Negotiation and Design for the Self-Organizing City. Gaming as a method for Urban Design

Gaming as a method for Urban Design

Tan, RE

Publication date
2014

Document Version
Final published version

Citation (APA)
Tan, RE. (2014). *Negotiation and Design for the Self-Organizing City. Gaming as a method for Urban Design: Gaming as a method for Urban Design*. [Dissertation (TU Delft), Delft University of Technology]. A+BE | Architecture and the Built Environment.

Architecture
and the
Built environment

#11
2014

Negotiation and Design for the Self-Organizing City

Gaming as a method for Urban Design

Ekim Tan

Negotiation and Design for the Self-Organizing City

Gaming as a method for Urban Design

Ekim Tan
Delft University of Technology, Faculty of Architecture and the Built Environment, Department of Urbanism

Negotiation and Design for the Self-Organizing City

Gaming as a method for Urban Design

Proefschrift

ter verkrijging van de graad van doctor
aan de Technische Universiteit Delft,
op gezag van de Rector Magnificus prof. ir. K.C.A.M. Luyben,
voorzitter van het College voor Promoties,
in het openbaar te verdedigen op vrijdag 12 september 2014 om 12:30 uur
door Rojda Ekim TAN
Master of Science in Urban Design, Delft Technical University, NL
Master of Science in Architecture, Middle East Technical University, Ankara, Turkey
geboren te Istanbul, Turkije

Dit proefschrift is goedgekeurd door de promotor en copromotor:
prof. Henco Bekkering
prof. Arnold Reijndorp

Samenstelling promotiecommissie:

Rector Magnificus, Voorzitter
prof. Henco Bekkering, Technische Universiteit Delft, promotor
prof. Arnold Reijndorp, Universiteit van Amsterdam, copromotor
prof. Juval Portugali, Tel Aviv University
prof. Han Brezet, Technische Universiteit Delft
prof. Ben Schouten, Technische Universiteit Eindhoven
prof. Zef Hemel, Universiteit van Amsterdam
prof. Wouter Vanstiphout, Technische Universiteit Delft

Architecture and the Built environment

abe.tudelft.nl

Design: Sirene Ontwerpers, Rotterdam

ISBN 978-94-6186-356-0
ISSN 2212-3202

Contents (concise)

Preface

I first relocated to The Netherlands from Istanbul as an architecture student in 2003. More than anything else, I was happy to leave behind a city which neglected its architects. I thought the designer in me would finally find peace by leaving a city which had grown into a metropolis of 14 million without the signature of any architect. Would I ever miss the gecekondu jungle covering Istanbul, the car invaded public squares, badly maintained old streets, advertisement cacophony and highway picnicking half-rural urbanites? In my new land, architects are taken seriously! Architectural history books and magazines are full of stories about Dutch designers' creativity in the last century. Design penetrated Dutch society and managed to form even the simplest suburban ordinariness: Vinex neighborhoods are designed by talented local architects with Calatrava signed fancy bike-bridges, well articulated barriers against noise along the country's highways, not to forget Hema design even in the poorest student homes. While being impatient about my idealist adventure to the land of designers I was clueless about the political and spatial changes which were to come both in the Netherlands and in Istanbul. These two seemingly different design and planning regimes would make me unlearn and relearn everything I thought I knew about architecture and cities. Istanbul was the success story of informality letting urban developments run their cause. In contrast, the Netherlands was the epitome of order with a strictly engineered environment which was envisaged, designed, and managed.

Today the Dutch are inventing ways to self-build cities, while the Turks establish new ministries and gigantic housing corporations to centrally plan the country. The institutions of fine city design tradition are beginning to weaken in The Netherlands, while modernist urbanist dreams for Istanbul triumph in Turkish national election campaigns.

The ideas presented in this book are born from this journey of unexpected turns in politics of two opposite city-making cultures. Constant comparative thinking helped me to grasp how various city players -independent from whether they act from above or below- get their turn to become the protagonists of urban environments for a certain period in history. So far, City Gaming is the best medium I know to enact, test, learn and implement the dynamics of urban agents into urban planning and urban design.

For this reason, this book has become about how City Gaming will Become the Future of City-Making.

Acknowledgments

Those who think they really need to write a doctoral thesis should be made aware in advance that this is an unavoidably long period of isolation in most cases. Some like this state of mind,others really cannot take it. To me, the real challenge of a doctoral work has been balancing this sterile isolation with the dirty and dynamic requirements of the outside world. I believe learning happens when one allows oneself to swing between the two extremes, the safe world of books versus unpredictable and ever-changing realities of your topic, particularly in the case of cities. Looking back, I feel lucky how the work I passionately do everyday have become the theme of my doctoral research.

Professional Life

The person who deserves first mention is Walter van Hulst, the journalist who charmed me to migrate to the Netherlands, while I was gearing towards the Harvard Graduate School of Design. Our endless discussions on democratic design were to become the early seeds of this study. I had no idea back then, how such influence a journalist would have on my thinking about design. Prof. Yuval Portugali's first lecture in Almere, 2005 was another breaking point in how I understand design: looking at cities as self-organizing systems was a sudden enlightenment to a young urban design graduate asking many questions; why design was not enough to solve urban questions of Rotterdam South, how can a city like Istanbul have such lively public streets and squares while there was not one designer involved in its emergence? I must here mention Wouter Vanstiphout, who without realizing taught me I should go for "What makes you tick?". This was his question to me when I popped into his Rotterdam office unsolicited seeking professional direction. I want to thank Dr. Frank van der Hoeven and Prof. Henco Bekkering who invited me to work as a researcher after my graduation at the Delft University of Technology and Prof. Han Meyer and Prof. Arnold Reijndorp who trusted I could pursue the topic of self-organization and the city further for the sake of urban design.

Jacqueline Tellinga, to whom I was introduced by Arnold, was tough and demanding in her practical questions, back then the Project Leader of Homeruskwartier, in Almere Poort. "Yes controlling how many household should inhabit a city block is undemocratic, but how should the City of Almere flex this when the building regulations dictate the radius of sewage pipe according to the number of people?" In the academia no one will tell you democratizing urban design might relate to the sewage pipe standards, but they do! When and who decided such urban standards? Another good topic for a doctoral thesis. Thanks Jacqueline for the time you made for this curious researcher in your busy schedules.

After the first city game workshop we organized in Almere Haven, thanks to Dirk Frieling, Michelle Provoost and Marit Geluk of INTI -International New Town Institute, things evolved faster than I imagined. In Istanbul, an amazing group of people contributed to the making of Yap-yaşa. Ulas Akin, Muge Yorganci, Prof. Murat Cemal Yalcintan, Gulensu Mukhtar Ibrahim Ilgili, Ali Riza Yildiz, Erdogan Yildiz, Fazli Ceylan, Pelin Tan, Hans Vermeulen, Yulia Kryzeva and Tan Morgul, thanks. Later various freelancer designers who joined my work teams include wonderful designers, artists and historians; Herman de Waal, Cristina Ampatzidou, Esther Slegh, Milena Ivkovic, Hans Larsson, Jacob Buitenkant, Suzan Christiaanse, Lilly Lam, Sito Veracruz, Veronika Kovacsova, Bert Oostdijk, Georgia Manousogiannaki, Julia Hundermark, and Alex Mackinnon.

Academia

My roommates and phd research colleagues Olgu Caliskan and Egbert Stolk in TU Delft definitely deserve a mention here. So do Jose Nuno Beiruoa, Machiel van Dorst, Diego Sepulveda, Flavio Sanchez. The sharp Spanish lady always ready to pose her clever questions is Marta Relats, whose solid friendship trust and power. Another strong Spanish woman with a direct influence on this work is Diana Ibanez Lopez who helped enormously in the tedious editing phase of this book.

Organizations

Organizations, outside Delft University of Technology and INTI, which have been supportive for city gaming experiments are Rotterdam Architecture Academy, City of Rotterdam, Mediamatic, Tolhuistuin, Stichting DOEN, The Dutch Stimulation Fund for Architecture, Dutch Consulate General in Istanbul, Amsterdam Fund for Fine Arts, Mondriaan Fund, City of Almere, Balkan in de Polder, La Fabriqe de la Cite, Polis University, IKSV Istanbul Design Biennial, UNHCR Al Zaatari, Dutch Consulate General in Cape Town, Stimulation Fund for Creative Industry, City of Cape Town.

Last but not least, I would like to thank Play the City Foundation and their board members, Christian Ernsten, Evert Verhagen, Juha van het Zelfde for their trust and support.

Family

My mother, Ayhan Atabey, a language teacher herself is at the core of all that I do. Her smartness, curiosity and open-mindedness has been my compass. She unfortunately will not be able to read this thesis as it is written in a language she does not speak and in a country foreign to her. The urge to simplify and translate all that I do into Turkish to share with her helped me to think in a more structured and conscious way. I am not forgetting my fellow play friend: my smart and fun brother Ulas Tan. Growing up

together we played endless hours of games; all types of ball games, chess, Tetris, lego, puzzles, 3D Tetris, SimCity and many more. He has been my role model, someone I tried endlessly to catch up with as his younger sister. Ulas probably is the reason I hurried to read, write and calculate at the age of 5. Thus without Ulas, this phd probably needed to wait two more years!

Nowadays, Willem Velthoven is the one with whom I play most often. Partner for life, Willem does not like losing, "This is why I never play games he says", while being the most playful man I have ever met. My sun shines more often in the Netherlands since he entered my life.

Finally I want to thank all fellow players who joined our city game experiments. They are the ones who keep educating me, without them this book definitely would never have happened.

Summary

An understanding of cities as open systems whose agents act on them simultaneously from below and above, influencing urban processes by their interaction with them and with each other, is replacing the simplistic debate on urban participation which asks whether cities should be organized bottom-up or top-down. This conceptualization of cities as complex systems calls for new collaborative city-making methods: a combination of collaborative planning (which already embraces various agencies and derives decision-making from negotiations between them) and collaborative design (existing methods rely on rule-based iterative processes which control spatial outcomes). While current collaborative planning methods are open and interactive, they fail to simulate realistic power negotiations in the evolution of the physical environments they plan; collaborative design methods fall short in modelling the decision-making mechanisms of the physical environments they control. This research is dedicated to building an open negotiation and design method for cities as self-organizing systems that bridges this gap.

Gaming as a tool for knowledge creation and negotiation serves as an interface between the more abstract decision-making and material city-making. Rarely involved in the creation of our environment, it has the unexplored potential of combining the socio-spatial dimensions of self-organizing urban processes. Diverse agents, the collaborations and conflicts within and between interest groups, and the parameters provided by topological data can all be combined in an operational form in gaming: potentially a great unifier of multiple stakeholder negotiations and individual design aspirations through which to generate popularly informed policies or design.

The simple language and rules of games will allow jargon-free communication between stakeholders, experts and non-experts alike. The interactive and iterative nature of city gaming encourages the development of collective intelligence, derived from the real lives of players to be redeployed in their real urban futures. Vitally, city gaming enables the negotiation of this future, as players with conflicting interests are given an opportunity to develop compatible, even shared, visions. By transforming serious issues into a playful and engaging (although no less serious) experience, city gaming unlocks difficult conversations and helps to build communities in the long term. The urban design, policy and action plans generated collaboratively through gaming will increase social coherence and local agency, as well as cutting costs and time in urban development processes.

This thesis proposes Generative City Gaming as an innovative urban planning and design method built on the tradition of serious gaming. Going beyond the educational scope of other serious games, the ultimate aim of city gaming is to become operational

in urban processes – a goal in the process of making a reality since 2008, when Generative City Gaming was first applied to a real urban questions in the Netherlands, later expanding to Istanbul, Tirana, Brussels, and Cape Town. "Negotiation and Design for the Self-Organizing City" reports on six of the twelve city games played to date which were instrumental in the evolution of the method: Play Almere Haven tested whether a game based on self-organizing mechanisms could provide an urban order; Play Rotterdam questioned whether game-derived design could be implemented in urban renewal of a central Rotterdam neighborhood; Yap-Yaşa was played with real urban stakeholders for transforming Istanbul's self-built neighbourhoods; Play Noord investigated a masterplan on hold could be fixed by unconventional stakeholders; Play Oosterwold jumped up a scale to test the rules of a flexible urban expansion plan for 4500 hectares; Play Van Gendthallen, was the first to enable stakeholders to make the leap from design to reality within the game process.

The Generative City Gaming method evolves continuously. Every new case tests and proves the applicability of city gaming to a specific urban complexity, while challenging the method to adapt itself and develop new features tailored to tackle each unique urban question. Through use, this gaming method is finding its place within existing city-making procedures in a number of countries. The next big question is whether cyclical and open-ended city gaming can move beyond being a consultancy and research tool to become the principal medium of processing and executing city planning.

2014, Amsterdam
Ekim Tan
PhD candidate
Delft University of Technology
International New Town Institute

Samenvatting

De laatste jaren is er een nieuwe kijk op de stad ontstaan. De stad wordt nu gezien als een open systeem dat bestaat uit verschillende actoren: burgers, bedrijven, overheidsinstellingen... Hun interacties vormen de basis voor stedelijke processen. Dit zorgt voor een nieuwe blik op het debat over stedelijke participatie. De vraag is niet of steden 'top-down' of 'bottom-up' gepland worden, maar hoe je nieuwe methodes kunt ontwikkelen om gezamenlijk de stad te maken.

Bestaande gemeenschappelijke planvormingsmethodes houden onvoldoende rekening met machtsverhoudingen. Zulke ronde-tafel-planning benadert de werkelijkheid onvoldoende. Bestaande methodes voor collectief ontwerp schieten tekort, doordat de fysieke omgeving onrealistisch gemodelleerd wordt. Daarom stelt dit promotieonderzoek een nieuwe methode van stedelijke planvorming en ontwerp voor. Een methode gebaseerd op de stad als zelf-organiserend systeem, die de complexiteit van de stedelijke vraagstukken van vandaag adequaat kan simuleren. Het Generatief Stadsspel gepresenteerd in dit proefschrift is zo'n methode.

Spellen worden nog te weinig toegepast om onze omgeving vorm te geven. Dit terwijl spellen erg geschikt zijn om alle aspecten die nodig zijn voor een goed stedenbouwkundig plan te integreren. Een spel kan veel spelers hebben met uiteenlopende belangen. In een spel kunnen deze spelers met elkaar samenwerken of elkaar tegenwerken, terwijl het spelmechanisme hen ongemerkt ruimtelijke data aanreikt. Doordat het spel visueel communiceert, of in eenvoudige taal, laat het experts en leken samenwerken zonder jargon. Iedere speler brengt de eigen professionele of persoonlijke kennis in. Door te onderhandelen ontstaat collectieve intelligentie: de spelers creëren kennis die er eerder niet was.

Doordat het spel van een lastige kwestie een speelse en boeiende belevenis maakt, worden de controversiële onderwerpen die voor een gemeenschappelijke visie nodig zijn bespreekbaar. Het laat de spelers van gedachte wisselen over een toekomstbeeld, niet over slepende pijnpunten. Spelers met conflicterende belangen op de korte termijn kunnen hierdoor verenigbare of zelfs gedeelde visies ontwikkelen. Het spelresultaat, stedelijk beleid of een ruimtelijk ontwerp dat spelenderwijs ontstaan is, zal daarom breed worden gedragen. Dit zal de sociale samenhang en lokale daadkracht versterken, en bovendien duur en kosten van het planvormingstraject beperken.

Het Generatief Stadsspel is gebaseerd op de 'serious gaming' traditie, maar kijkt verder dan de educatieve blik van andere serieuze spellen. Het heeft tot doel een onmisbaar onderdeel te worden van het stedelijke besluitvormingsproces. In 2008 is het Generatief Stadsspel voor het eerst gebruikt op stedelijke vraagstukken in Nederland. Sindsdien is deze methode ook toegepast in Istanbul, Tirana, Brussel en Kaapstad.

Dit proefschrift beschrijft zes van de twaalf stadsspellen die tot nu toe ontwikkeld zijn. Elk van deze spellen betekent een nieuwe stap in de ontwikkeling van de methode. Play Almere Haven keek of een spel gebaseerd op zelforganisatieregels stedenbouwkundige orde tot stand kan brengen. Play Rotterdam paste ontwerpoplossingen uit het spel toe voor de herstructurering van een volksbuurt. Yap-Yaşa werd gespeeld met de echte belanghebbenden bij de transformatie van Istanbuls zelfgebouwde wijken. In Play Noord werd onderzocht hoe kleinschalige initiatiefnemers een vastgelopen masterplan weer vlot kunnen trekken. Play Oosterwold maakte een schaalsprong om de regels voor een flexibel uitbreidingsplan van 4500 hectare op de proef te stellen. En Play Van Gendthallen was het eerste spel waarvan de spelers het resultaat in werkelijkheid hebben gebracht.

Het Generatief Stadsspel evolueert voortdurend. Het is op vele complexe stedelijke situaties toepasbaar gebleken. Het spel verandert met iedere plek waar het wordt gespeeld, doordat het wordt aanpast en uitgebreid in reactie op de lokale situatie. Ook vindt het steeds haar plek binnen de stedelijke ontwikkelingsprocedures van verschillende landen. Het heeft dan ook het potentieel om meer te worden dan een middel voor ontwerp- en beleidsadvies. Het Generatief Stadsspel kan het medium worden dat leidend is bij de stedelijke ontwikkeling van morgen.

Contents (extensive)

Appendices


KERK
600 M2
BORDEEL
200 M2
CAFÉ
200 M2
Urban Farm

PART 1 The City

1 Who Makes the City?

"The city with which we end the 20th century and enter the 21st is untamed, shrew, capricious, ever-changing; actually not a city but a text written by millions of unknown writers, unaware that they are writers, read by millions of readers, each reading his or her own personal and subjective story in this ever-changing chaotic text, thus changing and recreating and further complicating it." [Portugali, 1997]

The metaphor of the city as a complex text written by millions of unknown writers is today becoming a less abstract, increasingly tangible phenomenon. The 'unaware authors' of the city were recognised in the nineteenth century city as much as in the contemporary city; what Professor of Human Geography Juval Portugali brings to our attention is the idea that the twentieth century 'planned city' is transforming into an awareness of the 'city as a self-organising system'. A greater number of contributors, more aware than unaware, are taking part in the shaping of their cities; it is no longer groundbreaking to state that the communication revolution is paving the way for collaborative urban processes through which various urban actors -*developers, residents, local governments, activists and others*- are finding new ways to co-produce cities.

Today, we are witnessing a transformative moment, as newly available technologies offer new methods to intervene directly in urban processes. Compare one of last century's participation tools such as 'Advocacy Planning' where experts positioned themselves as representatives of disadvantaged communities, while today communities and individuals have the chance to operate more directly in the city.[1] While new collaborative bottom-up tools emerge, the top-down production of the city by 'traditional' powers, such as government planning institutions, commercial developers and architects, continue to exist[2].

---

1 A more comprehensive survey on the historic evolution of participatory city-making can be found in the following chapter.

2 Bottom-up and Top-down are terms borrowed from systems science; an initiative to study systems from a holistic point of view. In a top-down approach an overview of the system is formulated, specifying but not detailing any first-level subsystems. A bottom-up approach is the piecing together of systems to give rise to grander systems. In disciplines of urban planning and urban design, these terms are also used to address organization models for cities in the making. Top-down urban processes are typically formulated in advance and are conducted by large urban stakeholders such as Cities, corporations. Bottom-up urban processes are aggregated by small scale enterprises or individual citizens, sometimes as collectives as well, formulating an urban order incrementally.

More than a replacement of the old by the new ways of city-making[3], we observe the coexistence of old city production methods with emerging ones.

We are in need of a new understanding for cities that does not rely on the dichotomy of the bottom-up or top-down, planned or unplanned, formal or informal. Instead, we should see the city as a holistic self-organizing system[4], run by multiple urban stakeholders, Such a complex urban system[5] is in constant search for its state of equilibrium, rather than being represented by a frozen plan. Cities are shaped by the interconnection of spatial, social, economic, political, environmental and cultural sub-systems under the influence of formal and informal processes. Urban agents activate these sub-systems by generating, evolving or simply following their driving forces.

Some of these urban agents come into power for a given time, until the city changes its state, following a new set of rules, whose order is influenced by other active players until this too shifts into yet another state and a new balance emerges. The process is open-ended. Cyclical processes generate decisions by engaged agents for implementation in relation to urban dynamics. Thus, creating new rules and modifying former ones will be only natural[6].

This new understanding of cities, free from the division of bottom and top urban players, will call for innovation of open and collaborative city-making methods where urban agents constantly exchange information, learn and negotiate and based on these interactions make decisions and implement plans for the city. Consequently this research asks: what would the new methods be which refer to the unpredictable spatial and social states of the urban complexity? What role do simple rules play in the organization of complex urban systems? What role could these simple rules play

---

3 The term 'city-making' was born from the need to address that there are other skill needed in enchanting cities than architecture, engineering and land-use planning. In this thesis it is also a conscious choice to use the term to stress that cities as self-organizing systems are collaborative artifacts embracing both bottom-up and top-down processes of learning, planning, designing and implementation.

4 Self-organization is a process where some form of global order or coordination arises out of the local interactions between the components of an initially disordered system. This process is spontaneous: it is not directed or controlled by any agent or subsystem inside or outside of the system; however, the laws followed by the process and its initial conditions may have been chosen or caused by an agent.

5 Urban systems refer to any network of towns and cities, and their hinterlands which can be seen as a system, since it depends on the movements of labour, goods and services, ideas, and capital through the network. In the thesis it used to refer to urban processes which depend on interactions of engaged stakeholders.

6 A more detailed description of a self-organizing urban process can be found in the third chapter's 3.1 'Characteristics of a New Method for Self-Organizing Urban Processes'.

in the establishment of new collaborative methods engaging well-informed urban stakeholders?

This chapter, continues with the mapping of 'do it yourself'[7] city-making methods and their coexistence with the modernist city production. As stated above the understanding of city as a self-organizing system embraces both approaches. Next, to illustrate this coexistence, a series of urban case studies from Malagueira, Al Zaatari, Istanbul, Curitiba, Rotterdam and Almere, will be analyzed. By studying how these urban settlements develop under differing planning regimes, simple rules can be identified that currently mediate each complex system. These cases prove that simple rules have the capacity to organize urban environments when implemented by numerous agents acting bottom-up and/or top-down, expressing the complexity of a society. Later in this thesis, this evidence will become essential for establishing the proposed collaborative method for cities as self-organizing systems. In the final part of this chapter, research questions can be found which led to propose the Generative City Gaming[8], a new collaborative city-making method.

7 Do it yourself is the method of building, modifying, or repairing something without the aid of experts or professionals. It is used to address behaviors where individuals engage raw and semi-raw materials and component parts to produce, transform, or reconstruct material possessions, including those drawn from the natural environment e.g., landscaping.

8 Gaming is a structured form of playing, while play is a form of intense interactive and collaborative engagement free from any material interest or material gain. At the urban scale the case of City Games refers to a complex process of self-organization. 'City Games' was suggested by Juval Portugali as a tool to illustrate and examine self-organization in the domain of spatial cognition. Generative City Gaming is proposed in this work to open up the closed nature of city-making processes to larger crowds. The method is invented to bridge the gap between understanding cities as nonlinear, unpredictable and complex processes and the lack of present operational methods treating the city as a complex system.

§ 1.1 Do It Yourself Cities

The methods available for individual or small stakeholders to contribute directly to the production and maintenance of urban environments is on the increase. Currently communication technologies offer information and space for bottom-up forces, in what the French philosopher Pierre Levy termed, the 'virtual agora' [Levy, 1999]. The following cases are exemplar bottom-up initiatives that have emerged in this 'virtual agora' in the last decade. The following cases are exemplar bottom-up initiatives that have emerged in this 'virtual agora' in the last decade.

If you work for the City of San Francisco, you can enjoy direct access to your Mayor through ImproveSF.org, to add your voice to a collection of citizen's ideas for how best to prioritize city's urgencies, manage cost-saving and generate revenue. If you are a citizen of Porto Alegre, you can help to shape the draft budget of your district, and draw up an investment plan for the city. As a resident of Finland, you can determine the agenda of your parliament by collecting 50.000 Facebook likes for a motion.

Not interested in governing your city? You can still have an impact on its traffic by converting your private car into a public taxi through mitfahrgelegenheit.de in any German city, or through a comparable website in almost any metropolis in the world today. You do not need to own a hotel to contribute to your city's touristic accommodation, anyone with access to internet can convert their own home into a hotel through couch-surfing, Airbnb or other platforms tailoring to every traveling audience, from backpacking to boutique. In cities like New York, this simple act of converting ones home into a hotel has grow to such a scale that it threatens the existing accommodation infrastructure. A catering version of this phenomenon also exists; if you live in Amsterdam and find the city's restaurants too expensive, the food substandard, or simply want to earn some money, you can turn your kitchen into a public restaurant and publish your menu and prices through thuisafgehaald.nl.

If you live in Australia's Newcastle and Hunter regions, you can help to manage peak electricity demand through the smart grid, by identifying and resolving faults in the grid through smartgridaustralia.com.au. As a New York citizen, you can even help reduce the amount of pollution in the NY harbor through updates in dontflushme.org by minimizing your gray water production in critical periods.

In Portland, Oregon, you can mitigate storm-water runoff and generate green spaces for the local community by removing unnecessary pavement. This can be organized communally through depave.org, which connects like-minded citizens. As a Brooklyn resident, an area where many lack affordable, fresh food options and suffer from health issues related to high poverty rates, you can adopt a city park or urban farming. In San Antonio, Texas, and in several cities in Australia, you can team up with Team Better

Block, a company that works with city governments and developers to create quick, inexpensive, high-impact changes that improve and revitalize underused properties and highlight the potential for creating lively streets. Through the digital pin-boards of popularise.com, a resident of Seattle, Oklahoma City, Richmond and many other US cities can influence the program of a local developer.

No time for such a direct engagement in urban action? If you have constructive ideas or urgent complaints about your street and neighborhood, you can share these by geolocating them on 'Verbeter de Buurt', an online map in various Dutch cities, and wait to see how your local authorities respond to your needs and idea feeds. Are you interested in building your own home in a country such as the Netherlands where the housing market is dominated by a small number of large housing corporations? You can select your ideal plot on ikbouwmijnhuisinalmere.nl, and consult the rules for its development at the same site. If all goes according to plan in the new town of Almere, by 2015 you will be able to build your portion of a collective water and road network in the Oosterwold polders, not through a zoning plan but by following your own ideas according to a few plan rules[9].

§ 1.2 Market and State led Cities

While the real impact of these new platforms on the making of cities needs careful examination, the question remains whether the ongoing trend, often also referred as DIY -Do It Yourself- emerges only in information-rich surroundings, thus still far from being the mainstream method of city production worldwide. Consider the recent growth of cities in China, India, Russia and many African nations by the constant addition of settlements, planned and implemented top-down by governments or large-scale corporations. Most of these mass-produced urban environments come about without any public negotiation. Their unmediated emergence results in a growing number of ghost settlements, such as Ordos City in China, built for 1 million residents and with only 2% of its buildings occupied, or Shanghai's half empty new towns, or the 9 billion euros of speculative investment in Seseña, Spain, of which fewer than one-third of apartments have been sold.

9 For the research on digital city tools active on the web, mobile devices or sensors, refer to 'Majority Report' by Play the City in 2013: playthecity.nl/majorityreport.

Figure 1
Monumental axis of Brasilia.

Figure 2
The Pilot Plan of Brasilia is dwarfed in size by its surrounding districts such as Ceilandia.

Furthermore, it is highly debatable whether well-occupied settlements of these market and state led cities have the capacity to meet the economic and social requirements of their residents and be sustainable in the long term. The striking example of TOKI[10], currently Europe's fastest producing housing corporation active throughout Turkey, demonstrates how disruptive it is to displace rural migrants to the city from low rise self-built settlements into high-rise apartment buildings, losing their economic networks in the process and leaving them isolated from their social structures.[11]

Large-scale urban processes require fast production and cannot facilitate the inclusion of and negotiation with all the parties involved in producing and consuming these urban spaces. However, the necessity for creating collective narratives and visions, reaching a sustainable consensus, and resolving conflicts between the engaged stakeholders of urban development processes remains. So do the high social and financial costs of creating empty and quickly decaying settlements. The social, environmental and financial price is paid eventually, yet the cost of disuse and decay does not appear on the balance sheets of developers. Neither market nor state take responsibility. Who then pays for the likes of the ghost city of Ordos?

There are known ways to avoid these failures, such as organizing more open and democratic processes involving various stakeholders to map real demands and desires. To many, however, starting such an open process seems slow and costly, although, of course, these must be visualised against the real costs of such quickly executed large-scale developments going ahead without addressing their intended community. Consultation offsets this cost -social, material and political as well as economic- by ensuring that the aims and interests of the developer map onto the needs of the future inhabitants raises awareness of particular sensitivities and conflicts amongst the stakeholders that, if left unattended, could hinder the process and success of the development. Attaining social, economic and environmental sustainability in the production of an urban environment can be a realistic aim only when the collection of players who demand, supply and maintain these urban environments are engaged in an interactive processes.

---

10 Housing Development Administration of Turkey; please find here history of TOKI www.toki.gov.tr/ptext.asp?id=2 Toplu Konut Idaresi Baskanligi Tarihcesi, Ankara, 2007.

11 TOKI has been exploiting the development of empty land, active in 81 cities in Turkey. With 800 boroughs and 2131 construction sites the housing administration reached a target of half a million homes between 2003 and 2013.

The fading illusion that a single power, be it the state or the market, can solely govern a complex system such as the city, makes us question their planning methods designed for cities as hierarchic organizations. Established tools such as master plans lose their relevance, and existing rules and regulations become outdated faster than ever before. If studied closely, it is evident that throughout history, attempts to govern cities from above have in fact generated their antithesis in the process, triggering either social or political disruptions such as informal settlements. Perhaps the best case in point is the 1960 'pilot-plan' for Brasilia: a new town and the new capital of Brazil. Design for half a million residents, it projected, idealistically, that all social classes would live in the same 'super blocks'. As a result it failed to attract middle and upper classes. Furthermore, as poorer construction workers rushed to the new capital in search of work, numerous slums began to form around the city. By the end of the 1960s, most of the population lived not in the Pilot Plan but in informal satellite towns; today more than half of the new town's 2,5 million inhabitants, 5 times its planned population, continue to live in self-built settlements that also provide the overwhelming majority of the shops, restaurants, bars, cafes, small factories and service companies the city needs, a pattern familiar in other Brazilian cities.

While the interventions from above generate forms of resistance that counter the impact of a top-down monopoly, 'do it yourself' urban practices fall short of being able to replace market and state led governance, as they struggle to upscale their reach. In practice there are no real examples of cities governed purely from above or below. Is there a way to comprehend urban complexity by combining the forces of the top and bottom while still focusing on the process and evolution of urban orders?

The following section explores such a holistic approach to cities focusing on the rules driving cities.

§ 1.3 Rule-Based Cities[12]

The physicist Geoffrey West, former director of the Santa Fe Institute[13], argues that a few fundamental rules drive cities all over the world: "*I've always wanted to find the rules that govern everything,*" West says. "*It's amazing that such rules exist. It's even more amazing that we can find them.*" [Lehrer, 2010] In his search for the set of laws that shape cities, West teamed up with Luis Bettencourt in 2008. Their team spent almost two years collecting data on various cities, including their size, population, public networks, crime rates, incomes, jobs, real estate values, education, and more. This data offered them clues about the algorithms that govern city growth, and West et al. succeeded in figuring out the mathematical relationship between the percentage of infrastructure in a city and its size.[14]

An equivalent approach to city design is taken by the mathematician and architect Christopher Alexander, who aims to define universal urban design patterns in his work 'A Pattern Language'. Alexander's hypothesis is that there is a way to describe the rules and conditions of 'good design' which can be represented through design patterns [Alexander, 1977]. Alexander proposes patterns not only for examining and explaining cities, but also as fundamental urban design rules that can open up a highly professionalized medium of making cities to 'ordinary' people. Often criticized in the design world for arguing for universal design values as opposed to unique solutions for urban situations, Alexander receives recognition from software architects who have built on his idea of 'patterns'. In the ICT world, patterns are a tool of conserving and sharing knowledge that can be developed by crowds, also termed as 'open source'.

---

12 In computer science, rule-based systems are used as a way to store and manipulate knowledge to interpret information in a useful way. A similar mechanism of storing knowledge on 'good design', for implementing and developing is proposed by Christopher Alexander for the discipline of urban planning and urban design. Rule-base city is used to address cities which use simple rules to store, share and evolve knowledge on city-making.

13 The Santa Fe Institute is an independent, nonprofit theoretical research institute located in Santa Fe, New Mexico, United States, and dedicated to the multidisciplinary study of the fundamental principles of complex adaptive systems, including physical, computational, biological, and social systems.

14 According to West's data, whenever a city doubles in size, every measure of economic activity, from construction spending to the amount of bank deposits, increases by approximately 15 percent per capita. No matter how big the city is; the law remains the same. http://www.nytimes.com/2010/12/19/magazine/19Urban_West-t.html?pagewanted=all&_r=0

Borrowing the concept of 'open source' back from the ICT to city-making, could we define patterns and rules as a mode of sharing, exchanging and negotiating city information amongst city's stakeholders? This way a shared simple language developed by well-informed stakeholders could evolve and feed collaborative city-making processes. Urban patterns and rules could be implemented, freely shared, negotiated and evolved for dynamic organization of communities and their settlements. There are links between the rules of how physical environments are shaped and those that define how people interact based on changing social, economic, political and cultural conditions. Developing a common understanding of fundamental rules controlling communities and settlements would provide a way of evolving urban developments collaboratively. Before further imagining an open source urban method, we should look into real cities to decipher the rules which organize urban settlements and communities

§ 1.3.1 Quinta da Malagueira

Quinta da Malagueira in Portugal stands out as a conscious example of a settlement designed to run on design rules not only to organize its spatial structure but also its social coherence. These rules were provided by the architect, Alvaro Siza, hired by the social housing association SAAL -*Servizio di Appoggio Tecnico Locale*- a slum clearance program formed immediately after the Portuguese bloodless Carnation Revolution. In the 1970s, the left-wing wave that came with the communist revolution, ordered, in a top-down fashion, that new settlements be 'participatory'. Accordingly, SAAL was set up, with an ambulatory team of designers, planners and sociologists that would join local residents associations, construction companies, and slum dwellers in co-designing new towns all over the country. "*We organized large meetings with 300 people from the Saint Sebastiao slum, their kids, cats and dogs. The discussion would go on until midnight.*" explained Nuno Lopes, an architect who worked on Malagueira as the local partner of Alvaro Siza in an interview in the spring of 2008[15]. Although such meetings were well-intentioned, they were not helpful for generating participatory design schemes.

15 In May 2008, anthropologist Brendan McBride from the IHS Institute of the Erasmus University joined me conducte a field survey in Malagueira settlement and interviewed the local architect of the settlement Nuno Lopes. Architecture students Francisco Mota Alves of the Evora University, and Jorge Ganito of the Lisbon University supported the research with field interviews.

Figure 3
Santa Maria settlement next to Malagueira.

As a reaction, Siza came up with a set of rules for organizing future growth. They allowed residents, housing corporations and future residents participate in the arrangement and expansion of their living spaces -a *participative process that continues today* [Tan, 2008]. Siza's flexible spatial structure was inspired by Santa Maria, the adjacent illegal neighborhood whose narrow streets are characterized by continuous whitewashed walls formed by a stretch of cubic homes with small windows. He systemized this local vernacular into a settlement model composed of regular modules that echoed the spatial units found in Santa Maria. His interpretation of the vernacular for Malagueira included some editing, such as the introduction of courtyards, as in typical Mediterranean and Arab homes, and lowered entrance walls to bring public and private domains closer to each other. Malagueira's narrow streets link to small squares or playgrounds, and mimic the urban fabric of nearby traditional neighborhoods with the addition of a large park in the midst of the settlement.Siza explains his approach to designing cities as evolving mechanisms when he states, *"What is interesting to me in the construction of a city is its capacity of transformation which, to a certain extent, is similar to the growth of a human being. It is born with certain characteristics and a degree of autonomy, a basic structure that can integrate or oppose itself to the changes of life."*

Figure 4
Malagueira Settlement before residents' adaptations.

Siza's strategy in Malagueira was to propose a simple customizable urban design system rather than a unique urban design composition. An urban structure consisting of a set of intelligible rules enabled residents, both original and future ones, to take charge of their town by tailoring it to their needs. Inhabitant's growth, programmatic and symbolic requirements could all be catered for by the rule-based plan, as and when they emerge, without altering the overall vision. Siza proposed three simple rules to accommodate growth:

1 The first rule was an expansion rule in four phases.
2 The second rule was the protection of the patios: in all four phases of growth the courtyards leading to the narrow public street remained unbuilt.
3 The third rule was the protection of the continuous white street facade connecting the homes.

Our field survey illustrated that grasping and following these simple rules, more than 68% of Malagueirans have modified their homes over the last forty years[16].

Besides the given rules, residents added new modification patterns to the settlement, such as building an external stair directly connecting the patio with the first floor as people either sublet a space to generate extra income, or accommodate their growing family within the same house when their children get married or an elderly member of the family moves in This element was implemented by many of the inhabitants and prompted the design team to design stair units for this resident-generated 'rule'.

16 In May 2008, anthropologist Brendan McBride from the IHS Institute of the Erasmus University joined me to conduct a field survey in Malagueira settlement and interviewed 100 random selected households on the evolution of the settlement through the individual modification implemented by residents.

Figure 5
Various adaptations implemented by residents. Photographs taken during the field survey in 2008.

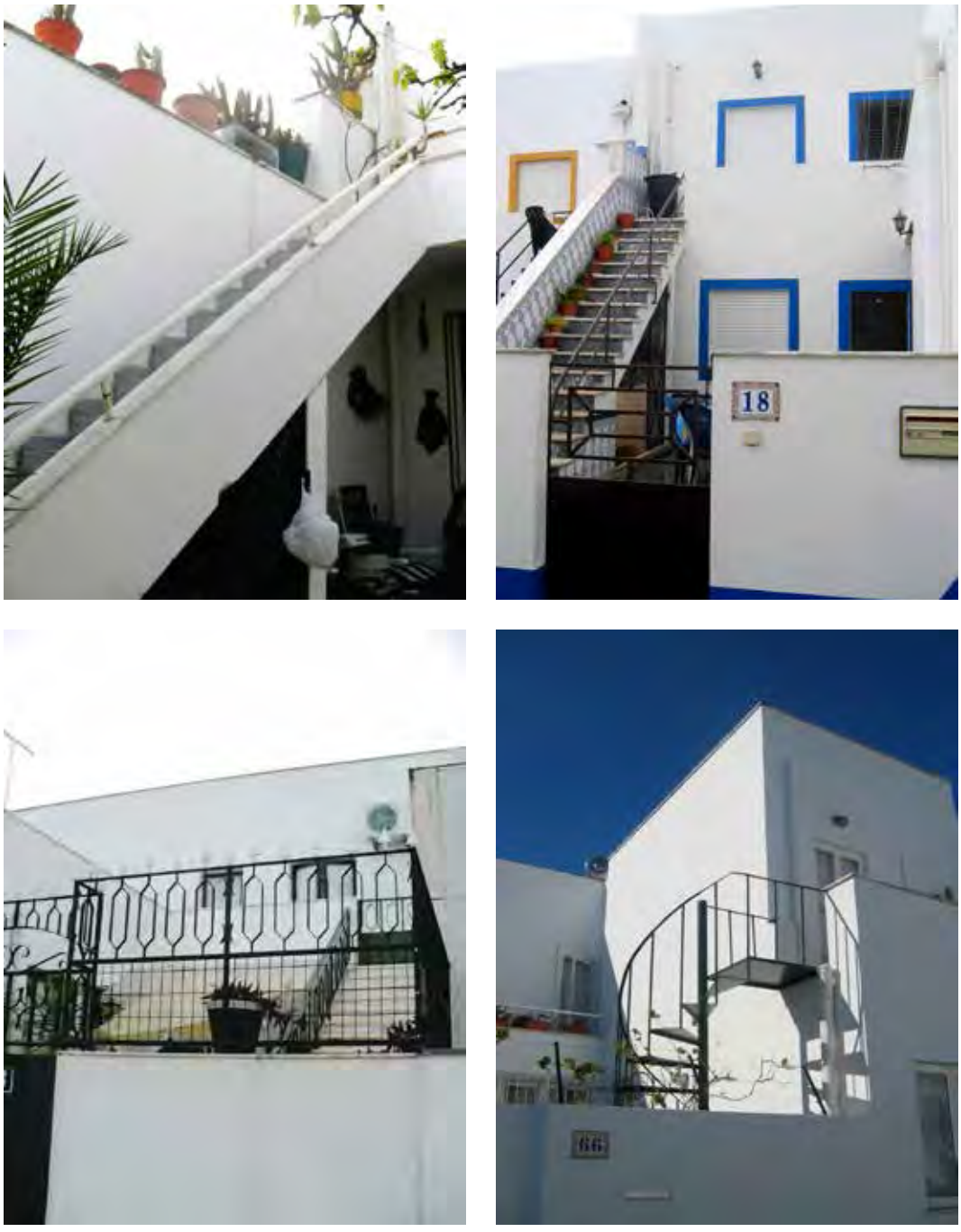


Figure 6
Design action by residents. Stairs divide households into two distinct living units without disturbing the privacy of ground floor dwellers.

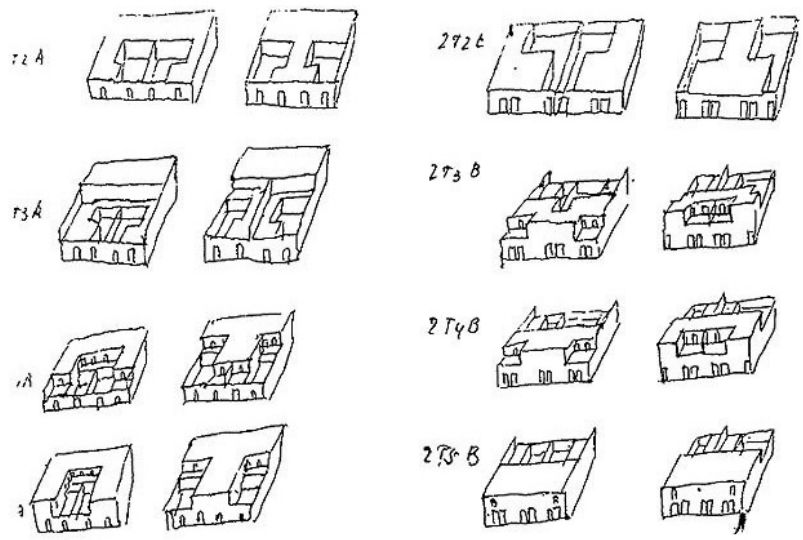


Figure 7
Siza's expansion rule in four phases.

Figure 8
100 interviewed during the field survey of 2008.

Figure 9
Gulensu Gecekondu Settlement in Istanbul.

Figure 10
Gecekondu plots are merged to create larger properties suitable for five floor yap-sats.

Unlike many low-budget social program settlements from the seventies that are in decay, Malagueira continues to grow in the hands of her occupants, as they adopt Siza's expansion rules. Initially built as a low budget neighborhood today Malagueira is flourishing, and attracting a broad range of new enthusiastic residents.

§ 1.3.2 Istanbul's Densification 1983-2003

Similar to Quinta da Malagueira, the densification of Istanbul's urban fabric in the last decades of the twentieth century largely followed clear simple rules. These were applied to more than 70% of the residential neighborhoods in the city, rather than a predetermined urban plan. Since the 1980s, Istanbul has witnessed a rapid transformation, as its gecekondu[17] buildings converted into apartment blocks, informally referred to as 'yap-sat', -*which translates into English as build-and-sell*. The informal gecekondus have been transformed into Istanbul's most mainstream urban fabric in two decades, and in the process increased the density of the metropolis by a coefficient of five. These blocks have risen throughout the city; the merging of four to six gecekondu plots provided the site for one yap-sat building. This initiative, taken en masse by small-scale contractors, can be traced back to a building law passed in 1983 that legalized the informal settlements of the city, and stipulated a maximum height of five storeys for buildings in these areas. Such a densification process with a total of two million new homes generated through small and medium scale entrepreneurs has been supported by a rule-based mechanism which both encouraged and defined the envelope of the apartment building in relation to the street and adjacent plots. Variations on these simple and easily comprehensible rules have been generated by small scale contractors.

Today, Istanbul has the highest number of registered contractors in the world according to former director of TOKI Erdogan Bayraktar [Bayraktar, 2010], as a result of them taking on the task of densifying the city in the last three decades, and motivated by the profit that could be made at low-risk.

17 Mostly one floor, mud-brick Anatolian style village homes which have been mushrooming in the peripheries of Istanbul since the 1950's.

Figure 11
Aerial view of Batel and Água Verde neighborhoods in Curitiba.

Figure 12
Towers of Wijnhaven Island in development.

§ 1.3.3 Curitiba's Public Transport-Based Densification

Curitiba, capital of the Brazilian region of Paraná, offers a comparable densification mechanism to that of Istanbul's. Unlike Istanbul, In Curitiba, density rules were combined with infrastructural design interventions. Under the leadership of Jamie Lerner, architect, planner and three times mayor of the city, urban growth has been controlled by rules that organized density in relation to the rapid transit network, public spaces and pedestrian flows. Within two blocks of transit arteries, a higher density rule was introduced, in direct relation to the population flow that the transit capacity generated per square-meter. Supporting the sustainability of the public transport line by ensuring sufficient capacity and efficiency to cater for all its potential users, the system eventually made car-based transport decline in the entire city. While the densification rule in Istanbul has not been linked to any form of transport or other citywide infrastructural scheme, the case of Curitiba proves how citywide rules for densification can be strategically linked to governance, and implement change by offering its citizens a desirable choice -*in this case an affordable public transport scheme*- rather than applying rules to explicitly restrict existing problematic actions such as excessive car usage.

§ 1.3.4 Dynamic Rules[18] for High-Rise in Wijnhaven

Next example of the use of rules for organizing urban density comes from Rotterdam, in the Netherlands [Borries et al, 2005]. Architect Kees Christiaanse's 1993 proposal for the Wijnhaven neighborhood is an experiment that illustrates how dynamic rules of positioning of skyscrapers help encourage high density. As the early enterprises received better chances for the controlling height and density, the rules became a factor in attracting developers to an increasingly degenerating site, while relational rules helped organize high-rise towers with a view to the River Maas, as well as good daylight

18 In this thesis, the term dynamic city rule is used for referring to the flexibility of an urban spatial principle in adapting to the changes in the social, economical, political domains.

Figure 13
Homeruskwartier prepared for construction.

Figure 14
Homeruskwartier evolved by her own residents.

[Groenendijk, 2009]. These assurances of environmental quality, good views protected from being blocked by future constructions and old-new construction volumes with no stipulated maximum height, encouraged investors to act fast and decisively, as the first towers built would experience a higher level of freedom in determining their position and envelope, while influencing later developments who would have to respect their viewlines and light requirements. Beyond organizing the physical order, Christiaanse offered a strategy resilient to the unknowns of the market in a stagnating economy.

§ 1.3.5 Almere's Organic Expansion

Our next case study is a larger scale new town expansion plan introduced by the City of Almere in 2005. It is based on simple rules that trigger small- and medium-scale initiatives in the Homeruskwartier[19], -a *polder extension in the new city part Almere Poort, the largest residential neighborhood of 3400 households in the Netherlands developed and built by its own residents*-. Although the Homeruskwartier plan was composed and imposed in a top-down manner, the implementation process opened it up to small scale investors, who were invited to develop a variety of building plots, limited only by the rules that applied to each specific plot. An online open platform run by the local authority published an easy-to-navigate interactive zoning map to communicate the plan rules applied to the plots and designed to encourage self-built initiatives [Tan, 2007]. Future residents, if they agree to the rule sets, can use the platform and the plan to communicate directly with their local authorities, without the mediation of large-scale developers and contractors. The plan that followed the Homeruskwartier in Almere's expansion -*the development of 4500 hectares of its Oosterwold area*- dared to take the approach a step further: proposing an urban plan without a final fixed image. Its design principles consist of a simple set of rules, implemented through an open process of ongoing and inclusive urban design.Oosterwold plan rules as designed by the Dutch architecture practice MVRDV can be found in the fourth chapter's Play Oosterwold. This was a clear step in Dutch urbanism distancing itself from predetermined and imposed urban schemes.

19 Ekim Tan has been invited to observe and report on the implementation process of Homeruskwartier, as an innovative urban development process for Dutch Urbanism. http://www.archined.nl/en/news/almere-letters-no1-the-trojan-horse

Figure 15
Aerial view of Al Zaatari.

Figure 16
Container distribution in Al Zaatari.

§ 1.3.6 Al Zaatari

Al Zaatari in Jordan is, as of 2014, the world's second largest refugee camp, after Kenya's Dadaab. It emerged from scratch in 2012 as a result of the Syrian conflict. The fast growing and highly flexible urban system makes Zaatari a perfect case for distilling the rules that control it. Populated by 120.000 Syrian war refugees, the camp is originally planned and run by the United Nations High Commissioner for Refugees –*UNHCR*. The real-time settlement greatly diverts from the original homogenous grid plan proposed by the UN experts[20].

Supply provided without consulting the specificities of the demand, or the sensitivities of the demanding public, is a risky business. Inclusive urban processes running on rules practiced by multiple parties have longer-term prospects of maintaining social and environmental coherence by being adapted to individual or collective dynamics, while mass-produced urban schemes implemented by large corporations or states at best solve the immediate needs of the first generations, but fail in adapting to the social and economic changes of the community they host. Reading urban emergences through rules highlights the process of urban development rather than a fixed end-result. The stakeholders interpreting the rules and implementing them become producers of the urban development, rather than consumers of a given urban environment.

When large segments of a society get a chance to understand city-making rules and apply them based on their realities, the dichotomy of the bottom-up and top-down for the organization of the city disappears into the background. The question still remains: who makes the rules organizing the urban processes? The cases above display a variety of rule setters: in a UN lead camp the refugees can, unexpectedly, take the lead in organizing their community based on unwritten principles. In Almere it is predictably the local government who proposes the rules for an organic city. The case of Istanbul shows how a rule can be made by the central government for legalizing particular informal settlements and how this can spread to a whole metropolis. Small scale contractors and residents continue the trend and by upscaling, the rule becomes the main driver of urban densification. The power play on who makes the rules governing an urbanity is still valid but shows a more dynamic process for individual or collective negotiations when compared to urban plans made by top-down forces.

20 In April 2014, a group of urbanists from the Netherlands, Ekim Tan, Floris van Slijpe and Geert Urhahn, proposed to UNHCR to negotiate their visions of the settlements and that of refugee settlers in Al Zaatari using the City Gaming method. Observations in this thesis are based on the field survey conducted in February 2014.

Figure 17
The container transport wheels invented by Al Zaatari Settelers.

Figure 18
Al Zaatari Settelers re-locating home containers.

A community, with its own social complexity, taking the effort and the responsibility to implement spatial rules and building its own urban environments based on these agreed rules will differ greatly from a community which is offered ready-made urban environments to inhabit; even if those rules are imposed by external powers. Cases above make clear that communities negotiate city-making rules actively and even have the capacity to propose and evolve these rules themselves. Could conceiving cities as rule-based systems be transformed into a method supporting the city as a self-organizing system?

§ 1.4 Gaming as a Generative Method for the Self-Organizing City?

How ever paradoxical -*designing for the self-organizing city*- may sound, the current challenge is proposing new methods for the city to function as a self-organizing system. The real cases analyzed above suggest a rule-based urban method for collaborative city-making: whether the rules organizing the urban system are set by war refugees, as in Al Zaatari camp, or by a world-renowned architect, as in Wijnhaven, the key innovation linking the case-studies is the role of simple rules. This allows large segments of a society to be included in the process, whilst also generating recognizable urban spatial and social orders.

Could one take these properties of urban systems running on simple rules and implement them into a new collaborative city making method? There are simulation models of cities based on mathematical rules, such as, West's growth model mentioned earlier, or Michael Batty's cellular automata explained in the following chapter. However, it is necessary to add human complexity to such models. Models that return data analysis to the citizens, that can be generated and used by them for informed decision-making. Apart from rule-based urban models, current collaborative planning methods are also open and interactive, however they fail to simulate realistic power negotiations in the evolution of the physical environments they plan; collaborative design methods fall short in modelling the decision-making mechanisms of the physical environments they control[21].

21 The survey on existing collaborative city planning and design methods can be found in the second chapter.

A new collaborative city method should be able to merge urban rules and interactive negotiation to allow space for comprehending the rules as adopted and adapted by the urban stakeholders instead of assuming fixed rules or outcomes in advance. Such a method needs to be able to assess urban patterns and rules through the positions, experiences and reactions of real human players. It should reveal existing rules and observe their evolution, propose new rules, or simulate others for particular urban situations in order to make the city. This thesis argues that to get to grips with the 'complexity of the city', urban experts need to distill the rules driving cities and use them strategically to facilitate free interaction between stakeholders. This method would allow the human agents of these systems to exchange information and negotiate urban questions until patterns for the city's development emerge.

A systemic method modeled on simple rules carries the potential to facilitate social, economic, and political dynamics shaping the city. The inclusion of a multiplicity of urban layers, or city's sub-systems will reveal the complexity of the society. In other words, the method will provide the freedom and capacity to interlink various urban layers -*for example geography and space as in Zaatari's underground water streams and the housing containers positioning*- to understand and intervene in urban systems by real human agents.

The 'method' described above might require out-of-the-box thinking. A process that will allow smooth and jargon-free trans-disciplinary work between diverse urban actors is not necessarily a completely new concept. It could in fact be, in whole or in part, a method that has existed for thousands of years. This work proposes to investigate '*gaming*' as the ingredient that transforms urban consultancy and planning into an inclusive and self-organising method of generating humane cities. Cities are self-organising systems of a complexity that traditional urban planning is not able to tackle and therefore calls for a different approach, of which City Gaming is a promising example.

According to the Dutch historian Johan Huizinga, gaming is the oldest learning method of human beings [Huizinga, 1938]. According to Richard Duke, it is the language of the future [Duke, 1974], and for Albert Einstein, the most elevated form of investigation. Contemporary gaming scholar Jane McGonigal argues that games are the most effective and fun way of intervening in and fixing real problems. To introduce games into the discipline of urban planning and design one should begin by looking through the eyes of game designers. An existing, and growing, practice of 'serious gaming[22]' appears to

22 A serious game or applied game is a game designed for a primary purpose other than pure entertainment. The "serious" adjective is generally prepended to refer to products used by industries like defense, education, scientific exploration, health care, emergency management, city planning, engineering, and politics.

be the form of gaming closest to the new process I propose would help players to grasp the complexity of cities. I propose to move from 'serious' to 'real' by, taking the game format beyond its dominant paradigm of simulation and mathematical modelling, and inviting urban actors of all disciplines and all cognitive backgrounds to take part.

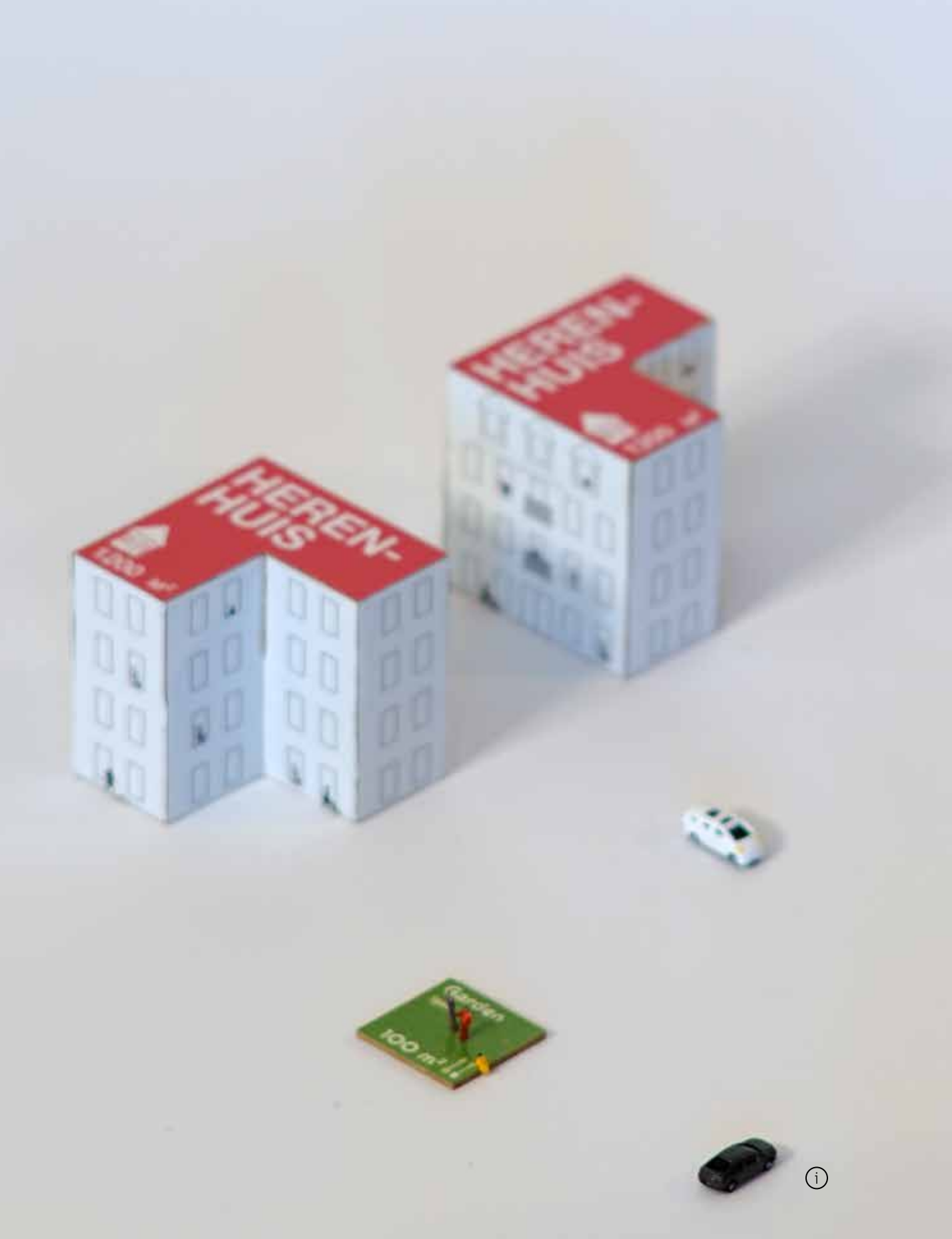
The principles of this research are simple: games are systems that support self-organization; cities function as self-organizing systems; games can be used to organise cities. Yet the reach and detail of the work, driven by simple rules, can engage in and produce complex states. Consider, for example, the complexity and potential variations of a game chess, despite its simple, fixed and easy-to-comprehend rules. Games provide a rare and engaging base for building rule-based simulation environments for cities. This research proposes using games as a laboratory test for cities, where urban rules are adapted and shaped by negotiation, and subsequently studied and further developed through proposed method of Generative City Gaming.

The challenge is conceiving games not only as laboratories for understanding and strategizing, but also transforming games into a *'generative'* method, one that is capable of organising the production of a solution and not merely pointing towards it. Ideally, both the process of planning cities and implementing the plan can be organised through gaming. This thesis focuses particularly on this question: Can games become operational in collaborative city making processes?

Before answering this question however, various sub-questions await clarification: what can we learn from a historical framework of collaborative city making? How does a new approach to cities as self-organizing systems influence the participation debate today? Do existing methods of collaborative city-making cater to the self-organizing city? What new methods can embrace self-organizing urban systems? Can games as self-organizing systems address cities as self-organizing systems? If positive, is there space for City Gaming to become operational in city-making, beyond simulation? How can Generative City Gaming take its place alongside, or in resistance to, current planning methods?

In order to situate the proposed new method within an existing theorisation of cities as self-organizing systems, I begin the next chapter by reviewing the historic context of collaborative city-making, and the theories and practices that address it since the sixties. The third chapter focuses on the fundamental principles of a new collaborative method that could support the process of emergence and evolution of cities. This section also explains how City Gaming has been constructed as a hypothetical method. The following chapter reports on the City Game experiments conducted between 2008 and 2013. These tackle a variety of complex urban situations: Istanbul's urban renewal districts [Kartal, Sariyer and Arnavutkoy, the new town expansions in Almere [Haven and Oosterwold], urban master-plans on hold in Amsterdam Noord and The Hague Binckhorst, the urban transition district Oude Westen, an intermodal train-station

in Tirana, a temporary town in Amsterdam's Van Gendthallen, and more. The scale varies from a building complex to urban neighborhoods, and even a metropolitan agglomeration. What remains constant in all these experiments is the detection of engaged stakeholders, the modelling of their agencies and interests, and interlinking their behavior with governance and spatial planning. The fifth and final chapter of this thesis elaborates further on the limitations and potentials of City Gaming.


HEREN-
HUIS
1000 m²
HEREN-
HUIS
Garagen
100 m²

2 From Participation to Self-Organization

The notion of collaboration in city making discipline has transformed largely since Team 10 members of the CIAM started questioning the human dimension of modernist city plans [Frampton, 1980]. Today the notion of the city as a self-organizing system helps us discuss 'participation' outside the classical dichotomies of the bottom-up and top-down powers [Portugali, 1997]. Today we conceive the city as a complex system where various interacting powers coexist.

In the decades following the Second World War, a political current known as the 'civil rights' movement, came to the surface in the North America and Western Europe. Students, intellectuals and workers raised their voices in demand for better labour and education opportunities. Rising values, such as individual freedom, a fairer social welfare and the right to produce one's urban environment instead of solely consuming it, had a reflection in the field of architecture and planning. The modernist movement's focus on the production of the physical plans, ignoring the people inhabiting these cities, neighborhoods, urban blocks and buildings, received wide criticism. Although the politics of populist movement attracted the most attention, there was a background response through systemic thinking specifically computational models. Soon taken over by the neoliberal politics of the eighties and nineties, the populist movement's call converted into a new phase, which Charles Jencks successfully coined 'consumer democracy' [Jencks, 1972].

The beginning of the twenty-first century has witnessed a comparable popularized civil rights movement. This time technology appears to be in the foreground, enabling participation of crowds without the necessity of a political statement[23]. While classical dichotomies of power between the state, the market and the society do exist, a new perspective offers new possibilities for conceiving cities as complex self-organizing systems as a result of the interplay of various powers. Participation is no more a simple dialectic of governance from above or below, participation becomes the self-organization itself.

23 Refer to DIY Cities section of the introduction chapter.

Figure 19
An estimated 3000 students demonstrate, boycott businesses, and clash with police in a 10-hour protest over making the lower part of State Street in Wisconsin into a mall, March 1972.

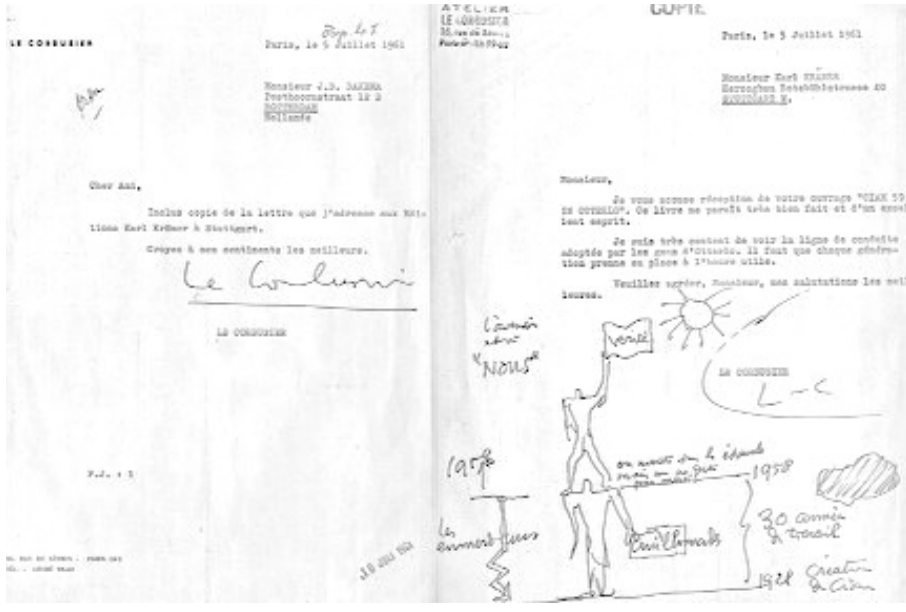


Figure 20
Sketch by Le Corbusier illustrating the emergence of Team 10 out of CIAM. He draws Team 10 on the shoulders of CIAM.

§ 2.1 Populist Movement

The sixties and seventies were a fruitful period for raising significant questions about the social relevancy of architecture and urbanism. These questions on how individuals relate to society, how the welfare state serves society and how individuals position themselves in the production and maintenance of the city, are still relevant today, although the translation of the democratic principles derived from the 'Populist Movement'[24] were considered by many as unsuccessful when implemented as projects.

The People: Passive User or Active Creator?

The legacy of undertaking the responsibility of knowing, designing and constructing the best physical environments to suit the public used to dwell exclusively in the realm of the 'expert'. It is precisely this reality that raised the debate on whether the people should be given the role of 'passive consumer' of their environments. Early criticisms of this practice can be found in the late 50s within the architecture community. Team 10, a younger group of architects participating in international CIAM meetings, started rebelling against the large scale, technocratic and abstract nature of modernist urbanism and how it failed to address the society's real urgencies [Heuvel, 2006]. Members of Team 10 were introducing notions such as 'human scale', the 'community', and 'continuous city processes' into designers' agenda. Closing the gap between the design bureaucracy and the society was regarded as urgent. -Note that the question of whether design could address social questions through physical interventions was not thoroughly analyzed.

The emphasis on physical planning at the expense of social and economic understanding remained a pressing question at the time, undertaken later by a group of 'anarchist' young designers and writers who published 'Non-Plan' in the New Society magazine in the UK [Hughes, 2000]. Their provocative work asked: Would our cities, neighborhoods get any worse if there was no plan at all? Proposing 'controlled free zones for community planning' they advocated urban experiments conducted in and around London to test a new way of planning[25].

---

24 Alexander Tzonis and Liane Lefaivre has termed architecture's reaction to the civil rights movement of the sixties 'Populist Movement' in their book Development of the Populist Movement in Architecture dating 1975.

25 It is striking to trace the contribution of Patrick Geddes in their debates and writings. Geddes, one of the forefathers of planning was known for his argument that 'town planning' is 'folk planning' rather than mere place-planning. Reflecting this view, the non-Plan team focused on the organization of the communities over places.

Figure 21
Peter and Alison Smithson drawing the attention of their fellow architects to the working-class street, when the theme of playing children seemed entirely new to the modernist discourse. Source: Nigel Henderson's photographs in Aix-en-Provence 1953.

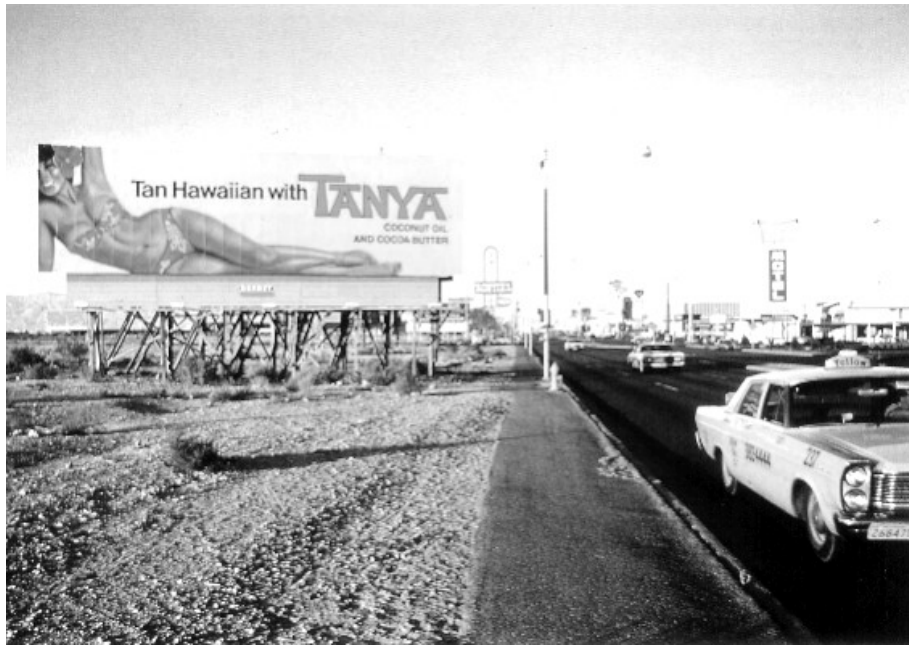


Figure 22
Learning from Las Vegas: recognizing the highway architecture by the people.

A more radical approach came from Denise Scott Brown and Robert Venturi of Yale School of Architecture, who acknowledged the creativity of the 'ordinary people' in their groundbreaking 'Learning from…' methodology [Scott Brown, 1977]. Instead of imposing the pre-occupations of the expert upon a population, they developed a method for understanding the everyday. Being brought up barefoot in South Africa could have played a role in Scott-Brown's thinking. She casually asked her design students marching to Washington on behalf of the social revolution: "*It's lovely having all these grand sentiments, but what are you actually going to do about it, right now?*" Countering the risk of complete detachment from the realities of everyday life, Venturi and Scott Brown encouraged their students to search for the beauty, order and intelligence in the sign language of the main street.

It is striking to observe the gradual shift in the narratives of those addressing the power balance between the user and the designer. Team 10 was preaching the adaptation of physical space to the real needs of the population instead of creating grand urban schemes; the Non-Plan team was stressing the importance of planning communities rather than places, while American architects were calling for the acknowledgement of the everyday. However it did not end here. The next level of thought was perceiving any imposed order upon a community as immoral, intellectually dishonest and counter productive [Popper, 1971]. In other words, what if the passive spectators transformed into active creators searching for their own freedom of choice and self-organizing diversity? This question had implications both as a utopian and as a constructed project. Constant Nieuwenhuys' New Babylon proposed a utopian city continuously re-created as a giant game where communal psychodramas were generated through open-ended lived processes [Wigley, 1998]. Likewise, its built version, the Inter-action Centre by Cedric Price, offered a festive interchange between the community and architects [Obrist, 2010][26].

26 It is worth to note here that the Inter-action Centre was later the inspiration for Renzo Piano and Richard Roger's Centre Georges Pompidou in Paris. Incidentally when the Inter-action Centre was run down from overuse of the community, Price gladly defended its destruction rather than insisting an expensive preservation.

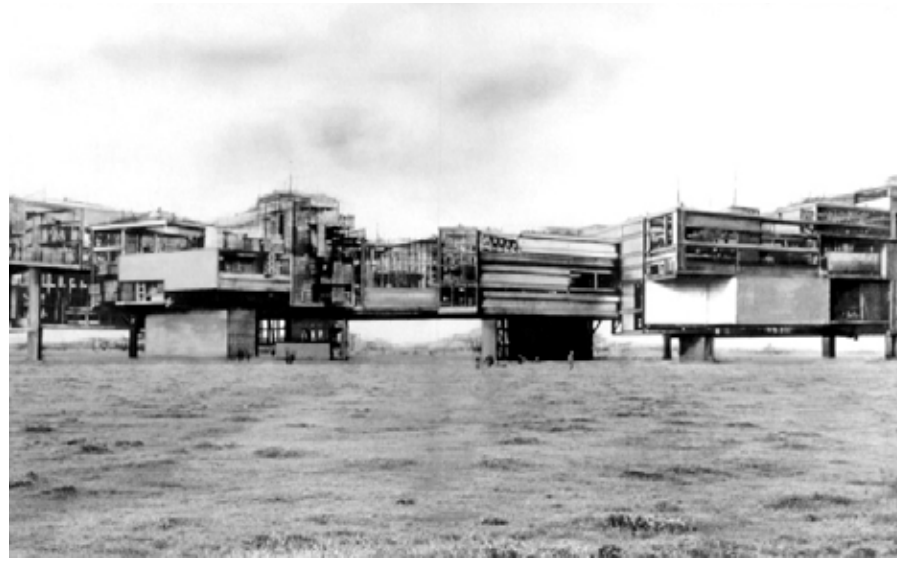


Figure 23
New Babylon by Constant Nieuwenhuys.

Figure 24
Photo of Inter-action Center in Kentish Town, 1976-2003.

Both Constant and Price were responding to a community in which the specific needs of individuals started coming to the surface. This was a period where disappointment in the welfare state's generic urban schemes was openly voiced, criticizing them for overlooking the demands of a complex society. Likewise sixties utopias were focused on '*the freedom of choice*'. Imagine Peter Cook's Plug-in City serving her residents instant desires [Cook, 1999], Buckminster Fuller's Dymaxion dwelling machine helping its owner escape the power-hungry corrupt system and become a nomad again [Fuller, 1973], Non-Plan's do it yourself control-free zone alternatives to the bureaucracy, speculation from surrounding developers, the construction industry [Hughes, 2000], and the psycho-geographical maps of the Situationists [Sadler, 1999] all point to an individualist society seeking to enrich their own experiences and express themselves. After all, the rise of individualism has a direct link to the struggle between who gets to plan and who will be planned.

§ 2.1.1 A Fairer Welfare

Beyond growing individualism, the deepening inequality between social classes and the insufficiency of the welfare state in serving the lower layers of the society became important drivers of the protest movement. Through Jane Jacobs' seminal work, the destruction of New York's urban neighborhoods became widely known [Jacobs, 1961]. Communities of diverse social and economic backgrounds were destroyed by planner's rescue attempts, undermining the self-generative local economies of organic settlements. For Paul Davidoff it was 'advocacy planning' which could guaranty the fairness desired in urban regeneration projects [Davidoff, 1965]. He argued that underrepresented communities of color needed planners to represent them in much the same way a lawyer would defend a plaintiff. While inventing new ways of representation, community was the focus in the US. The growing gap between communities and deepening class society in the UK was causing more radical reactions. The London squatter campaigns could simply not be stopped by policy makers. Following the collapse of the housing market, the occupation of the Hollies -*luxury private housing which stood empty for years*- in 1969, was the peak of this movement. Allocating dozens of homeless families has turned into a success story when all legal attempts by the council to resist the occupation were successfully fought off [Hughes, 2000]. Using this case as a precedent, squatters spread in London and in other UK cities such as Nottingham, Birmingham and Glasgow.

The squatter movement later spread to continental Europe; The Netherlands, Germany and Denmark amongst others.

Figure 25
Paul Davidoff.

Figure 26
Jane Jacobs during a protest in Washington Square Park, 1963.

Worth mentioning is the renewal of the nineteenth-century working-class neighborhoods through Dutch State program called 'Bouwen voor de Buurt' -*Building for the Neighborhood in English*- where even renters would have a say in their surroundings [Vanstiphout, 1997]. Many designers and planners voluntarily left their desks to form project groups in the neighborhoods. Their work primarily became mediating talks with tenants, sociologists, and social workers. The 'support/infill' scheme, invented by Dutch architect John Habraken's, is also a fruit of this period, aiming at giving tenants the responsibility of designing their own interiors [Habraken, 1972]. Support/infill concepts created the possibility of dwelling in a larger built infrastructure. More than just a design affair, the construction model aimed to tackle the social inequalities caused by the building industry and reformulated the roles of residents, builders, material suppliers, developers, planners and consulting engineers accordingly. Although well-meant and logically consistent, this proposal remained unrealized, functioning only on a theoretical level due to its mismatch with the economics of a construction industry closely tied to mass-production.

§ 2.1.2 Learning from the South

The desire for greater freedom of choice and a fairer society were strong drivers behind the populist architecture movement. A third trigger stemmed from the confrontations of western designers with the South. As mentioned earlier Denise Scott Brown's acceptance of the ordinary based on her South African background. Team 10 members learnt of the practice of self-building through visual urban studies in Casablanca-Morocco, Dogon-Mali and Algerian shantytowns [Rudofsky, 1964]. The Smithsons dedicated themselves to Bethnal Green, a working-class neighborhood in East London, to grasp the strength of local interventions upon the imposed orders of modernist urbanism [Hughes, 2000]. Through these studies, designers reintroduced the interconnectedness of housing, street, district, and city. It was becoming clear how the separatism of modernist functionalism was isolating the living, working and playing places. Self-built environments were perfect models for understanding the interplay between public and private spheres. 'Habitat' as a concept was rising, a place populated by human beings and their communities and a natural environment where people have direct control over the formation of their physical surroundings. This was the direct opposition to the obsolete modernist notion of the house as a machine for living in. No wonder such fundamental conceptual conflicts between generations caused the dissolution of CIAM in 1956 as an international organization of the modernist movement [Frampton, 1980].

Figure 27
Poster protesting gentrification, Amsterdam, 1972

Figure 28
Building for the neighborhood applied in Bickerseiland. Pictures illustrate the neighborhood activism, residents, architect Paul de Ley and Alderman Lammers observing a city model built by the residents. NAI Archive 1971.

Could the South offer solutions to the housing questions in the West? John Turner, a British architect who spent 1957-1965 working in the squatter settlements of Peru, had some ideas on this question. Beyond the observations of Team 10 on how self-builders could adapt their environments, Turner took on an even more extreme position: the freedom to shape' one's own environment was an existential value [Turner, 1972], and the user, not the professional, was meant to be the designer. As opposed to the large scale housing schemes of social welfare, self-organized settlements offered a 'good fit' or 'response' to the needs of a user. Turner's paper, given at a United Nations seminar in 1966, had an impact on the 'sites and services' program widely implemented in the South[27].

Could people in the West be involved in the generation of their urban environments on larger scales? This proposal had never found its functional counterpart in the so-called 'developed' world. Such is the case with many protesting voices calling for the democratization of planning and architecture in this period. After all, in the seventies the popularized debate took place in a political framework. Initially fired by utopian images of a playful world with endless resources, -*the Plug-in City, New Babylon, Fun Palace*-, the debate finally took the shape as a resistance movement. It turned into a protest culture, interacting with the welfare state and its institutions with skepticism. Many of the key figures in architecture in this period have been categorized as 'leftist' architects: the socialist architect Cedric Price worked closely with the communist impresario Joan Littlewood on the Fun Palace, Reyner Banham was raised as a working-class boy and considered himself as part of protest culture even after his art history education gained him a prestigious academic position at the Bartlett, When the political winds of the eighties started blowing, characterized by the policies of Margaret Thatcher and Ronald Reagan, there was little remaining of the participation debate.

§ 2.2 Human-Centric Design and the Systemic Thinking

The resonance of the populist movement on technological advancements of the time is often bypassed. Technologists admired the power of computers to process large sets of data between parts -*individuals*-, linking to a systemic whole -*society*-.

27 At the turn of the last century Geddes was actively involved in planning Tel Aviv, in Palestine and in some Indian cities. The ideas inherited through the book of 'Geddes in India', Turner could raise awareness of becoming the producers of their own environments instead of merely its consumers.

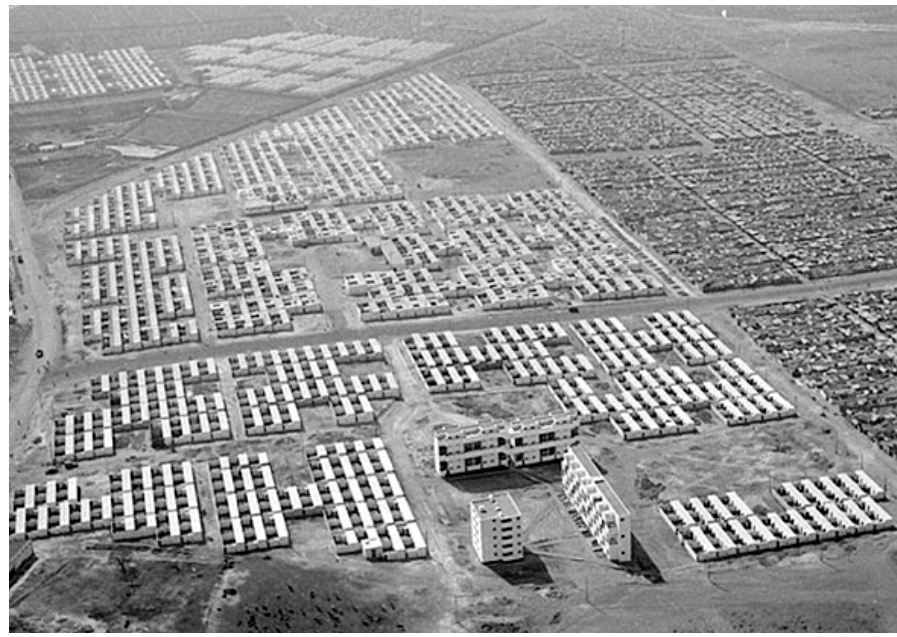


Figure 29
Aerial view of Casablanca's Carriere Centrale housing developments by the Group of Modern Moroccan Architects and Team 10 in 1952, adjacent to the oldest slum in North Africa.

Figure 30
Nid D'Abeille by the Group of Modern Moroccan Architects upon completion in 1952.

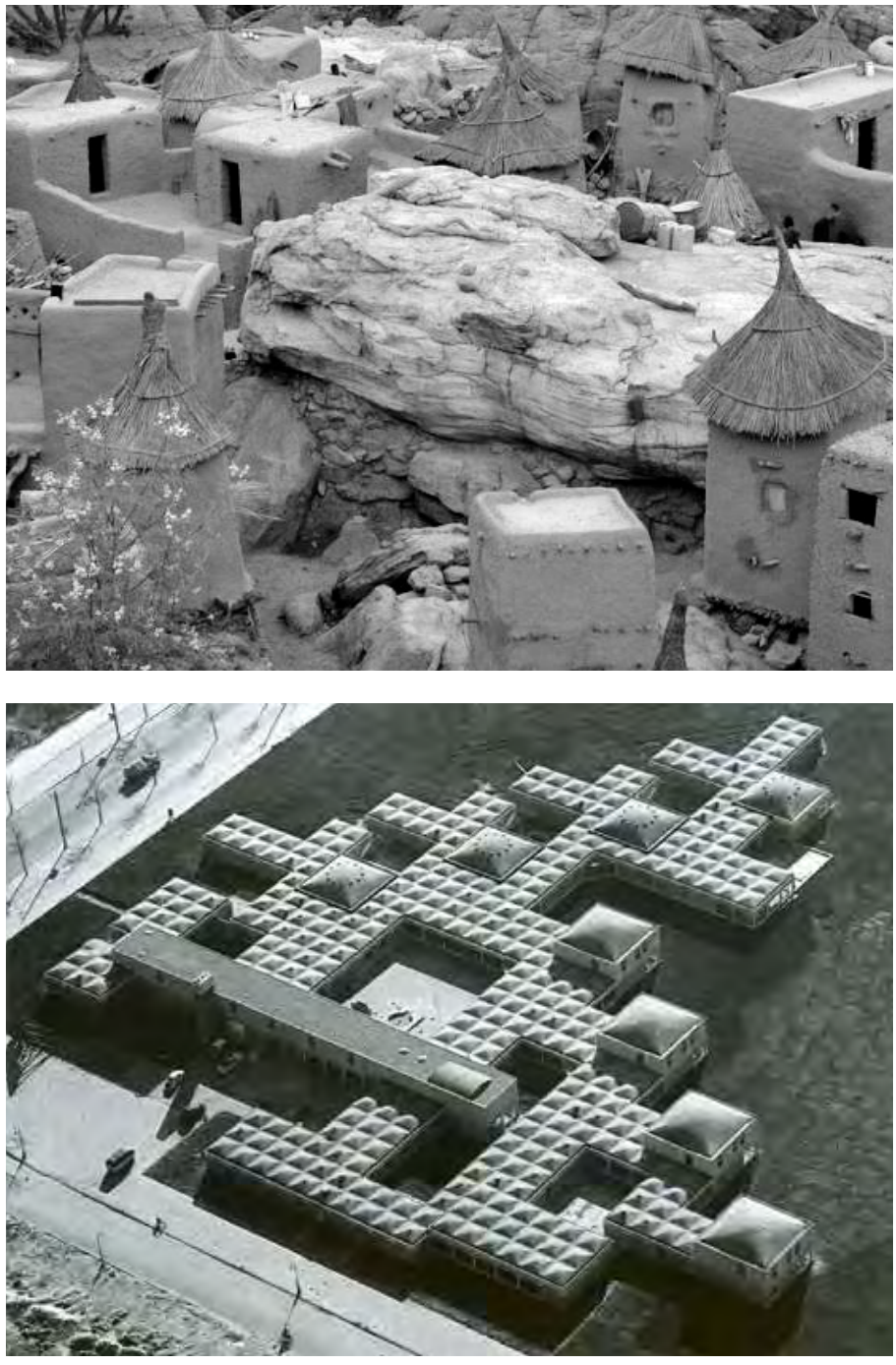


Figure 31
The homes of the Donon (above), inspiration for the former Burgerweeshuis, 1960, by Aldo van Eyck (below).

