

The Hackable City: A Model for Collaborative Citymaking



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The Hackable City (normative definition):
In a hackable city, new media technologies are employed to open up urban institutions and infrastructures to systemic change, in the public interest. It combines top-down smart-city technologies with bottom-up 'smart citizen' initiatives.

The Hackable City (research project):
The goal of this research project is to explore the opportunities, as well as challenges created by the rise of new media technologies for an open, democratic process of collaborative citymaking. How can citizens, design professionals, local government institutions and others employ digital media platforms in collaborative processes of urban planning, management and social organization, to contribute to a livable and resilient city, with a strong social fabric?

Introduction

About five years ago, in late 2012, One Architecture, an office for architecture and urbanism, invited The Mobile City, a research group on digital media and urban culture, to join forces in a workshop organized by the Dutch Delta Metropolis Association. Workshop participants were asked to draw up a new vision for the future city: which themes should dominate the urban agenda in the coming decade? What should the next 'big visionary project' look like? And how could this be applied to a number of city-regions in the Netherlands?

During the workshop, after discussing various current trends in urban planning, we found ourselves turning those original questions around. When we began exploring what this big vision, masterplan or investment project could look like, we found numerous citymaking initiatives that – in a spirit reminiscent of online hacker cultures – had just started to change things in the city that in their eyes needed improving. We found energy collectives producing and distributing renewable energy; projects that turned empty office space into co-working or housing spaces; and loosely organized citizens using social media to improve the livability of their neighborhoods through collective action. Sometimes these collectives were organized by informal groups of neighborhood residents; more often they were initiated by professional designers, architects or other professionals who were embracing a new approach to their profession. Rather than waiting for new masterplans to appear, they organized collectives of various stakeholders around the issues they deemed urgent.¹

Their impromptu character do not mean that these initiatives are not visionary. Like many hacker cultures, many of these citymaking initiatives are searching for alternative value systems that could underlie urban planning. Some are actively seeking to catalyze societal transformations, for instance in the domain of renewable energy. Others center on the notion of the commons: the city as a set of resources that are collaboratively owned and managed. In a world where public services and resources have been increasingly privatized, they seek to bring these resources back into the public domain, reclaiming a citizen-based 'ownership' of the city.²

Could, we found ourselves arguing, the sum of all these initiatives make up the next visionary project? Taken together, they could potentially make the city more resilient, innovative, livable, and social. Rather than approaching the city as a *tabula rasa*, these initiatives are interested in continuously improving the current city. Local initiatives could quickly identify local issues to address; small-scale initiatives could test out new approaches and technologies and scale them up when proven successful. And their collective and collaborative approach could also bring ownership of the city partly back to the citizenry.

So, at the end of the workshop we formulated our vision, or 'urban imaginary', of The Hackable City: a city in which new media technologies are employed to open up urban institutions and infrastructures, to improve upon them in the public interest, in practices of collaborative citymaking.

We found the 'hacking' metaphor a productive one to address the initiatives we had found, and to explore the opportunities as well as the chal-

lenges they offered for collaborative citymaking. First of all, the spirit of many of these initiatives resembled the ethos found in many online hacker cultures.³ They playfully appropriated existing city infrastructures, improving upon them in a process of learning-by-doing and the pooling of resources. Rather than envisioning grand projects, many of them are about cleverly making do with what's already there, organized around collectively set agendas. And when they do embark on more ambitious projects (e.g. the development of an online collaboratively authored encyclopedia) they do so in a spirit of collaboration towards a common good, in an open process in which knowledge is shared and participants continuously learn from each other.

Second, the actual practices organized by these initiatives can also be understood as 'hacks'. They appropriate – often in a playful manner – existing infrastructures and technologies and take them beyond their intended uses, sometimes into legal grey areas, in order to improve upon them.

