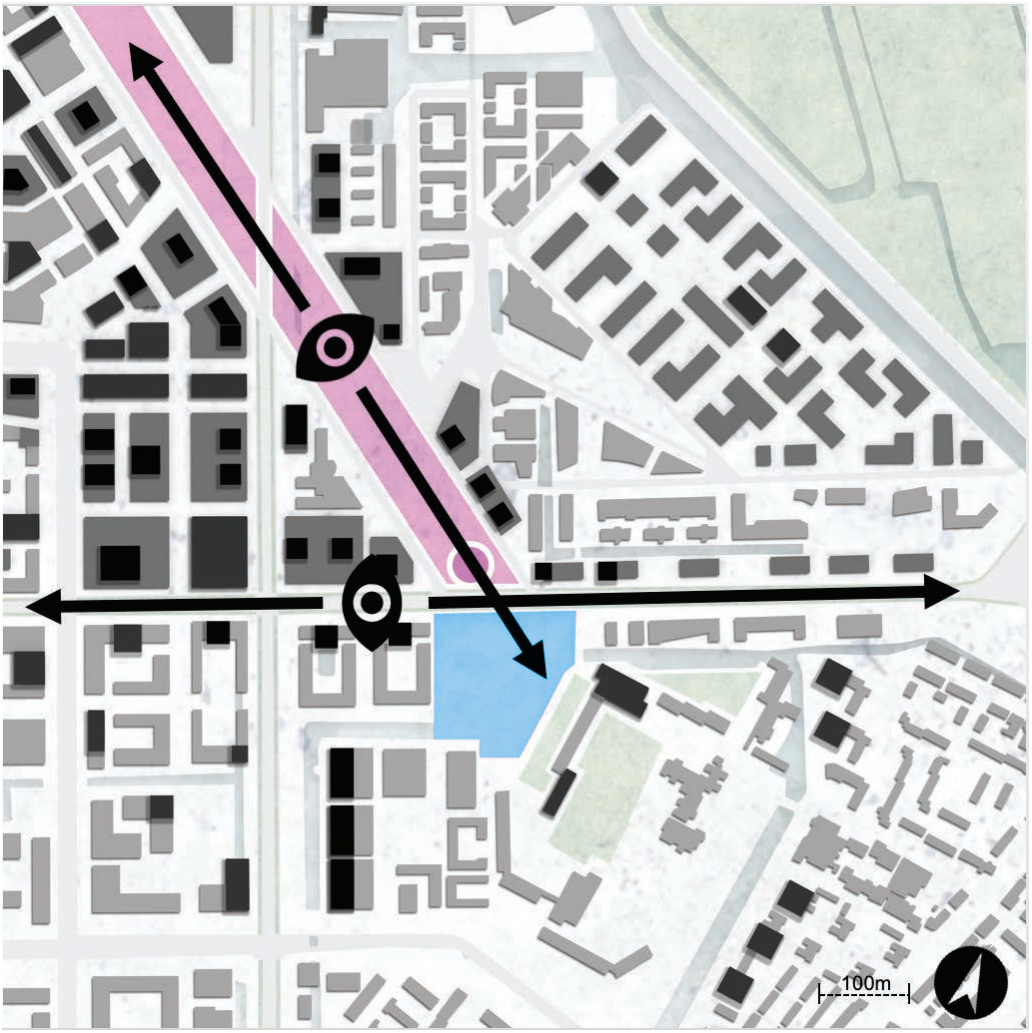
A10 Pedestrian boulevard

Bicycle highway

Transporthub

Project site

6 min walk



Sightlines

(p)leisure park

A10 Boulevard

Park

Water

Building scale

From the North-West elevation is becomes clear that the park offers a special view towards the activity park which is emphasized by the high rises. Furthermore visitors from the transport hub and cit center will come from this direction.

On either side of the building plot, tall high rises are situated creating a strong barrier. The high rises are connected with sky-bridges, providing extra levels of entrance for the users.

The South East elevation shows the visual relation the plot has with Duivendrecht, the building plot could be extended over the water to better integrate this area with the center of Amstel. Mobility wise the plot functions are a transition point between the center of the park and the A10 boulevard, connecting the dense center of Amstel to the rest of Amsterdam.


