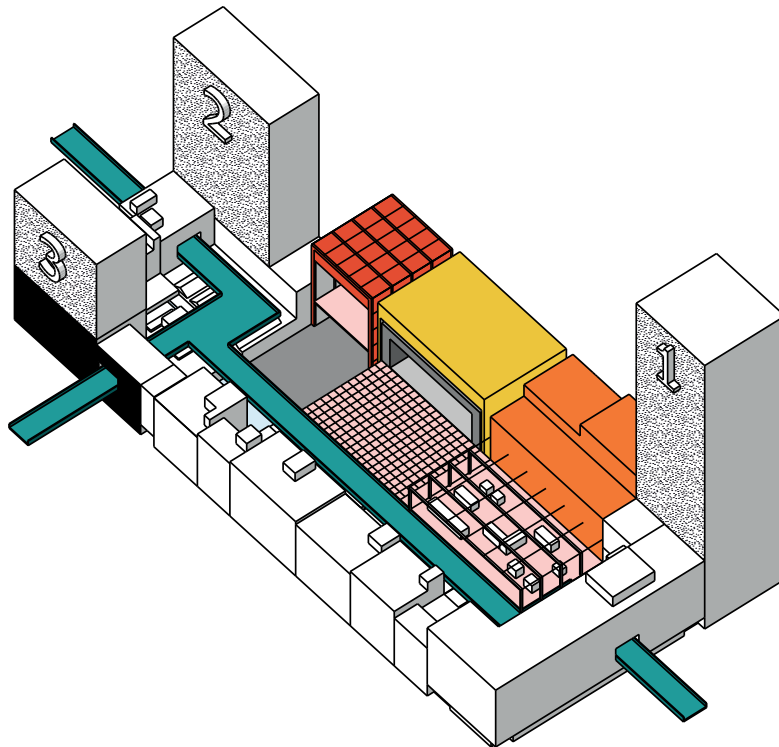# SCHIEKADEBLOK AS AN URBAN MACHINE

a new urban type of 'adaptive' public space for Rotterdam Central District

Serving the public realm at the intersection of digital and physical public space

CONTENTS

PART 1 | **SCOPE OF THE GRADUATION PROJECT**
 (graduation plan)

The problem statement
The time has long gone when public space could simply be considered as bounded material space that was openly and freely accessible to all. In the contemporary society, the public realm is now served and lived in virtual spaces like social media platforms, as much as they once were in streets, squares and parks. The contemporary urban public spatial realm is neither physical nor digital, but an intricate and relational combination of the two. Therefore, in light of this interconnection there is a need for a (re)conceptualization of public space, both external (urban-level) and internal (building-level).

The research question
How can the physical and digital public spaces of RCD-East be interrelated to one another in order to create a new urban type of 'phygital' public space, which is able to enhance the social engagement of the public realm in this area?

The project goal
In the recent past the phenomenon of Pokemon Go has already illustrated a way in which the digital and physical spaces can be merged. The application, used on smartphones, triggered the users to explore public spaces that where marked as hotspots, in some cases equally in both worlds, physical and digital. The smartphone application even showed that it could be used to revive abandoned physical public spaces and make them attractive and inviting again through the digital. Regarding the architect's role, I would like to invert this argument and look for a way in which the physical design of a public space can invite and attract a digital layer or use, so that the physical and digital public spaces can evolve and develop along each other through time. To do so, I have to explore possible junctures in the physical spatial design, where the digital layer can be intersected or attached. In order to elaborate on a possible relationship between the physical and digital spaces, it is necessary to look for clues that both worlds have to deal with. It is generally acknowledged that the digital world has mainly offered global innovation in terms of connectivity, accessibility and adaptability. These three themes can also be investigated in architecture, particularly through their usage in the shaping of spaces. Therefore, based on these three themes, the investigation will be focusing on uncovering possibilities for a dialectical relationship between the physical and digital public places. The aim is to integrate connectivity, accessibility and adaptability through both the physical and virtual public environments in order to stimulate an integrated use that serves and contributes to the contemporary public realm.
The design-aim is to make the use of physical public space compatible with the use of virtual space, so that it is capable of evolving along with the technological developments in the near future, instead of losing its value due to the digitalization. Within this research, the virtual/digital public spaces are mainly referred to public spaces like social media that are accessible through smartphones, because smartphones enable us to be present in both the physical and virtual environments simultaneously, since the study focuses on the intersection of these environments. Also, the use of mobile phones and the accessibility to public spaces is mainly seen through the lens of the pedestrian. The term phygital stands for the synthesis of the terms physical and digital.
The design research will be approached through the lens of three themes, connectivity, accessibility and adaptability in the material/physical sense and how this can relate to or intersect in the virtual public space. As mentioned before, the public spaces, whether physical or digital, are meant to serve the public realm. For the definition of the public realm, I would like to refer to Richard Sennett who argues that the public realm is in its simplest way defined as a place where strangers meet with incomplete knowledge of one another, leading to anonymity and

impersonality, which enables an environment for individual and communal development. Whether in a physical or digital space, Sennett emphasizes that the most important fact about the public realm is the activities that are taking place in it, which occur on the base of strangers meeting one another. In this research, I would like to emphasize on this statement and investigate possible ways in which social engaging(interaction/participation) of 'strangers' can take place in phygital public spaces, approached through the three themes of connectivity, accessibility and adaptability. When the public spaces are highly connected, highly accessible and adaptive, the place is more attractive to digital inputs and is therefore more likely to evolve in an integrated manner into the future when it comes to social engagement and activities in the physical public spaces.