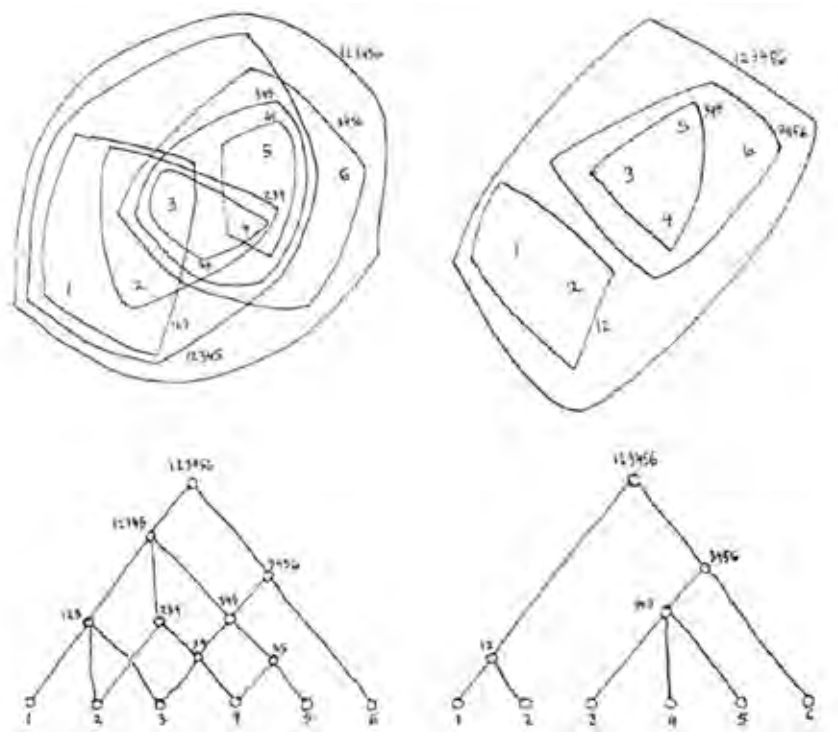


Figure 32
Diagrams used by Alexander in "A City is not a Tree" to explain the semi-lattice idea.

Computational models were seen as the key to solve humanity's problems, and the 'systems thinking' was the way to approach this problem solving. In practice this meant viewing 'problems' as parts of an overall system, rather than reacting to specific parts as singularities; the assumption was that computational models could simulate the complexity of social systems such as cities and the society. Scientists sensitive to the social and environmental questions of the time responded accordingly: Architect and MIT researcher Nicholas Negroponte's software sited Archigram's Plug-in City, where machines themselves achieved decision-making by sampling environments based on public cheers and boos [Hughes, 2000]. It was believed that if such a decision-making system could be achieved, it would defeat the indifference of the welfare state to the unique desires of the individuals.

Computing could ground social decisions not only on micro, but also on macro scales. The Club of Rome's The Limits to Growth was an exemplary attempt to predict futures for the human kind through computer modeling of demographic and economic data [Meadows, 1974]. However, models such as The Limits to Growth predicting global environmental catastrophes based on economic simulations discredited the approach, as there was very little back up for very specific quantitative assumptions used in the model.

Further, the capacity of mathematical models for simulating or designing complex social and environmental systems was questionable. The dependance on quantitative parameters while excluding qualitative dynamics in social systems was another unresolved weakness of computational models.

In the design world, it is striking to find traces of systemic thinking in Alexander's work 'A Pattern Language'; a comprehensive inventory of 'good' design solutions for complex problems [Alexander, 1977]. When used according to abstract rule sets and adapted to unique contexts, Alexander et. al claimed, such a system would empower ordinary people to handle complex design questions, thus defeating the hegemony of the expert. This work was a direct response to the very question of the right to shape one's own environment. Never explicitly referencing systemic thinking, Alexander and his team worked with parts -*or patterns*- of a systemic whole -*the city*- and the compositions of pieces based on simple rules, just as grammar links and makes 'collective' sense of individual words in a language. It is important to mention here that Alexander was a mathematician as well as an architect and he saw design through computational thinking [Alexander, 1964]. Alexander's Pattern Language seemed like a brilliant alternative to the aforementioned dependance on quantitative variables built around strong internal logic, but it raised questions about the very arbitrariness of selected design criteria for 'good' design.

The systemic thinking in relation to human-centric architecture and urban design was vague and its arbitrary applications to real-time cases raised concerns about whether such an approach could ever produce concrete results. However, cybernetics and computing concerned with the social and environmental questions that cities pose promised a way out of the ideological debate about who has the power to design. The political dichotomy of whether urban environments should be organized bottom-up or top-down received an implicit answer: a holistic approach to cities is to understand them as systems consisting of multiple subsystems being shaped under the influence of various agents -*residents, planners, investors, politicians and others*-. The networks that these agents form were acknowledged more than the hierarchies between them when referring to cities. In 1965 Alexander would famously conclude that design criteria referring to cities cannot be understood as a treelike hierarchic system, but is rather an interlinked semi-lattice structure.

Systemic thinking slowly entered the urban design field and evolved in time into more focused and detailed theories of self-organization, chaos and complexity. Today, instead of being a theory within other existing disciplines, some already see complexity as a science by itself [Wolfram, 2002]. Later sections of this chapter will unfold the twenty-first century populist movement and continue this theme by looking at the current links between systems theory and participatory planning and design.

Figure 33
Consumer society as imagined by Charles Jencks, 1969. All the products of a society are cross-indexed, stored on microfilm with computer access, with the Pentagon handling the relevant information!

§ 2.3 Consumer Democracy

In the eighties, a political regime took charge, basing itself on the agenda of Chicago School economist Milton Friedman and objecting to the hegemony of the welfare state [28] [Friedman, 1993]. First in the US and the UK, and later in continental Europe as well as Latin America, public institutions were privatized and the free market was stimulated. In this model, the free market rather than the state would provide the long desired individualization and diversity for the society. Just as Charles Jencks successfully foresaw with his concept of Consumer Democracy in 1969, a supply-oriented market could promise consumers well-being by offering them a larger variety of products for consumption, whilst the state slowly retreated from its role of regulating the social harmony. "*While the market was customizing people's individual wishes, it could become the function of the FBI, CIA, Pentagon who can handle big information of the users customized wishes in a powerful computer.*"

28 One can draw the parallel between the Populist movement's objection to the hegemony of the welfare state and that of Friedman.

Jencks speculated [Jencks, 1972]. The decades following the seventies witnessed the marriage of democracy with free market capitalism. The debate over users shaping their own environment has been largely modified into the mass-customization of user needs. From housing projects marketing personalized environments, to Nike letting consumers design their own shoes, all large corporations chose to modify themselves around user-oriented strategies.

While projects with social ambitions were melting into the free market in the developed world, it was India under leadership of Indira Gandhi and later Rajiv Gandhi who developed socially relevant urban processes with designers such as Balkrishna Doshi in Aranya, or Charles Correa's New Bombay [Steele, 1998]. Their work explored urban environments for millions of inhabitants where public transport, the user's right to shape the environment, incremental growth schemes and up-cycling for waste and water management were the main focus.

Meanwhile, in the field of planning, citizen participation was slowly transforming into a formalized component of practice during the eighties and nineties. As part of development projects, which more often came as public-private partnerships, protocols were invented for involving 'users'. Participation was becoming 'instrumental', taken as a means to an end for development projects. By the end of the nineties the international community would acknowledge the large scope of professional participatory tools such as the 'Charrette', a short-term consensus building tool for various sub-groups of society; 'Citizens Jury', a citizen's report prepared by randomly selected well-informed citizens; 'Consensus Conference', laypeople's assessment of experts' views on controversial topics; 'Delphi', an iterative survey of experts conducted through questionnaires; 'Expert Panel', a synthesis of expert inputs for reaching a shared vision; 'Focus Group', a small discussion group of stakeholders facilitated by a professional moderator; 'Participatory Assessment', an evaluation meeting of stakeholders to reflect on the past for future decisions; 'Scenarios', narrative descriptions of potential futures for complex problems; or 'The World Café', cross-fertilization of ideas through iterative cafe table meetings [Slocum, 2003].

§ 2.4 Technology Driven Populist Movement

The marriage of the democracy with the free market absorbed 'the right to shape' into 'the right to consume' while the democratic-decision making debate took on a more technocratic form with carefully designed protocols. The power play between the individual and the state -*the principal debate of the seventies*- became popular again in the first decade of the twenty-first century. This time the market became integrated

into the discourse, which over the past decades evolved into an unavoidable partner for the state. Often referred to as the information revolution, this time the debate centered mainly on technological advancement in information and communication technologies. This relegated politics which is traditionally understood to have a secondary role.

Beyond the fast access to information, collective processing of knowledge by thousands through emerging open platforms, is relevant for the topic of collaborative city-making. As Pierre Levy terms it, this 'collective intelligence' is built through collective efforts and the competition of numerous individuals [Levy, 1999]. *"It is a form of universally distributed intelligence, constantly enhanced, coordinated in real time, and resulting in the effective mobilization of skills. The basis and goal of collective intelligence is mutual recognition and enrichment of individuals rather than the cult of fetishized or hypostatized communities."* Levy's description works well with an already highly individualized society which grabs the chance to effectively working for collective goals based on individualistic motifs. A ubiquitous technology provides new forms of participation in various fields such as sharing data, writing software, solving medical puzzle games, crowd-funding social processes, crowd-building projects and more [Waal, 2014]. Individuals get their voices heard while acting fluently in multiple networks. Different from in the seventies, this is a natural social mechanism or an everyday practice for many and not necessarily a political statement. The ideals of the sixties on individualism are converted to the mainstream, and computation proposals of the sixties are matured to flawlessly facilitate them.

A higher, looser and faster interdependence between the members of contemporary social system diverges from traditional conceptions of collectivity. New information technologies allocating knowledge exchange have made the long meetings of crowds in the seventies obsolete. Today, collective action, social learning, and cognitive change does not stand for slowness and inefficiency. On the contrary, an individual action supported by interactive communication techniques may turn into a collective outcome as long as it is approved and shared by larger groups of individuals.

The fundamental difference between today's debate and that of the seventies is the current ambiguity present in the classical dichotomies: the market and the state, or the society and the state. Today, cases in which communities take over the traditional role of a local government are increasingly common; think, for example, of the web-based network Team Better Block[29] who may choose to arrive in your neighborhood

29 teambetterblock.com

one day and take over the streets for picnicking or draw missing bicycle paths or imagine the US-based web tool Seeclickfix[30] recording and reporting citizens feeds on requests for lamppost repairs, new garbage bins, bicycle parking, fixing broken side walks, suggesting a possible fountain, or calls for a local community memorial. Today, there are increasingly more moments when ordinary citizens transform themselves into providers of a commercial service; such as the Car2go[31] mobile application which enables citizens to share their private cars through their smart phones. Peer to peer digital currencies have emerged without the intermediation of a central authority, as an alternative to centralized money market, such as the 'Bitcoin'. Central state authorities increasingly call for the direct involvement of local communities. The Finnish Open Ministry for example, addresses any issues that collect at least 50.000 Facebook likes in its parliamentary agenda [Collier, 2012]. Twenty-first century's tech-based generative culture constantly challenges the traditional role patterns of individuals, collectives, small or large companies, NGO's, and local and central authorities -*unexpectedly interchanging them*.-

Collaborative city tools coexist with the traditional market driven companies. They are directed by political and governmental arrangements, contracts and ruling housing provision, area development, education, health care and so forth. The conventional power play of shaping and governing the city continues to exist between the society, state and market. Although power division in city making does rely on conventional structures, the question remains critical of who generates and owns the data as well as who processes facts into the narratives managing the society. New technologies offer chances to unconventional parties responsible for city making to become involved and access powers they did not possess in the past. In this regard, we witness a blurring and increasing exchange of roles between the society, the state and the market. This blurring raises a number of questions, Who takes care of the city streets? How are commercial transport services crowdsourced to individuals spread all over town? How are communities of faster learning societies called on to determine a parliament's agenda? Why do local governments feel the need to call citizens to co-design and maintain cities? How is it that some commercial companies hold and have greater access to data about citizens than a state? Why people voluntarily -*but not always knowingly*- submit details of their personal lives through microblogs and social network platforms? Or how electricity networks turn into bottom-up fed systems through smart grids? As classical role patterns of the society, state and the market become indistinct the question of participation calls for new interpretations.

30 seeclickfix.com

31 car2go.com

Figure 34
Team Better Block works with cities, developers, and stakeholders to create quick, inexpensive changes that improve underused properties.

§ 2.5 Participation as Self-Organization

The city has become a meshwork of players. City's stakeholders constantly build unpredictable collaborations to access power and reach their individual, collective, commercial, social and political goals [Landa, 2000]. The complexity of the city does not seem to fit into the classical participation schemes which divides the world into 'top' and 'bottom'. Today, it is not revolutionary to argue that to construct top-down urban schemes is only an illusion and so too is believe that such partially controlled zones could remain isolated, unaffected by the complexity outside its borders. -*The Brasilia introduced in the first chapter is a remarkable example of how a fully controlled city creates simultaneous its own antithesis*-. The endorsement of the idea that cities are too complex to control centrally is leading to new paths and systems that in turn lead to the emergence of other forms of order. Juval Portugali's seminal work 'Self-organization and the City' is a worthy attempt at translating the abstract notions of self-organization into the formation and evolution of cities [2000, Portugali]. "*The design of cities is considered as a prime example of open self-organizing systems. Cities are collective outcome of a synergetic and self-organizing process under which thousands of participants act locally in a relatively independent manner.*"

In fact, a systemic approach to urban processes is not new. The 'Human-centric Design and the Systemic Thinking' section of this chapter mentions works that see cities as a systemic whole consisting of interacting components. Remember Negroponte's software for customizing a multiplicity of individual demands? Or the Club of Rome's mathematical model offering global economic and population growth scenarios based on human behavior and economic parameters? The reason these models from the sixties failed is that they modeled cities as closed systems which can be deduced by mathematical rules. Today, we observe how last century's premature tech-based attempts to address the complexity of society are now coming of age and offering tools that carefully combine technology with social dynamics. One can even argue that this maturation process was supported by some courageous attempts of visionary architects in the seventies.

In 1996 in Silicon Valley, the keynote speech of a software conference was given by an architect, -*inventor of the 'pattern language'*-, Christopher Alexander. Alexander was introduced to the software architects with these words: "*Once in a great while, a great idea makes it across the boundary of one discipline to take root in another. The adoption of Christopher Alexander's patterns by the software community is one such event.*" [Coplien, 1996] Carefully selecting and recording good design practices in such a way that ordinary people can adopt and adapt them has become one of the most widely applied and important ideas of the past decade in software architecture and grass-roots programming communities worldwide.

Alexander sees architecture and urban design as a holistic system, which organizes itself incrementally through interactions enacted by various kinds of builders. Alexander believed that design could be openly performed by both professional and nonprofessional designers, if the design patterns created by the city's actors and the 'positive' impact on the environment could be recorded, shared and applied. All players would then need to act through commonly accepted rule sets, just as they use common words within the set of grammar of a language. In the software architecture community, such a mechanism exists and is referred to as 'open source'. Over the net, codes are shared under certain conditions and evolved by multiple authors, with a double benefit to the system and its users; while larger groups can have access to a certain code, its chances or evolution into more advanced forms of code increases with use. Alexander's ideas, which found a fundamental position in software design, seek a rooted recognition in design disciplines. The idea of commonly shared and evolved patterns -*the patented codes of the software world*- in city making requires open and democratized processes where such urban patterns are recorded, shared, evolved and implemented by urban stakeholders. The understanding of the city as a self-organizing system allows us to integrate open negotiation and implementation of good practices. Take the example of how a city's blocks, streets, districts, neighborhoods form the larger whole we call the city. Within the city, there are patterns for how residential buildings take shape, or how a new building is attached to an adjacent one, how street shops get competitive or become complementary to one another, how city festivals find a place in a city's agenda, how food flows into our cities... These patterns are made active by various stakeholders who interact with one another and result in choices shaping the urban environment. Thus I propose to look into 'agencies' -*urban stakeholders*- which act on dynamic 'rules' -*patterns*- resulting in various urban 'orders' -*physical urban environments*-. Let us now zoom in to these three conceptions of self-organization -*agency, rules and order*- to be able to address real cities, their emergence and evolution.

§ 2.5.1 Agency

Agency refers to a mode of action based on a particular kind of knowledge [Hirschman, 2009]. In an urban process there are numerous agencies shaping the city. These agencies are activated by individuals acting independently and making their own free choices. They show different behaviors based on the powers and interests they have in the city. Developers, policy makers, planners and designers, residents, shopkeepers, investors, NGO's, neighborhood organizations and other all interconnected and are interacting to reach their particular targets. These interactions help them make choices. Take the example of individual residents in an organic settlement. They build their own homes and simultaneously define the norms for public street widths by

how each home is positioned. Or think of how interactions between real estate agents and potential home owners define home prices in a city area. As these interconnected urban players interact, conflict and collaborate given their powers and interests, they constantly redefine the dynamics of an urban system, whether it be breaking or forming new orders. There are set of rules based on which these agents behave in order to express themselves -*social rules*- as well as relate themselves to other agencies or physical surroundings -*spatial rules*-.

§ 2.5.2 Rules

Rules are those factors of influence that determine or limit an agent and his or her decisions. In the self-organization of an urban system, sets of rules are applied to govern agents' behaviors. Spatial rules, for instance, organize how these agents get to shape an urban space. There are also structures that form the rules their society is based on. Anthony Giddens argues the re-creation of a social self-organizing system takes place through the cycle of 'agency' and 'structures' [Giddens, 1984]. In this dialectical process, agents and structures constantly influence one another. As structures enable and constrain agencies, agencies may also abandon or change existing structures or generate new ones for the society. Urban agents are reasoning and knowledgeable human beings. In the city, new qualities emerge, by the communication and interaction of urban actors, and the adoption or ignorance of rules that irreversibly affect rule sets or cause new ones. What we often experience is that while urban rules strictly define how players produce urban areas, the evolving needs of agents force changes and adaptations in urban zoning regulations. Imagine how office workers, increasingly working from home enabled by fast internet connections, create a dramatic drop in the demand for office spaces. This could eventually result in changes to legal plans. Alex Lehnerer's book, Grand Urban Rules, into fundamental urban rules defining the DNA of cities from New York to San Francisco, to Zurich and San Gimignano, displays how good urban rules, when applied by crowds, allow freedom and creativity of communities [Lehnerer, 2007]. Likewise one of the most influential legal thinkers of modern times, Richard Epstein, argues in his book '*Simple Rules for a Complex World*' that the complexity of a society can only be addressed by minimal legal regulation. He proposes to address fundamental simple laws rather than referring to endless exceptions of the society. According to Epstein as the amount of rules to define the interactions of agents increase, the complexity level of an urban system may decrease. Too many descriptively detailed rules will coerce agents instead of stimulating them. A set of simple rules is enough to specify how the interconnections are allowed to behave, the network is randomly initiated and then iterated continually following the ruleset. Portugali explains that urban systems are based on rules, independent of whether these are written legal rules or unwritten informal ones.

However, the complexity level of a system is dependent on the variety of the agencies and interactions within it rather than the number of the rules applying to it.

§ 2.5.3 New States of Order

Self-organizing systems tend towards new states of order whenever they loose their equilibrium. As systems adapt themselves to changing conditions, new rules emerge that can govern the emerging new states [Portugali, 2000]. Thus, a self-organizing system needs dynamic rules to adjust to new constrains. In this way systems become capable of change and continue to exist; to evolve.

Take the example of a declining urban district gentrifying into a more fashionable neighborhood, then stagnating due to rising prices and eventually transforming from a residential to a business area. All these states indicate a period of stability for the settlement followed by the time for phase of evolving into a new state. In an urban system, the search for new orders or the adaptations to a better fit depend on the interactions between various agents, some more active and conscious than others, their processes of learning and preferences. As the number of interactions between various agents grow, the complexity level of an urban system grows respectively [Fuchs, 2003]. Herein lies the difference between a city seen as a controllable artifact and a city as a dynamic system formed by interactions between diverse agents capable of responding to changing external constraints and internal transformations [Portugali, 2000].

§ 2.6 Cities as Self-Organizing Systems

To provide a more concrete insight into cities as self-organizing systems through the concepts of agency, rules and the search for new equilibrium, two urban settlements will be analyzed [Tan, 2010a]. The purpose of this analysis is to test how self-organization can clarify emergence and evolution of cities independent from the simplistic dualism of the bottom-up and the top-down organized cities. The following sections attempt to deconstruct two settlements into their agencies, rules and various states of order. These settlements, an informal settlement in Istanbul and a carefully arranged Dutch new town Almere, are two extreme cases from either end of the spectrum for how rules, agencies and their interactions impact emergence and evolution of an urban system. Despite their distinct forms of emergence, both

Istanbul's informal city, incrementally planned and built by thousands of residents, and the Dutch new town, envisioned by several state institutions and with a strictly adhered to blueprint plan, display mechanisms of self-organizing systems. The agencies active in the emergence and evolution of these towns differ greatly in power, but both display a dynamic state where numerous agencies become active in seeking for new social and spatial equilibriums.

§ 2.6.1 The Cases of Gulensu and Almere Haven

The first case, Gulensu is a gecekondu[32], or an informal settlement, situated in the Asian half of Istanbul, 20 km further east of the CBD. The second case is Almere Haven, a new town located 20 km east of central Amsterdam. Both settlements are about 40 years old, are in comparably peripheral locations, and have around 25.000 inhabitants. Both are considered as paradigmatic examples of their kind; Gulensu is an informal settlement with a high level of resident satisfaction, reasonable public infrastructure and amenities while Almere is considered to be a success story of make-ability and includes numerous spatial experiments. Let us first analyze how Gulensu has come to life. What were the forces at stake? What were active agencies?

32 Mostly one floor, mud-brick Anatolian style village homes which were mushrooming in the peripheries of Istanbul since the 1950's.

Figure 35
Bird's-eye view of Gulensu, Istanbul.

Figure 36
Bird's-eye view of Almere Haven, The Netherlands.

§ 2.6.2 Agency in Gulensu

When Istanbul's late industrialism exploded in the late 50's, Anatolian migrant workers flowing to the city did not wait to have land titles before consolidating their self-built gecekondu's [Esen, 2004]. Though western ownership laws were introduced with the new secular republic 80 years ago, the mentality of this act goes back to an Osmanli tradition where it was legal to seize a piece of the Sultan's land, as long as the appropriator would give it a function [Neuwirth, 2004]; Gulensu was no exception. Not having large affordable housing schemes offered to them by neither state nor the market, Gulensu's future residents, who had migrated to work in textile and leather factories nearby, faced the challenge of creating their own living environments. People needed shelter, an available answer to that need was squatting a piece of land and building their own home, just as their parents would have done, back in the villages. Apart from the urgency of securing a private home -*an urgency which can be seen as a right, and one which has been practiced by thousands of residents*- other forms of agency also helped to erect a town of 25.000 residents since the 1970's. This town included public utilities such as schools, health clinics, religious buildings, sports clubs and infrastructure such as public buses and minibuses, natural gas, electricity, water and sewage.

Community leaders or land mafia gained the agency to organize private and public land division. The agency of neighborhood organizations emerged to facilitate the organization and construction of public utilities such as mosques, schools, football fields and a variety of other social infrastructures. After reaching a population of 2000 residents, any settlement in Turkey can politically participate the local elections [Neuwirth, 2004]. This is when local governance by the community is combined with local authorities to organize public services of a gecekondu: Using this rule, an agency for political representation of the community, referred as 'muhtar' could also emerge. The democratically elected governor mukhtar, could then negotiate the rights of the settlement to urban infrastructures such as asphalt public roads, public buses, natural gas and other services with the local government, in exchange for the community's votes.

Figure 37
Various First Generation Gecekondu Homes in Gulensu.

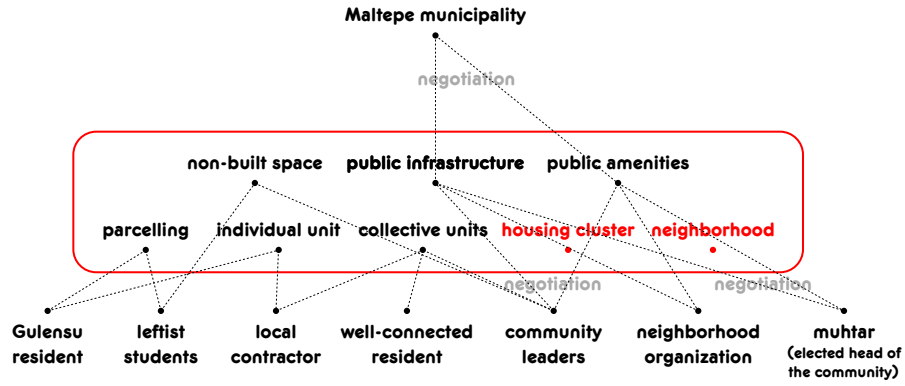


Figure 38
Active agents in Gulensu.

After 30 years of the town's governance being guided by locally developed agency, the national urban transformation schemes implemented by the central government have begun entering Gulensu since early 2000's. To implement urban transformation schemes, the central authorities mobilized the local government to impose high-rise urban block on the area, replacing the organic fabric of the town. While in the early years of the gecekondu, individual residents were actively involved in its creation process, over time, such direct agency gave way to local representatives, governors and local government which has recently been eclipsed by the ministry of urban development's nationwide urban transformation schemes. Before going into the detail how these affected the settlement let us first now look at the kinds of agencies active in the planning and production of the Dutch new town Almere Haven.

After 30 years of the town's governance being guided by locally developed agency, the national urban transformation schemes implemented by the central government have begun entering Gulensu since early 2000's. To implement urban transformation schemes, the central authorities mobilized the local government to impose high-rise urban block on the area, replacing the organic fabric of the town. While in the early years of the gecekondu, individual residents were actively involved in its creation process, over time, such direct agency gave way to local representatives, governors and local government which has recently been eclipsed by the ministry of urban development's nationwide urban transformation schemes. Before going into the detail how these affected the settlement let us first now look at the kinds of agencies active in the planning and production of the Dutch new town Almere Haven.

Figure 39
Public facility in Gulensu: the high school.

Figure 40
Public facility in Gulensu: the health clinic.

§ 2.6.3 Agency in Almere Haven

Almere Haven was erected as new town on an area of dried out 'reclaimed' sea to relieve the demographic pressure on Amsterdam. Thus may appears to require an excessive amount of planning when compared to the case of Gulensu, whose residents first arrived in Istanbul to find out that they had to plan and build their own towns. Therefore the agencies involved in making Almere Haven are substantially different from those involved in Gulensu. Almere's story starts with Zuiderzee Works, a water management and agricultural land production plan dating back to 1890. Using this national policy plan, the ministry of Transformation and Water Management produced a parcelling plan for South Flevopolder in 1959. Following the ministry's initiative, RIJP, the regional planning agency, took over to prepare a structure plan for the new town of Almere. Under the RIJP directors, the local agency of PBA -*Almere Project Bureau*- a multidisciplinary task force with capacity for urban planning, architecture, general planning, sociology, civil engineering, agricultural engineering, landscape architecture, traffic engineering and economic planning defined the particular projects to be implemented. Under the PBA's planning remit came housing corporations that produce the homes for the future residents.

Almere's founding fathers were idealistic and dreamt of 'active residents' [Provoost, 2000]. There were hardly any users there to participate in this idealized activity, but still they held questionnaires in the urban renewal neighborhoods of Amsterdam, such as Dapperbuurt and Pijp, as well as in other parts of the country which could potentially recruit residents for Almere. The results of these surveys were literally translated into architectural design schemes with the hope of satisfying the needs of Almere's potential future residents. Planners hoping for active residents while assuming home interiors based on surveys is a striking paradox.

Almere Haven's story up to this point sounds like a fully controlled and organized scheme. It is interesting to observe how precisely the plans were implemented, evident from a comparison of the detailed plans drawn by PBA with the satellite images of Almere today. A great image of a make-able city appears in before your eyes and you wonder whether such an artifact, produced with so much care and control, could comprise self-organization. The agencies mentioned above display a treelike hierarchic set of relations and their behavior is precisely defined within legal frameworks. However, after decades of rigid and centralized structural control over Almere, dynamics influencing the town are increasing and the impact of planning institutions are decreasing their hold on the process. The new town is increasingly moving into the realm of unpredictability. Before discussing the forces modifying the new town in unexpected ways, let us go through the principles and rulesets that Almere Haven is based on.

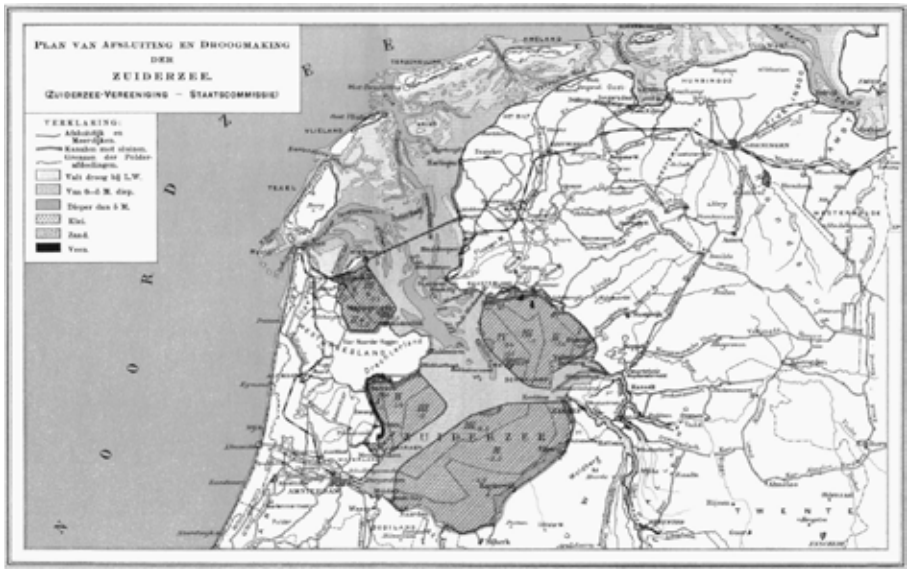


Figure 41
Closure and drainage plan of Zuiderzee, 1890.

Figure 42
Structure Plan of Almere, 1977.

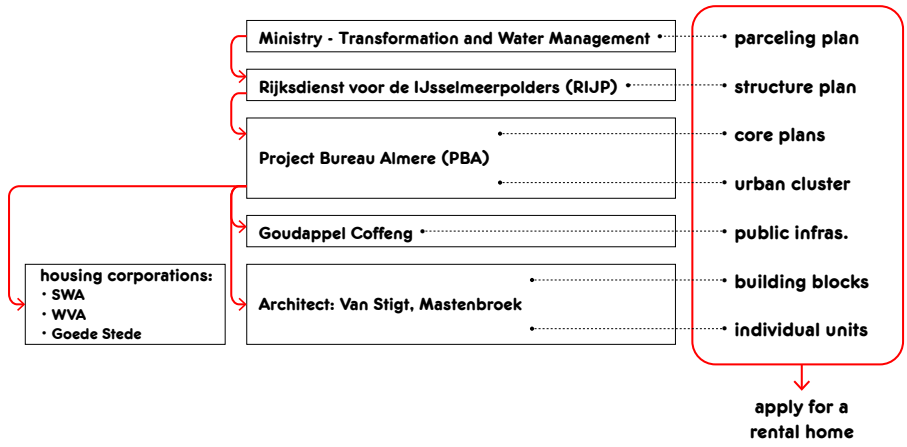


Figure 43
Active agents in Almere..

§ 2.6.4 Rules Organizing Almere Haven

When the master plan for Almere Haven was being prepared, the Club of Rome's 'The Limits to Growth' [Meadows, 1974] had just come out, as a reaction to the oil crisis at the time. It encouraged Almere's visionaries to generate alternatives for car-oriented planning schemes. As a result, human-scaled streets and semi-closed courtyards connected to each other with prioritized and isolated bus-lane prevailed in Almere as a major urban design principle

A settlement around a mixed use core is the next distinguishable design principle of Almere Haven; a city hall, a church and an open-air market in which retail and cultural facilities are mixed with housing, forms the city core. Its residential districts consist of introverted housing enclaves, while businesses and industries are zoned along the highway at the periphery of the town. All these planned public utilities and infrastructure were planned and built to serve a population of 30.000.

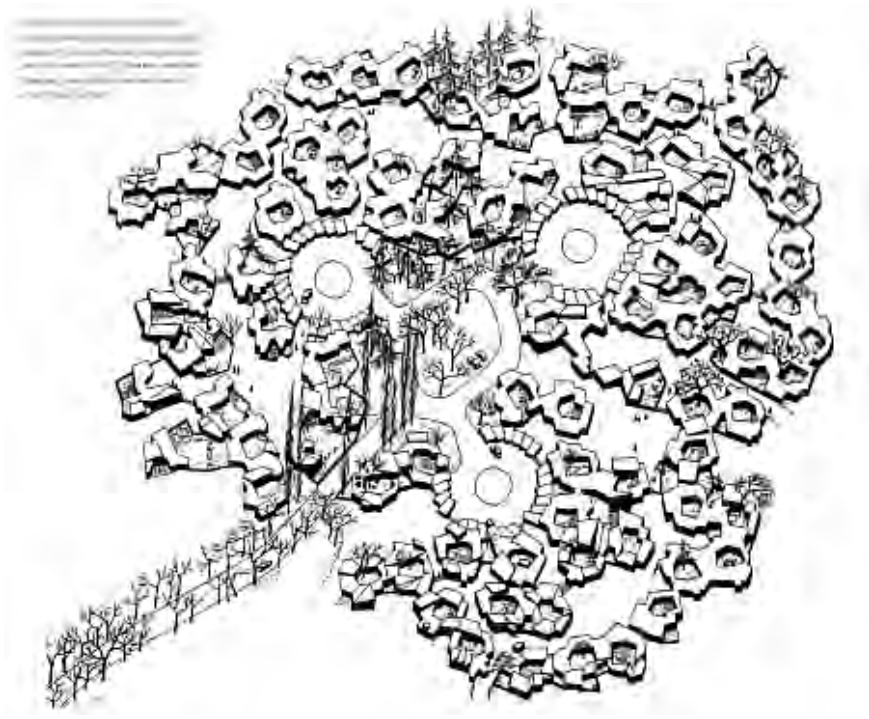


Figure 44
Principles of a cauliflower settlement: complexity and smallness. Drawing by Niek de Boer, in Baksteen magazine.

Figure 45
Sattelite photo of Almere illustrates its neighborhoods based on the principles of the cauliflower settlement.

Apart from these major principles ordering energy, mobility, zoning and population size, there is a long list of prescriptive rules and regulations which guided the erection of Almere Haven. Studying the PBA planning documents, one finds precise rules designed for land use distribution, percentages of housing types, the number of rooms prescribed for various housing types, the desired income level of future residents, ideal percentages of renters and homeowners, the types of economy that should flourish in the area, proposed floor sizes for different work types, the number and kind of shops, proposed car density, a distinct and hierarchical mobility network isolating buses, cars, bicycles and pedestrians from one another, the distances of stops and percentage of houses in different proximities to bus stops, the type of constructions to be built along the roads, and more [RI]P, 1974].

Just as Epstein argues for society, so many rules intended to organize the physical space constrain and decrease the scale and number of resident initiatives in Almere Haven. Fewer more accessible rules could give space for interpretation that can release the real dynamics of a community in development.

§ 2.6.5 Rules Organizing Gulensu

The logic followed by Gulensu's emergence and its evolution principles can be deciphered in physical constrains, such as horizontal and vertical borders limiting its growth, as well as in the skill sets of its founding residents -*mainly Anatolian immigrant workers*-. As the residents themselves were to a large extent the builders of the town, their traditional knowledge of a typical Anatolian home -*the transition zone from private to public in the entrance, first floor extensions, pitched roof unless waiting for expansion*- prevailed, and the urban interpretation of it characterizes the built landscape of Gulensu. This typology was transformed in the process of adapting to a much higher urban density and the vertical growth tactics made necessary by the horizontal limits imposed by the territory, and made possible through the new material found in the city: reinforced concrete. Gulensu's urban fabric is and form is defined by freestanding homes that are carefully positioned as not to block each others' sea view, to respect the transition between the public and private spaces, and extend vertically up to 5 floors. The pitched roof is only built when the growth is finalized, otherwise the columns are built to connect to the upper floor expansion. These individual small homes, their growth and positioned is repeated several times that they become shared recognizable patterns. Besides these unconscious rules followed by the majority, there are rules negotiated amongst the members of the community such as not touching the football fields and public street while the rest of the land is potentially a new plot to be developed. Similarly the ground floors of the shopping street bordering the adjacent town Gulensu are occupied by retail, which seems like a rule shared by various homeowners who also rebuilt their properties into continuos city blocks.

Figure 46
Urban interpretation of Anatolian Homes in Gulensu, Istanbul.

Figure 47
Shopping street in Gulensu, Istanbul.

Figure 48
Unplanned adaptations in Almere Haven.

§ 2.6.6 Almere Haven's New States of Order

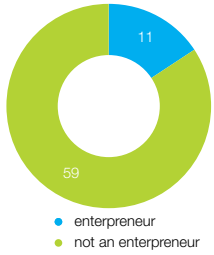
Over the last decade, the young pioneers who moved to Haven in the late seventies are aging, and their children are leaving the town in search of higher education and jobs. Some of the second generation are not returning, and the graying demography has its impact on the neighborhood's demands for social infrastructure. The Elderly no longer need schools and playgrounds, but require a different set of public utilities; since there is a scarcity of 'third-age' specific services, they end up hanging out for long hours in downtown cafes such as the fast-food chain MacDonald's. This results in conflicts reported in the local media as Almere's '*hangouderen*' problem[33]. In the meantime, the underuse of existing public facilities is reflected in the material decline of some public buildings. This transformation is not limited to public utility buildings. Retail and housing is mixing in unexpected parts of the town. This is a different typology to the settlement's original mixed-used center as home businesses appear, ranging from nail studios to music stores and specialist bike shops

According to a survey we conducted amongst 100 randomly chosen households in Almere Haven, around 72% of the occupants told us that they adapted their homes according to their own tastes and needs[34]. This percentage is a significant indicator of the residents' motivation to be involved in shaping their environments, particularly striking in a settlement where 54% of the housing is rental and managed by social housing corporations[35]. Modifications vary from expanding garages for introducing extra program [7%], colorings and reforming external facades [27%] for improving identity to redesigning gardens [34%], and various interior changes. Coinciding that along side this tendency, there is a change in the agency of the state; currently both the national and the local governments of the Netherlands are publishing policy reports that propose to open up government's decision-making and the sharing of more responsibility with residents in the production and maintenance of the city [Hajer, 2011]. *-Practical translation of the new policies in Dutch Urbanism can be found in chapter four, Play Oosterwold.-*

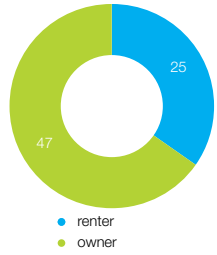
33 http://www.geheugenvanalmere.nl/page/1225/nl

34 In the spring of 2008, 15 international students arrived in Almere Haven for the first generative City Gaming workshop. They conducted a survey with randomly chosen 100 households in Almere Haven's 11 districts. The Appendix Almere Haven Survey contains further details.

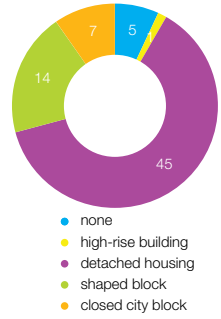
35 https://www.almere.nl/fileadmin/files/almere/bestuur/Sociale_Atlas_van_Almere_2011:Sociale_Atlas_2012_H2_Woninggegevens.pdf



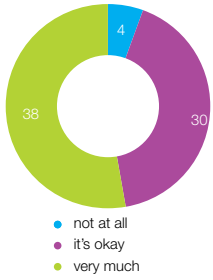
1 - Enterpreneurship



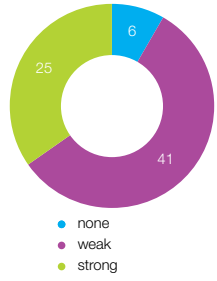
2 - Ownership



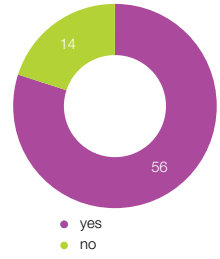
3 - Preference of Dwelling Type



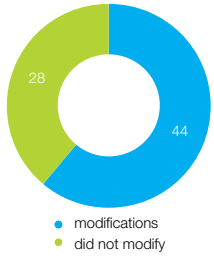
4 - Neighborhood satisfaction



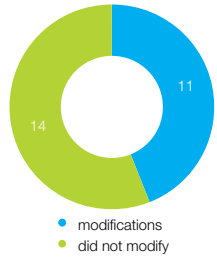
5 - Social ties in the neighborhood



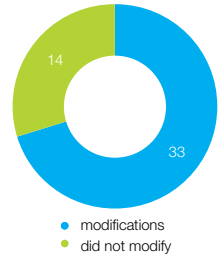
6 - Sharing space with neighbors



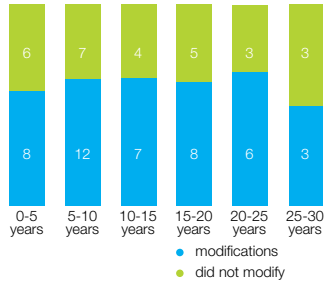
7 - Housing modifications



8 - Modifications in tenacy



9 - Modifications in ownership



10 - Modifications by residency period

Figure 49
Data of the Almere Haven survey on individual modifications. A full breakdown of the Almere Have Questionnaire can be found in Appendix 1.

§ 2.6.7 Gulensu's New States of Order

Gulensu's incremental growth, produced by her residents on the base of dynamic rules, is only one part of the story. Besides the physical constraints designating its growth limits, the agency of the local and central authorities also had a role to play in the internal evolution of the settlement: in Basibuyuk, one of Gulensu's neighboring districts, TOKI replaced the gecekondu homes to build a prototypical project of 324 new households in six high-rise housing towers. Such an abrupt interference with the existing dense but relatively low-rise urban fabric created a great stress on the residents of Gulensu and other similar gecekondu settlements in the borough. A direct result of that experiment was that in 2009 the residents voted out the local governing political party, the AK '*Justice and Development*' Party, and voted in the Social Democrats, the opposition party, who promised not to touch the organic structure of the gecekondu's. In the meantime, the central government was finding ways to transfer the power of local governance to ministries in Ankara in order to accomplish the planned transformation task, not only in Gulensu but throughout Istanbul's self-built neighborhoods, which make up about 70% of the city's urban fabric.

Figure 50
New TOKI highrise housing blocks Basibuyuk, Istanbul.

§ 2.7 Self-Organization is the New Participation

Today no one knows how the ongoing power play between the local residents, commercial developers and investors, and local and central governments will develop. Will Gulensu be converted into the sea of generic housing towers erected by TOKI which are mainly shaped by the economy of their elevators? Or can it evolve further as its residents engage in conversation with the local government? Undoubtedly the evolution of the settlement will continue, as it searches for the next stable phase. On this point Almere Haven and Gulensu are comparable. Born from policy in the hands of engineers, the carefully planned new town is nevertheless changing beyond the limits predicted at its conception, and thus becoming free of its blueprint's control. As the influence of its founders diminishes, the settlement is slowly taking new form: her residents introduce adaptations such as starting new businesses in areas that challenge the original plan, and new policy-makers bring in innovative governance ideas.

Almere Haven is evidence of the impossibility of a single power, be it the welfare state, a developer or some other top-down decision-making mechanism, to manage a complex system such as a city. Even the carefully engineered dynamics of a new town get more complex with time: changing demographics, people's immediate urban needs, and one agency's domination of the system cannot guarantee order. In the case of Almere the welfare state's institutions themselves, the planning office and social housing corporations, are going through phases with an uncertain future. They are actively calling for people's involvement in the ownership of their housing heritage and the maintenance of public space and buildings.

Gulensu inversely, is facing pressure from the central authorities. University spin-off NGOs have formed collaborations with the community to help them better understand the legal procedures. From such an unconventional partnership alternative plans emerge which can resist this pressure more effectively and influence decision making on the local governance level. In Gulensu conflicting dynamics between the central authority and the residents help the community to build a collective vision for the entire town's future. Residents now talk more openly about transformation. More significantly, they are taking the imminent danger of an earthquake seriously, and are willing to respond to the urgent need of transforming the urban fabric, on the condition that they remain in charge of making the transformation plan. This complex conflict has triggered attempts to find a new order.

Gulensu and Almere Haven settlements, analyzed through the lens of self-organization, displays concretely how the interplay between agencies transform in time. None of them rule constantly. In both cases, the collaboration of unexpected and diverse agencies is the key development as a step forward from the domination of one agency. Unlike in the sixties and seventies, participation is no longer a dialectic between the top and the bottom. Participation now can be taken out of this dichotomy of two polarized power-bases. This approach will open new insights, such as acknowledging new modes of partnerships and interactions such as in the Gulensu community's plan negotiations with the local government. Recognition of different powers [legislations, money, skills, time, network, knowledge] distributed across diverse agencies will help model unexpected but constructive partnerships replacing the opposing powers of traditional participation debate.

This chapter started with the debate of human-centric planning and design from the sixties till today. We observe the shift from a 'Populist Movement' couple by a fasciation to a technology-driven 'Do It Yourself Movement' with social and political implications. Influence of the systemic thinking on cities is relevant to the conception of cities as open self-organizing systems as opposed to cities modeled as predictable closed systems running on mathematical algorithms in the sixties. The following chapter will build on the perspective of self-organization as the new participation where multiple and varied agencies continuously negotiating and interacting to exercise their visions on urban space. It will explore the need to develop new methods for the negotiation and implementation of urban visions after exploring potentials and limitations of existing collaborative methods of city-making.


HEREN-
HUIS
Urban Farm
BORDEEL
200 m²
CAFE
200 m²
200m²

PART 2 # The Game

3 City Gaming for the Self-Organizing City

Cities function as a meshwork made and maintained by various players. In parallel to the fading illusion that a single power, be it the state or the market, can govern a complex system such as the city alone, the planning methods with which a single power generates cities as hierarchic organizations are being questioned. Established tools such as master plans lose their relevance, and existing rules and regulations become outdated faster than ever before. If twenty-first century participatory urban planning is indeed grounded in a conception of the '*city as a self-organizing system*', we will need new city-making methods which are free from the outdated dichotomy of the bottom and the top to be put it into practice.

Self-organizing urban processes suggest that by combining the various 'agencies' that represent the social and political complexities of an urban system based on rules, a participatory process that aims to find 'new states of order' can be developed. The previous chapter clarified how the three concepts of agencies, rules and orders underpin self-organizing processes. The fundamental question is now how these ideas become concrete in city-making methods that embrace real constituents, and in doing so help a broad range of players to have a greater influence on the urban systems they inhabit through an open participatory planning platform.

This chapter continues to make concrete the concept of cities as self-organizing systems and specifies seven properties derived from this understanding of cities that I deem key to the development of a method for urban negotiation and the design of the self-organizing city. To this end, the extent to which existing methods of collaborative city-making cater to the self-organizing city is analyzed. Looking beyond traditional and current planning and design methods, the chapter goes on to scrutinize the potential of gaming as a medium for negotiative and open city-making; games emerge as unique media which can combine multiples agencies, simple rules and various complex states of orders that evolve through the interactions of agencies. In an era when not one but many makers are in charge, online games have become the common language of learning and communication. This chapter ends by asking whether gaming can become an operational part of the process of city-making. Building on Christopher Alexander's design experiments with collaborative improvisation [Alexander, 1987] and Juval Portugali's City Games[36], Generative City Gaming is proposed as a method for negotiative and open city-making.

---

36 At the urban scale the case of City Games refers to a complex process of self-organization. City Games were suggested by Juval Portugali as a tool to illustrate and examine self-organization in the domain of spatial cognition.

§ 3.1 Characteristics of a New Method for Self-Organizing Urban Processes

What properties would a potential open city-making method need to have to facilitate self-organizing urban processes? What is the right way to engage citizens with their urban environments through the information, narratives, visions, scenarios, decisions and designs they create? Below is an attempt to establish a set of criteria for a new generative method that will create, evolve and maintain self-organizing processes for making cities collaboratively.

§ 3.1.1 A Self-Organizing Urban Process is Multi-Agent

Instead of being a platform ruled by a single power such as a state institution, a market party or an exclusive community, an open city-making method would authorize various agents to intervene. This is the first characteristic of a self-organizing urban process. Reflecting the 'democratic' status quo of any open system, where no agent controls the platform on his or her own. Nevertheless, within this collective effort there are moments for each of these urban actors, individually and in collaboration with each other, to become a leading influence on the ongoing planning and production process. All urban players have a variety of powers and all influence developments in the city: some have more investment capacity, others have more time, knowledge, legislative experience, or skills in construction, communication, campaigning, networking, and so on. As a result, a process based on these multiple agents would also have to take into account and embrace their specific roles, powers, interests and connections with one another -*a consideration that implies researching and programming the skills and interest network of a particular community of players into each site-specific game*-.

Although the process would offer all engaged urban actors equal access to a multi-agent platform, it would be unrealistic -*in the sense of both being impracticable but also removing the game process from an applicable real-world reality*- to state that such a method could even out the power levels held by the various agents. Agencies need to be reflected on this platform as they exist in reality, so that it becomes possible to observe how various agencies and the relationships between them influence their urban environments. However, it is fundamental that the stakeholders traditionally involved in the 'production' of the city can be joined by new players who are traditionally excluded from the process: those considered 'consumers' of the city. By including these players, the process opens up to the redistribution of responsibilities and consequently of some powers.

§ 3.1.2 A Self-Organizing Urban Process Supports Open Communication

Facilitating meaningful communication between players from different disciplines, such as planning, finance, engineering, sociology, or the various fields of design would become the second property of such a multi-agent method. Some of these professionals will use distinct terminology that makes their more complex statements inaccessible to other players. Even where these disciplines share terms, such as 'urban program' which is common to many of these professions, they might be loaded with different meanings: for an urban designer urban program implies spatial activities, for an urban economist, the prioritization of urban questions. Beyond the problem of the misconceptions that may arise between different disciplines, professional jargon alienates many nonprofessionals, and may limit their engagement in a discussion even if they have precise ideas about urban activities or insightful views on an area's or community's economic urgencies. Effective and inclusive communication for professionals and nonprofessionals alike is a vital property for such inclusive urban methods to be successful.

Beyond tackling the jargon barrier, one can question whether words have the capacity to accurately represent the city, as a physical artifact. To overcome the limitations of exclusively spoken communication, A hybrid process is proposed that interweaves visual and verbal representations of the physical urban context. Many confusions and uncertainties stemming from the use of professional wording could be clarified by visualizing complicated notions such as density, infrastructure, networks, the distribution of public utilities etc. in 3D physical environments. Interactive methods of city planning, and their outcomes, would become easier to grasp for nonprofessional stakeholders when such properties are translated into tangible physical entities.

Communication can be further improved if viewing the physical interface can be combined with actively modifying it. This property would also help players communicate the dimension of time; they could not only observe the physical environment, but also explore, shape and evaluate possible future proposals for that urban territory.

Such a hybrid verbal and visual interface would need to exist both in analog and digital media. Coexistence would help process information, negotiations and decisions taken by the stakeholders more efficiently; take here the example of Facebook, a digital media populated mainly by friends made in the analog world. Our face-to-face interactions influence our communication on this digital platform and vice versa.

Thus a new open multiplayer method of city-making could exist also as an analog, local community who exchange ideas in physical space face-to-face, but can shift the discussion to a digital interface to spread to larger crowds and vice versa[37].

§ 3.1.3 A Self-Organizing Urban Process is Collaborative

Beyond triggering open dialogues between stakeholders, the method would need to match together complementary ideas in order to help stakeholders evolve their plans collaboratively. Such an interactive multiplayer platform would not only cultivate consensus, but also bring out potential conflicts. Unfolding the sensitivities surrounding a given urban question in an open interactive environment is as powerful as consensus building. Openly debating the disputes that emerge, as a community interacts helps players to learn how to better understand each other's positions and to negotiate these through clearer communication: even learn from each other and influence each other's visions.

§ 3.1.4 A Self-Organizing Urban Process is Based on Simple Dynamic Rules

Self-organizing systems are dynamic and show unstable and non-linear character; there is no one predetermined or even final result in a self-organizing system [Portugali, 1997]. Instead, the interactions of agencies give rise to various states of order in time. In other words, such an open, multi-agent and collaborative urban method will depend on the interactions of urban agents to create agreement and collaborative outcomes that change under various conditions. The behavior of these urban agents, including how they interact with one another, is based on certain codes such as cultural and social structures, building rules, regulations and other urban legislations. In the absence of some of these codes, -*an informal town with no official urban regulations being a typical example*- agents produce their own rules through which to act and interact in response to needs and the environment.

37 In the fourth chapter, you can find the example of Play Noord which integrated the social media into the analog game interface.

Rules governing the behavior of a city's agents can be sampled from the existing urban, cultural and or political conditions, or generated and dynamically evolved by the agents themselves. The Rules section in the previous chapters elaborated the simple nature of principles driving open systems. They can become ubiquitous, thus understood and applied by plural agents and allow individual interpretations.

A rule-based process has the capacity to engage bigger crowds in urban processes than consultations with a clearly prescribed outcome and an imposed order defined by a single agent or agency. Thus the fourth property of the urban platform is being bound to simple rules that make a complex system active. Investigation into rules for urban processes – *who makes those rules, to whom they apply, who modifies them etc.*– is discussed in depth in the introduction chapter.

§ 3.1.5 A Self-Organizing Urban Process Evolves Incrementally

Simulating the evolutionary nature of self-organizing systems is the fifth property of the process. To progress incrementally, an urban process would need to embrace both the individual and collective actions of its agents: the interactions and iterations that affect the urban environment.

In contrast to a traditionally urban process with a clear end and outcome, such a 'piecemeal' urban production process would work cyclically, relying on regular stakeholder feedback to keep up to date, and run continuously. The constantly updating urban process could then take into account changing conditions and stakeholders, thus could register and monitor adaptations practiced by agents even during and after an urban plan's implementation.

As an urban process' external and internal conditions change in real time, the reactions of agents to these new circumstances can be documented and addressed or incorporated through this process. Eventually, such a self-organizing method should produce collaboratively generated outcome while continually gathering input on it as the method recurrently reflects on the system's new states of order. The outcome of one particular phase – *itself fully resolved in relation to the context that initiated it* – can then become an input feed for a new generation of the urban process.

§ 3.1.6 A Self-Organizing Urban Process is Constantly Learning

A communicative, evolutionary and rule-based city-organizing method that builds on the interactions of multiple actors will consequently become a learning platform, the sixth property of the self-organizing urban process. Generating, collecting, storing and sharing information with large crowds needs to be at the core of a process that both draws on and supports collective intelligence. The relevance of the collective intelligence to collaborative city-making practices have been explored in the previous chapter's 'Technology Driven Populist Movement' section.

The more interaction the interface supports, the more it learns and the more flexible it becomes. As an urban system 'learns' from its stakeholders' interactions and adaptations, it will develop the ability to adapt to new circumstances. The more adaptation takes place, the more 'fit' -or aptly adapted to its use and growth- the system becomes.

Further, such an open city-generating method would need to integrate advanced computation techniques as it would involve crunching large amounts of data to generate information, including the narratives that guide a given urban process. Live data-processing could enable agents to take more informed decisions. The 'rolling process' of creating the city would in this way be reflected in a rolling knowledge -*one not based only on the naturally evolving social, political and material environments, but also growing live-feed of the collective knowledge base collated by the city-making method itself*.

§ 3.1.7 Self-Organizing Urban Process is Generative

Such a method for a self-organizing urban process would need to become operational, the seventh property, helping multiple players to implement their intelligence by applying it in and to the real-world. Decisions stemming from a multiplayer platform working on a hybrid -*visual and verbal*- urban interface would yield evolutionary urban compositions, future scenarios and shared visions. Real agents would not only simulate urban conditions through such processes but also implement ideas and plans resulting from their negotiations.

I introduced above the seven main properties of a process for negotiating and designing the self-organizing city: an interactive multi-agent platform that has jargon-free and inclusive communication. This is hosted by both visual and verbal interfaces that encourages open dialogue and consensus as well as clarifies conflicts.

This city uses simple rules to accommodate the complexity of the society. These rules simulate the evolutionary nature of self-organizing systems that functions as a learning system for better adaptation, and that provides material implementation in the 'real' world.

§ 3.2 Do Existing Collaborative Methods Serve the Self-Organizing City?

Before moving on to the specification of a new urban planning and negotiation tool, let us analyze existing collaboration methods for self-organizing urban processes. Some of these methods partially support one or more of the seven characteristics identified above. In conclusion, we'll tackle the question of whether there is a need for designing a brand new urban method from scratch, or whether combining the existing tools into a process with all seven key properties would be enough.

§ 3.2.1 Collaborative City-Making Methods

The section entitled 'Consumer Democracy' in the previous chapter identified a long list of public consultation and decision making tools for planning practice. Targeted at engaging the stakeholders of an urban question within the framework of democratic governance most of these participation methods can be classified as multiplayer. They focus exclusively either on experts' interactions, in the form of an 'Expert Panel' or other professional consultation format, or on brainstorming or decision-making

by nonprofessionals, e.g. a 'Citizens' Jury'. But a true mixture of diverse backgrounds and powers remain unaddressed by these multiplayer platforms. They typically adopt a verbal language, where physical and visual media remain secondary. The necessity of effective integration of visual communication for addressing urban situations and processes has been emphasized above. Although exceptionally the 'Scenarios' method uses the graphic language of design drawings or maps, it is a method used by design experts, limiting the potential contributions of non-designers.

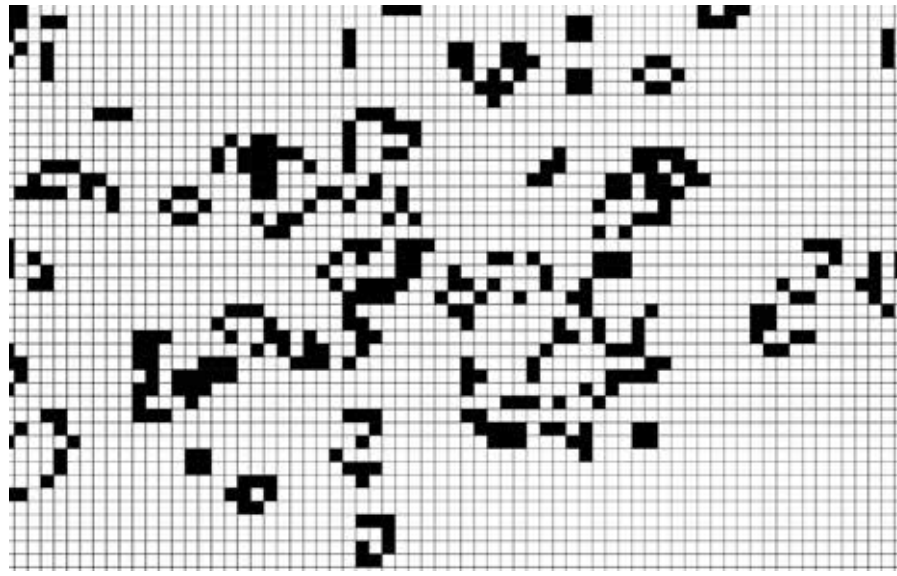


Figure 51
Conway's Game of Life is based on simple cellular automata: one interacts with the game by creating an initial configuration and observing how it evolves.

Aside from these multiplayer methods for decision-making and planning, the urban design domain has its own participation methods. These processes usually run on rules and are iterative. As they use topological interfaces they are effective in addressing urban physical issues. Take the example of Cellular Automata, as in the work of Michael Batty, modeling dynamic local states of individual cells and mapping interactions of neighboring cells that cause a global impact on the system [Batty, 2005]. Cities as complex systems show parallel behavior to such cellular models, being a complex wholeness composed of individual cells such as homes, building lots, and urban blocks. The properties of local spatial units, for example real estate values of apartments, are determined in relation to their immediate neighbors, eventually regulating real estate value of an entire district. Cellular automata runs on simple rules and grasps the dynamics of local agents and their capacity to generate urban orders spatially, economically or socially.

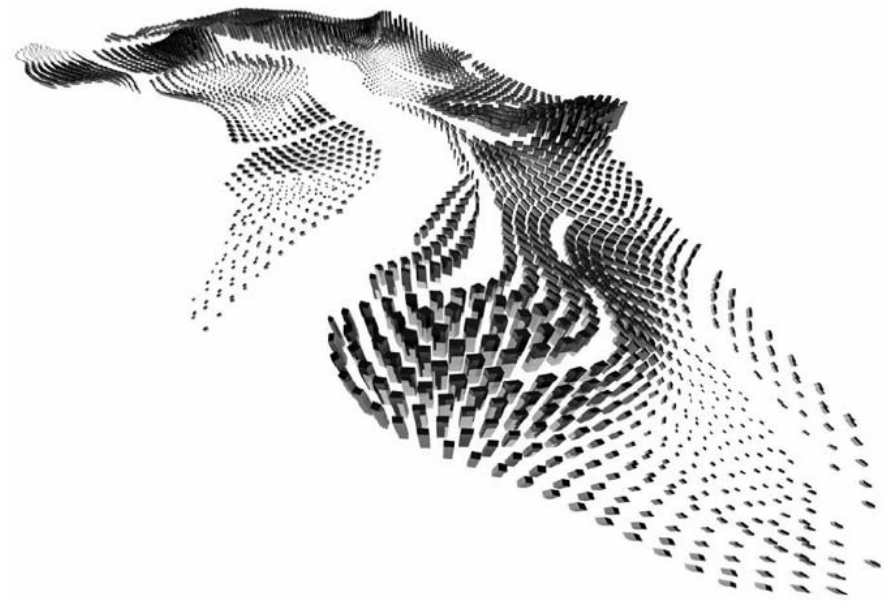


Figure 52
Form Informing Urbanism. Work by Zaha Hadid and Patrick Schumacher.

Generative design models, another modeling technique providing multiple design solutions, is capable of taking into account various parameters influencing design choices of various stakeholders [Schumacher, 2008]. These are effective interfaces enabling designers and non-designers to interact and work on visualized models of places and attributing linked parameters to the topology. The encoding process can use several generative processes, such as genetic algorithms and shape grammars to iterate the model and help the design decisions adapt to new conditions[38].

38 Kaisersrot, the Dutch architecture and urban design practice KCAP's computer program for modeling complex urban systems, is an example of a site planning method in which future residents can choose variables such as the size and the location of a plot. Accordingly, the parametric design tool calculates an optimum site plan based on the users' inputs [www.kaisersrot.com]. A similar concept exists on the building scale. Portuguese architect Jose Pinto Duarte's 'housing customization tool' is a program that can generate home design based on variables such as the number of rooms required and the ideal locations of patios [Duarte, 2001]. While the program of the house is determined by user inputs, the form is based on a spatial grammar defined by the programmer. In this case, the grammar is based on the design rules set by Alvaro Siza, a leading Portuguese architect Pinto Duarte collaborated with in the creation of the Quinta da Malagueira settlement in Évora, elaborated in the first chapter. The original urban plan is itself a very striking example of how rule-based urban schemes activated by real complex agents can succeed in creating a resilient environment, and as such the design rules that guide Pinto's form-making process have already been tested as valid by 'live' user input.

Both cellular automata and parametric design methods are highly communicative as well as rule-based and iterative. However, as closed systems where equations and relations are predetermined they leave hardly any margin for the unexpected internal and external changes of open systems such as cities.

While planning-based participation methods embrace the social and political context of an urban process by involving various agencies and deriving decision-making from negotiations between these agencies, design-based methods offer rule-based iterative processes with controlled spatial outcomes and effective visual communication. While collaboration methods based on planning miss addressing the emergence and evolution physical environments, collaborative design methods fall short in modeling the decision making mechanisms of the physical environments they control.

When decision-making and forming the urban environment are juxtaposed an unexpected field of knowledge with the capacity to include both becomes relevant: gaming, as a method for knowledge creation and negotiation serves as an interface between the more abstract decision-making and material city-making. Rarely involved in the creation of our environment, it has the unexplored potential of combining the socio-spatial dimensions of self-organizing urban processes. Diverse agents, the collaborations and conflicts within and between interest groups, and the parameters provided by topological data can all be combined in an operational form in gaming: potentially a great unifier of multiple stakeholder negotiations and individual design aspirations through which to generate popularly informed policies or design.

§ 3.2.2 Gaming As a Method for Collaborative City-Making

Games can be defined as structured forms of playing, while play is a form of intense interactive and collaborative engagement, free from any material interest or material gain. In his book Homo Ludens, the Dutch philosopher Johan Huizinga identifies play as necessary condition for culture to emerge: "*Play is older than culture, for culture, however inadequately defined, always presupposes human society, and animals have not waited for man to teach them their playing.*" [Huizinga, 1938] As structured play, games run on very clear and simple rules, and have identified challenges and interaction patterns to which players respond to reach predetermined goals. Today, an increasing number of games are played for serious purposes: defense, education, scientific exploration, health care, emergency management, city planning, engineering, religion and politics are just some examples of the fields within which gaming has found a role. Also known as 'serious games', such games are simulations of real-world events or processes designed and played for the purpose of solving a problem. [Abt, 1970]. Although serious games can be entertaining, their main purpose is to train or educate players.

Chapter 2 elaborated on the works of designers such as Nieuwenhuys and Price, experimenting with game-like urban environments to be played by active citizens. Later in the sixties, serious gaming emerged in the field of urban planning for the purpose of problem-solving. These first urban games typically revolved around topics such as land use, community development, public participation, city management, transportation, ecology, and natural resources. Some of these games were politically oriented, played by regulators to negotiate public budgets. Richard Duke, the father of planning simulation games, created 'Metropolis' at the University of Michigan for the Lansing City Council of Michigan State [Duke, 1966]. Metropolis is a planning game played in analog format, created to engage members of a city council in the urban development plans [Duke, 1995].

Following advancements in computer technology, more planning simulation games adapted mathematical models to refine their representations of complex environments. As the development of these models relied on the growth of computation technologies, it is no coincidence that they were geared towards processing a wide range of the quantifiable aspects of cities: economics, demographics, technical factors, transportation, mobility, urban growth, and others. The seventies witnessed an avalanche of simulation games for land use and price planning. Hyper-comprehensive 'large-scale urban planning models' [LSUMs] were built to predict complex urban futures. Duke's Metro and Metro-Apex, following versions of Metropolis developed during this period, were the most used games for training, learning and prediction [Malgorzata, 2007]. These games flourished at a time when a significant number of planners believed that it was possible to model a major metropolitan community with a predictive, scientific tool in order to evaluate how various proposals would affect the community [Duke, 1966]. This later proved to be a rather simplistic view, limited both in theoretical and technological content. The 'Limits to Growth' simulation model proposed by the Club of Rome [Meadows, 1972], the workings and limitations of which were discussed in the previous chapter, also belongs to this school of thought[39].

39 'Human-centric Design and the Systemic Thinking' section of the previous chapter elaborates ideas behind the 'Limits to Growth'

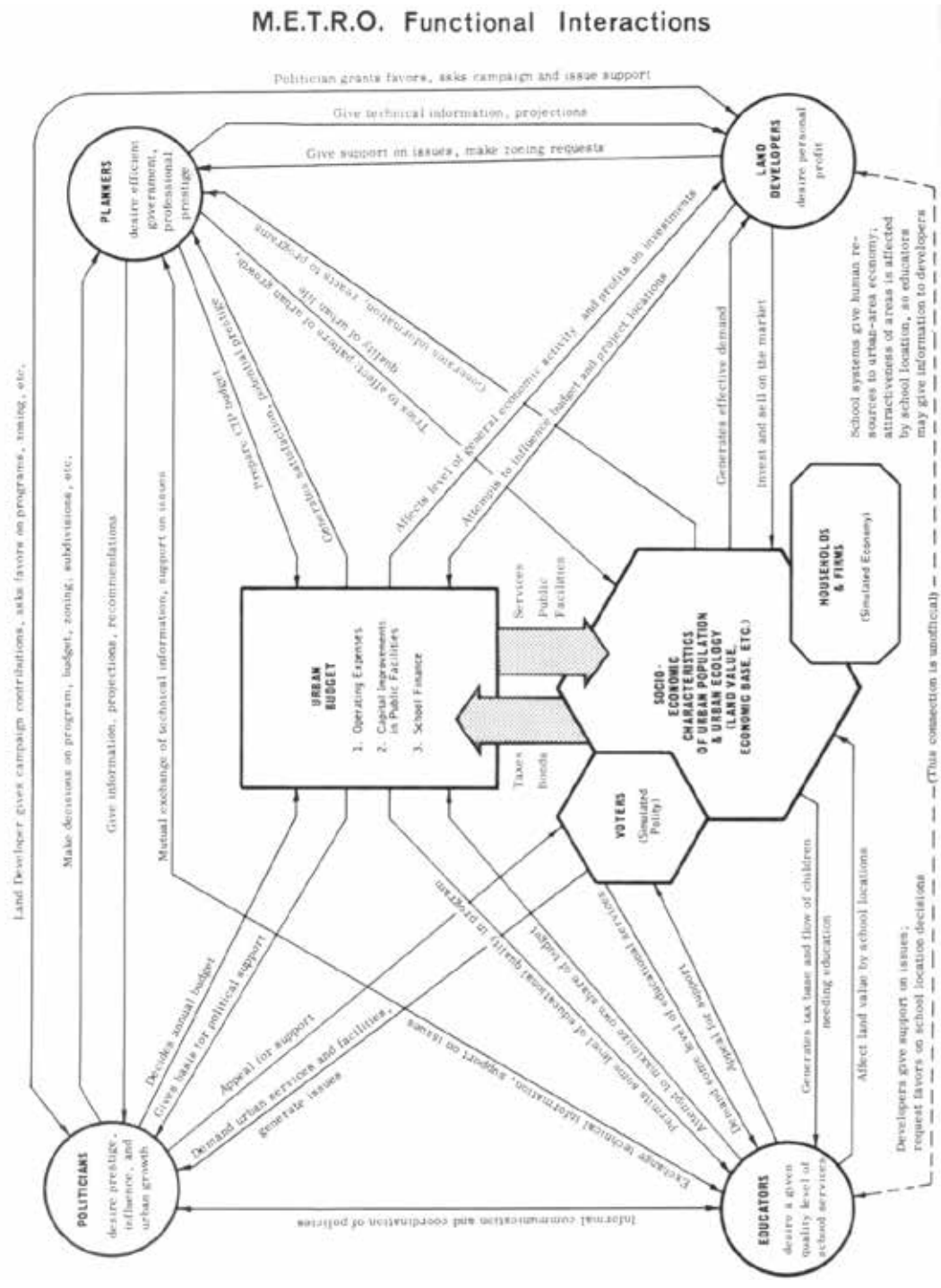


Figure 53
Planned and unplanned Brasilia 2014.

The planning games of the sixties and seventies typically assumed an urban system controlled and ordered from above. Likewise, data selection, its correlation with other datasets, and equations simulating urban complexities were neither influenced by nor made known to players. It was precisely these properties, and specifically their top-down treatment, that eventually backfired. When the social planning crisis of the eighties, addressed in Consumer Democracy of the pervious chapter, was coupled with rising skepticism about the accuracy of the computation of social complexities, most of the serious gaming research has been put on hold[40]. It became obvious that serious reflection was needed on the setup of planning games: they could not function as closed models, a sort of black box for socially generated data. From these errors of gaming new questions arouse which are fundamental to this research: could games function as open systems, just like the cities they simulate? Could they integrate unexpected internal and external conditions, and eventually adapt based on these inputs? Could they integrate the complexity of human agents into the process of prediction to improve better results?

Such trial and error episodes are inherent to the process of emergence of new methods. While the eighties and nineties saw diminishing numbers of scientific articles on urban gaming and fewer planning games being played, the rise of self-organization theories at the turn of the century offered new perspectives for gaming; hybrid forms such as 'free-form games' [Mayer, 2009], in which human beings as complex agents combine computation with their own unpredictability, opened gaming up to represent society's complexity. The most visible transformation of games towards representing the social and urban unpredictability could be observed in the best-selling planning game SimCity, launched in the eighties. Identified as a 'god-game', SimCity challenged its players -*each the mayor of their own city*- to build cities from scratch and strategically manage their growth. The game was originally designed to simulate a city organized top-down with predetermined zoning norms built into the game. However, the latest release of the game in May 2013, has opened up the system to allow multiple players to interact with one another while governing their cities. This single change has converted the game into a semi-open multiplayer environment in which the unpredictable individual and collective interactions of players can influence the game process. Players have built a wiki community to exchange knowledge on the process of playing. They thus influence the process, content and design of the game, evidence of how 'collective intelligence' both inside and outside the game platform is gaining importance. Advancements in systemic thinking, ICT and a changing view on how cities self-organize from both above and below, have helped to evolve SimCity into a more open and evolutionary game environment.

40 A systematic search in to the index of the magazine 'Simulation & Gaming' reflects a gap in published articles on serious games for planning in the eighties and nineties.

Figure 54
SimCity screen shot.

SimCity is a reflection of the fact that these theoretical and technological advancements are currently relevant and embraced by popular practice.

'Serious gaming' scholar Igor Mayer of Delft University of Technology, who specializes in games for policy-making and the scientific ground behind the method, claims that gaming remedies some of the weaknesses of simulation models by addressing open systems instead of the closed system approach explained above [Mayer, 2009]. He explains that games offer "*the possibility of integrating technical-physical complexity with social-political complexity and letting policy makers and stakeholders play with that complexity. This is significant for complex multi-actor policy making because it requires the integration of cognitive and social-political learning and change.*"

Mayer stresses the weak scientific grounds of gaming for policy making; "*When judged against engineering sciences policy gaming can be easily discarded as outcomes of a game are hardly replicable.*" Games suffer from the same symptoms that modeling and simulation have been suffering. "*They can be slow, irrelevant, and abused.*" Mayer argues. Simulation games for predicting the future fall short in their usage of particular data and the correlations they make. They also hinder accessibility due to the black box nature of the software, while free-form games that are open to the complexity of external forces and human behavior are criticized for not being repeatable.

Moreover, it is impossible to conduct valid research because observation and analysis during a free-form game could contaminate what is being measured; monitoring and scientific synthesis can become very complicated given the excessive amount of data generated during gaming.

Mayer stresses that other foundations and assessment criteria should be established in order to conclude to what extent gaming is of relevance for generating public policy. A quote from Chris Crawford, a computer game designer and writer, expresses best of how we should perceive the relevance of gaming: "*The greatest utility of gaming can be tapped only when we recognize it as a medium of expression rather than a form of calculation.*" [Crawford, 2002] This argument suggests the potential of gaming in the negotiation and design of cities. In the following section I will elaborate further on how gaming could become a method for self-organizing the city.

§ 3.3 Gaming as a Method for Self-Organizing the City

§ 3.3.1 Games Support Learning

According to Huizinga, play is fundamental to human society and occurs among many species, seeming to clearly serve the function of skill learning and practice. [Huizinga, 1938]. The learning property of self-organizing urban processes -*as elaborated above*- show how open systems change and evolve as they are fed by new relevant information. This is how a learning system prepares itself to become fit for unexpected conditions. Games as structured forms of play can fulfill a ground of trial and error when adapted to urban processes. Stakeholders of a complex urban situation can use gaming for experimenting with various scenarios, The unique knowledge generated through present agents and their interactions can be transferred to real situations. Thus games can act as the parallel virtual world of urban processes, where stakeholders find the safe-bed of testing their own information and strategies against others through means of play. In other words, games can become research and learning environments for cities where knowledge is collected and evolved.

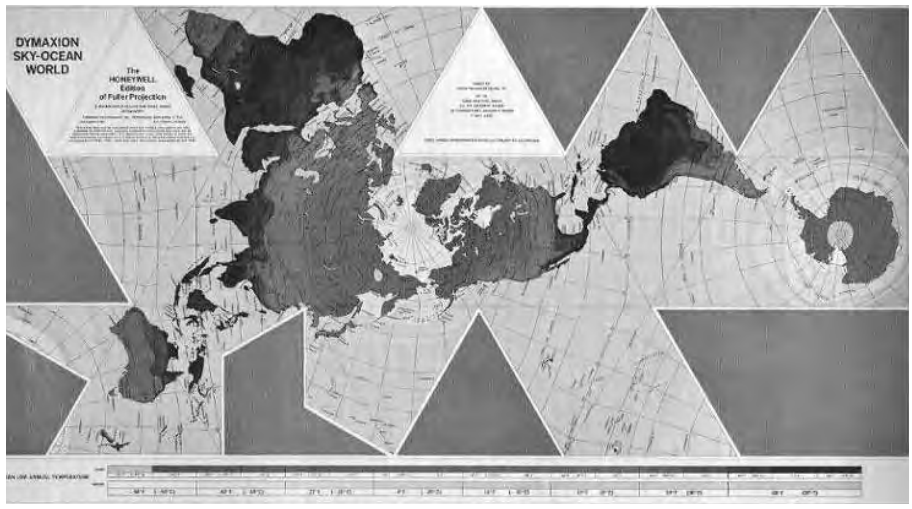


Figure 55
Dymaxion world map by Buckminster Fuller.

Figure 56
Buckminster Fuller presenting the World Peace Game.

Gaming is increasingly present in current technologies, becoming a regular feature of our smart phones and computers. We find it in the form of online video games or websites, making it easier to share the collection and evolution of knowledge that emerges through play. A good example for generating and sharing knowledge through gaming is Foursquare, a very simple game for earning a '*mayor*' title through checking into destinations in the city. This creates a massive collection of actual location-time maps of cities complete with unique tips and reviews provided by thousands of users[41]. These games make the experience of mapping and reviewing fun.Learning the behavior of individuals through engaging games is increasing. Perhaps the most striking example of this is 'World of Warcraft' -*WoW*-, an online multiplayer role playing game. Players of WoW have built the world's second largest wiki -*second only to Wikipedia*- to share and learn from each other's experiences.

§ 3.3.2 Games are Collaborative

Games are environments in which multiple players coexist, compete and learn that if they collaborate with other players they can better advance their own goals. MIT researcher Jane McGonigal, a scholar experimenting with popular games for crowds, observes that contemporary online gamers are accomplished problem solvers who learn that cooperating helps with complex challenges[42]. Likewise, self-organizing urban processes call for open mediation between urban stakeholders for collaborative and evolutionary implementation of plans.

A striking example that illustrates the collaborative power of games is the architect, inventor and visionary Buckminster Fuller's 'World Peace Game'. This game is structured on the premise of open cross-border collaboration between nations and even continents. Foreseeing the communicative power of such an undesired collaboration model, the United States Information Agency banned the game in 1967 [Fuller, 1971]. USIA found the idea of a borderless world freely cooperating 'too revolutionary'. However, Fuller was certain that games were the right collaborative interfaces to "*help the world work for 100% of humanity in the shortest possible time through spontaneous cooperation without ecological damage or disadvantage to anyone*" [Fuller,1967].

41 foursquare.com

42 janemcgonigal.com

There should have been a way to share world's remaining resources if multinational corporations acted responsibly, and games could illustrate this. Fuller's equally revolutionary giant geodesic dome would be built for the 1967 Montreal World Fair, yet the cold-war politics of the time could not tolerate the publication of a spontaneous cooperation game. Undaunted, Fuller continued to develop his game which implicitly suggested that our planet would shift from being dominated by two powers into a more multi-nodal environment; imagining negotiation and collaboration between parties traditionally isolated from one another seems more likely to happen today, despite the ongoing or even accelerated race for resources. Today the for-profit-education company 'O.S. Earth' holds the intellectual rights to Fuller's World Game™ and organizes large scale collaborative world games globally.

§ 3.3.3 Games are Multi-Agent

The contemporary gaming industry is moving towards online multiplayer platforms. Likewise, older computer games such as SimCity are converting to open platforms which allow multiple players to interact simultaneously. The most relevant example of a multiplayer game environment that provides inspiration for complex urban processes is the popular online role playing game 'WoW', -*which has been introduced above*-. In WoW, players with unique missions -*key actors such as investors, developers, or NGOs for urban processes*- interact with other players and their environments and in the process generate unpredictable individual and collective narratives -*imagine how millions of urban actors coexist, interact with one another and their physical environment and contribute to the making of the city*-. WoW gameplay begins and progresses without a predetermined ending, while players collaborate and compete with other players to achieve their goals in an open and fairly transparent environment. New players can join the game in progress or may decide to leave part way through it, thus emulating realistic cycles of interactions and out-of-sync individual goals and life rhythms. Play goes on as this dynamic group of multiple actors create a self-organized environment within the constraints of the game platform. Just as in WoW, cities take shape according to the aims and actions of various actors and the particular roles they take on. The analogy between the new generation of online games and cities as self-organizing systems suggests that multiplayer interactive game platforms are an appropriate interface for negotiating urban environments, offering both an openness similar to that of cities and flexibility.

§ 3.3.4 Games Evolve Incrementally

New generation games such as LA Noire invite players to co-design own game scenarios during the play process in a self-organized manner[43]. This tendency in the gaming industry sees players as the authors of their own game adventures. It is notable how similar this approach is to the way Portugali conceive cities, as quoted in the first paragraph of this research. Present-day gaming is a process that involves players interacting in an open environment. A game's narrative unfolds as players, either sequentially or simultaneously, navigate towards their goals following particular rules. Each time the game is played, the resulting unique scenario reveals that is not predetermined or imposed by anyone in advance: decisions emerge from the interactions of players.

Christopher Alexander's urban design method is a great example of how piecemeal urban growth can address the city as an evolutionary holistic system where all individuals author their own urban experiments. With Postgraduate Students of Berkeley, Alexander created City Game like platforms where individuals negotiated collective visions for a waterfront through incremental processes [Alexander, 1964]. Although Alexander himself never called these experiments games, the process oriented thinking which allows the iterative actions of a group of collaborating individuals to organize urban environments is surprisingly similar to the setup of contemporary gaming, at the core of which systemic thinking can be traced. In fact, what Alexander proposes is a strategy of adaptive design for self-organization based on local rules and acting on the small scale to generate large-scale complex order. The configuration evolves with each step: a 'computation' that depends upon players' interactions. The final result embodies such advanced complexity that it could never have been designed all at once, or even drawn in an office.

§ 3.3.5 Games Support Open Communication

"*As the true character of gaming as a unique communication form becomes clear, its use as a 'Future Language' will become pervasive.*" [Duke, 1974]. In his seminal book, 'Gaming: The Future's Language', Duke analyzes how the human brain thinks through gestalt but uses language to express the thought, a sequential way of explaining a holistic nonlinear image; the receivers obtain the linear wording for complex forms and reconstructs them in their brain.

43 lanoire.wikia.com

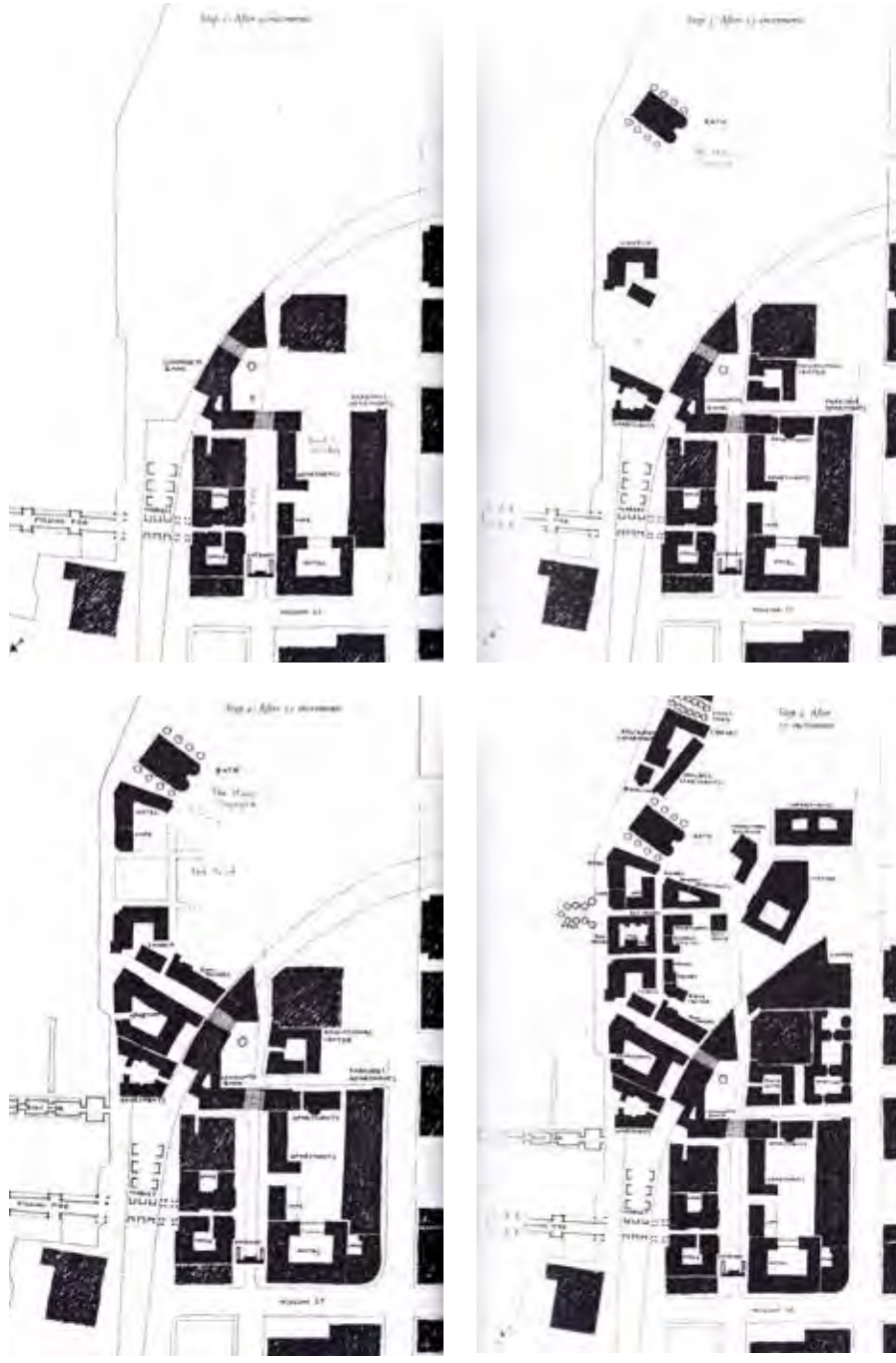


Figure 57
Iterative design development of San Francisco Bay by Christopher Alexander et. al.