Building plot

Possible plot extension


Possible entrance

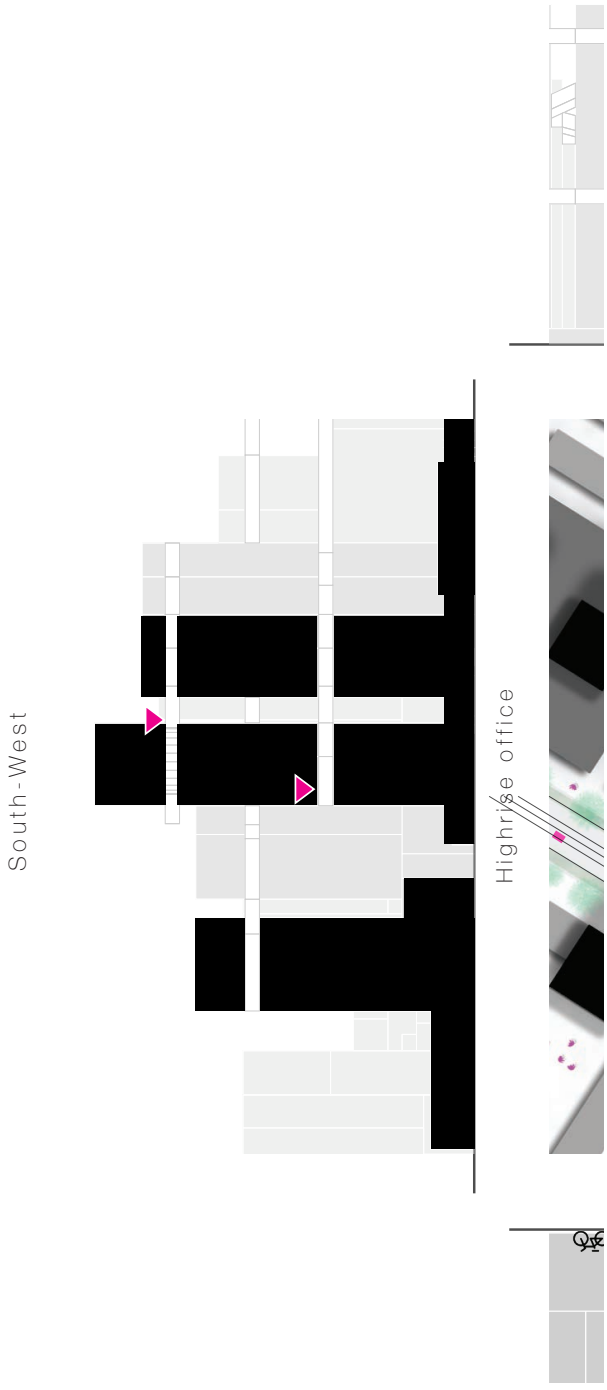

Highrise 100m+


Midrise 0-100m


Lowrise 0-30m

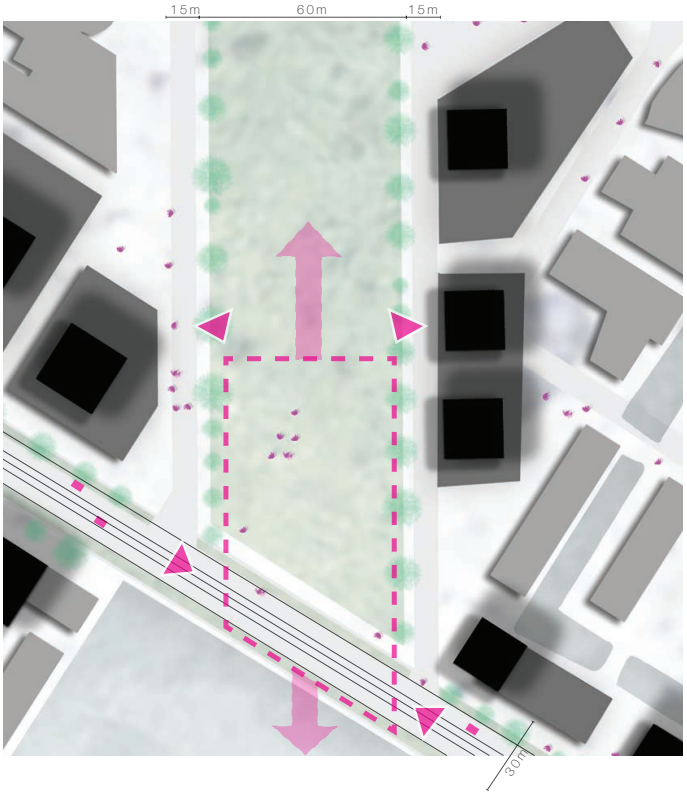
1:100 Scale 1:2000


North orientation

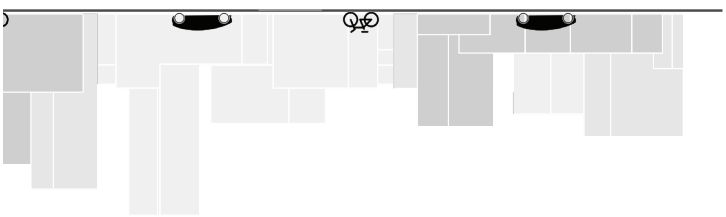


North-West

(activity) Park & transporthub & City center

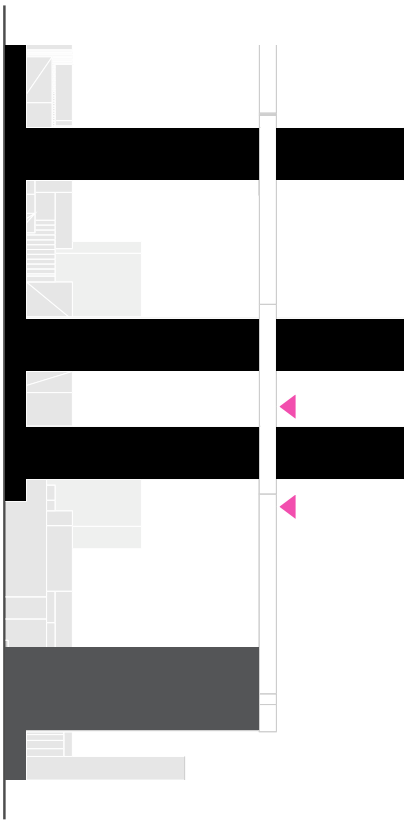


Water + A10 Boulevard + Duivendrecht



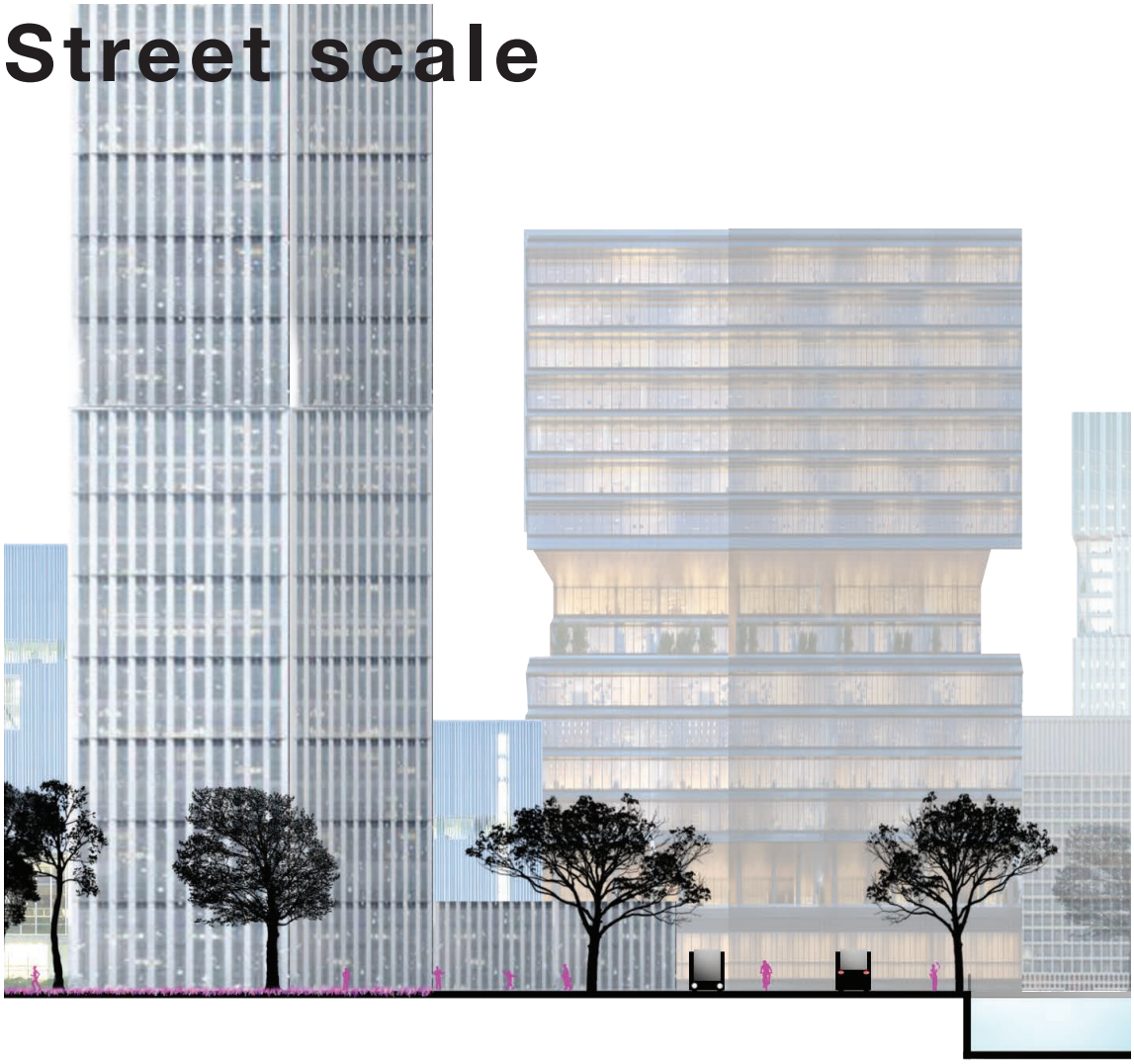
South-East

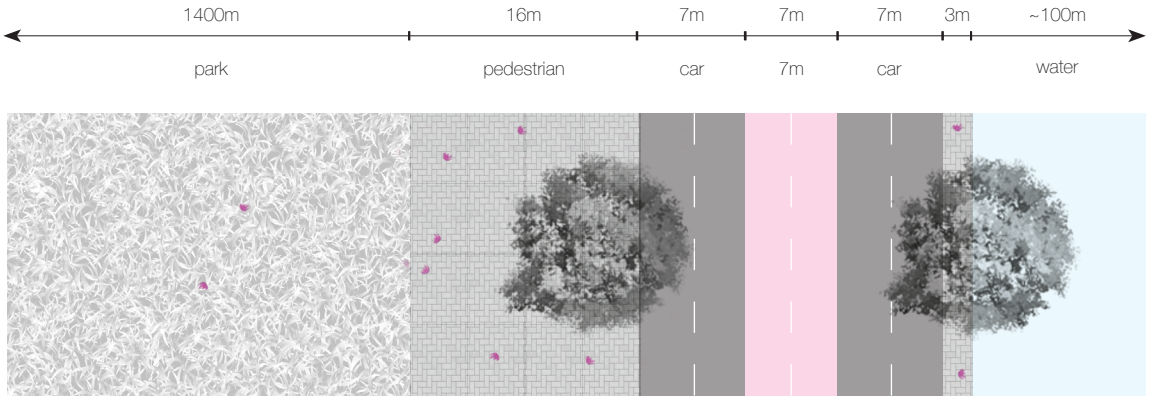
Highrise office



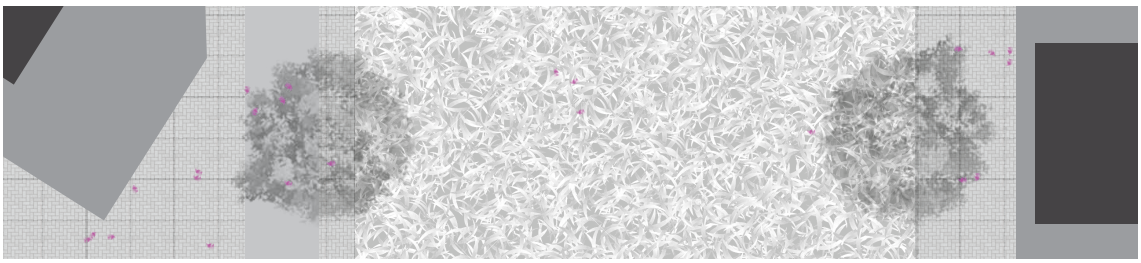
North-East

Street scale





A10 Boulevard



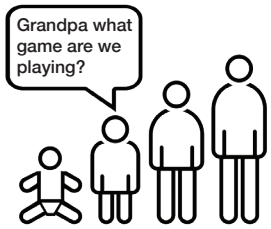
(P)leisure Park

Amstel Gaming Hub

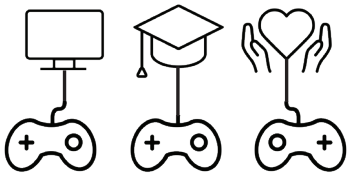
06
DESIGN SYNTHESIS

Design brief

Gaming de



Intergeneration gaming community



more than just leisure

New ste

Case s

Private

4914m²

developer

production