The relevance of this project

[*Cross Domain - City of the Future*] Regarding the relation between the graduation studio and my graduation topic, in a very literal sense it can be said that my theme is also a case of *cross domain*, namely the domains of the physical and digital public space. Theories about themes like 'augmented or virtual urban spaces' already emerged since the birth of ICT's(Information Communication Technologies) during the nineties and now to a lesser extent theories about phygital spaces started developing in more recent times. Yet, I could not find (much) tangible projects so far of urban types that are representing these phygital theories and therefore, in doing so through my graduation project suits well within theme of 'the city of the future'. As a result of this graduation research, a (design) suggestion will be made from my interpretation of future public space, related to the term phygtial; which hints on the intersection of physical and digital space. The relevance of this theme is touching upon more aspects in society then just spatial design, since the digitalization and virtual publicness like social media platforms are heavily influencing our social behavior and the way we live and work within both the society and the urban fabric. Since the introduction of ICT's a lot has changed in how we live nowadays, affecting almost every discipline and the way they contribute to the society. New developments come and go in shorter time-spans and so newly created structures have to be able to adapt even faster in order to grow along with these developments. Therefore the theme is very topical and the ever-growing technological developments makes thinking about such future-scenario's not only inevitable, but also necessary.

From a larger perspective, it can be said that the project is trying to undermine the negative influences of digitalization: an increasing anonymous, impersonal and individual society. The very wide-spread opportunities that digitalization offered us and the large innovations on the grounds of connectivity, accessibility and adaptability/flexibility through digital services might have blurred the quality of being, engaging and meeting in physical places. But we must not forget that, despite the many possibilities of the digital world, in the end we will always need physical spaces. Although the virtual world seems to be very conducive to social engagement, on the contrary it can also be said that social engagement in physical form is declining. As a result of such extensive and active participation in society on social media platforms, there seems to be less and less social contact taking place in physical form, because people are becoming isolated by the use of mobile phones. Also, on one side of the argument social media is very much dominated by profiling and positioning yourself within society, but on the other side it creates an enormous amount of impersonality and anonymity when the publicness is lived from behind the screens.

In the end the discussion is not about wether the public space should be in physical or digital spaces, but it is about considering a new urban paradigm of public space that serves the public realm in both ways. Therefore intersecting the physical and digital public spaces by elaborating on the qualities and advantages of both worlds, a more balanced out interrelation will arise in order to serve the public realm at its best.

PART 2 | **PROJECT EVOLVEMENT AND REFLECTION**

Project evolvement in the early stages (around P1)
In the period around P1, as for the theoretic framework, I was mostly setting up a research around the themes of physical public spaces and how they serve the public realm, to get a general understanding of what I was trying to address with the idea of interrelating physical and digital public spaces. Therefore the theoretic framework remained rather generic. This was as a result of mainly two reasons:
1. Researching the public realm and public spaces is very broad and therefore very hard to pin down without any specific directions.
2. Researching the 'digital' aspect even more difficult at that time, because the theme of interrelating physical and digital environments is very broad as well. And besides, this theme is rather new and has therefore a relatively little and shallow theoretic framework in current researches.

It was initially frustrating and funny at the same time that in the early stages of my research I kept stumbling upon the field of 'computer programming and architecture' examples, instead of interrelating physical architecture with virtual environments. Reflecting back to this part of the research, it is not strange at all, since computer programming is referred to as 'software architecture' and it seemes that software architects where inspired a lot in their working methods by the approaches used in physical architecture('hardware'). But towards the P2, after having picked the location of Schiekadeblok and having determined the three domains of connectivity, accessibility and adaptability, the project was getting more and more shape. It really helped to first dive into the physical side of the project, before trying to dig deeper into the digital part.
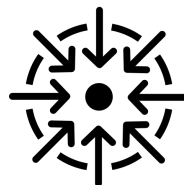
Project evolvement towards P2
In the time period towards the P2 my research had led me to the division of three main domains that would serve as possible attachment points between the physical and digital environments:
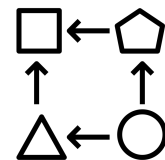1. Connectivity
2. Accessibility
3. Adaptability
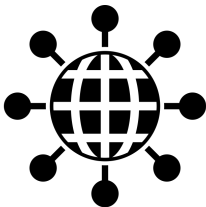
CONNECTIVITY   *ACCESSIBILITY*   *ADAPTABILITY*

Up until the P2 I predominantly researched and elaborated on the first two aspects, namely the connectivity and accessibility. The idea was to get grip on the location of the Schiekadeblok and design and establish the main principles for this area in terms of connectivity and accessibility, which felt as a legitimate first step to this design approach. If the physical connectivity and accessibility of the area fails in the first place, then looking into more specific aspects like the possibilities of making this area (digitally) 'adaptive' would make little sense. It also seemed that the municipality was working on the connectivity and accessibility of this area as well and so with the 'luchtsingel' as a basic starting point I started looking into ways of evolving this interesting concept into a more overarching design principle. This is where I was triggered and started elaborating on the 'elevated publicness', offering the pedestrians of Rotterdam a pleasant safe-haven public route/environment on an elevated level, away from the chaotic and dangerous ground level, especially around this specific area where the main traffic-arteries of the city come together at Hofplein. This elevated public walkway connects and gives acces to the different public hotspots in the area: Rotterdam Central Station, City Centre, Schiekadeblok, Pompenburg and Hofbogen/ Zomerhofkwartier. Also future developments of public hotspots are taken into account and situated along this same route, like the Conradstraat and Treehouse on the Delftseplein. All these public hotspots are connected through an elevated public deck within the Schiekadeblock, which serves
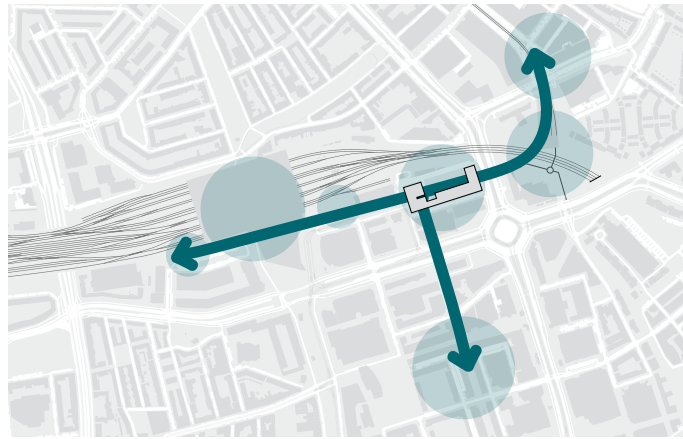
as both a place to linger with public functions and facilities, as well as a transit zone for passage to the other hotspots. In this way, the Schiekadeblok and its surrounding area are connected and accessed in a proper way for pedestrians, which is mainly achieved through physical environments. The fact that this elevated route is physically connected to multiple hotspots in the area, gives me no hesitations that it will be connected well trough the digital environments (like google maps and social media) as well.