This brings out a third resemblance: hackers often work in the context of, but sometimes in opposition to existing (computer) systems. Some of these systems may welcome hacks and are easy to improve, for instance by making their source code readable and understandable to outsiders, by offering an architecture that allows for plugins, or by offering their data through APIs. Other systems are proprietary and try to fend hackers off. Because of this, their 'hackability' may be limited. In citymaking, similar relationships unfold. Some city governments or institutions may welcome civic hacks, inviting collectives to contribute towards all kinds of processes, and making city resources available; others may be more wary, preferring to fall back on time-trusted internal procedures and procurement processes geared towards other institutional players. Using 'hackability' as a counterpoint to 'hacking' immediately brings out the relationship between collective initiatives and the institutional contexts in which they operate.

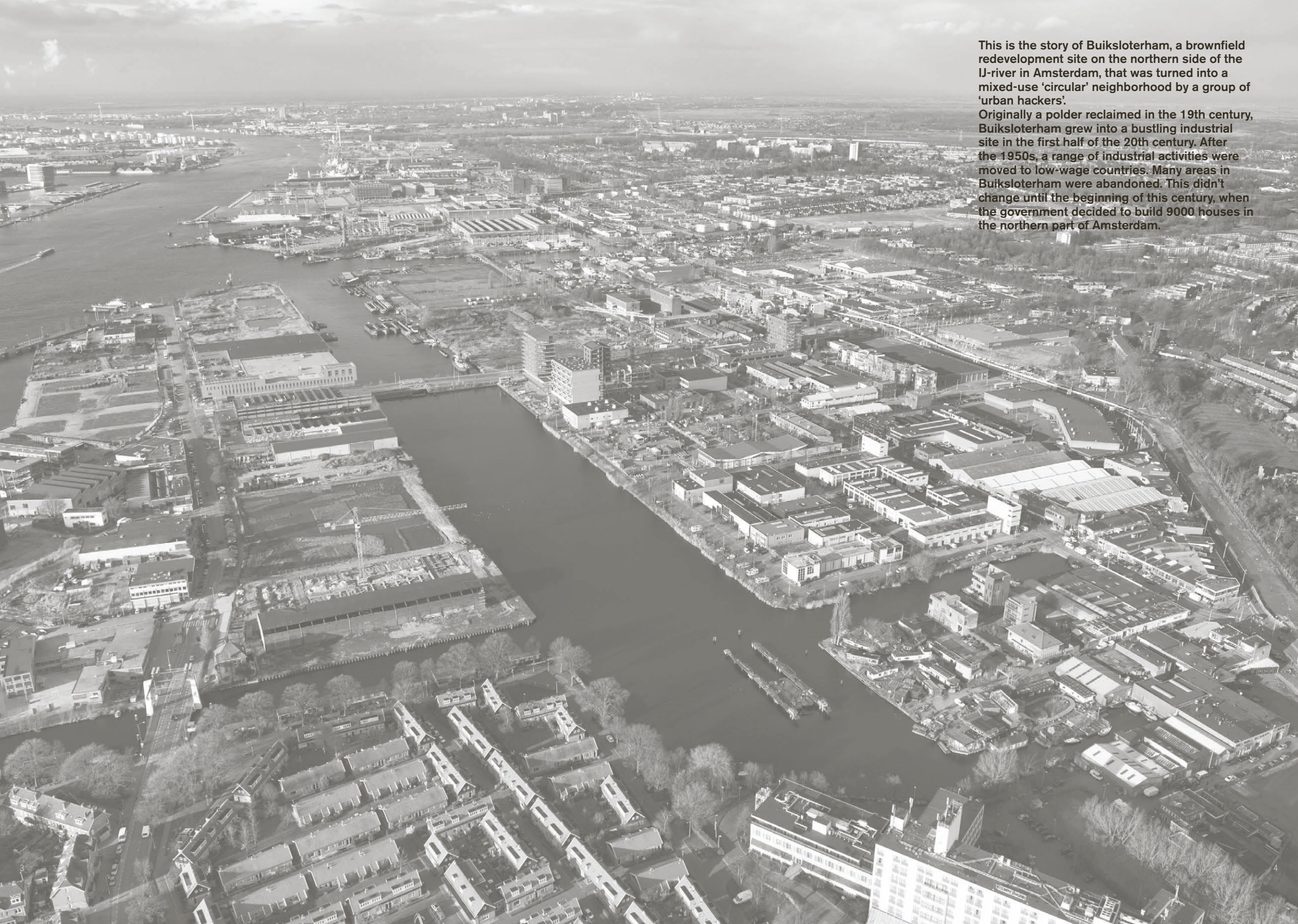
Finally, hacking is also an interesting metaphor because of the role that digital technologies play in many projects – not, usually, in a prominent way, but more as an almost mundane set of tools that enables these initiatives to get off the ground. Online platforms – varying from Facebook to 'home-grown' content management systems – have proved to be useful tools for collaboration, resource pooling, knowledge