residence

training

Semi

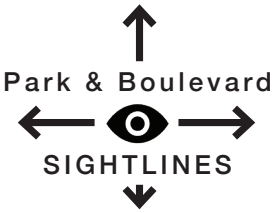
888

gaming

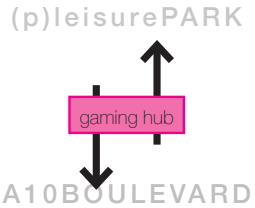
event

gamer

Loca

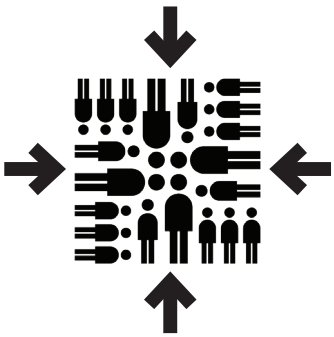


Long sightlines



Destination &
Travel mediator

Ambi

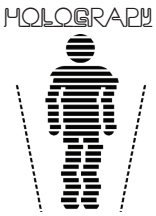


Central place for gamers of different generations
and backgrounds to play and watch games

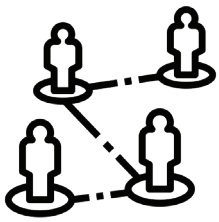
Exclusive gaming
cannot be ach

velopment

ereotype



New technologies



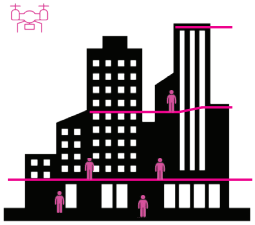
4 gaming personalities

studies

public
3m²
g arena
space
gallery

Public
5013m²
interactive plaza
retail

ation

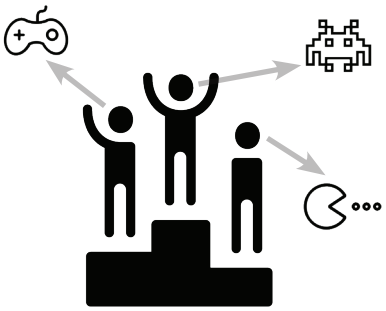


High dense
3d urbanism

Preserving park

tions

g experience that
ieved at home



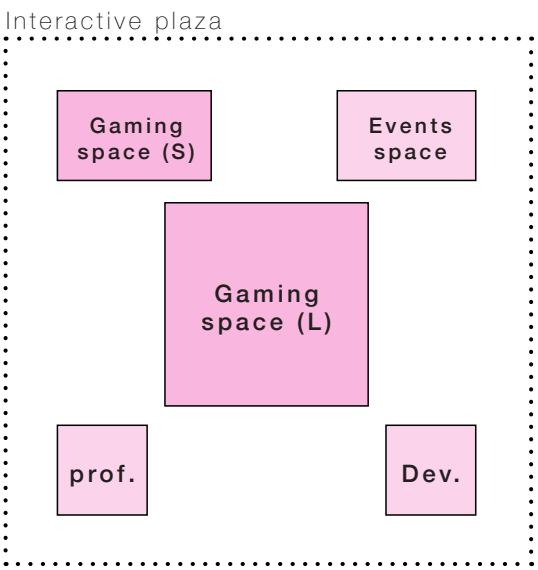
A building that utilizes the landscape of the city as the platform for gaming