Project evolvement after P2

During P2 I already mentioned that I would be elaborating on the 'adaptability' theme from there on, of which I thought would give me the most interesting and fruitful opportunities in interrelating the physical and digital environments. I ended the P2 with my initial thoughts on this adaptivity domain, illustrated by the figure below.
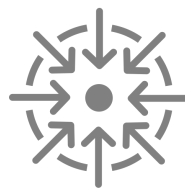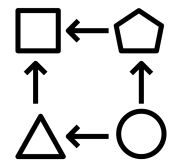
CONNECTIVITY   *ACCESSIBILITY*   *ADAPTABILITY?*

MAKING THE PUBLIC SPACE ADAPTIVE
want to work? Just take the app!

What do you want to do?

Allowing the public realm to decide for themselves how the public space will serve them.

The main question was to research ways in which the physical environment can be adaptive and responsive to the needs and specific activities at different times. I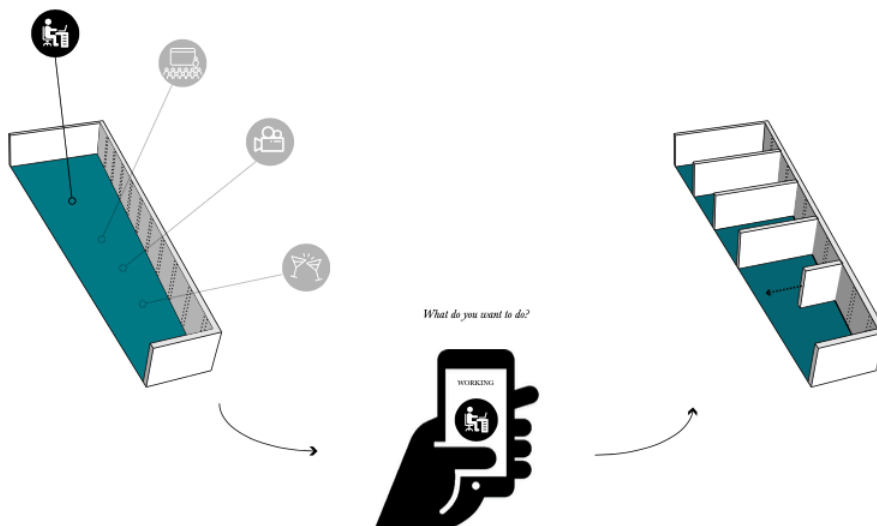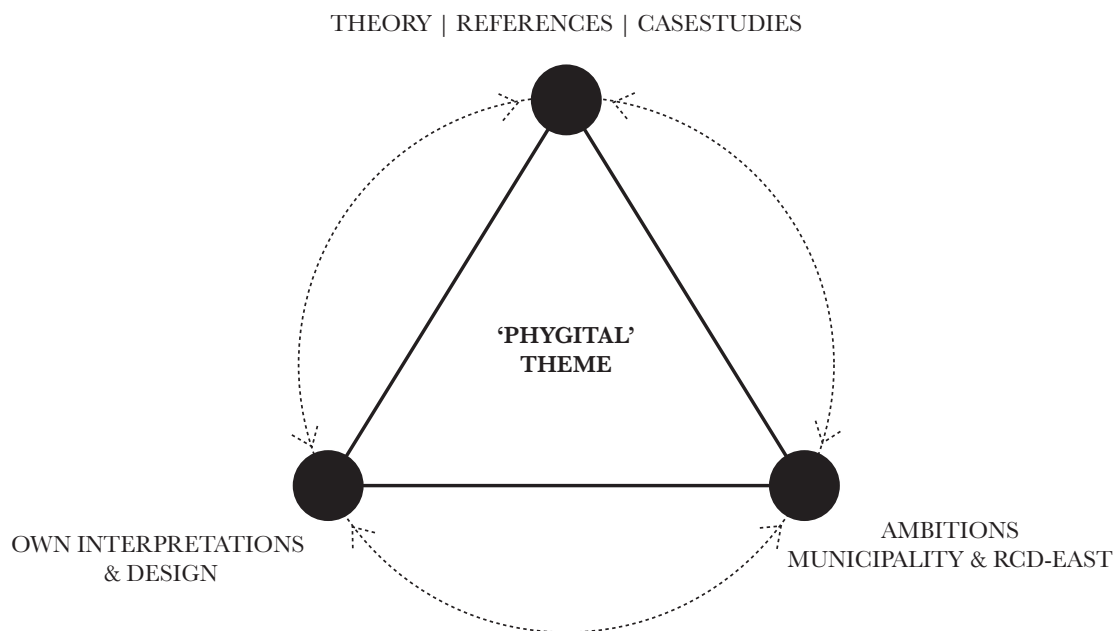n which ways can the physical environment adjust to multiple configurations? After P2 I started looking into examples in which this already happens and I pretty soon discovered that I had to look for 'kinetic architecture'; architecture that is able to move. What if kinetic architecture is combined with Internet Technologies and responds to data-driven impulses? Also within the theoretic framework I finally managed to get more specific and find more relative resources, which actually was as a result of doing my research mostly 'digital'. From a certain point on I realized that the theoretic framework around the theme of interrelating physical and digital worlds was still very shallow, so I started looking into digital resources like TEDx-talks and youtube-movies. This is where I really started to find relevant examples, references and casestudies. I even found very on-topic literature through one of these videos, because the writer was talking about it during a TEDs-talk. It was funny to experience how 'the digital' eventually really helped me to get more grip on the digital-part of my project.