This form of communication, Duke claims, is inferior to simulation; a language where an integrated form of interactive communication by human beings can focus on the future with ease. In the beginning of this chapter I identified the necessity of hybrid verbal and visual communication for inclusive urban methods.

Linked to this argument, is the communication gap between experts and non-experts elaborated earlier in this chapter. Professionals create and use a language about urban environment different than that of the 'ordinary' residents. As a consequence, "*People are put down by the elitist professional who quite literally speaks another language and they are put off by a technology that appears antihuman.*" stresses Duke and argues establishing a real dialogue about this multifaceted dynamic realm would be through the method of gaming which is a hybrid of visual and verbal, two way and interactive, inclusive and engaging from infants to elderly of cross cultures [Duke, 1974].

Technological advancements seem to prove Duke's prediction that games are the language of the future. In the first decades of the 21st century we are witnessing a world where games are becoming a ubiquitous medium in all walks of life: In medical puzzles they mediate millions players to help the experts[44]; in energy saving and sharing, games bring residents and policy makers closer in a search for solutions that are both socially and economically sustainable[45]; in elderly care, serious games allow family members to support professionals in the physical and cognitive rehabilitation of their old family members[46,47]; in personal training and coaching, games motivate individuals to fix and achieve their ambitions[48].

---

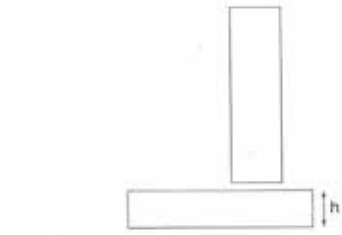
44 Foldit is a revolutionary new computer game enabling players to contribute to important scientific research. Please see fold.it

45 EnerCities is an energy and natural resource game that allows you to build a sustainable city while encountering environmental restrictions. Please see enercities.eu

46 Storyville Studios develops serious games to improve the contact between generations in a playful way. Please see storyvillestudios.nl

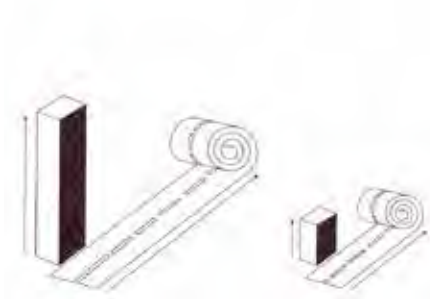
47 Silverfit is a specialist in geriatric rehabilitation using computergame technology to activate elderly people and make rehabilitation more fun, more effective and cheaper. Please see silverfit.nl

48 nike+ is an advanced app with personal training interfaces and a social digital environment where one can challenge other app users or collect positive feedback.

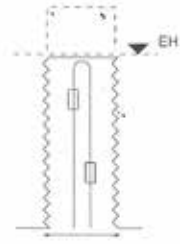


1 - Base Height - Resident District R6, New York

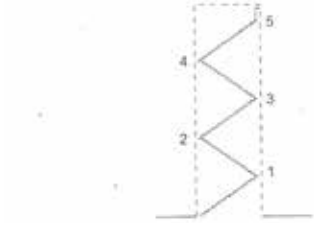
2 - Facade Transparancy - Seattle



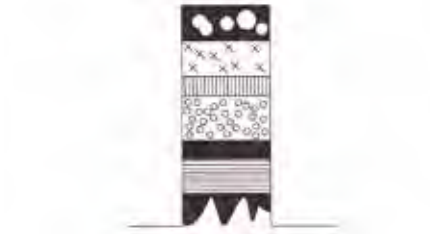
3 - Towers at Primary Street, Zürich



4 - Economic Height - New York, Chicago



5 - Storey Rule, Paris



6 - Vertical Assembly, New York

7 - Fodder Ratio, Ebenezer Howard

8 - Multi Funcion Streets, Jane Jacobs

Figure 58
Lehnerer extracts good urban rules in his book Grand Urban Rules. City Games can function as laboratories running and testing urban design rules.

As games spread into various fields, their capacity for effective communication is increasingly clear, and awaiting proper exploitation in the practice of city-making. Betaville is a digital medium to test scenarios and mediate negotiation between real stakeholders such as developers and landowners. It is based on proposals submitted by designers and seems to be an effective hybrid verbal -*through tweets of participants*- as well as visual -*through 3D modeling*- communication platform[49].

§ 3.3.6 Games Run on Rules

Games are based on simple rules that are compulsory for all players. Using these simple rules, players create unpredictable complexities. Take, as a prototypical example, the game of chess. With a few simple rules, players interacting sequentially can build a high level of complexity: a changing territory and battle sequence that is still difficult to predict today, despite its simple rules remaining stable for centuries.

An analogy between games and society can be drawn here according to the influential legal thinker Epstein who claims that a minimal legal regulation is necessary to address the complexity of a society -*explained in detail in the pervious chapter*-. His analogy translates well into the regulation of urban design, as games are good candidates for 'laboratory tests' of policies or other decisions, allowing rules to be evaluated before they are adopted and applied in real conditions. When the rules that govern cities are at stake, we must consider not only the rules that guide the behavior of individual and collective players, but also rules that guide the creation of the physical environment. Alex Lehnerer, an architect and the author of Grand Urban Rules, -*introduced in the second chapter*-, argues that good rules, beyond constraining a system, ensure creativity, freedom and fairness for urban systems [Lehnerer, 2005]. Just as in games everyone who takes part must play according to clear and transparent rules, all those taking part in an urban process are equally subject to a set of norms and regulations.

To gain an understanding for rules that free the thinking and actions of those who apply them, let us scrutinize the nature of rules; the proscriptive -*rules regulating banned conditions*- and prescriptive -*rules describing and facilitating in detail desired conditions*-.

---

49 Betaville is an open-source multiplayer environment for real cities, in which ideas for new works of public art, architecture, urban design, and development can be shared, discussed, tweaked, and brought to maturity in context, and with the kind of broad participation people take for granted in open source software development. betaville.net

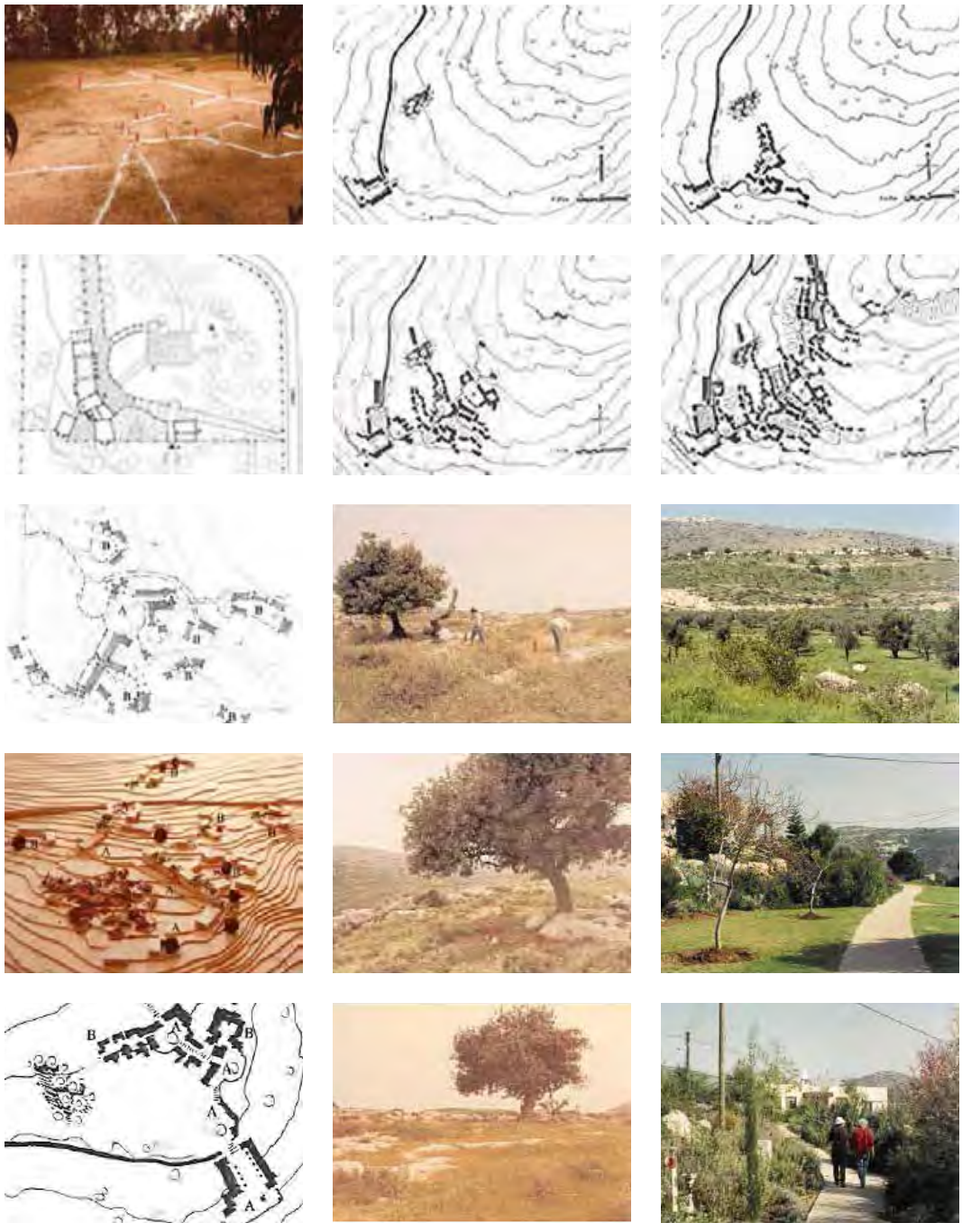


Figure 59
Architect Nili Portugali's collaborative village design experiment with settlers of Shorashim, Upper Galilee in 1982.

Grasping the different nature of these rules and how they impact systems will give an insight into what urban rules would trigger openness, inclusivity and creativity. The nuanced difference between proscriptive and prescriptive rules can be explained by clarifying the difference between European and American versions of football. Compared to 'soccer', as the Americans call the European version of the game to help highlight the distinction, American football has significantly more descriptive rules. Players must memorize sets of rules for specific strategies and tactics before they can move meaningfully on the play field. Players communicate through these codes, which to a large extent prescribe their moves. European football has comparatively fewer and simpler rules, and these do not include detailed descriptions of moves or sequences. This does not mean that teams do not strategize how they play. On the contrary, there is much more room for each player to interpret unpredictable situations. There is more space for a player's independently determined actions in soccer, within the bounds of a few proscriptive rules: rules that tell them what is absolutely forbidden. The analogy between games and social systems remains valid here for the types of rules applied to both games and complex social systems such as cities. Rules that communicate the limits of a system in a simple way, such as 'kicking only the ball and not each other', maximum building height or ideal density for a city, but do not prescribe in detail how to distribute the height and density in an urban site, or the style of a kick, create vital space for creative interpretation and negotiation between the system's players.

§ 3.3.7 Can Games Become Operational?

So far I explored how gaming resembles systemic thinking and supports self-organizing urban environments. From war-gaming to gaming for education, simulation, prediction, collective intelligence and policy making, a field of knowledge is in increase evolving through trials and errors since the sixties. While gaming for purposes of training, strategizing and learning is widely trusted, scientific foundation of gaming for prediction and policy making is still subject to questions as expressed by Mayer.

The curious question for city-making becomes whether gaming can serve as a method for collaborative decision making, co-creation of urban environments from seeding ideas to implementing plans. Beyond feeding decision making, can gaming become operational in producing collaborative urban schemes to be implemented? This question implies that gaming as a method would become a permanent part of city making cycles for collaborative actions from decision-making, to participatory budgeting, to crowd-building and maintaining cities.

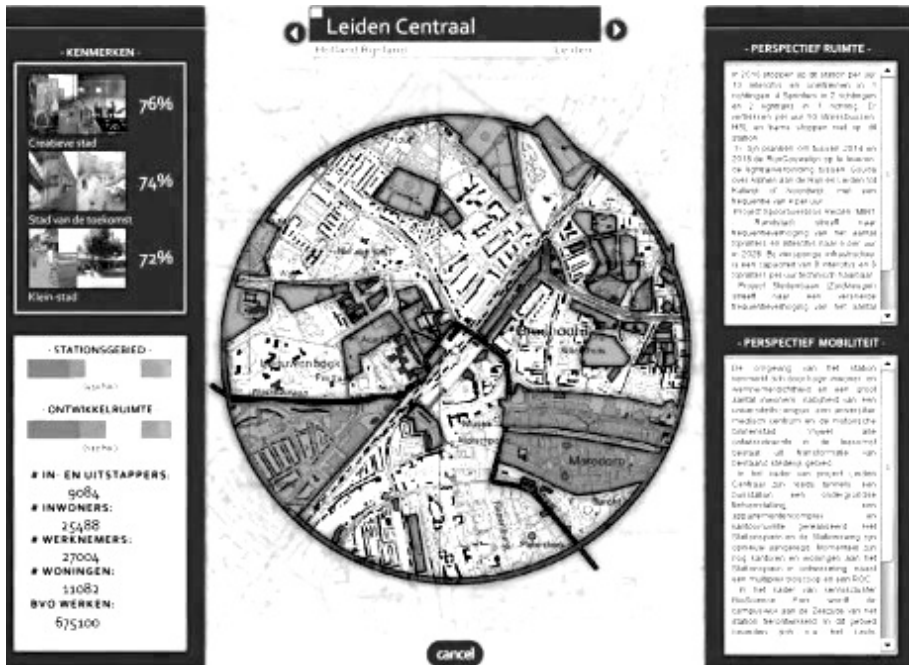


Figure 60
Screenshot from Sprintstad.

Figure 61
Gamers playing Sprintstad.

A number of visionary urban experiments include elements of gaming, and point towards its promise as a generative method for cities: Alexander's incremental design experiments for the San Francisco Bay waterfront from 1987[50], and Alexander and Nili Portugali's collaborative village design experiment with settlers of Shorashim, Upper Galilee in 1982 [Portugali, 2005]. Henry Sanoff travelled to various North American cities with his architecture students to offer participatory planning services through gaming in the 1980s [Sanoff, 1999]. Mayer and his team at the TU Delft have been consulting the Dutch public authorities through simulation gaming since the late nineties, supporting urban planning and policy making with urban strategy and management games such as Maasvlakte II, Sprintstad [Mayer, 2009]. Despite these precedents, 'City Gaming' still has many unexplored properties. Its applicability to self-organizing systems, combined with its online pervasiveness, promise to make it an effective and innovative co-creation process for making cities.

Gaming offers a unique medium in which the parameters of governance -*the power play between state authorities, market parties, individuals and collectives surrounding the formation of urban space*- and the parameters of the physical urban space -*topography, density, infrastructure, public utilities, and housing*- are all taken into account and influence policy and other decision-making as well as spatial compositions. Further, Mayer's study on policy shows that the hybrid nature of games is capable of integrating technical-physical with socio-political complexity. Gaming creates a trans-disciplinary condition where spatial design, political governance, social and cultural structures can engage in problem-solving through an interactive dialogue that crosses scales, visions and fields of expertise.

We also observe a general tendency towards a blurring of the traditional relations between market parties, states and citizens, a phenomenon discussed in the 'Technology Driven Populist Movement' section of the previous chapter. This transformation will no doubt influence the procedures of city-making in terms of the distribution of power and responsibility for making and maintaining cities. However, we cannot disregard the fact that existing urban planning and design procedures are not geared to open and negotiative processes. I should therefore stress the fact that gaming as a city-making practice remains hypothetical. Its use for such an operational, or 'real' purpose is new. Its integration into planning practice will require acceptance as a serious city-making and negotiation method by the agents who will utilize it, as well as alterations to the conventional procedures of city-making[51].

---

50 http://www.arch.ksu.edu/seamon/buttimer_chap.htm

51 A further debate on potentials of City Gaming for real urban procedures can be found in the final chapter.

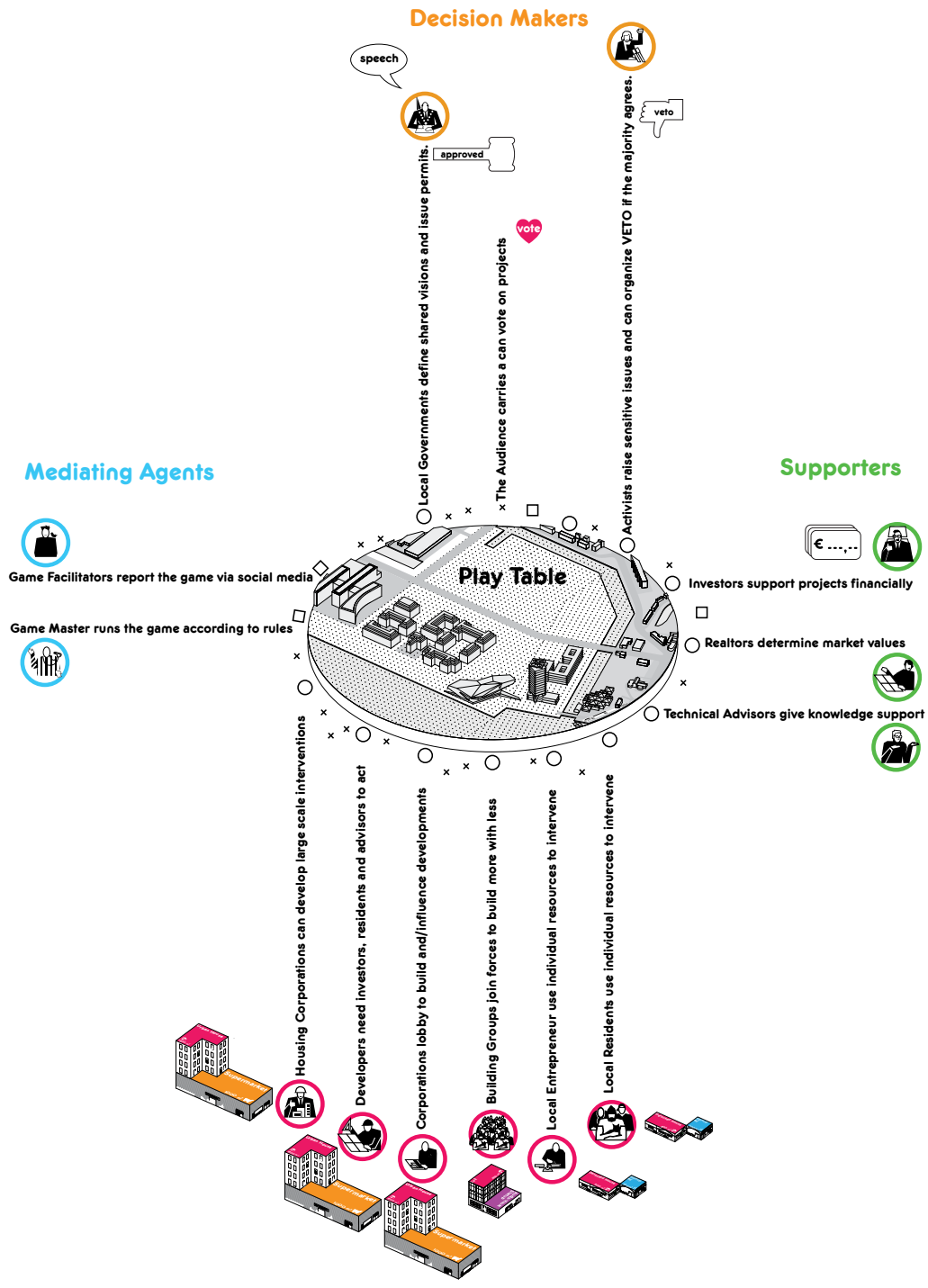


Figure 62
Agencies in the Generative City Game.

Before I can outline a strategy for infiltrating the existing planning system, I must first define the proposed operational gaming method for cities. Instead of inventing a new name for it, I will build on Portugali's term 'City Gaming', coined in 1996 when he examined cities as self-organizing systems through collaborative and iterative games [Portugali, 1997].

§ 3.4 Generative City Gaming

This work proposes Generative City Gaming to open up the city-making processes to larger crowds. The method is invented to bridge the gap between understanding cities as nonlinear, unpredictable and complex processes and the lack of present operational methods treating the city as a complex system. As the name suggests the method is geared for direct implementation of game outcomes in practices of city-making. Particularly the operational property differs from other gaming genres which aim at learning, training, strategizing, prediction and entertainment. Building on the tradition of serious games, Generative City Games revolve around real complex urban problems. Different than serious gaming however, City Gaming integrates both design and decision making dimensions, or the topological context and social and political structures of cities, in a generative medium for the purpose of making and maintaining cities.

Generative City Gaming is built to respond to real-world complexities of cities. The problem-solving capacity of City Gaming becomes obvious in urban questions where multiple stakeholders with various conflicts and interest are involved. Whether a new city expansion or renewal of an existing neighborhood, or regeneration of a train station node, or smart grid adoption of local communities with regard to government's energy policies, so long as there are multiple stakeholders with clashing interests the City Game method is relevant. Real urban urgencies define the narrative of the game, while existing power balances between politicians, technocrats, market and community determine potential implementation.

A Players

City Gaming is a multi-agent platform and involves human agents, in the literature also referred as 'free-form gaming' [Mayer, 2009]. Instead of running on a closed game software, free gaming opens up the course of the game to the dynamics between real stakeholders. This is how City Gaming can take into account the unpredictability of complex urban agents, typically impossible to model through mathematical algorithms.

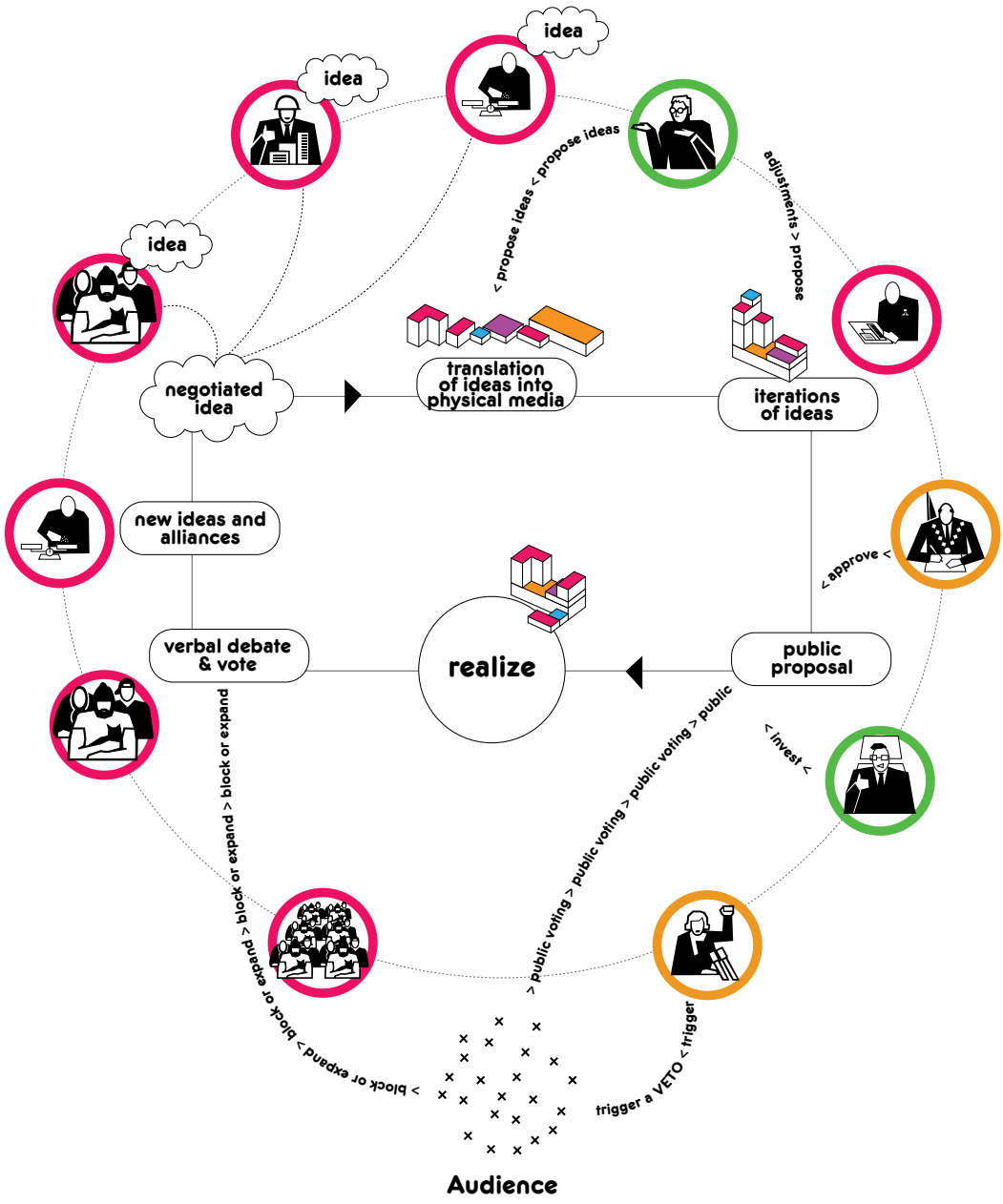


Figure 63
Diagram illustrates how the Generative City Game triggers the collective intelligence of players.

Stakeholders are mapped through an 'agent-network' diagram. Not only the traditional urban stakeholders but also hidden change-makers are mapped and invited onto the play field. This diagram visualizes how the interest and powers of engaged stakeholders relate. This inquiry is created during the game design phase and supports trust-building for the Generative City Game. Here all possible stakeholders are interviewed and invited to play. Every potential player is asked to name other potential players, independent from whether they are entailed in the official procedures.

The method can involve various actors as city gaming translates complex urban notions into simple game rules and constrains. The 'low threshold' helps participation of contributors from distinct disciplines and backgrounds.

Generative City Gaming as a participatory urban method helps facilitating the complexity of interactions amongst engaged players. The multi-agent play platform triggers collective intelligence of real stakeholders. Engagement of human agents through play leads to a community with loose ties. Community matures as urban players commit to shared visions and define own responsibilities to implement outcomes of the City Gaming [Tan, 2010b].

Generative City Gaming employs 'role-play' for incorporating diverse agencies influencing a given urban complexity. Using role-play, urban stakeholders influence the game according to their own capacities and interests. Role-play allows players to determine the course of the gameplay. As players interact with each other, through the free role-playing, they can change the rules the city game is running on. Players can either alter existing game rules or invent new rules to organize themselves.

Generative City Gaming uses exchange of roles during gameplay in cases of conflict and ultimate polarization between stakeholders. This tactic helps players to comprehend positions and behaviors of other players, and provides opportunities for consensus building.

B Interface

In urban processes the challenge of distinct languages used by experts and non-experts add up to the challenge of understanding position of other players. Generative City Gaming provides a hybrid interface where visual and verbal representations of urban processes and formations are integrated in a simple game environment. Low threshold interface, a modifiable 3D model supports communication of various experts amongst one another and with non-experts. Simple rules are designed in such as way that an ordinary player with limited knowledge in urban terminology can comprehend consequences of complex notions such as urban density, maximum building height, scale , etc.

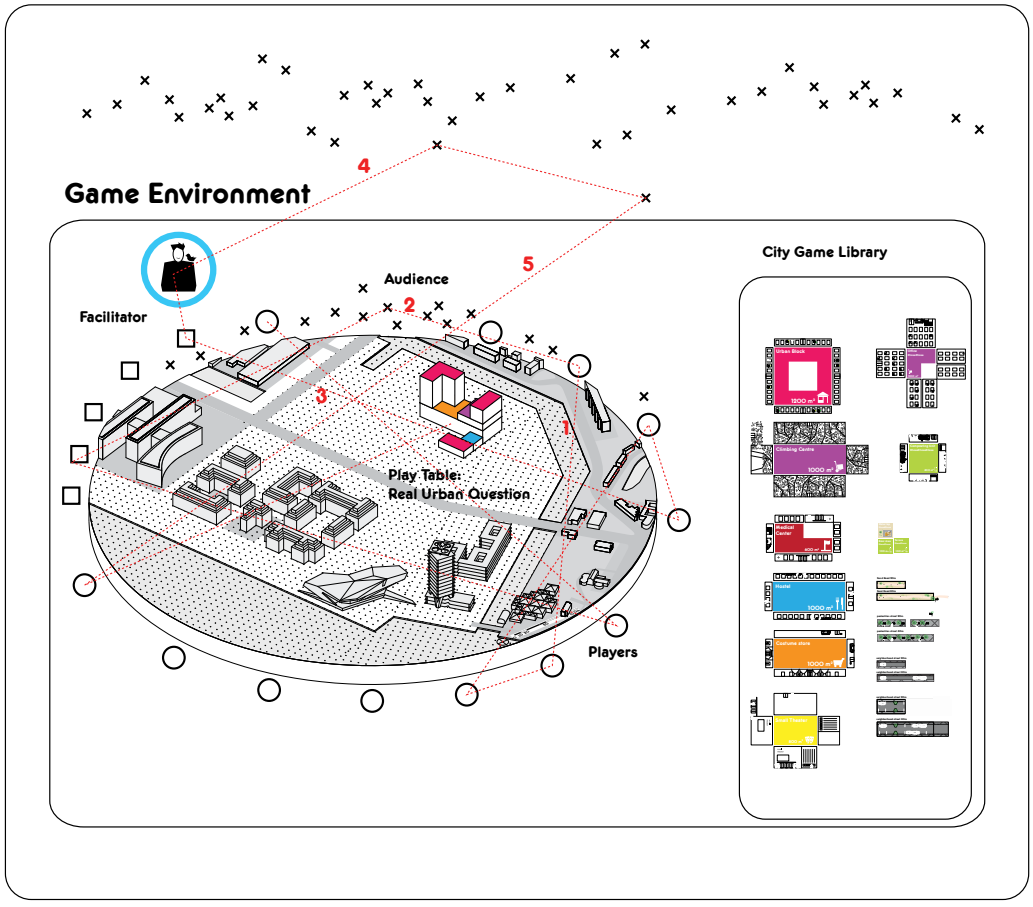


Figure 64
Diagram illustrates how Generative City Game triggers the collective intelligence of players.

Generative City Gaming takes place primarily in analog media supported by digital technology. Tools such as, urban data processing softwares, social media for sharing and spreading game play to larger crowds, become integrated into the analog game. Dynamic 3D city models receive data support from parametric urban models or physical installations become connected to social media through RFID. Continuous switch between face-to-face interaction and digital social media is a principle built in the Generative City Gaming. The digital recording of the analog game makes the

knowledge generated during the game available. Online logging of players' actions prolongs the analog play into the digital territory. Systemic registration of interactive play as well as further digital negotiation and storing relevant information warranties a learning environment for the method.

C Process

Generative City Gaming is modeled as an incremental and open ended process. The incremental development is ensured by simple and dynamic rules. It works in cyclical processes, where each sub-cycle in the game can produce particular output within the ongoing process. The method as a non-ending process overlaps with the understanding of city as a self-organized system, which does not have a final form.

Accepting the impossibility of managing cities from above or from below only, Generative City Gaming proposes governing cities by unexpected alliances between all engaged bottom-up and top-down players. Generative City Gaming conceives the city as a process generated by multiple agents of various powers and interests. This approach diverts from the dualistic participation theories, splitting city's generators into bottom and top. Generative City Gaming builds on self-organizing processes managing urban emergence and evolution. This choice sharply diverts from traditional city planning games and simulations assuming a top-down authority managing cities. Imagine how, SimCity, the most popular city simulation game, revolves around a mayor in charge of founding and developing a city from scratch, maintaining the happiness of the citizens while keeping a stable budget. Unlike SimCity in Generative City Gaming, there is not one player in charge, but various players or their partnerships take charge for various phases.

Generative City Gaming, working with the principles of self-organization, does not impose an assumed urban order. Instead, engaged players create urban orders, which emerge from their interactions. Unpredictable partnerships, formed during the play, undertake action for building and/or renovating the city.

D Outcomes

As the purpose of Generative City Gaming is direct participation in ongoing urban processes, the outcomes it generates becomes critical. Generative City Games produce outcomes from decisions to unexpected partnerships, from highlighting design ideas to precise collaborative urban design plans. The game outcome could reveal a set of urban scenarios to be considered by decision makers, or new change-maker agents. Their initiatives can be highlighted, or new unexpected partnerships of existing traditional urban players can be formed. Hidden urgencies to be placed in urban agendas can be mapped, or new urban rules can be invented by participant during the play.

As the Generative City Gaming targets collaborative city making and maintaining, possible clients for the method are local authorities. These include political or technical departments of municipalities, as well as housing corporations, urban developers, organized urban communities and NGO's. Depending on the narrative of the urban question, Generative City Gaming helps consensus building and conflict resolution amongst real city actors.

This chapter attempted to reveal the key characteristics of the self-organizing cities and draw parallels to gaming as a planning and production method that can facilitate these complex urban processes. The following chapter reports on six case studies where the evolving Generative City Gaming method was applied.In so doing it tackles the main question that emerges from this chapter: How can we build on these characteristics, and the potential that gaming-for-city-making shows, to implement a generative model that gathers, implements and evolves collective urban intelligence?


HEREN-
HUIS
Urban Farm
VRIJ-
STAAND
HUIS
Garden
100 m²

4 Generative City Gaming Experiments

The previous chapter provided a conceptual survey of gaming as a method for cities in their emergence and evolution. Gaming has been put forward as a collaborative method; inclusive, playful and engaging. Finally, the question was raised whether gaming can be utilized as a generative and recursive model through building a hypothetical method called Generative City Gaming. Upcoming sections depict six-year-experience of testing and evolving this method in various cities.

The First Generative City Gaming experiment was played in Almere Haven in 2008 by a group of international design, sociology, planning and anthropology students who were invited by the TU Delft and the International New Town Institute -INTI. Since 2008, City Gaming has been applied in more ten urban situations: Almere, Rotterdam-Oude Westen, Istanbul-transformation, Amsterdam-Overhoeks, The Hague-Binckhorst, Almere-Oosterwold, Tirana, Istanbul-governance, Amsterdam-Van der Pekbuurt, Amsterdam-Van Gendthallen, Brussels and Cape Town.

I chose to report six cases in particular as they stand for new developments in the evolution of the City Game. Almere Haven was the first experiment, with students conducting testing whether a game running on self-organizing mechanisms could provide an urban order for urban expansion. Oude Westen raised the question whether design could be implemented in a City Game. Istanbul was the first game we played with real urban stakeholders, while Noord was organized to see whether the City Game outcomes could jump over to the reality. Oosterwold was a City Game to test rules of an urban strategic plan for implementation.Finally, Van Gendthallen game was designed so that players of the game could construct the outcomes of the gaming process. The rest of the games have their particularities stemming from their localities, but as the basic structure of the City Game method is repeated without a distinct invention, we chose not to report them here. The online documentation of all City Games is to be found on the social media[52] platform playthecity.eu.

52 playthecity.eu social media website is powered by anyMeta. anyMeta is a community management system that offers a sustainable information structure for internet projects. anyMeta is powering over 40 different web sites. The system allows visitors to actively participate on the website, while the resulting information automatically appears in the right place, within a relevant context. This makes anyMeta extremely suitable for social networks, knowledge management, collaborations, and story telling.

Figure 65
Sportpark de Wierden development area for 400 new homes and Homeruskwartier for 3500 new homes.

Game reporting followed a clear structure for each case: after introducing the context, necessity and the task-giver for each game, we clarified the hypothesis, the aim of the game experiment, urgency of the urban question, players involved, the City Game interface, the rule set for play and design, the process and eventually the outcomes. The questions were raised based on the challenges and hypothesis of the experiment and elaborated at the final part of each City Game report. Some of the questions raised as a result of each game found their answers in a consecutive game which interlinks these independent experiments.

The 'City Gaming' method is evolving and developing; new features are added such as the growing City Game Library[53] in various languages[54], RFID-based online polling, connection to social network website playthecity.eu. The description of City Gaming given in the previous chapter as of 2014 is dynamic and subject to changes based on new findings as the City Gaming method matures and gets implemented in various urban contexts the world-over.

§ 4.1 Play Almere Haven: The New Town Expansion of Sportpark de Wierden

In the spring of 2008, the International New Town Institute invited me[55] to run a design workshop on designing new New Towns with a team of international students, using an 'organic' process. We took this invitation as an opportunity to test our theoretical findings on the immediate questions that the city of Almere is facing, where INTI is based. Two upcoming plans for the growth of Almere caught our attention, as they needed to be developed through an 'organic' process according to the vision of alderman Adri Duivesteijn. These were the Homeruskwartier, a new district on the western borders of Almere with 3500 new households, and an expansion plan of 400 households for Almere Haven Homeruskwartier had a very clear strategy with an online legal plan where individual plots were sold to future inhabitants, with simple rules for their development. In Wierden, the extension of Almere Haven, we did not observe a comparable vision addressing the desired organic growth. Thus we decided for this plan as a case-study, as it more urgently required ideas and suitable methods for organic planning.

53 A collection of modular urban design unit in 1:300 scale for homes, shops, schools, libraries, museums, sport centers, agriculture, infrastructures, events and public spaces, has been developed for the 'Generative City Gaming'. The collection is carefully design for engaging non-designers with easy to understand architectural plans and facades. As of 2014, the library have over 10.000 pieces, in various languages, e.g. Dutch, English, Turkish and Xhosa.

54 Please find the City Game Library Appendix #4. Initial game library was created in Dutch, later editions included English and the South African local language Xhosa.

55 I was advised by Prof. Juval Portugali and Prof. Arnold Reijndorp in this experiment.

Figure 66
Proposed expansion area for Wierden.

We also found that Wierden, the urban expansion growth adjacent to the oldest settlement area in Almere, urgently needed the development and implementation of collaborative planning tools. We held meetings with the city about our approach and its possible applications in Wierden. The local government of Almere Haven was open to sharing the information we needed to get started. However, they remained critical about self-organization theory and the relevance of the interactive play method for their daily practice. At this point we need to keep in mind that in 2008 there had not been any applied examples of an evolutionary plan in the Netherlands.

§ 4.1.1 Aim of the Game

The main question for Wierden experiment was whether a self-organizing urban development process could produce an urban design scheme with recognizable urban patterns and a clear vision. Could a common urban vision emerge amongst diverse players acting in their own individual interests? If design principles and visions would emerge in this process, when and how would they occur? How could these emerging urban design patterns be traced? What kind of urban structures would emerge, such as urban fabric, urban network, public spaces and infrastructure? Could the outcome of such an evolutionary process eventually be translated into a legal urban design plan?

The City Game for Almere Haven is an experiment testing the process and outcomes of an incrementally evolving urban expansion plan. The hypothesis of the Play Almere Haven experiment is that self-organizing development processes can produce urban design schemes with clear visions and design principles. We expect to trace design logics as they are invented, implemented and repeated by the players in the City Game environment, just as we explored urban design rules and orders of the informal town Gulensu in the second chapter. This time the context is an expanding new town rather than a growing informal city. We want to use the game experiment as a controlled urban design laboratory to simulate an emerging incremental new town. We do not aim to implement the outcome of this process. The question of whether such a process could replace current practice of generating urban schemes remains to be explored in the future.

§ 4.1.2 Almere Haven's Urban Question

The City of Almere needs to expand its Haven *-harbor in English-* district through an open and collaborative process by engaging its current and future inhabitants [City of Almere, 2012]. The main motivation behind the growth is the underuse and decay of public utilities, as well as an aging population in Almere Haven, the oldest neighborhood of Almere.

A Public Utilities under Stress

22,000 people live in Almere Haven today. The official 1976 plans were for a town of 30,000 inhabitants [Rijksdienst voor de Ijselmeerpolders, 1984]. As public services were built to serve the fully grown town with young families, some of the primary schools and community centers currently suffer from underuse. The city introduces 400 new homes and a supermarket to improve the use of services in de Wierden. New construction will be undertaken in the green zone indicated on the plan, an area preserved for future growth in the 1970s. Situated at the northwestern edge of Almere, these 20 hectares of land are surrounded by sport fields, a canal, temporary housing enclaves, and the existing de Wierden neighborhood.

B Graying Population

Diversifying the demographic composition is the key motivation behind the Wierden plan. In the late seventies, young families were the majority populating the Haven district. Currently, the overall population is graying dramatically as the pioneers get older and their children leave the town in search of education and jobs. Thus the local government sees injecting Almere Haven with a new generation of young families as a way of balancing the aging demographics.

Figure 67
Play Table Almere Haven.

C Mono-Functional Development

Beyond the mixed social structure, the desire to achieve a mixed-use new town can be traced in Almere's early planning documents. Despite this, most Almere districts are planned as mono-functional quarters. Achieving a mixed-use city is still a primary target of today's city officials. Again, paradoxically, the Haven development has been envisioned as a housing development with a renowned supermarket chain: Albert Heijn -AH. Although AH is a service required, it does not bring the sort of diversity and community engagement for the envisioned mixed used new town.

D Open Planning

As mentioned earlier, the current Almere government and the particular project team of the city planning department aims to initiate an open and collaborative plan-making process for Sportpark de Wierden. The motivation for this is to diverge from the top-down planning tradition practiced throughout the new town's history. Despite the local government's intention to run an interactive and transparent consultation process to plan the new development, it is unclear how this process will be managed, what methods and tools will be in charge.

This challenge triggered the design and implementation of the City Game 'Play Almere Haven'; designed to test a self-organizing development process for this specific case. We will later discuss whether the outcome of such a City Game could be considered as a method for generating collaborative urban design schemes for cities.

§ 4.1.3 Designing the Setting for Play Almere Haven

The play setting is a game table representing Sportpark de Wierden, the designated site for the future growth of Almere Haven. A 1:200 physical scale model forms the game table. A stack of model elements consisting of 400 units lays adjacent to the game table. The smallest gaming piece is a 100 square meter unit representing a single house. To achieve larger block sizes these units can be combined. The 1:200 scale was chosen so that the game table fit the public hall where the game took place, while the smallest gaming unit is an appropriate size for the players to play with comfortably at this scale. The physical model evolves during the game as players place the model elements on the table to visualize their intentions in a fast and simple way. A video camera fixed to a tripod recorded the top isometric view of the game table. A dynamic camera recorded player's conversations and took photos. Fifteen players, role-playing the investors or the future residents in the game, took their place around the model to interactively perform the development process.

§ 4.1.4 Rules for Play Almere Haven

In 'Play Almere Haven', players tackled the challenges as described in the section on de Wierden's urban question by developing the new town expansion accordingly. The City Game did not provide any predefined urban design rules for responding to the urban task. Neither the game designer nor players agreed on an urban vision in advance. The decision to not impose predetermined design solutions was in line with our assumption that such design rules and order would emerge as the City Game unfolds. Thus, the evolutionary process of play involving multiple parties simulated an interactive collaboration to reach a shared, and clear, design order.

While players did not follow any urban design guides, the type of actions they performed in the City Game were strictly regulated by organizational rules that informed the game process rather than the formal outcomes. These rules were designed in such a way that the City Game was an interactive multiplayer process that grew the city incrementally.

Players followed their own interests and visions in the absence of a given common design vision. They reacted to other players and earlier development decisions taken by other players. All the participants were aiming to find the best fit location for their individual visions in any given round.

We designed the following organizational rules to fulfill the necessary conditions for an interactive, collaborative and evolutionary process:

A Sequence Rule

Participants play in sequence.

B Respect Rule

In case of conflicting interests, later acts implemented in the game have to respect all previous decisions.

C Density Rule

The City Game ends when the entire program is distributed across the given area of play.

To keep this process coherent, and reflective of the real conditions of the de Wierden development as described by the municipality, we defined minimum constraints on the density developed and the borders of the area of play.

- We assume the urban program [400 homes + retail] defined by the city as a given.
- We assume that the geographical borders of the plan remain as foreseen in official plans of the city.

D Access Rule

All game units need road access.

§ 4.1.5 Almere Haven Players

All players followed the same rules and had the same agency or role in the game; that of a potential resident searching for the best location. They took on the role of a future inhabitant who is a small or medium scale investor in Sportpark de Wierden. Obviously, several other agencies would become active in the development process in reality, such as the local government, housing corporations, developers, NGO's, contractors, designers, activists and others. The aim of the game was to trace whether a design order could emerge purely out of the interaction of the end-users' interests. This decision was informed by Informal towns, explored earlier in this research. In the realization of an informal town, residents undertake a large portion of the development task themselves, although the city, contractors or subcontractors remain indispensable participants as clarified in detail for the gecekondu neighborhood of Gulensu in the second chapter.

The productive collaboration between players, who represented different types of small and medium-scale 'resident' investors, was carefully observed by a referee or a game master. In situations where the self-decision making process of players failed, such as an unsolvable conflict, the referee called for public voting. It was important that the referee knew the dynamics of the game and was perceived as a relatively neutral individual by all players. Professor Juval Portugali, a member of the advisory committee of our game design team, took on the role of game master[56].

56 In the Play Noord City Game in 2011, also reported in this chapter, we invented a mechanism where activists and policy makers could take over the decision making by similarly calling for a public vote.

Figure 68
A series of photos illustrate the player's negotiations.

§ 4.1.6 Play Almere Haven Process

A Preparation Process

For organizational reasons we chose to represent end-users instead of organizing City Game sessions with the participation of all the possible end-users. 400 moves -*that is, placing a model element of the initiative such as a living, working or retail space on the game table*- were undertaken sequentially by 15 postgraduate students in architecture, planning, sociology, and anthropology who traveled to Almere Haven from India, America, Kenya, the Netherlands and Turkey. These students simulated the possible investors in such a development in Almere Haven.

Prior to the game we organized a week-long research camp in Almere Haven to prepare the players. Over the first two days, the students conducted questionnaires with one hundred households. Interviewed families were chosen at random and equally spread across the ten neighborhoods of Almere Haven. On the third day of the research camp we analyzed and extracted interview data to create various profiles representing Haven residents. The questionnaire collected data about occupancy, the household members, their wishes for living and working, preferred housing typologies, adaptations made in their houses, and other local-scale initiatives such as entrepreneurship [Appendix #1 Almere Haven Survey]. Considering the analysis of this data, the players took on profiles which 'sampled' a range of existing Almere Haven residents.

Every player chose one of the fifteen avatars of Almere Haven inhabitants to represent in the game. To simulate the variety of residents that make up a real city, players changed their profile for every game round. At the end of the thirteen rounds, the players had settled all 400 units of model elements on the game table. The whole game lasted three hours.

Later, we broke down the game footage into its thirteen constituent rounds of play and traced how the interaction between players was projected onto the City Game table in each round.

B Play Process

The City Game progressed as each player came forward and announced their own profile. Next, the player chose the preferred location in which to invest for their own initiative. All players played in this format sequentially representing diverse profiles. Individuals' seemingly random or unexpected living, working and leisure desires became meaningful as a critical mass of actions with clear patterns started emerging. It is important to note at this point when the game environment is too large, players find it difficult to recognize order and generate rules to follow. In the test games before playing the final game, participants found the need to redefine the site dedicated to urban expansion. The fields in the north surrounded by older trees were kept outside the game table by the players as a result of the test games.

As the interests and plans of each player were revealed on the game table, conflicts and collaborations started happening. Opposing interests and negotiations helped players to clarify their choices -*such as whether to live in an urban or rural environment, with higher or lower density, in high-rise or low rise buildings, with collective or individual life styles, with mixed or homogenous program, or on green, water or landscape.*

Figure 69
Map of interviewed neighborhoods.

C Spatial Inventions and Patterns During the Play Process

During the first round of Play Almere Haven players enjoyed the freedom of fulfilling their individual choices of a best fit location. As early settlers, they were free to define the physical, social and environmental conditions of their inhabitation, just as a pioneer in an informal town would. During the second round, we could observe random tendencies for detached homes, urbanity or collective living. However, a clear direction for an overall vision did not yet occur at this stage.

During the third round, we could start to discern the general preference of the players for a low-rise, dense residential community integrated with individual retail and office units. This phase also saw the creation of a collective enclave with a shared garden on the western part of the site.

A new trend also began in this round, after one of the players built his residence with an advertisement studio along the creek defining the southern borders of the game table. Other players recognized the advantages of settling along the water and copied this behavior in the fourth and fifth rounds.

The sixth and seventh rounds witnessed a break from the general low-rise high-density development with the emergence of a new typology: a high-rise urban block started rising where two main roads intersected towards the center of the site. During this phase players debated about the centrality of the developing town. This moment was the first time players raised issues about the whole, or shared urban vision, alongside their individual visions. Was the new high-rise development representing the center of the evolving town? Did we need a square here? Did we all agree on the road network, which started emerging organically along the homes and commercial and cultural workspaces? If agreed on the new centrality, did we need to adjust the road network? Did we need a bus stop? How could we expand the bus network? The eighth round witnessed discussions on such public matters and agreements on the road network, public utilities, squares, and where higher densities could be located.

The land along the water and road network was already fully occupied by the ninth and tenth rounds. During the eleventh round players shifted towards the inner parts of the road network. We observed the careful invasion of the land around detached structures with open green around them that had settled in this area in an earlier phase. This was the period where most NIMBY[57] behavior was triggered in the game. The final two rounds did not witness any new spatial trends; players mainly kept to the collectively settled rules of settlement and thereby strengthened the emerging orders.

The players located the predefined program, 400 households mixed with work and retail spaces, in thirteen rounds. The self-organizing nature of the development allowed various recognizable spatial orders to coexist. While those that emerged earlier ran their course, innovations emerged as they were supported and followed by multiple players. The diagram below illustrates different phases of the design game based on the different rules that emerged over time.

57 An acronym for the phrase Not In My Back Yard.

§ 4.1.7 Play Almere Haven Outcomes

The process of play revealed diverse design trends emerging throughout the City Game. Urban design choices were made to clarify questions of urban density, building typologies, infrastructure and urban land use.

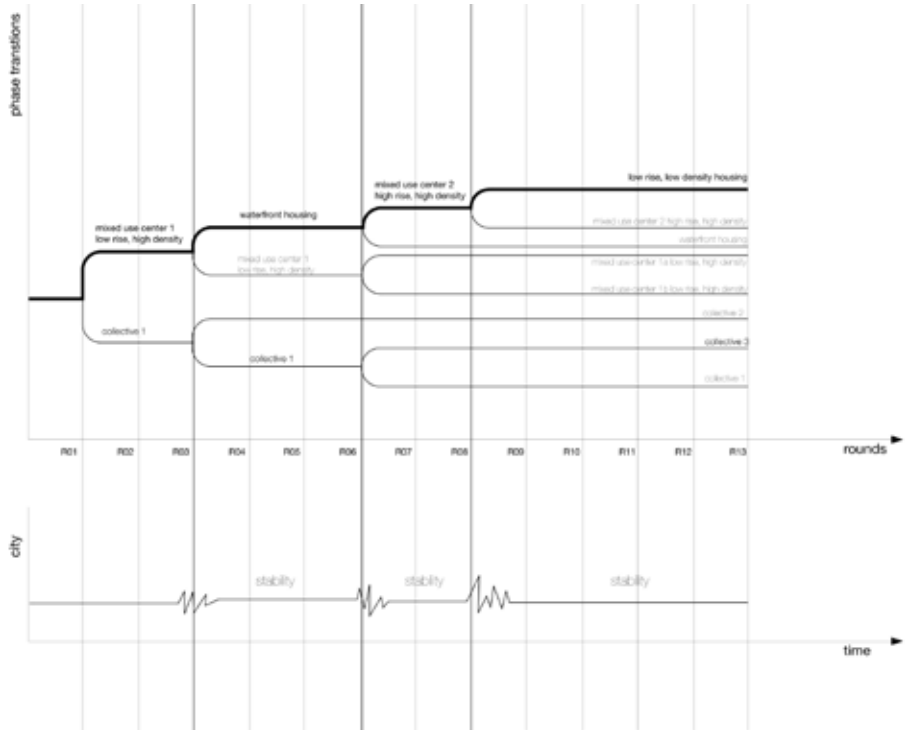


Figure 70
Phase diagram indicating orders throughout the play process.

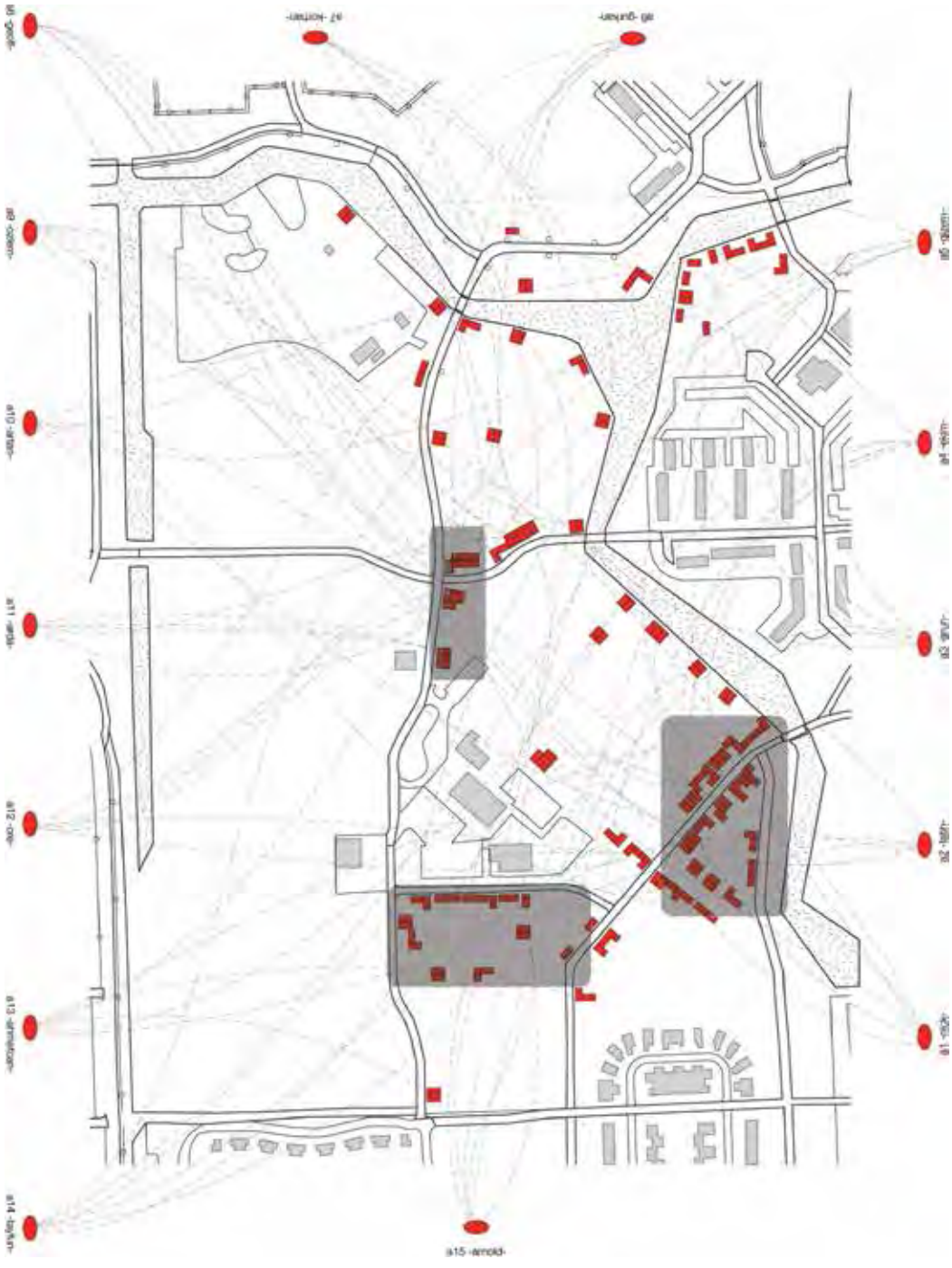


Figure 71
First two play rounds of Play Almere Haven.

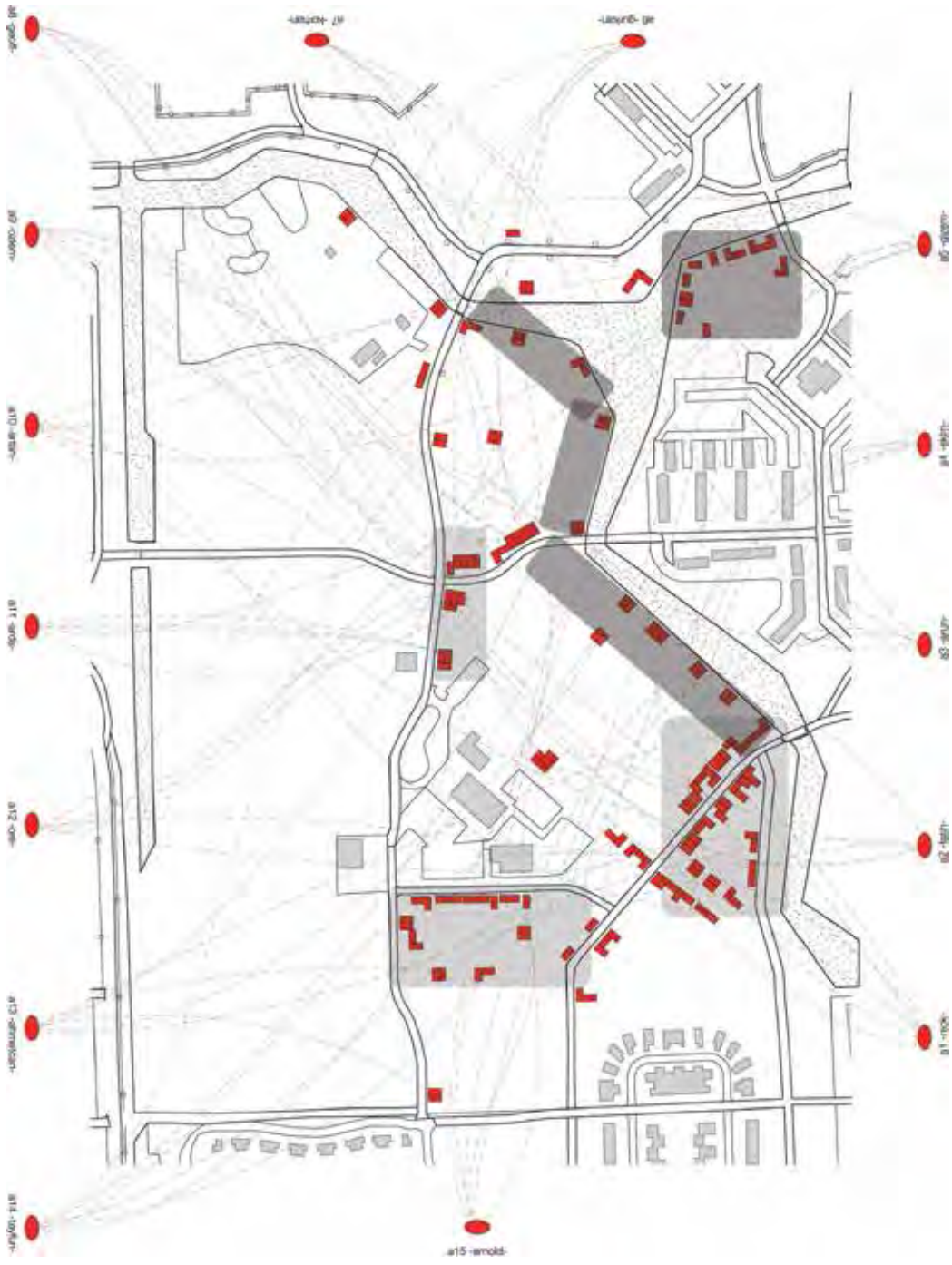


Figure 72
Third to fifth play round of Play Almere Haven.

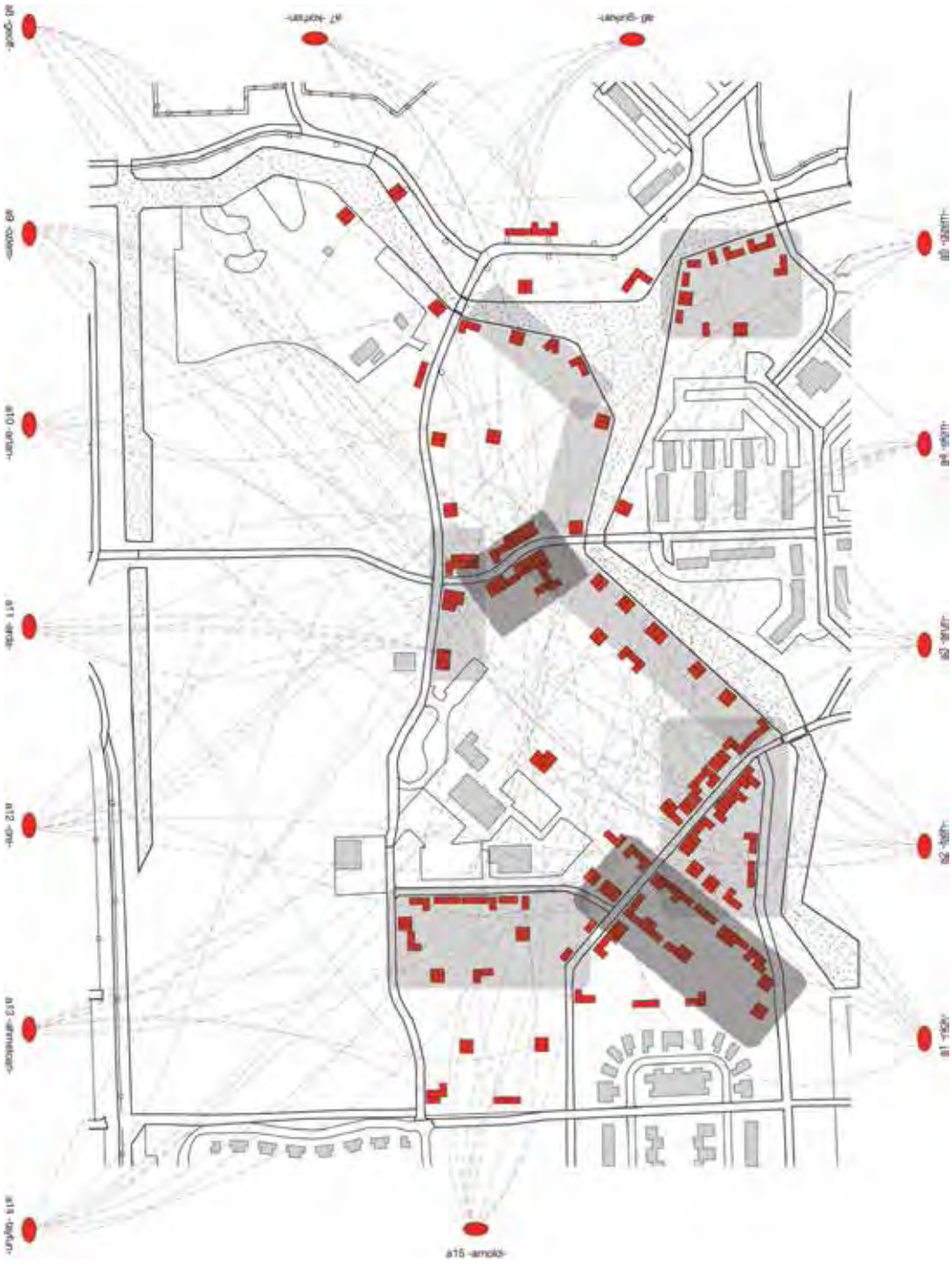


Figure 73
Fifth to eighth play round of Play Almere Haven.

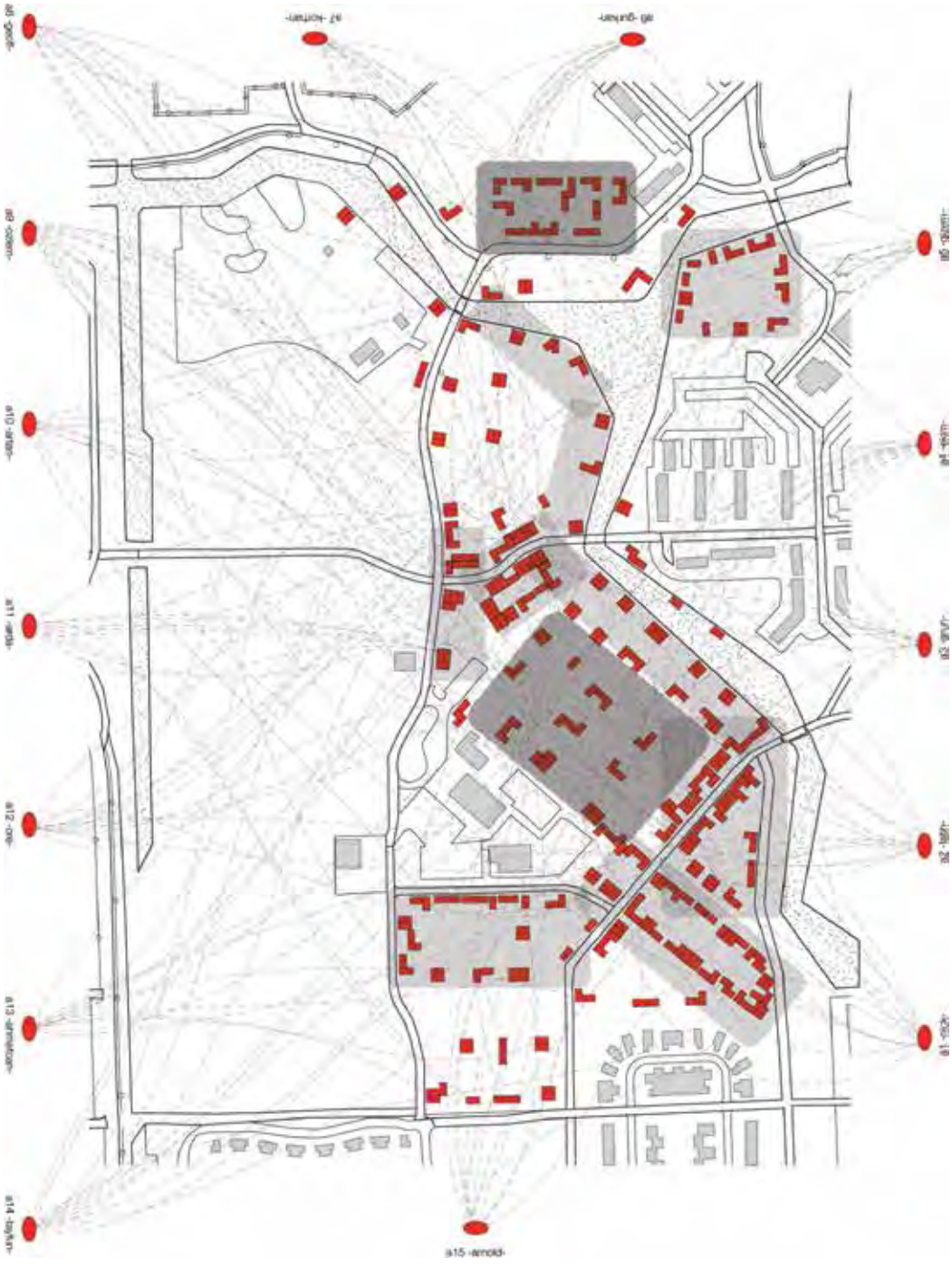


Figure 74
Ninth to twelfth play round of Play Almere Haven.

A Low-Rise and High-Density

The low-rise high-density development principle created during the first rounds was followed until the end of the City Game. Thus, players practiced the rule of urban density as an overarching order throughout the process. Despite this dominant choice, opposing positions such a high-rise tower block and a number of low-density detached villas were also possible within the overall urban scheme. Thus, while the main order was created and then generally accepted by the players, exceptions could still find their space within this process.

B Organic Street Network

As the game was governed by the personal and local interests of individual players, we were particularly curious about the emergence of a public vision and its translation into space. During the experiment we observed that the conflict between multiple players' interests helped to raise questions about centrality, mobility, infrastructure networks and public spaces. This was most evident during the sixth and seventh rounds, when players used the existing road junction to locate a high-density mixed-use program. This generated a general discussion, or conflict, involving most of the players which was resolved by defining a centre for the development, and then creating a dedicated bus-lane with a stop, a public square [indicate on the maps] and street network leading to the square. The road junction was accepted as the settlement's new center was linked to the existing bus network connecting Almere's neighborhoods. The street network was laid out by the shortest lines that made the emerging settlement accessible. The settlement was comprised diverse typologies, from collective enclaves adjacent to single villas to high-rise blocks of various sizes. Accordingly, the building islands defined by the road network followed the diversity of living forms and landscape properties of the site rather than a predefined grid.

C Fine-Grained Urban Program

The outcome of the game was a fine-grained mixed-use urban fabric. This was achieved by single investors inserting their own initiatives in formerly unforeseen locations. In this process the given non-housing program -*one supermarket*- has been replaced by the smaller retail units and workplaces of entrepreneurs. Within this organically grown mixed-use-scheme, we could trace activity patterns such as clusters of shops and cafes in the high-rise block in the center, waterfront restaurants, and studio or garage spaces for the creative class in individual homes. The collective housing enclaves included shared nonresidential program such as a fitness studio, communal launderette, a yoga salon and collectively owned offices.

D Diverse Urban Form

Players created diverse housing types, such as collective housing enclaves, a linear waterfront development, closed low-rise city blocks, detached houses surrounded by open green and a high-rise city block. These were formal orders on the urban design scale. During the game, players also introduced habitable bridges connecting buildings, ground floor gates opening urban blocks or 3D voids within the high-rise block. However, these architectural decisions were rather rare, and it was therefore difficult to recognize patterns or architectural orders. Formal architectonic choices remained limited mainly because of the abstract nature of 1:200 scale in architectural design. Urban types and their organization, rather than architecture, constituted the formal outcome of the experiment.

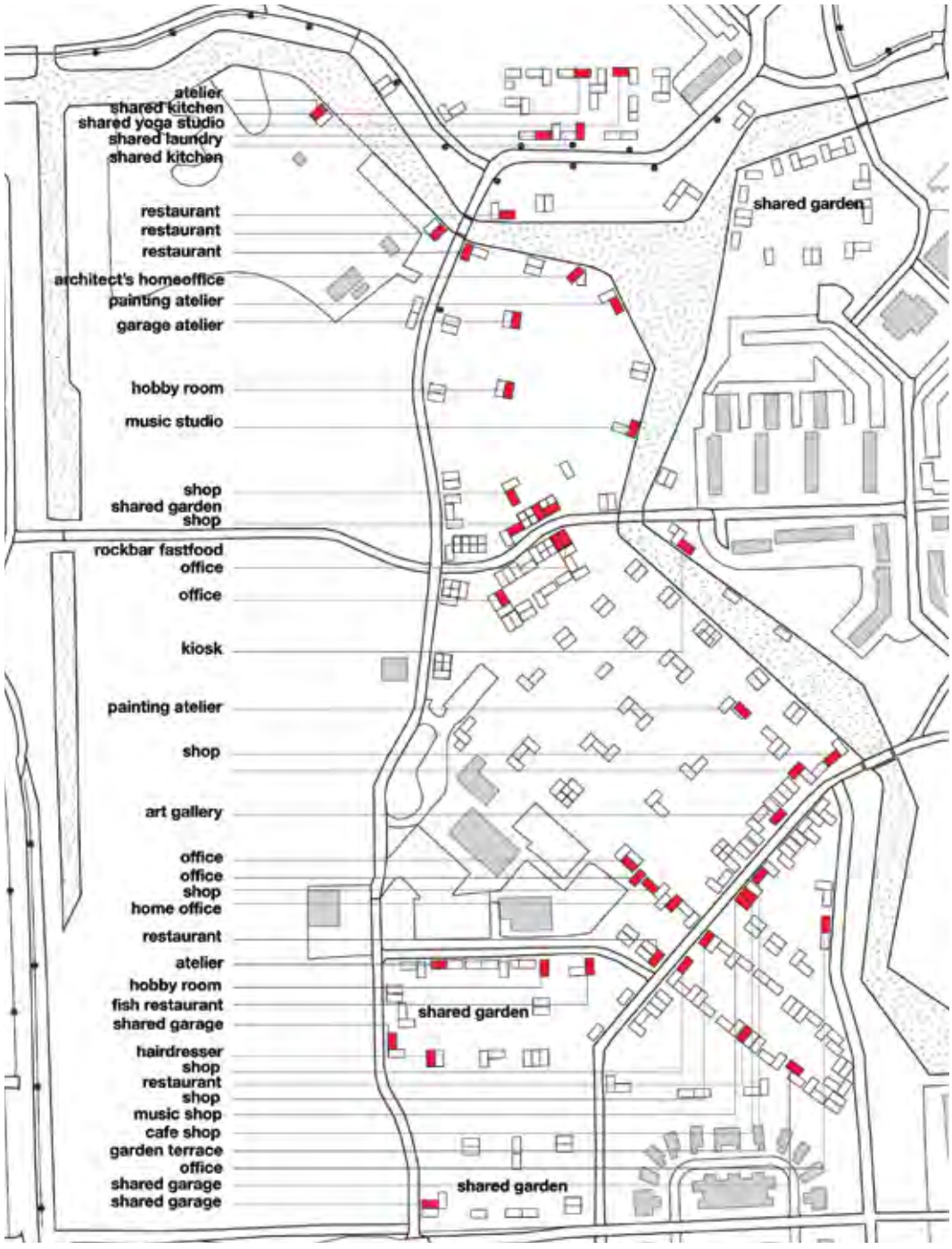


Figure 75
Ninth to twelfth play round of Play Almere Haven.

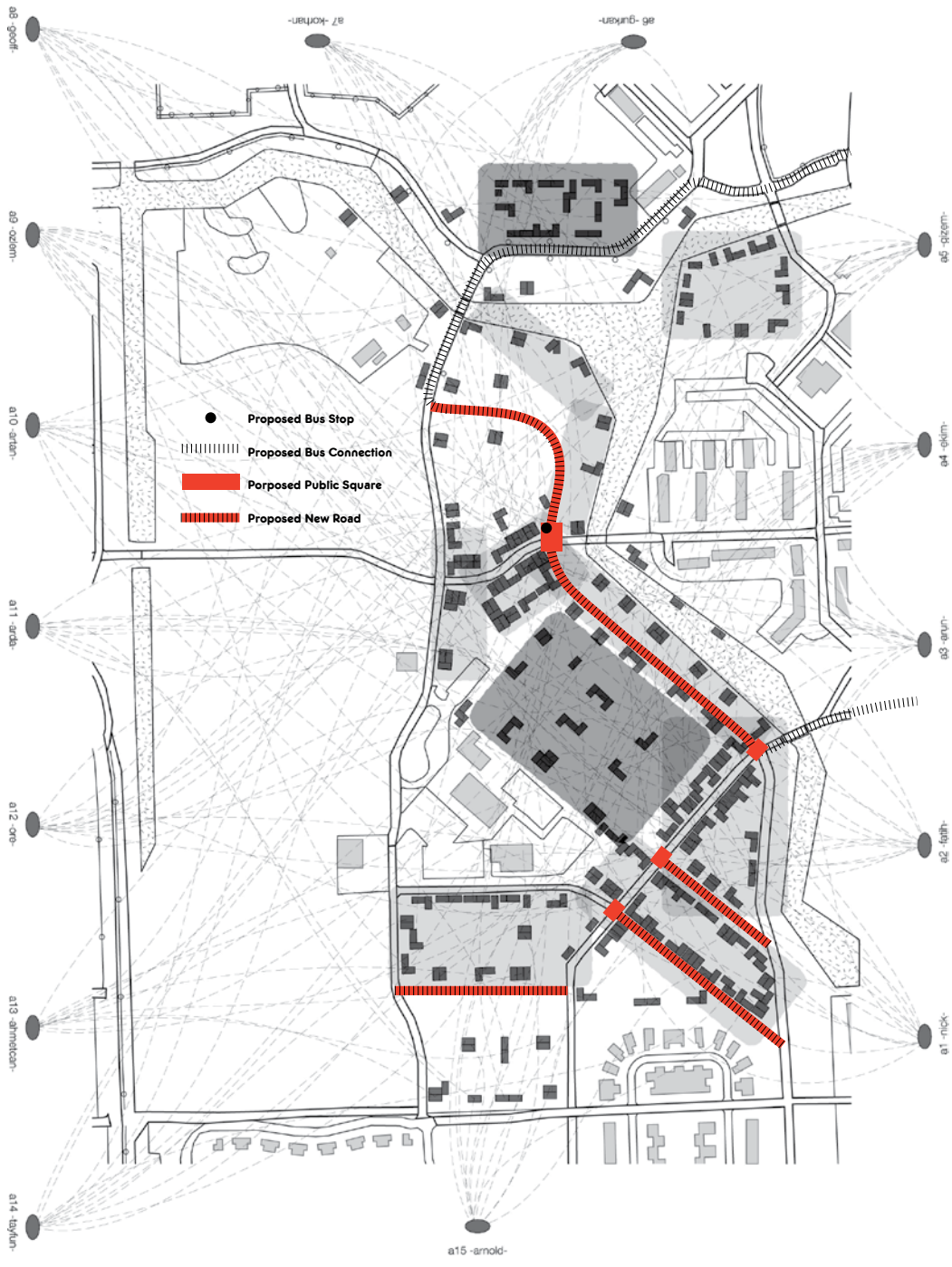


Figure 76
Map illustrating the public square, bus lane and the street network.

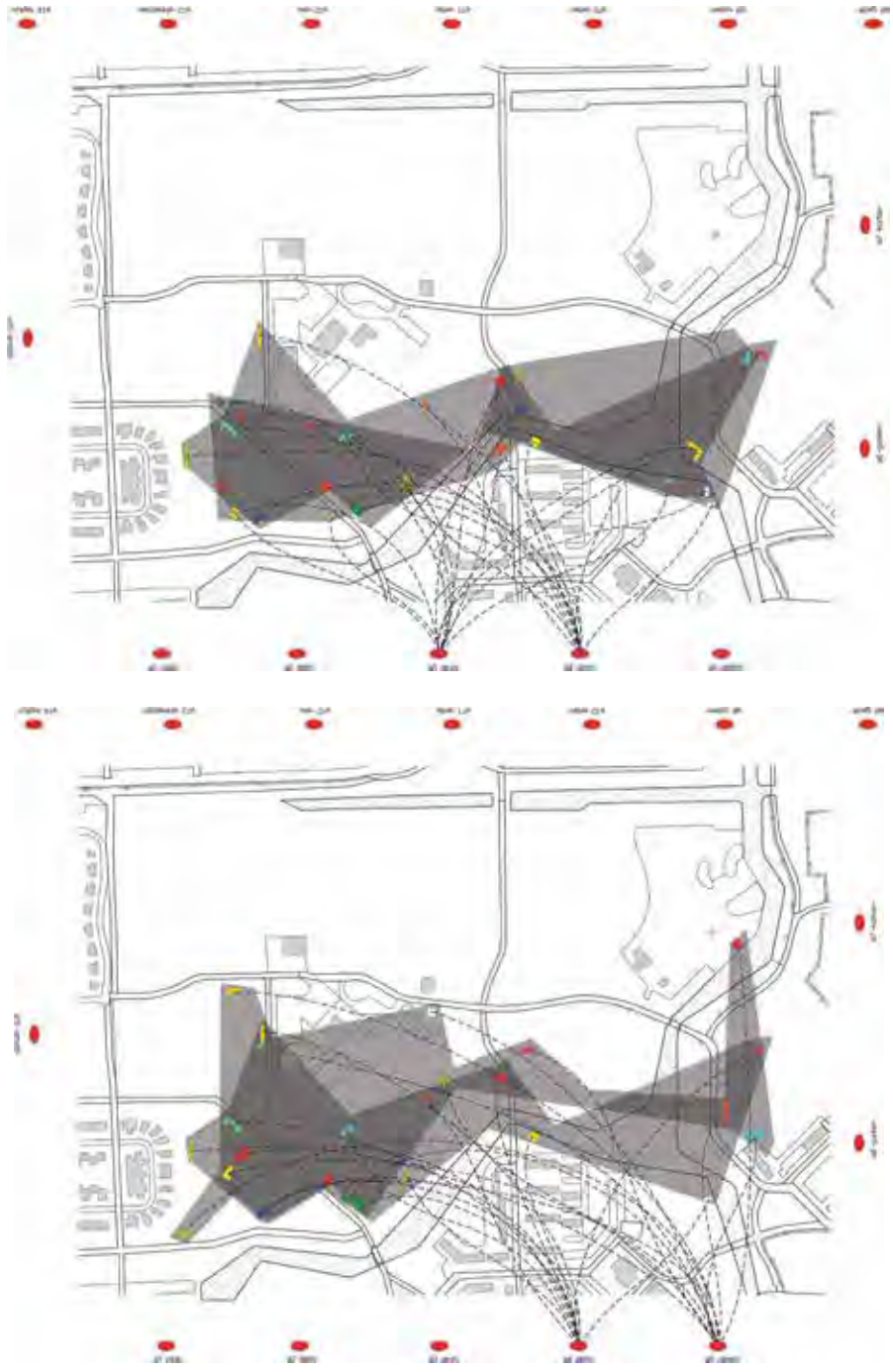


Figure 77
Player interactions in relation to their positions around the play table.

§ 4.1.8 Can an Incremental Process Achieve a Holistic Urban Vision?

The outcomes of Play Almere Haven answer our initial question of whether a design order and vision would occur as a result of the combined steps of players in this evolutionary City Game. As discussed in the section on outcomes, the players did achieve an urban design scheme with recognizable urban properties: low-rise, high-density, mixed-use development composed of various urban forms and serviced by an organic street network.

Initial organizational rules helped players to reveal their own interest, and build this into a meaningful whole with design principles. Here, the rules of sequence and respect have been effective, as they caused the emergence and resilience of a design order in the early phases of the process. The order is secured through continuous negotiations between players which include conflicting, collaborating or lobbying acts. Each individual player is subject to internal input constructed by the mind, and external input which is the legible information coming from the common reservoir – that is, the City Game table and surrounding players. The interplay between participants, the city simulation setting and the cognitive capacity of an individual player, serve as input to the emerging order.

Christopher Alexander's concept of wholeness in evolutionary processes is relevant and clarifies the emerging order in the Almere Haven experiment. In 'A New Theory of Urban Design', Alexander discusses how the interests of individual agents relate to a holistic vision of a coherent design [Alexander, 1987]. The urban whole in the game occurred in an organic way; subsystems gave rise to a recognizable order which formed the whole. Participants brought each local action or move in the game under the evolving overall order negotiated amongst the agents. Individual players maneuvered their own interests around shared decisions, such as the creation of a central zone for the neighborhood. A more specific example is the creation of a rule allowing higher densities around the bus stop introduced by the players. This is an overall ordering rule affecting individual choices. We observe that such a rule could have easily been applied in the evolution of the new town of Almere. Although a broad bus network covers the town, densities in Almere are not necessarily organized around its logic. This is a consequence of blueprint planning where natural development mechanisms, such as densification around a bus stop, do not evolve naturally but only as foreseen by the planner.

A similar mechanism can be observed in how players created an overall mixed-use development through their interactions. The pre-configured plan schemes of Almere lack the ability to facilitate unexpected program initiated by entrepreneurs, while the play process naturally produced a fine grained development mix. We believe this is an important conclusion of this City Game, allowing individual smaller scale interventions, which can be directly translated into real development processes [Tan, 2012].

§ 4.1.9 Questions Raised

As stated in the hypothesis, the outcome is not intended to lead to a legal urban master plan. Although the final scheme includes clear and coherent urban design decisions, we need to highlight particular conditions which limit its potential to become a realistic urban design plan. Could a City Game be played involving architectural design decisions? Could such a City Game deliver an applicable legal plan?

Players were not Almere locals but international students living in metropolitan cities. Thus, their understanding of current Almere citizens depended only on the two day survey and the impressions they collected in Almere before joining the simulation. These players, mostly urban young people from global metropolitan areas, have their own particular cognition of urbanity, which was expressed itself particularly in the central high-density high-rise enclave, an uncommon feature for Almere. One can be for or against the idea of testing or implementing such densities in this town. However, such an approach would only be valid if real investors or inhabitants who plan to settle in Almere Sportpark de Wierden would indicate a desire for higher densities. Could a City Game be played with real residents and with players of various agencies engaged in the development of Wierden plan?

Players collaborated and formed coalitions much more easily in the game than they could in reality. Game conditions for taking collective decisions did not reflect reality reliably. The openness and inclusivity of all the players, unhindered by concern for money, social dynamics or the time needed for such collaborations, distorted the realism of the City Game. Could the future City Games find a way to simulate the risks and difficulties of collaborative actions?

Statistically, neighbors created more interactions between themselves than with other players in Play Almere. When traced, the actions of adjacent players displayed parallels in terms of what they considered best fit for their model elements. When action areas are mapped for each player, the visual order of such patterns becomes clear. These interactions resulted in more common decisions influencing the urban plan directly. Witnessing the influence of interactions between the players on the physical organization, the potential inherent in employing negotiations as one layer of real planning processes, seems patent. However, in existing methods of participation there are gaps between collaboration meetings and the decision making of the professionals. Although the interactive game could offer a direct platform for the evolution of a city, this mechanism needs translation into real development procedures to address the gap.

The urban design process of Play Almere Haven began without a clear vision or master plan. This was initially perceived as excessively experimental by the municipality.

However, we observe a remarkable change in the approach of the city toward the self-organizing processes, which Almere calls 'the organic city'[58]. In 2012, a new expansion plan for a polder called Oosterwold, at the southeastern edge of Almere, proposed a development process very similar to Play Almere Haven experiment: a process with simple rules but without a fixed master plan regulating urban density and program. The following sections of this chapter elaborate on the Oosterwold plan, as well as the City Game our team designed 'Play Oosterwold' for the fine-tuning of the plan rules.

58 In the context of Almere, the term 'organic urban development' suggests that both the passing of time and the new residents are [f]actors influencing the future design of the district. It is a strategy departing from that of the overarching master plan ['top-down planning'], It allows freedom for private commissioning and constitutes the next step in resident participation. The term has been introduced by Adri Duivesteijn, the alderman of Almere between 2006-2012.