KNOT AS SENSATION

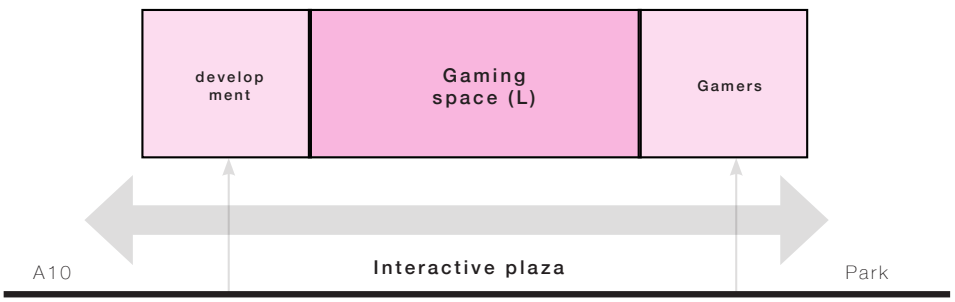
MASSING STUDY 1

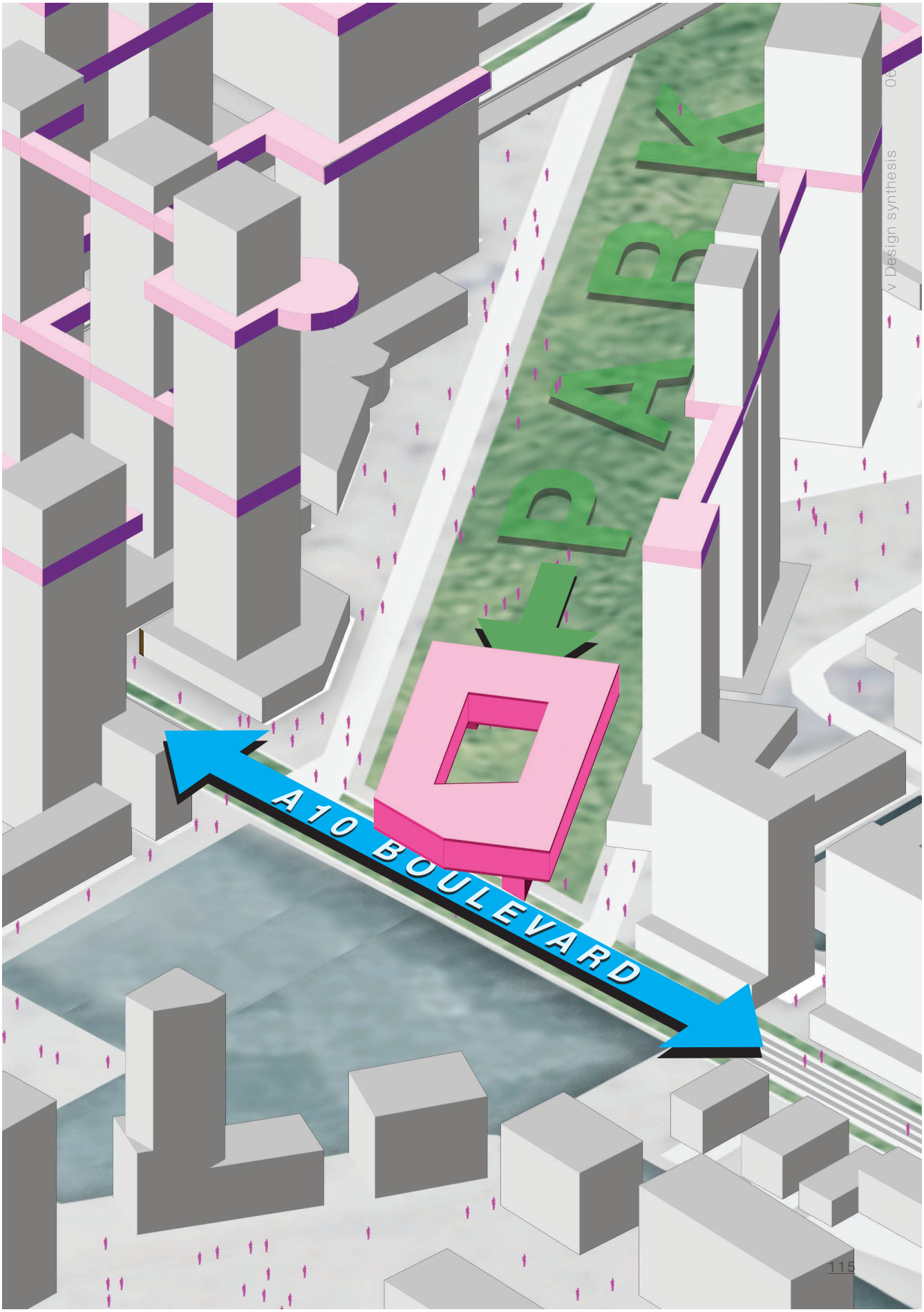
Gaming space most important programme, with all high-tech technology clustered, in the core of the building. The private programmes are situated around the core with the public interactive place acting as the movement area connecting the spaces together. By separating the public and private the park can be extended naturally to the a10.

PLAN



SECTION



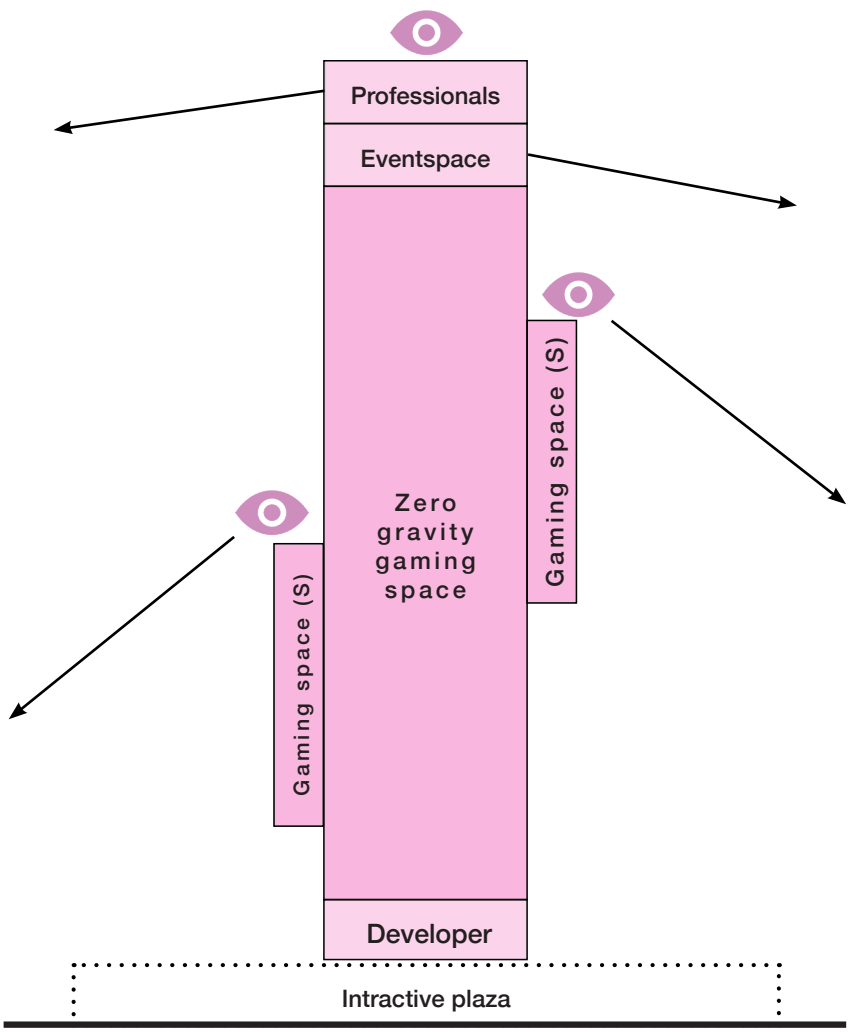

PARK
A10 BOULEVARD

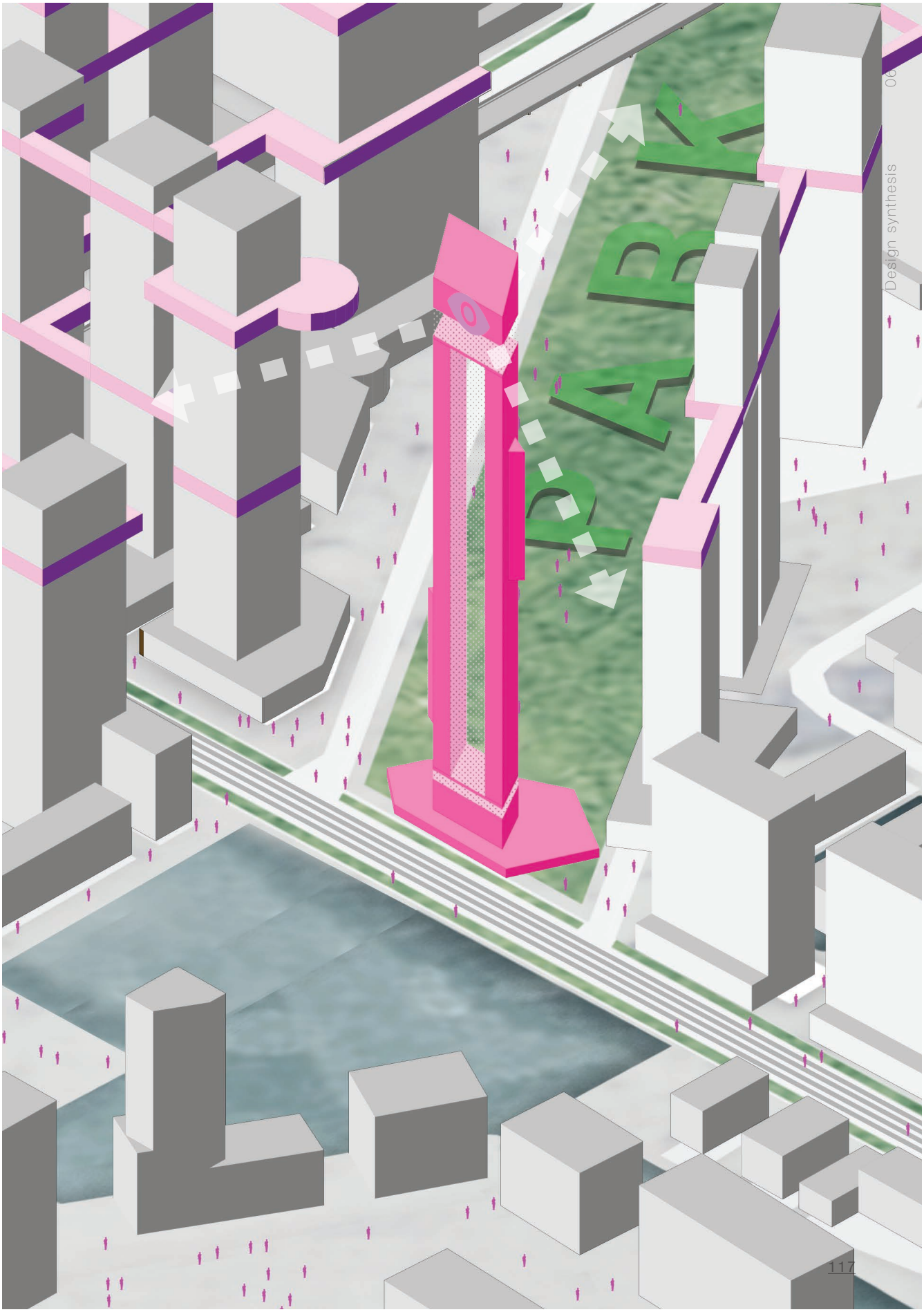
360 WATCHTOWER

MASSING 2

Because of the new technology, the environment become the new platform where games will be played. The watchtower provides the player a unique setting where he can play the game in. The park, water and skyline become the new platforms where games will be projected on. Emphasis on vertical plane opens up new possibilities for the zero gravity to also function as a way of transport.