THEORY | REFERENCES | CASESTUDIES

'PHYGITAL' THEME

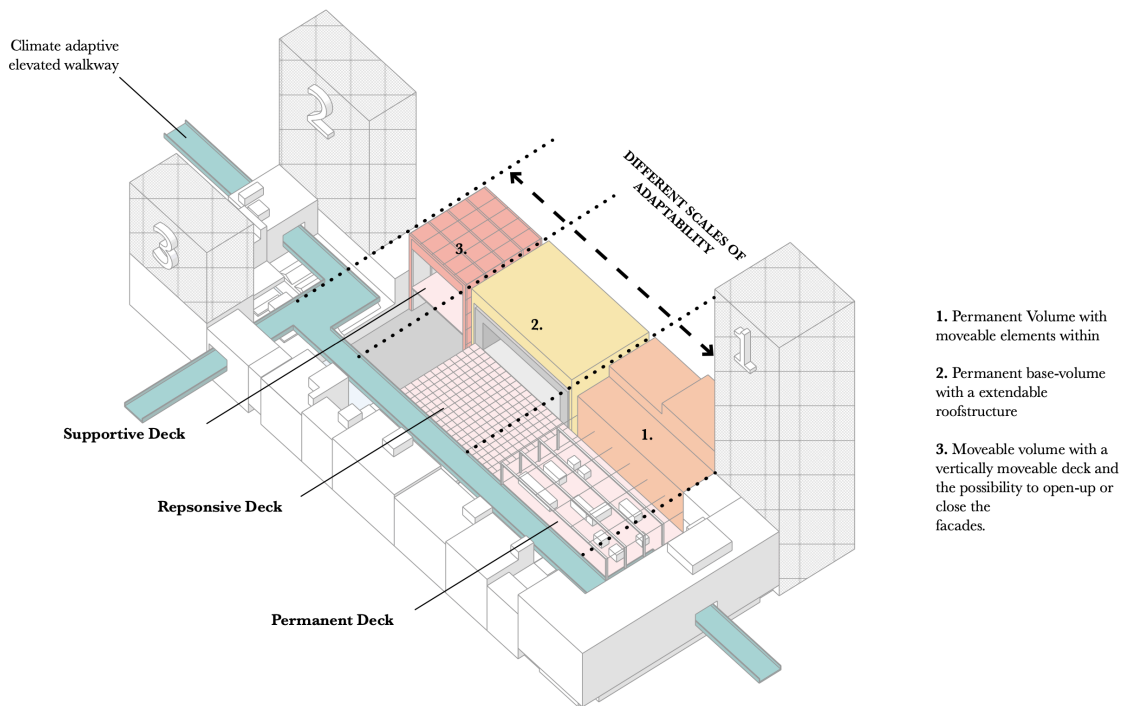OWN INTERPRETATIONS & DESIGN

AMBITIONS MUNICIPALITY & RCD-EAST

From that point on, the relation between research and design got a more integral way of working, shown by the illustration above. Instead of having just theoretic material, I now also had relevant references and casestudies, which I could directly test on my site and design with. The outcome could then be tested and adjusted again according to my own interpretations, as well as trying to align them with the ambitions and visions of both the municipality and the association of RCD-East (existing out of for example the current tenants and companies that are located at Schiekadeblok).

Making architecture adaptive has a lot of different ways and approaches, but along the way I came to an understanding that I could use the different scales of adaptivity to address the different needs and functions for the Schiekadeblok, but also to handle the huge scale of this block. From there on I tried to make a zoning-principle in which the different approaches to adaptivity could have a meaning for the design and for the users. Now I am at this point where I try to figure out the most optimized basic configuration for this idea, which functions already good on its own and how the adaptive parts can be of best use to the location, users, municipality and so on.

SCHIEKADEBLOK AS AN URBAN MACHINE

approaching different scales ofadaptability

Climate adaptive elevated walkway

3.

DIFFERENT SCALES OF ADAPTABILITY

2.

Supportive Deck

1.

Repsonsive Deck

Permanent Deck

1. Permanent Volume with moveable elements within

2. Permanent base-volume with a extendable roofstructure

3. Moveable volume with a vertically moveable deck and the possibility to open-up or close the facades.

The different volumes and their corresponding decks represent different scales of adaptability.

After testing different configurations and options, I created a basic lay-out in which I had three volumes that where representative for three different scales of adaptability; a permanent volume with moveable elements within (1), a permanent base-volume with an extendable roof structure (2) and a volume that is moveable in its whole (3). Adjacent to these volumes the elevated deck also addresses different forms of adaptability; a permanent deck, a responsive deck and a supportive deck. The permanent deck houses

In the next part some written notes and thoughts are to be find, which is part of my work method and gives insight to how the ideas evolve while looking up relevant information for the project. wa
The design-aim is to make the use of physical public space compatible with the use of virtual space, so that it is capable of evolving along with the technological developments in the near future, instead of losing its value due to the digitalization.
As a result of this graduation research, a (design) suggestion will be made from my interpretation of future public space, related to the term phygtial; which hints on the intersection of physical and digital space.
New developments come and go in shorter time-spans and so newly created structures have to be able to adapt even faster in order to grow along with these developments.
From a larger perspective, it can be said that the project is trying to undermine the negative influences of digitalization: an increasing anonymous, impersonal and individual society.
As a result of such extensive and active participation in society on social media platforms, there seems to be less and less social contact taking place in physical form, because people are becoming isolated by the use of mobile phones.