Figure 78
Satellite photo of the center of Rotterdam, depicting the neighborhood of Het Oude Westen.

§ 4.2 Play Oude Westen: Urban Renewal in Rotterdam's Old West

In 2009, the municipality of Rotterdam and Rotterdam Academy of Architecture invited us to develop and run an evolutionary City Game for the transition neighborhood Het Oude Westen -*HOW*-, or The Old West[59]. The City Game would be played in a fourteen day architectural design masterclass. The city and the academy were specifically interested in the Almere Haven experiment as a precedent, a game which synthesized resident interviews with an incremental urban design process.

The challenge faced by the municipality, about to relate to resident groups in a transitional city section, fitted well with our survey. Moreover, Play Almere Haven raised several questions for us to test in our future City Game experiments. One these questions was about the type of urban question a City Game can process. If a self-organizing system could be simulated in a new town, how would that system work in the transformation of an existing urban neighborhood? The request to prepare a City Game for Rotterdam's Oude Westen sounded like an interesting setting through which to investigate such questions. Furthermore, the design focus of the task required by the Architecture Academy was an attractive proposition, as Play Almere Haven left us doubting whether a self-organizing urban development process could facilitate design.

§ 4.2.1 Aim of the Game

In the debate about whether the Almere Haven experiment was suitable for implementation as a legal master plan, we concluded that the abstract level of urban architecture needed to become more tangible. The urban scheme was not articulated enough to be translated into a legal urban plan. We needed to test whether we could develop a City Game that resulted in an elaborated scheme. To explore the possibilities of a designed incremental plan we created Play Oude Westen. Thus, the central intention of the Rotterdam experiment had become how to test whether design could be integrated into a self-organizing urban development cycle.

59 The team involved Ekim Tan who was assisted by Pieter van der Kooi. Later the seven architects, players of Play Oude Westen, also contributed to the development of the method.

1 - Situation in 1974.

2 - Situation in 1993.

3 - Newly built projects.

4 - Renovations.

Figure 79
Renovation and rebuilding of Oude Western.

The secondary aim of the experiment was to apply the principles of a self-organizing City Game to an urban renewal question. In Play Almere Haven we tested the City Game for the expansion of a new town, whereas the Rotterdam City Game pondered the renewal of an existing central city district. We assumed that if interacting multiple agents enacting spatial localities towards a set of global orders, the evolutionary City

Game could simulate urban renewal just as it simulated the growth of a new town. In other words, as long as there are multiple players with conflicting interests around a complex urban equation, the City Game method should apply[60]. The urban narratives particularities of involved agents would require tailoring but the generic structure of the City Game would remain the same.

The City Game in Het Oude Westen is an experiment testing whether design can be integrated into a self-organizing urban process as a component of interactive play. The reason for including design as an extra step in the City Game is to elaborate the strategic decisions into clear urban form. The hypothesis of the Het Oude Westen experiment is that the incorporation of design with evolutionary decision-making would result in a detailed urban plan.

§ 4.2.2 Het Oude Westen's Urban Question

Oude Westen dates back over a hundred years. From the 1960s on, the neighborhood witnessed a remarkable transformation into an immigrant neighborhood due to the influx of nonwestern workers. Already in the 1970s a strong action group emerged in the neighborhood, consisting of local residents. These pioneers encouraged the city council to declare the area Rotterdam's first Urban Renewal site. This pronouncement led to a comprehensive alteration of the existing physical structure with the renewal of more than fifty percent of the buildings. Today, after almost four decades of slow partial transformation in Oude Westen, the technical and physical state of most of the buildings once again calls for improvement.

A Social Composition

Since HOW's renewal in the seventies, most private homes came into the hands of social housing corporations. The area has gradually evolved into a low-income immigrant neighborhood over the last decades. Nowadays, over ten thousand people live in the area, seventy percent of which are nonwestern. Respectively, seventy percent of the shops in the quarter are owned and run by foreigners.

60 Refer to the properties of Generative City Gaming as identified in the previous chapter section 3.3.

Figure 80
Het Oude Westen before renovation.

Figure 81
Het Oude Westen after renovation.

In 2001, the city declared Saftlevenkwartier, a district in HOW, to be one of the least safe places in the Netherlands. Since then it has drawn special attention, not from the police, but also from housing corporations. As a result, the city hall saw this as a diagnosis for the need to upgrade the Oude Westen.

In 2009 we were asked to join this project by applying the City Gaming method. The municipality had just proclaimed Oude Westen, situated at the western edge of the city center, as Rotterdam's western center[61]. Including the settlement in this new center signaled the official intentions for this piece of the city – it was an invitation to the well-educated young families with double incomes to move in. This would automatically impact the existing social composition of the settlement. Gentrification is openly sought for the future of Oude Westen. In short, the city's ambitions for the neighborhood are focused on the possible newcomers. Our transformation model integrated the current residents and their community structures for Oude Westen's future.

B Complexity of Engagement

In contrast to earlier renovation projects, the municipality envisioned a future where better educated and higher income groups move into the central HOW. Such a future raised question about the displacement and replacement of the current population. Involving various groups is essential. The plural nature of this community makes it difficult to predict their expectations about leaving or staying in the area. Today, its social composition is dramatically different from the community of the seventies. Residents who prefer to remain, besides the expected new arrivals, need to be addressed in the renovation or rebuilding of private homes and public spaces. Play Oude Westen was configured to test a possible design intervention based on the representation of existing residents.

C Negative Image

Despite two of Rotterdam's busy shopping arteries, Nieuwe Binnenweg and West-Kruiskade, bordering the settlement, the interior streets of the district are isolated from urban life.

61 http://www.rotterdam.nl/Clusters/RSO/Document%202013/Bekendmakingen/Bestemmingsplannen/DEELGEMEENTE%20CENTRUM/3.%20NL.IMRO.0599.BP1012OudeWesten-va02-A0.pdf

Figure 82
Courtyard in Oude Westen.

Figure 83
Typical street profile in Oude Westen.

These narrow streets are dominated by car-parking and do not stimulate a pleasant stay. A series of underused public squares, notoriously known for drug dealing, call for citizen ownership to bring them back into the public realm. All in all this isolation of HOW's inner territories feeds the negative image of the quarter held by outsiders of it being a dangerous area with high crime rates.

The complexity of the urban question, and of the existing residents' varied backgrounds, triggered us to implement a game which could reveal the intricacy of the multiple interests at play in the area and generate solutions that synthesized conflicting visions. However, in the game, we ignored the challenge as defined by the municipality, that is, attracting a new and wealthy group of residents to the area. In 2009, we could not find any demographic indicators supporting the assumption that such high-income groups would move into this area of Rotterdam.

Figure 84
A locked courtyard gate in Oude Westen.

Figure 85
Oude Westen map indicating the area selected for investigation in the game.

Figure 86
Play table Oude Westen.

§ 4.2.3 Designing the Setting for Play Oude Westen

As Play Oude Westen revolved around the scale of architectural and urban design, we focused on a representative sample area rather than the entire neighborhood. This area included the Nieuwe Binnenweg on its southern border. This four hectare district covered two squares, Rijnhoutplein and Toni Koopmanplein, and five city blocks one of which surrounded a one hectare courtyard.

A physical model was a 3D representation of the existing neighborhood to be played by the modifications of players.

The play setting fitted into a 2*2m square at 1:100 scale. A video camera fixed to a tripod stood and recorded the top isometric view of the game table. A dynamic camera recorded player's conversations and took photographs. Seven architects, who represent the residents in the game, took their place around the model to interactively perform the development process.

§ 4.2.4 Rules for Play Oude Westen

In 'Play Oude Westen', architects played to design an urban renewal neighborhood. Players interactively designed the incremental steps of an overall transformation task, which was not predefined. We, as game designers, introduced only organizing rules fundamental for a self-organizing system. Aside from the sequential play, respect and density rules -*which can be found in the play rules of Almere Haven*- we added the vision rule. While analyzing Play Almere Haven's outcomes, we noticed the dialectic relation between individual interests and the shared visions of the playing team. For the Rotterdam experiment we decided to document the tension between individual design steps and collective design visions. We asked players to develop both individual and collective agendas, hidden and open respectively. Each player visualized their -*hidden*- individual vision and handed it to us before play began. During the game they tried to reveal their hidden visions by translating them into collectively acceptable public design steps.

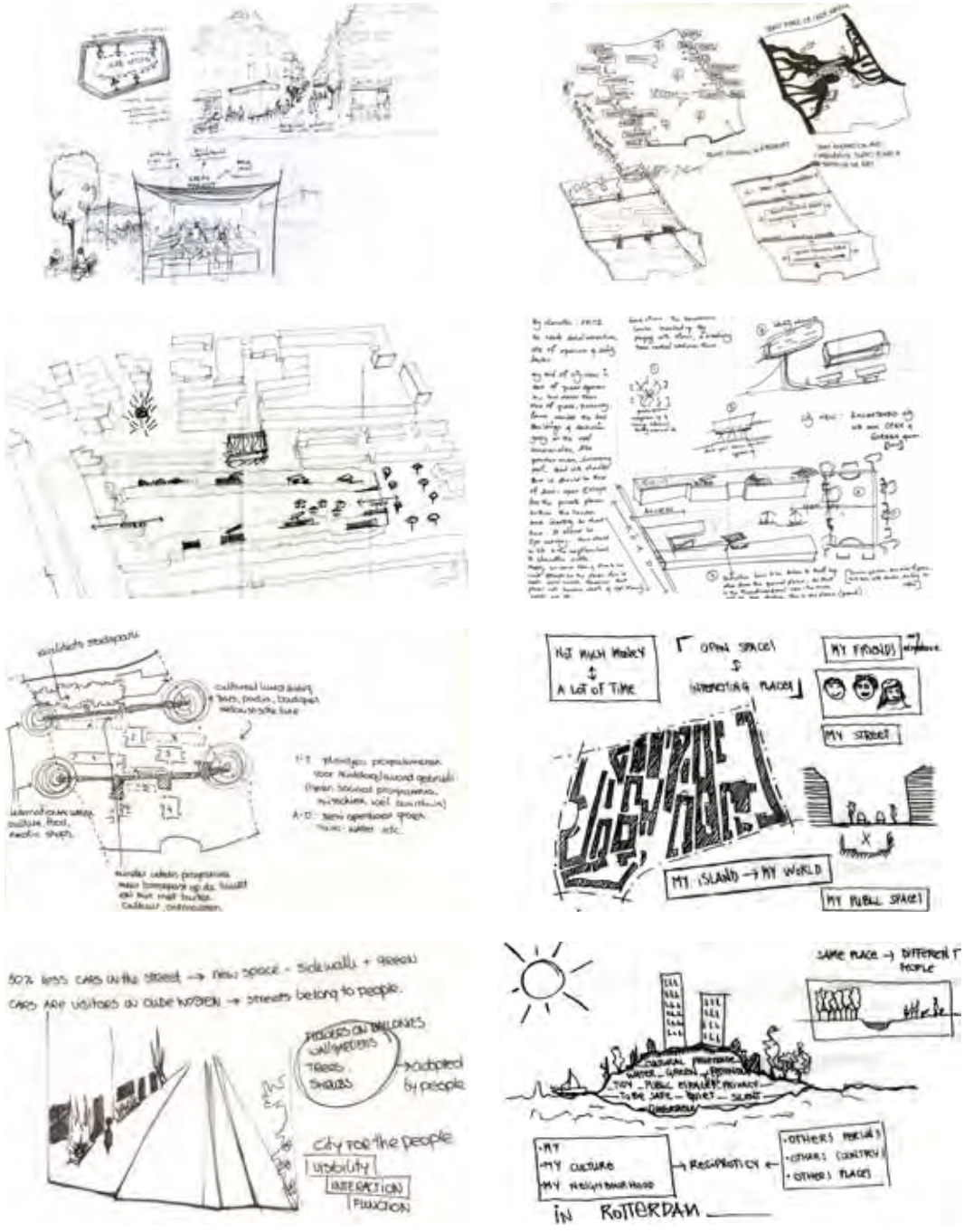


Figure 87
The individual and collective visions of each player were depicted before the play sessions.

§ 4.2.4.1 Play Rules

A Sequence Rule

Participants play in sequence.

B Respect Rule

In case of conflicting interests later design acts implemented in the game have to respect choices made earlier.

C Density Rule

Each player has the right to 5 small [s] + 2 medium [m] + 1 large [l] interventions.

- S = one household or small scale intervention such as adding a fountain, building an entrance gate, planting a few trees, or extending terraces.
- M = 02 - 04 households
- L = 10 - 12 households

The City Game ends when all small, medium and large intervention steps have been played.

D Vision Rule

Each player acts according to 2 agendas: one open, one hidden. The open agenda is based on practical spatial needs of individual players referring to the local scale, whereas the hidden agenda is based on a larger vision of the global scale, such as the whole of Oude Westen, Rotterdam, the Netherlands, the EU, and so on.

The set of rules did not remain static after being introduced to the players at the start of the game. Players evolved and modified rules during the development process. Designers felt the need to set up a ritual of story telling and voting to evaluate players' design ideas. This created the approval rule. Similarly they felt the need to invent public intervention rule which created day-long debates between players. They proposed a collaboration rule as actively contributing players started displaying more responsibility and less conflict in pursuing their public space agendas.

A Approval Rule

For a design act to be valid, the player needs the approval of the majority, four votes per group.

-Design validation takes 20 minutes. Every player takes five minutes to introduce their design, listens to other players' reactions for 10 minutes, and has the last 5 minutes to defend the project before the group votes.

B Public Intervention Rule

Interventions made in the public space need collaboration between the majority of players, at least 4 players need to agree on any alteration of the public space by contributing their own intervention steps.

§ 4.2.5 Het Oude Westen Players

Play Oude Westen took place within the framework of a summer school organized by the City of Rotterdam and the Rotterdam Architecture Academy. Each year, the summer school invites carefully selected postgraduate architecture and urbanism students from around the world. Our team of architects included members from India, Poland, Kazakhstan, the Netherlands, China, Germany and Spain. All players had a professional education in architecture, design or urban studies. We configured 'Play Oude Westen' as a multiplayer interactive City Game. All players followed the same rules and have the same agency as that of the local residents.

As mentioned above, the settlement is a mixed immigrant community. To gain insight into the individual members of such a complex community we decided to conduct in-depth interviews with residents who were interested in their physical environment and willing to invest time in our survey. During the game, architects represented residents they interviewed in the Het Oude Westen neighborhood. The 'interview and represent' method had already been tested in the Play Almere Haven experiment. In this game we deepened the personal interviews to draw a more realistic profile of the resident for the City Game.

Architect Dagmara Frycz interviewed Allister Meyer. Allister is 32 years old. He is from the Netherlands, but has lived most of his life in England. Two years ago he decided to move back to Rotterdam from London. He is employed as a consultant. Allister chose to live in Het Oude Westen because of the low cost of rent. He enjoys that the neighborhood is home to many interesting bars and stores, and its multicultural character adds to the liveliness. "*However,*" he adds, "*Oude Westen needs better marketing, because it has a lot to offer.*" Recently he has observed improvements in the area's safety. Allister stresses that more work is needed on the attractiveness of the area at night and in the winter. "*Getting rid of street bums and coffee shops selling marijuana might help*" he suggests. A big believer in the local entrepreneurs, he proposes the introduction of small businesses into the isolated 'interior' of the neighborhood, expanding out from the main streets West Kruiskade and Nieuwe Binnenweg.

-Dagmara represented Allister and translated his views on the city into her design steps in the game.

Sharan Sundar interviewed Kjell Betlem. Kjell is 36 years old. He is from the Netherlands and has lived almost all his life in Oude Westen. He remembers the neighborhood as a very safe environment only during the 15 years of his childhood. After this, he witnessed how the safety and physical condition of buildings downgraded. He finds it positive that he knows most of his neighbors and everything he needs is close by. However, Kjell's house itself suffers from a lack of sound insulation. Kjell hopes to join his family in Thailand where they emigrated five years ago.

-Sharan represented Kjell and translated his views on the city into his design steps in the game.

Esther Slegh interviewed Hatice Yilmaz. Hatice is 27 years old. She comes from Turkey. She has been living in Rotterdam for 4 years. She lived in Delfshaven before moving to Oude Westen. She has three sons of 1,5 and 4 years of age. Hatice does not like the neighborhood and plans to move out as fast as possible. She thinks the visible use of drugs and alcohol on the streets sets a bad example for her children. Besides that she is exposed to sounds and smells from the apartment below her house and the housing company is slow in acting to solve the problem. She would rather move to the northern part of Rotterdam, Blijdorp, which has a quieter and greener environment and fewer junkies.

-Esther represented Hatice and translated her views on the city into her design steps in the game.

Sabine Wildrath interviewed Randy Jebriny. Randy is 20. His parents originate from Cape Verde and Syria. He was born in the Netherlands and has a Dutch passport. Randy moved to Oude Westen 8 years ago. He likes Oude Westen, although he is often bored. He feels the quarter does not have a lot to offer for teenagers and young adults like him. The only activity he can think of within OW is to drive around with his scooter and to hang around with his friends. He likes the multicultural environment, which is reflected in the range of cultural backgrounds in his circle of friends.

-Sabine represented Randy and translated his views on the city into her design steps in the game.

Hyunju Cho interviewed Mahin Jankie. Mahin is 30 years old. He migrated to Oude Westen from Surinam 20 years ago. He works at a bar with a friend. He doesn't like his neighborhood because he says there is just concrete there, and no nature. Moreover he thinks the settlement lacks urban facilities for young people like him. He has many friends from other countries and he often parties with his friends from the neighborhood. He enjoys living with many other foreigners. His dream house would have a big garden and gorgeous river view.

-Hyunju represented Mahin and translated his views on the city into her design steps in the game.

Clara Pascual Cornago interviewed Samira Aboud. Samira is 34 years old and migrated from Morocco at age 7. She works in a child care center. She lived in Oude Westen since she arrived in the Netherlands. She has good relations with the neighbors and believes that they are a community. *"The solidarity is stronger in Oude Westen than in other settlements in the city."* Samira stresses. When the weather is nice she enjoys the neighborhood's public places, although she admits that she would like to have more privacy on some occasions. She dreams of a house with a private garden.

-Clara represented Samira and translated her views on the city into her design steps in the game.

Darina Skiba interviewed Mik Kapetovich, Mik is 38 years old and of Serbian Dutch descent. He works in Nigeria for about 8 months a year, and spends the rest of it in Rotterdam. The central location of Oude Westen is very attractive for him. He likes the neighborhood and wants to spend more time here in the future. He hopes that the car invasion of the streets will be improved. He is critical about the multicultural debate in the Netherlands. *"Despite the fact that we, Dutch people, have the image of a very tolerant nation worldwide, this neighborhood is evidence that this is changing. The city wants to replace the lower income immigrants with well educated higher income residents."* Mik explains. He proposes simply not to make an issue out of this topic; *"My children already don't understand the whole discussion. The coming generation will just move on!"*

-Darina represented Mik and translated his views on the city into her design steps in the game.

§ 4.2.6 Play Oude Westen Process

A Preparation Process

The design masterclass organized by the Rotterdam Architecture Academy and the City of Rotterdam lasted for two weeks. Seven architects, our core design team, conducted a thorough site analysis including resident interviews in the first four days. Every player represented the person they met and interviewed. In the meantime one group built the 3D scale architectural model for the play setting. The game started on the fifth day of the summer school. The seven players played for seven days to conduct their 'small, medium and large' design interventions in three rounds. The result was an intense process of designing with, convincing and lobbying other designers to get ideas realized in the game. The last three days of the workshop was given to mapping and reporting on the long play process. The group presented the evolutionary design experiment to the Academy and Rotterdam Municipality officers.

B Game Play

As prescribed in the rules of play, the design process in Het Oude Westen progressed sequentially. Players introduced their design proposals one by one. After the second design proposal, the players invented the rule for design quality. According to this rule, each designer needed a majority of votes to locate their proposal on the play model. The newly devised rule had a direct influence how the players presented their design ideas. They started producing explanatory architectural sketches and models to better

communicate their idea and persuade other players to support their agendas. To limit endless design debates, the group also limited the time allotted to each player to 20 minutes [5 minutes for presentation, 10 for discussion and 5 for voting]. In practice, most discussions lasted longer and very few proposals were accepted immediately.

The City Game progressed as each player came forward and presented design ideas to upgrade the neighborhood. The sequential play of design steps helped players to consider and react to each other's design interventions. As the interests and plans of each player were revealed on the game table, conflicts and collaborations emerged between players. Opposing design ideas and negotiations helped the team to consciously clarify a joint design approach.

C Inventions and Patterns During the Process of Play

The first player, Dagmara Frycz, introduced a café with an outdoor terrace in a quiet spot in the district. She was representing a consultant who was concerned about the safety of courtyards in the neighborhood. She deliberately placed the entrance of the shop towards a courtyard. A fierce debate broke out over whether the semiprivate character of the courtyard could be combined with an urban activity in this way. Dagmara indicated an already existing gate, as well as the suitable size of the courtyard *-180*40 meter-* which already contained a public playground as justification of her proposal. While the group was negotiating the borders of public and private space, architect Sharan Sundar reacted in support of Dagmara's design statement by breaking open the opposite edge of the courtyard to the square of Gerrit Sherkmanplein. The group then took a lunch break and came back with a new rule that designers need more precise drawings to reinforce their ideas and a time limitation for the storytelling and convincing before each idea would be subjected to voting. After Dagmara and Sharan's complementary interventions were voted in, designer Clara Pascual continued by proposing a mobile kiosk for gardening and urban play in the same courtyard. She represented a Moroccan lady dreaming of more active green spaces in her immediate environment.

The focus on the revitalization of courtyard life was broken by Hyunju Cho who located a parasite home-office and a fitness hall powered by solar panels on the rooftop of the adjacent block. Hyunju personified a Surinamese bartender who longed for programmatic diversity. A parallel debate to the one about the courtyard emerged, discussing private and public nature of the rooftops. Finally, a majority voted positively for an energy-efficient private home-office on the rooftop but rejected the supposedly noisy gym. Hyunju reacted by relocating the sports school to the ground floor with an entrance from the courtyard. Opening up green courtyard spaces by introducing public activities had by now become an accepted strategy in the group and did not cause any objection.

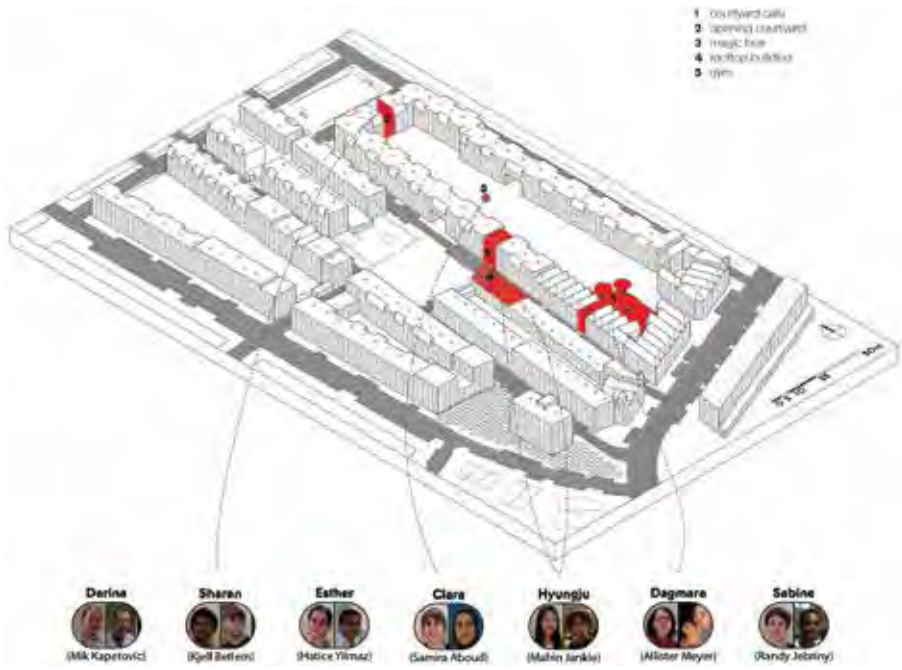


Figure 88
First phase Play Oude Westen.

Player Darina Skiba initiated a new design approach by proposing to paint street facades to tackle the neighborhood's formal monotony. She represented a Serbian resident who was sensitive to the multicultural composition of his community. According to the player, a literal translation of the multicultural social structure into colorful design blocks would improve resident satisfaction and care for the neighborhood. She sketched typical Rotterdam social housing blocks with every household elevation marked by diverse paint, graffiti, textures and styles. Darina's idea resulted in a conflict between designers. The debate limit of half an hour was exceeded. As Darina initially used her 'large' step for this move, according to the rules she needed to gather four other players to contribute. Darina was not able to convince other architects to join the act, so she decided to convert her step from large to small. This decision made it possible to enter the gaming table, although at a much smaller scale.

Sabine Wildrath took the next design step and introduced a Do It Yourself bike shop across from the gym. As the proposal fitted well in the shared design vision of opening up and programming interior courtyards, the idea passed quickly. Next, Dagmara took her second turn and designed a neighborhood library at the northern edge of the sameblock. She introduced this place as a 'gate', attracting the public to the block's interior with its café, gym and bike shop.

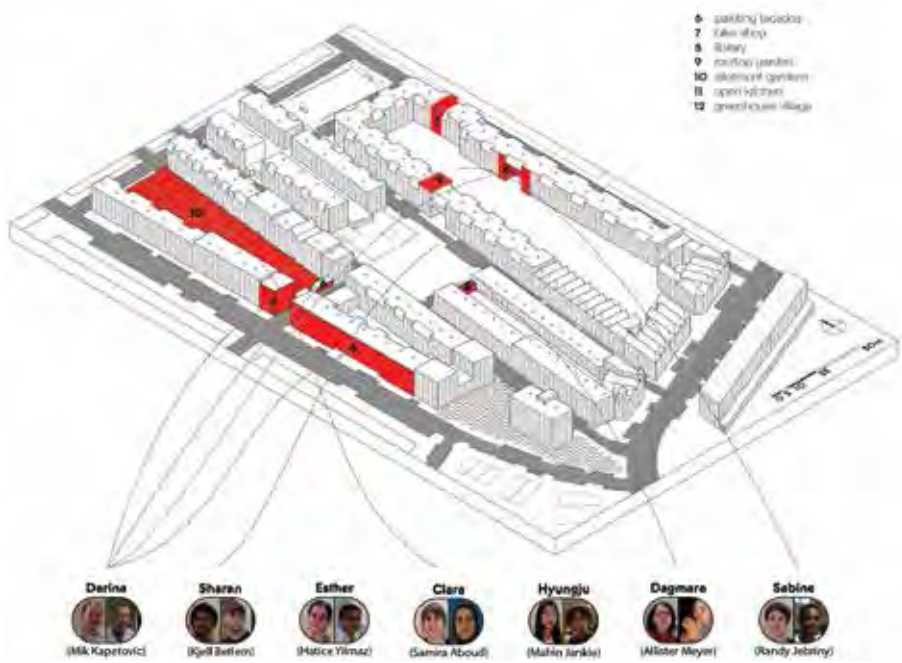


Figure 89
Second phase Play Oude Westen.

As a reaction to Hyunju's first step, the parasite rooftop home-office, Sharan built an urban garden on the rooftop. Getting inspiration from urban gardening and observing the opening up of courtyards, Clara then proposed allotment gardens in neglected yards to be offered to non-HOW residents. She defended the move by suggesting that such an influx would positively influence the reputation of the settlement, resulting in cultivated backyards which might even provide some income for the neighborhood's public landscape.

Following the public library entrance intervention by Dagmara, Landscape architect Esther Slegh introduced a community kitchen, run by the residents, for the adjacent city block. She represented a middle-aged Turkish lady with a passion for cooking. The location of this 'gate' was a strategic choice, responding to a missing link in the street network by connecting it in the west-east direction.

Sabine, reacting to the new possibilities brought about by the connection of the street network, placed greenhouses on the public square adjacent to Esther's public kitchen. While Sabine and Esther started negotiating whether greenhouses and allotment gardens could provide the kitchen with vegetables in the long run, some of the designers raised the issue of ownership. Could privately owned glass houses occupy a public square? Even if it improved the underused square by offering gardening for the

neighborhood, this radical design step created controversy in the group. The majority supported the idea with the condition that it was an exception and not a rule; every new private enterprise in a public space would require specific evaluation.

Esther then introduced an aquaponic system connected to the allotment gardens. Aquaponics is a closed system of fish and plants growing symbiotically through the circulation of water. This advanced form of city gardening would occupy a large portion of the courtyard and counted as this player's 'large' step. Concluding that the enterprise was too large and experimental, the other designers rejected Esther's proposal.

Sharan developed the trend initiated by Darina that dealt with the symbolic dimension of space. He represented an elderly native resident who sought more symbolism in the city. Supporting the idea of the need for personalizing the generic urban elevation, Sharan proposed a distinctive high-rise element to mark the courtyard entrance which he opened to Gerrit Sherkmanplein Square earlier in the game. This tower would also allow people to look over the neighborhood from a different angle. The idea of providing a landmark with a view to the neighborhood was embraced. However, the amorphous forms the architect submitted became a dispute. The proposal passed with the condition that Sharan would design the landmark according to the formal language of the settlement. Still lobbying for her ambitious aquaponic system, Esther used her 'small' intervention to support Darina and Sharan's attempts for increased personalization of the urban space. Her proposal of vertical wall gardens combined with sidewalk seating passed without objection. Meanwhile, she had been promoting her aquaponics project; in collaboration with Darina, Esther reintroduced the idea combined with a glass roof cover for the courtyard. Not only did they collaboratively design and strengthen each other's proposals, they ran an aggressive campaign both within and outside the game -*such as during the lunch breaks*- to further their scheme. This way they managed to recruit another 4 designers who had not yet used their 'large' move. They agreed on the courtyard as an urban garden open to the public with a community kitchen and cafes. Glass houses in Toni Koopmanplein signaled what could be expected from the modified courtyard. Finding the evolving situation very inspiring, Clara proposed a local food store at the edge of the square.

Next, an unexpected new action came from Sharan who proposed to add balconies to homes which have no outdoor spaces but only small windows. He elaborated his design as platforms flipping in and out of the facades, closing during cold spells and opening up when the weather allowed. This move, pushing the customization of generic housing structures, was supported by the players's votes.

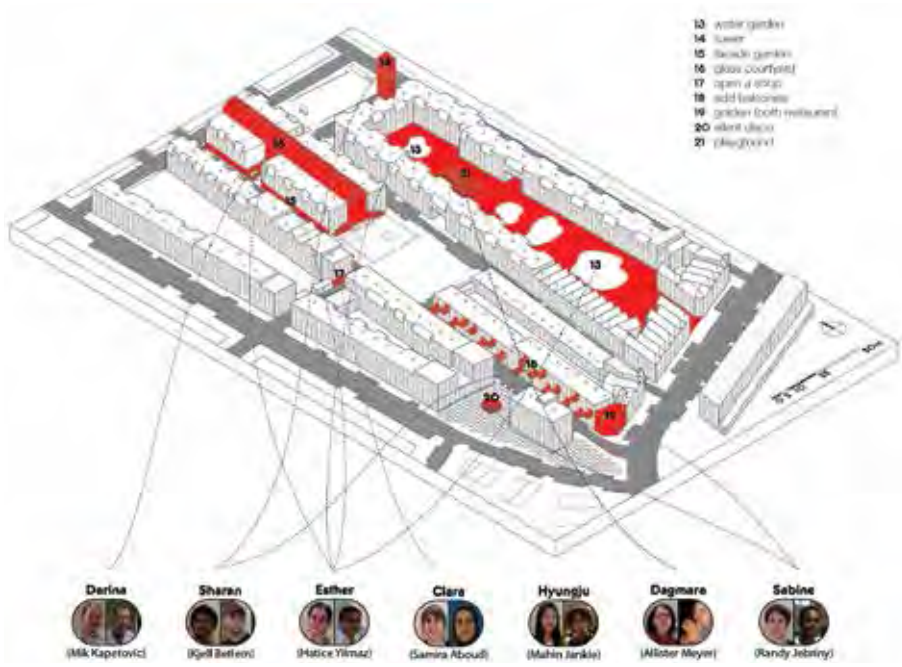


Figure 90
Third phase Play Oude Westen.

As the last design action, Sabine proposed a restaurant on an empty corner plot facing the Nieuwe Binnenweg. She proposed a golden facade to mark the corner. Perceived as a move enhancing the characterization of public space, her initiative was welcomed.

The game ended when the designers completed 168 design interventions on three different scales which could be taken up by residents in the given district. The map below illustrates how designers interacted with previous decisions taken by other designers, and how different trends arose throughout the process of the game.

§ 4.2.7 Oude Westen Outcomes

In Play Oude Westen, various architects represented randomly selected residents by translating their demands into design actions to upgrade the settlement. When analyzed, the play experiment reveals four essential phases shaping the overall design: opening up private open spaces, programming open spaces, occupation of public space by private initiatives, and both formal and symbolic customization of generic social housing.

1 - Legibility and customizabiliy

2 - Open up the courtyards

3 - Grow and sell food

Figure 91
Play Oude Westen, analyzed according to comparable steps generating design orders.

A Sharing the Private

During the analysis of the site, one of the designers diagnosed the isolated nature of the inner territories of Oude Westen. This strong observation was widely accepted in the group. Thus the first design move in the game tackled this question; a café was proposed with an entrance opening not to the street, but onto a courtyard. Further steps such as opening same private courtyard to an adjacent public square, designing similarly public enterprises, such as a bike shop and a gym, behind large transparent courtyard facades, and introducing a mobile Kiosk to courtyards, strengthened this movement. Similar to the action of occupying unused private courtyards, architects proposed the utilization of empty rooftops by making them accessible first to private users, by adding parasite home-offices, and then to a wider public by creating roof terraces for community use. The analysis of a single designer was thus translated into design steps by various players, generated an influence on the spatial composition of the district.

B Programming the Private for the Community

Introducing activities to newly open shared spaces followed the first design wave. These included parasite offices for freelancers, planting rooftops, allotment gardens and public utilities such as a library or a community kitchen at the entrance to formerly closed off courtyards. As the first design step for making private open space semipublic had been embraced, the continuation of more private spaces opening to the public could follow.

§ 4.2.7.1 Ownership of the Public

Next in the game, the architects proposed a set of design interventions that offered public spaces to alternative private uses. Greenhouses located in the middle of a public square, or aquaponics in a public courtyard are fascinating examples of this trend. In addition, privately managed sidewalk gardens replaced car parking, thus stimulating leisure and community use instead of a transitory street. How borders of traditionally public and private spaces are questioned and redefined during play signals the necessity for more ambiguous and complex open space use, as indicated by the plural structure of the Oude Westen community.

§ 4.2.7.2 Personalized Territories

Customization of the generic spaces of the district is a trend which peaked towards the end of the City Game. It was introduced at an early phase – *the sixth step* – after the first design trend. At this early phase most players did not follow this idea, as they were busy programming open spaces made accessible in the previous phase. As play drew to a close, however, the idea was reborn and accepted by a larger group of architects who put their energy into customizing public housing facades, adding landmarks to city blocks, introducing uniquely designed balconies which transform social housing seasonally, or creating a corner restaurant marked by a contrasting formal design language.

§ 4.2.7.3 An Alternative Street Network for Oude Westen?

If the tendencies of 'Sharing the Private' and 'Ownership of the Public' are overlapped and extrapolated to the neighborhood at large, a new network of courtyards and public green emerges and through which bikers and pedestrians can navigate.

Cafes and small craft and community shops are situated with stairs leading to the new roofscape. Existing narrow inner streets, which used to be dominated by a combination of traffic and car parking, can now be more easily negotiated by pedestrians and cyclists, while still catering for vehicles, as well as access to private homes.

§ 4.2.8 Can Design be Part of a Self-Organizing System?

This design experiment brought seven architects to shape a transformation neighborhood through a self-organizing process. Design and self-organization are contradictory forms of regulating space. While design proclaims to be a predictable and controlling mechanism, a self-organizing system is a nonlinear and unpredictable process in search of balance. The incremental decision making by the agents is not planned and the outcome is therefore unknown to all participants.

Figure 92
Game outcome illustration based on the players' design sketches.


lib-
ra-ry
0 5 10 25 50m

The Rotterdam experiment combined the precision of each design step played by an agent with the self-organizing decision making process that emerges where these well-defined ideas conflict and compete with each other, sometimes even completing other designers' proposals. The complementing of ideas was a surprisingly positive outcome supporting the individual-holistic order debate of Alexander, observed also in Almere Haven game. In the absence of a predetermined design order, architects could reach an overall design vision requiring a radical shift in the use and managements of public spaces.

The overall plan developed out of the interactive negotiating process undertaken by the seven designers in a ten day period of play. Design entered the process as a format through which players presented their ideas. Compared to the process of the Play Almere Haven experiment, where individual agents indicated the geographic location of an urban component, Play Oude Westen progressed more slowly as agents took individual steps to develop and apply their design interventions on the play field. Each unplanned step took longer in this process, but helped designers to reach a common stance with greater precision. Players achieved a higher level of sophistication in their collective design choices. Thus the result of the City Game came closer to an urban plan.

No doubt such a decision making mechanism requires, and therefore leads to, a distinct set of rules. This explains why the rules had to be adapted and added to by the designers during play. Beyond the design principles explored above, players invented a protocol where each design idea is introduced, debated, voted on, defended and organically crystallized. A fourteen day masterclass of City Gaming delivered an urban plan composed by seven architects representing seven local residents. The incremental and evolutionary process resulted in design details such as foldable wooden balconies on the customized facades of existing social housing, rooftops with parasite home-offices, neighborhood shops with golden fronts opening onto courtyards, extra street linkages in the street network, and more. This creative variety stemmed from the DNA of the City Game where each player brought out the urban demands of actual residents in an architectural design format and a scale model of 1:100.

Design as part of self-organizing system proved to be a productive regulating method in the Play Oude Westen experiment. Building upon the Play Almere Haven experiment, we observed that a higher level of sophistication in the outcome could be achieved by enabling the input of designer agents.

§ 4.2.9 Could a City Game Facilitate an Urban Renewal Process?

Our assumption that a self-organizing process could cater for an urban transformation process essentially suited the high social complexity of the community in Oude Westen. The embedded difficulty of how to tackle the unpredictability of such a plural group found its solution in the method of representing local agents in an open and evolutionary process. Instead of the illusion of predicting or controlling such a complexity, we favored the direct involvement of complexity, in this case diverse members of the community, in the game. In this respect, the interactive City Game is a more suitable method for simulating an existing community such as Play Oude Westen than for simulating the hypothetical community of a new town expansion, as in the Play Almere Haven experiment.

In Oude Westen, Actie Groep Oude Westen, a very distinct and strong community organization, could potentially activate the enterprises suggested by Play Oude Westen, provided they received license from the city to modify their immediate surroundings. To activate the self-organizing renovation of Oude Westen, the first step would be allowing individuals and/or groups temporary use of public squares. Where there is a proposed new use for unused or unmaintained courtyards, the fences and border gates need to be displaced to make space for local retail, urban agriculture, landscape gardens, or other productive interventions. Personalization of building facades needs to be allowed if the initiative comes from residents. Retail units in the Oude Westen should be more easily rented to residents who want to start their own businesses.

All of these changes would facilitate the individual and/or collective enterprises of Oude-Westerners. The game experiment essentially suggests taking individuals' initiatives into account in neighborhoods such as Oude Westen, converting these enterprises into design steps and translating into building rules. This is an alternative practice to a process where the landowner, in this case the housing corporation Woonstad, is the only party taking such decisions in the hope that they will attract newcomers to buy these new projects and move into the area.

§ 4.2.10 Questions Raised

As the stakeholders such as the Actie Groep Oude Westen or the housing corporation Woonstad are mentioned, the question raises whether organizing a City Game only around the residents is sufficient. Could there be a City Game involving all involved agencies in a given urban question? The agency of a housing corporation and that of a renter would probably differ. Could a City Game interface facilitate such differences, stemming from power, responsibility and interests? We already observe that residents simulated by architects, representing the same agency in the game, display various interests, responsibilities and even powers based on their design abilities negotiation and lobbying capacities. Thus if we could analyze and model various agencies for the City Game, we could bring stakeholders such as investors, renters, policy makers and NGO's in one City Game so long as they are engaged directly in the given urban question.

The direct engagement condition in fact debriefs the representation of architects, the residents of Oude Westen. Within the framework of a summer school organized for foreign architects, the City Game could simulate residents based on personal interviews. Would that mean that the City Game had to exit the education framework to come closer to the practice of urban design and involve engaged players?

Even if we could reach the direct stakeholders how would we solve the question of representation? Was there a direct way to include over three hundred households represented by the players? In the future, the City Game method needs to look for ways of reaching out to a larger audience. Aside from the question of representation of larger numbers due to the impossibility within an analog gaming setting, the next representation which became problematic was designers representing non-designers in a design game. We should pose the question whether we could reach the same architectural level if the players were real residents representing their district. How could the City Game facilitate both designers and non-designers on the same play field? Even if these players could be collected around the same play platform could there be a common language leading the communication of these players?

§ 4.3 Play Istanbul: Yap-Yaşa Urban Transformation in Istanbul's Peripheries

In 2010, Istanbul was appointed the European Capital of Culture -ECOC. Throughout that year, the city hosted a rich cultural agenda. The underlying themes of ECOC were Open Society and Public Engagement, particularly urban transformation linked to the impending threat of a violent earthquake and urban gentrification linked to public participation.

Not difficult to imagine that there were urban players in need of exploring dialog with other stakeholders, such as housing corporations, local governments, investors, developers, home owners and renters, planners, engineers, designers, activists and neighborhood organizations. However, decision making on such a pervasive matter could only be successfully implemented if professionals and nonprofessionals become part of a direct and open urban design process. Fundamentally, Istanbul's urban transformation process required the active engagement of millions of households. Methods supporting open conversations for urban processes therefore are welcome in Istanbul context.

The complexity and actuality of Istanbul's urbanity persuaded us to investigate a City Game played with real actors[62]. A City Game could serve as an interface supporting the inclusion of larger groups in this process. This intervention could contribute to the debate on Istanbul's democratic planning.

§ 4.3.1 Aim of the Game

The integration of various agencies in the City Game was essential. The City Game needed to visualize the negotiations between diverse actors and their power ties, resources, vision and interest in Istanbul's transformation. Thus the main purpose of the Istanbul experiment was to advance our City Game interface to a level that not only designers and planners would utilize it, but also facilitate the involvement of residents and local communities, developers and investors. We needed to invent a game interface which could translate the impact of all involved players on the physical urban environment. This would require detecting and analyzing the way these agencies engaged with each other as well as with the dynamics of the actual renewal process.

62 The team involved Ekim Tan who was assisted by Hans Vermeulen, Yulia Kryzeva, Ulas Akin and Muge Yorganci.

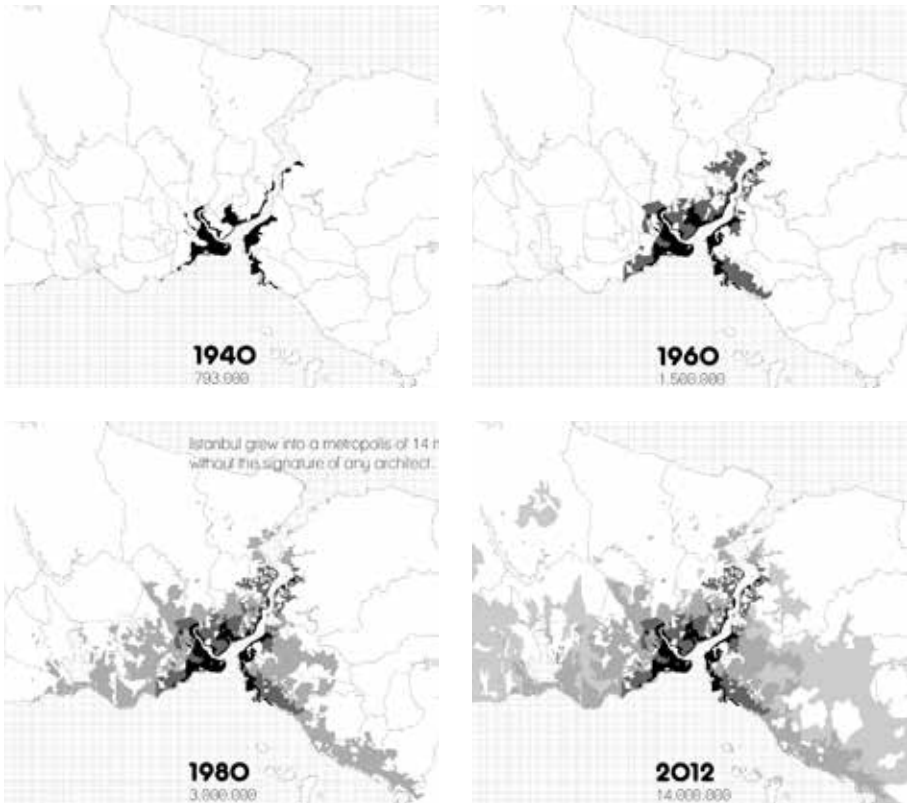


Figure 93
Istanbul's urban growth between 1940 and 2012.

Our former City Gaming experiments, in Almere Haven and Rotterdam, used an iterative interface with few organizational rules. Designers negotiated design rules in the absence of predetermined design constraints. However, Istanbul City Game needed to facilitate non-designers to defend own interest with [or against] professionals in a design interface. Thus to realize this experiment with stakeholders of diverse backgrounds, we needed to level out differences in design knowledge. Introducing simple design rules besides organizational rules could help non-designers negotiate their interests on fairer ground[63]. Applying the same design rules to each player *-from*

63 The real cases supporting this argument have been introduced in the introduction chapter, specifically the adaptation process of Malagueira settlement, Al Zaatari Camp, Istanbul's densification...

the architect, to the activist, politician, resident- would even out differences concerning player's design capacities. We needed a parametric urban design system in which the application and variation of rules would be composed by human agents instead of a software[64].

The Istanbul City Game has become an experiment testing whether the multiple actors of an urban transformation process could co-design in a City Game interface. Due to the mix of designers and non-designers, we felt the need of introducing simple design rules guiding all players. The hypothesis was that if multiple agencies act within an interactive design environment, structured by simple design and organization rules, a fair playing field for various actors would be generated for negotiating urban transformation strategies and shared by players with differing interests and power levels.

§ 4.3.2 Istanbul's Urban Transformation Question

A Uncontrolled Urban Colonization

In 2009, during the excavations of the new Istanbul Metro, remnants were found that dated the city's history back to 8000 BC [Koc, 2010]. Despite being one of the oldest cities in the world, Istanbul's urban explosion is relatively young. The evolution of Istanbul into a metropolis of 14 million inhabitants from a disconnected city of a very young republic has all happened in the last five decades. During this period, a fast urban development beyond planning control covered more than half of the city's surface.

64 Generative design methods have been explored in detail on the third chapter under the section 'Collaborative City-Making Methods'.

Figure 94
Istanbul's residential areas subject to urban transformation.

B Earthquake

Such an unconstrained urbanization occurred under the shadow of an imminent natural disaster threatening the city. Experts predict that an immense earthquake measuring 7-8 on the Richter scale will hit Istanbul before 2020. 70% of the existing housing stock is self-built and technically too weak to survive such an earthquake. This is the fundamental reason why the Istanbul Metropolitan Planning and Urban Design Center[65] -*IMP*- established an urban renewal program for residential neighborhoods that concerns 4,5 million buildings in Istanbul. This translates into a grand urban transformation scheme of both the city's peripheral neighborhoods -*Kartal, Arnavutkoy, Sariyer or Kucukcekmece*...- and the central districts -*Sultanahmet, Zeytinburnu, Uskudar*...-. Many of these sub-municipalities have already been

65 IMP has been founded by the mayor of Istanbul, Kadir Topbas in 2005, with an idealistic vision for involving experts more effectively in the decision-making processes of Istanbul

preparing urban renewal plans either through their own local planning teams or through international urban design competitions. The transformation campaign is slowly turning concrete in places such as Basibuyuk, Maltepe, and as demolition and renewal projects are advancing, we observe emerging controversies due to inadequate housing relocation.

C Pressure on Nature Reserves

Just like the earthquake, 'urban growth' is a dynamic which pressures the urban transformation process of Istanbul. The IMP experts expect a population increase of between five and ten million by 2030. This urban expansion will be absorbed either by further densification of the existing urban fabric, or by the colonization of forest and water reserves at the northern peripheries of the city. A recent study reveals that Istanbul's urban areas have expanded 87.9% from 1987 to 2007, while forest areas declined by 5.4% in the same period [Karaburun et al, 2009]. If the urban growth occurs as peripheral sprawl, Istanbul will lose more forest areas. New high-rise housing estates are already appearing in random order at the peripheries of the city, and even directly within its northern forest reserves. A conscious transformation policy for the current housing demand appears urgent.

D Actors of Istanbul's Transformation

Which parties will take the lead in conducting a transformation task on such an enormous scale? Istanbul has a strong tradition of self-building and densifying in the last fifty years. Can the ongoing tradition of bottom-up city making undertake such a technically challenging question? With Turkey's changing politics and an ever-centralizing planning system, the question arises whether an Ankara-centered top-down model will entirely replace self-organizing mechanisms to fulfill the transformation assignment. If that will be the case, how will consultation of millions of inhabitants, small and medium scale developers, contractors and investors occur? Who will dominate the decision-making and organization of urban transformation is the principle question here.

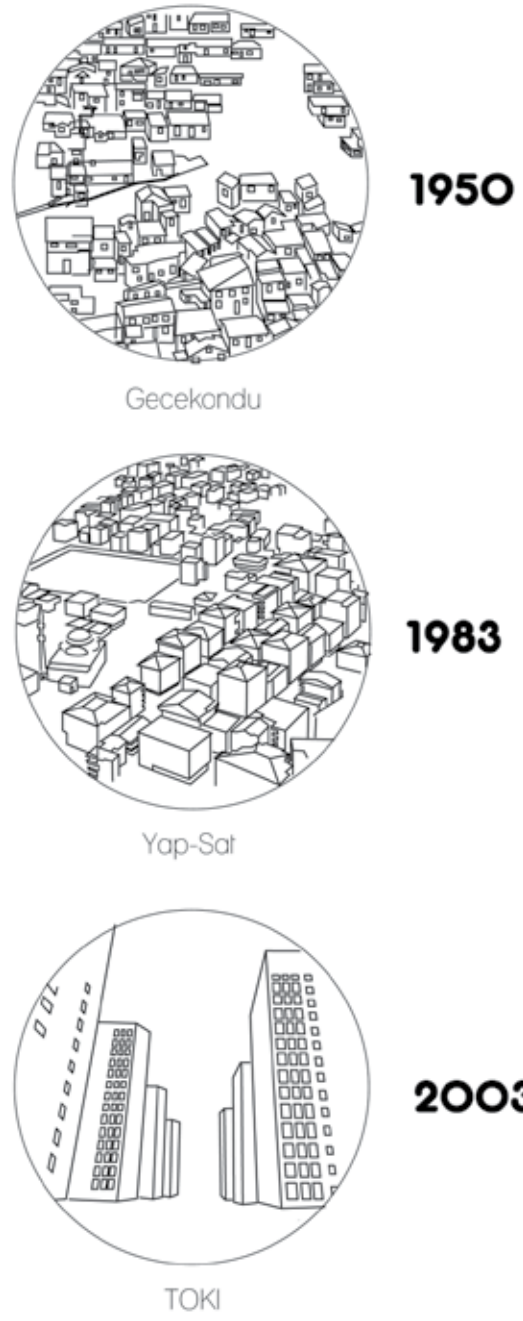


Figure 95
Gecekondu, yap-sat and TOKI blocks as Istanbul's DNA.

E In Search for a New City Block

Michael Batty's perspective on cellular automata for modeling urban complex environments has been explored in the previous chapter under the section 'Collaborative City-making Methods'. Thus when this model is transferred to urban neighborhoods of Istanbul, we can comprehend how local interactions on the level of individual building plots might result in identifiable urban orders on neighborhood scale. As individual building units negotiate their public and private borders with adjacent units an overall order emerges based on simple agreements between particular households. In Istanbul, this autonomous unit has been the gecekondu[66] from the fifties onwards. Next the yap-sat[67] flat in the 80s has become the smallest urban unit forming urban districts. Both gecekondu and yap-sat have spread vastly in their period, making up more than 70% of the city's surface by the turn of the new millennium. They covered city at such a rapid pace that official planning tools of any kind were insufficient to either stop or replace their sprawl. In other words, gecekondu and yap-sat acted as the DNA of the city's urban fabric.

In the new millennium a new housing unit lead the metropolitan sprawl. This new candidate for the Istanbul pixel dominating the city's growth was created by the Housing Development Administration of Turkey TOKI. The random mushrooming of TOKI blocks turn into a real conflict when these units are used to replace existing neighborhoods mainly consisting of gecekondus. Experts in the fields of planning and sociology, however, question the legacy of the new high-rise neighborhoods which alienate their residents. Socially coherent gecekondu settlements typically provide local economic networks, which TOKI's high-rise developments don't. Such social, economic and even psychological factors make finding a new building typology, or the new Istanbul urban pixel, crucial in order to create alternatives for TOKI's monotonous high-rise blocks. This is why the Istanbul game zoomed into the scale of the city block.

66 Mostly one floor, mud-brick Anatolian style village homes which were mushrooming in the peripheries of Istanbul since the 1950's.

67 'Yap-sat' translates into English as build and sell and stands for five floor apartment buildings erected by small scale contractors for profit.

§ 4.3.3 Searching for the Play Istanbul Interface

The game environment needed to represent a standard city block in one of Istanbul's residential neighborhoods in transformation, instead of simulating one unique city area. A generic environment was preferred for testing the applicability of the proposed collaborative organization model in relevant transformation sites in the city. The variety of agencies influenced the interface as differing levels of power, knowledge and interest needed to be translated to the game space, blocks and role cards[68]. Thus, modeling and rendering the diversity of actors engaged in the urban transformation process entailed devising a medium interlinking differing forces.

A The Pixel and the Megaform

Istanbul can expand either by densifying, transforming its existing neighborhoods vertically, or threatening its resources and weakening its social capital by sprawling horizontally into its natural reserves. Istanbul's new autonomous pixel, and the type of urban growth this implies, will therefore determine the mega-form of Istanbul.

The Istanbul game was generated to test the impact of vertical urban growth within the existing city borders. The new urban pixel spreading throughout the city as a result of an alternative urban transformation was based on densifying Istanbul's city block, the neighborhood's basic unit. Therefore the City Game focused on developing the transformation of a generic city block. The game integrated not only spatial organization but also social, political and economical mechanisms behind the transformation of the urban pixel. Over one hundred stakeholders has been invited to generate variations on this pixel during game sessions. Urban block variations of a generic co-design model was significant in displaying how a simple transformation model had the capacity of producing endless variations that could be implemented also in reality, by the stakeholders themselves. This process was meant to continue until the urban growth pressure has been absorbed.

68 In 'Generative City Gaming' involved stakeholders are modeled based on their patterns of behavior. Role cards are designed to communicate the interests, powers and action points of a given player.

B Modeling the Yap-Yaşa Pixel

As narrated in the introduction chapter, Istanbul already witnessed an immense conversion process of gecekondus to yap-sat blocks of flats. The game enacted the metamorphosis of 20 traditional yap-sat blocks, each of which contained on average 12 households. A pixel consisting of 20 yap-sat blocks accommodates 240 households. For a developer to become financially interested, the number of households must reach 300, an increase by 20%. Typically, a traditional yap-sat block sits on a 1000 square meter footprint. Twenty of these will add up to a 2 hectare footprint for the new urban pixel, and give a density of 150 homes per hectare. This density is comparable to the densities of Paris and Barcelona, slightly higher than Amsterdam's City Center[69].

This size of the new pixel was the smallest urban unit to include an open space accommodating daylight, ventilation and leisure. Given the lack of a green public space network in Istanbul, this was a conscious choice for the surface area of the pixel. Accordingly design rules supported a perimeter block maximizing the size of open space. This new block was meant to contain a minimum of 300 households and a central green courtyard. We named this pixel Yap-Yaşa -*Build-Inhabit in English*- as an allusion to the Turkish term yap-sat -*explained earlier*-, converting an economically driven construction process into a new socially and environmentally habitable paradigm.

We decided on a 200x100 meter plot to play out the Yap-Yaşa game. This secured a minimum 0.8 hectare, 40% of the ground area, as a central public or semipublic green space. Players can generate more than this amount, but this is dependent on particular players as the interface has no limitation for maximum height. Thus the play interface has built in density requirements but distribution of the mass, open space and the height is determined by the particular players in each play session.

69 300 households is equal to the number contained in 6 TOKI blocks. This equation is important to keep in mind for Play Istanbul, comparing the spatial qualities between high-rise blocks and varied mid-rise perimeter blocks with a communal green courtyard.

Each Yap-Yaşa block was based on a 50/50 share of the building, and therefore of decisions and engagement, between the TOKI and residents[70]. TOKI's share of the territory was a 10 meter wide strip around the periphery of the city block, amounting to 3600 square meter of land. Within this zone TOKI had to supply 150 of the block's 300 households, with a minimum of 5 levels. The residents and small contractors building in the interior of the Yap-Yaşa block could choose their maximum heights, positions, mass-void composition, etc.

Four gates on every facade provided accessibility to the Yap-Yaşa block's interior green space. These openings were proposed to cater for pedestrian flows and bike traffic, connecting the internal life of the block with the city, providing these slower or local scale forms of mobility. Such a mobility scheme providing space for slow traffic would improve Istanbul's city fabric dramatically, specially on the local scale, as modes of transport other than motorized vehicles have great difficulty in claiming their legitimate place in the urban network.

The design-determining factors of the Yap-Yaşa interface that influence the architectonic and social form have been carefully translated into simple organization and design rules, which can be found in the following pages.

70 Chile Elemental's Quinta Monroy Housing scheme realized by limited public funding where they provided 50% of the building and left the rest to its future residents was the source of inspiration for Yap-Yaşa development. Not for financial motivations, but the social inclusion and coherence were the leading factors for this decision.

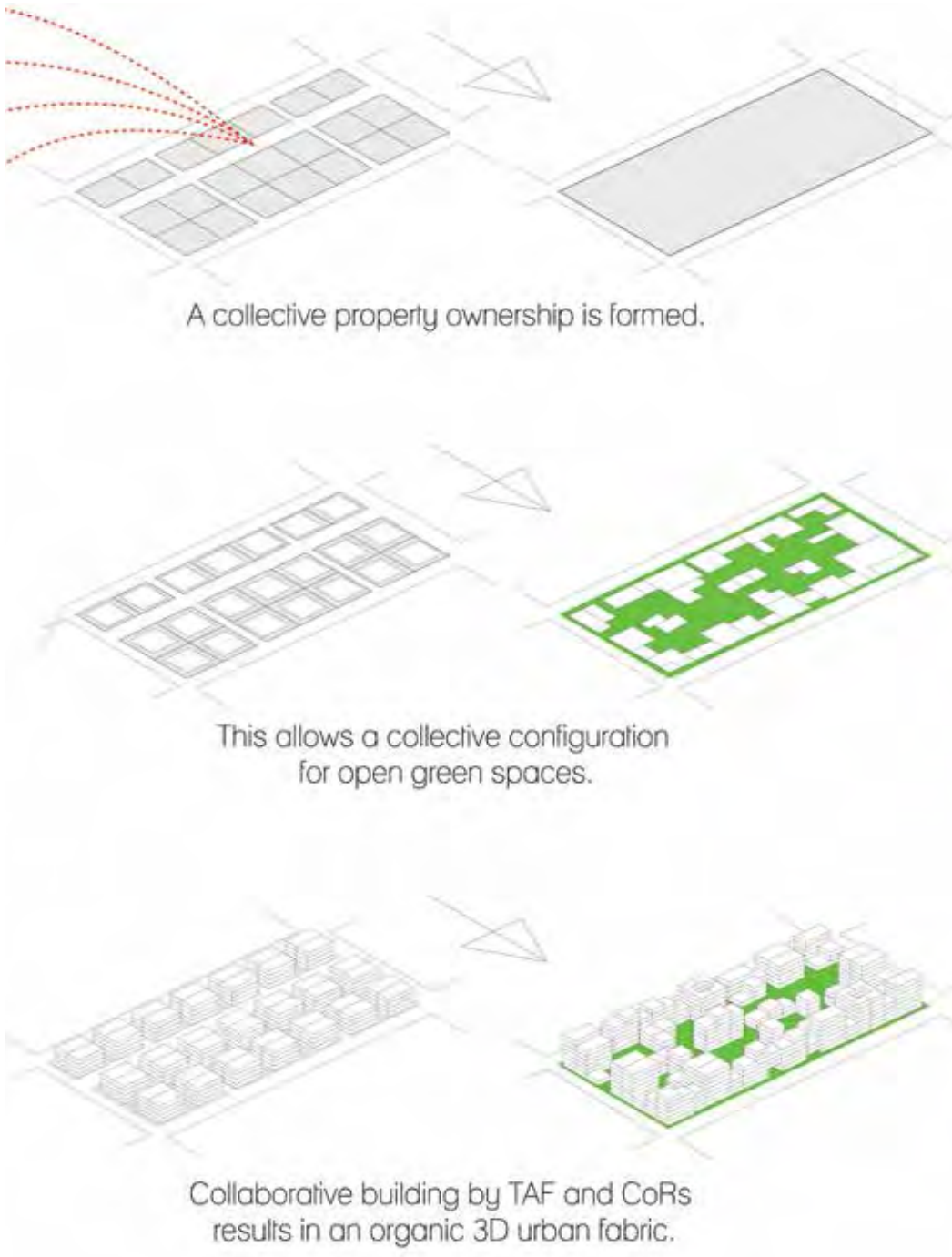


Figure 96
Rules for city block size, public green, gates and the proposed 50% ownership division between TOKI and local residents.

C Modeling Urban Agents

After we fixed the scale of intervention as the city block, we then mapped the key actors currently engaged in the transformation of Istanbul's neighborhoods into the game interface as follows:

The '*Metropolitan Municipality of Istanbul*' as the legally responsible party has been involved with its various sub-institutions: the '*Urban Transformation Directorate*' -*specifically to run urban transformation in Istanbul*- and three local governments undergoing urban transformation, were contacted. As a result of these organizations and their regulators, two agencies represented the municipality: a politician responsible for legislation, announcing and adapting organization rules, and a technical advisor who keeps an eye on the implementation of design rules, such as maximum height, public green and gates.

In 2003, the new version of Turkish law number 2985 broadened the responsibilities, power and resources of '*TOKI*', which was established in 1984 and had been rather a laid-back organization in terms of housing provision when compared to self-builders. With the new law, the housing administration has been given the privilege to advocate gecekondu clearance on behalf of the urban transformation for public interest. This technically meant that TOKI could lay claim to more than 40% of Istanbul's urban land, thus making it potentially the most influential player in terms of implementation of urban transformation projects[71]. This relation gave the national housing administration a special position amongst other stakeholders of the Yap-Yaşa game.

71 2005, two years after its rebirth, TOKI took action in slum clearance for urban transformation: Istanbul's gecekondu neighbourhoods Ayazma and Basibuyuk have been demolished. In the case of Ayazma, 1400 families were relocated to TOKI homes in Bezirganbahce. Professor Asuman Turkun reported that 700 of these families left Bezirganbahce due to unrealistic payment models and a mismatch between their lifestyles and the new environment [Lovering, 2011]. Today, these families rented homes in other peripheral gecekondu neighbourhoods. A parallel series of events is witnessed in Basibuyuk. Here, TOKI relocations had a direct impact on political elections where the active governing party the AKP lost.

Figure 97
New TOKI-style housing blocks mushrooming in Istanbul.

Next, local NGOs such as '*IMECE*', '*Dayanismaci Atolye*', active in the gecekondu neighborhoods and Istanbul's transformation districts were added to the game interface. They play a slow but very significant role in raising awareness in terms of active participation of citizens in urban transformation processes. In Turkey, these groups typically stem from academia, positioning themselves as critical of the top-down renewal projects practiced by TOKI. In Yap-Yaşa they kept their resistant and creative stance.

The position of *residents*, however, is much more diverse and unpredictable thus cannot be modeled. Some citizens act pragmatic and ready to negotiate rates and square meter percentages after the renewal, some resist and others are undecided but open. They include both home owners and tenants who are willing to stay in the neighborhood, but dependent on the property prices after the transformation.

Contractors play a dominant role in the re-densification of Turkish cities and Istanbul is no exception. Small scale contractors in particular have been responsible for converting gecekondus into yap-sat type housing blocks. However, lately, the competition from TOKI has caused an upscaling of contractors' projects, as high-rise blocks flourish in every corner of the country. In the game we introduced a contractor agent who could choose the scale on which to work: either with residents or TOKI.

Realtors play the role setting property prices in transition neighborhoods after urban renewal takes place. We introduced this player into the game as an evaluation factor for the outcome after the transformation of the city block, as a way to measure the satisfaction of the actors.

These roles have been printed on role cards and guided players throughout the game. The exact scripts can be found at the end of this section. To represent the diverse roles we worked with a graphic designer to illustrate characters involved in Istanbul's urban transformation process.

D The reality and the alternate reality

For the purpose of comparing ongoing transformation process with the proposed alternative of Yap-Yaşa we configured the game as two episodes. The first episode directly modeled the power relations according to reality. The second episode tests an alternate reality where the power of strong players such as TOKI was decreased to 50% by submitting half of their building resources to residents and contractors. This method tests the new Yap-Yaşa pixel when 50% of it is realized by small scale investors. To be able to repeat this model enough times to transform Istanbul, top-down actors would need to collaborate with small scale investors.

Figure 98
Game room before the players have arrived.

E Role-exchange

In the special case of Istanbul and the heated debate around its transformation it was rather difficult to convince all stakeholders to meet around a table. Most of these players refuse to shake hands or greet each other in real life. This is why we introduced the role-exchange method. Thus a TOKI representative would become a tenant in the game, an NGO turns into a technical advisor and so on. Role-playing could help the players see the conflict through the eyes of others and perhaps find reasons for collaboration in real life.

§ 4.3.4 Designing the Setting for Yap-Yaşa

Modeling the interface as a generic assembly of about 20 yap-sat flats gave us the freedom to select cases from various neighborhoods to test the Yap-Yaşa urban pixel. By building one generic model we could invite stakeholders from different city districts. The game interface was designed to include as many residential areas as possible, making it a useful city-wide method for the negotiation of neighborhood development.

The Yap-Yaşa setting consisted of three gaming tables. The first table showed Istanbul and its region at a scale of 1:10000, and indicated ongoing transformation activities or plans in the area. The second table zoomed into the three specific neighborhoods, Sariyer, Kartal and Arnavutkoy, at 1:1000 scale. The third table was the interactive gaming table, with the generic blocks at a scale of 1:100[72].

The building blocks were designed to represent the old yap-sat flats, TOKI blocks and the Yap-Yaşa urban pixel. We first marked the gaming table with a 10 by 10 meter grid. Building blocks were based on this grid, where 20*10m represented one urban housing unit. To represent yap-sat modules, we stacked four of these units and screwed them together. TOKI blocks were then visualized by combining these 4 layer modules. For Yap-Yaşa blocks, we stacked and screwed 3 layers. We also retained some loose single units. Building units were color-coded, so we could visualize and track the play moves made by various stakeholders. We chose 3 different wood types in light, natural and dark colors to represent different players. Light color units were to be used by TOKI, darker ones by residents and natural ones by the small scale contractors.

72 In the Oude Westen game in Rotterdam, 1:100 scale proved itself to be suitable for the negotiative architectural design of perimeter blocks.

Figure 99
Players rotating wooden game units in various colors.

The screwing detail added the possibility of rotating units, and triggered additional negotiation between neighboring households. This small detail not only helped the formal composition but also stimulated social ties between residents as the city block evolved.

To regulate the building activities of the stakeholders, whether TOKI, the residents or contractors, we drew color-coded lines across the gaming table, aside from the base grid and the pixel size. The blue line following the outer boundary indicates the strip assigned to TOKI. Territory inside this blue line corresponds to collaborative Yap-Yaşa construction. Pink lines designate lots for TOKI towers, while yellow lines define existing yap-sat plots. The beginning phase of the game followed the yellow lines of the yap-sat flats. The pink and blue lines were then negotiated alternatively to transform the yap-sat blocks in the sample urban pixel.

A video camera fixed to a tripod recorded the top isometric view of the game table. A dynamic camera recorded the players' conversations and shot photos of the game in progress. Each session for selected three districts was played by stakeholders performing the Yap-Yaşa transformation process.

§ 4.3.5 Rules for Yap-Yaşa

As a contrast to Almere Haven and Rotterdam City Games, Yap-Yaşa did have rules for spatial organization. Besides the play rules of the game we added design rules informing the urban green, maximum height, property and building gates. The design parameters for defining the Yap-Yaşa pixel have been described at length above. These simple design and organization rules helped players variate on the Yap-Yaşa block.

§ 4.3.5.1 Play Rules

A Simultaneous Play Rule

Participants play simultaneously, unless the politician or the NGO calls for a public meeting to change the course of the development.

-Each Yap-Yaşa year lasts 10 minutes; the game simulates 10 years.

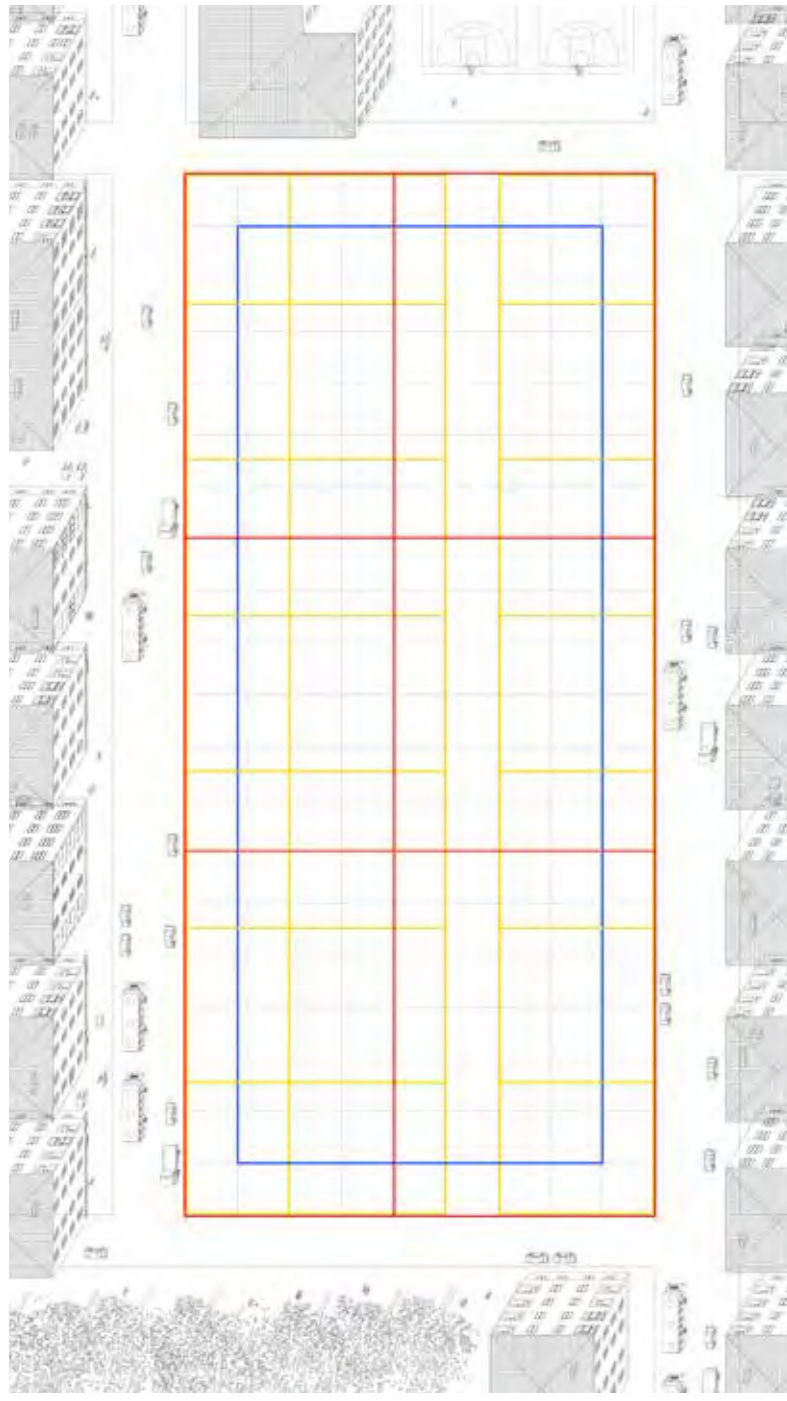


Figure 100
Map indicating active play area based on color-coded property lines.

B Respect Rule

In case of conflicting interests, later acts implemented in the game have to respect all previous decisions.

C Consensus Rule

Transformation can start when the residents of 4 adjacent yap-sat flats are in favor of transforming their block.

§ 4.3.5.2 Design Rules

A 50% Rule

50% of the Yap-Yaşa block is built by the housing administration [TOKI], and residents build the other half with involvement from small-scale developers. The housing administration plays along the block's exterior facade: outside the blue lines. The residents play in the center of the block: inside the blue lines.

B Height Rule

The housing administration can build a maximum of 7 floors, and must build a minimum of 5. Residents don't have height limits, but can be stopped by the green rooftop units.

C Green Rule

A minimum of 40% of the ground floor is covered by green units fitting the 10*10 grid of the play table. The minimum courtyard size is four green units. Green units need to be continuous.

D Gate Rule

On every 4 side of the Yap-Yaşa block a gate must be created.

Figure 101
Yap-Yaşa in Karakoy Square.

Figure 102
Locations of selected Yap-Yaşa neighborhoods.

§ 4.3.5.3 Preparation Process

In preparing Yap-Yaşa, building trust amongst stakeholders: visiting most of them and convincing them to join the play sessions took as much time as inventing, designing, building and testing the play interface. Our correspondents[73] in Istanbul built a network of individuals and institutions to support the play sessions while we were busy designing the play narrative, rules and conditions -*and the hardware*- the play table and units[74]. Our correspondents joined forces with Istanbul Metropolitan Planning Organization [IMP], the Mimar Sinan University, Turkey Architects and Engineers Association TMMOB and the Amber Platform, a new media institution in Karakoy. IMP provided us with mapping and data about Istanbul, Mimar Sinan helped with reaching out to the NGOs and resident's organizations, TMMOB provided their network of planners, designers and local governments, Amber Platform provided us with a debate platform and their location as a 'neutral' ground in which to welcome all players.

As the project was part of the official Istanbul ECOC [European Capital of Culture 2010] program and the Dutch Consulate was one of the funders of the project, we used these institutions as a framework through which to reach out big players such as TOKI, investors, developers and the Transformation Department of Istanbul Greater Municipality. The correspondence with these official institutions evolved slowly and required extra attention and perseverance to introduce them to, and convince them of, our unusual method.

On arrival we organized a series of meetings and debates and invited the press to the launch of the game. The media with an eye on urban transformation showed interest. A well respected journalist, Tan Morgul, whose work on urban issues is respected by a national audience within the field of urbanism was interested in attending the play sessions. After the launch, Yap-Yaşa events in Istanbul continued for 10 days: 3 days of building the setting and organization meetings with locals; 5 days of play sessions, two of which for internal tests; 2 days of public lectures and debates, and 1 day of spontaneous outdoor play with the public in Karakoy Square.

---

73 Our Istanbul correspondents were Muge Yorganci author of the Turkish online architecture magazine and network Arkitera and Ulas Akin, the senior planner working for the Istanbul Metropolitan Planning and Design Center .

74 Due to the distance between the production and gaming event locations - Amsterdam, Delft and Istanbul - we used online communication media intensively during the preparation process.

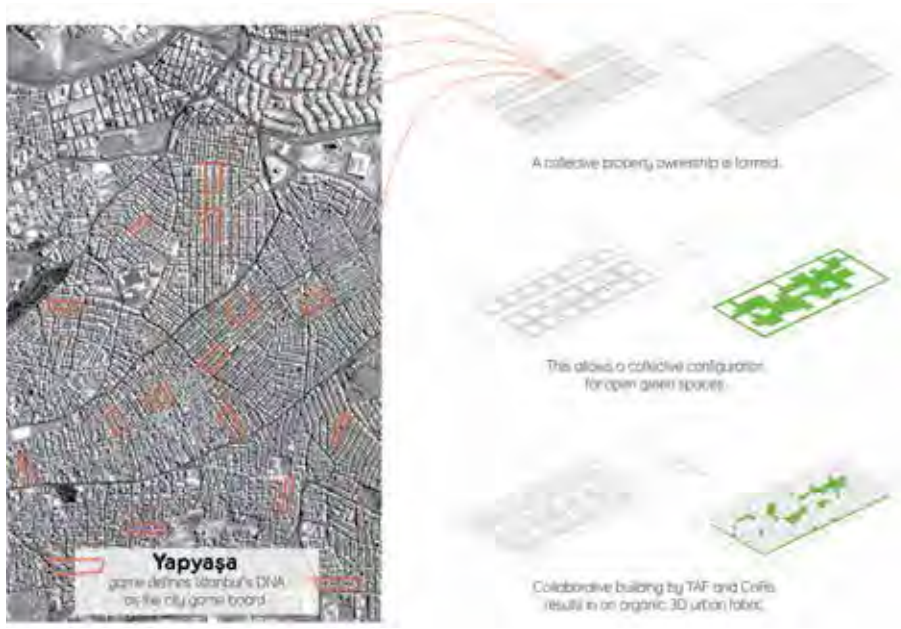


Figure 103
Urban transformation based on Yap-Yaşa.

Figure 104
When repeated multiple times, the Yap-Yaşa Block will introduce public green into Istanbul's urban residential neighborhoods.

§ 4.3.6 Yap-Yaşa Players

We selected three districts of Istanbul which were to be soon be influenced by urban transformation plans for the Yap-Yaşa game sessions. The controversial plan for the third Bosporus bridge was one of the factors pressuring the urban renewal plans. Other forces, such as land speculation by farmers and foreign investors was already visible, despite environmentalist groups denouncing the bridge for ruining the last nature reserves of the metropolis. Neighborhoods such as Sariyer and Arnavutkoy, the former located on the Bosporus and the latter in the inland territories of northern Istanbul, are facing imminent transformation. Similarly, Asian counterpart districts such as Kartal, feel the pressure of renewal under the impact of the prestigious CBD projects undertaken by world-renowned architect Zaha Hadid, as well as the recently opened Sabiha Gokcen Airport in Pendik.

These cases illustrate that, aside from the threat of an imminent earthquake, the third bridge, the new CBD in Kartal and the Pendik airport have their share of responsibility for the close link between Istanbul's urban renewal and urban gentrification. Neighborhoods such as Maltepe, Zeytinburnu or Kucukcekmece which are highly earthquake sensitive, or central places such as the old city district, Yenikapi, Sulukule, Uskudar and Tarlabasi, are already witnessing physical signs of transformation.

As local governments commission foreign and national advisors to generate urban renewal plans, developers start contacting residents to sign agreements. Meanwhile, activists are organizing residents to resist for a more collaborative process. Based on the actuality of the transformation plans we chose for Sariyer, Kartal and Arnavutkoy to join the game. These three neighborhoods have a relatively low density and can absorb further growth. The renewal, as proposed by Yap-Yaşa, is most critical in these districts in terms of tackling the government's plans to build in the nature reserves outside city borders.

Besides the shared urgency of transformation as a common factor, the three selected cases display different political and social organization:

A Kartal

Kartal's Yunus neighborhood stood out as a case where active neighborhood organizations were resistant to the urban renewal plans. Here the polarization of the renewal debate was high. As the local government indicated no sign of searching for a dialog, activists were frequenting the neighborhood organization to grow the resistance movement.

1

2

3

Figure 105
Potential block for Yap-Yaşa transformation in Yunus (1), Ataturk (2) and Derbent (3) neighborhoods.

Two local residents, one shop owner, an expert from the Istanbul Metropolitan Planning Institute, one private, one public planner and one architect involved in plans, one urban psychologist, one academic, one private investor and one visual communication designer interested in Yunus, a journalist from the national liberal newspaper Radikal newspaper, all joined the game for the Kartal session. Given the antagonism, there was no representative of the official local government for this case.

B Sariyer

In contrast to Yunus, Sariyer's Derbent displayed a more socially and politically coherent scene. Here the local government appeared to be highly conscious of the importance of communication and the collective performance of diverse stakeholders. Local politicians, technical advisors and neighborhood organizations have formed a platform to manage the decision-making process democratically.

Three residents, one shop owner, one public planner, one activist, one urban strategist, one real estate agent, one representative of the local government, the second director of Istanbul Metropolitan Planning Institute and the journalist from the national liberal Radikal newspaper joined the game for the Sariyer session.

C Arnavutkoy

Arnavutkoy's Ataturk neighborhood displayed less political involvement when compared to previous examples and had rather a commercial orientation for the upcoming urban renewal plans. Arnavutkoy, a relatively young village of Istanbul, is over 100 years old. Initially founded by Albanian immigrants during the late Ottoman era, the village has grown into a 200,000 inhabitant municipality since the 1950s. Residents have farmed the area and, in Istanbul terms, it is low density urban sprawl. This explains how the arrival of urban renewal and further growth did not generate political opposition but was seen as a chance for urban speculation. The local government showed interested in testing out impacts of densification on the district and nearby natural resources.

Two residents, one shop owner, four representatives from the local government, a member of an environmental NGO, one land owner, one representative from the Urban Land Institute [ULI-Turkey], one expert from the Istanbul Metropolitan Planning Institute, one foreign architect, one visual communication designer and the journalist from the national liberal Radikal newspaper joined the game for the Arnavutkoy session.

Figure 106
Yap-Yaşa play process, Kartal.

A detailed list of the names and functions of all players can be found in the Appendix #2.

We invited the housing administration TOKI and the Urban Transformation Directorate of the Istanbul Metropolitan Municipality to all three neighborhood gaming sessions. We had been in contact with various experts from these organizations six months before the game sessions were held. Despite very kind and seemingly open and willing dialog, these officials finally cancelled their participation in the game one week before the Yap-Yaşa sessions.

§ 4.3.7 Yap-Yaşa Play Process

Yap-Yaşa's first episode started with the vision speech of the politician introducing the urban transformation agenda, followed by reactions from the housing administration, advisor, contractor and residents, positioning themselves accordingly. Players spontaneously responded to each other's statements, and the NGO and the politician organized collective meetings to influence decision making. The active building process was included in the second episode. Both episodes were programmed to last 10 Yap-Yaşa years, which in the game was 100 minutes per episode. We had a tea and simit -*circular sesame bread*- break between episodes, efficiently used for lobbying. The first episode was based on the existing rules and power relations of the ongoing transformation process, while the second episode was brought to life by alternative rules and power relations between the current urban actors, such as the housing corporation, the local government, the designer, the landowner, and so on. -*The play and design rules mentioned above belong to the alternative scenario.*

§ 4.3.7.1 Yap-Yaşa Kartal Session

A The First Episode

The politician, role-played by a resident, held a speech on the earthquake risk and upcoming urban renewal plans for the Kartal Yunus neighborhood. Resident, played by an investor, an academic, a private sector planner, an IMP expert and an architect, started revealing their positions about the urban transformation as being against, for or undecided.

Figure 107
Yap-Yaşa play process, Kartal.

TOKI, played by an urban psychologist, and went on to reveal their plans for new towers. They started lobbying with the contractor, enacted by a visual communication designer. The technical advisor of TOKI, played by one of the residents of the Yunus neighborhood, was carefully examining the status props on the table to use based on the 'consensus rule' -*third play rule to start with the renewal*. Meanwhile the realtor, played by a public planner, started noting property prizes. The average value of yap-sat apartment flat was 80.000 euros before the transformation started.

Meanwhile the NGO, played by a shop owner from the neighborhood, was actively organizing indecisive residents to resist any form of agreement with TOKI or the contractor. We scripted the number of players 'for' and 'against' transformation would neutralize and there were a number of hesitant residents. This made the outcome of the negotiations unpredictable and gave space for building arguments and long negotiations between players. Residents, enacted mostly by experts who are responsible for conducting the urban renewal processes in real life, surprisingly resisted TOKI's plans in the game. The debate on the renewal of a generic urban island in Kartal deepened into intricate questions, such as whether an underground parking would be financially feasible or whether open green space needed to be fenced or remain public. However, a group of residents acting together and resisting the demolition of four adjacent yap-sat blocks, blocked any form of consensus. This went on until the time limit of the episode expired. In the meantime the journalist, who was tweeting the resistance, got an online message asking whether an earthquake could take place in the game. We did simulate the earthquake to explore how the players would react to TOKI housing schemes after the disaster. Post-disaster, all players acted collaboratively and agreed to implement the plans prepared by the housing administration.

B The Second Episode

This episode was modeled in such a way that every resident had certain number of building units between them. Residents had access to 50% of all the building units. Accordingly, TOKI handed over 50% of the building stones they possessed in the first episode. We placed the status props back in the original configuration and the second episode began. In contrast to the first episode, residents acted less resistant and found ways to negotiate with TOKI by locating their building units where they would like to resettle in the urban island. The technical advisor chose to remain passive and waited for construction deals between residents and the housing corporation to be made. He was responsible for implementing the game's design rules, such as the proportion of urban green or maximum height. He made sure that building blocks stopped rising until a roof garden emerged, gates were built on four sides of the block and that the urban green had continuity on the ground floor as defined by the rules. As a result of the building activities, green public spaces emerged as fragmented and enclosed subspaces instead of as a central courtyard. A mid-rise high density block was the outcome of the negotiations. The realtor noted the value of the new flats between 150000-200000 euros based on interviews with the residents in the game.