SECTION



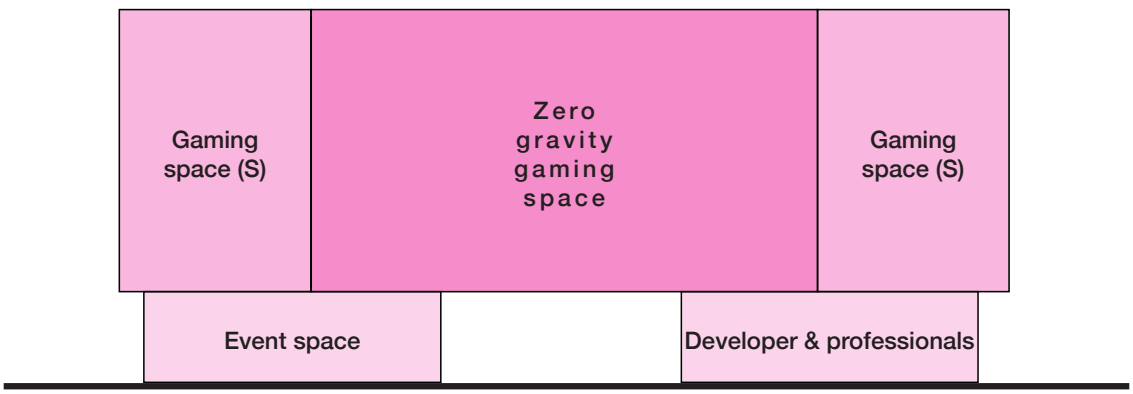

PARK

GATEWAY / DISPLAY

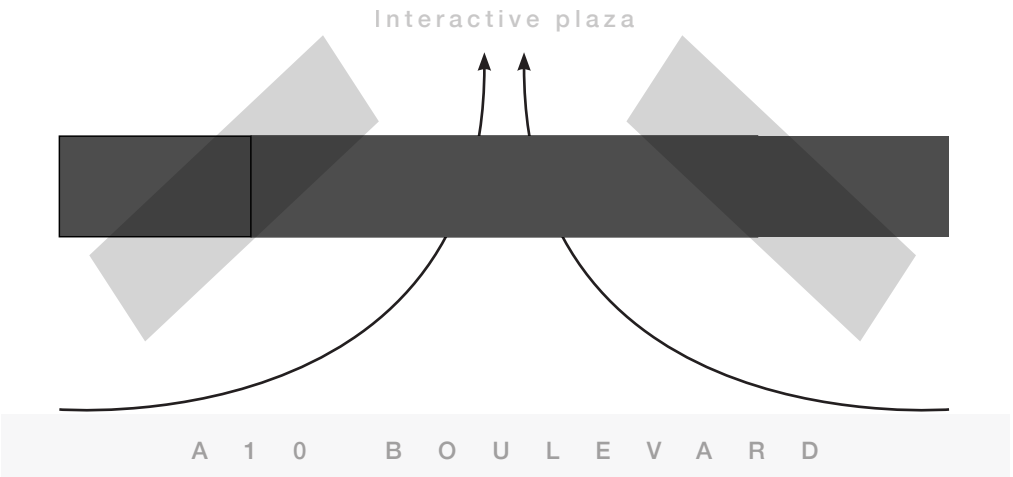
MASSING 3

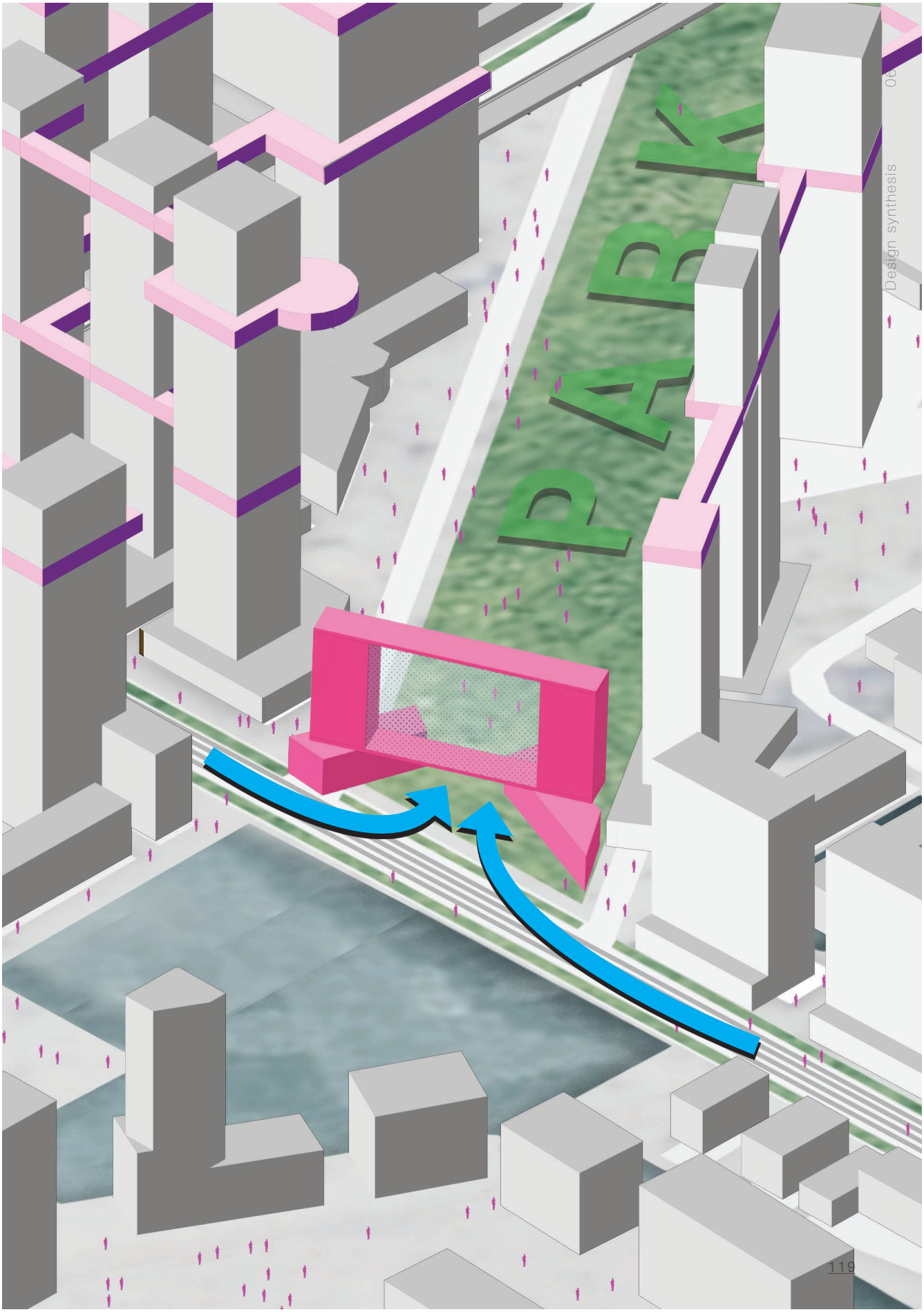
The building spatially functions as a gateway from the A10 boulevard towards the park and the rest of Amstel area. Furthermore the large transparent space that sits on top, functions as a live screen displaying turning the building into a outdoor cinema. Games that are being played at the moment or from other venues can be displayed by the building.