The visible dynamics of a physical environment that is literally moving,
The Schiekadeblok as an urban machine. Speculating into the future, I concluded through my research that a possible interconnection between physical and digital environments can be found in the adaptivity-part of

In the past, architecture was a very permanent and static happening. In the very widespread literature concerning the theme of sustainability within architecture, it can roughly be said that there is a subdivision between:

1. Sustainability in terms of life-span; if a building gets build and lasts a hundred years (or longer) this building is sustainable in that sense, in contrary to buildings that get demolished after ten or twenty years.
2. Sustainability in terms of materiality; the materials that are used for constructing a building are in some way circular; circular in terms of re-use(modular building principles) or circular in terms of being easily re-purposed through a recycling process.
3. Another approach to sustainability in terms of materials is looking for new ways of constructing /designing and new materials that go beyond the use of raw materials like oil. Basically looking for new ways of constructing, without making a very permanent structure.

Speculating into the future, I concluded through my research that another approach to sustainability can be reached through the merging of physical and virtual environments. looking into hybrid-design of physical and virtual environments. I think that, especially for public spaces, a very permanent and static design is no longer a design-approach that suits in contemporary, nor future times. In my opinion this is strongly related to the incredible acceleration of changing ways of working and living in the past twenty-or-so years, since the emerging of ICT's. The digital-era has made us adapt each time even faster to the even faster changing digitalization processes. The introduction of smart-phones has really created new opportunities in terms of (socially) connecting, giving acces to infinite resources and giving the opportunity to adapt to different needs or activities that is triggered and stimulated by the digitalization-era.

After the research and design work that I have done in the past months, I can conclude that my approach to 'phygital public space' would be slightly different than I first imagined. Initially I thought that I would design a space with all kinds of digital inputs. But while I was looking up casestudies, literature and applying my findings on the design, I pretty soon discovered that these interventions where too specific for an architect to fill in. You would find yourself more designing digital apps instead of designing physical spaces. After doing further (design) research I concluded that in my interpretation, the physical space could be maybe not so directly connected to digital environments, but more indirectly by designing physical spaces that, due to their responsiveness, will not be neglected and submissive to digital environments in the future. Because regardless of how sophisticated the digitalization will be, in the end, we always will need physical spaces. Therefore the statement has developed more into: we as humans have been immensely adaptive to the digitization of the past two decades; in almost any form and in any sector; why not the built environment? From that point on I really started evolving and elaborating on physical design approaches that could be adaptive and responsive to a variety of events, activities and configurations. A physical public space that is responsive to the needs and demands of people, time and

By creating physical public space that is able to adapt to a variety of different activities, events and configurations, this public space becomes more future-proof and is more likely to evolve into the future, ;hand in hand' with digitalization.

PART 4 | **FINAL REFLECTION**

I started off this project by a fascination about the shift that has been going on in the last decades regarding the role of the physical built environment for the public realm, since the emergence of Internet Communication Technologies and with this the digital environments. There are a lot of theories about this phenomenon, mostly in a negative light where theorists claim that physical urban spaces get more and more neglected due to the digitalization and the (smart) technologies that have been changing the way we live, work and move drastically. And still is.

As a result I was triggered to explore ways in which the physical and digital worlds could be interrelated to each other, instead of seeing them as each other's opponents. I made the statement that there is a need for a re-consideration of public space as just physical and material space and that we, as designers of physical space, are now and certainly in the future tasked with this interesting challenge. Through my graduation project I made an effort in somehow interrelating the physical and digital environments, seen from my personal interpretation on this theme.

Because of the very wide scope of this theme and the countless possibilities in trying to interrelate the physical and digital, I looked in the early stages of the project for possible leads and therefore at one point I determined three domains through which I wanted to explore this theme:
1. Connectivity
2. Accessibility
3. Adaptability
I determined those three domains because of their relevance to both the physical and digital environments. This way I could investigate possible attachment points or interrelations.

Up until the P2-presentation I mainly looked into the first two aspects and with this into the more physical side of the project. How is the location connected in the area, what are the accessibility issues and how can an overarching masterplan tackle these primary aspects. This resulted in the 'elevated publicness', which created an urban scheme in which an elevated public walkway connects all the important and upcoming public hotspots in the area of the City Centre of Rotterdam. This elevated publicness argues that the ground-level of this area is in all its chaos no longer an attractive place for pedestrians and so that the public space should be lifted to an elevated level through this route, connecting to all the public hotspots like Rotterdam CS and the city centre.

After that I started elaborating on the adaptability aspect. How can the design of a physical space be adaptive, especially now that we are in a time in which our environments get less and less permanent and more changeable, due to the digitalization. (How) Can the design of a physical space adapt to this phenomenon? How can we create a space that is less permanent and able to adapt to different times, trends, activities and events? We as human beings have been extremely adaptive to the changes that the digitalization has brought to our way of life; so why not the built environment? Why should the physical environment and architecture remain so permanent, in a time so changeable and a time which is characterized by temporality?

Then, along the design process, I started realizing that kinetic architecture was the direction that I was heading almost automatically and also very naturally; adaptability through movability. Architecture that is able to have certain degrees of movement is architecture that is able to respond to specific times, events/activities or sun positions. I started experimenting with different forms of movement and testing them on the location of Schiekadeblok. An important phase of the design process was trying to find 'the most ideal basic configuration', which already met most of the demands of the visitors and tenants. The ability to move and with this the ability to create different spatial settings and configurations would then really be an added value. Other configurations would then be created as a result of optimization of a more specific or a more demanding event/activity. So after having determined the most optimized basic configuration, I started testing other spatial settings that would suit the more specific and unique demands for this location. What really helped me with this process was the moment when I created a sort of 'storyboard' and narrative for a dayshift of this architectural object. So what would a regular day look like for this building? What different configuration would it have during a day and for what reason? How can a random visitor spend a day at this building? After having made up this

storyboard, the 'movability' also started to make even more sense. It really showed what the capacity to adjust and adapt was and the added value of it. From this point on I was able to become more and more concrete on the design and on the technical elaboration of the project.