Figure 108
Yap-Yaşa play process, Kartal.

§ 4.3.7.2 Yap-Yaşa Sariyer Session

A The First Episode

The politician, role-played by a gecekondu tenant from the Derbent neighborhood, held a speech on the risks of informal building and pleaded for a fast urban renewal process. Residents, played by an activist, an urban strategist, a local government officer and IMP's second director, started revealing their positions about the urban transformation. TOKI, played by a shop owner from Derbent, went on to defend planned high-rise blocks. Together with the contractor, a real estate agent in real life, TOKI then started building a sample TOKI block at the corner of the play table. The NGO, played by a resident, chose to hold individual meetings with every stakeholder to stop the plans by proposing new elections. The politician appeared to work with TOKI and the contractor. The technical advisor, played by a local resident of Derbent, could not identify an open spot in which to activate the 'consensus rule' in this episode. When the debate on the renewal of a generic urban island in Sariyer seemed to get stuck, the NGO's lobby for new elections turned out to be a realistic option for more of the players and the NGO proposed himself as a candidate to stand against the existing politician. He won the elections by promising everyone active participation and decision-making in the urban renewal process. The journalist tweeted the newly elected politician.

B The Second Episode

This episode was modeled in such a way that every resident owns building units, and between them the residents own 50% of the all building units. Accordingly, TOKI handed over 50% of the building stones they possessed in the first episode. We placed the status props back in their starting positions and the second episode began.

The technical advisor together with the former NGO, the new local politician, started laying out public green props before any moves were made by either TOKI or the residents. They seemed to have a clear vision for organizing the public open space which remained coherent throughout the game. Some residents resisting the ongoing transformation and their housing blocks remained untouched until the end of the second episode. The early action on the public green spaces forced TOKI's block to rise to 7 floors, their maximum height. Similarly, the individual building in the interior part of the city block ended up building up to 10 floors in 3 housing blocks to fit in the 100 household units under their responsibility. As a result, a high-rise high density perimeter block rose around two large green courtyards with more that 50% public green on the ground floor, 4 wide entrance gates and several urban roof terraces.

Figure 109
Yap-Yaşa play process, Sariyer.

A The First Episode

After politicians opening speech, residents, played by 3 representatives of the local government and the visual communication designer revealed their positions about the urban transformation, according to the status assigned to them. TOKI, played by the ULI-Turkey correspondent, introduced the new plan for high-rise blocks, to be built soon in collaboration with the contractor, a shop owner from Arnavutkoy. They started building a sample of TOKI block outside the play area. The foreign architect, who played the technical advisor of the local government, started collaborating with TOKI closely to establish where to start the demolitions. The NGO, played by a municipality planner, held both individual and collective meetings with all stakeholders. The NGO positioned himself not against renewal but against high-rise and high density development. Residents, open to transformation, acted together with the contractor. The debate on the renewal of a generic urban island seemed to focus on the extra square meter percentages to be demanded from TOKI. The right to build 20% percent extra to make the renewal feasible seemed to be a deal accepted by the residents, the politician and TOKI. However, this conflicted with the argument put forward by the NGO, who is an official worker of the Arnavutkoy municipality in reality. When he reminded the residents and TOKI of the conflict between individual wishes and the collective vision for the area, the debate focused on how to organize a lower density with TOKI. This debate went on until the tenth year of the Yap-Yaşa game. The journalist, who was observing and tweeting the game, had to report to the real world that TOKI's plans were not realized in the given period in Arnavutkoy.

B The Second Episode

Based on the density debate of the former episode, the NGO proposed to exclude 10% of the building units from the game. An internal vote among the players followed, and the proposal was accepted and implemented by the exclusion of 5% of the residents' units and 5% of TOKI's units.

Figure 110
Yap-Yaşa play process, Arnavutkoy.

Figure 111
Yap-Yaşa game outcome, Kartal.

Figure 112
Close-up view of the Kartal session outcome.

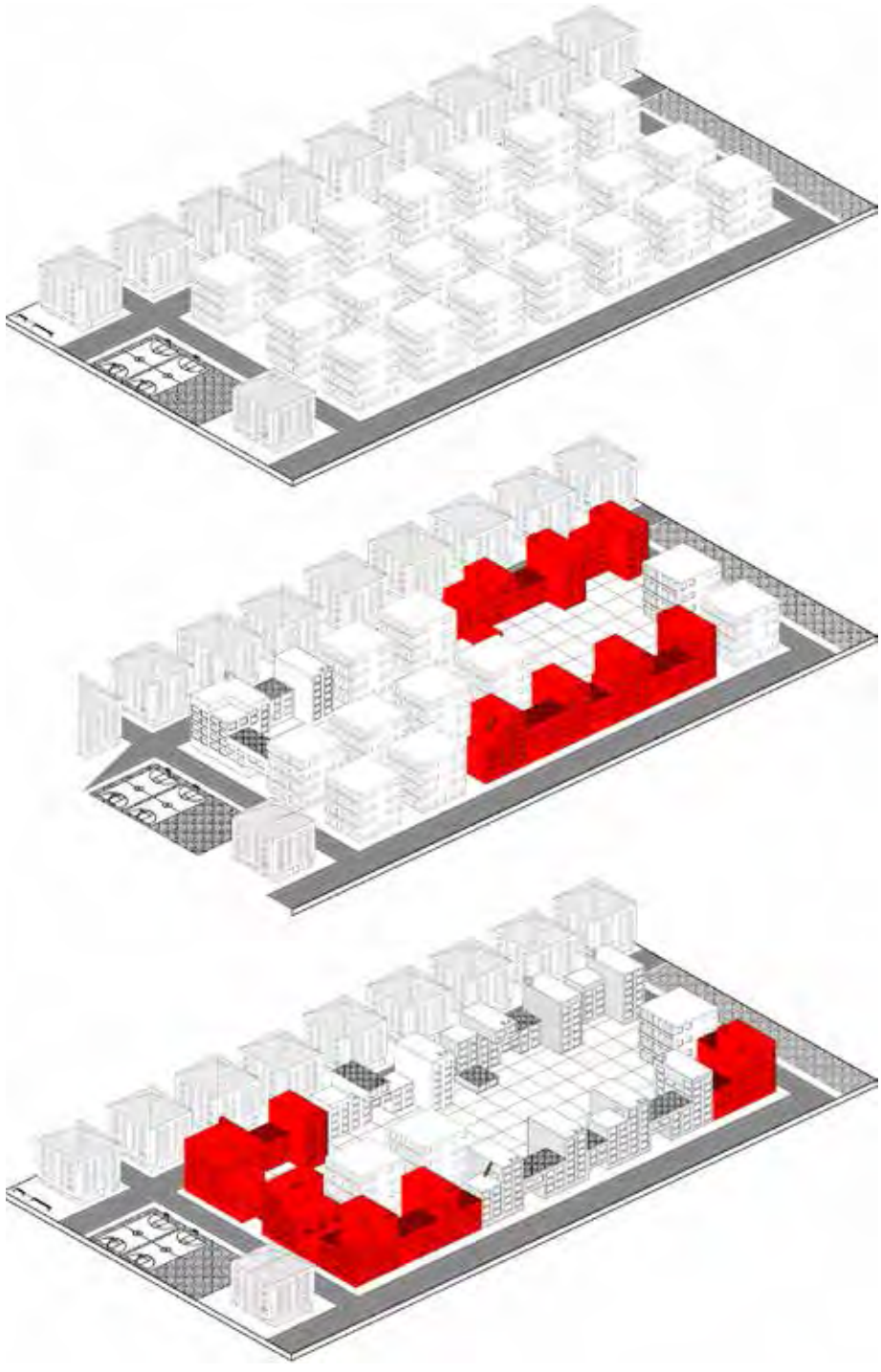


Figure 113
Yap-Yaşa play process, Kartal, phase 1 - 3.

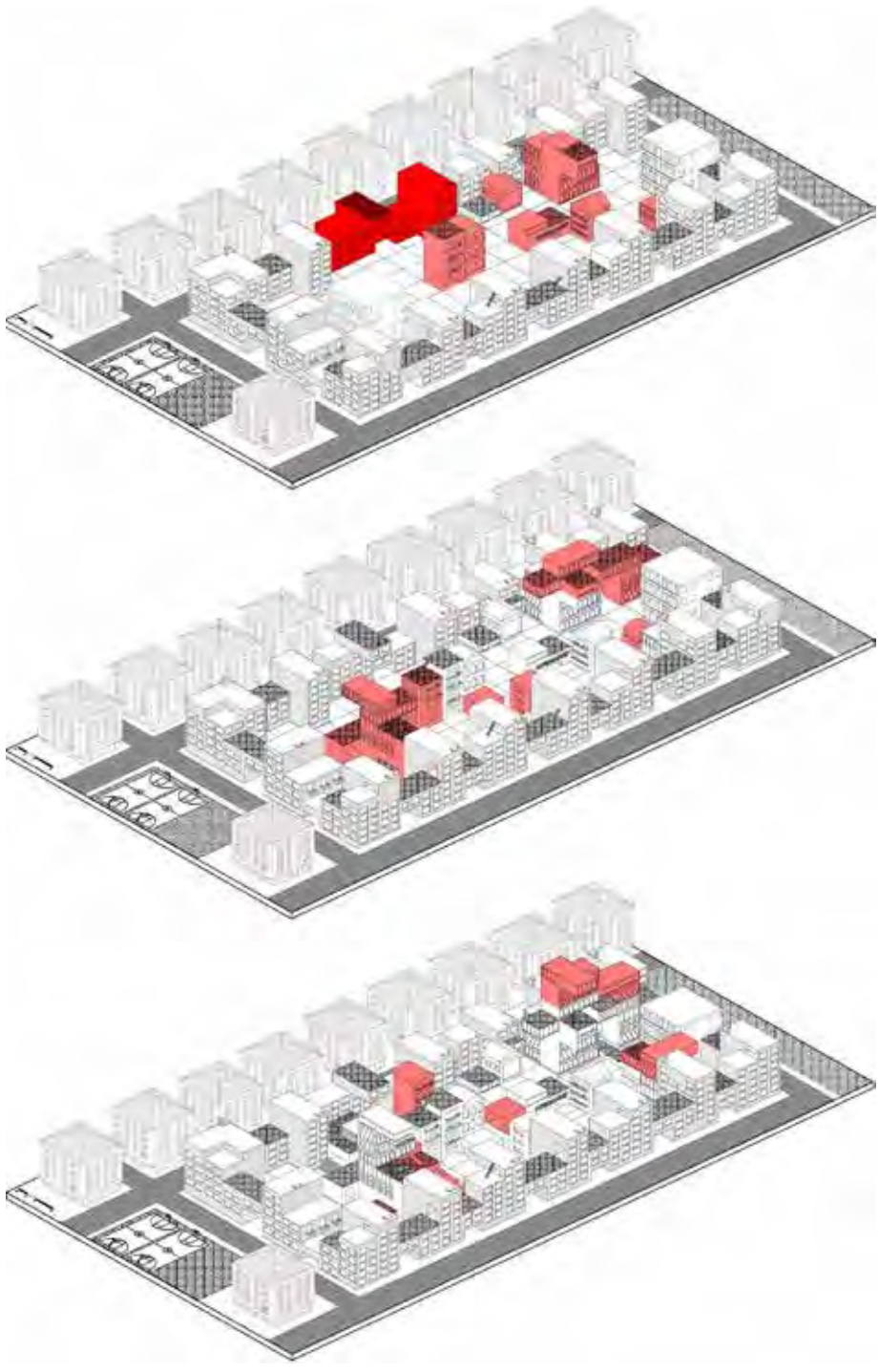


Figure 114
Yap-Yaşa play process, Kartal, phase 4 - 6.

Figure 115
Yap-Yaşa game outcome, Sariyer.

Figure 116
Yap-Yaşa game outcome, Arnavutkoy.

The technical advisor, a foreign architect in reality, started coordinating a designed peripheral development with TOKI. The contractor joined the building of the perimeter, whilst residents located their new homes and shops in negotiation with the TOKI team. The NGO and the local politician started laying out the public green, which had a clear formal order due to the peripheral design imposed by the technical advisor. As a result, a mid-rise low density perimeter block emerged, with a large central courtyard and smaller gardens distributed through out the block.

§ 4.3.8 Yap-Yaşa Outcomes

The Yap-Yaşa game interface produced variations on a city block typology, guided and constrained by the design parameters set in advance. All game outcomes differed from one another. They adapted to each new group of stakeholders who negotiated their own interests through the Yap-Yaşa game interface. We observed how governance dynamics impacted player's negotiations.

The Kartal session reflected the actual conflict between groups that resisted the transformation and interest groups for urban speculation. Socially and politically fragmented Kartal stakeholders had difficulty in reaching any agreement during the City Game. As the dispute continued, within the time limits of the first episode, only a random external condition could transform the ongoing conflict into a collaborative play: an earthquake proposed by a player from social media.

The outcome of the second episode was a fractured Yap-Yaşa perimeter block with inner blocks of various heights and small subdivided courtyards.

The politically proactive and consensus-seeking structure of Sariyer was reflected in the first episode. As each player clarified his or her own position, it became evident that players would not follow the TOKI plan. Through the initiative of the NGO, a consensus was built to call for new elections. Before the playing time ran out, a new politician came to power by promising a redistribution of power within the urban transformation process; thus a smooth transition to the second episode.

The gravity of collective decision making translated into a clearly defined communal green space at the center of the city block with wide entrance gates leading to it. Three high-rise blocks with a green terraced structure rose around it.

In the pragmatic and relatively less politicized Arnavutkoy, heated debates did not emerge in any of the game sessions. The preference of the local government for a lower density, combined with the advice given by the foreign advisor, resulted in a regular

lower density city block. TOKI created an outer periphery with a clear architectonic order and a consistent height of four levels. The interior of the block was made up of low-rise independent blocks with roof terraces, and had more than 50% green space, including two main courtyards.

§ 4.3.9 Can City Gaming Link Power Dynamics to Urban Form?

Yap-Yaşa's hypothesis was that if diverse agencies could act in an interactive design environment with simple design and organization rules, consensus between various urban actors might be achieved. Yap-Yaşa is the first game where we formulated the interests and power levels of real stakeholders to influence an urban design process. Thus the interface created ties between a housing corporation, a politician, residents, tenants, NGO's, the local government and experts, all in terms of their responsibility and accessibility to the provision of housing. In the Yap-Yaşa game, an interactive interface mediated the agents' negotiations and rendered them as urban form.

Three Yap-Yaşa sessions resulted in various urban blocks, although the agencies scripted in the game are the same. The complex human beings, and their particular 'real' context, gave life to the agencies by revealing their own dynamics. As we concluded earlier, the sociopolitical conditions of each locality were reflected in the final Yap-Yaşa block. A new assembly of stakeholders from the same locality would generate yet another novel block. Thus the interactive play does not calculate an optimum form for a given neighborhood, yet does facilitate the modeling and understanding complexity of unpredictable agents and the possible forms that could spring from their power dynamics.

In the Yap-Yaşa game we not only modeled power relations according to reality but also tested an episode with alternative power ties between existing stakeholders. In the first phase, power, or access to building units, was in the hands of the central housing corporation. In the second episode, power was redistributed to a larger group that included the residents, business owners and contractors through 50% rule. Leveling power and responsibility changed the process of play entirely. Although both episodes depended on the same consensus rule to set the transformation in motion, they turned out differently. In all the game sessions, the first episode ended up deepening urban conflicts and resulted in a lack of decision making, an earthquake, a call for new elections, and the alteration of the set rules of the game. In the second episode, where most players had some form of access to shaping the transforming city block, the negotiation phase took much less time. TOKI and the residents engaged in real co-working. The behavioral change according to the levels of access to resources and influence on the process carries significance for real urban development processes.

The controlled self-organization exhibited during the second episode soothed previously polarized urban politics.

The sharing of powers has been inspired by the Chile Elemental project, introduced earlier where due to lack of resources the residents were brought into to process of urban transformation. For the Yap-Yaşa case, not exactly the scarcity of resources but the necessity of collaborative decision making 50% rule worked constructively. This could be a democratic and well-informed track for Istanbul to reinvent its own self-organizing process in urban development.

The role-play aspect of the Yap-Yaşa game gave the process of play its autonomous input. By role-playing, participants could reveal their own background knowledge and experience. Releasing such input would be difficult to stimulate through game rules. Freeing players and giving them space to introduce their own perspectives is necessary alongside strict game rules. We observed that players used this freedom to invent new conditions such as demanding new elections as in the second sessions or lowering density as in the third session.

§ 4.3.10 Can Parametric Design Foster Interactive City-Making?

Every agent who subscribes to Yap-Yaşa rules participates in a strictly controlled design system. Players can be trained or untrained as designers, in order to collaboratively generate an urban block with predefined design parameters for density, building height, green space and public network connections. By following simplified game rules, they accede to a higher level of design system which enables them to generate a technically precise urban perimeter block. Each Yap-Yaşa play session guarantees a perimeter block with 150 homes per hectare, a minimum of 40% continuous green space on the ground level connected to the public street network through gates on all four facades. These entrances ensure connectivity to the surrounding blocks and enhance the pedestrian and introduce bike networks. Players are not necessarily aware of these technical details, as technicalities are carefully translated into play cards, building units and props. By following the game instructions regarding the amount of building, green, and urban program units required, players remain within the design rules provided for them.

In the meantime players subscribe to a system of organization where they define their individual preferences of living in relation to nature -*sky, sun, earth, green- to people -possible neighbor and , passers-by-* and to urban program -*shops, offices, allotment gardens, etc.* They inform the design framework as they act and customize the system to their individual needs as well as to the dynamics of the group. Thus the system gets informed by the choices of agents. The design frame is built in such a way that it can adjust to the agents' ideals. Players may disagree with the design rules and, as was the case in Arnavutkoy, opt for a lower urban density.

The City Game provides a new communication medium, where individual choices are visualized and crystallized in such a way that verbal communication becomes secondary, and the 3D game interface becomes the direct medium of communication of all the stakeholders. Both individual choices and agents' relations inform the design system.

Figure 117
Yap-Yaṣa game outcome, final design drawing.

One could argue that Istanbul itself is a product of urban parametric design. Simple rules behind mushrooming gecekondu and yap-sat apartment flats have been explained in the introduction chapter. These urban pixels and the social and economic models activating them, have never been consciously designed through an urban parametric system. Both are applied by non-designer residents and small scale contractors who use endlessly variable facade materials and color schemes. They find ways of surpassing rules to achieve extra built area, by cantilevering floors or roof construction. The growth of Istanbul's residential neighborhoods can provide us with the confidence that another generation of parametric urbanism, this time with conscious design choices introduced by local governments, could provide answers for the imminent urban transformation task. The tradition of self building and bottom-up organization already practiced by the stakeholders, could be harnessed through carefully designed urban design rules. This could become the logic behind a model like Yap-Yaşa and its applications multiplied in the city.

As a result, a cultivated self-organization could lead to the democratization of the housing sector. Yap-Yaşa has been proposed not only as a spatial model but also as a collective governance scheme involving small and large scale urban stakeholders in a negotiative participation. This is an alternative organization model to the top-down housing schemes. The new Istanbul pixel, or city block, is a potential social condenser where both individual builders and social housing tenants could share their habitats. A critical mass of the new Istanbul pixels for living, working and playing could be generated through the collaboration of existing parties which could then facilitate the advancement of the urban development simply including in business models of a metropolitan densification process.

§ 4.3.11 Questions Raised

The choice of a generic block for the Yap-Yaşa interface made it possible to repeatedly apply the game to diverse districts of Istanbul. However, the downside of this decision was the lack of contextualization of a real transformation situation. Despite the fact that the physical setting was recognizable to every player, we lacked the modeling of the unique considerations of each specific case. These considerations were limited to negotiations between the stakeholders present. For this reason playing with 'direct' agents of change from each district was vital. The building units, in line with the representative style chosen for the site plan, were also abstracted. Interaction and media designers who observed the play sessions advised us to elaborate the game pieces in such a way that players could build more intimate links with the play pieces and make more accurate moves in the game. This triggered us to test whether players could be stimulated by more detailed facades, color-coded urban program, added information on props, and other additional stimulus.

The malfunctioning real estate agent is an aspect we need to mention about Yap-Yaşa. Players had difficulty prizing home units after the transformation, while the participants enacting the real estate agent were not attentive in pursuing this component of the game. On the other hand, the game is mainly built around testing an urban parametric design system and negotiations between stakeholders, rather than measuring the resulting property prices. There is no mechanism controlling or determining the house prices in the dynamics of the game. We suspect that this is the main reason why this aspect failed. A game with real estate investments and public expenditures has later been design for Almere Oosterwold reported later in this chapter.

The Yap-Yaşa game interface incorporated the role exchange of players as a response to Istanbul's polarized urban politics and the extreme ongoing conflict between the invited stakeholders. It was an effective gesture that enabled the coexistence of diverse actors around a game table in a productive debate. However, the role exchange, which was the only possible way to gather these actors with decreased tension, does blur the game results. Design decisions made by players acting in each other's roles are not representative of the individuals' real choices. This aspect of Yap-Yaşa is definitely a drawback for giving feedback to a real design process.

The following questions arose out of Yap-Yaşa, and are to be answered in the upcoming experiments. Would the game outcome inform reality if actual urban actors join the game in their daily roles with real responsibilities? Would they be willing to pursue and apply the agreements, inventions and outcomes that occur during the game to real life? Would an elaborated urban setting with unique properties result in more realistic outcomes? If we would introduce money as a resource into the game would be possible to deduct conclusions on investment behaviors of players? If the game had design parameters linked to real estate values, would the evaluation mechanism work better?

Despite the fact that Yap-Yaşa has hardly any real applications, the social and spatial promises of the model and gaming as an effective method for a high conflict zone such as Istanbul has been recognized by local and national newspapers and magazines[75]. The word play of Yap-Yaşa and yap-sat has been recognized by the most popular self-organized urban dictionary of Turkey[76]. This game led to a city governance game we designed in 2012 'If I were Istanbul's Mayor' for the Design Biennial of Istanbul[77].

---

75 http://www.radikal.com.tr/radikal.aspx?atype=radikaldetayv3&articleid=1023057&categoryid=41
http://www.yenimimar.com/index.php?action=displayQuestion&ID=109
http://v3.arkitera.com/news.php?action=displayNewsItem&ID=57385

76 http://eksisozluk.com/yapyasa--2517495

77 http://www.playthecity.nl/12018/en/if-i-were-the-mayor

§ 4.4 Play Noord: A Legal Plan on Hold at the Center of Amsterdam

In 2011, Tolhuistuin, a cultural institution based in the former Shell Amsterdam campus, contacted us about Overhoeks, an urban wasteland neighboring their site[78]. Back in 2006, one of the ambitious urban master plans of Amsterdam was projected for this area; a high density waterfront redevelopment plan strategically located across from the central station. Under the impact of the fiscal crisis the plan has been quietly placed on hold. ING Real Estate, 70% owner of the project contract, left the project due to the closing of its real estate offices worldwide in 2011[79]. Ymere, the second partner in the project contract, became hesitant to implement its stake in the master plan, while the local government of Amsterdam Noord was searching ways to adapt to the sudden changes in Overhoeks Master Plan. Chris Keulemans, the director of Tolhuistuin, explained to us how he frequently met people with ideas and initiatives for this empty urban land. He was puzzled about the future of this vacant central location situated adjacent to his organization. Tolhuistuin was installed here to bridge the social and cultural gap between the existing social housing neighborhood Van der Pekbuurt and upcoming high income level communities of Overhoeks. However the future was becoming blurry with no chances of a new community settling in Overhoeks. With the ongoing crisis, the development of Overhoeks has turned into a complex process. Keulemans was calling the city of Amsterdam for self-reflection: "*Everyday that Overhoeks remains a wasteland, we the people, as tax payers and as citizens, are losing out. If the investors and developers are quiet, can we not as Amsterdammer's, find a way to self-organize this piece of land?*"

Our first contact with actors of the redevelopment showed that they are open to dialogue. In contrast to Play Istanbul, in the Play Noord case individual players were easier to detect and ready to partake in an interactive platform to influence the stalled urban design process. During this period, our team[80] won an idea contest organized by Stichting Doen[81] about citizen participation.

78 The team involved Ekim Tan who was assisted by Cristina Ampatzidou. Herman van de Wal, Esther Slegh and Willem Velthoven.

79 http://www.architectenweb.nl/aweb/redactie/redactie_detail.asp?iNID=25203

80 The architect Harmen van de Wal based in Rotterdam joined Ekim Tan to prepare the pitch and start up the Noord game process. Studio Van de Waal has special interest in informal town developments particularly in Jogjakarta, Indonesia.

81 The Idea contest was organized under the conference named Kom je Ook? [in English: Will you join my party?] mediamatic

Figure 118
Amsterdam Center and the development area of Overhoeks.

We pitched for an online version of City Game to involve the intelligence of larger crowds in city making. Winning the contest provided the extra budget for expanding the City Game interface into digital media. This process was planned to inform one of our key questions: whether City Game outcomes can inform reality.

The tangible urban question, stakeholders who are open to negotiation, and the new online dimension generated a context in which the City Game could provide input for an ongoing process. This convinced us to take on the Noord challenge.

§ 4.4.1 Aim of the Game

The Yap-Yaşa game was successful in creating a mechanism for collective decision making by diverse stakeholders. However, it barely influenced the course of the ongoing transformation process in Istanbul. Given the open planning ambitions of Amsterdam's DRO -*City Planning Office*- compared to the opaque planning processes used in Istanbul, we were hopeful that applying the gaming method back in the Netherlands, with a new online platform, could give the game another dimension and have a greater impact [DRO, 2010]. For the Noord game to have an impact on reality

it was fundamental to engage urban actors who could offer loyalty to the outcome of such an open process. Overhoeks had a legalized master plan which was no longer functional. We needed to find both engaged official players, and small and medium scale entrepreneurs to commit to the project and collectively fill the gap left by the big investor who abandoned the project.

City Game in Amsterdam Noord is an experiment testing whether a paused master plan can be reactivated by uniting typical and atypical urban actors through a City Game interface. The hypothesis, therefore, was that by combining a multi-actor analog City Game with a digital City Game interface we could provide input for an actual urban design process. This input could be twofold: Both the roles of existing stakeholders during the redevelopment process and the physical plan created before the economic crisis can be questioned through the City Game.

Could an interactive collaborative process activate a legal plan on hold? Would this process trigger a temporary use plan? How could such an open process supported by multiple stakeholders earn legitimacy? How would the new players impact the power balance among the existing stakeholders? Would they be willing to pursue the agreements, inventions and outcomes that occur during the game in real life? Would an elaborate City Game played by real stakeholders result in more realistic outcomes?

§ 4.4.2 Play Noord's Urban Question

The Shell Amsterdam campus, situated on the northern bank of the River IJ across from the central train station, has been active since 1938. When in 2003 Shell shrank its campus down to 7 hectares, 20 hectares of urban land were left free for development by the city. There was a brief public debate about the options, whether to reuse the industrial heritage or see the site as a tabula rasa for a higher density redevelopment[82]. At the end, a zoning plan supporting the second vision was legalized in 2006. Out of 49 industrial Shell buildings, two were included in the master plan, causing the demolition of the rest. The Overhoeks Tower and The Big Shell Laboratory were planned for reuse according to the advice given in the 'Cultural-historical Impact Report' by the Office of Monuments and Archeology of Amsterdam[83].

82 Interview with Prof. Maurits de Hoog, Senior Planner in Amsterdam DRO, 2011.

83 Cultuurhistorische Effectrapportage [CHER] van bureau Monumenten en Archeologie Amsterdam [BMA].

Figure 119
Overhoeks area waiting to be developed.

A A New Central Suburb for Amsterdam

The plan was to build a dense housing scheme along the River IJ. A total of 430.000 square meters of new construction was foreseen on the 20 hectares available. This consisted of 300,000 square meter of housing, 70,000 square meter of offices, 35,000 square meter of retail and 25,000 square meter dedicated to culture, health and education. The housing was intended for higher middle income groups, with an exceptionally low 10% of the scheme set aside for social housing[84]. Preparing the ground for the new construction implied the demolition of most of the structures of the former shell campus, as well as cleaning the soil polluted by Shell's experiments on the site over the last century. To earn back these investments, the price of the land and the construction density was crucial for the city's budget. The municipality saw high-end housing as a way to offset their investment in making the soil ready for urban development.

There was severe criticism of the exclusive nature of this housing program. Whether homes in such a central location could cater for lower income groups is subject to debate. Overhoeks has a great potential to become a new mixed center as a projection of the old center over the River IJ. Amsterdam's world-renowned city center is equally divided between residential and other program, whether cultural or commercial. The Overhoeks legal plan on the other hand, with an urban program composed of 75% housing, only 10% of which was occupied by lower income groups, and 25% other program, does not reflect urban dynamics of Amsterdam's core [data taken from the Amsterdam Council, 2006].

A second level of exclusivity occurs when the urban plan treats Overhoeks as an independent island covered with high density residential development, despite the two adjacent districts which can profit from spatial, economical and social exchange. Van der Pekbuurt, a historically significant social housing neighborhood, and Buiksloterham, a mixed industrial business zone, which hardly have any interaction with Overhoeks in the zoning plan. The reverse, however, is claimed by the rhetoric of the Ymere housing corporation and the City Hall. Overhoeks was supposed to help gentrify Van der Pek's affordable housing model, which is raised a heated debate pursued by activists working on the topic. Likewise the displacement of industrial businesses and the consequent intrusion of housing enclaves in Buiksloterham is targeting a similar outcome. Overhoeks has been an isolated piece of urban land until now, but opening such a site to the public requires mutual respect for and a positive impact on its surrounding neighborhoods.

84 Municipalities in the Netherlands often have a fixed rate of 30% for the social housing in new development projects.

Figure 120
Buiksloterham, Overhoeks and Van der Pekbuurt.

Could a City Game bring on the question to the attention of engaged players? Could a City Game challenge the existing mix of housing and non-housing activities as well as a more diverse mix of various income levels in Overhoeks?

B Economic Crisis

The third level of exclusivity in Overhoeks' redevelopment plan occurs on the level of its investors. About 450,000 square meter of the land was supposed to be financially sustained by only two parties: ING Real Estate and the housing corporation Ymere. Although it was a model that worked smoothly before the crisis, it proved to be too fragile to rely on once the financial conditions changed. Meanwhile, the production of the city must continue regardless of changing conditions, and therefore cannot be left to a few parties who typically act on secure surplus and not according to the actual urban spatial requirements of the city. When in 2010 ING decided to shut down its real estate offices all over the world, Amsterdam was no exception. This meant that the Overhoeks project came to a halt as the owner of 70% of the contract withdrew, paying the city an 8 million euro fine to leave a 250 million euro project.

C Policy Crisis

In February 2011 we were introduced to the Overhoeks process. From our interview with Hans Gerson -*the director of city's Project Bureau Noordwaarts*-, we understood that technocrats did not see changing the zoning plan as an option, given the long and intricate process of legalizing such a high profile plan[85]. The project manager, Annegien Krugers Dagneaux was convinced that the right strategy was to find the next big investor while waiting for the economy to improve. Temporary use was not an option the project office was willing to explore; the project manager saw small and medium entrepreneurs showing up at the door of the project office unmanageable, thus a threat to the process.

85 As of 2014, changes are made in the legal plan. The new approach looks at the incremental development possibilities by dividing the plan into development of private plots developing and evolving in time, instead of at once implemented top-down project.

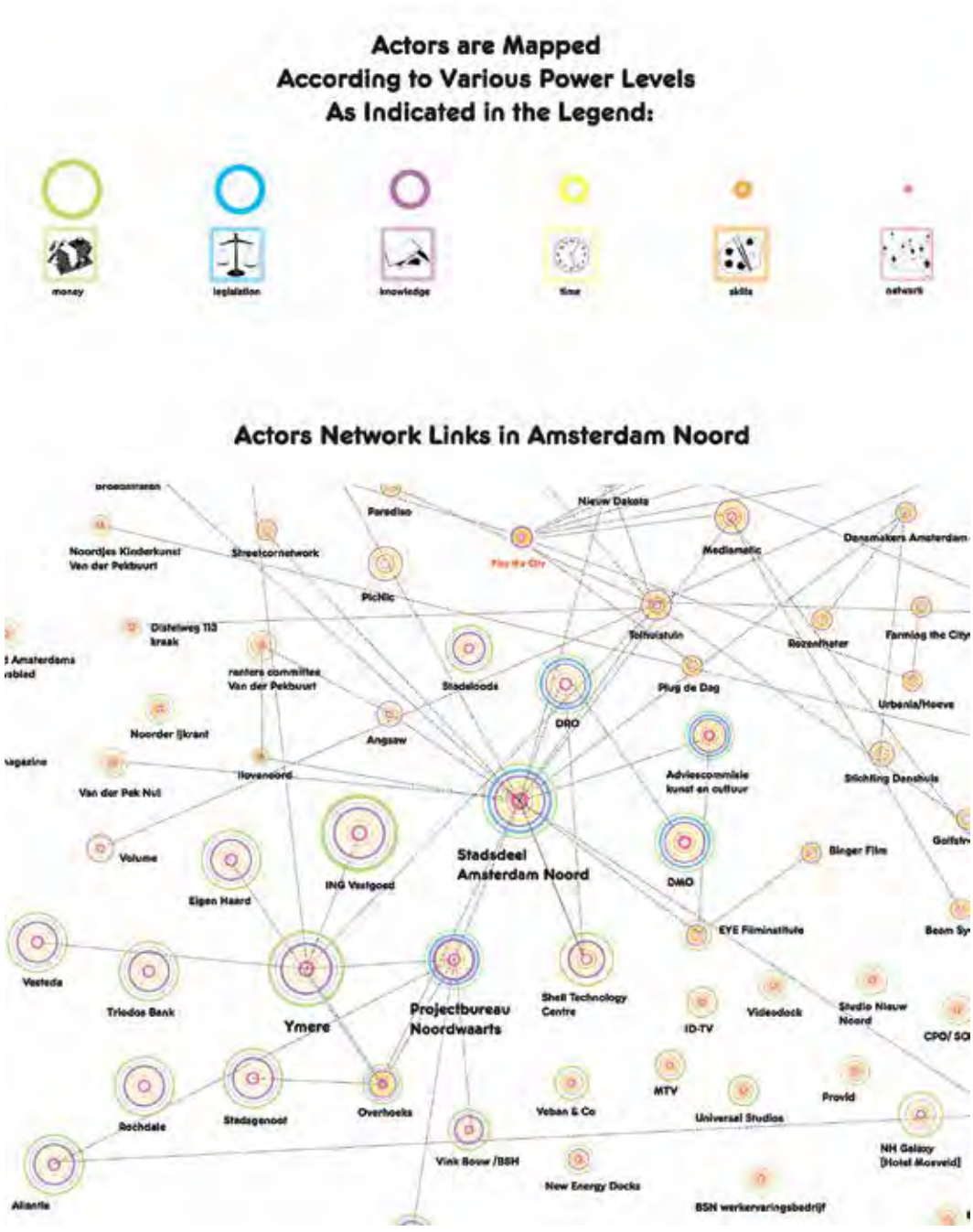


Figure 121
Actor-network diagram conducted to map power relations in Noord.

In the Play Noord City Game, we decided to keep the economic and spatial targets of the plan unchanged. Thus, an urban program of FAR 2 density[86], as fixed in the zoning plan, had to be simulated in the game. Nevertheless, we freed the urban development process from the actual procedural constraints such as the obligation of large parties for conducting large urban projects. In this way we urged as many small and medium developers as possible to be involved in organizing the projected urban program, and to redistribute the given density.

§ 4.4.3 Play Noord Players

When the game was ready to play in October 2011, 94,000 square meter of housing, approximately 400 households, had been built. Cultural organizations such as Tolhuistuin, Open Coop and the Eye Film Institute were already settled in Overhoeks. All of these parties had relocated to the site to function as part of the original ambitious urban scheme, and were feeling insecure by this time about their positioning adjacent to a wasteland.

We held meetings with politicians such as Alderman Kees Diepeveen and the Mayor of Amsterdam Noord, Rob Post, as well as city's technical advisors such as Aafke Post, Louis Pirenne, and Henk Grotendorst who embraced the interactive City Game process. The project bureau Noordwaarts, responsible for managing the legal zoning plan, supported us by sharing some of their data, but were suspicious about the role of City Gaming beyond the territory of the project office. The planning office of the Amsterdam Greater Municipality DRO showed interest and the deputy director Zef Hemel joined several brainstorm meetings in which we set up the game parameters. He also shared some of the information on their negotiations with potential alternative stakeholders, such as an English investor who wanted to build a London Eye-like structure along the IJ. In our research, we found a French entrepreneur who wanted to set up a party boat on the river, a Dutch entrepreneur envisioning a theme park on the Overhoeks site, and the visionary Amsterdam developer Han Michel, among others.

Ymere was the only original investor still involved in the process and reacted cautiously to the City Gaming method. They held several meetings with us and consequently decided to join the game as an observer but not as an active player.

86 Floor area ratio is proportion of the total covered area on all floors of all buildings on a certain plot to the area of the plot.

Figure 122
Noord play table, scale 1:1000.

Figure 123
Noord play table, scale 1:300.

The timid approach of Ymere was mainly based on the ongoing gentrification process in Van der Pek where many of its tenants felt threatened to leave their homes.

Bart Stuart, an artist and activist who lives in Van der Pekbuurt, represented the tenants' organization, and was therefore an interesting player to include in the City Game. Kijkruimte, a creative art space in Van der Pekbuurt, was also invited to play, as was Tolhuistuin. Through these local platforms we got introduced to many local residents, shop owners and artists.

By interviewing this first list of players, and asking them to point us to other potential investors, residents, and local businesses, and repeating this method several times we reached a list of 160 potential players who we could invite to join the game. This research resulted in an 'actor network diagram' based on power relations of stakeholders. We considered not just economic or legislative dimensions, but also mapped the networks, time, knowledge and skills tied to individuals, organizations and institutions. This overview of interests and values helped us to define the organizational parameters of the City Game. We mixed and matched different values [skills, money, time etc] for every game session to balance a comprehensive representation of various interest and powers engaged in the process. Due to the limitations of a one week game sessions, we could invite 120 of the 160 potential actors to join directly one of the play Noord sessions. The list of stakeholders can be found in a table in the Appendix #3.

§ 4.4.4 Designing the Setting for Play Noord

We took the abandoned marketing pavilion of the luxurious Overhoeks flats as the setting for the Play Noord sessions. This floating glass structure situated at the entrance of Overhoeks has a great view of the Eye Institute, Tolhuistuin, the wasteland, and the half finished housing blocks, which gave the players a direct experience and awareness of the urban question the City Game simulated. This building is also a symbolic location, representing how the real estate crunch stopped an ambitious urban plan. The inverse process of reviving the plan by establishing a collaboration between new and existing stakeholders, and its injection with a new energy and social consciousness could, symbolically, rise from the site from the ashes of the old.

The analog game tables of the Overhoeks site showed the site as 3D models on two different scales, each on a circular table of 2,4 meter diameter. The circular format for the models allowed easy access for all players to the game. The first table included Buiksloterham, Overhoeks and Van der Pekbuurt, at 1:1000 scale. This model was used to show the participants' visions of the wasteland in connection with its surroundings.

Figure 124
Voting station in Play Noord game room.

Figure 125
Players voting for projects with personalized RFID-cards.

Figure 126
The technical equipment behind the voting station.

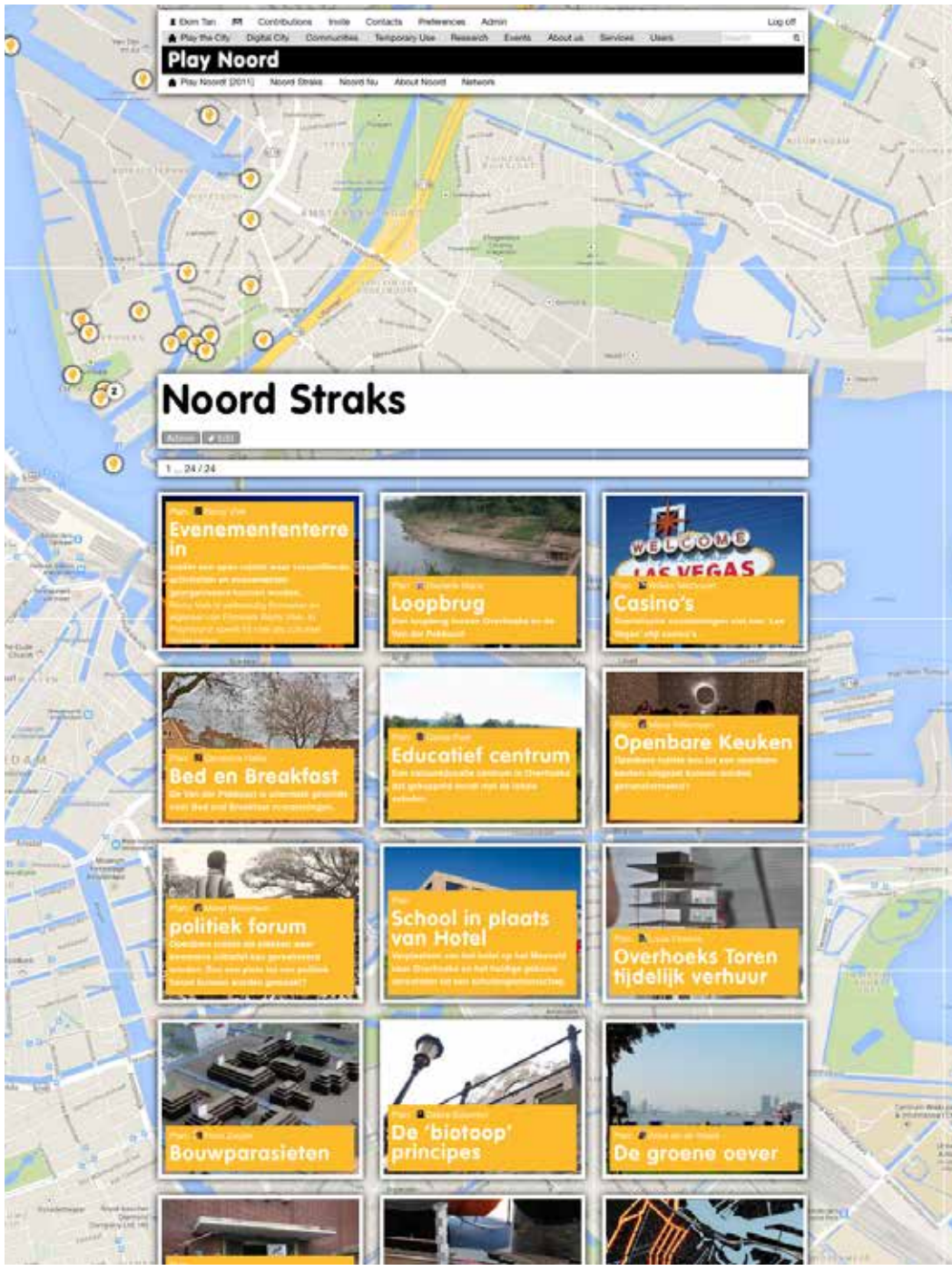


Figure 127
Digitalized game outcomes on the social network website.

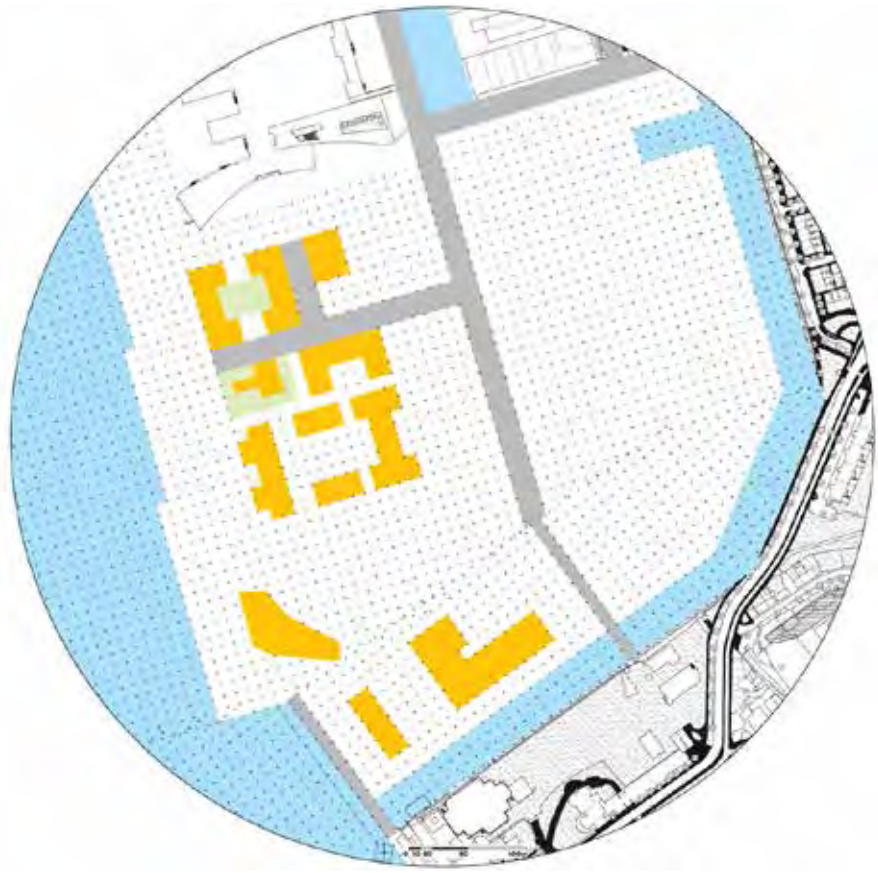


Figure 128
Noord play table, scale 1:300.

This element of the game was born from our observation that the Overhoeks plan was treated as an isolated urban design question, lacking a real negotiation with adjacent sites. The second table, built at 1:300 scale, focused on the 20 hectares of the Overhoeks zone, and its immediate environment: the Overhoeks tower, the Eye, Big Shell Lab, Tolhuistuin and the 10 housing blocks completed according to the zoning plan. The wasteland, as the area in which play would unfold, was divided into a 10 by 10 meter grid for two purposes: to grasp the scale easier and to fit the modular building units. To ensure that all players could access all the spaces on the gaming board, this table was designed to rotate.

In addition to the analog game setting we set up an online voting installation using RFID technology. Until the Noord game, local conflicts in our City Games were mainly resolved between the players directly engaged in it, although the conflict had an impact on the overall evolving order. We designed this installation in order to test whether a moment of general overall evaluation, in the form of online idea polls, would improve the players' collective vision.

Figure 129
Players selecting game pieces from the city game library.

These idea polls would be applied in the middle and at the end of play, to highlight the most positively perceived initiatives versus the most disturbing or ineffective projects.

To share the ideas and plans generated or communicated throughout the game with the outside world, we connected the digital voting installation to our social network website. In playthecity.nl/noord, players created their own profiles and generated articles to document their contributions. In this way all moves in the game could be documented and other interested players who could not join the game due to time and location restraints could have access to these ideas, comment on them and add their own plans.

A City Game Library

The Yap-Yaṣa experience taught us to be more expressive and less abstract in the design of play blocks. This could help non-designers better comprehend and represent the physical environment they are proposing. For this edition of the City Game our design team created a library of urban design game pieces with easy to understand architectural facades for homes, shops, schools, libraries, museums, sport centers, agriculture and public spaces. The full City Game library of the play blocks can be found in the Appendix #4. A video camera fixed to a tripod recorded the top isometric view of the game table. A dynamic camera recorded player's conversations and took photos.

§ 4.4.5 Rules for Play Noord

§ 4.4.5.1 Play Rules

A Simultaneous Play Rule

Participants negotiate and generate plans simultaneously. Every round includes time for players to clarify their actions sequentially.

Figure 130
Teaser game for inviting the Amsterdam Noord residents.

B Respect Rule

Later design acts implemented in the game have to respect choices made earlier in the game in case of conflicting interests.

C Approval Rule

Players vote on projects in the middle and at the end of the process.

The top 3 projects selected by the public get a promotion [by 20% expansion].

The 3 projects ranked lowest by the public leave the game.

D Veto Rule

Players can object to projects. The policy maker and the activist can activate the veto prop. The activist needs the approval of 5 other players, while a policy maker needs the approval of the local government.

E Collaboration Rule

A collaborative project, consisting of a minimum of 3 players, earns 20% extra square meters.

F Public Intervention Rule

The local government and the activist initiate public and green spaces. Temporary occupation of public grounds by stakeholders can be negotiated directly with local government.

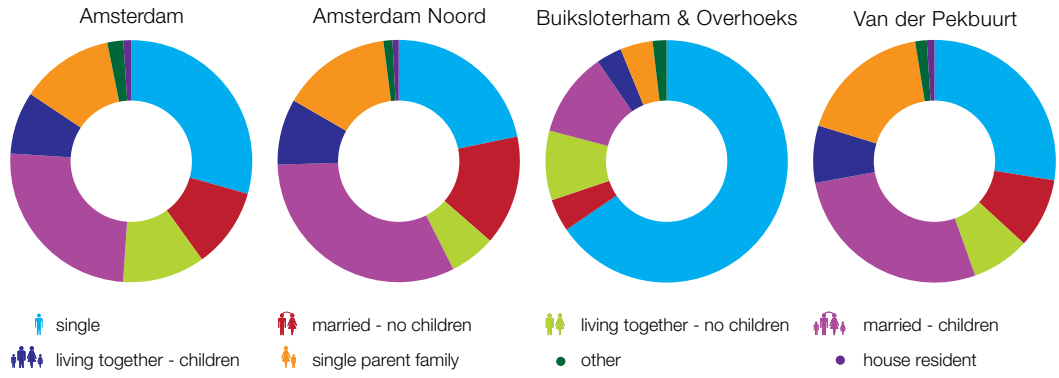


Figure 131
Infographics supporting informed decision-making in the game: Household types.

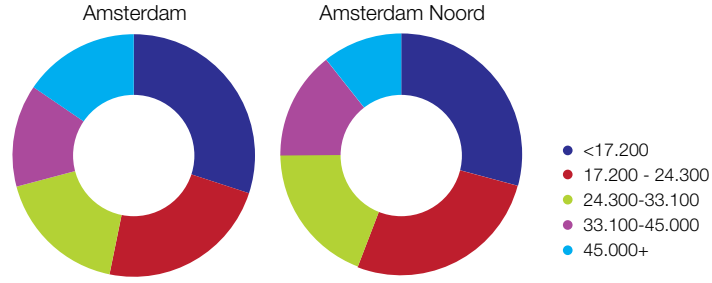


Figure 132
Infographics supporting informed decision-making in the game: Households per income class.

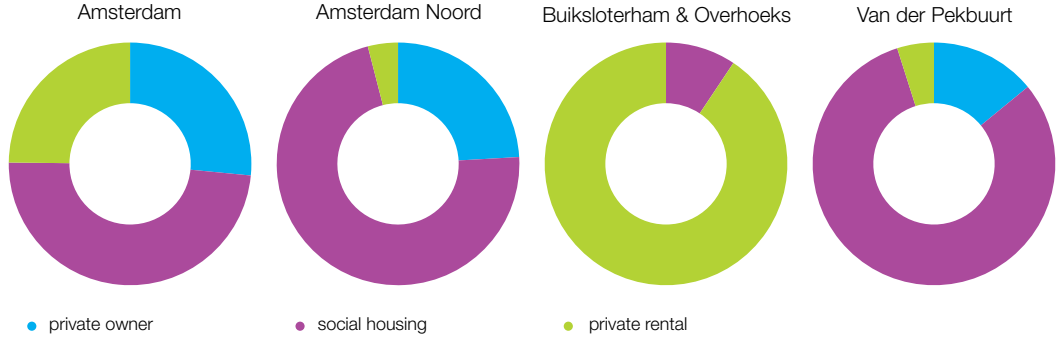


Figure 133
Infographics supporting informed decision-making in the game: Housing types.

Figure 134
Infographics supporting informed decision-making in the game: Unemployment in Noord.

Figure 135
Photos taken during the play process on the first day.

§ 4.4.5.2 Building Rules

A Access Rule

All projects need road access.

B Density Rule

The urban program and the density is fixed to FAR 2, as defined in the municipal legal plan. The original distribution of 75% housing, 25% retail, business and culture can be reinterpreted by the players.

C Height Rule

There is no rule for maximum height.

This is a process of negotiation. The local government can limit the height of a building by implementing roof gardens, solar panels or wind turbines on top of the building. If the player in turn wishes to exceed this height he can agree to exchange his construction resources, i.e. square meters, to convert into public program: a square, parking, park, school, museum...etc.

Players need to follow the instructions given in the role cards. Please find the role cards in the Appendix #5.

§ 4.4.6 Noord Play Process

A Preparation Process

During the preparation of the Noord game we moved to Van der Pekbuurt in Amsterdam Noord. This served as a base for mapping the area and getting to know the stakeholders we would invite to Play Noord in March 2011, along with the help of our local contacts. Living in the social housing neighborhood with a view over the wasteland of Overhoeks and Buiksloterham we could meet and exchange ideas with local players.

Figure 136
Photos taken during the play process on the second day.

Besides a continuing dialog with the officially involved urban actors, visiting local meetings and parties helped us spot less visible local actors who could potentially play a role in re-imagining Overhoeks.

To meet residents with interest in their neighborhoods, we adopted a former game and organized play sessions in public spaces: the market, and the Buiksloterweg ferry stop. This contributed to our mapping of engaged locals and their ideas, both of which were recorded on our website before the play sessions.

We visualized data depicting the social, political and economical profile of Noord through info-graphics. Spatial maps of public space, private-public ownership, an actor network diagram and housing conditions were prepared to summarize our research and make it easily accessible to the players. These materials were shared with all players and displayed on eight A0 panels to ensure that the collected data was readily available to support decisions made throughout the game.

B Game Play

The Play Noord game consisted of 10 rounds, each representing one year and covering the period from 2010 to 2020. Every 'play year' lasted 10 minutes. Players could use the first 5 minutes for construction and the second 5 minutes for negotiation. In the first 5 minutes players collected game props and building props -*such as their allotted square meterage of building blocks, roof gardens and roads*-, lobbied with other players and visualized their plans on the game table. In the 5 minutes that followed they could explain their actions to the rest of the players and begin public negotiations.

C Visionary Speech by the Politicians

Before players started developing the Overhoeks area, the politician in the game gave a visionary speech based on the keyword we provided, representing Amsterdam's urban agenda. Zef Hemel -*the DRO's Deputy Director of Amsterdam's Planning Department,* Kees Diepeveen -*alderman of Amsterdam Noord*-, and the renown project developer Evert Verhagen, took on the role of a politician in the first three sessions of Play Noord.

§ 4.4.6.1 First Play Noord Session, 14 October 2011

On the first day, the policy maker, Zef Hemel, argued for a genuinely public space, that is one in which various groups in the community can feel home and see opportunities in the big developers had withdrawn from Overhoeks. According to him, this gives room for small initiatives and a gradual, organic transformation of Noord.

Characteristic of the first day was the formation of various collective housing groups on the one hand, and the crowdsourcing of developers' resources on the other. Both collaborative groups consulted intensively with the Mayor. Players paid attention to the green and blue character of Noord.

In this session most votes went to a water project: the floating swimming pool proposed by the design advisor Sasha Glasl and the cultural entrepreneur Saskia Hoogendorn. To support their project, these players built public walkways along the River IJ. In second place was the riverbank regeneration and green corridors project by city officer Aafke Post. In third place came the reuse of the Overhoeks Tower and the 'wild living[87]' in Shell Big Lab. Overhoeks Tower was redeveloped as a residential workspace for the international film industry. The Shell Lab got a new lease of life, with a combination of living and working spaces, hospitality, and urban agriculture. Realtors Jolbert ten Napel, Geraldine Hallie and cultural entrepreneur Anke de Vrieze investigated a business model that could strengthen these functions, such as the sale of urban agriculture products in a supermarket or a restaurant in the Big Lab. Environmental activist Debra Solomon reinforced these ideas by giving the Big Lab a new vertical garden.

87 Wild Living in the Shell Big Lab introduced a model in which potential residents divided and tailored former office building into their living environments.

Figure 137
Photos taken during the play process on the second day.

The politician of the second session, Kees Diepeveen, argued for a place that embodies the freedom and creativity of the twenty-first century, a place where creative entrepreneurs feel at home and have room to experiment. Diepeveen sought to encourage small scale businesses, where consumers and producers could interact. In spatial terms, Noord would become an area with a profound mix of small-scale living and working.

In this game, the moves of the players ranged from very strong gestures, such as a new high-rise tower acting as a landmark, to a dense urban structure that would evolve slowly. As a result, the projects proposed in this game were typologically contrasting. Programmatically, however, the stakeholders agreed; the city's undesirable program, such as brothels, marijuana plantation or Las Vegas style casinos, were taken as 'the engine of development in the northern part of Noord'. The constant feedback and the 'testing' of interesting or controversial developments, such as Noord as a free economic zone, greatly affected the formulation of the area's development.

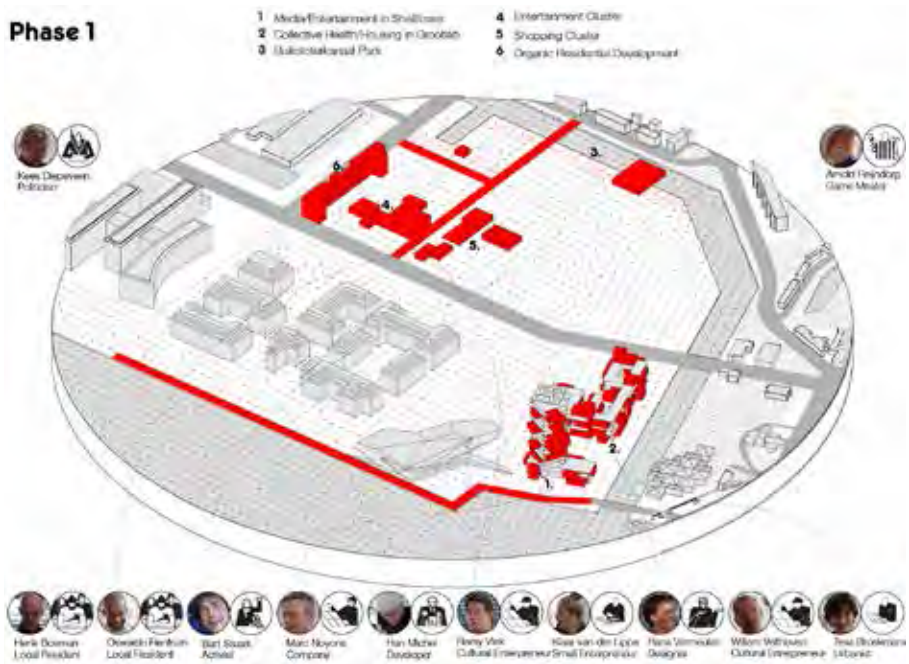


Figure 138
Play Noord's second game day illustrated in five phases: phase 1.

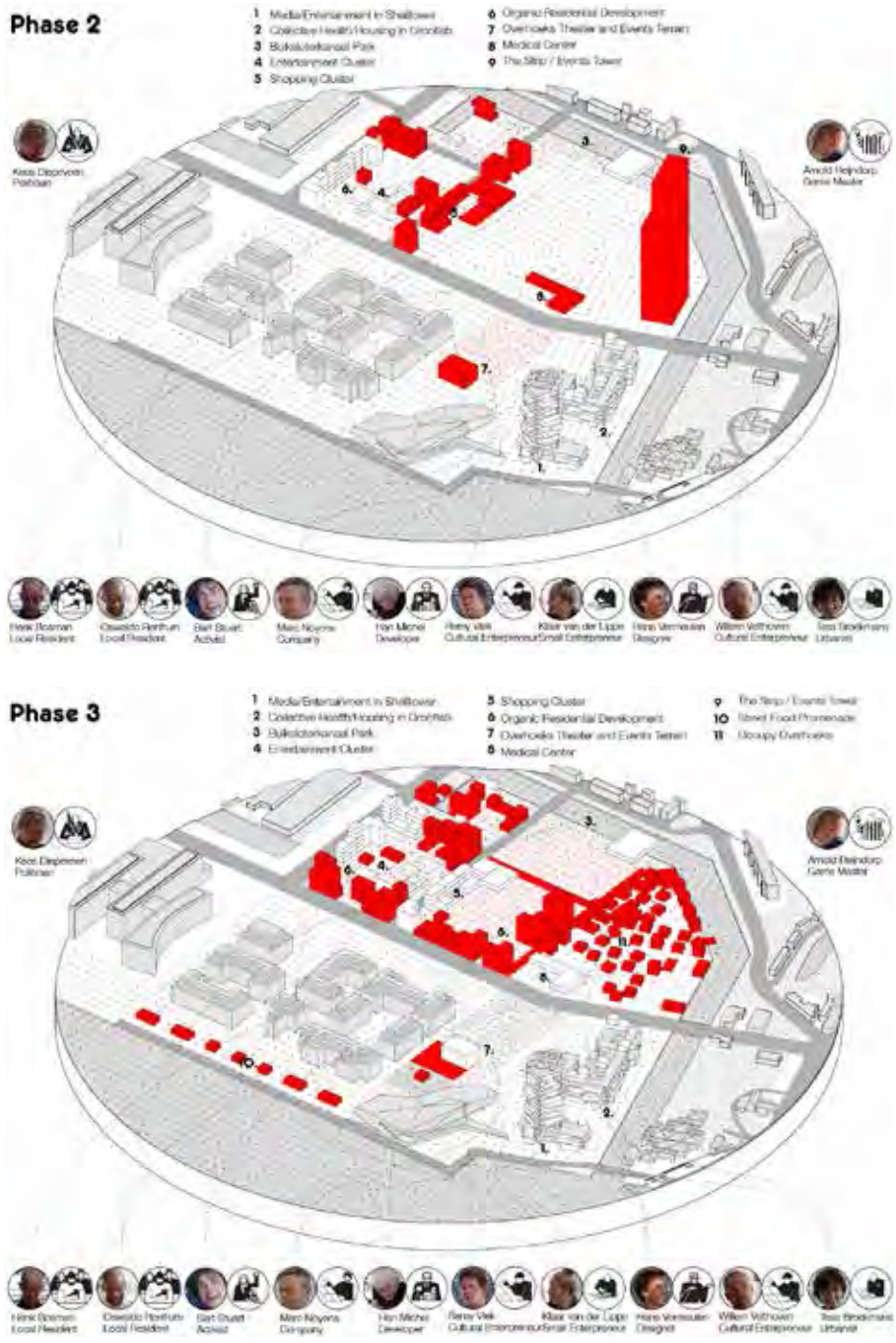


Figure 139
Play Noord's second game day illustrated in five phases: phase 2 and 3.

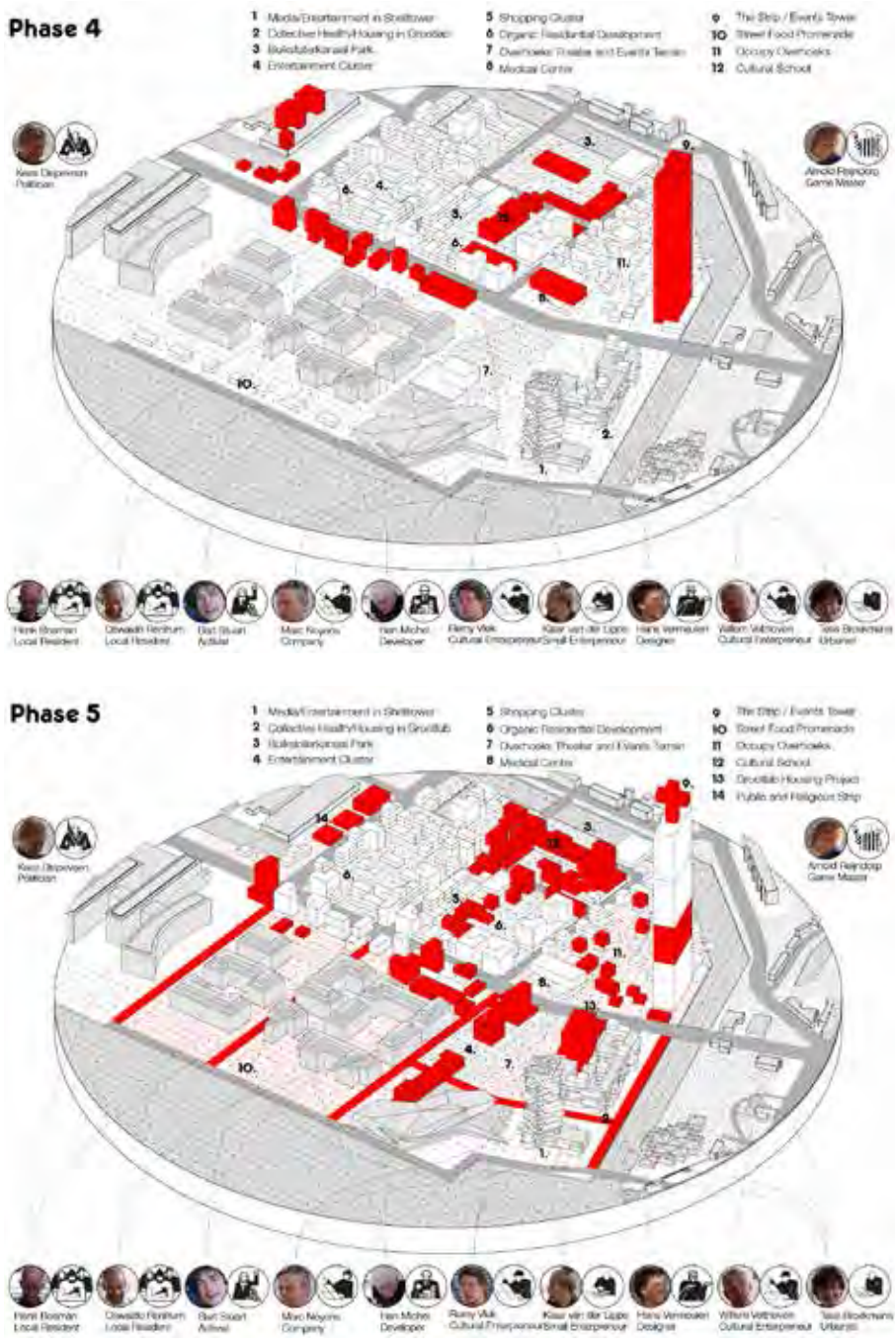


Figure 140
Play Noord's second game day illustrated in five phases: phase 2 and 3.

In the voting, it is notable that the more controversial projects received the most votes. An example is the 'Occupy Overhoeks' project which came first in polls. What made this idea extraordinary is the fact that approximately two weeks into the game session in the Tolhuistuin, a real 'Occupy' action occurred in the Shell Big Lab[88]-. The developer Han Michel's organic urban growth also got popular recognition in polls, coming second with his mixed use enclave [6]. Architectural advisor Hans Vermeulen's cluster of small-scale housing initiatives, part of the Occupy scheme, got enough votes to continue in the game [11]. The landmark high-rise tower next to the Shell Big Lab proposed by cultural entrepreneur Willem Velthoven was at first vetoed by the politician Kees Diepeveen, but with the help of lobbying, Velthoven's office tower got accepted [9]. In one of the final rounds he had to change the program of the tower to accommodate the much debated brothels, marijuana plantation and casinos, as well as spaces for spiritual activities and health services.

§ 4.4.6.3 Third Play Noord Session, 16 October 2011

Evert Verhagen, the developer playing the politician on the third day of the game, showed the players the value of Overhoeks. He explained that it is particularly well-placed in relation to Amsterdam Central Station, and that a lot of space is available for building. He hoped that the players would develop a kind of New Amsterdam, one that might become as important and interesting as central Amsterdam. Verhagen called for temporary use for working and recreation, mixed with living and a public space that is vivid and accessible. He emphasized densification as an instrument for achieving urban quality.

Three the players focused on increasing the prosperity and welfare of the residents of Van der Pek neighborhood, and saw opportunities to do so by activating the empty areas of Overhoeks. Small and medium scale stakeholders worked on a visionary mixed program, such as transforming the Shell Lab into a combination of a sports complex and new homes.

88 http://www.at5.nl/artikelen/75067/ontruiming-na-lijk-gekraakt-shell-gebouw

The most voted project was the green axis, a new public park. The park was created by the spatial consultant in collaboration with the politician and found support from resident Amber Bernink, the activist Merel Willemsen, cultural entrepreneur Danielle Paes Leao and resident Gerda Peet. The most visible point of the green park project was the temporary high-rise 'lifeguards tower' by Amber Bernink, a slender residential tower with the 'Temporary office for transforming Noord' on the top floor.

Diversified small-scale developments in CPO[89] form by Hein de Haan got the most votes. This project also embraced other initiatives, such as resident Julien Book Hardt's 'edible garden' project, the coalition ensuring that many fellow players voted for it. Another form of diversified development, a center for public art in Noord with many small branches and workshops devised by cultural entrepreneur Danielle Paes Leao came third. This project takes place partly under the roof of another project: the revitalization and reuse of the Shell Big Lab and the Overhoeks Tower by developer Jan Bosman. In the last round, Bosman's redevelopment of the site's existing buildings, combined with a floating restaurant on the River IJ, obtained the most votes thanks to its varied program.

89 CPO is the abbreviation for Collective [Private] Commissionership, which is a form of development where a group of private individuals obtains the power to design and realize their housing environment collectively.

Figure 141
Play Noord, the second day: a dense housing complex vetoed.

§ 4.4.6.4 Spatial Patterns in Play Noord

Players agreed on certain spatial and programmatic solutions in the course of the simulations. These spatial decisions came up in all play sessions, which were conducted independently. We give an overview of these patterns below.

A The Shell Big Lab and the Overhoeks Tower

Re-programming of the Shell Big Lab and the Overhoeks Tower always happened in the early rounds of each game. The program for the Overhoeks Tower ranged from workshops and residences for artists to an incubator for small businesses, wild living, casinos, brothels or care and social functions The Shell Big Lab was felt to be more attractive than the Overhoeks Tower, and filled with a variety of commercial activities such as an 'oriental market hall' or a complex for sport, fitness, health care and education.

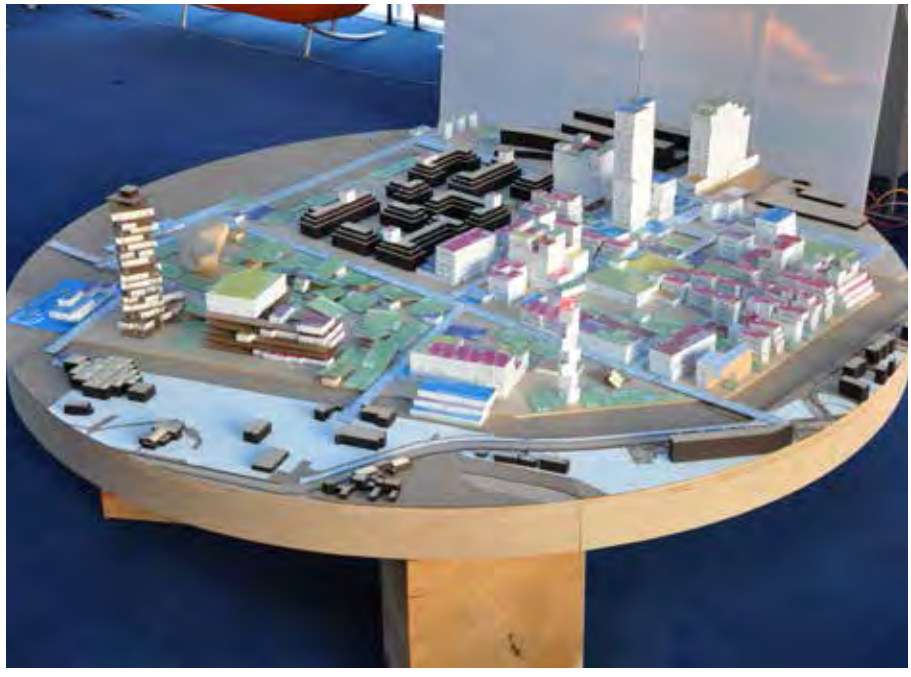
B Ranonkelkade Banks

In all game sessions, Ranonkelkade has been interpreted as the main urban green space, as well as serving as a transition zone between the Van der Pek neighborhood and Overhoeks. The area was considered either as a neighborhood park, or as part of a broader green framework that ran from Van der Pek to the River IJ. Thus it was typically understood as being both green and public. A small yet typologically and programmatically varied residential development mirroring the Van der Pek neighborhood emerged on the south side of the Ranonkelkade in all sessions.

C Water

Making better use of the existing areas of water and increasing the water surface in Overhoeks was a recurring idea. Building directly on the banks of the IJ was coherently proposed by several stakeholders playing the City Game independently.

1 - Day 1.



2 - Day 3.

Figure 142
Play Noord outcomes, day 1 and 3.

Conserving the IJ riverbank, or developing it sensitively, was a common strategy. As a result, this area always retained its green character, and its accessibility was often increased by the widely accepted proposal of creating more trails along it. A floating village on the River IJ was well received by the players in all sessions, strengthening the public axis from the IJ to the Van der Pek, with small-scale retail and cultural program being interspersed throughout a lively residential neighborhood.

D Overhoeks Center

The central area of Overhoeks was an intensely debated and contested zone. While a high density had to be realized in the area, the need for a central city park was understood and supported by the majority of players. Consequently, the terrain behind the EYE Film Institute was developed as a city park, surrounded by high-rise blocks on all three days. Despite being a difficult spatial requirement, the sight lines to the IJ were maintained in all sessions.

§ 4.4.6.5 Spatial Inventions in Play Noord

Despite these design patterns we recognized in the Play Noord sessions, there were also entirely unique ideas we noted. These spatial decisions can be considered as exceptional moments of play-generated knowledge and creative inventions which need to be registered, collected and included in the area's planning process. An overview of these ideas are listed below:

City officer Louis Pirenne came up with a specific business model for the temporary rental of the Overhoeks Tower. Instead of trying to develop the whole tower at once Pirenne proposed filling one or two stories per year, starting with the ground floor and rooftop.

Resident Amber Beernink invented the temporary parasite tower for managing temporary use. The underlying idea was that of a temporary social housing tower, with a 'manager's house' on the top floor. The residing manager would be responsible for temporary use of all Overhoeks and the Van der Pek area organizing the process through a constant presence.

Cultural entrepreneur Floor Ziegler suggested erecting parasites or small-scale construction projects on the roofs of the new residential complex in Overhoeks. The idea of individual villas on rooftops was embraced by many of the players, causing the game's policy makers to create a new rule allowing such constructions in the area.

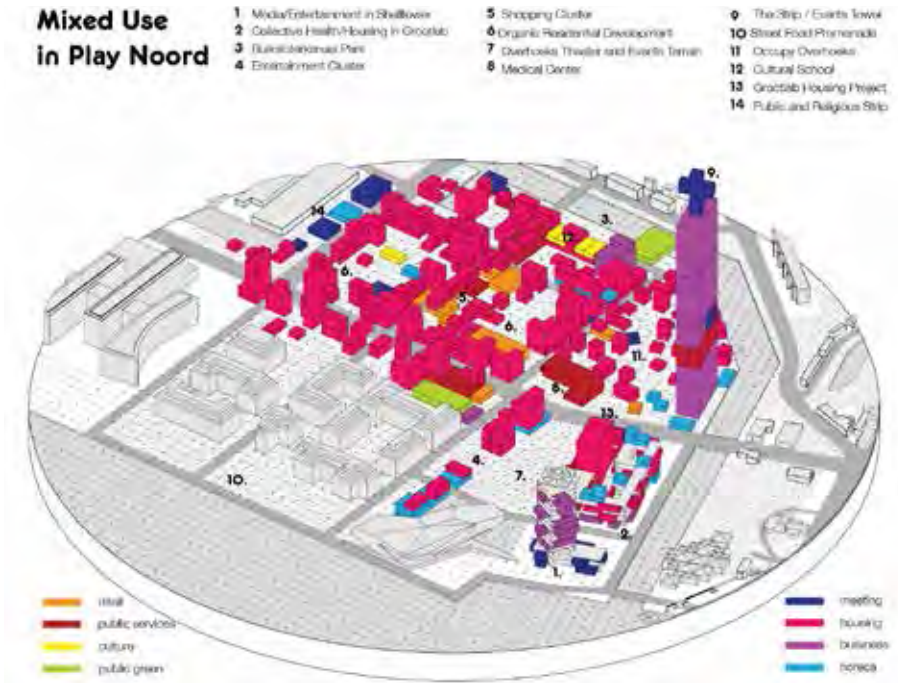


Figure 143
Play Noord outcomes, day 2.

Environmental activist Debra Solomon introduced the 'biotope' principle'90 by proposing green walls on existing, or reused buildings, and the construction of green roofs. This principle includes potential combinations of urban agriculture. Proposed functions took a permaculture approach to enhance the local ecology.

Oswalde Renfrum, Bart Stuart and Hans Vermeulen initiated the Occupy Overhoeks movement: a loose collection of small residential units, workshops and other structures in the green area. Illegal initially, it was legalized within a year in the game.

Touria Melliani invented a public oven that functioned as an 'open kitchen': a communal cooking space for residents of Overhoeks and Van der Pek to bring them closer through the simple connecting power of food.

§ 4.4.7 Play Noord Outcomes

A Temporary Use

Play Noord is a game designed to explore whether collaborative organization of small and medium entrepreneurs could replace the agency of large scale players. By definition, this is not a game to investigate temporary use, Do It Yourself or reuse. However, a remarkable majority of the actions in the City Game were geared to the emergence of temporary and urban structures which are feasible in the short term. Projects proposals focusing on water and reuse of existing buildings were the main carriers of these ideas; floating houses, cafes, swimming pools, Occupy Overhoeks, an outdoor cinema, the Overhoeks event area, city farms, parasitic building, an open kitchen, a network of kiosks along the banks of the IJ, and temporary leasing of the Shell tower, are all short-term projects that could propel development on these sites. The transformation of the Shell Big Lab into a combination of temporary 'Wild Living' studios, office space for the creative sector, and a rehabilitated housing complex with shopping areas and facilities for the elderly, are examples of reuse which could occur immediately with either a short or long term vision.

90 Biotope is an area of uniform environmental conditions providing a living place for a specific assemblage of plants and animals. Solomon proposed introducing a carefully selected group of plants adapting well to the climate and the urban setting of Amsterdam Noord.

Figure 144
Play Noord outcome, final design drawing.


supermarket
Atelier
Atelier
High school
Hotel
Café
Bar
0 10 20
50
100m

Temporary thinking helped to introduce the mental flexibility to plan combined living and working areas, and once conceived, these became central to a longer term plan.

Further, urban farming was seen as an essential part of the combined living-and-working areas on all three days. On the first day the presence of this topic was strongest thanks to the efforts of Debra Solomon, who was passionately pushing a local ecology component in the game. The forms that urban farming took ranged from small private 'edible gardens' to a compost company with an inlet and outlet on the water, as well as a commercial urban farming company with an educational function. Players perceived farming to be a fast way of developing an urban wasteland into a productive and playful new neighborhood.

B Diverse of Housing Typologies

In the three days of the Overhoeks game a large variety of housing typologies were explored: parasites on existing buildings, townhouses, self-built city blocks with an organic pattern of growth, collective housing with public facilities such as a nursery with guest-rooms, the reuse of an office tower for luxury lofts with good views, and a wild living area with small-scale housing initiatives placed freely within it. The plurality achieved in housing typologies was an outcome we already observed in first City Game, Play Almere Haven. It is an outcome of evolutionary urban simulation that is lacking in top-down planning; the great diversity of housing typologies in Play Noord came out of the diversity of players and the unique partnerships generated between them during the simulations.

C Unique Program Combinations

Just as the rich variety of housing typologies that emerged during Play Noord is special, a varied urban program of complex but feasible compositions was made possible through the collective intelligence created by the participation of an active audience. When compared the original legal plan, proposing a housing versus non-housing program proportion of 1:3, all Play Noord sessions ended with a proportion on 1:2. An unexpected and creative example is the transformation of Buiksloterham by Willem Velthoven, Klaar van der Lippe, Jan Bosman, Bart Stuart and Han Michel into a special economic zone with free plot layout, casinos, hotels, housing, an entertainment venue and a city farm.

D Crowd-Building

Many public interventions, such as the city park or the public bridge connection between Overhoeks and Van der Pek, were subject to public construction and maintenance costs. Players were conscious of how such costs would come under pressure. To Realize the project they started proposing tools for crowd-building of a public bridge with the unemployed population of Van der Pek.

E The New Activist

Play Noord sessions opened an extensive debate on the possible roles of a 'New Activist'. The criticism raised by Merel Willemsen, -representing the activist in the game- was wether the activist could initiate developments that she prefers instead of resistance.

§ 4.4.8 Can City Gaming be Transformed into an Urban Reality?

The purpose of the Noord game was to seek, and collectively propose, a strategy that can influence the reality of the site's development. We used the City Game model that had been tested in Istanbul, but altered it to approximate more to reality; instead of simulating a generic case with relevant parties as in Istanbul, a concrete case and site were scrutinized by stakeholders directly engaged in Noord.

After the week of City Gaming in October 2011, the ideas generated during the analog game were digitally recorded and shared through the social network platform. This was done to reach a larger crowd who could not attend the Noord game. In this way we could map more actors who could engage in the process[91].

91 Digital record of all ideas can be found on thie link: playthecity.nl/search/5170

Figure 145
The floating pool on the river I] as developed after Play Noord by Sasha Glasl.

Despite being far from perfect in its implementation[92], sharing the collective intelligence generated during the City Game session -*through what Pierre Levy*[93] *calls 'virtual agora'*- will become an inevitable step of collaborative decision making based on citizen-generated information [Levy, 1999].

Below are a set of example ideas generated during the Play Noord sessions which had a follow up in reality:

92 Assessing the internet literacy of the stakeholders involved was another lesson we learned from Play Noord. Not only did it become clear, for example, that over 50% of the Van der Pek residents, did not have email accounts, but also that highly influential bureaucrats such as Hans Gerson, director of the Project Bureau Noordwaarts, prefers communication on paper or by email rather than using social network sites such as playthecity.nl/noord or twitter. Thus the game outcomes, proposals and comments made by stakeholders after the analog game are invisible to them, and therefore ineffective.

93 Refer to the second chapter for further explanation of Levy's ideas.

In October 2011 the Occupy Movement was based in the Beursplein, Amsterdam. Simultaneously, the Occupy Overhoeks initiative emerged during the City Game as a solution to individual and collective housing, and the demand for working spaces. Three weeks after the game sessions, a group of activist under the leadership of two sociology students from the University of Amsterdam occupied the Shell Big Lab in Overhoeks. They used Play Noord's online platform to announce their future plans for the building[94]. The initiator contacted our team to share his actions and earn local support. They inhabited the vacant building for a month, while making plans for future projects and inviting artists and young entrepreneurs to join them. The local government then denounced the occupation, claiming that homeless people and junkies had been harming the building's interior, and the police removed the occupiers from the building.

The Public Oven proposed by Touria Melliani during the game attracted attention on the Play Noord platform[95]. Old and new players debated oven types and the ideal location for such an oven in the area. A Play Noord player, Willem Velthoven joined the online debate suggesting that the oven should be placed in Van der Pekbuurt, while another former player, Debora Solomon, offered to provide technical knowledge from an oven she had built in Schilderswijk, The Hague. Melliani found the public space permits from the city hall slow and complicated to procure, but eventually succeeded and launched the public oven in the garden of Tolhuistuin in 2012, with the support of the city hall and the Tolhuistuin director.

The Floating Pool on the River IJ by Sasha Glasl got the most votes during the game session. Architect Glasl pursued the idea after the game, producing architectural drawings while looking for a developer to realize the project[96]. Setting up meetings with city planners to further the project made it clear to Glasl that such a radical new addition to a frozen zoning plan was seen as unacceptable by the City Hall. As temporary use, a floating boat on the IJ could generate a sustainable business plan. It could also travel to another transition zone when its temporary permit was over. However, as this text is being written in July 2013, there is still no attempt to convert Overhoeks into a temporary plan area that could embrace such a project.

A number of individual initiatives developed during Play Noord's jumped out of the game to partake in reality; some of them landed in Noord, while others settled in other parts of Amsterdam. However, the overall scenarios for the area generated by the game had much

94 playthecity.nl/3785/nl/paleis-voor-de-volksvlijt

95 playthecity.nl/5156/nl/public-oven

96 Please find on this link the plan for the Floating Pool: playthecity.nl/5769/en/floating-pool-on-the-ij

less impact on reality. Although it is obvious to everyone that the conditions framing this zoning plan have changed dramatically, the legal procedure does not support fresh input, such as that offered by interactive gaming that mediates the needs and ambitions of new and existing stakeholders.

Significantly, one of the general outcomes of the game was that the stakeholders want immediate adjustments made to the plan for them to be able to continue developing this part of the city. Despite the game parameters' adherence to the density and urban program composition foreseen in the legal plan, the project proposals clearly diverged from the amount of office space prescribed in the plan. Players challenged this programmatic condition because of the abundance of old fashioned workspaces already available in Amsterdam. Even if only to adapt to such punctual input on the nature of their content, zoning plans need to be in a process of constant evolution instead of holding on to a fixed legal moment. A dynamic master plan is the only way to keep an overall vision intact.

The reception of Play Noord by politicians was more positive when compared to the project office Noordwaarts. Alderman Kees Diepeveen kept the communication going after the game. Following the Noord sessions he launched a campaign to open up envisioning the future of Noord to local inhabitants. The website www.toekomstvisie2030.nl shows big similarities with playthecity.nl/noord. We are glad that Play Noord had a positive influence on how the municipality re-designs its planning processes, and even provided both a prompt and a template. However, it seems to be a waste of time and money to repeat such a similar campaign instead of simply adapting and building on the existing tools developed by citizens' initiatives such the Play Noord.