sharing, crowdfunding, coordination of actions, community engagement, campaigning and so forth. Sensors and the use of (big) data have helped to map out the issues themselves as well as providing opportunities for intervention. The individual contribution and consumption of shared resources can be measured and rewarded, and administered through new locally coordinated mechanisms such as the blockchain. Digital media technologies, in other words, have made it possible for these collectives to organize their 'city hacks'. They offered new ways to effect social organization and economic exchange, as part of an emerging 'network society'.

Following these lines, our imaginary of the hackable city is intended to be productive in the debate about future cities in three ways. Firstly, the hackable city can be understood as a normative urban ideal centered on collaborative practices of citymaking; an ideal to strive for. Secondly, in order to strive towards such an ideal, a more systematic empirical understanding of collaborative citymaking practices is needed, including possible points of intervention. The hackable city can serve as a model with which to map, discuss and plan collaborative citymaking practices. And thirdly, the hacking metaphor also brings out a particular outlook on citymaking. It can be used as a reflexive lens with which to critically investigate our own ideal of citymaking. What new issues does the ideal of the hackable city bring up? For instance, to what extent are these examples of hackable citymaking inclusive, that is, representative of society at large, and how can they be legitimized in a democratic political system?

In a research project that followed the workshop, we started to further address these issues surrounding the hackable city. In a year-long research trajectory situated in the Amsterdam-based urban living-lab and brownfield redevelopment site of Buiksloterham, we further explored the opportunities as well as the challenges presented by the rise of new media technologies for an open, democratic, collaborative citymaking process. We explored these themes through observations and interviews with stakeholders, workshops, the introduction of a number of 'design probes', and by taking part in various local meetings about the development of the area.

Buiksloterham is particularly interesting for us, as its traditional development model had been severely hampered by the financial crisis of 2008, opening up opportunities for new players.



This is the story of Buiksloterham, a brownfield redevelopment site on the northern side of the IJ-river in Amsterdam, that was turned into a mixed-use 'circular' neighborhood by a group of 'urban hackers'.

Originally a polder reclaimed in the 19th century, Buiksloterham grew into a bustling industrial site in the first half of the 20th century. After the 1950s, a range of industrial activities were moved to low-wage countries. Many areas in Buiksloterham were abandoned. This didn't change until the beginning of this century, when the government decided to build 9000 houses in the northern part of Amsterdam.

With traditional developers pulling the plug on some of their projects or being unable to get the financing off the ground, 'self-builders' and collaborative building groups filled the gaps they left by starting to construct their own homes. One Architecture itself is active in this area, including by leading one of these collaborative building groups. Numerous actors in the area share the ambition to further develop the area collaboratively and in accordance with the principles of the circular economy. At various scales, actors are experimenting with new and innovative technologies and processes, with the aim of shaping the city in a resilient and sustainable manner.