SECTION



PLAN



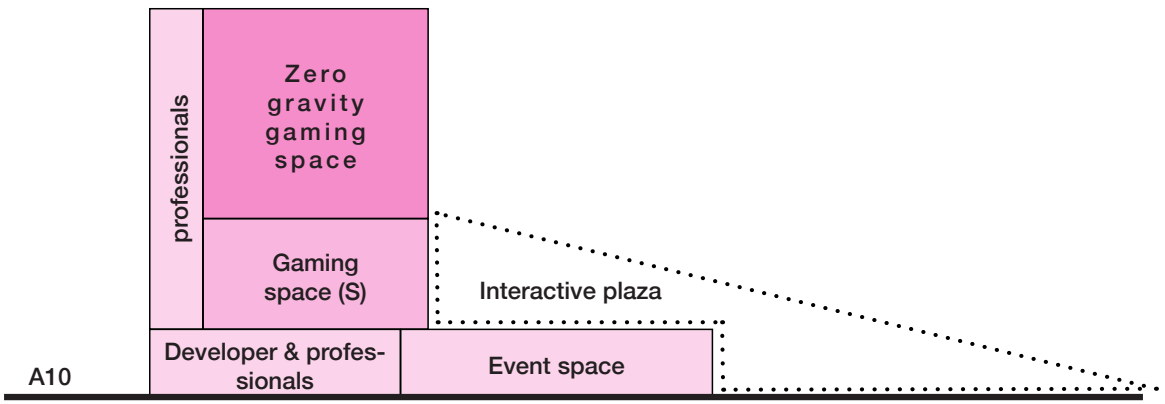

PARK

LANDSCAPE

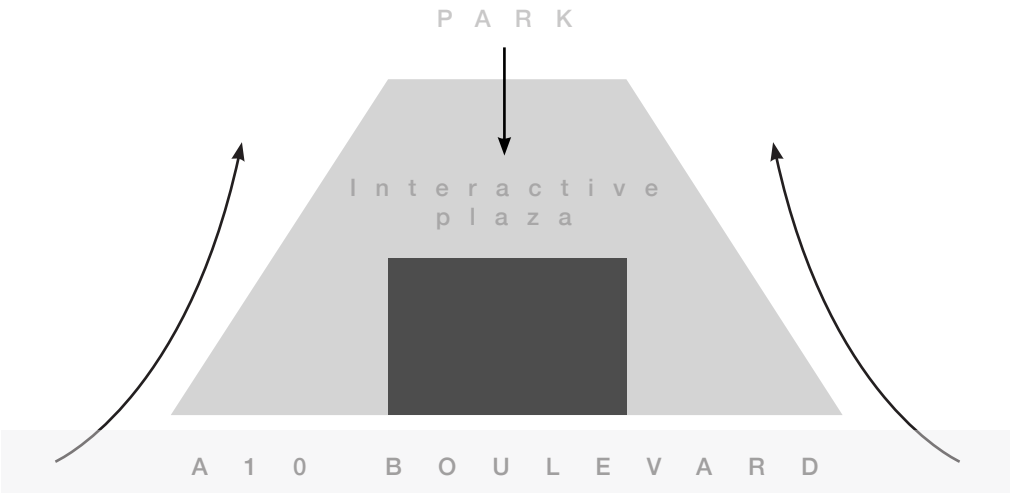
MASSING 4

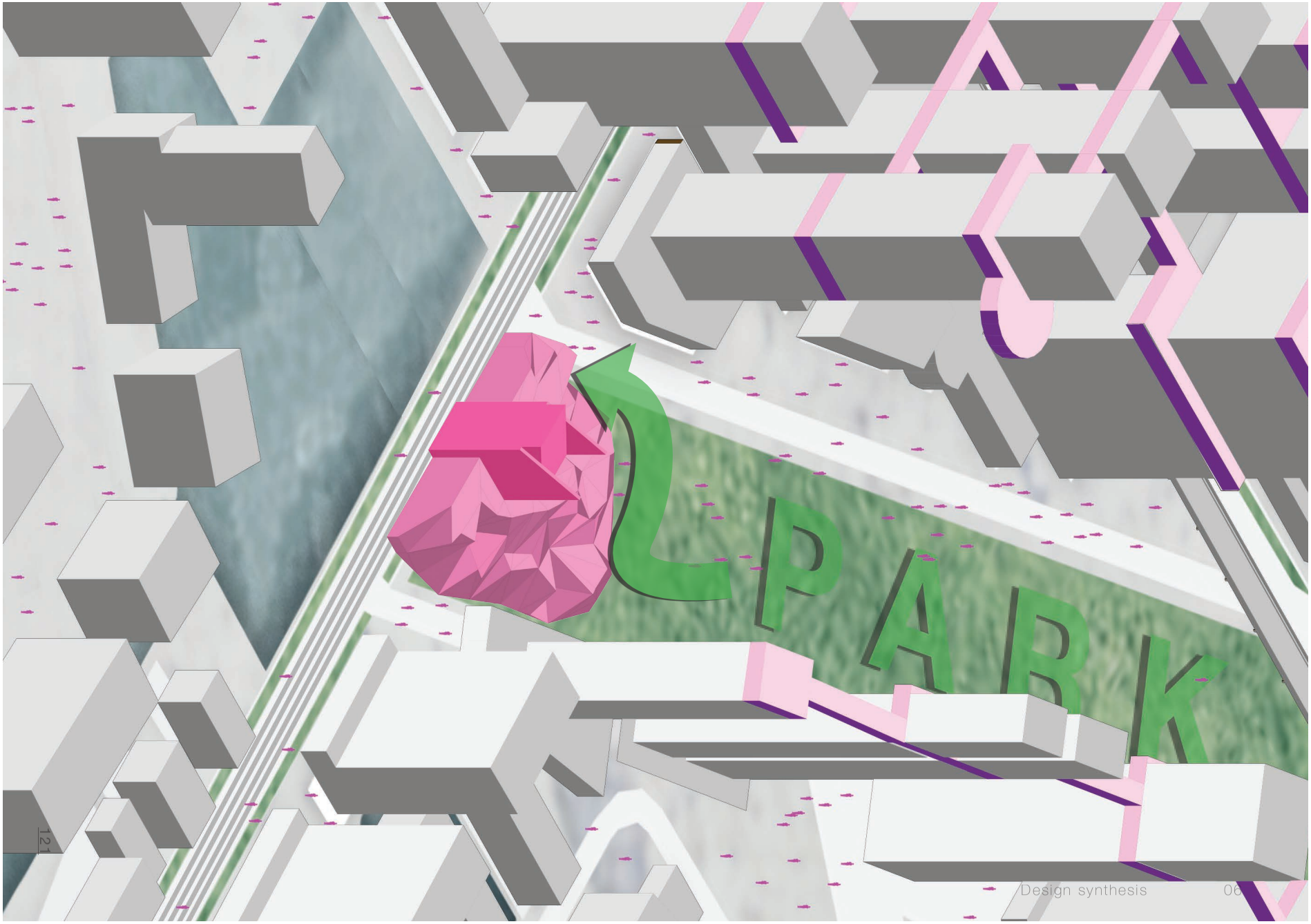
Because of the new technology, the environment become the new platform where games will be played. The watchtower provides the player a unique setting where he can play the game in. The park, water and skyline become the new platforms where games will be projected on. Emphasis on vertical plane opens up new possibilities for the zero gravity to also function as a way of transport.