§ 4.4.9 Questions Raised

The main question was the legacy of a City Game, which claims to be a neutral platform to gather all traditional and hidden players to co-plan a city area. Although the content of the game outcome provided relevant outcomes in resolving existing post-crisis conflict, the results did not have any engaging consequence for the City Hall. The idea of renewing the existing legal plan, or of setting up a temporary use plan of Overhoeks for coming fives years, was not received positively by the project office.-*although three years later we see these steps taken*.- Thus the direct impact of City Game outcomes to the urban development processes needs to be addressed instead of indirect and later impacts.

As time passed we could see how individual ideas and stakeholders reacted and changed, in relation to the City Game played in 2011. One clear conclusion is that Play Noord sessions can only be influential if they are held continuously to provide regular

input and connect stakeholders with similar interests. We needed to invent an episodic process of local planning with a realistic business plan to make a difference. In contrast, our intervention was designed and financed only as one round of game sessions. Running the social network website, keeping the blog updated, and connecting players online needed to be part of such an intervention.

In 2012 we were invited to feature our work at an international conference organized by a French think-tank, La Fabrique de la Cité who had been following our work and found it innovative [Farrugia-Tayar, 2012]. Since they offered a grant based on the innovate nature of the method, we could find the time and space to reconnect with the Noord community to organize new Noord sessions. However, continuity is an obligation that needs to be embedded consciously into the game design and funding plan, rather than relying on unplanned games sessions with random sponsors.

The trust of citizens can only be gained if the participating stakeholders express their dedication for the implementation of the outcome. Whether organized by the municipality or an independent neutral party, dedication of players to the game outcomes appears to be a pressing existential question for effectivity of a City Game. Conventionally citizens perceive the role of the City Hall as the regulator and main responsible actor of urban development processes. If the purpose of such a City Game is to share the power of decision-making and responsibilities, the role of the City Hall can be questioned. Can it become one of the responsible participating players alongside other responsible civil organizations and citizens?

For the future, games answers are needed for how to design a City Game with a clear business and organization plan that could remain active in the ongoing urban development processes. How could individual stakeholders' projects be supported through the City Game until their realization? How could the City Game become part of the official procedure while the City Gaming process officially, and deliberately, functions outside the rules of the current planning system? Could the 'inspraak'[97] processes be updated? Could City Games become obligatory in collaborative planning processes informing the realization process before and after a master plan is legalized? Could inspraak evenings host City Gaming instead of workshops primarily based on verbal communication and in doing so helping people to realize their vision by making it visual?

---

97 Inspraak is a method for involving the public in general or in particular in preparing, shaping or implementing policies of the Dutch government. The phenomenon was developed in the seventies as an expression of the 'new democracy'. Nowadays, inspraak is part of the normal way of decision-making by the government, and in many cases replaced by the term participation.

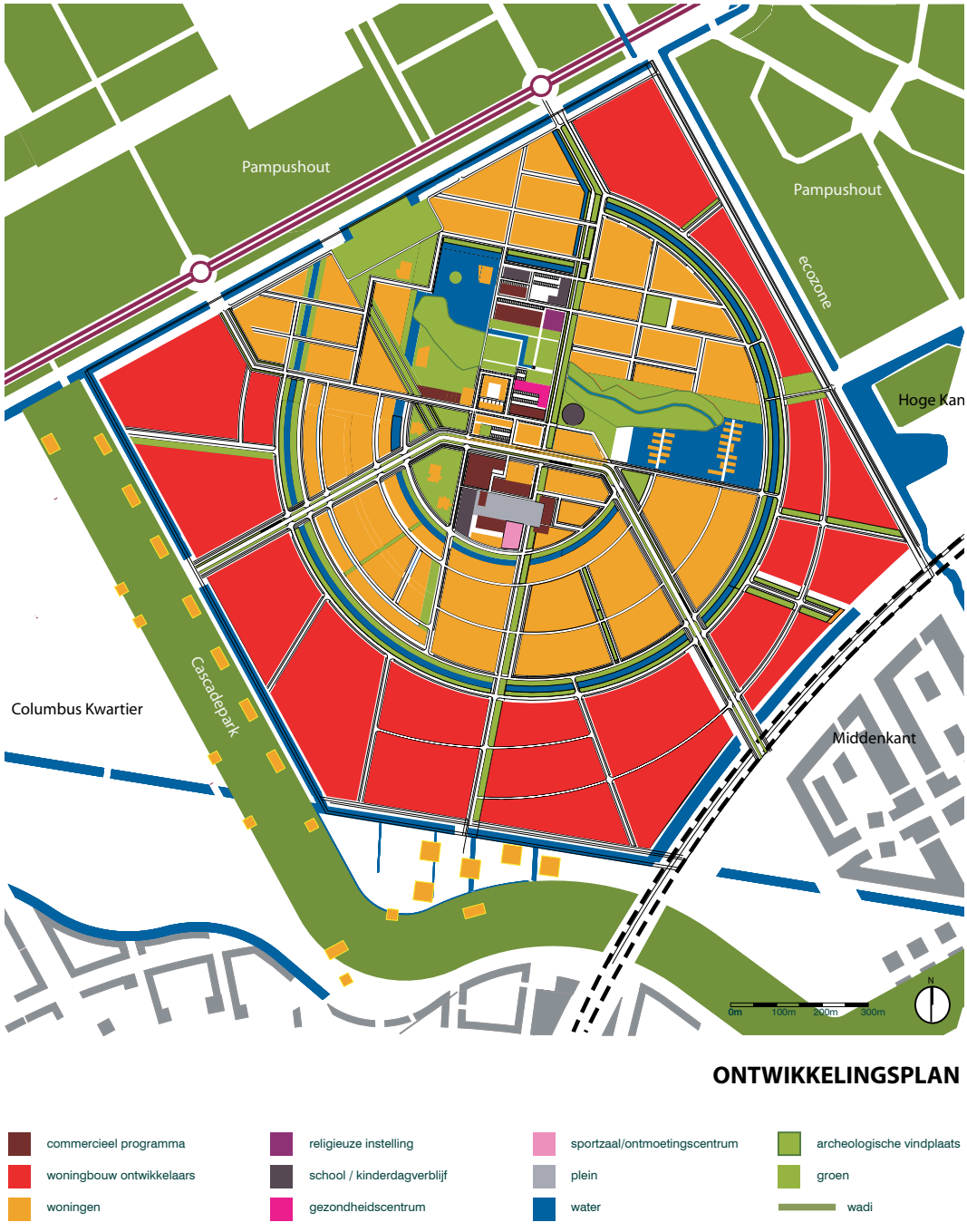


Figure 146
Master plan of Homeruskwartier as proposed by OMA.

§ 4.5 Play Oosterwold: A Do It Yourself City Plan

Only three years after Play Almere, a City Game based on the principles of self-organization that we created for the expansion of Sportpark de Wierden, *-reported earlier in this chapter-* the city of Almere produced a development plan following the principles of self-organization for a new expansion on the Oosterwold polder [Almere 2.0, 2012]. In the Wierden game, we simulated a growth process organized by residents following simple rules, without a predetermined urban plan. Back then this idea was seen as extreme by the same municipality. Although they were experimenting with single plots and less rules on the architecture scale than in Homeruskwartier, to self-organize an entire town seemed far-fetched to them [OMA, 2007] [Koole, 2014]. By 2012, municipality's Planning Department Almere 2.0 in collaboration with the architecture office MVRDV, published the Oosterwold plan which would progress by following simple rules made by the city without a fixed final image. This rule-based Do it Yourself -*DIY*- plan was a product of a larger transformation of the Dutch social welfare state into so-called 'participation society'[98].

In 2012, the International New Towns Institute co-curated the fifth International Architecture Biennial Rotterdam under the title 'Making Almere'. Here, INTI primarily exhibited the urbanization process of the new town, with a special focus on the latest developments such as the Homeruskwartier, a new self-organizing town in the Oosterwold polder, and Floriade 2022.

Recognizing the similarities between the Wierden game and the Oosterwold plan, INTI invited our team to join their biennial design team[99]. The new Oosterwold plan, in our eyes, was one of the latest radical developments of Dutch planning practice. Parallel to our suggestions in Almere Wierden, the plan bravely negotiated the roles of the government and citizens in the creation of a new town. Controversial debates around the plan focused whether the plan could be launched in the market with only the rule-based format. Could it be successful in creating spatial, social and economic quality?

98 Participation Society was first pronounced during the Dutch King's Speech in 2013 and explained as: when people themselves shape their future, they do not only add value to their own lives, but also to society as a whole.

99 The team involved Ekim Tan who was assisted by Cristina Ampatzidou and Hans Larsson.

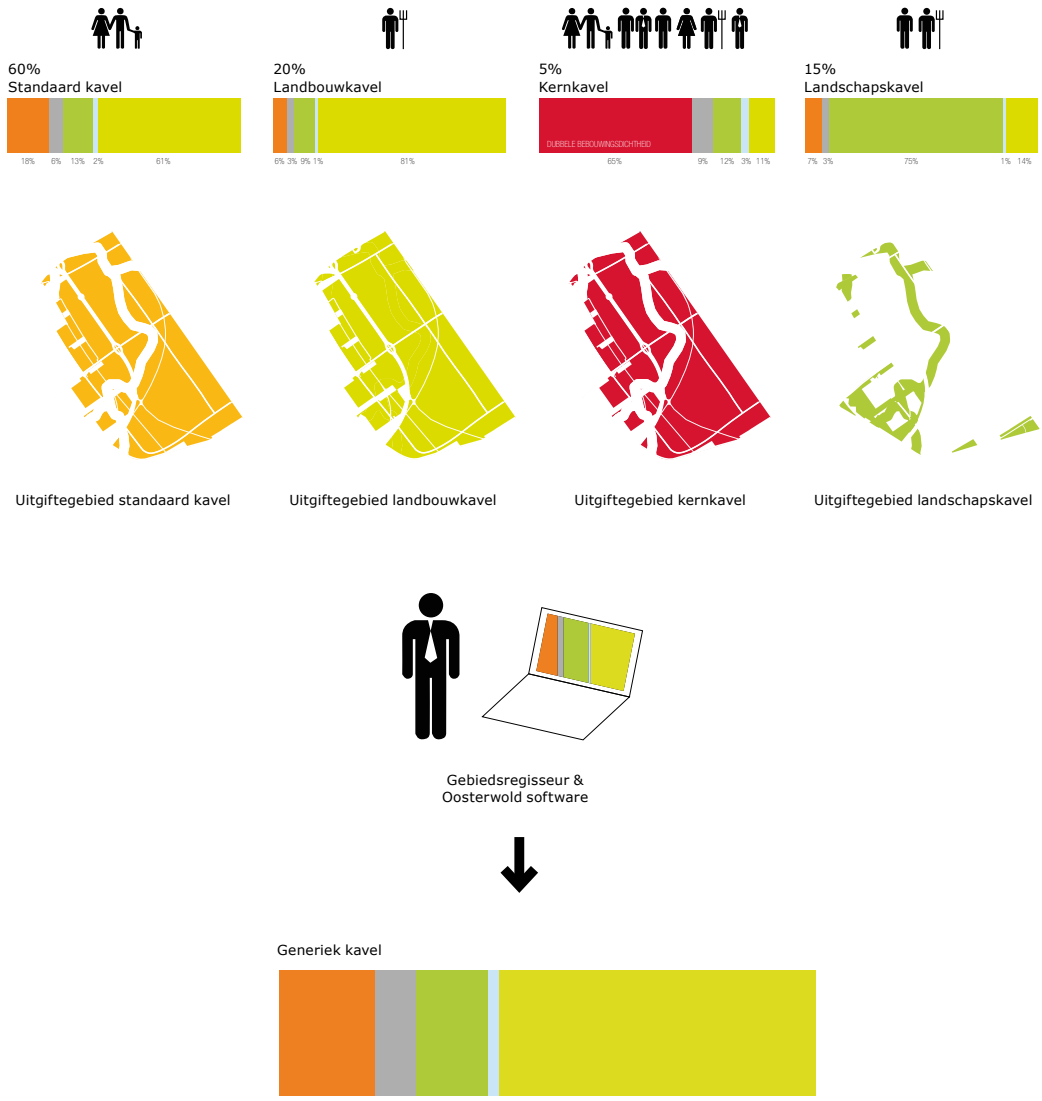


Figure 147
Plan rules of Oosterwold as proposed by MVRDV.

The role of a potential City Game in Oosterwold could join this debate and provide answers on the role of proposed rules for the plan. Would these rules lead entrepreneurs to build a low density suburb with self-managed green public spaces, and large farmlands mixed with businesses and autarchic living as the plan suggested? Would the given rules help achieve a certain spatial quality? What would be the respective roles of individuals and the state in the financial and juristic organization of the city?

Seeing a possible contribution to the ongoing debate of 'organic planning' within Dutch Urbanism, we decided to take on the Oosterwold game.

§ 4.5.1 Aim of the Game

Almere 2.0, a project team functioning under the city's planning bureau DSO, was the initiator of the plan. They needed feedback on the functioning of Oosterwold plan. Before the plan could be released on the market, insight was required on how land owners, speculating investors, other engaged municipalities, designers, and possible future inhabitants of Oosterwold would activate the rules on critical subjects such as public infrastructure and green space. The City Game could also reveal how individual entrepreneurs would invest when expected to provide their own local roads, energy production, water provision and sewage systems.

Thus Play Oosterwold became an urban design experiment testing whether a City Game could supply required feedback for the implementation phase of an urban plan. Our hypothesis was that this input would emerge from real stakeholders, playing according to the plan's rules and enacting this experimental settlement process. Accurate feedback could be ensured by diversity in the groups of players as well as by the continuity of the play sessions. As this thesis is being written Oosterwold sessions continue to be held in Almere. Reports of latest session can be found on playthecity.nl/oosterwold.

Our secondary aim was to experiment with monetary values in the City Game system and observe how real estate mechanisms would play out during the game sessions. We had attempted this aspect in a former game, Yap-Yaṣa, in 2010 to monitor the changing real estate values with limited success. In Oosterwold our aim was not to track the value of private property but to survey the investment behavior of entrepreneurs in relation to the obligatory spendings in sustainable technologies, public infrastructure and public spaces that partaking in the plan implies.

Figure 148
Satellite photo of Almere Region illustrates Oosterwold area to be developed.

§ 4.5.2 Play Oosterwold's Urban Question

Within the framework of the Almere 2030 structural vision, the new town will double in size [Almere 2.0, 2009]. This growth is foreseen as dense urban fabric in the western part of Almere with an enhanced infrastructure connecting it to Amsterdam, while the eastern part of the town, on the Oosterwold polder, will grow into a lower density neighborhood. The development plan for Oosterwold proposes a self-organizing growth where the roles of the state and citizens are redefined.

A An Open Development Strategy

The ongoing crisis caused the state to question its position as the main coordinator of urban development plans in the Netherlands. Since 2008, we have witnessed the freezing of several zoning plans as big parties withdrew from them to avoid running high risks -*Play Noord examined this issue in detail*-. In such cases local governments pay the highest price as the responsible party that remains involved and has to find other ways to move on with derelict urban sites.

Sharing responsibilities with future inhabitants lies behind the Oosterwold plan to develop 4500 hectares of polders. The local government wants to facilitate an organic city[100] instead of preparing the infrastructure and investing in the public spaces of Oosterwold before individual plots are developed, as in traditional plans. This way the government not only cuts the initial investments but also crowdsources urban development by engaging individuals, collectives and big investors. Future inhabitants are expected to organize the generation of their own energy, reuse gray water and maintain complex water managements systems collectively with neighbors. This negotiated self-sustainability is expected to bring both order and diversity to the plan.

With almost no precedent, it will be a challenge to implement these spatial policies in a way that will produce urban spatial quality.

100 In the context of Almere, the term 'organic urban development' suggests that both the passing of time and the new residents are (f)actors influencing the future design of the district. It is a strategy departing from that of the overarching master plan -'top-down planning'-, allows freedom for private commissioning and constitutes the next step in resident participation. The term has been introduced by Adri Duivesteijn, the alderman of Almere between 2006-2012.

Figure 149
Play Oosterwold intake table.

B Low density

When realized, Oosterwold will have an urban density of 5 people per hectare with a maximum of 15000 homes. 20% housing land use will be combined with 50% agriculture, 5% working, 10% infrastructure, 10% public green, 1% water, and 4% public services. The plan advises to protect Eem Valley as a backbone, a green zone running through the entire area, however it is up to the evolution of investments whether to preserve and strengthen it or introduce urban development.

In the meantime, existing land owners who bought land to speculate during Almere's boom years are already displaying resistance to the projected urban density. They expect a higher density to give better returns for their investment in Oosterwold. The cost of developing a low density city with large amounts of public space to be invested and maintained by private parties is a curious aspect to observe during Play Oosterwold sessions.

The leading idea behind the plan conflicts with traditional real estate rules based on making profit on one's dwelling, *-or on a series of dwellings built simultaneously for immediate sale-*. The Oosterwold plan springs from a philosophy that sees buildings as self-sustainable shelters to live in, rather than investments that will bring financial gain. Will this new logic transforming the existing housing sector be internalized by the investors of Oosterwold?

§ 4.5.3 Play Oosterwold Players

The most engaged members of the Oosterwold plan joined the City Game. The local governments of Almere and Zeewolde, where Oosterwold polder is situated, planning and design agencies involved in creating the plan such as the architecture office MVRDV, Almere 2.0 and INTI, other interested local governments such as Ede, Kampen, and G4[101] officers, as well as state institutions such as the Real Estate and Development company working for the Dutch State and the owner of 50% of the Oosterwold polder *-RVOB-*, the provincial water company Waterschap, the forest preservation agency Staatsbosbeheer, and the agriculture fair Floriade, *-planned to take place in Almere in 2022-* remain close to the process as the proposed new development strategy has consequences for how they shape their policies with regard to Almere.

101 Amsterdam, The Hague, Rotterdam and Utrecht are working together in the G-4. The four largest cities in the Netherlands have a joint European Office in Brussels. Cooperation takes place in many different areas such as sustainability, transport, research, security, employment and income and social inclusion.

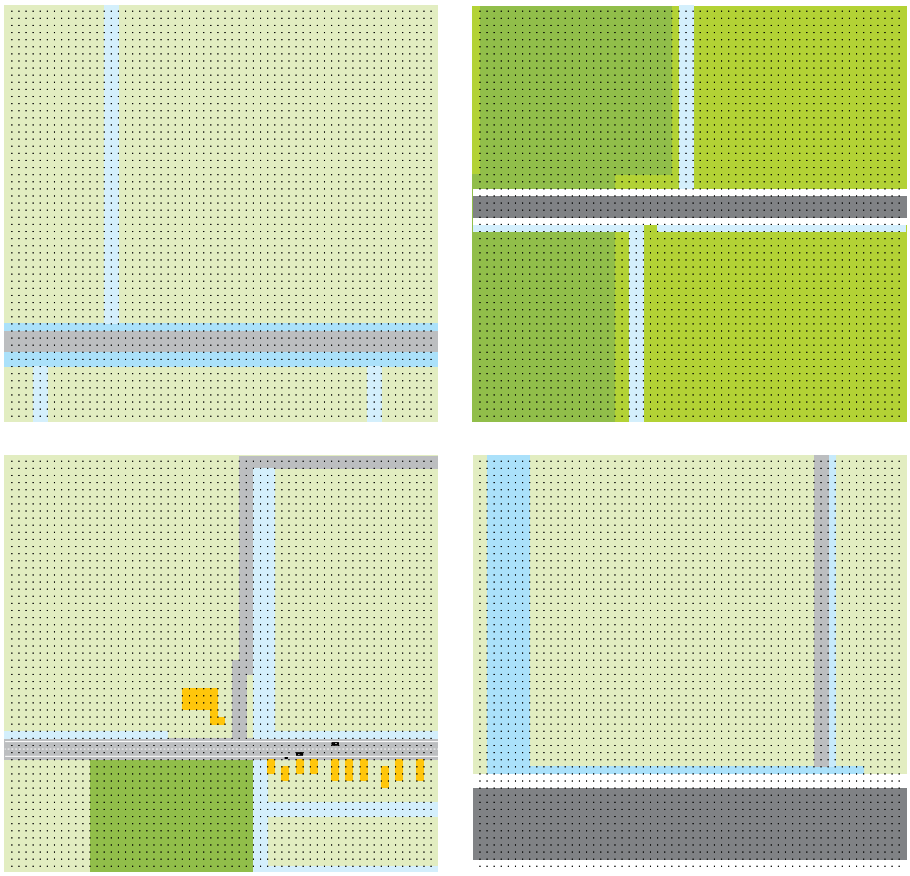


Figure 150
Play tables of Oosterwold.

Research institutes such as the National Planning Office PBL, the University of Amsterdam, New Towns on the frontier of Geopolitics, the Christian Agricultural Technical School and various higher education institutes also followed the evolution of the plan due to its innovative aspects. So far, all of these players have played the Oosterwold game. Beyond these institutions and state organizations, real estate agents such as the Vastgoedvrouwen, land owners, farmers and interested investors have been invited to play and react to the rules of the Oosterwold plan.

Despite the dense involvement of governmental institutions at this stage, the logic of the plan foresaw a completely different group of participants, namely entrepreneurs of various scales, to activate the plan. We identified three main roles that would be influential in implementing the rule-based plan: Future occupants living, working and playing in the polders as investors -*small, medium and large*-; an area manger representing the local government, and the bank controlling the cash flow for investments. These three have been translated into role cards for the game.

§ 4.5.4 Designing the Setting for Play Oosterwold

Play Oosterwold game room was situated in the city centre's main shopping street, also known as the 'city mall', as part of the biennial show 'Making Almere' created by INTI. The game room occupied a former bookstore on the cozy Belfort Square in the new center of Almere designed by OMA, the Office for Metropolitan Architecture.

A key difference with earlier games is that Play Oosterwold stayed in this central location and would be played repeatedly in the coming years. After the Noord game we realized that to have a real impact the City Game had not only to be designed and played once, but to be reiterated in its locality in parallel to the plan's development. The Almere City Game could become a platform providing continuous input and growing a network of people who develop ideas together and synchronize their visions through interactive play.

Given the 4500 ha size of the polder it was impossible to simulate the entire area with our 1:300 scale City Game library. In the game room we sampled four sections of the Oosterwold polder, representative plots that served as four game tables. Each table modeled 36 hectares, with different rural characters and at different distances from the urban center. These game tables were placed around a carpet on which a 1:1000 scale satellite map of Oosterwold was printed. This carpet was designed to facilitate an introductory questionnaire game to map spots preferred by the players to settle. A registration table processed the intake of players and served as a bank cash desk.

For this edition of the City Game our design team expanded the Noord library of urban elements by adding windmills, solar panels, sun collectors, and water management tools, as well as the plots with describe land use percentages in the Oosterwold plan. The pieces newly added to the City Game Library can be found as an appendix. To track how entrepreneurs invest in public infrastructure, public space, and sustainable technologies, we tagged all land plots, buildings, open spaces, events, and activities with realistic prices as provided by the colleagues from Almere 2.0. We designed a wall built from shoe boxes to hold the new City Game library, with descriptive tags of all its more than 10.000 component urban design pieces, to make it easily accessible.

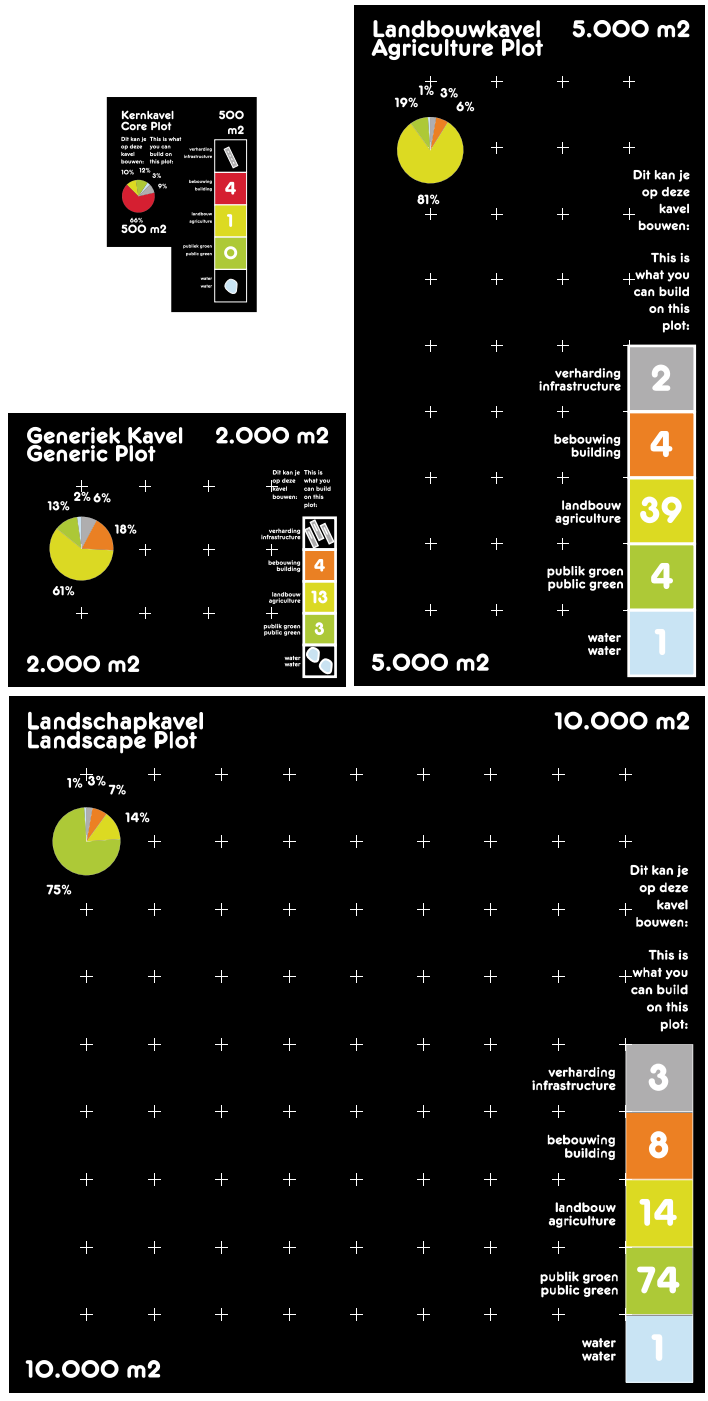


Figure 151
Game cards of various sizes with infographics for density, land use percentages and plot type.

A video camera fixed to a tripod recorded the top isometric view of the game table. A dynamic camera recorded players' conversations and shot photos.

§ 4.5.5 Rules for Play Oosterwold

Rules of Play Oosterwold were generated by translating the rules of the master plan. Below is a simplified version of plan's rules, as introduced in the Ooosterwold plan report [Almere 2.0, 2012]

§ 4.5.5.1 Plan Rules

1 People make Oosterwold.
2 Occupants can choose building lots freely.
3 Generic lots have a fixed land use.
4 Special lots vary in land use, e.g. landscape, agriculture, city core or work.
5 Urban infrastructure will be built by inhabitants.
6 FAR is 0,5 in all lots except for the city core plots which have FAR 1.
7 More than 2/3 of Oosterwold will remain green.
8 Building lots are largely self-served concerning water, energy, sewage so forth.
9 Each building lot development is financially self-sufficient.
10 Public investment follows private developments.

It was encouraging to see many of these rules could easily be absorbed through the play process without listing them as apart constrains. Rules 3, 4, 5, 6, 7, and 10 could be integrated into the design of game cards using infographics. The intake of players integrated rules number 1, 2. Rule number 9 was introduced by the Oosterwold money printed for this game. Finally we had to translate rules 8 and 10 into building rules to animate the settlement phase of the plan:

Figure 152
Play rules explained before the game.

Figure 153
Players exploring the city game library of Oosterwold.

§ 4.5.5.2 Play Rules

A Access Rule

Roads must be allocated along the edge of your plot. If you need more roads outside of your plot for access then you must make an additional purchase.

B Respect Rule

Those who have placed their plots first have the right to veto settlements in neighboring lots.

C Phases Rule

After negotiating the location of plots, buildings must be clustered together and cannot touch the boundary of plots. All players need to locate the agriculture, landscape, water and sustainability pieces respectively.

D Area Manager Rule

The Area Manager follows the developments by individual entrepreneurs, and intervenes by introducing public program when and where it is needed according to Dutch urban growth norms.

E Play Suggestions

Try and use existing infrastructure as much as possible. This will reduce your building costs! If you coordinate green open spaces with your neighbors players can make strong community areas. Players moving into an area are encouraged to think about adding a new functions for activity enrichment.

Play Oosterwold introduced an excel equation to track user behaviors on land investments versus urban plot size and kinds in as presented in Appendix #7.

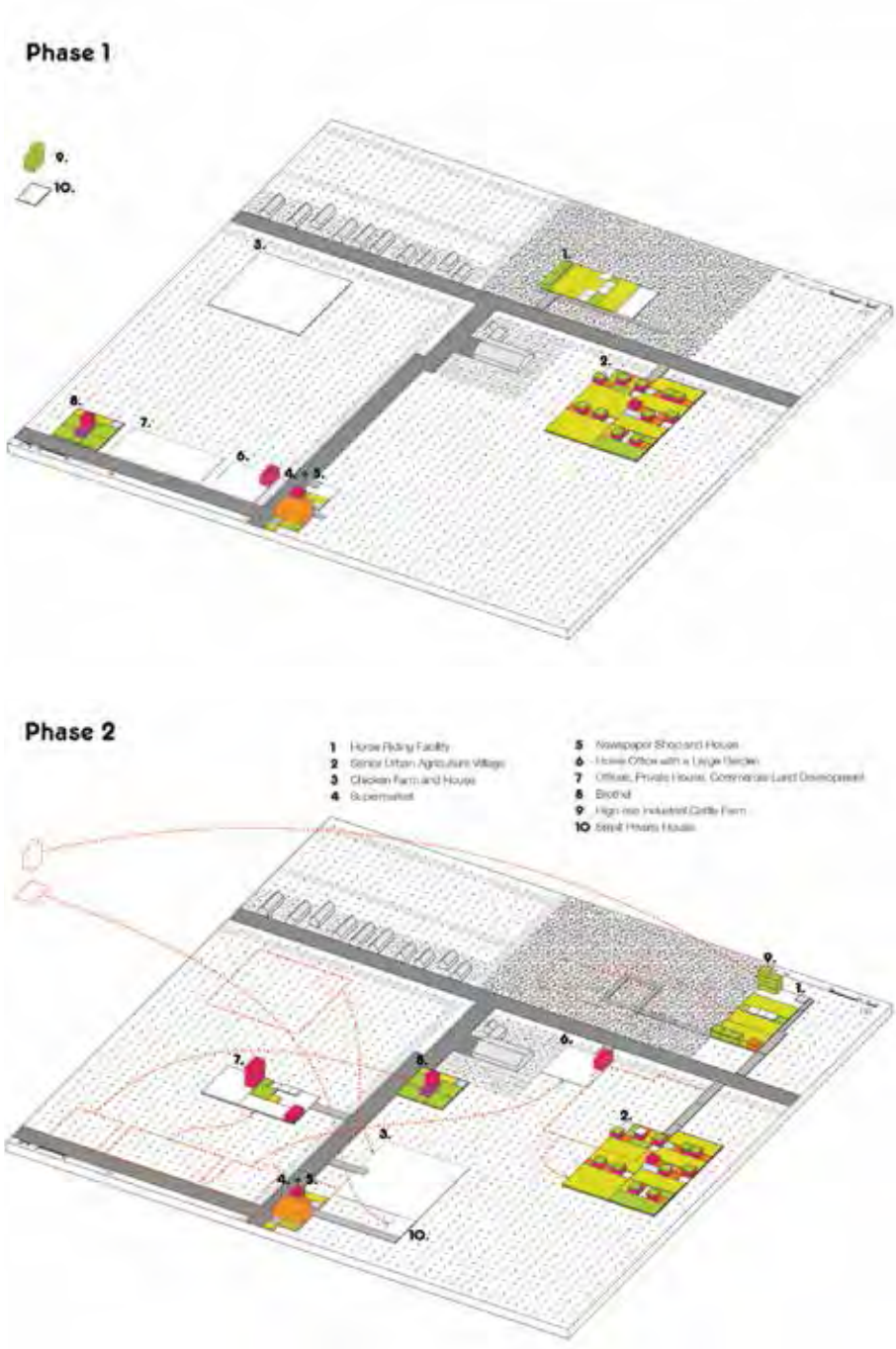


Figure 154
Play Oosterwold phases: 1 - 2.

Figure 155
Photo taken during the RVOB play session.

§ 4.5.6 Oosterwold Play Process

Since the launch of 'Making Almere' during the Fifth IABR in May 2012, Play Oosterwold has been played by over 1000 players in over 50 sessions; we continue to organize new sessions as new groups announce their interest in the City Game. Rather than generalizing all game sessions here, we report one exemplary session which offers relevant feedback on the rules of the plan. In July 2012, 12 members of RVOB, played Oosterwold. As mentioned earlier, RVOB, the national real estate and development agency, has a special position in Oosterwold as they own 50% of the polder and for them the success of the upcoming experimental plan is of great importance. Thus they also had a special interest in simulating and fully comprehending the rules through the City Game. All participants took the role of a possible investor on a range of scales. Our two team members joined the game as the bank and the area manager to cater for financial and public services. The banker provided loans for small, medium and large scale entrepreneurs to invest in the game. He checked the coherence of proposed plans and cost estimates against land and construction prices. We set the price of land at 10 euro per square meter, as suggested by the municipality of Almere. This price is considerably low compared to land prices in Holland, and other areas of Almere. The city can offer such low land prices in Oosterwold, thereby stimulating investors to buy in to the plan, as they will not provide public infrastructure such as supplying water, electricity, and a street network, leaving both the cost and responsibility for the infrastructure to the investors and residents.

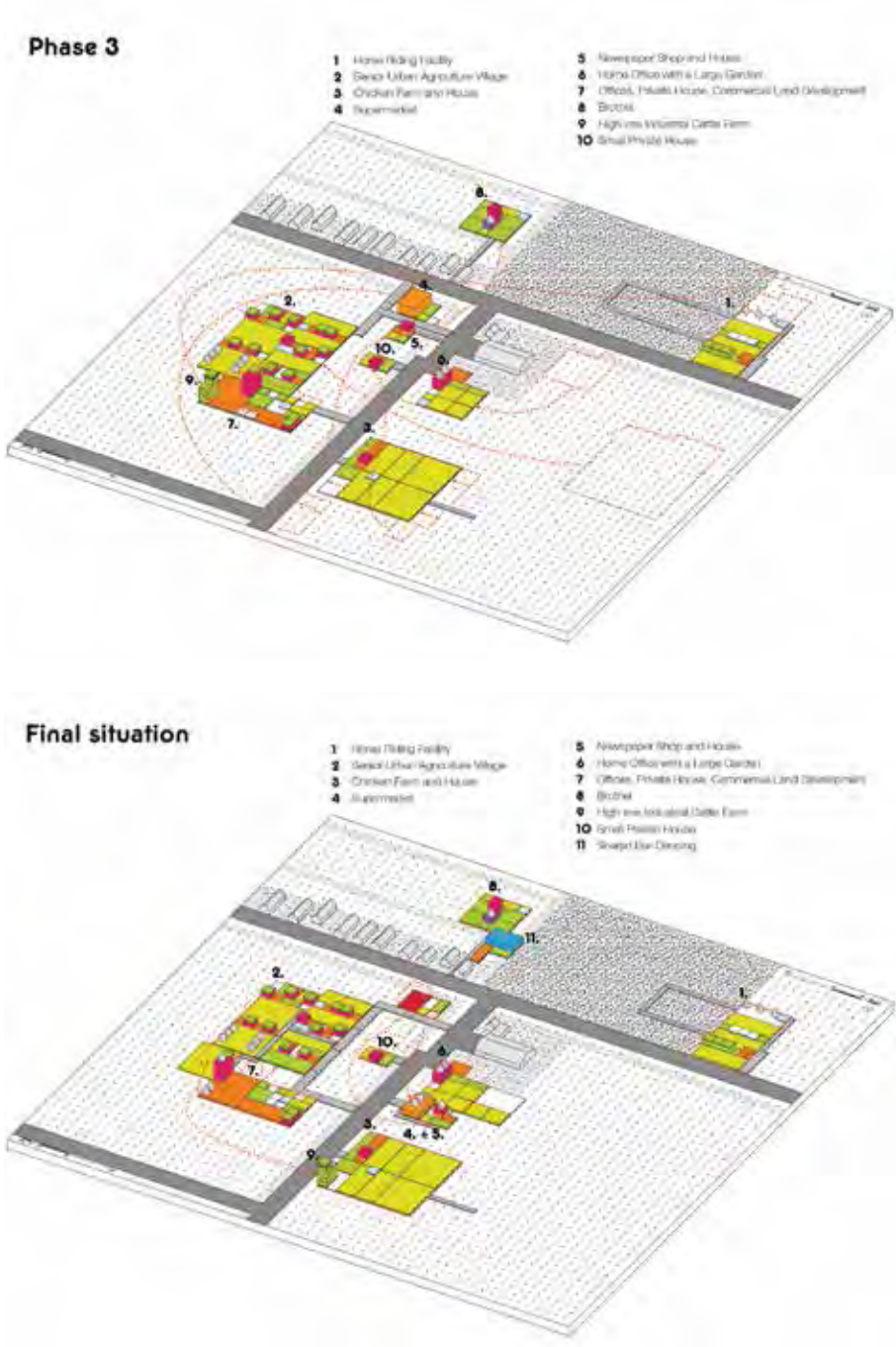


Figure 156
Play Oosterwold phases: 3 and final situation.

After collecting loans, players could explore the City Game library -*selecting plots, land use and building props to realize their plans according to the rules of the game*. A medium scale entrepreneur composed of a small village for senior residents, where inhabitants engage in collective urban agriculture. The farm had to be far from the existing street network to offer the quiet that retirees appreciate. Next, a small scale entrepreneur built his own house on a generic plot along an existing road. A medium scale investor placed a supermarket on an urban core plot, adjacent to his home office. A player with a small budget opened a brothel, asking other players to invest and help him to grow his business. A bookstore combined with a private dwelling situated itself across from the supermarket. A large scale investor laid out an industrial chicken farm with sun collectors, and several residential developments with gardens positioned themselves freely in the polder.

The first controversy stemmed from sprawling residential dwellings in the polder about the road infrastructure to be paid for by private investors. Players were confronted with an insufficient street network, one they could not complete with the infrastructure they had bought initially from the bank -*according to percentages on their plots*-. These locations were mostly quiet, open and far from existing infrastructure. Even if an investor had enough resources to pay for the extra stretch of local street network needed to connect these remote plots, debates were sparked when investors with limited budgets started utilizing local roads laid out and paid by other players without contributing a new section themselves. In most cases stakeholders agreed to share costs or simply chose a location closer to an existing street network.

Besides learning to share costs for the public street network during the game, participants brought up cases where they could purchase a building, but not an entire plot with public and private green space and infrastructure. This fueled a live interaction between players when building owners started looking for a land owner that would allow them to locate their program -*without the attendant infrastructural responsibilities that would come with buying their own plot*-. The process of searching for hosts for emerging private and collective program has been repeated a few times, and helped both the land and the building owner to save costs and generate creative program collectively. Please note that the organization of shared street network and public green needed to find its own rules rather than proposed plan rules through long negotiations between players.

Figure 157
Players' interventions gathered around the existing road network.

In the meantime, the stinking chicken farm and the growing brothel chain has been displaced a few times as a result of the NIMBY[102] reaction of the neighboring plots. This caused another debate on whether the Oosterwold plan needed a clear zoning policy instead of continuously moving around controversial program. Players utilized the 'Respect Rule' to resolve conflicts rising due to NIMBY. A positive outcome of such difficult dilemmas was that they served to foment intense interaction between stakeholders and created a collective decision making process to which most players could subscribe.

During the game, players argued particularly on Rules 4 and 5, which obliged everyone to spend resources on water reserves as well as energy generation. The supermarket owner refused to apply a quota of water preservation on his plot while some other businesses questioned whether obligatory spending on wind mills and other sources of energy generation would be realistic profitable investments.

Observing the passive role of the area manager, some players expressed their worries about the new, more 'hands-off', role projected for the government in the Oosterwold process. Watching the developments quietly and intervening only when the populationgrew enough was perceived as diminishing the quality of the public domain, thus the Dutch planning practice.

Players joined a lively debate on libraries and cultural centers, feeling that their presence in a neighborhood would strengthen the community. They sought ways of generating such services cheaply by decreasing the land prices for the municipality's purchases. The land price debate brought up a disagreement between the City of Almere and the RVOB on an important financial aspect of the plan. The director of RVOB Carolien Schippers, one of the City Game participants, questioned the quality check mechanism for the proposed projects that composed such a self-organizing development, and stressed the unrealistic land prices of the game simulation. Schippers expressed her worries as "*If, as assumed in the game according to the City of Almere's estimates, one could purchase urban land at 10€ per square meter, the RVOB can end up with a negative balance on the development, while the municipality will eventually lack the means to provide necessary public utilities even after the whole projected population moved into Oosterwold.*" According to RVOB, the minimum acceptable rate per square meter would be 24 euros. The difference between price ranges imagined by local and central governments, displayed the significance of playing more sessions with real investors – *the existing land owners* – to bridge the gap between the expectations of the diverse parties who will master plan Oosterwold.

---

102 an acronym for the phrase Not In My Back Yard

Figure 158
Game outcomes derived from the free form plots of the MVRDV plan.

§ 4.5.7 Play Oosterwold Outcomes

A Autarchic Living and Working

The most obvious outcomes of the Oosterwold game process were the search for the autarchic living and working by players in almost all sessions. We believe this stems from the two conditions the plan introduces: the heightened responsibilities for individual entrepreneurs over infrastructure which would traditionally be met by the state, and lower restrictions applied to private developments regarding urban zoning, form and governance. Given these challenges, players tried to make developments sustainable not only for a residential purpose, but also by proposing business models for working and alternative organization for leisure. The self-sustainability of each player's initiative was tested by the game, while various symbiotic or parasitic relations, financially and socially, emerged between players.

B A Variety of Living Forms

The formal and social variety in living forms is another clear outcome of Play Oosterwold. The building program was adventurous, ranging from large farms combined with business, education, leisure and residential program, to small aquaponic farms integrated into solar energy powered homes, distance learning centers within bioengineering farms, single villas, and even beer breweries attached to collective housing initiatives. However, formal exploration, as proposed by the designers of the plan rules, remained at the level of building masses and was not visible in the form of plots. The strong imagery created by MVRDV, designers of the plan, representing the freedom and creativity that the living enclaves could project onto the urban plots, was not picked up by different players for different reasons; land owners and city officers perceived the idea as inefficient and unrealistic, while investors and entrepreneurs focused their creativity on the their own individual or shared program, public services, as well as individual building forms.

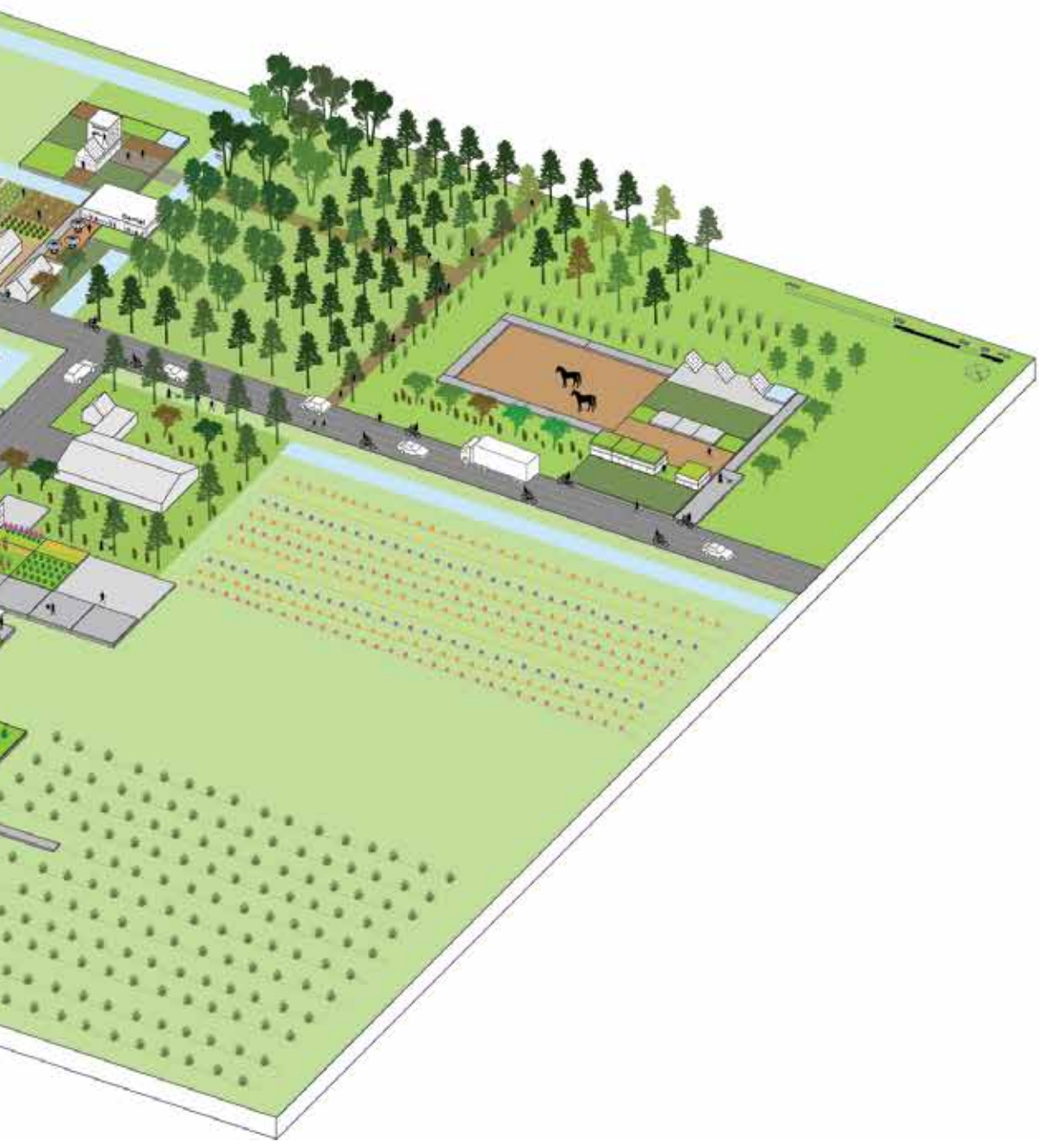
C Collective Organization

Confronted by the challenge of self-building local public infrastructure, players started forming groups to deal with issues of water management, the street network or energy generation. In the game simulation environment, organizing collectivity emerged naturally and flawlessly around the game table. This made some players question how to organize such effective interactive processes amongst the future inhabitants during the real implementation of Oosterwold. It was precisely this debate on collectivity that made investors think of efficient ways of using existing infrastructure. A predefined percentage rules doesn't work in this game, unlikely to function in the higher complexity of the reality -*with more players and less direct interactions*-. We advise that the Oosterwold plan should develop more simple but clear rules regarding the infrastructure, such as replacing the rule of percentages with rules of accessibility per parcel and division of costs according to the size of investments.

D Cluster and Reuse

Players who scattered their initiatives in the first phases of the game, were confronted by the challenge of self-provision and self-maintenance of public infrastructure in the later phases. This triggered a reaction of clustering complementary programs and shared initiatives, as well as effective reuse of existing infrastructures to avoid new construction. We favor this organic reaction; individual responsibility over public services might result in more efficient use of those services. However, it is important that a responsible figure such as the area manager in the game, or the state in a local form in the actual development, ensures that public interest takes precedence over the interests of individuals.

Figure 159
Play Oosterwold outcome as played by RVOB.



E Private-owned Public Green

The Oosterwold game, based on the plan rules, introduced a new notion of the ownership of open green spaces. In Oosterwold, public green spaces are sold to private investors in varying percentages as part of predefined land uses of particular plots. As a consequence, public space that used to be owned and maintained by the state, is now sold to entrepreneurs by contract and has to be maintained by them. According to the plan, these green spaces must offer open access to all citizens, but can be commercially programmed and managed by the owner. This aspect of the plan was rather new for the participants of the city simulation. This caused them to ignore plots with a high percentage of public green space and triggered the invention of new types of open green such as a semipublic golf course open to visitors at certain times of the week whilst being run as a business.

§ 4.5.8 Will City Gaming Become the Research Laboratory of Urban Planning?

Play Oosterwold was designed for examining the rules of the Plan Oosterwold. As more stakeholders engaged in the Oosterwold game we became increasingly aware of the practicalities and impracticalities of this experimental rule-based plan that will be released on the market in 2015.

The disagreement between land owners and the city hall about the market price of the land was exposed during the game sessions. The players' systematic rejection of the expensive public space plots was witnessed in almost all City Game sessions. Furthermore, we could conclude that the local street network could not be individually organized as assumed in the original plan, but required a new form of collective responsibility.This conclusion also applied to the water networks, sewage systems and energy production.

The application of self-sustainability rules to every development will need careful examination, as the city simulations revealed the tendency of players to undermine or question their obligation to make each plot sustainable. We also witnessed negotiations about the provision of public services between citizens and the area manager. The City Game sessions showed that the state is expected to participate more proactively in the plan, not just in spite of but perhaps because of their demand that individual developers to shoulder higher collective responsibilities. In some sessions, occupants took the provision and management of public services into their own hands. This is another possible organization model. All in all, in most game sessions we observed players questioning the new role of the state as a passive facilitator, despite imposing so many rules beforehand. Rules designed specially for entrepreneurs will be a necessary evolution; the requirements and capabilities of those who will apply them need serious consideration in the formulation of rules.

The Oosterwold case has shown us that the steady presence of the game within the Almere community may deliver constructive input on the maturing process of the plan. The demand for more game sessions continues, and some groups come to play more than once in order to develop their ideas on the future of Oosterwold. A community with loose ties is growing organically, both through the analog and digital platforms of Play Oosterwold. Keeping such a platform alive could help to facilitate the interactive and collective parts of both communicating and implementing Oosterwold. The City Game can represent every new building facility and new play sessions can build upon the existing Oosterwold of each given moment. The city's endless process of development can be simulated and imagined through a game and projected onto reality. An ongoing evolving plan can be provided by using the City Gaming platform. An ever changing and adapting urban reality can be played and shared with a truly representative range of possible stakeholders. The generative City Gaming carries potentials to become a research laboratory where professionals are exposed to real stakeholders. Plans may therefore develop continuously while they are co-created and shared with the public through open and interactive communication. This debate will be elaborated in the following chapter.

§ 4.5.9 Questions Raised

During the Play Oosterwold sessions one questioned recurred consistently, regarding money circulation in the game. As the game aim was designed to trace how people spent their money on urban development, we did not built an economic cycle into the game where people could circulate their money based on real estate values or the profit generated by their businesses. We called this the monopoly question. It remains a relevant question, and we have yet to imagine and model urban play situations where the internal economy of the game has a direct influence on the physical urban design. Introducing the finance component into the games can be more appropriate for urban management topics such as the smart grid and energy in neighborhoods, than in urban design.

While various groups have shown great interest in the process of playing the city, or playing the plan, our attempts to combine diverse stakeholders, such as investors, the city of Almere, and land owners, around one game table have failed to date. Political hesitation on the side of the city hall, over how to communicate internal information and with which parties, appears to get in the way of such an open decision making mechanism. Would popular demand for more transparency open up such obstacles to collaborative decision making?

In the second chapter's 'Technology Driven Populist Movement' section we explained blurring roles of the market, state and society. Plan Oosterwold is a great example of an urban product born into such a transition process: while the local government makes plans for a collaborative process where power, information and responsibilities ask for a new form of distribution. However, there is more courage needed to implement such an unprecedented open process. Avoiding a true mix of players to negotiate such a plan could be explained within this framework. We observe collective processes for public budgeting schemes implemented in cities such as San Francisco in the US, Porto Alegre in Brazil, Madrid in Spain. Could such open decision-making mechanisms become an inspiration for the implementation of Almere's Do It Yourself plans? Would the rules, once set by the municipality, be allowed to evolve according to popular feedback via open platforms?

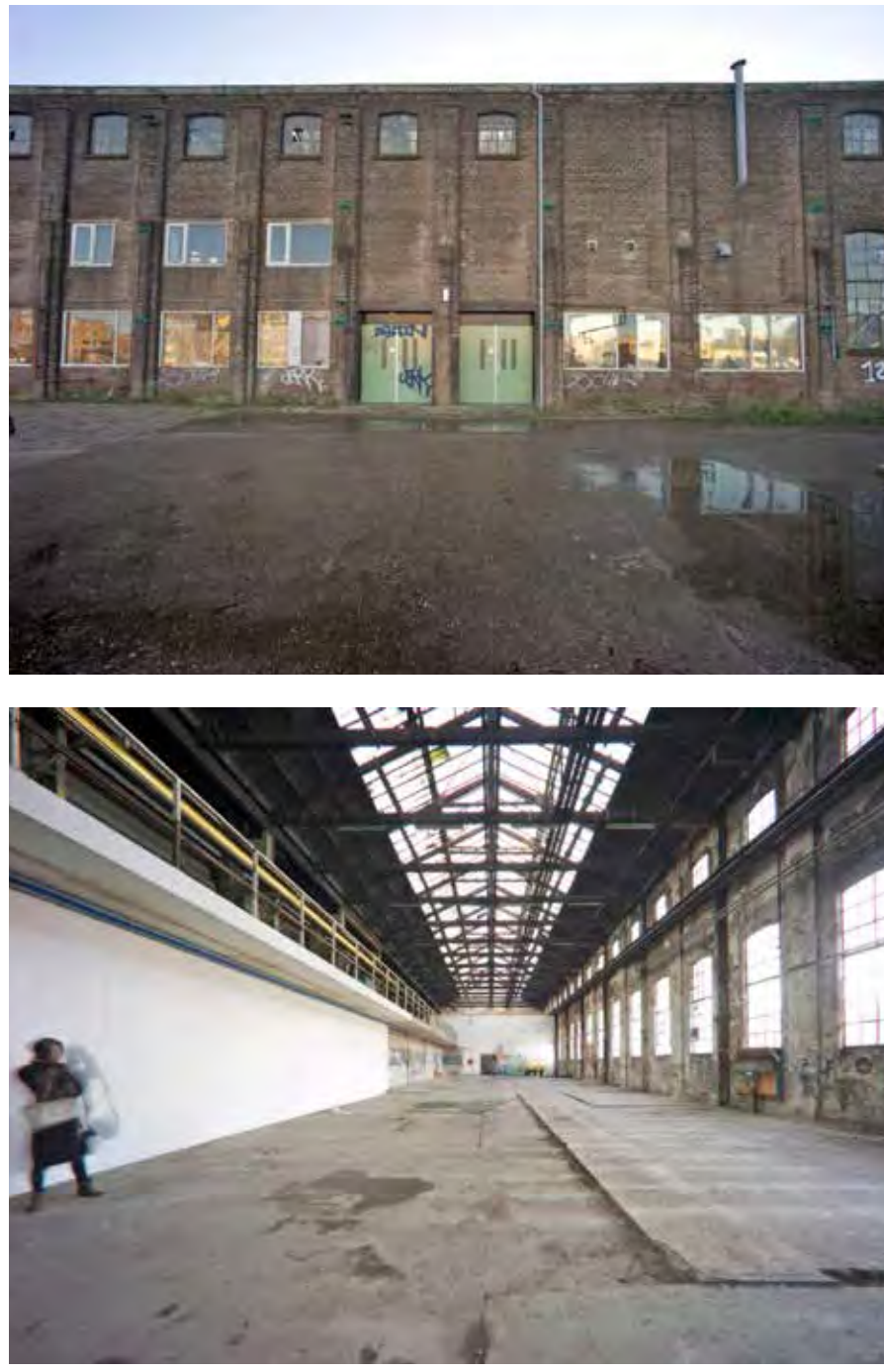


Figure 160
Van Gendthallen in Amsterdam's Oostenburgereiland.

§ 4.6 Play Van Gendthallen: A Temporary Town in an Amsterdam Monument

In November 2012, we were invited to join a brainstorming session by the Mediamatic Foundation, a public institution engaged in projects that span art, technology and society[103]. Mediamatic is also known for their pioneering role in using, and thereby highlighting, hidden urban spaces in Amsterdam. The Rijkskledingmagazijnen [1987], Entrepotdok [1990], parasites on a supermarket in Rapenburg [1997], Post CS [2003], and Duinter [2009] are some of the buildings which came into the public eye and gained certain urban importance when Mediamatic used them for innovative events that attracted an energetic young public. This time the building at stake was the Van Gendthallen in Amsterdam's Oostenburgereiland. This area is situated just within the eastern boundaries of the city center. One of Amsterdam's earliest industrial sites, Oosterbureiland remained active until the end of the last century. In 2004 the area was taken over by the project developer Heijmans Real Estate, who sold the largest portion of the island, 9 of its 11 hectares, to the housing corporation Stadgenoot in 2008.

At the time of the purchase, Stadgenoot did not have a vision ready for the site; they started working on a mixed use plan in which housing plays an important role in the redevelopment of the former industrial site [Ravestein, 2012]. However, due to the economic slow-down caused by the fiscal crisis, Oosterburgereiland is being gradually occupied by adventurous businesses who hold temporary contracts with Stadgenoot, such as café-bar Roest's summer beach on the Dijksgracht, Laser Games, Pizzeria Rosa and Rita, fashion designer Hans Ubbink, and Stormer Marine building boats. Mediamatic saw potential in the island, and specifically the empty free and generous spaces of Van Gendthallen, as a site on which to experiment with topics such as social urban farming, citizen generated environmental data, and living building materials such as mycelium. However, considering the scale of the halls, built in 1898 for 40 locomotives and 400 wagons ordered for South Africa, Mediamatic's plan needed young collaborators to join the project and help to occupy the space temporarily.

Mediamatic's call to co-building a six-month temporary town in the 3000 square meters of the Van Gendthallen was well received by many creative enterprises who rely on temporary use of spaces for their existence. However, settling more than 20 diverse initiatives coherently within a limited site was a complex process. In order to do this well, Mediamatic, as the party leading the project and responsible to the Stadgenoot, invited our team to help the collaborating initiatives to co-plan their temporary takeover of Van Gendthallen.

---

103 The team involved Ekim Tan who was assisted by Veronica Kovacsova, Lilly Lam and Sito Veracruz.

Figure 161
Position of Oostenburgereiland in Amsterdam Center.

We were asked to design a game process through which overlapping and conflicting interests could be visualized and synthesized into a plan -the process outcome- which would then be constructed, after all players had reached a consensus on the plan.

We took on the challenge because the players had a real and immediate need to negotiate a creative community environment for their work.

§ 4.6.1 Aim of the Game

In contrast to the indecisive nature typical of planning processes, the need for immediate space of the quasi-autonomous enterprises collaborating in this project required a precise and decisive planning and design process for Van Gendthallen. The city of Amsterdam reacted positively to the proposal of creating a temporary settlement in the cold and forgotten industrial halls of Oosterburger Island. Stadgenoot, the landowner, hesitated between encouraging events that would attract attention, and value, to their property, or selling the building to the next bidder with an acceptable offer. The ambiguity about building regulations, ownership and management

continued throughout the process. We perceived the lack of conventional parameters dominating urban processes such as fixed zoning rules and the concern of profit as an advantageous condition for the emergence of a new temporary town in Amsterdam.

Play Van Gendthallen became an urban design experiment testing whether City Gaming could implement a solution for an urban condition which falls under temporary use regulations. The City Game still needed to prove that its outcome could in fact produce an applicable plan. We thus based this experiment on two assumptions: First assumption was that over twenty cultural enterprises would be able to produce an applicable urban plan collectively using the City Game process. None of the players were planners or architects, but by using the platform and following the rules of the game they would eventually produce a concrete result that could be constructed in a month. Former City Games such as Play Almere Haven and Oude Westen had already had positive indications of crowds generating urban design orders through evolutionary processes. The Second assumption was that a City Game process was the right method to host the urgencies of a large number players with conflicting interests in negotiation with a flexible and relatively open local government who was willing to collaborate by granting the permits for building, events, catering and holding animals on an urban farm.

Since the first game in 2008, we have been systematically seeking right circumstances to realize the outcome of a City Game; Van Gendthallen seemed to be the right urban condition for this to happen.

§ 4.6.2 Play van Gendthallen's Urban Question

A Empty Offices

In the Dutch real-estate market, the amount of office space on offer exceeds the demand. The city of Amsterdam conducted research into empty office space which showed that the 1,3 million square meters of empty office space corresponds to 17% of Amsterdam's total available office space. While 4% to 8% empty office space is considered healthy for a city in order to have space available for rental or sale, the current situation in Amsterdam is well beyond such margins and calls for extra attention to change the balance. The municipality is already trying various methods of stimulating reuse and transformation, as well as limiting new construction.

Figure 162
Enterprises presenting their plans during one of the preparation meetings.

Seen from this perspective, Van Gendthallen is part of a larger urban phenomenon in Amsterdam, and in the Netherlands. Aside from this market glut, traditional office buildings do not cater for contemporary needs; demand for flexible and open work places is increasing as the hierarchical nature of working environments disappears in Amsterdam's service industry. Meanwhile, an emerging trend amongst young creatives increases the chances of the industrial halls to be converted into desired working clusters.

B Empty Monuments

Van Gendthallen is a listed monument. In the last decade national monuments, just like office buildings, have become abundant in the Netherlands. In early 2012, the National Building Service Organization -*De Rijksgebouwendienst*- declared their intention to remove 30% of the monuments from their real estate portfolio[104].

This framework gives a clearer perspective about the urban condition of Van Gendthallen. The building at stake is both a monument and a work space which is searching for a new use in a crisis period. A new zoning plan for this area is expected to be issued in 2014.

C Temporary Urbanism

The urban condition described above is a challenge for Dutch urbanism at large. The practice is in need of effective tools for developing temporary plans for empty urban areas in a less hierarchical and more flexible manner. Temporary use is currently seen as a valid method for adjusting legal plans, and to revive urban development [Oswalt; 2013]. However, it is not just stagnant urban plans that must change: the market, planners and local governments also need to adapt.

Van Gendthallen is an excellent example of how vacant areas need to be managed. Its productively wild, free character emerges out of the strong will of engaged entrepreneurs from the social, business and cultural worlds. The search for new methods of adjusting legal plans to make space for temporary use is becoming increasingly significant. This process is about transforming a planning system based on top-down integral planning into a more organic and flexible method of organization that can support small scale development and creative individuality within it.

104 http://erfgoedstem.nl/tag/leegstand

Figure 163
Players building their own mockups during the city game preparation sessions.

§ 4.6.3 Van Gendthallen Players

Mediamatic's open call for scientists, designers, artists, and urban farmers brought together a large spectrum of enterprises in need of inspiring and interactive spaces to work and socialize in. The process of gathering interesting initiatives took time and effort, as the call spread through email lists and website announcements, but mostly by word of mouth. We observed the organic growth of the network as the pioneering groups involved their contacts. The involvement of an architectural historian and PhD candidate from the University of Amsterdam, Marieke Berkers, was also important. She has been building up a database of temporary initiatives in Amsterdam and their impact on urban development for her doctoral thesis [Berkers, 2013]. While the City Hall, its various technical advisors, and the director of the housing corporation followed the process closely, they did not join the game as participants. This dubious position has been mentioned earlier; these parties like the idea of cultural enterprises using such a vacant building, while the targets they have financially from such estates are not fulfilled by temporary use; but seen as a step for a more profitable end.

The groups that played Van Gendthallen to defend their territories within the temporary town were an inspiring collection of creative initiatives: Do It Yourself workshops such as Fool's Gold, Trash Lab, Pretty Nice Stuff, Lab Updated and Paper Universe; urban farming initiatives such as De Tostifabriek, Aquaponics Farm, Plant Engine and Inflatable Clean Lab; catering enterprises such as White Trash Liqueur Factory, Open Cooking, Hot Love Nest Hotel, and Favelous Canteen; and art related projects such as the City Dust Pavilion, Indoor Slackline, Hanging Nest, and City Dust Observatory. With this initial composition of players, the temporary town would become a place with several ateliers and do it yourself workshops, where food is produced as well as consumed, and in which art installations provide public activities that share the place with a larger audience. The livability of temporary places, the availability of occupants, and the number of people engaged in public activities were all later set as a criteria that defined the 'order of play' during the sequential play session.

Mediamatic, the host of the temporary city in Van Gendthallen, was already experimenting in the space with three glasshouses, two aquaponics towers, and swings hanging from the 15 meter high ceiling. Keeping these installations in place, Mediamatic joined the game to claim a space for their offices.

Figure 164
Players building their own mockups during the city game preparation sessions.

Figure 165
1:30 scale city game table.

§ 4.6.4 Designing the Setting for Play Van Gendthallen

The City Game started on the digital media before it was played on the physical interface. The social network website, mediamatic.net/343164/en/freezing-favela, hosted all interested parties where they could place their images and visions and start interacting with other parties through comments, chat and 'like' functions of the website[105]. Through this transparent medium, public communication for lectures to feed the process, group meetings and individual presentations of enterprises were made possible.

The City Game took place in the leaking ice-cold industrial halls of Van Gendthallen. This is the reason participants started referring to the place as '*Freezing Favela*' during the preparation period of the City Game. In contrast to earlier games, which took place in 10-20 hectares of urban land and were modeled at 1:300 and 1:100, the 3000 square meters area available for the temporary town was represented at 1:30 scale. Practically, this scale change meant that we needed to re-create the City Game library. However, the specificity of the game suggested that the pieces needed to be built by the enterprises themselves, as they had a better vision of the spatial, symbolic and technical details of their project spaces. As each initiative was directly represented in the City Game, we could demand that each player tailor their own space to be constructed in Van Gendthallen.

During the last week of December we built a workshop in the 'favela' with architectural model materials and tools. This way players could come to build 1:30 scale models of their own individual proposals, whilst watching others develop their own. Our team members were present in the workshop to help non-designers to build their models. At the same time, our team was busy building the 1:30 scale model of the 3000 square meter area that would serve as the game table. A wooden skeleton model of the first and second halls of the Van Gendthallen was built in such a way that the roof and walls were portable, and could be lifted to place the models of players' initiatives inside it. This setup was invented in this game partly due to scale, but also because this is the first game played within a built structure, and not on a site. During the preparation workshops, players were already testing and tailoring their ideas to the context, being prepared for them in parallel as a scale model.

105 The online expansion of the game using social media platform was already tested in Play Noord., available on playthecity.nl/noord

For the game session we prepared a setting with a projector and a microphone, in which each participant would present their proposal to the other players. The specificity of the projects, thought through in context and with very realistic details, created a play process where each proposal was discussed thoroughly. We should also add that both the play sessions and the preparation meetings were held publicly. In these open events each enterprise got a chance to share their plans with the other project participants as well as the public, and as a result have a positive influence on the maturation process of other plans.

A video camera fixed to a tripod recorded the top isometric view of the game table. A dynamic camera recorded players' conversations and took photos. For this play session Mood Masters, an online TV program producer based in Almere, joined the game to film the process[106].

§ 4.6.5 Rules for Play Van Gendthallen

For all our former game sessions we designed the rules of the game. These were typically simple and as accessible as possible, but they were by nature top-down conditions inserted to manage the game. In one of our regular meetings with the Van Gendthallen players, one week before the game, one of the players stood up and opposed our 'conflict rule'. He proposed that instead of relying on arbitration by the game master, players should be able to reach a consensus by debating a matter and voting directly. As the other players agreed, we adapted the rule. Following this, Mediamatic proposed to support some of the initiatives' construction costs as they shared the groups' worries about finances. They also proposed the associated rule of tax. The group then agreed collectively that these points be added as game rules. During the play session players came up with the rule of collaboration to organize themselves better and resolve conflicts. They also invented a system for organizing the line-up, or play sequence, of the players; criteria assessing how public each enterprise would be, how many visitors their activities would attract, and how often public events would take place, would determine which project should take priority. Play Van Gendthallen has become the first game in which players negotiated the game rules we proposed and suggested new ones.

106 Please watch the movie report of Mood Masters at the link: https://vimeo.com/56875026

§ 4.6.5.1 Initial Play Rules

A Sequence Rule

Participants play in sequence.

B Respect Rule

In case of conflicting interests, later acts implemented in the game have to respect all previous decisions; such as positioning cold and warm, wet and dry, noisy and quiet environments.

C Iteration Rule

Participants play 'Freezing Favela' over a minimum of two sessions, throughout which there will be a gradual, organic arrangement and development of diverse initiatives.

D Conflict Rule 1

In conflicting situations where players can't come up with a common decision, the game master takes over and resolves the conflict.

§ 4.6.5.2 Play Rules by Players

A Conflict Rule 2

The role of the game master is not to decide but to clarify a conflict situation, mediate the arguments, and organize a call for public voting to decide the matter.

B Finance Rule

Enterprises finance their own initiatives, but Mediamatic, the curator of the temporary town, will provide an amount of up to 600 euros to support each enterprise.

C Tax Rule

After building the city, if any citizen starts earning income from their activities, 30% of the income will be returned to the curator, Mediamatic.

D Public Engagement Rule

If an enterprise organizes more public events than others, or can engage more public to use the freezing favela, then this player has priority in the play sequence.

E Priority Rule

Collaboration will not only help you build more cheaply, save energy, etc., but it will also earn you a better position in the game when a conflict emerges as well as in the implementation phase after the game.

F Rule of Rules

Always try to solve things without having to refer to the 'Play Rules' first.

§ 4.6.6 Van Gendthallen Play Process

After agreeing on the rule set for playing freezing favela the City Game was ready to process the complexity of the varied requirements of numerous future residents, ranging from food production to trash and poo processing, fish and mushroom farming, and more. All players came together to play Van Gendthallen and plan the Freezing Favela on a cold Sunday, the 6th of January 2013. Out of the twenty-four projects registered online, about twenty representatives were present to defend their spots and visions in the favela-in-the-making.

The rule of sequential play triggered a heated debate about who would have the right to get a head-start. In a territory defense mechanism, playing early in the process would make a big difference.

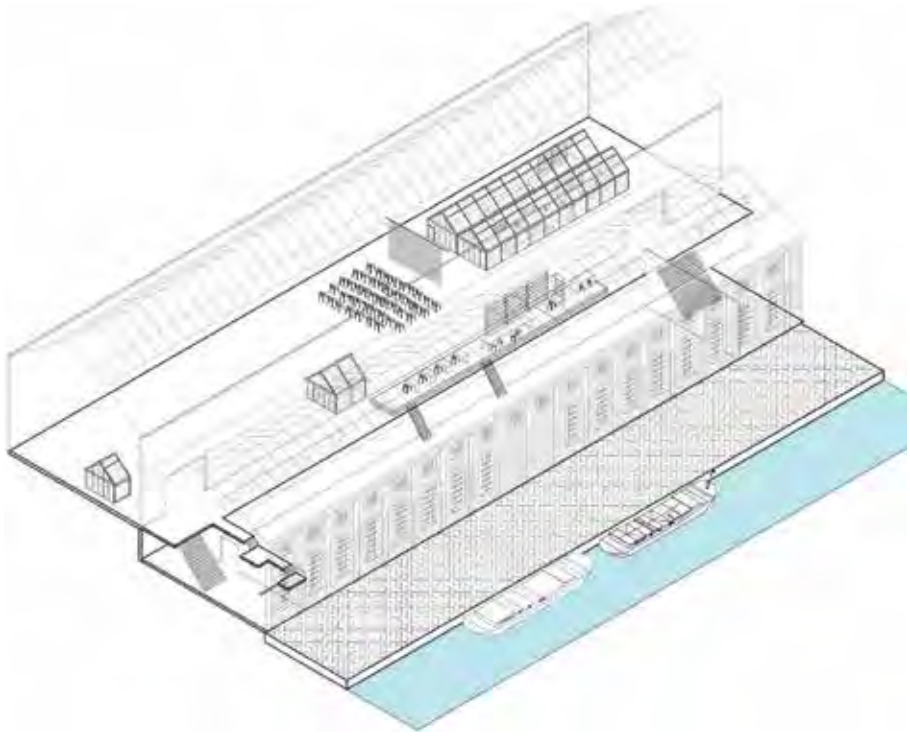


Figure 166
The play area of Play Van Gendthallen.

In the first round of the play session, we drew lots to decide on the lineup arbitrarily. This round of play was a tentative session for claiming space, in which each player declared their vision, program, and the physical requirements for their enterprise. Each participant placed their mockup model on their preferred spot in the portable Van Gendthallen scale model. We required all players to act as if all spots were empty when their turn came, essentially as if all turns were the first. This caused overlapping projects during the session, but also helped us to map the conflicts, as well as, possible future collaborations between players. While most food related initiatives claimed their spots in and around the existing kitchen in the first hall, connecting with water and sewage systems, We make Hummus showed an interest in the second hall where all workshops would be , to serve these initiatives and to profit from their visible location, separated from the bulk of other catering projects. Poo Project and the Tostifabriek had difficulty finding welcoming neighbors in the game. The 3000 square meter Van Gendthallen building was filled up before all twenty projects could find their own territory.

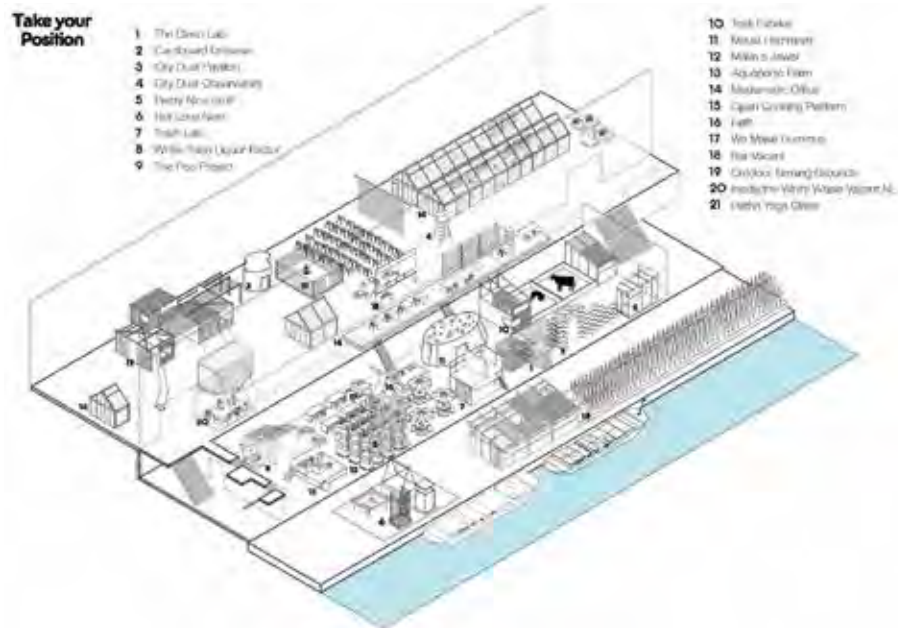


Figure 167
Results of the first episode of Play Van Gendthallen.

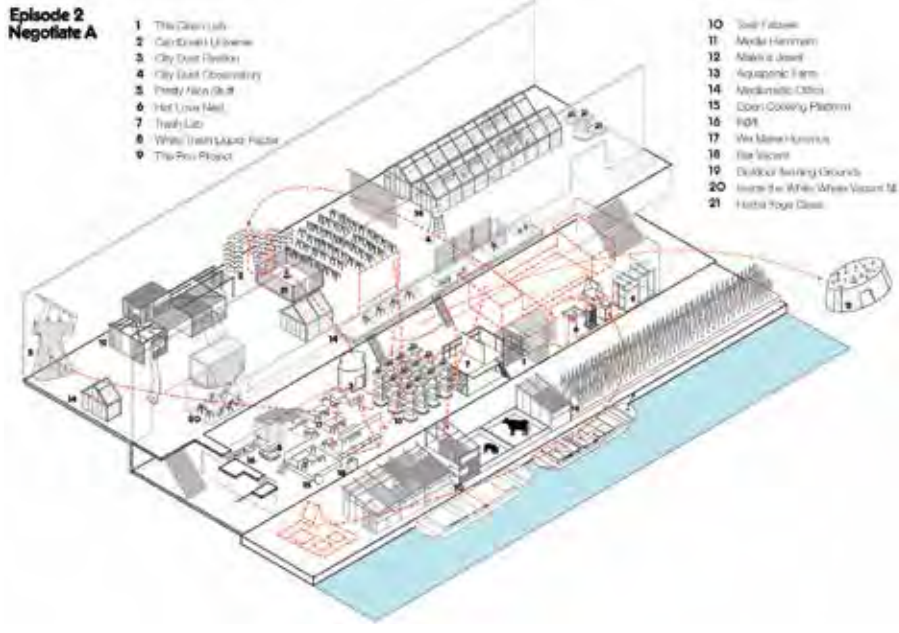


Figure 168
Negotiations between players during the break of Play van Gendthallen.

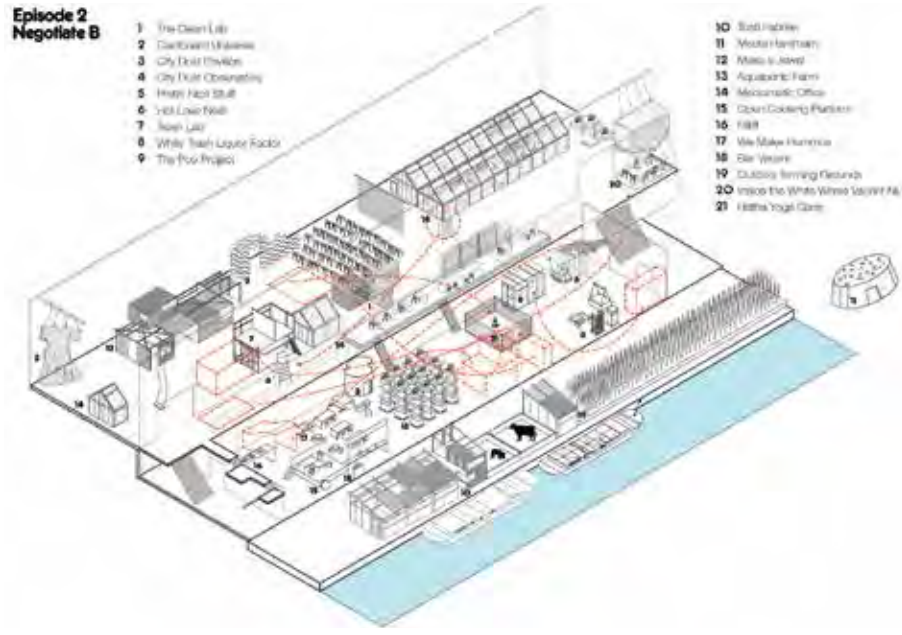


Figure 169
Negotiations between players during the second episode of Play Van Gendthallen..

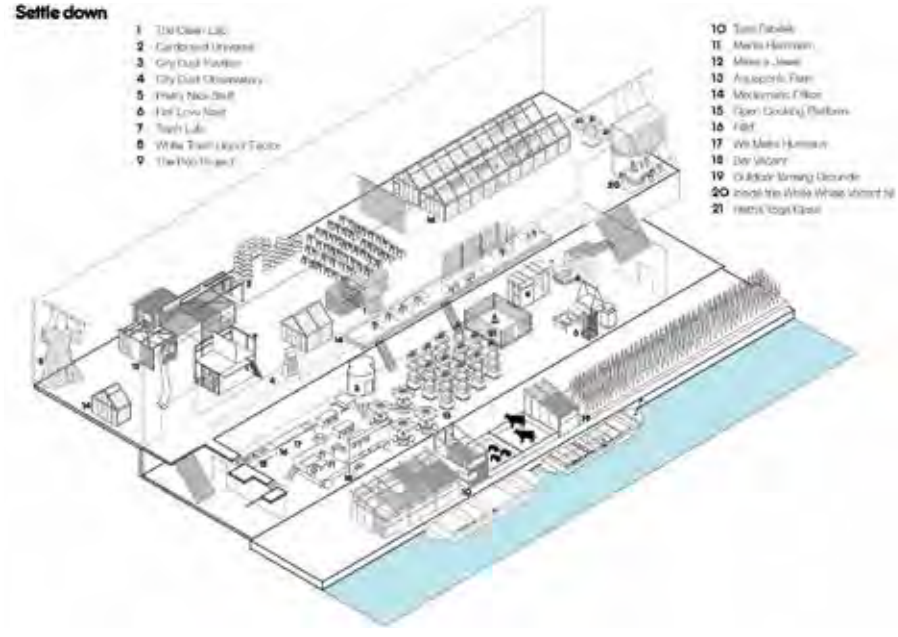


Figure 170
The results of the second episode of Play Van Gendthallen.

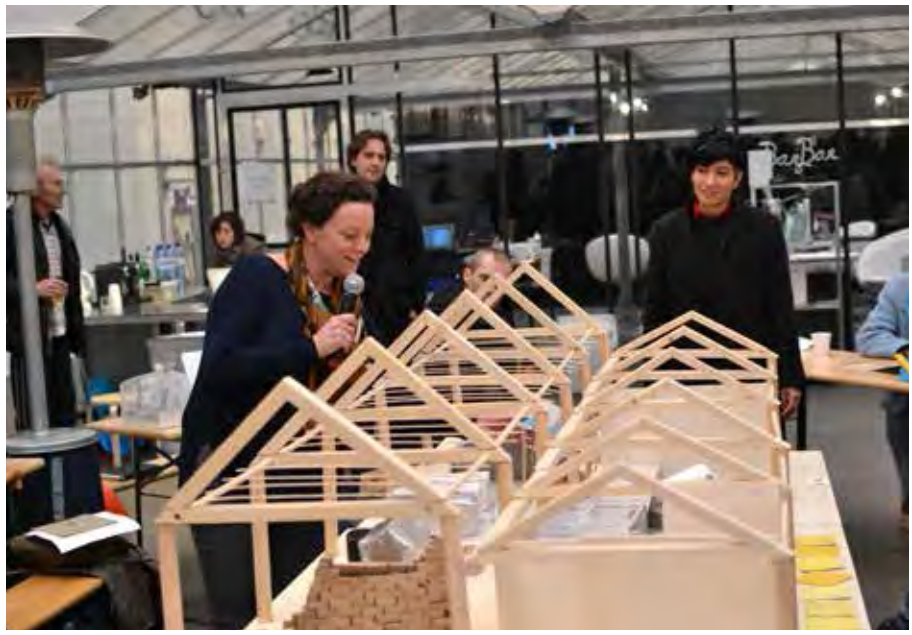


Figure 171
'We Make Hummus' presenting plans and choosing a position.

Figure 172
'Trash Lab' presenting plans and choosing a position.

Many conflicts over access and navigation, or proximity to utilities and daylight, occurred throughout this round. As common interests and conflicts emerged, the interaction between groups prompted the establishment of new shared plans. After the first round of introductions and sharing individual plans with the group, we restarted the territory sharing process. As the players were in need of communicating with other groups to lobby their visions and find common denominators, a one hour break followed the first three hour session. During the lobby hour, new partnerships were formed and tactics for positioning got sharper. This influenced the afternoon play session.

During the second round, players started claiming the territories they wanted for their initiatives. The sequence of play was this time based on how public the activities of each enterprise would be, based on the priority rule players invented. Instead of individual groups finding a space, as in the first round, now mergers were playing together to secure their ideal spot. Projects like Mediahammam and Aquaponic Farm collaborated by sharing heating systems and walls, while food and waste related initiatives formed a large consortium sharing the kitchen and wet spaces, such as the Tostifabriek, the Poo Project, and the White Trash Liquor Factory. During this session, opposition and NIMBY-like reactions were also raised, such as to the workshops of the Poo Project which produced papers from cow poo, and had problems finding neighbors as a result of the smell or the stigma associated with this type of waste product. In this round Poo Project convinced White Trash Liquor Factory to share the heat they would generate by boiling the paper.

Unexpected partnerships such as using the oven of the hammam as the pizza oven of the Favelous food facility would not have been born without the mediation of the interactive and transparent City Game that facilitated the planning process of the Van Gendthallen.

§ 4.6.7 Play Van Gendthallen Outcomes

The three months of the project, from an open call for participation to tentative and final play sessions, delivered a final plan for the industrial monument. Immediate consensus was not achieved, but several iterations both in developing and playing the game evolved a plan where more than twenty parties could find and negotiate their place in the project. Besides daylight and accessibility, practical needs for ventilation, water, electricity and sewage become check points that caused minor shifts in the construction of the initiatives. For example, the Tostifabriek planned to bring in two pigs and three cows.

Figure 173
'Tostifabriek' presenting plans and choosing a position.

Figure 174
'Media Hammam' presenting plans and choosing a position.

Figure 175
'The Poo Project' presenting plans and choosing a position.

Figure 176
'Fool's Gold' presenting plans and choosing a position.

Figure 177
Negotiations during the break of Play Van Gendthallen.

Figure 178
Players after consensus for the share plan was achieved.

Figure 179
Final game outcome Play Van Gendthallen.

This generated a debate about the smell and noise of the animals in the building, and where a suitable location for such utilities might be. After a long debate on whether the heat of animals was something for other initiatives to use, a consensus was reached to build a portable wooden structure for the whole Tostifabriek outside the monumental structure.

The next debate was fueled by the White Trash Liquor Factory's waste collection system, which other players found unattractive. By designing a waste monument right at the entry to Van Gendthallen they could keep their distillation process inside, adjacent to other food facilities that needed water and electricity to be viable. When at the end of a full day of gaming all players agreed on the overall plan, debates over the collaborative construction phase that would follow already began, including, for example, a debate on using a single material, straw bale, for the whole favela. Construction started two weeks later. During this period participants detailed their construction plans and collected materials to build the town.