The technical elaboration of the design was quite a challenge, because it had no resemblance with a traditional design whatsoever; even to the scale of materialization. Precisely because of the ability to have moveable parts, it became even harder to come up with the technical means that provide this feature. At one point I got the feeling that I really was going too far on this behalf. I realized that I had to make choices and could not elaborate on every single aspect of this movability. It proved to be very helpful to stop designing at one point and just start elaborating on the technical implementation. Very specific feedback during the P4 also helped me with this, because a certain section of my building was pointed out as being the most representative for all the moveable elements and all the different spatial settings. This way I was able to elaborate further on this specific section and to carry out all the 'movements' through this section, explaining the 'dayshift story' that I described a bit earlier. At this point the project really started coming together. Unfortunately a bit on the late side, because afterwards I realized that I should have made the switch to the technical elaboration earlier. But, I can say that I am happy with the fact that in the end I was able to bring it all together into a complete project, starting with the conceptual idea about the digitalization, up to the eventual 'Urban Theatre' which resembles adaptive architecture that is responsive to both contemporary and future times.

PART 4 | **SOME NOTES AND THOUGHTS ALONG THE WAY**

The interrelations of physical and digital public space
Over the last few decades an increasingly collaborative work developed among spatial practitioners such as architects, urban planners, artists and media designers has produced a particular landscape of projects that engage information technology as a catalytic tool for expanding, augmenting and altering the public and social interactions in the physical urban space. For spatial practitioners, a series of opportunities arise from the possibility of engaging networked digital technologies as catalysts for processes that might have a strong impact on social, cultural and environmental future scenarios.
As information technology becomes pervasive, one has to rethink the rules for communication between the citizen and physical urban space. Emergent technologies have brought into question the role of the material city in representing the public and the collective experience of urban space. Information and matter, code and space collapse into a new system, and mediated spaces become an architectural problem. In this new scenario, the role of machines is intended as a set of devices that become relevant to the experience of urban space and the public realm.
Five categories of temporary urban testing models that offer short term and rapid solutions to the needs and demands of the public realm:

1. Appropriative and adaptive
2. Prototypical
3. Hybrid and systemic
4. Performative
5. Generative and Catalytic

Recognize public space by identifying new types of social interactions and intensifying the correlation between digital and physical space as well as the artificial and natural.
In the late 1950's the Situationists moved away from functional urban planning and started looking at the social realm as a field for urban production.
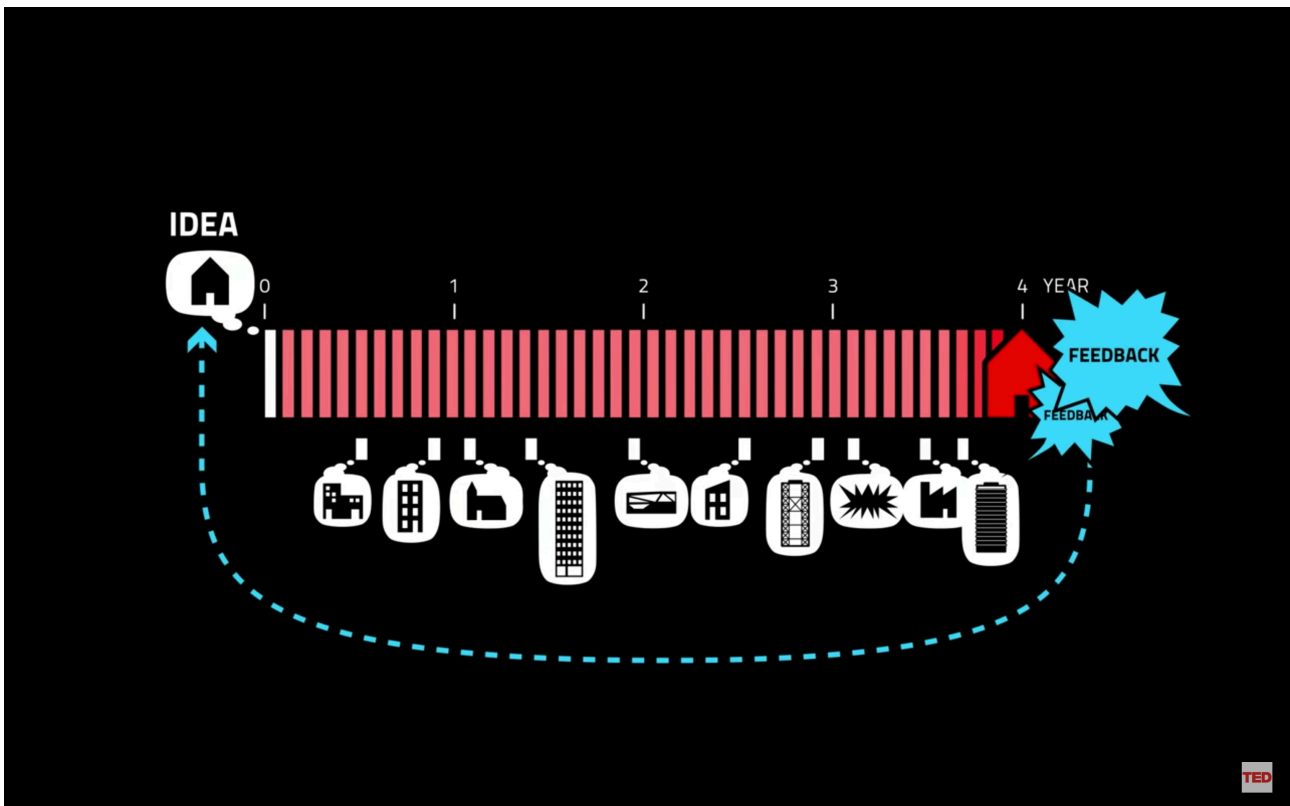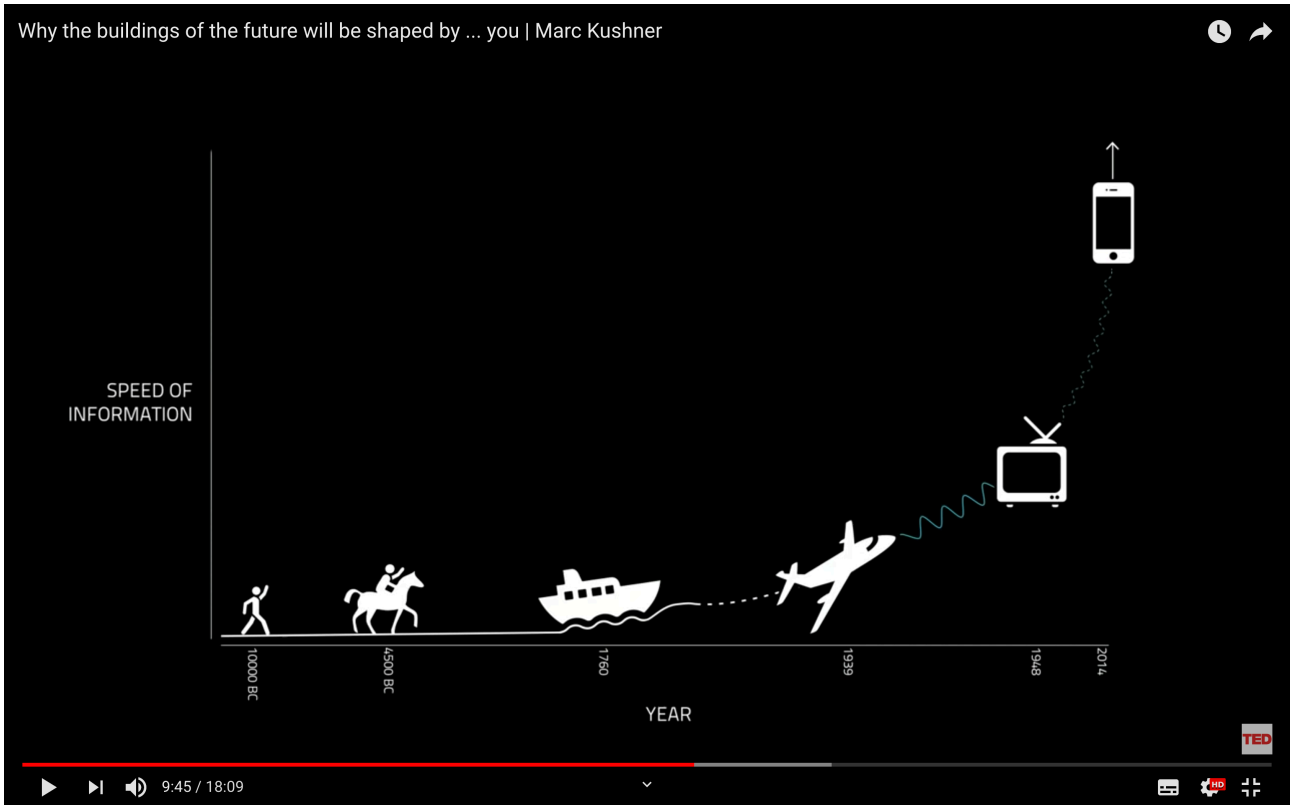
What is augmented reality(AR)?
What is virtual reality(VR)?
What is artificial intelligence(AI)?
Wireless is not invisible
Internet of Things (IoT)