This cahier will further discuss our imaginary of the hackable city as we have developed it since the initial workshop five years ago. In the first section we will explore its normative dimension: why would we want to strive for a hackable city? In the second section we will present our model of the hackable city that can be used to further analyze and understand examples of hackable citymaking. The model can also be used as a springboard for further discussions on the various challenges related to hackable citymaking.

In the subsequent *Cahier #2 Design Probes for the Hackable City in Amsterdam Buiksloterham* we introduce the design probes we have introduced in Buiksloterham and share the lessons learned from these experiments. In addition, *Cahier #3 The Hackable City International: lessons from Athens, Sao Paulo and Shenzhen* presents findings on related practices in city-making in these respective major cities. These cahiers will be followed by an edited academic volume in which researchers from various countries around the world analyze international examples of hackable citymaking in more detail.



However, due to the crisis, hardly any traditional parties were interested in developing this formerly industrial and heavily polluted site. This planning void left room for various sorts of urban pioneers. One lot was divided amongst a group of individual self-builders, another was appointed to six collaborative building groups.



One of the abandoned lots was that of the former ship wharf De Ceuve! Volharding. The municipality didn't know what to do with this abandoned brownfield. In a competition, they asked for ideas that were innovative as well as viable.



A group of landscape architects, architects, citymakers, and artists organized themselves as a collective to turn the site into a Cleantech Playground: a test zone for clean technologies that helps to transform the city from a large waste producer into a sustainable community with a circular economy. Old house boats were recycled into creative workspaces. The boats 'float' in a sea of plants that were selected for their capacity to purify the polluted soil.

The hackable city as an urban imaginary

Cities are not only built with bricks and mortar, steel and glass. They are simultaneously constructed through words and images, manifestos and visions, industry buzzwords and legal texts. It is our imagination of the future city, the good city, the just city, the garden city, the efficient city, the participatory city or the smart city that inspires or deters architects, project developers, policy makers, urban planners, investors and citizens alike, and as a result shapes the actual cities that are developed, built, made and lived in.⁴

These urban imaginaries embody normative ideals and practical scenarios to strive for, or alternatively dystopian visions to be avoided. They may include models, trajectories or road maps that more concretely lay out the way ahead. And they also act as metaphors or lenses that bring out particular aspects of those complex systems we call cities, framing the future city in a particular way: as a set of infrastructures to be managed as efficiently as possible; as a political community striving for equality and justice; as an economic system to produce growth; as a community of strangers that are able to live together despite their cultural differences; and so forth.

We propose the 'hackable city' as another such urban imaginary: a city in which new media technologies are employed to open up urban institutions and infrastructures, and to improve upon them in the public interest in acts of collaborative citymaking. This imaginary is based on a particular normative ideal of the city, a vision of cities as complex social, political, economic and cultural systems as well as open networks for experimentation and innovation.⁵

To start with the first, cities that perform well function as open social and cultural systems that provide citizens with a sense of belonging, a sense of responsibility for the common good, and the capacity to act on both private, collective and public issues. They have vibrant, inclusive public spaces, a strong civil society, political systems that respond to citizens' needs and focus on public values, and procedures of governance that are transparent and accountable. Processes of citymaking should in our vision strengthen place-based urban collectives, and provide citizens with a sense of 'ownership' of their cities. With this term we mean the degree to which citizens feel both connected to and responsible for shared issues, as well as capacitated (a sense of agency) to act upon them.⁶

Simultaneously, cities can be understood as systems for innovation. It is this capacity for innovation that could be extremely useful in the search for solutions to the serious problems, large and small, we are to address, contributing to the resilience of cities. To illustrate this point Hajer and Potjes refer to a study by Bulkeley and Căstan Broto. Their research showed that at the strategic level of urban policy, they found hardly any comprehensive plans to address climate problems. However, when they explored local initiatives in 100 cities across the world, they found 637 different experiments addressing the challenge. Cities would do well to foster these experiments, find ways to recognize the successful ones, and help them to become more successful.⁷ Such an approach matches Maarten Hajer's plea for an 'Energetic Society' as a model for urban governance. Hajer found that society is made up of numerous initiatives of citizens and businesses 'with an unprecedented reaction speed, learning ability and creativity' that strive for change. To address the challenges of our times, societies would do well to mobilize this energy.⁸