SECTION



PLAN



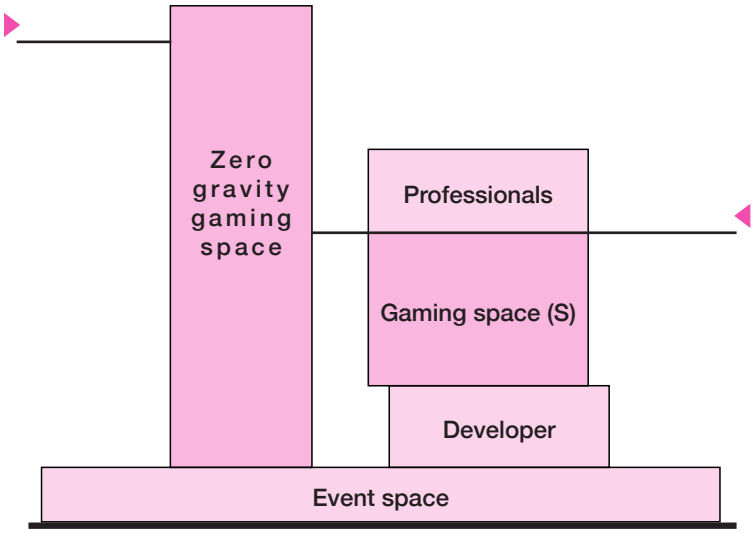

PARK

ENCLOSURE

MASSING 5

The building has its openings faced towards the park because of the sun orientation, by forcing the visitors from the boulevard to cross the building first they get a grand revel of the gaming hub and the interactive plaza. The two towers making use of the multi leveled surrounding by having sky bridges.

ELEVATION



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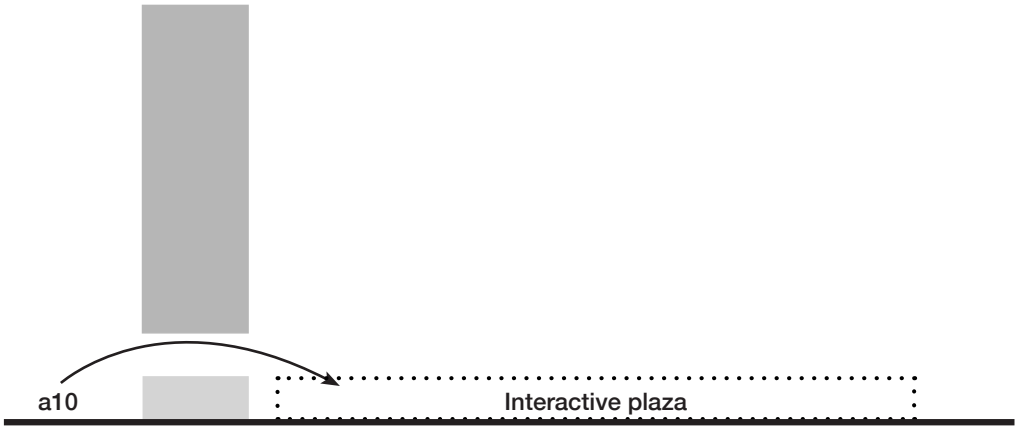

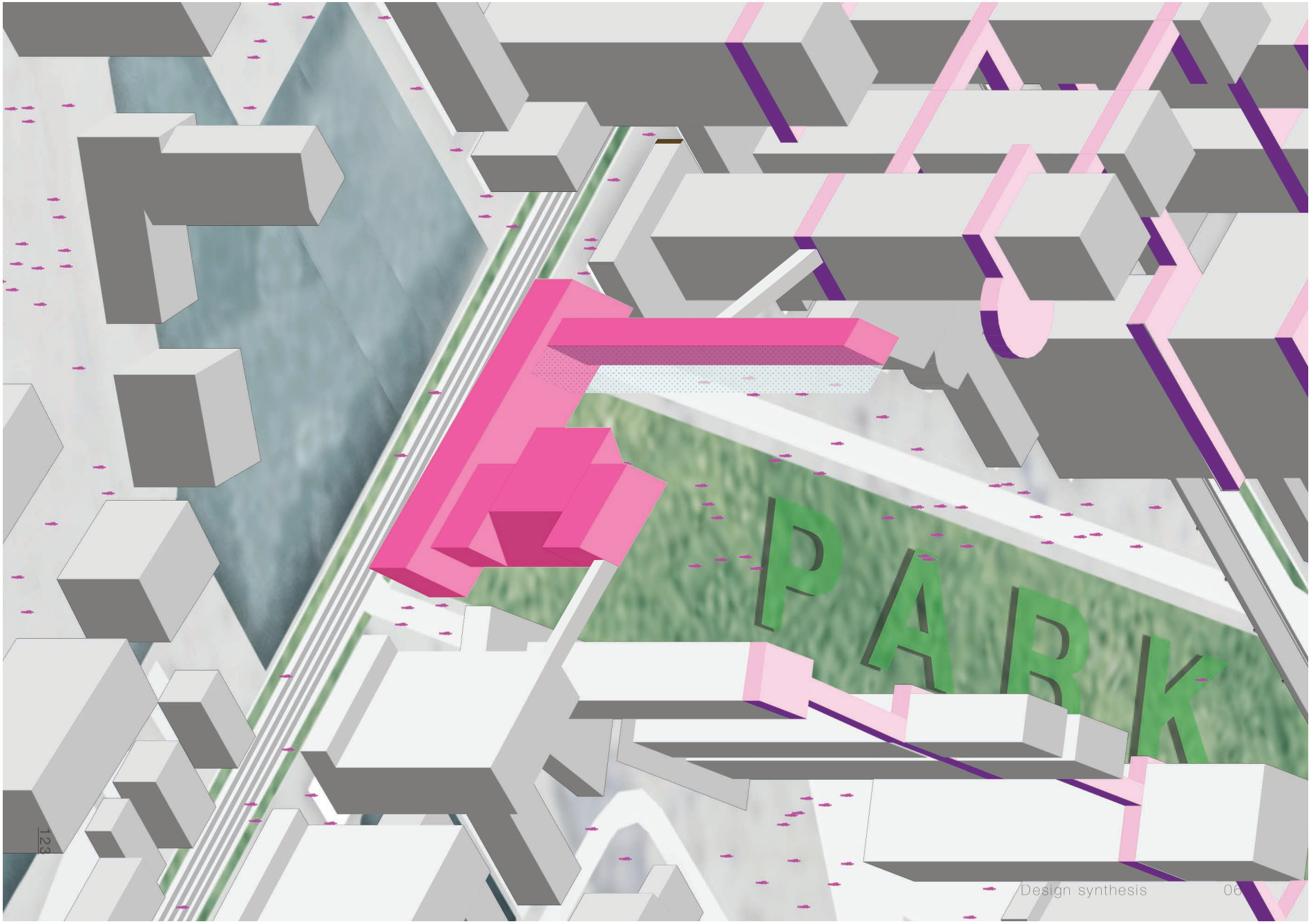
PARK

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Graduation plan

Personal information	
Name	Tai Wei kan
Student number	4626478
Telephone number	0619581843
Private e-mail address	taiwei@live.nl

Studio	
Name / Theme	Complex Projects / AMS Mid City 2100
Teachers / tutors	Olindo Caso, Manuela Triggianese
Argumentation of choice of the studio	The studio's methodology focuses on understanding the city though research that it operates in many different scales which all are constantly interact with each other. Which seems the most comprehensive and useful for the preparation of the practice.

Graduation project	
Title of the graduation project	Game Grounds, playgrounds for gaming in the future city
Goal	
Location:	Amsterdam, Amstel
The posed problem,	Entertainment is digitalizing and gaming plays an important role in this industry. Gaming technology however is developing rapidly and has to users interacting differently to his or her surroundings. With new technologies such as virtual-, augmented reality, and holography, new spatial relationships are created which requires innovative spaces to optimally experience this. Before designing the future gaming hub, it is essential to research these technological developments and its spatial consequence.
research questions and	Main question: How will future gaming technologies impact the spatial relationship between users and physical space.

	Sub-questions - What are the future developments in gaming? - What are the spatial implication as a result of development in gaming? - What functions are required for gaming typology? - Which users will make use of the gaming hub?
design assignment in which these result.	The Gaming Hub of the future that provides space for the production and consumption of videos games aimed at the diverse gaming community.