A From Conflict to Creative Collectivities

The most striking outcome of 'Freezing Favela' was how creative collaborations were born out of direct territorial conflicts between the various enterprises. After the first chaotic session we witnessed a twist that transformed a lack of sufficient space for each participant into symbiotic work and space sharing tactics. The Yoga initiative agreed to take place in the Media Hammam while the Hammam initiator collaborated with the food initiatives, agreeing to share a wood oven to cook pizzas as well as to heat the hammam. All food related initiatives found it more feasible to be located in one central location in the first hall instead of being scattered all over the favela. This would help them maximize the use of utilities, and offer a larger variety of menus, from the hummus kitchen to the Italian chef and various home-cooking initiatives operating out of Mediamatic's kitchen.

Figure 180
Pigeon fertilizing tower in Play Van Gendthallen.

Figure 181
Hanging nest for human beings in Play Van Gendthallen.

Figure 182
Fool's Gold in Play Van Gendthallen.

Figure 183
Aquaponics in Play Van Gendthallen.

Figure 184
Melt Ice Cream Factory in Play Van Gendthallen.

The Fool's Gold, Pretty Nice things, Trash Lab and other Do It Yourself groups agreed to move in to the second hall. This would facilitate collective construction, sharing each others' workshops, materials and, eventually, visitors. In the meantime Tostifabriek partnered with chefs to produce the cheeses, bread and ham that would make their 'toasties'. The chefs happily settled as neighboring Aquaponics, which promised them fresh tomatoes, salad and fish for their kitchens.

The planning, building and occupation phases of favela displayed a similar organic character. We observed how some groups found collaborators to better face the challenge of building their structures, while some groups fell out such as the Poo Factory, Lab Updated, Open Cooking and We Make Hummus. New groups such as the Pigeon Fertilizers, Melt Ice Cream Factory and the Hanging Nest for Human Beings joined in as the favela grew into maturity. A lively temporary program of concerts was planned by Echokamer, an organization that collaborated with various installations in the favela creatively. Thematic dinners organized by the Favelous Canteen, monday literature evenings, Amsterdam's Ignite lectures featuring the work of local creatives, political debates reflecting Turkey's Gezi Park Movement, as well as successful crowd-funding dinners for the Tostifabriek combined to offer a rich and evolving favela program until September 2013. All in all, a temporary city full of play, learning, food and science experiments provided an atmosphere that reminds one of the Cedric Price's Fun Palace and Constant Nieuwenhuys' New Babylon but then in the twenty-first century Amsterdam. *-Please find more on these reference projects in the second chapter.*

§ 4.6.8 What Makes 'City Gaming' Applicable?

The case of Freezing Favela is evidence that elements of a city can be envisioned, designed and constructed through collaborative and interactive City Gaming processes. As the first experiment that fully made the leap from plan into reality, this game will help us to determine which conditions are necessary for the realization of City Game outcomes. Although we had tested the City Gaming method for various urban contexts and scales, and some ideas from the game process have been realized on site – *such as in Play Noord* – we had not yet realized the process from mediation to materialisation in its entirety; Van Gendthallen is a significant step forward due to its success in translating the game result into a temporary urban settlement. What were the circumstances that enabled the gaming process to evolve into a fully built urban plan?

Figure 185
Favelous Canteen in Play Van Gendthallen.

Figure 186
Favelous Canteen, with fish from Aquaponics.

Figure 187
Tostifabriek under construction.

Figure 188
Official opening of Tostifabriek in Play Van Gendthallen.

Figure 189
Amsterdam's urban farm in the Freezing Favela, Van Gendthallen.

First, the scale of Van Gendthallen was comparatively small, compared to the urban design questions the City Game method had focused on since 2008. Aside from the manageable size, the construction work required to make the industrial halls habitable was comparatively less complex: all new constructions did require carrying their own weight, being waterproof and heat isolation to some degree although conditions such wind, snow etc did not impose extra requirements. Planning and implementing a 3000 square meter interior urban plan in a period of three months was therefore manageable, relative to the other projects we had tackled. As the scale gets larger and the number of people and power levels involved increase, the process requires more time investment and extra steps before it can be realized.

Second, the correlation between the participants of the City Game and builders of the plan has never been more direct than in Van Gendthallen. Most players, or their team members, were later involved in constructing as well as running and maintaining the temporary town. So we can conclude that when the middle man and other extra procedures are removed from the processes of imagining, building and finally managing and using the city, space for direct and dialogical evolution of cities opens up.

Third, these players were bound to the building and monument regulations of the city, while counting on the support of the local government for the occupation of the vacant industrial hall. The support of the city, a party with special interest in seeing the desolate parts of the city come alive, encouraged the land owner in a time where quiet real estate market offered few alternatives, was an exceptional moment for such a temporary city to take off.

Pop-up restaurants such as the Favelous canteen were tolerated on a 'horeca', or catering, permit, as were the events organized by the favela residents. Finding the sounds of the animals disruptive, well-informed residents forced the city to displace the animal farm from the quay along the Van Gendthallen while the city hall engaged in creative maneuvers to find the right urban planning laws that, understanding the building as a temporary 'parked' object would make animals legal on the site. In the end, labeling the stables as an art installation cleared the permit requirements. The fact that the favela was on a private land rather than public grounds worked to the advantage of the farm. Animals were registered through the farm that owned them, which also solved the question of the permit for their waste. In other words, animals were considered transient, parked in an art project in the city, and their waste disposed of by the farm they were registered.

Fourth, Mediamatic's immediate need to establish a lively town with partners who needed inspiring spacious places to build their enterprises was also a condition which caused the direct, and comprehensive implementation of the City Game outcome. Furthermore, most of the players were either capable of self-building or had a network that would help in the construction of temporary light structures.

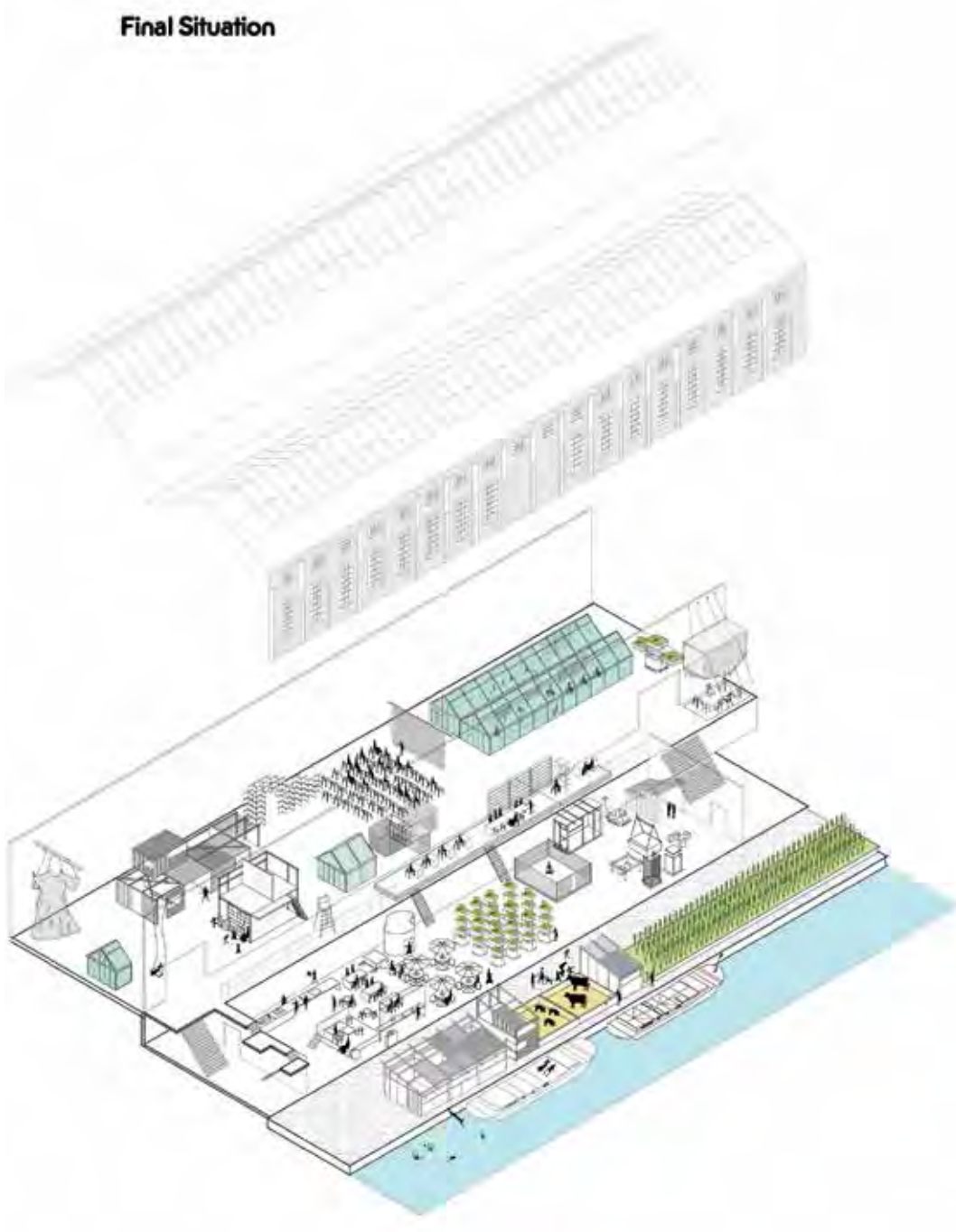


Figure 190
Freezing Favela outcome, final design drawing.

Last but not least, the interests of the land owner, the local government, the temporary residents and Mediamatic – *the coordinating party* – were easy to coordinate. The conflicts that did emerge were on a lower level, amongst the enterprises during the division of territory, and were tackled creatively to generate a more collaborative plan, instead of slowing down or freezing the planning process. The founder of Mediamatic Foundation Willem Velthoven confirms the impact of the play process on the planning of the temporary town as: "*The game helped converting the energy that could have been spent in a struggle for own territory into a productive open city-making process. While everyone had an individual image of what 'Freezing Favela' was, no one could predict the final image of it. There is also no final shape of a temporary town evolving everyday through events. It kept transforming until we deconstructed it.*"

§ 4.6.9 Questions Raised

Was the case of Van Gendthallen an exception, or can such direct implementation of the City Game be recreated in future cases? Since the City Game method has proven itself to be functional in generating an implementable plan, would it be possible to generate permanent master plans through open and interactive City Gaming methods? The search for more negotiative and open urban planning is already a hot topic in the Netherlands. Through documents such as 'Shaping the Spontaneous City: Obstacles and Opportunities for Organic Urban Redevelopment' the National Planning Office has been mapping the initiatives spreading throughout the country, often for fixing inflexible legal plans [PBL, 2012]. While these initiatives areas are read as spontaneous enterprises, the question rises whether one could propose a systematic model for these local emergences evolving into a larger urban transformations.

The unavoidable question for us was wether the game could be instrumental also during the construction of the temporary town. What if the players, after agreeing on a common plan and constructing their own pavilions, in fact went on playing? Could the construction process become more efficient and coherent? We proposed to the group to pick straw bale as a common construction material and run a next game round to collectively and efficiently organize the construction process. All aspects of construction, from buying the material to crowd building, to sharing building knowledge, to sharing walls and entrances etc would become part of the next game. Although some of the players showed enthusiasm, the host, Mediamatic, found the choice of a single material as a limiting factor for the creativity of various groups. The final iteration of the City Game never happened, but we believe such inter-scale iteration of a game towards implementation is crucial.

We have created City Games for urban expansion, regeneration, transformation, temporary use, and new towns. Depending on both the urban question and its context, the game outcome influences these cases in various ways. Our observations show that games had a varied impact on the contexts they were designed for. As the City Game evolves we observe how diverse cases play out, even after the City Game has been implemented. This prolonged observation process allows us to develop a deeper knowledge of the impact a City Game can have on given urban contexts. While using City Gaming for controlling or even predicting urban complexity is not our aim, the hypotheses we can derive from analyzing the gaming data can support our main objective: to use games in a more conscious manner to influence given urban conditions. Can we theorize on the possible outcomes of implementing a City Game on an urban reality based on our four years of experiments?

The following chapter provides a framework for how the City Gaming has been evolving as a method in terms of rules, agencies, narratives and outcomes within the urban circumstances it has been applied. Current limitations and future potentials have been laid out based on the knowledge stemming from this evolution.


HEREN-
HUIS
Urban Farm
BORDEEL
200 M²
CAFÉ
200 M²
200m²

PART 3 The Future

5 The Future of City Gaming

The previous chapter zoomed in to six City Games applied to particular urban conditions. Since 2008, when the first City Game was organized in Almere Haven, the method has evolved. The main drivers of this work have been to facilitate a given urban question through a game environment by bringing together the right stakeholders and influencing the urban reality through this gaming process. Based on these touchstones, the successes and failures have been recorded. This helped the City Gaming method to develop and improve. The highly diverse urban questions we tackled have challenged the method. The very variety and unpredictability of the cases has been a steady input component, testing the game against urban realities and helping it to evolve in response. The final chapter of this research will report on the evolution of City Gaming since its inception and the questions that have guided its development: How has the capacity of the City Gaming been improving through its applied experiments? What was the role of rules in the evolution of the method? What organizational and design rules have been invented for which purposes? What are the right interest groups to join the city play? The first game was played with students simulating residents; why and how did more urban roles get integrated into the game? Where does the urban narrative stand in this development? What are the common denominators of the various urban complexities? In response to which urban questions does City Gaming become more effective?

To conclude, the potential and limitations of the method will be discussed. The reflection will be completed by posing open questions about what steps the research can take to further advance the method. These improvements build on what the research has shown to date, both in terms of its own process and its successful adoption for the implementation phases of real urban processes.

§ 5.1 Evolution of Generative City Gaming

The first City Gaming experiment, Play Almere Haven conducted in 2008, was inspired by Christopher Alexander's iterative design processes as well as Yuval Portugali's city simulation experiments with scale models observing self-organization principles at work in an urban context[107].

107 Please see chapter 3, section 3.3 for Alexander and Portugali's work for further explanation.

Likewise, the purpose of the Almere Haven experiment was to test principles of self-organization[108] on Almere's urban extension plans. While the new town's policy-makers desired the active contribution of Almere's existing and future citizens, they lacked the necessary methods to organize such a process. Could a City Game simulating self-organizing urban growth become an alternative participatory process for the city of Almere? Rather than producing a fixed master plan, the Almere Haven game set out to test whether a process with simple rules could result in an open-ended evolutionary plan that reflected the complexity of urban development. The players, international students from various academic disciplines, followed simple rules of sequential play, respect for choices, and urban density to lay out their ideal settlement as simulated future residents of the area. As a result of intense interactive play, a diverse plan emerged, reflecting the heterogeneity of the players. It was promising that a City Game method could produce a readable urban plan as a final outcome. However, the level of elaboration in the plan and a lack of design was evident. Furthermore, students from large metropolises such as Istanbul, Nairobi, Mumbai, and New York playing a role as hypothetical future residents of a lower density new town, brought their tendencies for high-rise and higher densities with them, colliding with the suburban character of Almere.

The second City Game, Play Oude Westen, was commissioned by the Academy of Architecture in Rotterdam for a group of international postgraduate architects. This time, the game integrated 'design' into the process of urban regeneration of a central historic neighborhood, Rotterdam's 'Old West' neighborhood. The version of the City Game applied in Almere Haven needed to evolve into an interface where players could elaborate the design dimension of an urban question. Adopting comparably simple play rules -*respect, sequence and density*- as for Almere Haven, players introduced design proposals through lobbying, adjusting and evaluating for an entire week. Incrementally developing a holistic urban design composition, seven architects 'played' four urban blocks within the neighborhood for ten days. The compelling conclusion was that the act of design could be integrated into a process running on basic self-organization rules as in the Haven case. The process was analyzed to extract simple design rules.

---

108 Chapter 3, section 1, describes the seven main properties of a process for negotiating and designing the self-organizing city: an interactive multi-agent platform that has jargon-free effective and inclusive communication, hosted by both visual and verbal interfaces. Open dialogue and consensus is encouraged and clarifies conflicts. Simple rules are used to accommodate the complexity of the society, which simulates the evolutionary nature of self-organizing systems. This functions as a learning system for better adaptation, and provides material implementation in the 'real' world.

Nevertheless, the result of the game as a design product could not be projected onto Rotterdam's reality. The amount of research and understanding which the foreign designers could acquire during the two week summer-school workshop, was insufficient to make the result nuanced and incisive enough. This brought us to think about how best to engage real stakeholders.

The third City Game, Yap-Yaşa, tackled the urban transformation of Istanbul. In it, I took the step of including real stakeholders from three of the megapolis' self-made neighborhoods. I already researched with the Rotterdam game how design could become part of the play process. However, given the fact that not many of the stakeholders were designers by training, I needed to take an extra step to organize the formal expression of a city block; Yap-Yaşa blocks, making up over 70% of the urban fabric were proposed as the operational unit for Istanbul's urban transformation. Using parametric design -*in which design is guided by rules*- was the obvious next step for a game system which is based on organizational rules to seek an urban order. By distilling the key elements of design into rule-based parameters, non-designers who were taught the game's guidelines for city block transformation, could focus on expressing their own interests and visions for the block rather than trying to contribute to a design challenge in the game -a *daunting and even limiting challenge for non-designers which could detract from them expressing and applying their knowledge and interest of the site*-. In other words, beyond having an understanding of the design rules, players were encouraged to concentrate on expressing their own interests. Design rules proposed by experts served as an interface for collecting design feedback from stakeholders who do not have the training or the ambition to contribute to the formal expression of their urban environment. Using simple rules created with their specific environment in mind, non-designers could articulate the vision they had regarding their own cultural, social and economic conditions in material terms, and interact on an equal footing with designers. Thus the Yap-Yaşa game offered the language of gaming and simple rules as an interface to empower both design experts and non-designer stakeholders to negotiate with one another.

By relying on parametric design, Yap-Yaşa facilitated a broad range of real roles, from the national housing corporation to local authorities, private and public sector planners, investors, mediators, urban designers, architects, neighborhood resident organizations and activists. Another innovation in the Yap-Yaşa game was the introduction of the role-exchange method. During the preparations of the City Game I understood that the urban transformation agenda of Istanbul was highly polarized. Bringing players together with severely clashing interests -*such as a tenant in a gecekondu whose house is to be demolished by the transformation plans alongside a representative of the national housing corporation institute who mobilizes the contractor firms to implement new high-rise blocks replacing the gecekondu homes*- was only possible by asking them to take on each other's roles to moderate the conflict. This method, inspired by gaming in role-play, allowed the City Game to both include

real stakeholders and to offer them a shift in this very reality: the opportunity to role-play and apply their own experience to a scenario through the imagines eyes of another. Despite the fact that some of the stakeholders of the urban transformation even refuse to be in the same room, let alone listen to one another and act collaboratively, the role-exchange method worked well. The City Game as an interface succeeded in gathering these players around a city model, and role-exchange helped them to open up and talk about very delicate issues such as eviction and demolition of the earthquake-sensitive neighborhoods. Such confrontational debates are mostly avoided in Istanbul, except when absolutely necessary, such as in a court case. The game condition, as an exceptional state which served as an escape from the difficulties of everyday reality, made space for free thinking and open discussion, and thus gathered stakeholders while still confronting them with their 'real' conflicts, albeit formulated as and mediated through a playful interface.

The parametric design implemented in Yap-Yaşa, was later applied in the fourth City Game, Play Noord, the former Shell research laboratories, a derelict urban site in the Amsterdam Noord district. The area had been ambitiously designed as a high density mixed-use program for higher middle income groups. The plan was legally approved by the local authorities, but came to a halt after the 2008 real estate crisis. Compared to Istanbul, the concrete urban question with its stakeholders more open to conversation, promised a better setting for the applicability of the game outcome. From the alderman Kees Diepeveen to the environmental activists Angsaw, the Noordwaarts project office and over 100 other stakeholders, the players of Play Noord welcomed open debate. As the local authorities were not willing to hold the debate for alternatives to a frozen legal plan within the walls of the municipality, an external agent, such as a City Game could start the debate. Due to the willingness of the stakeholders and their tolerance of each other's positions, real stakeholders could defend their real interests in Play Noord. This was in contrast to Yap-Yaşa where stakeholders represented the interests of other players. This contributed to the accuracy of the game outcomes. However, I implemented one extra layer in the mapping of stakeholders for this game: including potential small and medium scale entrepreneurs who show interest alongside existing large-scale investors and corporations who hesitate due to financial risks. As in reality the 'big' players stepped back from the project and acted conservatively to avoid risks. I was curious to observe how alternative smaller size enterprises could tackle the same program.

Due to the public attention that the City Game attracted, my team created a digital public evaluation poll that enabled both the players and the engaged audience to vote on initiatives they supported. The projects with most audience votes stayed in the game and could continue to grow. This game also developed the guiding roles of the politician and the activist with vision-setting and the power to veto. The politician could give public vision speeches when he or she saw the need for setting a collective direction, while the activist could use the veto card to stop an initiative when more than half of the players supported the motion.

The challenge of reaching a larger number of players was taken on by expanding the debate to the digital polls, and connecting both the polls and the game to a social media website which broadcasted the opinions and plans proposed during play. This process helped to spread the outcomes of the game to a wider public who could later become part of the game by discussing it on the social media website where ideas could be shared and developed collectively.

Shortly after Play Noord, this game was also applied in The Hague's Binckhorst neighborhood, where a succession of master plans had failed after the financial crisis. Half a year later the City of Tirana and Polis University, Albania, invited the City Game to Play Tirana for a new train station at the northern end of the city center. The digital part of Play Noord was adapted into a governance poll game for Istanbul a year later, called '*If I were the Mayor of Istanbul*'. At playthecity.eu there is more information about these cases. This thesis does not report on these games at length or analyze them, as they are practical applications of the existing method without additional innovative properties. It is important to note, however, that local applications of the same City Game result in different outcomes, given that urban rules and conditions vary, as do the players, their powers, interest and conflicts.

Play Oosterwold was commissioned for testing plan rules of a Do It Yourself urban plan in its design phase, and observing how players tackle the challenge of providing and maintaining adequate public amenities with private resources. According to the plan rules, public services such as local roads, energy and water were to be provided by individual residents in Almere's Oosterwold neighborhood. This required the integration of currency into the play process for the first time. Introducing money as a parameter highlighted existing direct conflicts between local and central authorities about the land values in Oosterwold, while sparking a debate about spatial quality and social value versus economic imperatives within the game. Beyond their investments in land and construction, players started developing real-estate trades such as renting out facilities, and made money through local businesses. This broadening of the economic aspect of the game was not initially engineered by the game designers but developed by the players themselves.

As hundreds came to play Oosterwold, they could learn about a new way of developing land in Almere by simulating the opportunities it afforded. Due to the large volume of demand, and with this purpose in mind, the game has been run with different stakeholders as part of the Making Almere show which was active for over two years. Our local game master oversaw over 50 play sessions which involved over one thousand individuals: the greatest reach of a single City Game to date. As players got acquainted with the rule-based plan I could observe the play patterns of potential Oosterwold residents and point out loopholes in the plan's rules. Thus, besides experimenting with currency and economic flows in the City Game, I learnt the importance of being locally embedded over a longer period for the game to achieve a longer-term impact. This also allowed us to observe patterns in the play process and generalize site-specific behavioral traits.

In contrast to the former City Games, Van Gendthallen was focussed on the urban architecture question more than urban design. A group of small-scale enterprises who were searching for affordable and inspiring workplace, activated the Play Van Gendthallen City Game. The development of listed monuments was brought to a standstill by the ongoing financial crisis. Over twenty initiatives who loved the historic context, even in its dilapidated state, and did not mind working with and in disadvantageous physical conditions such as the leaking roof and the cold, came together to build a temporary town in about three months. Individually, they had clear plans for their initiatives –*whether it was setting up a businesses, workshops or performance*– but they required an overall shared vision for the 3000 square meter area in the form of an implementable plan that would be acceptable to all parties. Thus, the City Game was confronted with the challenge of implementing the play outcome within the scope of three months. This was a unique requirement for the City Game. A 1:30 scale model of the historic halls was built and all players were individually consulted and advised as they created individual scale models of their initiatives. Once these were ready, the play session began, lasting for three days until the participants reached outcomes they could all agree to build collectively. The players of the game were also the builders or designers of the initiatives in the temporary town. This directness helped the City Game in two ways; play rules could be discusses first hand and change according to the players' interests, which was the first instance of flexibility in the adaptation and creation of rules in a City Game; the immediate relation between those playing the game, those making decisions, and those applying them to reality meant that, once discussed and mediated through play, the game outcome could be successfully implemented in the three months following the play session.

The related tactics of building such a detailed scale model as a game interface and conducting intense consultation with all players before the play began, helped ensure the success of Play Van Gendthallen's implementation. Thus, this game not only differs from previous ones with respect to the immediate implementation of the outcome, but also in terms of the scale of the development. This was the first game that functioned on the architectural level, in contrast to the former games' focus on the scale of urban planning and design.

The City Gaming method has evolved tremendously, from a hypothetical simulation test about how self-organization principles could work in a new town expansion in 2008, to a complete game outcome implementation in 2012. Its evolution was inspired in part by the questions it raised in the process of answering others. Below is an outline how such an evolution occurred, considering particular components of the City Game such as rules, roles and narratives independently.

§ 5.1.1 Evolution of Rules

The first game Almere Haven contained four simple rules of play. The first rule, requiring sequential play, was set to ensure an iterative process where all players observe each step taken and react to the course of the urban dynamics developing in the game. The second rule, on respect, was chosen to protect the decisions prioritized by players in the initial phases of play; new moves conflicting with earlier ones that had been agreed on cannot simply overturn them, but have to establish themselves in the existing context. This could be done by lobbying the other players and finding an acceptable position which coexists with material already on the play table. This rule enables the coexistence of diverse orders side by side, by negotiated distances.

The third rule determining density was needed to clarify the spatial challenge on an abstract level. A given program translated into the number of game units was defined in the design of the game to help represent the reality of a given urban question. Players were given the freedom to distribute the units themselves in the City Game. A practical application of the density rule is marking the end of the play sessions, which are open-ended in their nature. The fourth and last rule required unblocked access to all proposed urban units, a design rule that not only influenced the positioning of households but also shaped the street network.

The following game, played by seven architects in Rotterdam's Oude Westen, initially adopted the simple rules of play from the Play Almere Haven game. However, the architects soon felt the need to evaluate the spatial quality of each player's iterative design steps, and brought in the approval rule for voting on these. Players also invented the public intervention rule for public space interventions: any discrepancy between individual visions on the collective space was resolved through the rule of a majority vote. The vision rule required clarification between fulfilling the desires and needs of each individual and shared visions for the urban development. This is why in Almere the outcome was a collage of various fragmented orders. In Rotterdam on the other hand, players achieved a strong, coherent overall design proposal, with a legible collective vision of opening up inner courtyards to create an exclusive alternative pedestrian mobility system[109].

109 One can be for or against the proposal of a typical globalized architect's fondness of collective space, opening residential blocks and adding more open space to an already difficult to control public spec in some areas. In Rotterdam game it is significant to see that designers with own individuals design views could manage to produce a coherent proposal under the impact of evaluation and consensus rules.

In Yap-Yaşa, the respect and density rules were kept the same while I tested simultaneous play instead of sequential play. In earlier City Games, the sequential play rule provided a recognizable design order through an iterative play process. The Yap-Yaşa game, however, was designed to resolve the conflict between central authorities and local residents regarding ongoing urban transformation rather than requiring players to come up with a unique design order. Furthermore, not all the game agencies were building: there were also policy makers and activists who were facilitating policy-making while seeking consensus and shared visions amongst all players. Thus simultaneous actions of builder and non-builders appeared more functional for this City Game.

Yap-Yaşa employed not only rules of play or organization that influence the final composition, -as implemented in the previous two games- but also parametric design rules directly informing the design of the city block such as the green rule, 50% rule, the height rule and the gate rule. The application of the parametric design rules resulted in formal variations on the play area, a generic Istanbul city block. The 50% rule, one of these parametric design rules, regulated the proportion of outer to inner parts of the city block based on its ownership, maximum height and urban form. While the outer skin was generated by the housing corporation based on a repetitive order, the inner parts of the block, amounting to the half of the built volume left free of the housing corporation's influence to be formed by the wishes of individual entrepreneurs. The green rule, a design rule for unbuilt spaces, imposed a minimum of 40% continuous public green space on the ground level, while all facades of the new Istanbul block were required to include a public gate leading to the green inner courtyards that formed as a result of the rule. The gate rule was aimed at the housing corporation and the green at the independent developers making them interact through the public realm. An interesting result of Yap-Yaşa was that a rule designed to organize the design, the 50% rule, appeared to be very influential in resolving the conflict over the transformation of the urban block. The two fronts of the urban transformation debate, whose disagreement in real life is mainly due to the unjust distribution of decision-making power started interacting and acting together after the 50% rule came into play. This allowed homeowners to join in the construction process of the transformation as individual entrepreneurs -*an interesting evidence that part of the resistance is against lack of involvement and not against change*-.

The combination of simultaneous play and parametric design rules continued in Play Noord after its successful application in Istanbul. The time needed for each game session could be optimized through simultaneous play, leaving more time for open debate. Two new rules were added to the respect and density rules in Noord, namely the veto and collaboration rules. The politician and the activist could activate the veto rule, the former using his veto card directly and independently, while the latter needed a majority to veto projects. This rule helped players to highlight sensitivities and conflicts, and openly negotiate them during play. In some cases players were able to negotiate common grounds out of an initial disagreement.

Play Noord was designed to debate a master plan that was on hold due to large scale corporations pulling out of a contract with the city of Amsterdam for its implementation worth about 250 million euros. As a result, the City Game was built around whether, and how, small and medium scale entrepreneurs could be organized to activate the frozen urban plan. A second rule encouraging collaboration was introduced to ensure that small and medium scale stakeholders could form larger scale initiatives in line with the original plan.

Play Oosterwold was built to test the rules of a self-build urban plan for Almere's Oosterwold polders, thus no new rules were added. I translated the rules of the urban plan as 'building' rules for the City Game. These specific rules prescribed the entire process of settling in the polders, from selecting a plot to building access roads, density, land use, e.g. water, energy and public green space. These rules were communicated through info-graphics places on game pieces. While the density rule and private land use rules -*concerning private ownership*- were implemented flawlessly, rules concerning water and access roads -*shared ownership*- needed adaptation by players to become functional[110].

The most direct of all the City Games in terms of the players' involvement was Play Van Gendthallen. Before the game our team conducted an intensive consultation with the players, who were also to build the outcome of the game. The players, for the first time, demanded negotiation for setting their own play rules. They installed the iteration rule to ensure a realistic outcome through three game sessions building up on each other. Instead of the veto rule -*designed to be activated by players such as the policy maker or the activist, who were not represented in the Van Gendthallen game*- we introduced the conflict rule, which mediated a clash of interests between enterprises over the limited amount of space available for each player. In case of conflict, the game master could call for a referendum to organize collective decision-making. As a reaction to this rule, players who valued self-regulation over the judgement of the game master proposed to resolve conflicts as a group without the interference of an external party.

Rules about the financing of the construction by Mediamatic, the host organization, were proposed by the players. A tax rule emerged for initiatives that make commercial profit from partaking in the temporary town,. Mediamatic put forward a public engagement rule, which gave priority to initiatives with the greatest public visibility and engagement capacity, allowing them to play earlier in the sequence.

---

110 Please check the previous chapter's Play Oosterwold Outcomes segment for further explanation of loopholes in plan rules.

Players saw the logic of this rule and added the rule of priority for collaborating teams who would optimize use of space, material and energy during the implementation phase. The players were able to reflect productively on self-organization, many because of their previous experience with it in their professional, political or artistic activities. The culmination of this collective reflection was the proposal by one of the players, to organize the town without having to refer to 'play rules'. The group named this the Rule of Rules.

This final rule, the Rule of Rules, captures well the open nature of City Gaming as a method whose human agents can influence and innovate its dynamic rules. I witnessed players inventing new rules or adapting existing ones to their needs through the play processes of Van Gendthallen, Oude Westen and Oosterwold. This rule that no rule is fixed and all rules can be subject to change whenever they lose their relevance might indeed be a meta rule for all the games I organized so far or, equally, an underlying principle that had underscored the process from the start but had not, until this last session, be explicitly stated.

§ 5.1.2 Evolution of Roles

Since the first game, in which students simulating residents, new roles have been modeled for each iteration of the generative City Game. Addressing the urban transformation of Istanbul required representing a large range of stakeholders, from national and local authorities to NGOs, market parties, planners, designers and residents of the self-built neighborhoods. In addition, roles representing drivers of the transformation, such as money, legislation, knowledge, skills, time, and networks influencing the urban environment on a range of scales have been introduced as resources to simulate Istanbul's urban complexity. The role modeling invented for Istanbul could be adapted to the Noord game after studying engaged players for this case. Every case and site has its own special character, and paying attention to modeling particular roles and their impacts is vital -*whether it be Istanbul's TOKI, Noord's Angsaw, or Van Gendthallen's 'creatives'*-. One important aspect to note when tailoring these generic roles is how the titles and actions of the players within any one organization vary from one another; in municipalities, for example, there are city officers other than the alderman who are publicly silent yet very influential in decision-making processes. Tracing these characters, modeling their behavior and including them in City Games has proven to be small but significant detail.

Interactions can take place between agents of same kind, such as residents of Almere Haven, designers in Oude Westen, or creative enterprises in Van Gendthallen, but can also imply negotiation between disparate agencies, as was the case in Istanbul, Noord

and Oosterwold. Resolving conflicts or building consensus between agents with a variety of powers and interests requires a higher level of complexity. Not only must different interests be catered for, but taking into account potential clashes or collaboration between different powers adds an extra dimension to modeling relations. This might have a positive impact on the applicability of a City Game; the Van Gendthallen game was played directly with the groups who were to built the temporary town, whose interests varied and sometimes conflicted with one another, despite being a similar 'type' of agent.

§ 5.1.3 Evolution of Narratives

City Gaming has so far been implemented at the urban design scale. The method promises to be scalable, to have the capacity to address urban challenges on the regional, national and international scales. The 'World Peace Game' designed by Buckminster Fuller on the subject of the fair distribution of the world's resources is an inspiring example of gaming tackling a challenge on the international scale -*for a lengthier discussion of Buckminster Fuller's game see the third chapter*. On a national scale, although it was never meant to become a City Game, the urban policy scenario-building process 'The Netherlands Now as Design', organized by influential Dutch planner Dirk Frieling et. al [van der Cammen, 1987], shows how national ambitions and vision documents can be formed by a collaborative gaming process through which local politicians team up with planners, designers and possible small and large scale investors.

Like the range of scales that a gaming environment might tackle, the range of urban narratives that can be transferred to the process of City Gaming is wide: almost infinitely so, since each new site brings with it its own narratives and nuances[111]. This thesis is illustrated by six City Games at different scales with questions that range from urban expansion to gentrification, transformation to temporary use, and the testing of a revolutionary 'Do It Yourself' urban plan. The method developed through these games is applicable to any number of urban questions, as long as they involve multiple players with varied interests and powers. City Gaming can facilitate the building of shared visions and their implementation through a process of play ordered by simple rules that address a specific urban question, and the contextual narrative within which it unfolds. The study of the site and its situation is therefore vital to the scripting of the narrative that will spark the game.

111 Please also find the article "Could a City Game facilitate an urban renewal process?" in the previous chapter's Play Oude Westen section.

An urban narrative increases in complexity when scripted and played with multiple stakeholders. Similarly, a City Game becomes increasingly worth designing the more diverse its players are, as it is with complexity -*and, often inseparable from it, contradiction*- that its role as a negotiating platform comes into full force. The need for consensus and the competition amongst players for urban resources that drive urban developments are decisive in defining the urgency of an urban narrative. In cases such as extreme growth or urban shrinkage, the public urgency to secure a positive legacy for an urban area helps the feasibility of the City Game's outcome, as implementation is more likely when the process of problem-solving is accepted as necessary and pressing. Thus the narrative is one of the vital triggers for public engagement.

§ 5.2 Limitations of Generative City Gaming

The generative city method method aims, ultimately, to introduce the game outcomes directly into the real urban processes they address, or even to convert the play process itself into a real planning process. The conditions of each case, such as its existing decision-making mechanisms, rules and regulations, or the balance of power between the involved parties, may either support or hinder the link between the play process and the reality it aims to influence. In addition, internal dynamics such as the constrains of digital technologies, imperfect compromises that result from negotiations, inequality between players, or deviation from the aim of the City Game can all impact on the performance of the City Game. Acknowledging the limitations of the method is essential for forecasting the possible impact of a City Game as accurately as possible, as well as reducing these hindrances it might face.

§ 5.2.1 Power Play

City Gaming integrates existing power relations into the dynamics of play. This helps to visualize urban processes realistically and take into account existing interests. Nevertheless, however accurate and relevant the outcome of a City Game may be, the real and sometimes shifting power relations of real urban processes are the dominant factor influencing whether the City Game outcome can have a real impact -*what I call making the jump from game to reality*-. A collaborative method such as City Gaming invites all players -*from the traditionally differentiated realms of bottom-up and top-down influence, as well as from the sometimes less defined reality between these*- onto an open playing field simultaneously. What is usually determined by experts behind

closed doors becomes negotiated and even generated by other parties; information that is normally limited to circulating within the walls of the municipality buildings reaches a wider public -*such as the population of that municipality*- helping them make better informed decisions on matters of public importance. This openness includes sharing local authorities' powers of decision-making and plan implementation not only with large corporations, as already occurs, but also with emerging small and medium scale market parties, as well as interested individuals and organizations. Sharing information is sharing power, which creates a tension and requires special attention in the implementation phases of all collaborative city generation methods. City Gaming is no exception.

Not only does the position of the local authorities, but also that of experts, such as the designer, is questioned by the City Gaming method. This suggests a reorientation of both towards collective and open intelligence. Whilst recognizing the importance of expertise, I emphasize the fact that urban environments evolve as a result of the interactions of all involved parties.: experts and non-experts. The designer could not be the single player who has the exclusive technical knowledge and thus determines its form, but rather one participating party influencing the urban process, and thus urban outcomes, with his or her particular expertise. Obviously the designer's specialized knowledge makes this player more influential in forming and programming urban areas, but his interaction with other stakeholders in this process is fundamental.

However, the perception that traditional participatory processes undermine the creative capacity of a designer creates resistance within the design and planning profession. This is an attitudinal limitation for the inclusion and normalization of the gaming method among architects and urban designers. What needs to be stressed here is the intertwining of organizational and design rules. To guarantee a certain level of design quality, designers are required to propose rules for City Gaming that will drive the coherence of the overall outcome, even if this is implemented by non-experts. -*This mechanism is exemplified by Alvaro Siza's Malagueira settlement in Portugal, described and explained at length in the introduction chapter*-.

City Gaming's impact on a given urban question is to a large extent dependent on the political and cultural background of the project or site it addresses. Some local authorities already work in increasingly transparent environments where even public budgets are managed by communities through participatory budgeting as in Porto Alegre. Other cities however, regard publishing master plans publicly as undesirable, or even illegal as in the City of Astana, Kazakhstan. Mostly, local governments who have power over their region's land-use plans do include phases, as either a formal or informal procedure, of public consultation. City Gaming, theoretically, is a form of public consultation that can be applied for a large range of planning regimes such as in polarized and opaque planning procedures of Istanbul as well as in negotiative and flexible planning conditions of Amsterdam's Van Gendthallen. However, as shown by

the six examples presented in this thesis, every time City Gaming is applied to an urban question, what the method can achieve is redefined by the political frameworks it functions within.

The involvement of various interest groups is a move towards a more pluralistic approach and outcome that, if not well managed, can result in excessive competition that is detrimental to the policy-making process. There may also be instances when some groups are more interested in advancing their own agenda then they are in advancing public interests. The problem of ensuring genuine representation by involving interest groups also comes into question. The most influential group, or the one with the greatest bargaining power, or that which is best organized, may not necessarily be representative of a wide spectrum of citizens. To tackle this limitation, City Games require a wide range of players or interest groups to play, and to iterate as many phases as is necessary to reach the widest possible engaged audience -in the case of Oosterwold this reached over 50 sessions, whereas in the more closed network of stakeholders in Van Gendthallen one extended session sufficed-. City Gaming attempts to further even out the limitations inherent in public representation by a process of prior 'stakeholder mapping' and by implementing rules that maintain public debate at the heart of the process.

§ 5.2.2 Responsibility

The question of who takes responsibility for the outcome and its implementation can be problematic for collaborative creative processes. Take, for example, some of the risks that an urban process implies: social inequality, finance, safety and hygiene considerations, and a broad range of other social, material and political uncertainties. Conventionally, the local and national governments, sometimes together with large commercial partners, take on the responsibility of developing urban areas. With raising numbers of collaborative urban processes; the question arises whether medium and small scale investors could be made responsible, not only for their own individual interests but also the collective interests of the communities they are acting in.

While in City Gaming players find it easy to promise to take on such responsibilities and commitments, perhaps because of the contained and controlled environment created by the game, deviations from these agreements inevitably emerge in reality. The gaming environment could be perceived to be too safe and experimental in this respect. These commitments, once they jump out of the game environment and into reality, turn out to be difficult to pursue. The strengthening of rules, such as the veto, could help to overcome the discrepancies between the game and the reality. Such rules encourage critique and debate. Therefore they include more of the

stakeholders' perspectives of reality in the decision-making processes and their related commitments. The development of more rules that relate to the commitments players take on will influence reality by increasing the game implementation's feasibility and social sustainability.

§ 5.2.3 Spatial Quality

The plural nature of City Gaming generated by the bringing together of experts, politicians, laymen and investors, brings up the issue of whether the quality of the spatial outcome could ever reach the same level as one generated only by experts. Compared to a group of skillful designers, a disparate collection of players engaged in City Gaming will be less likely to generate formally coherent compositions. The method is built in such a way that players bring in their own individual interests and types of expertise. Players have to test these against the interests and expertise of others. Due to the interests at stake and limited amount of resources, players acting individually find it difficult to realize their own goals.Those lobbying and negotiating effectively tend to advance further in the City Game, mostly by modifying their original aims to fit a joint undertaking. The messiness and uncertainty of the play process could be perceived as a limitation for the method, yet it is the crucial factor that frees up participants to self-organize.It should be point out that similar negotiations occur albeit between designers, politicians and investors over building regulations, however not as directly as in the City Game. The design drafts generated by experts are also tested eventually against imperfect and changeable social, political, environmental and economic agendas. The directness and transparency a City Game provides might in fact be more desirable than the indirect negotiations a design proposal is subject to in current procedures.

To some, and understandably so, the uncertainty of the outcome of City Gaming seems to be a serious handicap. For politicians it is unsafe to involve such a process without knowing whether the outcome would support the their stance. Technocrats find it threatening not to know in advance whether unexpected turns of the play process might generate results that would challenge existing rules and regulations. It is puzzling for many of these professionals to accept that most urban processes are too complex to foresee. However, even if plans generated by traditional procedures create a sense of certainty, we know that the urban realities they function within are dynamic, changing so fast that by their scheduled implementation many of these plans have been worn out, or outworn their relevance.

Finally, the gaming method essentially requires courageous decision-makers who comprehend the added value of the play process. The gaming process could then be applied either as part of existing planning processes or even to replace the current planning process. It is a risky step for many, with hardly any precedents of City Gaming being used to guide the implementation of urban processes in this way. While 'serious gaming' has been widely applied in indirect training, learning and strategizing within the field of urban planning, City Gaming aims to transform its practice too, and requires innovators in the field of urban planning to take it up and utilize its full potential.

§ 5.3 The Potentials of Generative City Gaming

§ 5.3.1 City Gaming for Empowering Crowds

The correlation of power play in a given urban question on the City Gaming process have been analyzed in the previous pages. The next important step is profiling the capacity of the City Game method to function alongside, or within, the power systems of an urban question. In other words; how can City Gaming become one of the components that guide the development of the city? It could do so either by partnering with one of the existing stakeholders or by establishing an independent position as a neutral party. Embedding City Gaming within the power balance of any urban question will gain recognition and influence for the method. It could also offer the existing powers a way to include more voices in the production of the city.

Previous experiments show that when players engaged in the City Game are also close to the real stakes, as in Play Van Gendthallen, they guarantee more accurate results and are more likely to shoulder the responsibility of implementing the outcomes. The greatest potential the gaming method has in such cases is the open and evolving character it brings to the planning process. This offers a system that allows the inclusion of collective intelligence. While the realities of hard competition, power struggles and tensions between parties will inevitably be part of any process, City Gaming provides these parties with a platform where negotiations can be looser and new angles can be found for thinking through problems and discovering unorthodox and unexpected solutions to pressing conflicts. Interactions that take place within the safe environment of gaming often give individual players a chance to think over the positions they take in reality.

Tactics such as role exchange also add an extra layer of flexibility and rethinking. It helps players to comprehending the real-life positions of other players. Using role-exchange as a negotiation tool is particularly relevant for working with segregated communities who often lack a base of constructive dialogue and shared ideas. In these cases, City Gaming has the potential to first create a space -social and physical- for the dialogue, and then facilitate it.

§ 5.3.2 The Power of Self-Organization

City Gaming integrates self-organization mechanisms such as incremental development based on the interactions of multiple agents. Self-organization is incorporated at the core of the method. This increases gaming's capacity for tackling urban questions whose 'reality' brings with it risks of the unknown. The open ended method, just as cities themselves, provides adaptability to a site and its stakeholders where the rules of the game are subject to change on the initiative of its players. As was demonstrated in the first Generative City Game, Play Almere Haven, urban mixed-use environments can be naturally organized when an evolutionary development process is at stake, while many top-down organized urban processes have difficulty achieving true mixed-use urban environments. Take the examples of the Kop van Zuid in Rotterdam and the I]-oever in Amsterdam: both waterfront projects that claim to create a mixed-use program but fail to achieve this aim when top-down planning and implementation takes command [Oswalt, 2013]. Furthermore, the self-organizing nature of City Gaming assumes and improvises on a nonlinear urban development process instead of following a linear logic. This can create the illusion of fixed perfect solutions for urban contexts. Generative City Gaming successfully embraces the unique property of self-organization without excluding planning and design procedures from urban processes.

The introduction of such iterative, open ended and nonlinear methods into traditional city-making practices needs further exploration.

§ 5.3.3 Digital Potentials

City Games are 'situation specific' and as a consequence do not perform well outside the context envisioned during their design. Developing a new digital game for each specific site or issue is costly and time-consuming. Our research indicates that to make the process more efficient and easier to tailor, plugging in digital technologies into discrete phases of the analog City Game is more beneficial to the process than building

a fully digital game. The flexible analog segment of the City Game can be tailored to the particularities of the context, site and players, while the digital part such as polling, which is linked to the social media website, remains generic and valid for various cases.

Although a number of digital elements have already been successfully integrated, there is still ample scope for developing this aspect of the Generative City Gaming. For instance, the integration of big data into City Games would support informed decision-making during the play process. Digesting big data is, of course, one of the key challenges of including it in any type of forecasting; making the data available in simple formats for players to easily digest and include within the game has great future potential. The gaming method might itself be seen as a prototype of complex data digestion. This could help develop a people-based approach to tackling urban big data, self-building of meaning and narratives.

To date, digital media has been used for recording and reporting the play moves of agents and linking them to social media where they can be tagged, discussed and spread. Digital tracking enables us to categorize the complex data generated during the play process faster, and even allows real-time broadcasting of the game to bigger crowds. A next step in this direction would be real-time feedback from these crowds. This could be reflected in the analog game, extending the reach and flexibility of the game simultaneously. Digital technology that facilitate tracking such as Radio-Frequency Identification -RFID, are already present in public transport cards worldwide. Play Noord is a good example of how this technology can be used to keep track of the analog game. Generative City Gaming will continue to explore the potentials that various digital technologies have to better record and analyze the game process. It will adopt new ones into its hybrid approach as they emerge.

§ 5.4 Will City Gaming become the Future of City-Making?

Since the first Generative City Gaming session held in 2008, observing numerous experiments and their outcomes, I can conclude that the method can successfully serve a range of purposes: '*simulating self-organizing urban mechanism*', as in Almere Haven; facilitating '*collaborative design*', first achieved in Oude Westen; '*conflict resolution*' and '*unlocking conversations*' as in Istanbul's urban transformation case; '*mapping city initiatives and ideas*' as in Amsterdam Noord; the '*testing urban plan rules*' as in Oosterwold where the main premise of a master plan -*here a set of rules geared towards coordinating the self-organization of a neighborhood*- could be 'played' in order to improve it before implementation; and '*temporary city planning and programming*', as in Van Gendthallen. While this research had a global goal of

transferring gaming into a generative urban process, in most of these experiments it was not possible to estimate the impact of the Generative City Game onto reality in advance. I can now conclude that there is not a fixed outcome of the method to activate a frozen master plan for example. Rather, the effectivity of the City Game is dependent on its stakeholders and, for this case, can range from reactivating the plan, to co-creating an alternative one, to mapping initiatives for the initial phase to trigger following steps etc. The one property that remain stable is that the outcome is a widely negotiated and based on consensus of engaged stakeholders. These include those who are well-aware of conflicts and sensitivities of other participants.

The evolution of the City Gaming method can be observed throughout this research, and, naturally, its most advanced state can be observed in its latest iteration; Play Van Gendthallen yielded an outcome that was built by the players in 3 months, immediately after the game. The prospect of making collaborative City Games with the purpose of implementing their outcomes becomes more evident. Thus if we could build a system where the City Game could function through scales, such as 1:30 building scale, 1:300 city block scale, 1:3000 neighborhood scale, 1:30.000 metropolitan scale, could we have an interactive environment where collaborative dynamic visions, structure plans, initiatives and implementation plans respectively could be interlinked? Could a constant interactive process run in a cyclical and open-ended environment from an abstract vision to realized projects and from concrete implementations back to an abstract idea? One of the follow-up experiments for generative City Gaming method should be setting up such an inter-scale setting to test the effectivity of the process.

Being aware of potential constraints, which are outlined in this dissertation, helps us to foresee the impact that City Gaming can have, given the political, cultural and social context of each urban question. Through use, this gaming method is finding its place within existing city-making procedures in a number of countries. In May of 2014, when this thesis is being completed, the city planning department of City of Cape Town signed a contract with the aim of introducing Generative City Gaming as a working method for the city's planning team. This is a promising circumstance for the evolution of the method. There is a chance to infiltrate the City Game into the everyday decision-making process of a city. The first step is a 1:300 scale City Game in the township of Khayelitsha Business District around the new train station. The game is built to define a realistic business case with potential partners to initiate follow-up urban development as a result of the game[112]. We expect a next step be a 1:30 City Game for the first implementation project. Meanwhile a 1:30.000 metropolitan scale game

112 playthecity.nl/capetown

will to be built interlink with other CBD's of Cape Town such as the Bowl, Belleville and Mitchell's Plain. The 1:30 scale city game has the potential to touch the real challenges of implementation while the 1:300.000 would bring in a holistic relevance to the interventions on the quarter and building scales.

This research which is tied to practical implementation of the method for real urban questions will continue seeking the right circumstances for making space for the Generative City Gaming. This should occur within the city-making processes, the ultimate goal of which is converting the city planning and implementation process into a multiplayer, open-ended, well-informed, transparent, constantly learning and playful process:

It is a desired outcome of this work that one day, a cyclical and open-ended Generative City Gaming method could move beyond being research and design to become the principal medium of processing and executing city planning.

References

Abt, C. C.. Serious Games, Viking Press, University of Michigan, 1970.

Akkerman, T., Hajer, M., Grin, J., The Interactive State: Democratisation from Above?, Political Studies, 2004.

Alexander, C., Notes on the Synthesis of Form, Harvard University Press, Cambridge, 1964.

Alexander, C., et al. A Pattern Language: Towns, Buildings, Construction, Oxford University Press, New York,1977.

Alexander, C., A city is not tree. In: Bell, G., & Tyrwhitt, J. [eds], Human identity in the urban environment . London: Penguin, 1992.

Alexander, C. The Origins of Pattern Theory the Future of the Theory, And The Generation of a Living World, ACM Conference, San Jose, 1996.

Alexander, C., A New Theory of Urban Design: Center for Environmental Structure, Oxford University Press, 1987.

Almere 2.0 IAK, RRAAM, Almere Oosterwold Land-Goed voor Initiatieven, The Hague, 2012.

Almere 2.0, Concept Structuurvisie Almere 2.0, The Hague, 2009.

Almere City Council, Werk aan de WierdenL De Ruimtelijke Visie, 2012.

Amsterdam City Council, Vaststelling van het Bestemmingsplan Overhoeks, 2006.

Bayraktar, E., Interview with the Director of Housing Development Administration of Turkey TOKI, Istanbul, 2010.

Batty, M., Cities and Complexity; Understanding Cities with Cellular Automata, Agent-based Models, and Fractals, MIT, 2005.

Berg, JJ., Franke, S., Reijndorp, A., Adolescent Almere: Hoe een stad wordt gemaakt, NAI010, 2007.

Adolescent Almere

Berkers, M., Keeping Organic Growth Alive, Creative Industries Research Centre, University of Amsterdam, 2013.

DRO, PLANAmsterdam, Vrijstaat, Dienst Ruimtelijke Orderning, 2010.

Blomberg, J., Reflections on Participatory Design, Computer-Human Interaction, 1990.

Boelens, L., The Urban Connection: An Actor-Relational Approach To Urban Planning 010 Publishers, 2009.

Borries, F., Walz, S., Boetter, M., Space Time Play Birkhäuser Architecture, 2007.

Borries, F., Christiaanse, K., Ursprung P., Stiphout, W., Sewing, W., Marshall, R., Situation KCAP, NAi Uitgevers, 2005.

Brabham, D., "Crowdsourcing the Public Participation Process for Planning Projects", Planning Theory, 2009.

Brillembourg, A., Feireiss, K., Klumpner, H., Informal city: Caracas Case, Prestel Verlag, Munich, 2005.

Brouwer, P., Boomtown Almere: Form Follows Lifestyle, Volume Project, 1999.

Caluwe, L., Geurts, J., Kleinlugtenbelt W. J., Gaming Research in Policy and Organization: An Assessment from the Netherlands, Simulation and Gaming, Sage Publications, 2012.

Cammen, H. Nieuw Nederland: Onderwerp van Ontwerp, Stichting Nederland Nu Als Ontwerp, Staatsuitgeverij 's Gravenhage, 1987.

Casakin, H., Portugali, J., The design and Dynamics of Cities as Self-Organizing Systems, ESLab, 2012.

Cecchini, A., Rizzi, P., "Is Urban Gaming Simulation Useful?", Simulation & Gaming, 2001.

Collier, K., "Finnish Parliament now Required to Vote on any Law with 50,000 Likes", Dailydot, 2012.

Cook, P., Archigram, Princeton Architectural Press, 1999.

Coplien, J, Keynote Speech Introduction, ACM Conference on Object-Oriented Programs, Systems, Languages and Applications, San Hose, 1996.

Crawford, C., Serious games: Improving public policy through game-based learning and simulation. Subjectivity and simulation. Retrieved February 25, 2004, from http://wwics.si.edu/forsight

Davidoff, P., "Advocacy and Pluralism in Planning", Journal of the American Institute of Planners, Volume 31, Issue 4, 1965.

De Certeau, M., The Practice of Everyday Life, Los Angeles 1984.

Duarte, J.P. Customising Mass Housing: A Discursive Grammar for Siza's Malagueira Houses. Ph.D. Dissertation, MI T, 2001.

Duffhues, J., Vliet, M., Nefs, M., SprintStad - Serious Gaming met Knooppuntontwikkeling, Bijdrage aan het Colloquium Vervoersplanologisch Speurwerk, 2011.

Duke, R. D., Gaming-simulation in urban research. East Lansing: Michigan State University Press, 1964.

Duke, R. D., M.E.T.R.O. A gaming simulation. East Lansing: Michigan State University,1966.

Institute for Community Development.
Duke, R. D., Gaming, the future's language. Beverly Hills, CA: SAGE, 1974.
Duke, R., Gaming: An Emergent Discipline, Simulation and Gaming, Sage Publications, 1995.
Epstein, R. A., Simple Rules for a Complex World, Harvard University Press, 1997.
Esen, O., Self-Service City: Istanbul, b-books, 2004.
Farrugia-Tayar, C., "A Amsterdam, la concertation devient unjeu", La Gazette, October Issue, 2012.
Foucoult, M., Of Other Spaces, Heteretopias, Paris, 1967.
Fortuin, K., De Stad als Ecosysteem, Sociale Gebiedsontwikkeling, 2013.
Frampton, K., Modern Architecture: A Critical History, Thames & Hudson; Fourth Edition,1980.
Friedman, M., Why Government Is the Problem?, Hoover Institution Press, 1993.
Frieling, D., Het Metropolitane Debat, unpublished, NAI Archives, 1998.
Fuller, B., World Game by R. Buckminster Fuller-How It Came About, April 1968.
Fuller, B., World Game Series: Document One, "The World Game: Integrative Resource Utilization Planning Tool", Southern Illinois University, 1971.
Friedman, A., Design for Change: Flexible Planning Strategies for the 1990s and Beyond, Journal of Urban Design. 2, 3, 1997.
Frazer, J., An Evolutionary Architecture, Architectural Association
Fuller, B., Marks, R., The Dymaxion World of Buckminster Fuller, Doubleday Anchor Books, 1973.
Fuchs, C. Structuration Theory and Self Organization, Systemic Practice and Action Research. vol.16 no2, 2003.
Gabel, M., "Buckminster Fuller and the Game of the World", Buckminster Fuller: An Anthology of the New Millenium, St. Martin's Press, 1999.
Gausa, M. Housing: New Alternatives, New Systems, Actar, Barcelona, 1998.
Goodman, R., After the Planners, Penguin Books, USA,1972.
Granovetter, M., The Strength of Weak Ties: A Network Theory Revisited, Sociological Theory, Volume 1, 1983.
Giddens, A., The Constitution of Society. Outline of the Theory of Structuration, Polity Press, Cambridge, 1984.
Groenendijk, P., The Red Apple and Wijnhaven Island. Rotterdam: Uitgeverij 010, 2009.
Iyer-Raniga, U., Treloar, G., A Context for Participation in Sustainable Development, Environmental Management, Vol 26, No 4, Springer-Verlag, New York, 2000.
Habraken, J., Supports; An Alternative to Mass-Housing, Architectural Press, Great Britain, 1972.
Hajer, M., Zonneveld, W., "Spatial Planning in the Network Society - Rethinking the Principles of Planning in the Netherlands", European Planning Studies, 2000.
Hajer, M., De Energieke Samenleving: Op Zoek naar een Sturingsfilisofie voor een schone Economie, Planbureau voor de Leefomgeving [PBL] Den Haag, 2011.
Hajer, M., Huitzing, H., De Energieke Stad, Thema Bestuurskunde, 2012-1.
Hanzl, M., "Information technology as a tool for public participation in urban planning: a review of experiments and potentials", Design Studies, Elsevier, 2007.
Harvey, D., Spaces of Hope, Cromwell Press, UK, 2000.
Heuvel van den, D., Risselade, M., Team 10:1953-1981, NAI Publishers, 2006.
Hirschman, Dan, "More Definitions of Agency" in blog A Sociologist's Commonplace Book, 2009
Highmore, B., Everyday Life and Cultural Theory, Routlegde, New York, 2002.
Hughes, J., Sadler, S., Non-Plan: Essays on Freedom, Participation and Change in Modern Architecture and Urbanism, Routledge, 2000.
Huizinga, J., Homo Ludens: A Study of the Play-Element in Culture Beacon Press, 1971. Original text is from 1938.
Lehnerer, A., Grand Urban Rules, 010 Publishers, 2007.
Jacobs, J., The Death and Life of Great American Cities, Vintage: Reiissue edition, 1992, original 1961.
Jencks, C., Silver, N., Adhocism: The Case for Improvisation, MIT Press Edition, 1972.
Karaburun, A., Demirci, A., Suen, I., "Impact of Urban Growth on Forest Cover in Istanbul 1987-2007", Environmental Monitoring and Assessment, Springer, 2009.
Kaspori, D., Oosterling, H., Bewoning Interventies: Een Prospectus voor Alternatieve Woningbouw, Den Haag, 2003.
Koc, O., Istanbul: 8000 years brought to Daylight, AKB Yayinlari, Istanbul, 2010.
Koole, C., Democratie van het Zand, Nederland, 2014.
Lefaivre, L., Tzonis, A. [1978] Development of the populist movement in architecture, Harvard Graduate School of Design.
Landa da, M., A Thousand Years of Nonlinear History, The MIT Press, 2000.

Landry, C., Westrenen, F., Venhuizen, H., Hans Venhuizen: Game Urbanism, Valiz Book and Cultural Projects, 2011.
Law-Yone, H., "Games for Citizen Participation", Simulation & Gaming, 1982.
Lehnerer, A., Grand Urban Rules, 010 Publishers, 2007.
Lehrer, J., A Physicist Solves the City, The New York Times Magazine, 2010.
Levy, P., Collective Intelligence: Mankind's Emerging World in Cyberspace, Basic Book, 1999.
Lootsma, B., Individualization, Hunch, Berlage Institute, Rotterdam, 2001
Lovering, J., Turkmen, H., International Planning Studies, "Bulldozer Neo-liberalism in Istanbul: The State-led Construction of Property Markets, and the Displacement of the Urban Poor", 2011.
Luhmann, N., Social Systems, Stanford University Press, Stanford, CA, 1995.
Malgorzata, H., "Information technology as a tool for public participation in urban planning: a review of experiments and potentials" in Design Studies 28, p. 289-307, Elsevier, 2007.
Matthews, S., From Agit Prop to Free Space: The Architecture of Cedric Price, Black Dog Architecture, 2007.
Mayer, I., The Gaming of Policy and the Politics of Gaming: A Review, Simulation and Gaming, Sage Publications, 2009.
McDonough, W., Almere Principles, Tooth Bussum, 2008.
McGonigal, J., Reality Is Broken: Why Games Make Us Better and How They Can Change the World, Penguin Books, 2011.
McGonigal, J., The Puppet Master Problem: Design for Real-World, Mission Based Gaming, MIT PRess, 2006.
Meadows, D, Randers, J., Limits to Growth: The 30-Year Update Paperback, Chelsea Green Publishing, 1974.
Mehaffy, M., Salingaros, N., Frontiers of Design Science: Self-Organization, Metropolis Magazine, 2011.
Meyer, H., Portugali, J., Stolk, E., Tan, E., 'Complexity Theories of Cities Have Come of Age.', Springer, 2012.
Mingers, J., Can Social Systems be Autopoietic? Bhaskar's and Giddens' Social Theories, Journal for the Theory of Social Behaviour, Volume 34 Issue 4, 2004.
Moudon, A., Built for Change, Neighbourhood Architecture in San Francisco, CA, 1986.
Nieuwenhuys, C., New Babylon: A Nomadic Town, Haags Gemeentemuseum, 1974.
Neuwirth, R., Shadow Cities: A Billion Squatters, A New Urban World, Routledge, 2004.
Obrist, H. U., Hans Ulrich Obrist & Cedric Price: The Conversation Series, Walther Konig, Koln, 2010.
OMA, Urban Design Plan Homeruskwartier, 2007.
Oswalt, P., Overmeyer, K., Misselwitz, P, Urban Catalyst, DOM Publishers, Berlin, 2013.
Pine, J., Mass-customization: The New Frontier in Business Competition, Harvard Business School Press, 1993.
Planbureau voor de Leefomgeving [PBL] en Urhahn Urban Design, Vormgeven aan de spontane stad: belemmeringen en kansen voor organische stedelijke herontwikkeling, Den Haag, Amsterdam 2012.
Popper, K., The Open Society and Its Enemies, Princeton University Press, 1971.
Portugali, J., Self-organization and the City, Springer Verlag, Berlin, 2000.
Portugali, J., Self-organizing Cities, Futures, Vol. 29. No. 4/5, 1997.
Portugali, N., Intbau UK, Volume 1 Number 11, "A Holistic Approach to Architecture and its implementation in the physical and cultural context of the place", 2005.
Portugali, N., The Act of Creation and the Spirit of a Place: A Holistic-Phenomenological Approach to Architecture, Edition Axel Menges, Stuttgart & London 2006.
Priemus, H., Housing and New Urban Renewal: Current Policies in the Netherlands, International Journal of Housing Policy, 2010.
Provoost, M., Colenbrander, B., Dutchtown - How Dutchness Absorbed Rem Koolhaas, NAI Publishers, 2000.
Pumain, D., Settlement Systems in the Evolution, Geografiska Annaler, Series B, Human Geography, Vol. 82, No. 2, Development of Settlements, 2000.
+RAMTV, Negotiate My Boundary: Mass Customization and Responsive Environments, AA, London, 2002.
Ravestein, A., Oostenburgereiland moet organisch ontwikkeld worden, Verslag Informatieavond, Amsterdam, 2012.
Rijksdienst voor de IJsselmeerpolders, Projektburo Almere, Ontwerp Almere-Haven, Januari 1974
Rijksdienst voor de Ijselmeerpolders, Structuurplan Almere, 1984.
Rowe, P. G., Modernity and Housing, MIT, 1993.
Rudofsky, B., Architecture Without Architects: An Introduction to Non-Pedigreed Architecture, Doubleday, 1964.
Sadler, S., The Situationist City, The MIT Press, 1999.
Salingaros, N., Some Notes on Christopher Alexander, math.utsa.edu, 1997.
Sanoff, H., "Designing with Community Participation", Simulation & Gaming, 1981.
Sanoff, H., Community Participation Methods in Design and Planning, Wiley Publishers, 1999.

Scott Brown, D., Venturi, B., Izenout, S., Learning from Las Vegas - Revised Edition: The Forgotten Symbolism of Architectural Form, MIT Press, 1977.
Shane, D.G., Recombinant Urbanism: Conceptual Modeling in Architecture, Urban Design, and City Theory, London, 2007.
Schumacher, P., Smart work - patrik schumacher on the growing importance of parametrics. Riba journal, 2008.
Slocum, N., Participatory Methods Toolkit: A Practitioner's Manual, King Baudouin Foundation, 2003
Steele, J., Rethinking Modernism for the Developing World: The Complete Architecture of Balkrishna Doshi,Watson-Guptill, 1998.
Tan, E., Almere Letters #1 "The Trojan Horse", Archined The Online Architecture Platform of the Netherlands, 2007.
Tan, E., 'Adaptive design' Dynamisch design heeft toekomst, Agora, Magazine voor Sociaalruimtelijke Vraagstukken, 2008.
Tan, E., 'Het Paard van Troje' Slow Management Magazine, 2008.
Tan, E., 'Interveawing the formal and the informal' Inhabitants as Agents in Istanbul and Almere, 'New towns of the 21st century', Sun publishers, 2010a.
Tan, E., and D. Ibáñez López. "On the emergence of new collectivity", L'Architecture d'Aujourd'hui 378, 2010b.
Tan, E., Portugali J., "Responsive design games and new towns", 'Complexity Theories of Cities Have Come of Age.', Springer, 2012.
Tan, E., "An Istanbul Utopia 2023: Do not Plan, Play the Istanbul", 'Are We the World?' 010 Publishers, 2013.
Thompson, D'Arcy W., On Growth and Form, Cambridge University Press, 1942.
Turner, J., Freedom to Build, Dweller Control of the Housing Process, New York, 1972.
Turner, J., The Scope of Social Architecture, [ed. By Hatch, R.,] New Jersey Institute of Technology, New York, 1986.
Tzonis, A. 'Participatory Design: Needs, System, and Paradox', Participate, Taiwan, 2004.
Tzonis Alexander C., LeFaivre, L., Development Of The Populist Movement In Architecture, Graduate School of Design Harvard University, 1978.
Vanstiphout, W., Harvard Design Magazine, Number 2. Consensus Terrorism The Dutch 70s, 1997.
Velthoven, W., Interview with the Founder Mediamatic Foundation, Amsterdam, 2013.
Wigley, M., Constant's New Babylon: The Hyper-architecture of Desire, 010 Publishers, Rotterdam, 1998.
Wolfram, S., A new kind of Science, Wolfram Media, Canada, 2002.
Waal de, M., The City As Interface: How New Media Are Changing the City, NAI010 Publishers, 2014.
Yin R. K. [1994] Case Study Research Design and Methods, California: Sage Publications

Appendices

Appendix 1

Almere Haven Neighborhood Survey

1	HS	Home Satisfaction
2	NS	Neighborhood Satisfaction
3	SW	Since When
4	R/O	Renter or Owner
5	O	Number of Occupants
6	PR	Previous Residence
7	ItM	Intention to Move
8	Pro	Profession
9	Ch	Changes
10	R	Roofs
11	W	Walls
12	G	Garage
13	S	Stair
14	Wi	Windows
15	Gr	Garden
16	Ba	Bathroom
17	Be	Bedroom
18	K	Kitchen
19	Co	Color
20	SF	Second Floor
21	Why?	Reason for Change
22	FC	Future Changes
23	LoF	Lack of Facilties
24	WiN	Work in Neighborhood
25	DRM	Dream
26	Spec	Specifications
27	SwN	Sharing with Neighbors
28	NT	Neighbor Ties
29	SoT	Strength of Ties
30	OM	Organization Member
31	DT	Dwelling Type Preference

Almere Haven Neighborhood Survey																	
		PERSONAL INFO								MODIFICATIONS							
No.	Neighborhood	HS	NS	SW	R/O	O	PR	ItM	Pro	CH	W	R	G	S	Wi	Gr	Ba
1	De Grienden	3	3	1994	2	4	Amsterdam-Center	0	housewife	0	0	0	0	0	0	0	0
2	De Grienden	3	3	1990	2	4	Amsterdam-North	0	housewife	0	0	0	0	0	0	0	0
3	De Grienden	3	3	2002	1	4	Amsterdam-West	0	social worker	0	0	0	0	0	0	0	0
4	De Grienden	3	3	1998	1	1	Amsterdam	0	housewife	0	0	0	0	0	0	0	0
5	De Grienden	2	2	2007	1	4	Amhem	1	web designer	0	0	0	0	0	0	0	0
6	De Grienden	2	3	2006	1	3	Almere Beiten	0	architect	1	0	0	0	0	0	1	0
7	De Grienden	3	2	1990	2	3	Almere	0	student	1	1	0	0	0	1	1	0
8	De Grienden	2	2	1980	2	2	Amsterdam-Center	1	housewife	0	0	0	0	0	0	0	0
9	De Wierden	2	1	1989	2	4	Amsterdam-Center	1	ass. manager	1	0	0	0	0	0	0	1
10	De Wierden	2	2	2004	2	2	Morton	1	gardener	1	1	1	1	1	1	1	1
11	De Wierden	1	2	1989	1	5	Almere Stad	1	nail technician	1	0	0	0	0	0	0	1
12	De Wierden	3	2	1998	1	3	Amsterdam	0	childcare	1	0	0	0	0	0	0	0
13	De Wierden	2	2	1983	1	4	Almere Beiten	1	production sec.	1	0	0	0	0	0	1	0
14	De Wierden	1	2	1986	1	5	Utrecht	1	housewife	0	0	0	0	0	0	0	0
15	De Wierden	3	2	2004	2	4	Almere Stad	0	office worker	1	0	0	0	0	0	1	0
16	De Gouwen	2	1	1980	2	6	?	0	care taker	1	0	0	0	0	0	1	0
17	De Gouwen	3	3	2002	2	4	Amsterdam	0	secretary	1	0	0	0	0	1	1	0
18	De Meenten	2	2	1998	2	2	Amsterdam	0	engineer	0	0	0	0	0	0	0	0
19	De Meenten	2	2	1986	2	1	Amsterdam-North	0	retired	1	0	0	0	0	0	1	0
20	De Meenten	3	2	1993	2	1	Utrecht	0	retired	0	0	0	0	0	0	0	0
21	De Meenten	3	3	1986	2	3	Amsterdam	0	unemployed	1	0	0	0	1	1	1	0
22	De Meenten	3	2	1995	2	6	Almere Hoven	0	nurse	1	0	0	0	0	0	1	0
23	De Meenten	2	2	1988	2	2	Amsterdam-North	0	unemployed	0	0	0	0	0	0	0	0
24	De Meenten	2	2	1990	2	3	Amsterdam	0	hairdresser	1	0	0	1	0	0	1	0
25	De Werven	3	2	1991	1	1	Hilversum	0	unemployed	0	0	0	0	0	0	0	0
26	De Werven	3	3	1998	1	1	Enschede	0	retired	0	0	0	0	0	0	0	1
27	De Werven	2	2	2001	2	4	Ouderkerk	1	wall painter	1	0	0	0	0	1	1	0
28	De Werven	3	2	1999	2	4	Amsterdam	1	school principle	1	0	1	1	0	0	1	0
29	De Werven	2	2	1985	1	4	Amsterdam	0	office worker	1	0	0	0	0	0	1	0
30	De Werven	2	3	2006	1	5	Markt	0	worker	0	0	0	0	0	0	0	0
31	De Werven	3	2	2003	2	3	Blaricum	1	app developer	1	0	0	0	0	1	1	1
32	De Werven	2	1	1983	1	1	Gorinchem	0	unemployed	1	0	0	0	0	0	1	1
33	De Werven	3	3	1990	2	4	Amsterdam	0	office worker	1	0	0	0	0	0	1	0
34	De Werven	3	3	1998	2	2	Almere Hoven	0	fashion worker	1	0	1	1	0	0	1	0
35	Haven Centrum	3	3	1998	1	2	Hilversum	0	retired	1	1	0	0	0	0	1	0
36	Haven Centrum	3	3	2005	1	4	Amsterdam	0	artist	0	0	0	0	0	0	0	0
37	Haven Centrum	3	2	2002	1	2	Werven	0	?	1	0	0	0	0	0	1	0
38	Haven Centrum	3	3	2007	1	3	Dronten	1	mover	0	0	0	0	0	0	0	0
39	Haven Centrum	3	3	2002	2	2	Amsterdam	0	teacher	1	0	0	0	0	0	1	0
40	Haven Centrum	3	3	1996	2	1	De Hoef	0	nurse	1	0	0	0	0	0	0	0

											INTERACTIONS				
	Be	K	C	SF	Why?	FC	LoF	WiN?	DRM	Spec	SwN	NT	SoT	OM	DT
	0	0	0	0	0	0	high school	0	0	0	0	5	1	3	2
	0	0	0	0	0	0	playground	1	0	0	0	5	1	3	2
	0	0	0	0	0	1	none	0	0	0	1	5	2	0	2
	0	0	0	0	0	0	none	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	none	0	0	0	0	3	1	0	2
	0	0	0	0	-	1	none	0	2	-	0	0	0	0	3
	0	0	0	0	more space	0	cafe	1	0	0	0	5	1	0	3
	0	0	0	0	0	0	none	1	4	0	0	5	2	0	2
	0	1	0	0	renovation	1	playground	0	0	0	0	3	1	0	2
	1	1	1	1	enjoys their way of life	0	old trees	0	0	0	0	3	2	4	0
	0	0	0	0	more comfort	1	playgarden	0	1	daily shop	0	5	1	0	3
	0	0	1	0	-	1	art center	0	1	cafe	1	5	1	0	3
	0	0	1	0	maintenance	1	playground	0	0	0	0	2	1	0	2
	0	0	0	0	0	1	sports center	0	0	0	0	1	1	1	2
	0	0	0	0	children	1	playground	1	0	0	0	5	1	0	2
	0	0	0	0	-	1	none	1	0	0	0	2	1	1	2
	0	0	0	0	aesthetics	1	food store	0	0	0	0	5	2	0	2
	0	0	0	0	0	1	none	1	0	0	0	2	1	0	2
	0	0	0	0	as extention of ground floor	0	none	0	0	0	0	2	1	0	2
	0	0	0	0	0	0	none	0	0	0	4	2	1	3	2
	0	0	0	0	aesthetics	1	none	0	0	0	0	2	2	0	2
	0	0	0	0	aesthetics, personalize	0	none	0	0	0	0	3	1	3	2
	0	0	0	0	0	0	none	0	0	0	4, 7	2	1	0	2
	0	0	0	0	more exterior space	0	none	0	0	0	0	2	1	0	2
	0	0	0	0	0	0	none	0	0	0	8	5	1	0	0
	0	0	0	0	renovation	0	none	0	0	0	0	2	1	4	4
	0	0	0	0	aesthetics	0	none	1	0	0	8	2	1	0	2
	0	0	0	0	functionalize	0	sports center	0	0	0	0	2	1	3	2
	0	0	0	0	renovation	1	none	0	0	0	0	5	1	0	3
	0	0	0	0	0	0	playground	0	0	0	0	2	1	0	4
	0	0	0	0	replacement	0	none	0	0	0	0	2	1	0	3
	0	0	0	0	renovation	1	shopping center	0	4	0	0	2	1	0	2
	0	1	0	1	more space, functionalize	1	none	1	6	music studio	0	2	2	0	0
	0	0	0	0	functionalize	1	none	1	0	0	0	2	1	0	2
	0	0	0	0	more exterior space, hobbies	0	none	0	0	0	0	1	1	2	4
	0	0	0	0	0	1	disco	1	0	0	0	3	1	4	4
	0	0	0	0	more comfort	1	none	0	1	-	0	1	1	0	3
	0	0	0	0	0	1	none	1	0	0	0	5	2	0	3
	0	0	0	0	maintenance	1	none	1	0	0	0	5	2	0	2
	0	1	0	0	aesthetics	0	none	1	0	0	0	-	1	3	3

Almere Haven Neighborhood Survey																		
		PERSONAL INFO								MODIFICATIONS								
No.	Neighborhood	HS	NS	SW	R/O	O	PR	ItM	Pro	CH	W	R	G	S	Wi	Gr	Ba	
41	Haven Centrum	3	3	2000	2	3	Nederhorst den Berg	1	landowner	1	1	0	0	0	0	1	0	
42	Haven Centrum	3	3	1986	2	2	Stadswert	0	bar keeper	1	1	0	0	1	1	1	0	
43	Haven Centrum	3	3	1987	2	3	Amsterdam	0	shop owner	1	0	0	0	0	1	0	0	
44	De Wierden	2	2	1990	1	2	Amsterdam	0	retired	1	1	1	0	1	0	1	1	
45	De Wierden	3	3	2006	2	3	Almere	0	-	1	1	0	0	0	0	1	0	
46	De Wierden	2	2	2000	2	4	Israel	0	teacher	0	0	0	0	0	0	0	0	
47	De Wierden	3	3	2007	2	4	?	0	?	1	1	0	0	0	0	0	0	
48	De Marken	2	2	1992	1	1	Utrecht	0	-	0	0	0	0	0	0	0	0	
49	De Marken	3	2	2003	2	3	Huizen	0	bus driver	1	0	0	0	0	0	1	0	
50	De Marken	3	3	1990	2	2	Amsterdam	0	retired	1	0	0	1	1	1	1	1	
51	De Marken	3	3	2003	1	4	Amsterdam	1	worker	1	0	0	0	0	0	1	0	
52	De Marken	3	3	1991	2	2	small village	0	retired	1	1	0	0	0	0	1	0	
53	De Velden	3	3	2000	2	2	Muidengouw	0	business owner	1	1	0	0	0	0	0	0	
54	De Velden	3	2	1985	2	2	Tiel	0	project manager	1	0	1	1	0	1	0	0	
55	De Velden	3	3	1999	2	4	Almere Stad	1	IT Manager	0	0	0	0	0	0	0	0	
56	De Velden	3	3	2000	2	4	-	0	-	0	0	0	0	0	0	0	0	
57	De Velden	3	3	1999	2	3	Almere Haven	0	student	0	0	0	0	0	0	0	0	
58	De Velden	3	3	2000	2	4	Minnellistraat	0	teacher	1	1	0	0	0	0	0	0	
59	De Velden	3	3	2000	2	2	Zeeland	0	-	1	0	0	0	0	0	1	0	
60	De Velden	3	3	2000	2	4	Haarlemmermeer	0	technician	0	0	0	0	0	0	0	0	
61	De Velden	2	3	1998	2	2	Leemwierde	0	artist	1	0	0	1	0	0	1	0	
62	De Velden	3	3	2000	2	2	Almere Haven	0	writer	0	0	0	0	0	0	0	0	
63	De Hoven	3	3	2004	2	5	Groenhof	0	artist	1	1	0	0	0	1	1	0	
64	De Hoven	2	1	2008	1	1	Amersfoort	0	student	0	0	0	0	0	0	0	0	
65	De Hoven	3	2	2008	2	3	Purmerend	1	student	1	1	0	0	0	0	1	0	
66	De Hoven	2	2	2006	2	3	Almere Stad	0	musician	0	0	0	0	0	0	0	0	
67	De Hoven	2	3	1998	1	2	Rotterdam	0	IT Manager	1	1	0	0	0	0	0	0	
68	De Hoven	2	2	1991	2	2	Biddinghuizen	1	nurse	0	0	0	0	0	0	0	0	
69	De Hoven	3	3	1979	1	3	Amsterdam	0	social worker	0	0	0	0	0	0	0	0	
70	De Hoven	2	2	1979	1	3	Bussum Gooi	0	nurse	0	0	0	0	0	0	0	0	
71	De Hoven	3	3	1985	1	1	Almere	0	artist	0	0	0	0	0	0	0	0	
72	De Hoven	3	3	2008	2	2	Almere Haven	1	house keeper	1	0	0	0	0	1	1	0	

											INTERACTIONS				
	Be	K	C	SF	Why?	FC	LoF	WiN?	DRM	Spec	SwN	NT	SoT	OM	DT
	0	0	0	1	more interior space	1	none	1	0	0	0	4	1	0	2
	0	0	0	0	renovation	1	none	1	5	0	0	4	2	0	2
	0	0	0	0	maintenance	0	supermarket	1	0	0	0	4	1	4	0
	1	0	0	0	maintenance	0	none	0	0	0	0	3	2	0	3
	0	0	0	0	-	0	none	1	-	-	-	1	1	2, 3	2
	0	0	0	0	0	1	none	0	0	0	0	1	1	0	2
	0	0	0	0	?	1	none	0	0	0	0	0	0	0	3
	0	0	0	0	-	1	none	0	0	0	-	1	2	0	3
	0	0	0	0	maintenance	1	playground	0	0	0	7	1	1	0	2
	1	0	0	0	more space	0	none	0	0	0	0	2	2	3, 4	2
	0	0	0	0	-	1	none	0	0	0	0	2	1	2	2
	0	0	0	0	aesthetics	1	none	?	0	0	0	6	1	0	2
	0	0	0	0	-	0	public transport	1	0	0	7	6	2	3	2
	0	0	0	0	more space	1	community center	0	0	0	0	4	2	0	4
	0	0	0	0	0	0	none	0	0	0	0	0	0	0	2
	0	0	0	0	0	0	none	1	-	-	0	1	2	0	3
	0	0	0	0	0	0	bus stop	0	0	0	0	2	2	0	4
	0	0	0	0	more interior space	1	bus stop, supermarket	1	0	0	0	4	2	0	2
	0	0	0	0	more exterior space	1	bus stop	0	0	0	9	3	2	0	2
	0	0	0	0	0	0	none	0	0	0	0	3	1	0	2
	0	0	0	0	more exterior space, hobbies	0	none	1	0	0	2	3	2	1	2
	0	0	0	0	0	1	public transport	0	0	-	5	3	2	0	2
	0	0	0	0	maintenance	0	all amenities	1	0	0	0	5	1	1	2
	0	0	0	0	0	0	none	0	0	0	0	0	0	0	1
	0	0	0	0	maintenance	1	all amenities	1	0	0	10	2	0	0	4
	0	0	0	1	children	1	community center	0	1	-	0	2	1	3	2
	0	0	0	0	enjoys their way of life	0	none	0	0	0	0	2	2	2	2
	0	0	0	0	0	1	none	1	5		0	5	2	2	2
	0	0	0	0	0	0	all amenities	1	0	0	6	2	2	0	2
	0	0	0	0	0	1	none	1	0	0	6	3	2	3	3
	0	0	0	0	0	0	none	0	2	0	0	2	1	0	2
	0	0	0	0	-	0	public transport	0	0	0	0	5	2	0	2

Appendix 2a

Stakeholders of the Istanbul Urban Transformation

Yap-Yaşa Player List		
Person	**Institution**	**Profession**
CEM BEYGO	Istanbul Technical University	Academic
EVRİM ÖZKAN TÖRE	Istanbul Metropolitan Urban Planing and Design Center	Academic
ELİF KISAR KORAMAZ	Istanbul Metropolitan Urban Planing and Design Center	Academic
NURAN GÜLERSOY	Istanbul Technical University	Academic
ALİYE AHU	Istanbul Technical University	Academic
T.KEREM KORAMAZ	Istanbul Technical University	Academic
GÜLDEN ERKUT	Istanbul Technical University	Academic
FERHAN GEZİCİ	Istanbul Technical University	Academic
CEM BEYGO	Istanbul Technical University	Academic
FULİN BÖLEN	Istanbul Technical University	Academic
Arzu KOCABAŞ DİREN	Mimar Sinan University	Academic
AYKUT KARAMAN	Mimar Sinan University	Academic
KEVSER ÜSTÜNDAĞ	Mimar Sinan University	Academic
ERBATUR ÇAVUŞOĞLU	Mimar Sinan University	Academic
BEHİYE GÜL DELİKTAŞ	TOKI National Housing Association	Architect
EMİNE KÖSEOGLU	Yildiz Technical University	Architect
KEREM BEYGO	Freelancer	Architect
FARUK GOKSU	Kentsel Strateji	Architect
EYLEM GULCEMAL	Kentsel Strateji	Architect
MEHMET MIMAR	Arnavutkoy Municipality	Architect
NAZIM ÖZCAN	Sariyer Municiplaity	City Officer
SERDAR AKIN	Istanbul Technical University	Civil Engineer
ASU AKSOY	Istanbul Bilgi University	Culture Management Dr.
İDİL ERKOL	Istanbul Bilgi University	Department of Architecture
İHSAN BİLGİN	Istanbul Bilgi University	Department of Architecture
MURAT GÜVENÇ	Istanbul Bilgi University	Department of Architecture
SEMRA AYDINLI	Istanbul Technical University	Department of Architecture
SENEM KOCA	Yildiz Technical University	Department of Architecture
ÖZE ULUENGİN	Yildiz Technical University	Department of Architecture
EBRU ERDÖNMEZ	Yildiz Technical University	Department of Architecture
MİRAY ÖZKAN	Kartal Urban Development Association	Director/Architect
HAKAN YENER	Urban Land Instite Turkey	Director/Urban Planner

Yap-Yaşa Player List		
Person	**Institution**	**Profession**
SELVA GÜRDOĞAN	Superpool	Founder/Architect
ÖZKAN GÖLPINAR	Mondriaan Foundation	Funder
DANIEL STORK	Consulate Generale of Kingdom of the Netherlands	Funder
RECEP TUNA	Consulate Generale of Kingdom of the Netherlands	Funder
YAMAN URAL	Freelancer	Game Designer
EKMEL ERTAN	Amberplatform	Intellectual
TUNA	Amberplatform	Intellectual
NAFİZ AKŞEHİRLİOĞLU	Amberplatform	Intellectual
OĞUZ ÖNER	European Capital of Culture	Intellectual
KORHAN GÜMÜŞ	European Capital of Culture	Intellectual
SİNEJAN KILIC	Galerist	Intellectual
PELİN DERVİŞ	Garanti Platform	Intellectual
ORHAN ESEN	Historian/Tour Guide Freelancer	Intellectual
AHMET TEMEL		Investor
MUHAMMET DUMAN	Association of Yunus Neighborhood Transformation	Local
EYÜP BATTALOĞLU	Association of Yunus Neighborhood Transformation	Local
FAZLI CEYLAN	Sariyer Neighborhood Association's Platform	Local
CEMAL EJDER	Sariyer Neighborhood Association's Platform	Local
MEHMET ATABEY	Sariyer Neighborhood Association's Platform	Local
LALE NUR KAPLAN		Local
SIBEL UNLU		Local
AKIF BURAK ATLAR	Architects Association	NGO
ERMAN TOPGÜL	Pedestrian Organization	NGO
FIRAT URCAN	Gata Medical Academy	Phsycologist
FIRAT URCAN	Clinique YL	Phsycologist
DERYA YAZMAN	Arkitera Architecture Platform	Press
ONUR SOYTÜRK	Platform planlama.org	Press
ŞEBNEM ŞOHER	Yeni Mimar	Press
TAN MORGÜL	Radikal	Press
ÖZLEM ŞAHİN	Pamir & Soyer	Realtor
FERİHA SONGÜLER		Realtor
CEREN KINIK	Editor Iletisim Publishers	Sociologist
A. DİDEM ÖZDEMİR	Istanbul Metropolitan Urban Planing and Design Center	Urban Designer
İBRAHİM ALP	Istanbul Metropolitan Urban Planing and Design Center	Urban Designer
SEÇİL ÖZALP	Istanbul Metropolitan Urban Planing and Design Center	Urban Designer
ÖZGE İMREK	Istanbul Metropolitan Urban Planing and Design Center	Urban Designer
ESRA YAVUZDEMİR	Istanbul Metropolitan Urban Planing and Design Center	Urban Designer
PELIN ÖZTÜRK	Istanbul Technical University	Urban Designer
ORHAN HACI	Istanbul Technical University	Urban Designer
DEMET MUTMAN	Bahcesehir University	Urban Planner
EMRAH ALTINOK	Yildiz Technical University	Urban Planner

Yap-Yaşa Player List		
Person	**Institution**	**Profession**
ASUMAN TÜRKÜN	Yildiz Technical University	Urban Planner
ZEYNEP ENLİL	Yildiz Technical University	Urban Planner
AYŞE ÇALKAN	TOKI National Housing Association	Urban Planner
NİYAZİ ÖZDEMİR	TOKI National Housing Association	Urban Planner
ÇAĞIN DURNA	Sariyer Municiplaity	Urban Planner
EDİP DİNÇER	Sariyer Municiplaity	Urban Planner
ECE DEMİR	Market	Urban Planner
ESİN KASIMOĞLU	Market	Urban Planner
GÖKÇEN TAŞKIN	Urban Planner's Association	Urban Planner
TUĞÇE TEZER	Urban Planner's Association	Urban Planner
ÇARE OLGUN ÇALIŞKAN	Urban Planner's Association	Urban Planner
AKİF BURAK ATLAR	Urban Planner's Association	Urban Planner
NAZIM AKKOYUNLU		Urban Planner
SEFER CALUK		Urban Planner
NURTEN TEKNECİOĞLU		Urban Planner
ARZU ERTURAN	Sariyer Municiplaity	Urban Planner
TANER HASDEMİR	Arnavutkoy Municipality	Urban Planner
NURİYE TEKNECİOĞLU	Arnavutkoy Municipality	Urban Planner
SEÇİL ÖZALP		Urban Planner
İPEK YADA AKPINAR	Istanbul Technical University	Urban Planner Dr.
AHMET CAN ALPAN	Mimar Sinan University	Urban Planner Dr.
FATMA ÜNSAL	Mimar Sinan University	Urban Planner Dr.
GÜZİN KONUK	Mimar Sinan University	Urban Planner Dr.
HÜRRİYET ÖGDÜL	Mimar Sinan University	Urban Planner Dr.
MÜGE ÖZKAN ÖZBEK	Mimar Sinan University	Urban Planner Dr.
BESİME ŞEN	Mimar Sinan University	Urban Planner Dr.
EYLEM GÜLCEMAL	Kentsel Strateji	Urban Planner/ Private Company
ZEKAİ GÖRGÜLÜ	Yildiz Technical University	Urban Planner/Architect
EMRAH KAVLAK	Sabanci Universoty	Visual Communication and Designer
ÖZGE GENÇ	Yildiz Technical University	Visual Communication and Designer

Appendix 2b

Yap-Yaşa Role Cards

Episode 1: Business As Usual

1 **YAP-YAŞA-TWITTER**
Tweet significant events, decisions during the game every 5 minutes.