Design systems that respond and adapt in a much more dynamic way and in less time, so that cities and buildings can respond to us as if they are human beings.
We humans adapt increasingly fast to digitalization processes. Can the physical architectural environment do so as well?

As digital media increASED THE SPEED WITH WHICH WE CONSUME INFORMATION

A thousand years ago people needed to walk to the next village to see and experience a building. The transportation speeds up, we get horses, we get cars we get ships we get planes we get television and now ultimately we have smartphones, which allow us to see and experience buildings even without going there. So architecture gets lifted from its site. That means that the speed of communication caught up to the speed of architecture. Because architecture moves

actually quite quickley, it doesn't take long to think about a building, it takes long to build a building. 3 or 4 years. In the meantime, an architect will design a hundred other buildings, before they know if that building that they designed 4 years ago was a success or not. Because in architecture, we there has never been a good feedback-loop.

The commercial real estate (CRE) industry, which largely operates at the intersection of the physical real estate space and its users, appears on the cusp of a digital transformation. Tenants and end- users are largely looking forward to doing more with the physical space. They are increasingly looking at **innovative and personalized technology-enabled experiences.** However, it could be imperative for CRE companies to prioritize tenants' and end-users' needs given the increasing influence of technology on customer preferences.
(Real Estate Predictions 2020 Deloitte)

Elements that influence personal experience in physical space:
- Light
- Temperature
- Spatial setting (dimensions of space)

Digital input can contribute to:
1. **Smart services** through digital technology (real-time tourist info, navigational services, shared mobility services, etc)
2. **Digital reality** experiences; AR, VR, IoT, AI
3. **Data analysis**; collecting user experience data to create a feedback-loop
4. **Personalized technology-enabled experiences**; adaptable phygital space. Physical space that interacts with its end-users and spatially adapts to the needs and experiences of the users, according to the event or activity that takes place in the space.

Interactive Architecture
Adaptive Architecture
Kinetic Architecture
Kinetic architecture as a means for making physical space adaptive?

We used to use masterplans to design public space, but a masterplan makes assumptions of future developments and promotes long-term implementations.

Think of public space as temporary, that way we could test different prototypes and make these ideas more permanent later. Public space as a hybrid, partially hardware(physical) and partially software (ICT). Utilize ICT to develop new types of public space. (TED Talks | Gernot Riether) And adaptive to test different types of public space.

What are the trends that might be affecting the cultural institutions. One thing that everyone kept coming on back was the internet and its capacity it gives for people to collaborate across disciplines is fundamentally beginning to alter the cultural ecosystem.