At the time of the workshop in which we first started to explore the imaginary of the hackable city we found that the principles of 'ownership' and 'resilience' were under pressure, as well as finding new openings to strengthen them. Firstly, the economic crisis showed that traditional routes of developer-led planning and development had not been very resilient at all. Due to a deadlock in its financial markets, housing production in The Netherlands had all but stalled by 2010, while overproduction in the boom years had led to more than 5 million square meters of vacant office space.⁹ The then Dutch National Architect ('*Rijksbouwmeester*'), Frits van Dongen, even claimed that The Netherlands no longer needed new buildings, but should start looking for a new building culture, focusing on the re-use of existing infrastructures.¹⁰ This radical statement could easily be related to wider criticisms of the dominant model of international investment fund-driven urban development. This approach leads all too easily to one-sided developments such as shiny office parks or houses developed for average up-market users, focused more on return on investment than on the creation of public value, for instance through the development of vibrant public spaces.¹¹ Moreover, citizens themselves usually have little or no 'ownership' of or control over such developments.



At workshops users learned to build clean technologies for the boats. While building together, a vivid community was created. Circularity became a tool for community building.

Through the imaginary of the hackable city we wanted to develop a more robust and resilient approach to the future of citymaking. As Bouw and Thoma have argued, top-down masterplan-driven planning is not well prepared to absorb the abrupt shocks of crisis situations, or even the dynamism of societal change, because of its 'inherent rigidity in scale and time.'¹² Instead, they argue that both urban development and the process of citymaking be organized in more adaptable and flexible ways. In his book *Veranderstad* Gert-Joost Peek makes a similar argument.¹³ In order to increase the capacity of social, economic and ecological systems to adapt to sudden stresses or gradual shifts in trends, it is imperative to involve local communities and their capacities for innovation and self-organization at the center of urban development. The imaginary of the hackable city brings this necessity to the fore, as it calls for citymaking as a collaborative process, carried out from the perspective of the public interest.

A second important development that played out at the beginning of this decade was the rise of the 'smart city' phenomenon. At that time, city municipalities worldwide had just started to embark on so-called 'smart city' policies, together with tech businesses and knowledge institutions. Their promise was a more efficient, safe, and orderly city, thanks to the application of digital technologies. Yet many of these efforts were criticized for their top-down technocratic understanding of the city.¹⁴ The explosive growth of online platforms in the last half decade, from Uber to Google Maps, from Facebook to WeChat, and from the Apple Appstore to Microsoft Azure, has not diminished our concerns. True, many of these make our lives more efficient and comfortable. But their architectures are closed, their algorithms opaque, and as they have started to take on a crucial role as urban and civic infrastructures, their lack of transparency and accountability may actually undermine the ownership we can exercise in practices of citymaking.

Take, for instance, the functioning of a GPS that at times can help us to circumnavigate traffic jams. This is a great feature, but it also leads to numerous questions. For instance, are other users receiving the same suggestions? Or are particular users being prioritized? And according to what principles does the system optimize its advice? Is it maximum time gain for particular individual drivers? Or is it to optimize traffic flows at large? Are particular streets shielded from use as alternative routes, perhaps because there's a school situated there, or because these streets already score badly on particle emission rates? And indeed, if such a system promised to make air pollution reduction a key principle in

its algorithms, how could we hold the operators accountable? Would we have access to the data produced by the system, in order to verify its claims? And to what extent could we influence these design decisions at the level of the algorithm? What if we would like to 'hack' the data produced by such a system for public value creation? Data on urban traffic could, for instance, be key in arguments about traffic regulations around schools and playgrounds. Perhaps even more problematically, to what extent do these 'smart technologies' that optimize existing mobility infrastructures actually undercut more fundamental political discussions about the *type* of mobility we want for our cities, and hence prevent systemic change from happening? Technological solutions then actually run counter to our notion of ownership.