Leisure is digitalizing, gaming has grown rapidly in recent years and is overtaking traditional types of free time spending such as television and radio. The shift in media consumption impacts how the user experience it, rather than experience it in real-life this new media mostly take place on the Internet.

Online accessibility continues to increase together with the gaming industry, which has already surpassed the music and film industry combined. With VR, AR, cloud computing and other technologies becoming more mainstream, gaming will certainly be more compelling, however the way we interact with gaming will be much different in the future. There has been tendency for gaming devices to become smaller and mobile, this trend alters the fundamental spatial relationship one has with its surrounding. Whereas one was bound to a certain space or screen, gaming can now occur everywhere and anywhere. Creating meeting spaces that enhance this gaming experience stimulates the gaming community both physically and online.

On the competitive side of gaming there exist a huge community that is ever increasing, with ecosystems that is similar to traditional sports. (competitive leagues with team accompanied with managers, coaches, sponsors and fans). These events can be streamed and viewed online, however there is no real substitute for attending a physical venue. Just like traditional sports people want to be together cheering with thousands of people and catching a glance of their idols. Architecture can contribute to the user's experience of the cultural moment, in the future city of (p)leisure the gaming hub is an essential contribution to the identity of Amstel.

Process

Method description

Complex projects operates with a comprehensive research structure which consist of analyzing hard and soft data.

- Hard data is acquired by mapping and analyzing the location to get familiar with the context of the location. This research is done on different scales which are L (city), M (District) and S (neighborhood).
- Following this soft data is analyzed, by using literature, interviews, podcast, important trends that influence the cities development are researched to create a general vision for the Amstel situation in year 2100.
- Site visits with professionals are planned to further gather hard data, and to develop one's individual fascination and project.
- Soft data is analyzed, by using literature, interviews, podcast, regarding the personal topic.
- The research concludes with a design brief containing design and site criteria. These will be the starting point for the design and massing process of the gaming hub.

Literature and general practical preference

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Reflection

Relevance

The graduation project is related to the envisioned future scenario that is developed in the studio. By adopting yet to come future technologies in the design of the gaming hub, new possibilities regarding spatial relationship the user has with certain actors are changed fundamentally. The research into how these technologies will alter this relationship will result in certain design criteria that can be later be implemented in a wider framework when this technology has become more widespread. Furthermore, this research will also give me insight into the many considerations that come into play when designing with new technologies which is relevant in the fast adopting society we live in now.

Time planning

Week 3.1
- Building technology
- Climate design
- Programming

Week 3.2
- Building technology
- Climate design
- Massing

Week 3.3
- Building technology
- Climate design
- Drawings

Week 3.4
- Building technology
- Climate design
- Drawings

Week 3.5
- Building technology
- Climate design
- Drawings

Week 3.6
- Building technology
- Climate design
- Drawings

Week 3.7
- Building technology
- Climate design
- Drawings
- Modelling

Week 3.8
- Building technology
- Climate design
- Drawings
    - (plans, elevations, sections 1:200)
    - (partial building plan +sections + elevation 1:50)
    - (façade fragment + horizontal and vertical cutsections 1:20)
    - (Details 1:5)
- Modelling

Week 3.9
- Finalizing models and drawings
- P3

Week 3.10
- Building technology
- Climate design
- Drawings

Week 4.1
- Building technology

- Climate design
- Drawings

Week 4.2
- Building technology
- Climate design
- Drawings

Week 4.3
- Building technology
- Climate design
- Drawings
    - (plans, elevations, sections 1:200)
    - (partial building plan +sections + elevation 1:50)
    - (façade fragment + horizontal and vertical cutsections 1:20)
    - (Details 1:5)

Week 4.4
- Finalize models and drawings
- P4

Week 4.5
- Finalize models and drawings
- P4

Week 4.6
- Final presentation model
- Minor design changes

Week 4.7
- Final presentation model
- Minor design changes

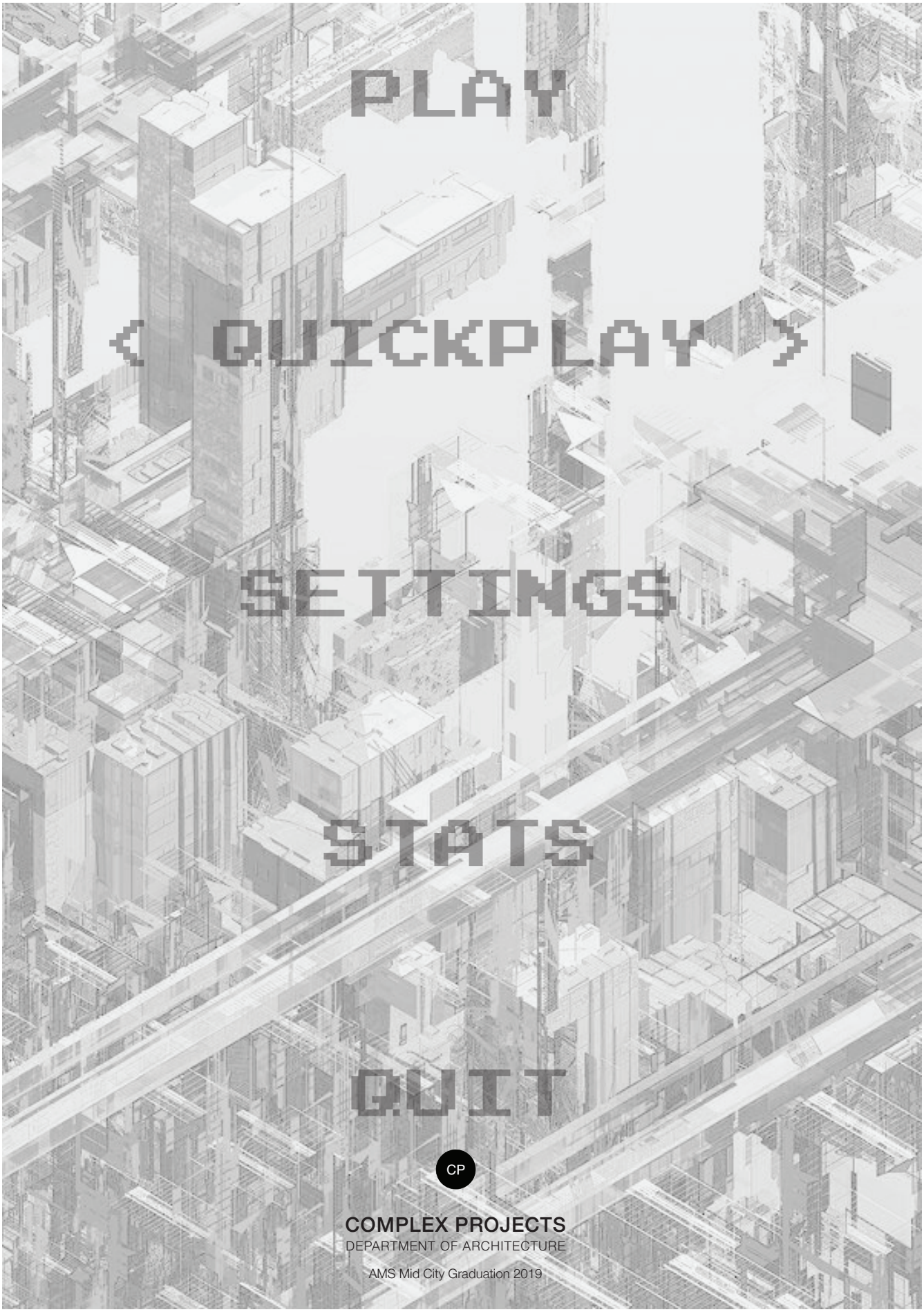
Week 4.8
- Final presentation model
- Minor design changes

Week 4.9
- Final presentation model
- Minor design changes

Week 4.10
- Final presentation model
- Minor design changes

Week21:
- P5 Final presentation

Week22:
- P5 Final presentation



CP

COMPLEX PROJECTS
DEPARTMENT OF ARCHITECTURE

AMS Mid City Graduation 2019