In de afgelopen jaren is in de tijdelijke situatie, met kleine ingrepen en veel initiatieven van particulieren, een creatief, innovatief, rauw en cultureel milieu ontstaan. Het Schieblock is uitgegroeid tot een commercieel verhuurde, creatieve hub. Gezamenlijk vormen deze partijen een ecosysteem dat heel waardevol is voor Rotterdam. Hier worden ideeën geboren en gelanceerd voor Rotterdam en ver daarbuiten. Hier groeien kleine initiatieven uit tot grotere ondernemingen of initiatieven op andere plekken.

Hoe kan ICT ingezet worden om phygital public space te creëren voor het Schiekadeblok en hiermee het creatieve, innovatieve, rauwe en culturele karakter te beschermen en te stimuleren?

Dit in combinatie met The Shed als belangrijkste referentie; het creëren van ruimtes die gebaseerd zijn op kinetische architectuur en zo de mogelijkheid bieden om adaptief te zijn aan het gebruik van die ruimtes. De publieke ruimtes bieden op deze manier de potentie en mogelijkheden om nieuwe types van public spaces te testen, waarbij ze aanvankelijk als een tijdelijke ruimte worden ingericht. Als het aanslaat, kan het een permanente plek krijgen. Het Schiekadeblok als een platform en digital playground ten behoeve van het stimuleren van innovatie, creativiteit, rauw en cultureel karakter.

Ubiquitous computing.

PART 5 | **DIGITAL RESOURCES**

WEBSITES

VIDEOS

Moving beams:
https://www.youtube.com/watch?v=mlSvc7GAMW0

Designing Resilience: the Intersection of Digital Technology and Physical Space
https://architizer.com/blog/inspiration/stories/carlo-ratti-physical-space-and-technology/

Sci-Fi Short film: Hyper Reality:
https://www.youtube.com/watch?v=qPsvGQRAMKM&t=46s

Intersection of the Physical and Digital Worlds:
https://uxmag.com/articles/intersection-of-the-physical-and-digital-worlds

Why the buildings of the future will be shaped by…. you:
https://www.youtube.com/watch?v=hha0NsYXS5c

Alibaba's FlyZoo Hotel in Hangzhou is Staffed by Robots:
https://globetrender.com/2019/08/05/flyzoo-future-hotel-hangzhou/

Pop-Up Apartment; Adaptive Micro-Apartment:
https://www.archdaily.com/558966/this-adaptive-micro-apartment-concept-does-it-all-in-half-the-space

The Shed New York; Adaptable and Expandable Cultural Venue for New York:
https://www.youtube.com/watch?v=KX_odXZqHIY&feature=youtu.be

https://www.youtube.com/watch?v=MbX_6MsjsIE

The Incredible Inventions of intuitive AI | Maurice Conti:
https://www.youtube.com/watch?v=aR5N2Jl8k14&feature=emb_rel_pause

Urban Spaces in a Digital Culture | Gernot Riether | TEDxNJIT:
https://www.youtube.com/watch?v=_aNifg4rdss

Cloud | Single Speed Design:
https://www.youtube.com/watch?v=jmgeI_2CcBc&feature=youtu.be

iLounge: instant, interim, interactive | Mona el Khafif & Marcella del Signore
http://northern.lights.mn/projects/el-khafif-del-signore/

https://issuu.com/marcelladelsignore/docs/ilounge

Fun Palace | Cedric Prince:
https://www.youtube.com/watch?v=YXafzLXLrE8

http://www.interactivearchitecture.org/fun-palace-cedric-price.html

Shape Shifting Buildings:
https://www.youtube.com/watch?v=orIDeaX7qYM

Re-imagining public space:
https://www.youtube.com/watch?v=dsh4YzSxSH0

A Zero Star Hotel | The Why Factory:
https://youtu.be/2NRM-mwoGUE

Kinetic Walls | Barkow Leibinger
https://vimeo.com/97429450

Augmented Structures v1.0; Acoustic Formations | Alper Derinoglu
https://vimeo.com/103407298

New Media Art; Post Digital Architectural Future | Refik Anadol
https://www.youtube.com/watch?v=AdKnYndA63Q

''Under Scan'' | Rafael Lozano-Hemmer
https://vimeo.com/26680207

Wikihouse
https://www.youtube.com/watch?v=4fB3SFgKPog

The Gantry | Hawkinsbrown
https://www.hawkinsbrown.com/projects/the-gantry-at-here-east

NIEUWS/ARTIKELEN

https://wederopbouwrotterdam.nl/actueel/programma-publiek-college-central-district-21-januari

High-line New York and others:
https://edition.cnn.com/style/article/osm-high-lines-paris-seoul-new-york/index.html

The Luchtsingel:
https://www.archdaily.com.br/br/770933/the-luchtsingel-zus/55ac1faee58ece12db0001f5-the-luchtsingel-zus-photo?next_project=no

Perelman Performance Arts Centre | Archdaily
https://www.archdaily.com/794971/rex-reveals-design-of-perelman-performing-arts-center-at-wtc-in-new-york

REX NY
https://rex-ny.com/project/surya/

Wikihouse
https://www.wikihouse.cc/Contributors

Here East | HawkinsBrown
https://www.hawkinsbrown.com/projects/here-east

Moduloft | Fouad Samara Architects
https://www.dezeen.com/2018/06/10/fouad-samara-architects-modulofts-apartments-beirut/

Pop-up School | INFINITY 6
https://www.designboom.com/architecture/crossboundaries-infinity-6-pop-up-school-shenzhen-china-03-16-2020/

Sejong Arts Centre
https://www.archdaily.com/380542/sejong-art-center-competition-entry-h-architecture-haeahn-architecture

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Staging Concepts
https://www.stagingconcepts.com/news/enhancing-the-performance-space-black-box-theatres/

The High-Line New York
https://www.thehighline.org/design/

The High-Line New York
https://popupcity.net/observations/street-furniture-pops-up-when-needed/