These are important questions, as urban affairs are increasingly being organized through all kinds of digital platforms.¹⁵ These platforms typically operate as 'black boxes' whose mechanics are hidden to us. The lens of 'hacking' forces us to think through to what extent citizens can still open up these black boxes. How can we make their workings transparent, and make their operators accountable? And to what extent can citizens exert influence over their mechanisms, or appropriate them for other uses from a public interest perspective? In a hackable city, citizens, companies and governments should strive for systems that are transparent and accountable in relation to their contribution towards (or detrimental effect on) public values. Likewise, with the imaginary of the hackable city, we again want to focus our attention on questions of openness, citizen agency and ownership in an age of the datafication and platformization of urban life.

At the same time, we have also signaled a number of emerging counter-trends. As we have described, in The Netherlands as well as in other countries affected by the financial crisis, individual practitioners, design offices and self-appointed 'citymakers' have started to fill the gaps left open by stranded real estate developments, often with unsolicited interventions, organizing collectives of citizens around local issues. Meanwhile, debates on the smart city have been countered by a shift towards 'smart citizens'.¹⁶ A first wave of cooperative online platforms has sought to empower its users rather than merely optimizing urban infrastructures.¹⁷ Again, the hackable city highlights the potential of these initiatives to move towards more collaborative modes of citymaking that provide citizens with a sense of ownership and make cities more resilient.

So far, however, many of these initiatives have also seemed to operate on a hyperlocal level, often in isolation from each other and with little or no connection with institutional practices. As Dan Hill and Bryan Boyer have argued, they popped up but many of them have also popped down again. 'The reason they pop down,' Hill writes, 'is that they're too easy, not a true test, they rarely deliver systemic change. So the challenge with tactical urbanism is when and how it becomes strategic, or even whether it can.'¹⁸ Indeed, examples of these instances of 'tactical', 'responsive', 'recoded' or 'pop-up' urbanism have started to mushroom,¹⁹ but it has also become clear that if these are to be taken seriously as true alternatives, rather than just an intermezzo played out in the lulls of a financial crisis, new conceptual and institutional frameworks for design, financing, evaluation and governance are needed.

The hackable city is our invitation to collaboratively draft these frameworks. We ourselves have made a first step in this direction with the introduction of the hackable city model discussed in the next section. This model can be used to describe, analyze, and design for actual practices of hackable citymaking, and as such also lays bare the issues that need to be resolved as well as indicating directions for future research.

The large group of people involved caused an enormous exposure on social and traditional media. This buzz contributed to Buiksloterham becoming part of the mental map of the inhabitants of Amsterdam. Cafe de Ceuvel became a popular hangout; many international delegations started to visit the site. These acts of storytelling also started to attract many other pioneers to the area.



In our publication *The Hackable City: a Research Manifesto and Design Toolkit* we have further elaborated on a number of characteristics of hacker culture that could be applied to citymaking. From these movements – diverse as they are in their practices and underlying ideologies – we have taken three principles that are productive for thinking about a hackable city. The first is an *individual* approach of tinkering, learning by doing, and hands-on problem-solving, trying things out and scaling them up if they work. The second is a *networked* practice of peer-based learning, sharing and collaborating. The third is a collective *normative* focus on the creation of communal or public goods.²⁰

Learning by doing and experimentation

Hacking can be defined as a process of clever or playful appropriation of existing technologies or infrastructures, and bending the operation of a particular system beyond its intended purposes or restrictions to serve personal or communal goals. As we wrote in our manifesto, hackers can often be characterized by an attitude of finding an intrinsic pleasure in tinkering. They balance pragmatic problem-solving against curiosity-driven problem-seeking, and consider messiness as a potential strength rather than a threat. A hacker is both a *homo faber* and a *homo ludens*, with a playful and curious outlook on the world. They want to find out how stuff works by tinkering with it; not as engineers who design according to a carefully preconceived plan or blueprint, but in an improvising, find-out-as-you-go way. Being a hacker entails a slightly subversive attitude. Hackers do not accept defaults ('things as they are') but imaginatively enquire the space of potential ('what if...?').