2 **HOUSING ADMINISTRATOR**
You are the only responsible party for the implementation of the transformation plan. As you can see you have all the new building stock.Introduce the plan to the rest of the group! Try to convince the residents to move out of the island! Hire the contractor to construct the plan, hand the blocks to him, he will do the construction.

3 **NGO**
Try to stop the transformation by organizing protest meetings with residents [one-to-one, or altogether] to raise awareness on the backdrops of the new plan!

4 **TECHNICAL ADVISOR [architect/planner/landscape architect]**
Advice Mayor and H.A if they ask for it or whenever you see necessity!

5 **RESIDENT 1**
You are one of the pioneers of the neighborhood. Resist any form of transformation! Try to stay in your apartment flat whatever the cost! If you happen to leave the neighborhood ask the facilitators to locate your new neighborhood on the first table.

6 **RESIDENT 2**
You are fond of the ongoing transformation. [status props] Talk with the housing administration! Try to speculate on your property! If you happen to leave the neighborhood ask the facilitators to locate your new neighborhood on the first table.

7 **RESIDENT 3**
You are in doubt about the ongoing urban transformation. On the one hand you are concerned about the earthquake but on the other hand you do not want to leave the neighborhood. Talk with H.A.! If you happen to leave the neighborhood ask the facilitators to locate your new neighborhood on the first table.

8 **RESIDENT 4**

You are in doubt about the ongoing urban transformation. On the one hand you like your own flat, on the other hand you see opportunities in negotiations with H.A. Talk with H.A.! If you happen to leave the neighborhood ask the facilitators to locate your new neighborhood on the first table.

9 **9. RESIDENT 5 -renter**

Resist any form of transformation, you have no better place to go in the city! If you happen to leave the neighborhood ask the facilitators to locate your new neighborhood on the first table.

10 **SHOP OWNER**

Resist the ongoing urban transformation as there is no alternative offered in the plan for your business! If you happen to leave the neighborhood ask the facilitators to locate your new neighborhood on the first table.

11 **GAME MASTER**

You direct the game! Conduct interviews with the audience. You can interfere a conflicting situation and may decide how to move on in an unclear situation.

12 **CONTRACTOR**

Get instructions from the H.A. on where to demolish existing apartment buildings and build new highrise blocks!

13 **REALTOR**

Valuate real estate prizes in the block, before, during and after the transformation by asking people values of same 3 flats each time

14 **MAYOR**

Start the game by giving a speech on urban transformation, the earthquake, and transformation: Keywords: earthquake, emergency, need for change and transform, re-densification due to demographic growth, time pressure, numbers of homes to be generated. Instruct the HOUSING ADMINISTRATION [H.A.] officer to implement the transformation plan!

15 **FACILITATORS**

You have been instructed in advance about the organization of the game. Watch the process carefully! The accuracy and smoothness of the simulation in your hands.

Episode 2: Yap-Yaşa

1 **Yap-Yaşa-TWITTER**
Twits significant events, decisions during the game every 5 minutes.

2 **HOUSING ADMINISTRATOR [H.A.]**
You are responsible for the implementation of the 50% of the transformation plan. Introduce your portion of the plan and starts implementing!

3 **CONTRACTOR**
Get instructions from the H.A. on where to demolish existing apartment buildings and build new blocks!

4 **NGO**
Try to stop the transformation by organizing protest meetings with residents [one-to-one, or altogether] to raise awareness on the backdrops of the new plan!

5 **TECHNICAL ADVISOR [architect/planner/landscape architect]**
Advice Mayor and H.A if they ask for it or whenever you see necessity!

6 **RESIDENT 1**
This round you can participate in the act of re-constructing your neighborhood. You are one of the pioneers of the neighborhood. Resist any form of transformation! Try to stay in your apartment flat whatever the cost! If you happen to leave the neighborhood ask the facilitators to locate your new neighborhood on the first table.

7 **RESIDENT 2**
This round you can participate in the act of re-constructing your neighborhood. You are fond of the ongoing transformation. Talk with the housing administration! Try to speculate on your property! If you happen to leave the neighborhood ask the facilitators to locate your new neighborhood on the first table.

8 **RESIDENT 3**
This round you can participate in the act of re-constructing your neighborhood.
You are in doubt about the ongoing urban transformation. On the one hand you are concerned about the earthquake but on the other hand you do not want to leave the neighborhood. Talk with H.A.! If you happen to leave the neighborhood ask the facilitators to locate your new neighborhood on the first table.

9 **RESIDENT 4**
This round you can participate in the act of re-constructing your neighborhood. You

are in doubt about the ongoing urban transformation. On the one hand you like your own flat, on the other hand you see opportunities in negotiations with H.A. Talk with H.A.! If you happen to leave the neighborhood ask the facilitators to locate your new neighborhood on the first table.

10 **RESIDENT 5 -renter**
Resist any form of transformation, you have no better place to go in the city! If you happen to leave the neighborhood ask the facilitators to locate your new neighborhood on the first table.

11 **SHOP OWNER**
This round you can participate in the act of re-constructing your neighborhood. Resist the ongoing urban transformation as there is no alternative offered in the plan for your business! If you happen to leave the neighborhood ask the facilitators to locate your new neighborhood on the first table.

12 **GAME MASTER**
You direct the game! Conduct interviews with the audience. You can interfere a conflicting situation and may decide how to move on in an unclear situation.

13 **REALTOR**
Valuate real estate prizes in the block., twice during the transformation and once afterwards, by asking people values of the same 3 flats each time.

14 **FACILITATORS**
You have been instructed in advance about the organization of the game. Watch the process carefully! The accuracy and smoothness of the simulation in your hands.

15 **MAYOR**
Declare new rules for a collective transformation!

Appendix 3

Stakeholders of the Overhoeks, Amsterdam Noord

Play Noord Player List		
Person	Institution	Profession
Sanne Remmenswaal	Videodock	audio-visual company
Susanne van der Klugt	ID-TV	audio-visual company
David van der Lely	Studio Nieuw Noord	audio-visual company
Martijn Jacobs	Provid	audio-visual company
Monique van der Toon	Beam Systems	audio-visual company
Eric Holterhues	Triodos Bank	banker
Bart Stuart	Van der Pekbuurt	bewonersvereniging
Harry van den Berg	Angsaw	bewonersvereniging
Kees Alberts	Angsaw	bewonersvereniging
Tom Tossijn	Angsaw	bewonersvereniging
Bianca Prins	BSN werkervaringsbedrijf	company
Annemarie Semeijn	BSN werkervaringsbedrijf	company
Dagmar Gielsen	NH Galaxy [Hotel Mosveld]	company
Susan Kimkes	Veban & Co/Shell Technology Centre	company
Peter Dortwegt	New Energy Docks	company
Neef Louis	Neeflouis	company [BSH]
Maarten de Boer	Vierwinden	CPO
Eric Amory	Ontwerp je Woning	CPO
Hein de Haan	CityMix	CPO
Saskia Noordhuis	Van der Pekbuurt	cultureel ondernemer
Floor Ziegler	Noorderparkkamer/ Broedstraten	cultureel ondernemer
Annet Lekkerkerker	Holland Festival	cultureel ondernemer
Peter Kan	Nachtwerk	cultureel ondernemer
Pierre Ballings	Paradiso	cultureel ondernemer
Sandra den Hamer	EYE Filminstitute	cultureel ondernemer
Ido Abram	EYE Filminstitute	cultureel ondernemer
Tom Schippers	EYE Filminstitute	cultureel ondernemer
Chris Keulemans	Tolhuistuin	cultureel ondernemer
Touria Meliani	Tolhuistuin	cultureel ondernemer
Koosje Laan	Tolhuistuin	cultureel ondernemer

Play Noord Player List		
Person	Institution	Profession
Lilet Breddels	Volume	cultureel ondernemer
Arjen Oosterman	Volume	cultureel ondernemer
Jeroen Beekmans	Golfstromen	cultureel ondernemer
Joop de Boer	Golfstromen	cultureel ondernemer
Gamila Ylstra	Binger Film Lab	cultureel ondernemer
Marten Rabarts	Binger Film Lab	cultureel ondernemer
Merel Willemsen	Kijk Ruimte	cultureel ondernemer
Rutger Emmelkamp	Droomstad	cultureel ondernemer
Daan Bogert	Hotmamahot	cultureel ondernemer
cristine	Rhizomatic	cultureel ondernemer
Johan Akerboom	Music School	cultureel ondernemer
Debra Solomon	Urbania/Hoeve	cultureel ondernemer
Anke de Vrieze	Farming the City	cultureel ondernemer
Francesca Miazzo	Cities the magazine	cultureel ondernemer
Themis Pellas	Farming the City	cultureel ondernemer
Irma & Irma	Bekijk Je Wijk	cultureel ondernemer
Femke Hoccou	Plug de Dag	cultureel ondernemer
Ger Jager	Dansmakers Amsterdam	cultureel ondernemer
Gary Feingold	Stichting Danshuis	cultureel ondernemer
Kees Blijleven	Krakeling	cultureel ondernemer
Erica V Eeghen	Toneel Makerij	cultureel ondernemer
Maritschka Witte	Rozenthater	cultureel ondernemer
Tanja Karreman	Nieuw Dakota	cultureel ondernemer
Marleen Stikker Kitty Leering	PicNic	cultureel ondernemer
Willem Velthoven	Mediamatic	cultureel ondernemer
Gijs Ockeloe	KVD Reframing	design company
Marcel van Wees	Wees Vormgever!	design company
Juha van het Zelfde	Non-fiction	design company
Michiel de Lange	Mobile City	design company
Tjeerd Haccou	Space and Matter	design company
Pie de Bruin	Architecten Cie	design company
Bjarne Mastenbroek	SeArch	design company
Gert Urhahn	Urhahn	design company
Jos van der Lans	Tolhuistuin	design company
Christian Ernsten	OpenCoop	design company
Hans Vermeulen	OpenCoop	design company
Mario Campanella	Civile Techniek TU Delft	engineer advisor
Shula Rijxman	ID-TV	film company

Play Noord Player List		
Person	**Institution**	**Profession**
Marisa Montis	Universal	film company
Ju-lan van Alphen	Stichting DOEN	funder/advisor
Steve Elbers	Stichting DOEN	funder/advisor
Brigitte Schapendonk	Overhoeks bewoners	individueel
Maria Rigter	Overhoeks bewoners	individueel
Hubert Schakenbos	Overhoeks bewoners	individueel
Frits de Wolff	Van der Pekbuurt	individueel
John Nora	Van der Pekbuurt	individueel
Isabel Nielen	Van der Pekbuurt	individueel
Mories Romkens	Van der Pekbuurt	individueel
Gerard Kapitein	Van der Pekbuurt	individueel
Joep van Egmond	Streetcornerwork	jongerenwerk
Robert Onck	Straatcoach noord - gebiedscoordinator	jongerenwerk
Daan Dijkstra	Distelweg 113	kraak
Ralph	Van der Pekbuurt	locale ondernemer
dar el caftan	Van der Pekbuurt	locale ondernemer
totaalgemak	Van der Pekbuurt	locale ondernemer
Willem Vermaning	Van der Pekbuurt	locale ondernemer
Wijkpost	Van der Pekbuurt	locale ondernemer
Elly en Theo	Van der Pekbuurt	locale ondernemer
Kasim	Van der Pekbuurt	locale ondernemer
Peter	Van der Pekbuurt	locale ondernemer
Luc Harings	Overhoeks	Locale ondernemer
Willem de Lannoy	Stadsdeel Amsterdam Noord	lokale overheid
Pascal van der Velde	Projectbureau Noordwaarts	lokale overheid
Marieke Derksen	Stadsdeel Amsterdam Noord	lokale overheid
Oktay Aslan	Stadsdeel Amsterdam Noord	lokale overheid
Jaap Schoufour	Stadsdeel Amsterdam Noord	lokale overheid
Louis Pirenne	Stadsdeel Amsterdam Noord	lokale overheid
Anja Dekker	Stadsdeel Amsterdam Noord	lokale overheid
Afke Post	Stadsdeel Amsterdam Noord	lokale overheid
Adri Dorneveld	Stadsdeel Amsterdam Noord	lokale overheid
Herke Elbers	Stadsdeel Amsterdam Noord	lokale overheid
Henk Grotendorst	Stadsdeel Amsterdam Noord	lokale overheid
Gerard van Hoorn	Stadsdeel Amsterdam Noord	lokale overheid
Quinten van Olden	Stadsdeel Amsterdam Noord	lokale overheid
Hartmut Wilkening	Adviescommisie kunst en cultuur	lokale overheid
Ferry Kesselaar	Adviescommisie kunst en cultuur	lokale overheid

Play Noord Player List		
Person	**Institution**	**Profession**
Hans Pieter Ekker	Adviescommisie kunst en cultuur	lokale overheid
Margreet Feenstra	Adviescommisie kunst en cultuur	lokale overheid
Zef Hemel	DRO	lokale overheid
Marcel Bolemendal	DRO	lokale overheid
Ton Schaap	DRO	lokale overheid
Rob Vooren	Projectbureau Noordwaarts	lokale overheid
Hans Gerson	Projectbureau Noordwaarts	lokale overheid
Elske van Caspel	Projectbureau Noordwaarts	lokale overheid
Annegien Krugers Dagneaux	Projectbureau Noordwaarts	lokale overheid
Els Daems	Projectbureau Noordwaarts	lokale overheid
Tita van den Broek	Stadsdeel Amsterdam Noord	lokale overheid
Bonnie Alberts	Historishe Centrum Amsterdam	lokale overheid
Geraldine Hallie	Hallie & Van Klooster Makelaars	makelaar
Dick Rjken	Steim	new media advisor
Dhr. E. Jonkheer	Stichting Kolom	ondernemer [onderwijs]
Onno Wittebrood	ING Real Estate	ontwikkelaar
Arthur van Neerijnen	ING Real Estate - voorm. brandmanager	ontwikkelaar
Eric-Jan de Rooij	Lingotto (ex ING- voorm. Brandmanager)	ontwikkelaar
Jolbert ten Napel	OCO	ontwikkelaar
Daniëlla Rijkes	OCO/Informatiecentrum Overhoeks	ontwikkelaar
Evert Verhagen	Gemeente Amsterdam	ontwikkelaar
Aukje Teppema	Stadsloods	ontwikkelaar
C. Oussoren	Lemniskade /BSH	ontwikkelaar
Jerry Breg	GTP Vastgoed /BSH	ontwikkelaar
Han Michel	eigen bedrijf	ontwikkelaar
B. de Vries	Vink Bouw /BSH	ontwikkelaar
J. Bosman	Bosman Ladisgroep Labes Groep /BSH	ontwikkelaar
Wim Looijen	Ymere	ontwikkelaar
Stijn Boogerd	ASR Vastgoed Ontwikkeling NV	ontwikkelaar
Marion de Haan	ex marketing manager ING Real Estate	ontwikkelaar
Sander Groet	AIR	ontwikkelaar
Marian Strumphler	Buiksloterham	ontwikkelaar [s]
Frans van der Avert	IAmsterdam	overheid amsterdam
Jacques van Veen	Amsterdam Uitburo	overheid amsterdam
Maarten van Poelgeest	Gemeente Amsterdam	politicus
Kees Diepeveen	Stadsdeel Amsterdam Noord	politicus
Rob Post	Stadsdeel Amsterdam Noord	politicus
Jacqueline Tellinga	Gemeente Almere	manager Homeruskwartier

Play Noord Player List		
Person	**Institution**	**Profession**
Igor Mayer	TBM TU Delft	specialist
Maurits de Hoog	Urbanism TU Delft	specialist
Ute Schneider	KCAP	urban design expert/advisor
Olof van der Wal	eigen bedrijf	urban design expert/advisor
Harmen van de Wal	eigen bedrijf	urban design expert/advisor
Tomasz Jaskiewicz	Urbanism TU Delft	urban design expert/advisor
René Grotendorst	Rochdale	woningbouwbedrijf
Niek Verveen	Stadsgenoot	woningbouwbedrijf
Gerard Schuurman	Vesteda	woningbouwbedrijf
Anita Smit	Vesteda	woningbouwbedrijf
Andrea Janssen	Ymere	woningbouwbedrijf
Ron Onverzaagt	Ymere	woningbouwbedrijf
Andre de Reus	Ymere	woningbouwbedrijf
Peter Blonk	Ymere	woningbouwbedrijf
Emile Spek	Ymere	woningbouwbedrijf
Franka Kanters	Ymere	woningbouwbedrijf
Michiel Schuytemaker	Ymere	woningbouwbedrijf
Olaf Vreugdenhil	Aliantie	woningbouwbedrijf
Niels Bon	Eigen Haard	woningbouwbedrijf

Appendix 4

City Game Library 2011

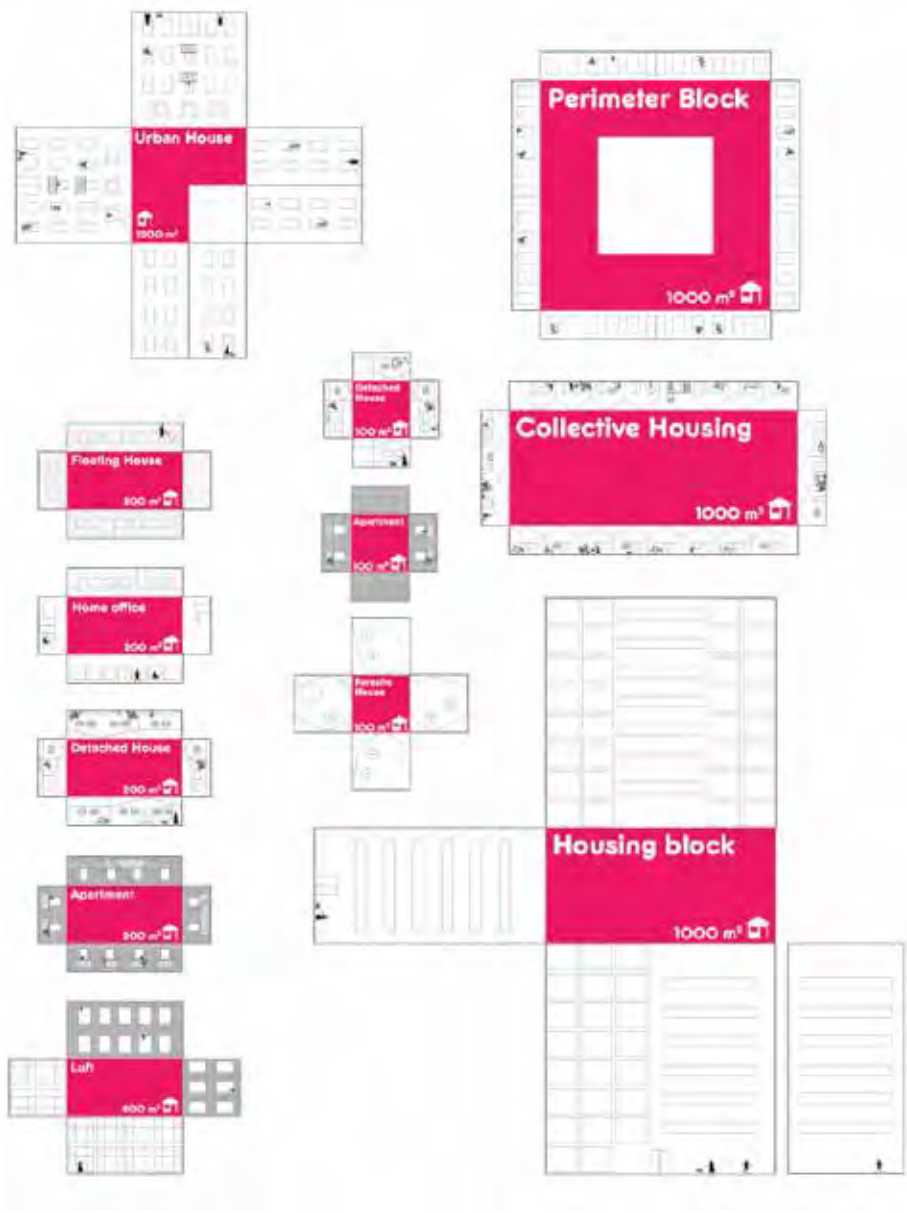


Figure 191
City game library 2011: Housing.

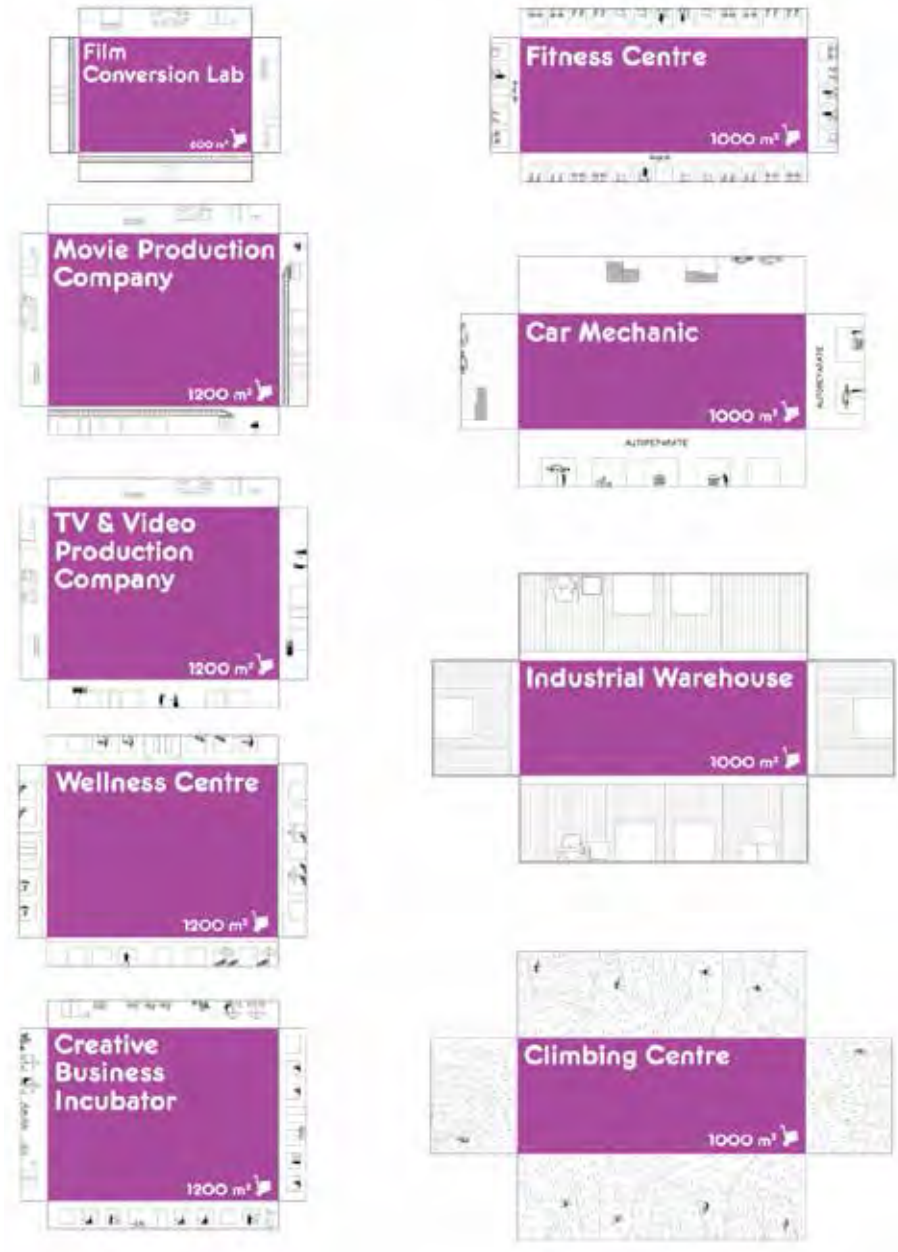


Figure 192
City game library 2011: Business.

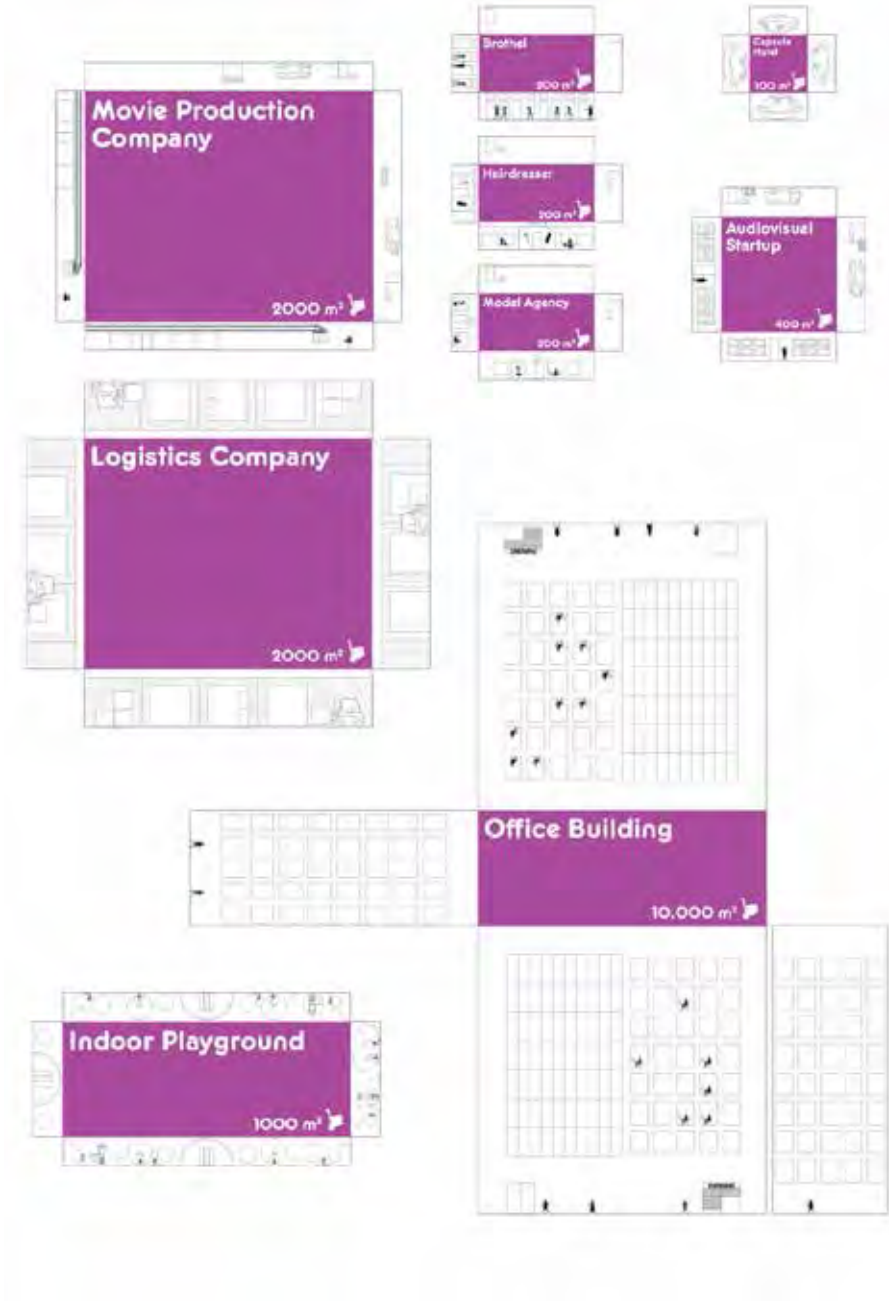


Figure 193
City game library 2011: Business.

Figure 194
City game library 2011: Green.

Figure 195
City game library 2011: Culture.

Figure 196
City game library 2011: Retail.

Figure 197
City game library 2011: Retail.

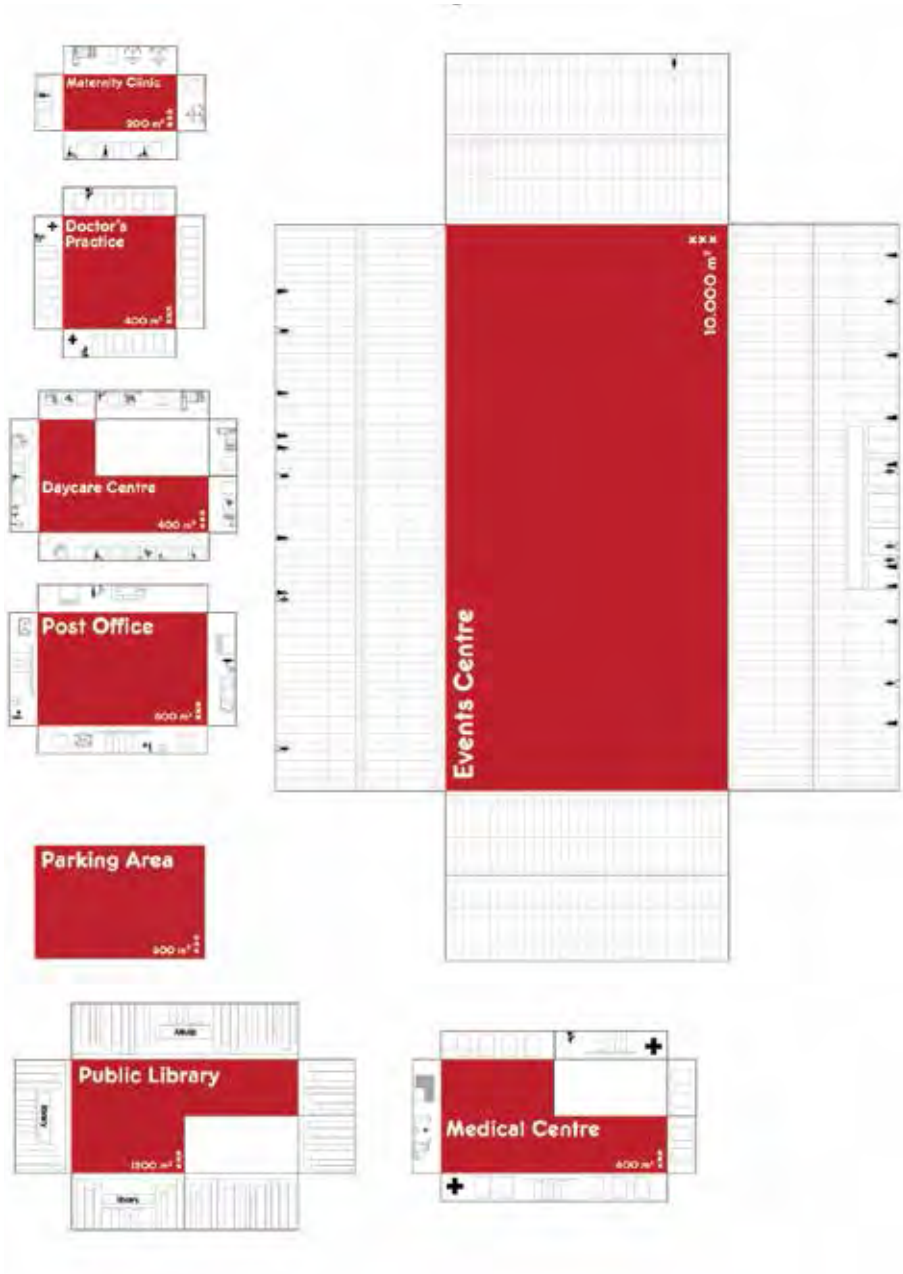


Figure 198
City game library 2011: Public services.

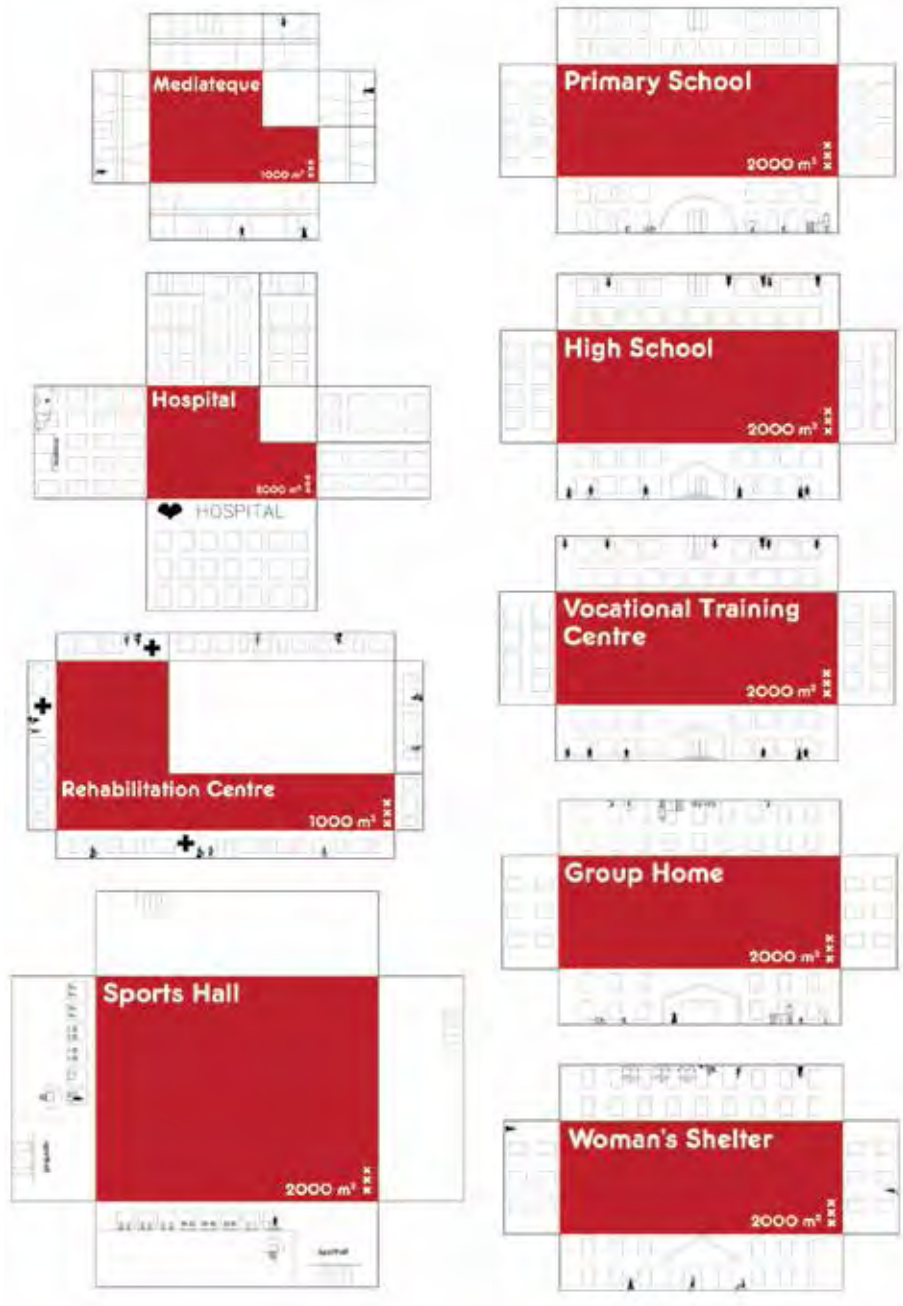


Figure 199
City game library 2011: Public services.

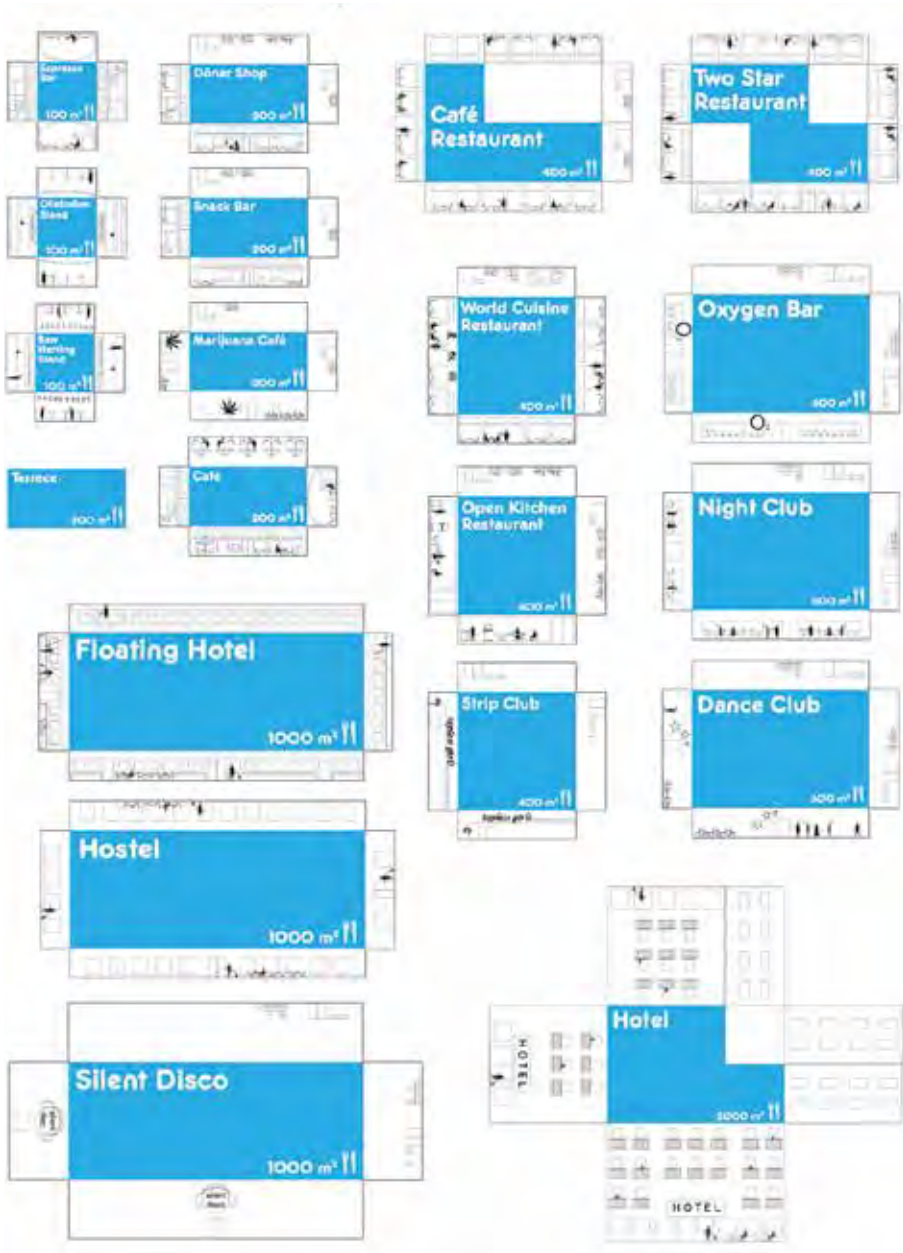


Figure 200
City game library 2011: Horeca (hotels, restaurants, cafes).

Appendix 5

Play Noord Role Cards

1 **LOCAL GOVERNMENT [POLITICIAN]**

- Challenge
  - How do you build and maintain a resilient city in times of crisis?
- Actions
  - Dear Politician, your public wants to hear you announce the city vision for the coming 10 years. You may create your own vision or select one provided by PLAY THE CITY:
- Vision Cards:
  - MANHATTAN AN HET IJ
  - OVERHOEKS SMART CITY
  - EXTREME MIX NOORD
  - OVERHOEKS 2028 OLYMPIC SITE NETHERLANDS
  - ...
- Hold a speech and share your vision with the public. What is your vision on Amsterdam Noord and how do you see Overhoeks developing? Keywords below are there to help you!
  - Keywords: lack of program — selfbuild — budget cuts — unique program — waterfront tourism agriculture selforganization — crowdsourcing — crowdbuilding — wisdom of crowds — squat — urban riots — migration religion — multiculture — identity — underwater museum — new collectivity — stagnating economy and demographics — less restriction — landmark Noord
- You are allowed to organise one meeting during the course of the game to steer ongoing developments to you vision.
- Veto
  - You may veto projects if they conflict with your vision, however you need Veto vote from the local government. And the majority of the public needs to agree with you. [technical expert]

2 **LOCALE GOVERNMENT [TECHNICAL EXPERT]**

- Challenge
  - Dear Member of the local government, your challenge is to provide enough and high quality infrastructure, public spaces, public facilities and cultural events. Stay passive until needs of entrepreneurs and inhabitants occur. Provide infrastructure based on the resources you have.
- Action
  - 1. Your total resources are 75.000m2

- 2. Don't build any profit oriented project, if you do, make sure you pay the profit back to public interest.
- 3. Every time activist uses his/her resources, you need to use 5 times as much of your resources.
- 4. You can form collaborations with the activist, companies, inhabitants and entrepreneurs to enlarge your resources therefore ambitions of your actions in the game.

• Beware
- Public can award you by expanding your proposals, but they could also vote out your project!
- You need to collaborate with at least 2 other players to activate your 'large' move.
- Please fill in the question form about other investors/developers/ entrepreneurs/inhabitants that have an interest in Noord.

3 **HOUSING CORPORATION**

• Challange
- Dear Member of the Housing Corporation, your challenge in the game is to supply the housing need clarified by the politician.

• Action
- 1. Your total resources are 75.000m2
- 2. 30% of the housing supply needs to be rental and mixed with private owned homes.
- 3. Try building combinations with non-housing construction on the ground floor, build in collaboration with other players

• Beware
- Public can award you by expanding your proposals, but they could also vote your project out!
- You need to collaborate with at least 2 other players to activate your 'large' move.

4 **COMMERCIAL DEVELOPER**

• Challenge
- Dear Developer, your challenge in the game is to find a creative and unique investment that might take off in Noord. You have a large program to realise thus to find the right parties to join forces is important for you.

• Action
- 1. Your resources are limited up to 50.000m2.

• Beware
- Public can award you by expanding your proposals, but they could also vote out your project!
- You need to collaborate with at least 2 other players to activate your 'large' move.

5 **COMPANY [L]**

• Challenge

- Dear Company, your challenge is to find best fit location based on your facilities. What are spatial needs of your company? As you know currently there is abundance of offices in the Netherlands. Observe the site well and use this for your advantage. Are there parties around the table to join forces with?

- Action
  - 1. Your resources are up to 50.000m2
  - 2. Invest in other program that increases the value of your facilities
- Beware
  - Public can award you by expanding your proposals, but they could also vote out your project!
  - You need to collaborate with at least 2 other players to activate your 'large' move.

6 **COMPANY**

- Challenge
  - Dear Company, your challenge is to find best fit location based on your facilities. What are spatial needs of your company? As you know currently there is abundance of offices in the Netherlands. Observe the site well and use this for your advantage. Are there parties around the table to join forces?
- Action
  - 1. Your resources are up to 20.000m2
  - 2. Invest in other program that increases the value of your facilities
- Beware
  - Public can award you by expanding your proposals, but they could also vote out your project!
  - You need to collaborate with at least 2 other players to activate your 'large' move.

7 **CULTURAL INSTITUTION**

- Challenge
  - Dear Cultural Institution, your challenge is to find best fit location based on your activities. What are spatial needs of your institution? As you know currently there is abundance of office spaces in the Netherlands. Observe the site well and use this for your advantage.
  - During the times the government is cutting budget on cultural institutions, you need to prove your need for existence. Try and find citizens who might help you in your difficult times.
- Action
  - 1. Your resources are up to 15.000m2
  - 2. Follow and invest in other cultural initiatives that increase the value of your facilities
- Beware
  - Public can award you by expanding your proposals, but they could also vote out your project!
  - You need to collaborate with at least 2 other players to activate your 'large' move.

8 **ENTREPRENEUR 1**

- Challenge
  - Dear entrepreneur, your challenge in the game is to follow the developments and be alert about the available suitable locations for your activities. There are other entrepreneurs in the game who will compete with you for the same challenge. You may look for collaboration possibilities if you are interested in growing in size.
- Action
  - 1. Announce your investment interests in the beginning of the game.
  - 2. Your resources are up to 10.000m2
- Beware
  - Public can award you by expanding your proposals, but they could also vote out your project!
  - You can only play your resources using the 200 and 400 m2 pieces.

9 **ENTREPRENEUR 2**

- Challenge
  - Dear entrepreneur, your challenge in the game is to follow the developments or be alert about the available suitable locations for your activities. There are other entrepreneurs in the game who will compete with you for the same challenge. You may look for collaboration possibilities if you are interested in growing in size.
- Action
  - 1. Announce your investment interests in the beginning of the game.
  - 2. Your resources are up to 10.000m2
- Beware
  - Public can award you by expanding your proposals, but they could also vote out your project!
  - You can only play your resources using the 200 and 400 m2 pieces.

10 **CPO INITIATIVE**

- Challenge
  - Dear CPO entrepreneur, your challenge in the game is to imagine models and themas for a co-housing initiative.
- Actions
  - 1. Your resources in the game are 35.000m2.
  - 2. Find partners for your initiative [these partners can be from the players as well as from the audience]
  - 3. Find the best location for your CPO project
  - 4. To expand your initiative you may join forces with small entrepreneurs and inhabitants
  - 5. Try to expand your project with collective program
- Beware

- Public can award you by expanding your proposals, but they could also vote out your project!

11 **INHABITANT 1**

- Challenge
  - Dear inhabitant, you are a renter in Van der Pekbuurt. Soon you might have to leave your apartment. But adjacent to your neighbourhood, where you always watch from Ranonkelkade there is a wasteland. You have enough time to engage in building your own shelter and good skills of working with land. How do you see your involvement? Can you rent an apartment, start an organic edible flower garden, run a street kiosk/cafe?
- Action
  - 1.Your resources in the game are up to 800m2 in total 10 game rounds.
  - 2. If you have interest in growing and building more, try and find smart collaborations given your skills.
- Beware
  - Public can award you by expanding your proposals, but they could also vote out your project!
  - You can only play your resources using the 200 and 400 m2 pieces.

12 **INHABITANT 2**

- Challenge
  - Dear inhabitant, you are a future inhabitant who currently lives in Almere. You like the quietness of suburbia while you miss joining the urban crowd as often as you like. You have a big family and work from home. Your challenge is to find the best location for your home and work that fits your wishes.
- Action
  - Your resources in the game are up to 6.000m2 in total 10 game rounds.
- Beware
  - Public can award you by expanding your proposals, but they could also vote out your project!
  - You can only play your resources using the 200 and 400 m2 pieces.

13 **INHABITANT 3**

- Challenge
  - Dear inhabitant, you are a future inhabitant who lives in Jordaan. You are looking for alternative living forms such as co-housing. Without giving in from your individual home you are interested in finding ways to share extra facilities such as sauna, fitness or a garage for your hobby.
- Action
  - 1.Your resources in the game are up to 10.000m2 in total 10 game rounds.
  - 2. You need to collaborate with other inhabitants, entrepreneurs, collectives or organisations who might have similar interest.

- Beware
  - Public can award you by expanding your proposals, but they could also vote out your project!
  - You can only play your resources using the 200 and 400 m2 pieces.

14 **INHABITANT 4**

- Challenge
  - Dear inhabitant, you are an urbanite. You just need a private quite flat where can also work. Your dream is to have your own roof terrace, where you can relax. Will you able to find/build such quiet apartments?
- Action
  - 1.Your resources in the game are up to 4000m2 in total 10 game rounds.
- Beware
  - Public can award you by expanding your proposals, but they could also vote out your project!
  - You can only play using the 200 and 400 m2 pieces of program.

15 **ACTIVIST**

- Challenge
  - Dear Activist, your challenge is to warranty there is enough and good quality public/green space in the development. You feel sensitive about the provision of necessary social housing [30%] in the development.
- Action
  - 1. Lobby for public/green spaces on site
  - 2. Your public/green space resources are up to 8.000m2. Every time you use your resources, your local government needs to use 5 times as much of your resources.
  - Activist x 5 = local government
  - 3. With the support of 5 other players, you can veto projects.
- Beware
  - Public can award you by expanding your proposals, but they could also vote out your project!

16 **DESIGN ADVISOR**

- Dear Design Advisor, your challenge in the game is to guide entrepreneurs, inhabitants and cpo in their spatial decisions.

17 **GAME MASTER**

- Game master runs the game process. Game master can decide in ambiguous moments in the game. His responsibility is to share ongoing game action with public. He organises the public polls, interviews the audience and announces results of the polls.

18 **GAME FACILITATOR**

- Game facilitators guide players in play rules. Run the infographics in screens.
- They keep track of the use of resources and the performance of players based on the challenges they are given.

19 **PLAY NOORD! TWITTER**

- Play Noord! Twitter twits real time about the important moments during the game play.

Appendix 6

City Game Library Expanded in 2012

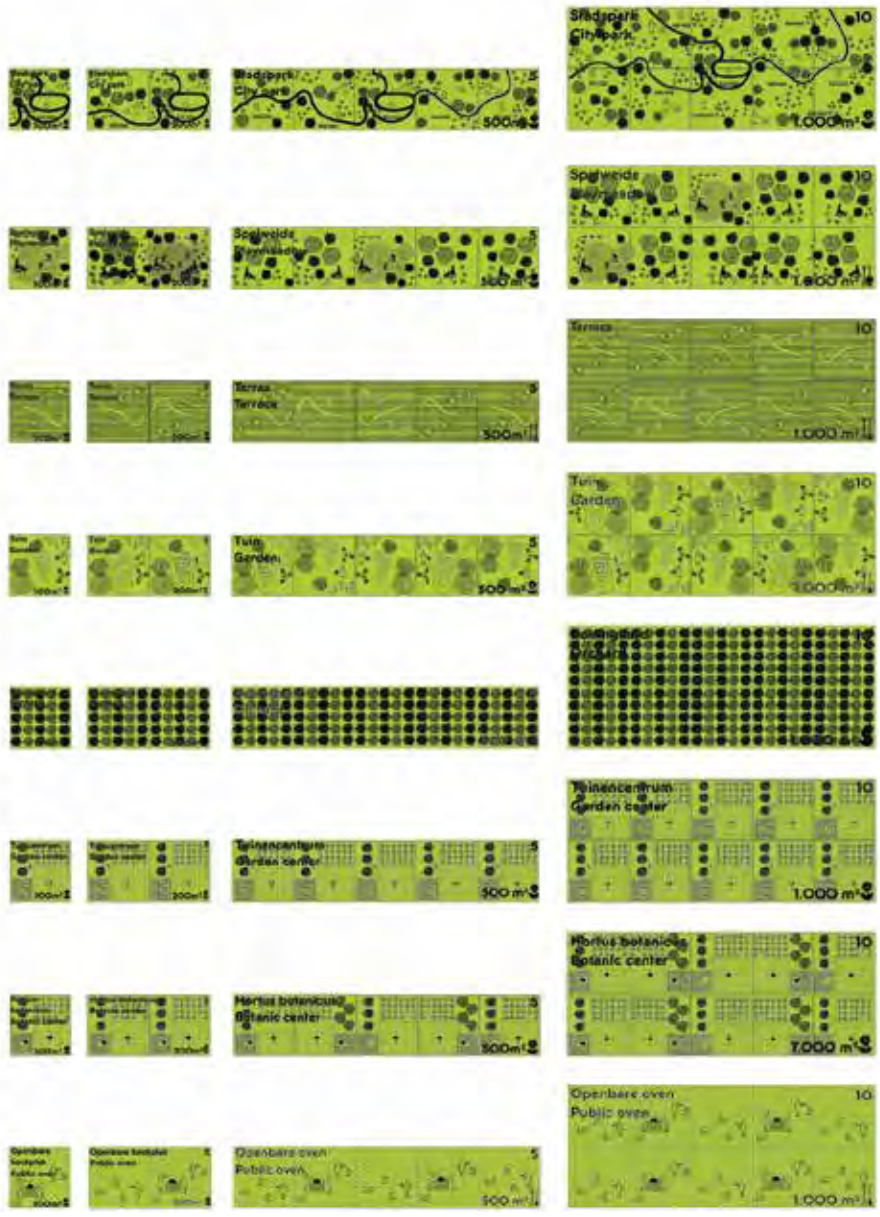


Figure 201
City game library expanded in 2012: Landscape.

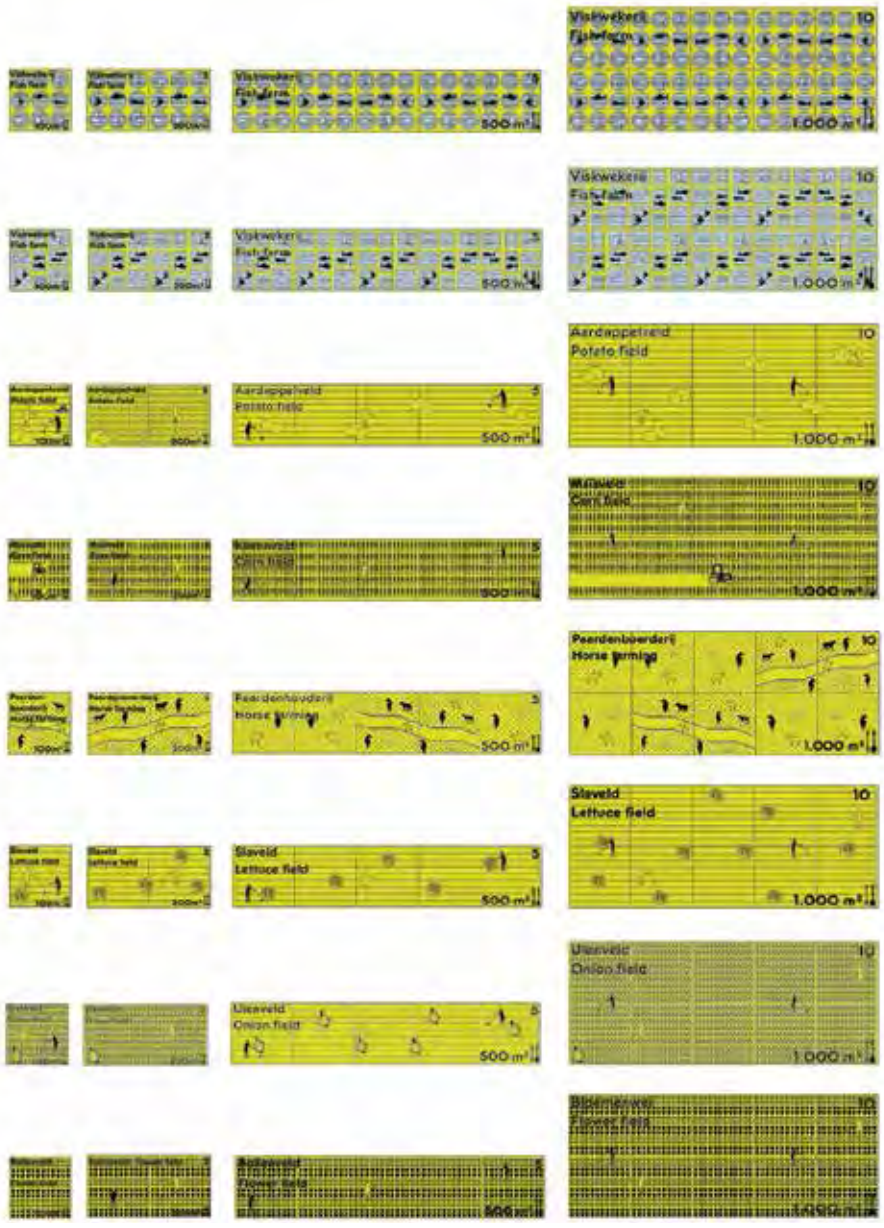


Figure 202
City game library expanded in 2012: Agriculture.

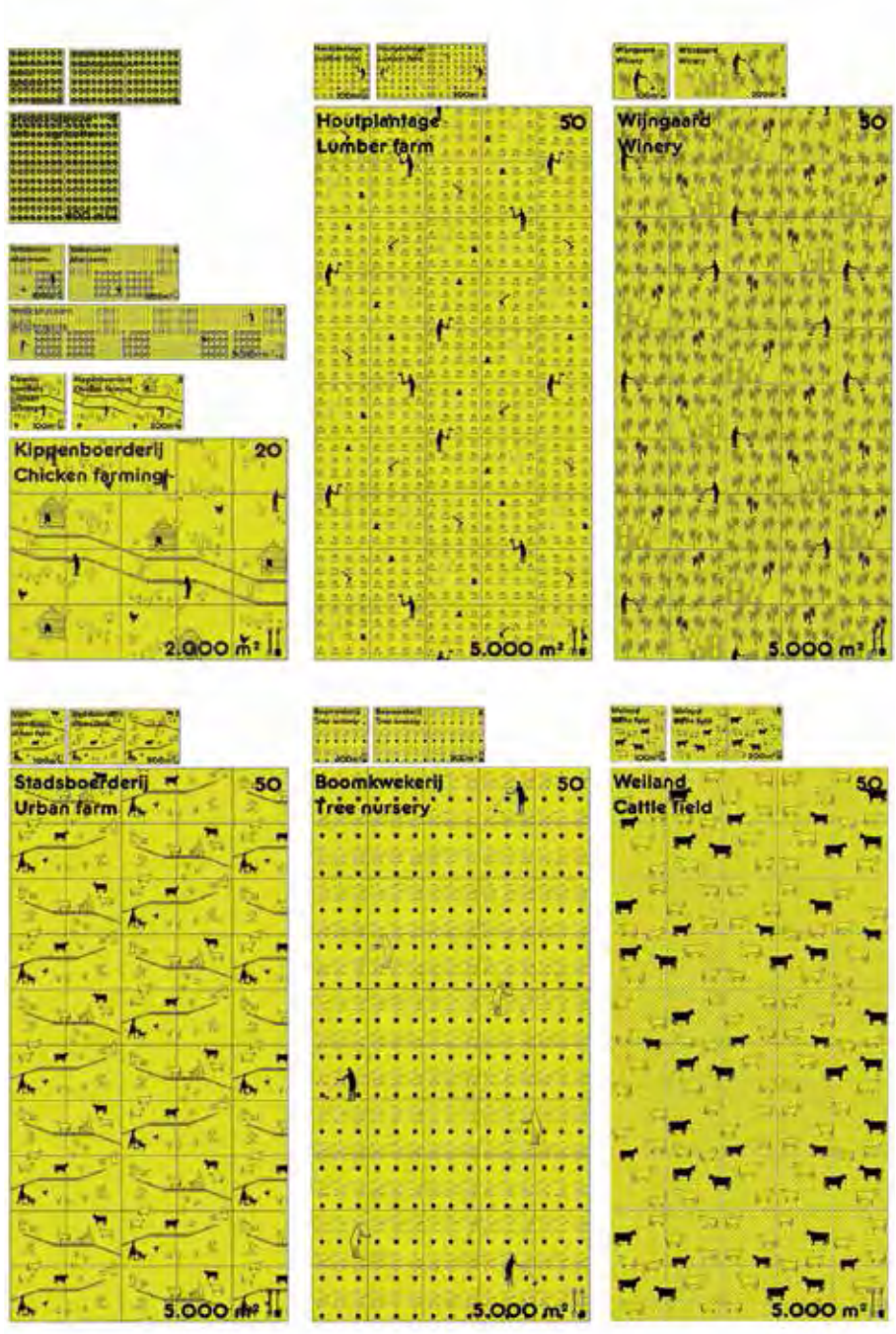


Figure 203
City game library expanded in 2012: Agriculture.

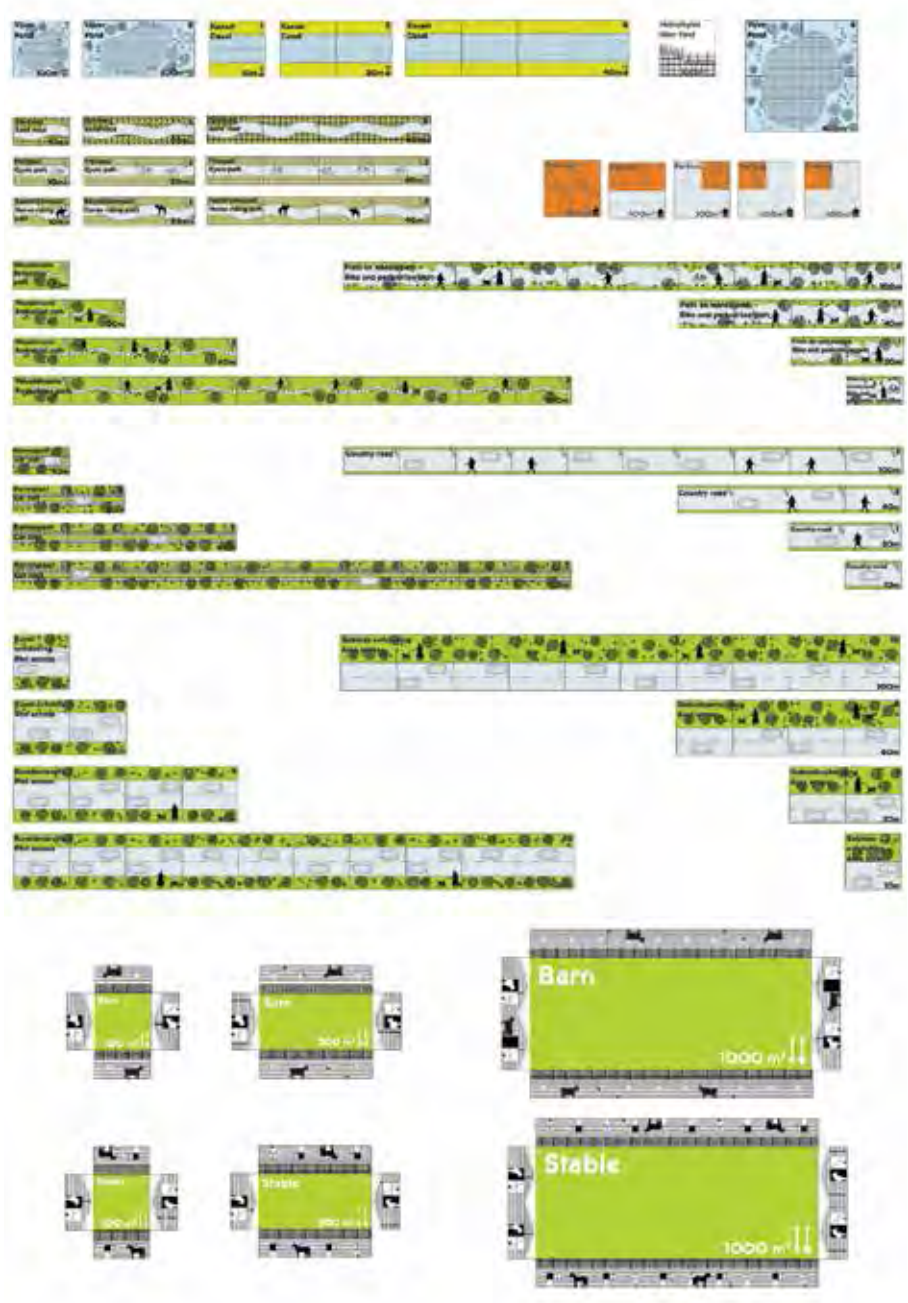


Figure 204
City game library expanded in 2012: Roads, water and buildings.

Appendix 7

Play Oosterwold Equation for Investments versus Urban Land Use

Player's Digi-Card — Log-in with your OV Chipcard

Name: *Player1*
e-mail: *Player1@playthecity.eu*

	Generic Plot	%	Landbouwkavel	Kernkavel	Landschapkavel
income:	20000		20000	20000	20000
starting resources in the game:	400000		400000	400000	400000
current resources in the game:	400000		400000	400000	400000

Developments:

Development Generic Plot

	type (dropdown menu)	area(m2)	%	value/m2	total cost
plot:		1	1	0	
building:	buidable area	0,18	0,18	1300	
infrastucture:		0,08	0,8	600	
public green:		0,13	0,13	200	
water:		0,02	0,02	200	
agriculture:		0,59	0,59	200	
building cost		0,09		1000	
Total Development Costs					

Development Landbouwkavel

	type (dropdown menu)	area(m2)	%	value/m2	total cost
plot:		1	1	0	
building:		0,06	0,06	1300	
infrastucture:		0,03	0,03	600	
public green:		0,09	0,09	200	
water:		0,01	0,01	200	
agriculture:		0,81	0,81	200	
building cost		0,5		1000	
Total Development Costs					

Development Kernkavel

	type (dropdown menu)	area(m2)	%	value/m2	total cost
plot:		1	1	0	
building:		0,65	0,65	1300	
infrastucture:		0,09	0,09	600	
public green:		0,12	0,12	200	
water:		0,03	0,03	200	
agriculture:		0,11	0,11	200	
building cost		1		1000	
Total Development Costs					

Development Landschapkavel

	type (dropdown menu)	area(m2)	%	value/m2	total cost
plot:		1	1	0	
building:		0,07	0,07	1300	
infrastucture:		0,03	0,03	600	
public green:		0,75	0,75	200	
water:		0,01	0,01	200	
agriculture:		0,14	0,14	200	
building cost		0,5		1000	
Total Development Costs					

	Type	Index of reversing money to size
1	Generiek Kavel	520
2	Landbouwkavel	778
3	Kernkavel	1951
4	Landschapskavel	789
5	None	0

Development Generic Plot

	type (dropdown menu)	area(m2)	value/m2	total cost
plot:	Generic Plot	500	1000	500000
building:	600	90	1300	117000
infrastucture:		40	600	24000
public green:		65	200	13000
water:		10	200	2000
agriculture:		295	200	59000
Total Development Costs				715000

Income sources
collaboration:

Figure 205
Interface to track the actions of players in Play Oosterwold.

Players' Investments in various Plots in the first Play Round							
Player #	Land use	Size	Infrastructure	Building	Agriculture	Water	Public
1	Generiek Kavel	6000	360	1080	3660	120	780
2	Generiek Kavel	1000	60	180	610	20	130
3	Kernkavel	1000	90	660	100	30	120
4	Landbouwkavel	20000	600	1200	16200	200	1800
5	Kernkavel	1000	90	660	100	30	120
6	Kernkavel	1000	90	660	100	30	120
7	Kernkavel	1000	90	660	100	30	120
8	Kernkavel	1000	90	660	100	30	120
9	Generiek Kavel	0	0	0	0	0	0
10	Landbouwkavel	20000	600	1200	16200	200	1800
11	Kernkavel	1000	90	660	100	30	120
12	Kernkavel	1000	90	660	100	30	120
13	Kernkavel	1000	90	660	100	30	120
14	Kernkavel	0	0	0	0	0	0
15	Kernkavel	0	0	0	0	0	0
16	Kernkavel	0	0	0	0	0	0
17	Kernkavel	1000	90	660	100	30	120
18	Generiek Kavel	7000	420	1260	4270	140	910
19	Landbouwkavel	500	15	30	405	5	45
20	Kernkavel	1000	90	660	100	30	120

Plot Types versus Distribution of Land Use in Plan Oosterwold							
	% Land	Land (m2)	Infrastructure	Building	Agriculture	Water	Public
Generiek Kavel	60%		6%	18%	61%	2%	13%
		864.000	51.840	155.520	527.040	17.280	112.320
Landbouwkavel	20%		3%	6%	81%	1%	9%
		288.000	8.640	17.280	233.280	2.880	25.920
Kernkavel	5%		9%	66%	10%	3%	12%
		72.000	6.480	47520	7200	2.160	8.640
Landschapskavel	15%		3%	7%	14%	1%	75%
		216.000	6.480	15120	30.240	2.160	162.000
All	100%	1.440.000	73.440	235440	797.760	24.480	308.880

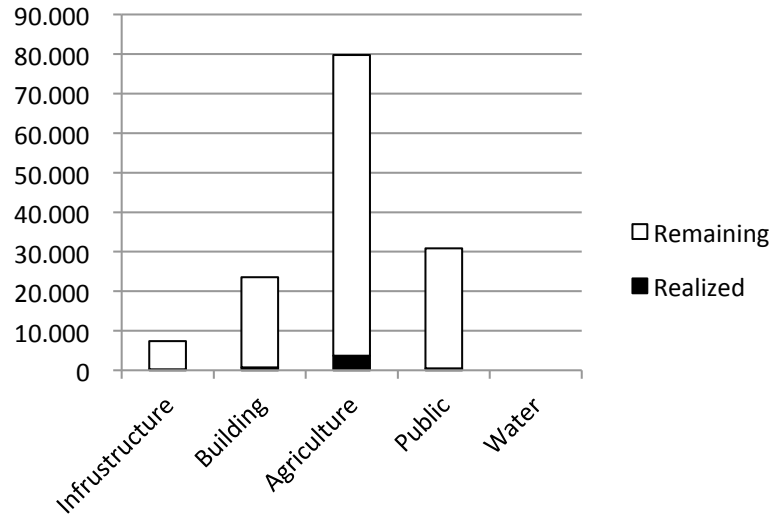


Figure 206
Built land, use distribution.

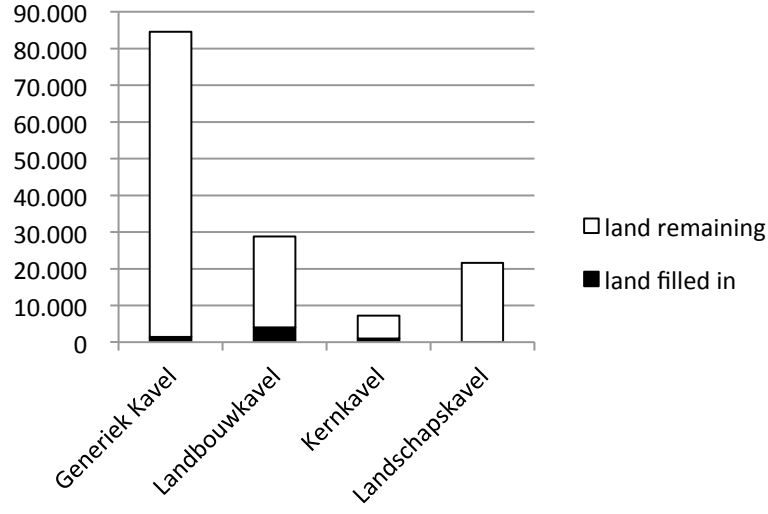


Figure 207
Filled versus remaining land in Oosterwold polders.

Appendix 8:

City Game Library Expanded in 2014

Figure 208
City game library expanded in 2014: Horeca, retail, housing, public services and culture.

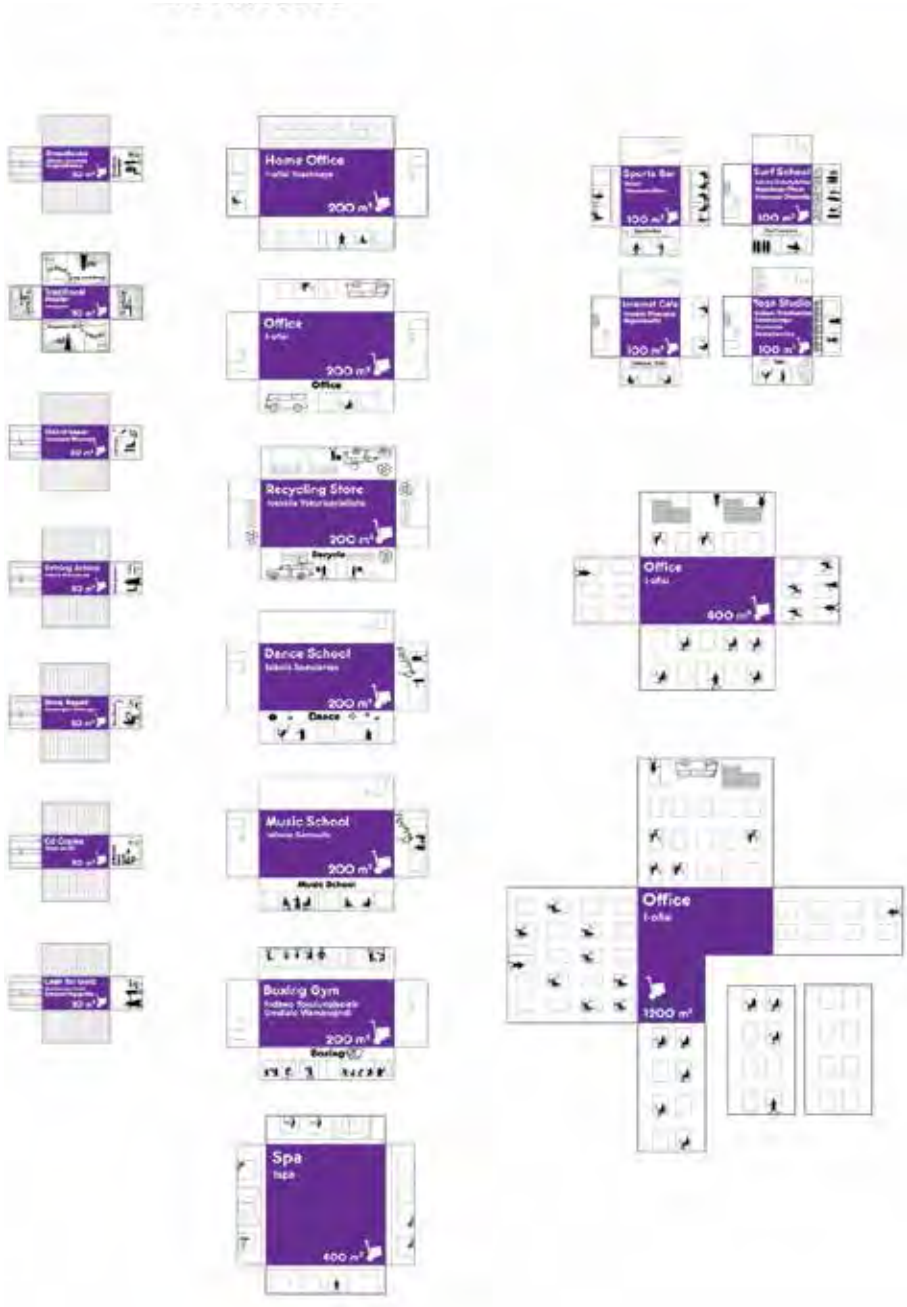


Figure 209
City game library expanded in 2014: Business.

Figure 210
City game library expanded in 2014: Infrastructure and green.

Index

List of figures

Curriculum vitae

Ekim Tan, female, Istanbul, 1976.
Mobile: +31 6 4141 5959
Web: www.playthecity.eu E-mail:ekim@playthecity.eu
Address: Jasmijnstraat 15-1 / 1031 EV Amsterdam
Languages: Turkish, English, German, Dutch, Arabic

Academic Studies

PhD Research
2007-September 12, 2014, Delft University of Technology, International New Town Institute, Netherlands
Do not Plan: Play the City! Negotiation and Design for the Self-organizing city.
Supervised by Prof. Arnold Reijndorp UvA, Prof. Henco Bekkering TU Delft

Master of Science in Urbanism
2003-2005, Delft University of Technology, Netherlands
-Cum laude
Waalhaven Waterisland, Spatial transformation of West-European harbors, Stadshavens/Rotterdam
Supervised by Pof. Han Meyer, exhibited at NAI as part of IABR flood curated by Adrian Geuze

Master of Science in Architecture
1999-2002, Middle East Technical University [METU], Ankara
Redefining roles of architecture and urban design in urban space production, Cukurambar, ankara

Bachelors of Architecture
1995-1999, Middle East Technical University [METU], Ankara
-Archiprix winner 99
Graduation Work: Ankara Maritime Museum Complex in Eymir

Professional Experience

2011—2013
Delft University of Technology, Netherlands
Design teacher in Design as Politics Chair of TU Delft

2010—
Play the City Studio,
Founder of the City design and research network
www.playthecity.eu
www.theresponsivecity.org

Play the City Projects

- 2012: If I were Istanbul's Mayor..., RFID based Interactive City Installation,
  Project Leader, Commissioned by the Design Biennial Istanbul
  www.playthecity.nl/benbaskanolsam
- 2012: Re-play Noord, A Master Plan on hold in Amsterdam
  Project Leader, Commissioned by the Cultural Organization Tolhuistuin, funded by La Fabrique de la Cité
  http://www.playthecity.nl/replaynoord
- 2012: Play Oosterwold, New town expansion of Almere
  Project Leader, Commissioned by the city of Almere
  www.playthecity.nl/almere
- 2012: Play Tirana, Multimodal urban node for Tirana
  Project Leader, Commissioned by the Polis University, Albenia
  http://www.playthecity.nl/9241/nl/play-tirana-2012
- 2011: Play Noord, A Master Plan on hold in Amsterdam
  Project Leader, Commissioned by the Cultural Organization Tolhuistuin, Stichting Doen
  http://www.playthecity.nl/168/en/play-noord-2011
- 2011: Play Brinckhorst, A Master Plan on hold in the the center of The Hague
  Project Leader, Commissioned by the city of The Hague
  http://www.playthecity.nl/151/nl/play-binckhorst-2011

2010
Yapyaşa, An alternative organization model for urban transformation in Istanbul
Project Leader, Self-initiated
www.playthecity.nl/benbaskanolsam

2009
Gecekondu, Summer Hotel, Amsterdam
Concept Designer with DUS Architects
www.theresponsivecity.org/2010/04/25/gecekondu-on-vimeo/ http://
eeuwvandestad.nl/archives/7675

2008—2009
European University Aleppo, Aleppo
Guest Professor at the department of architecture

2008
sLIM, Urbanism course for professionals and post graduates, Amsterdam
Content Curator on the Self Organizing City http://www.slim.nu/nl/lg11info.php

2005—2009
EU funded Network Citymine[d], Brussels
Academic Expert at the Micronomics Festival
http://micronomics.citymined.org

Books

'*Complexity Theories of Cities Have Come of Age.*', Springer, 2012.
co-editor with Prof. Han Meyer, Prof. Yuval Portugali and Egbert Stolk

'*Street Level Desires*', *Discovering the City on Foot*', Delft Publishers, 2009.
with Dr. Frank van der Hoeven

'*Rotterdam Waterstad 2035*', Gemeente Rotterdam, 2005.
with -scape and urban affair
http://www.architectenweb.nl/Store/Books/Detail.asp?id=346

Articles

'*An Istanbul Utopia 2023: Do not plan, Play the Istanbul*', 'Are we the World?' 010 publishers, 2013.

'*On the emergence of new collectivity*', L'Architecture d'Aujourd'hui, 2010

'*Responsive design games and new towns*', 'Complexity Theories of Cities Have Come of Age.', Springer, 2012.

'*Interveawing the formal and the informal*' Inhabitants as Agents in Istanbul and Almere, 'New towns of the 21st century', Sun publishers, 2010.

'*Het Paard van Troje*' Slow Management Magazine, 2008

'*Adaptive design*' Dynamisch design heeft toekomst, Agora, Magazine voor Sociaalruimtelijke Vraagstukken, 2008

'*Vermeers wanted*', Nova terra, Dutch independent urbanism magazine, 2007.

'*Downtown disney*', Nova terra, Dutch independent urbanism magazine, 2007.

'*Letters from Almere no.1*', Letters from a new town, 2007.
http://www.archined.nl/nieuws/almere-letters-no1-the-trojan-horse/

'*In search for opposing the generic identity*', International forum on urbanism, Beijing, 2006.

'*The Copenhagen experience: what the pedestrian wants*', Nova terra, Dutch independent urbanism magazine, 2006.

'*Legibility back on the agenda*', Atlantis, Delft, 2006.

'*Modernity in fast-motion -Istanbul*', Istanbul's silent but fast urban transformation, 2006.
http://www.archined.nl/nieuws/modernity-in-rapid-motion/

'*Noodles versus Magnum*', The chinese urban development, 2006
http://www.archined.nl/nieuws/noodles-versus-magnum/

'*Cities: grand bazaar of architectureS*', World Congress of Architecture, 2005.
http://www.archined.nl/archined/4841.0.html

'*Thin line between being radical and naïve*', Indesem workshop: Architecture; A political act, 2005.
http://www.archined.nl/archined/4808.0.html

'*More sign than space, Las Vegas revisited*', Interview with Robert Venturi & Denise Scott Brown, 2005.
http://www.archined.nl/archined/4604.0.html