In citymaking, we have seen a similar approach becoming more prominent. In their book *Tactical Urbanism*, Lydon and Garcia describe numerous examples of citizens, designers, architects and even city governments who simply tried out small and temporary interventions in the urban fabric to see whether they would be successful, rather than commissioning feasibility studies or grand masterplans. In these instances, playful appropriation is often used as a tactic to mobilize local stakeholders and potential users. For instance, a bike lane could be temporarily painted onto the tarmac surface of an urban road. To highlight such a temporary action and attract a crowd, festive events could be organized around it.

However, in most cases these 'hacks' are not meant to be short-term temporary solutions or playful events, but should be understood as test cases aimed towards more permanent and durable changes. If successful, the intention in many of these instances is to convince institutions to embrace the hack, and to use their legal and/or financial resources to implement a permanent improvement. This is why recording metrics of the consequences is often important in convincing stakeholders of the need for a more durable version of the interventions.²¹ A hackable city embraces experiments and temporary solutions to permanent problems. Finding the right indicators to record the performance of these hacks is an important aspect of these experiments. How can it be proved that these 'hacks' serve a broader public interest and deserve institutional support and/or further development?

Sharing, collaboration and the use of experience and expertise

A central principle running through most hacker cultures is the principle that 'information wants to be free', meaning that knowledge needs to be shared. This allows participants to learn from each other and to innovate using the knowledge or insights provided by others. Much open source software, for instance, is built upon these principles. Participants share the code they contribute to larger projects, and others can learn from this code by studying it. The open and modular architecture of these software packages allows participants to add their own modules or plug-ins and work in close collaboration with each other towards a common goal, but also to easily fork new projects and appropriate the existing work of others for their own needs.

As we noted in our manifesto, citymaking has embraced a related approach in which professionals have started to seek cooperation with citizens in open processes of co-creation, sharing various insights and forms of expertise. Examples include the rise of collaborative planning in which planners have started to use digital tools to gather input from stakeholders, and the use of games to engage various stakeholders in the process. In processes of 'open innovation' and 'living labs', procedures have arisen in which citizens can act as co-creators in the design of products or even their neighborhoods. Baccarne *et al.* describe these initiatives as evocative of a hacker ethic, as these living labs 'promote the idea that anyone is capable of performing a variety of tasks rather than relying on paid experts or specialists'.²²

The point is not that expert knowledge no longer has value, or that any amateur could take up any task. Rather, what these examples show is that citymaking can be a more inclusive process if various forms of expertise – from the technical to the mundane – can be brought together in a system of open innovation. And that lessons and procedures learned and established in one place can be the starting point for an intervention or action in another.



When traditional developers pulled away, due to the crisis, another Buiksloterham lot was repurposed for so-called self-builders. Individual citizens could buy their own plot of land and design and build their own houses. For the Netherlands that was a rather novel direction in urban development.



Many of the self-builders started to organize themselves to exchange knowledge and develop collective resources such as a local park.



As many of these first generation of self-builders had a background in architecture or design, many of the houses they built were experimental in character: they explored new building materials and construction methods, circular provisions for energy production and rainwater retention as well as new social arrangements.

City Lab emerged as a collective that organizes various residents and other players in local networks around waste, energy and public space: individuals experiment with new technologies and share their lessons with the collective. A remaining challenge is to find a business model for such collective organizations.



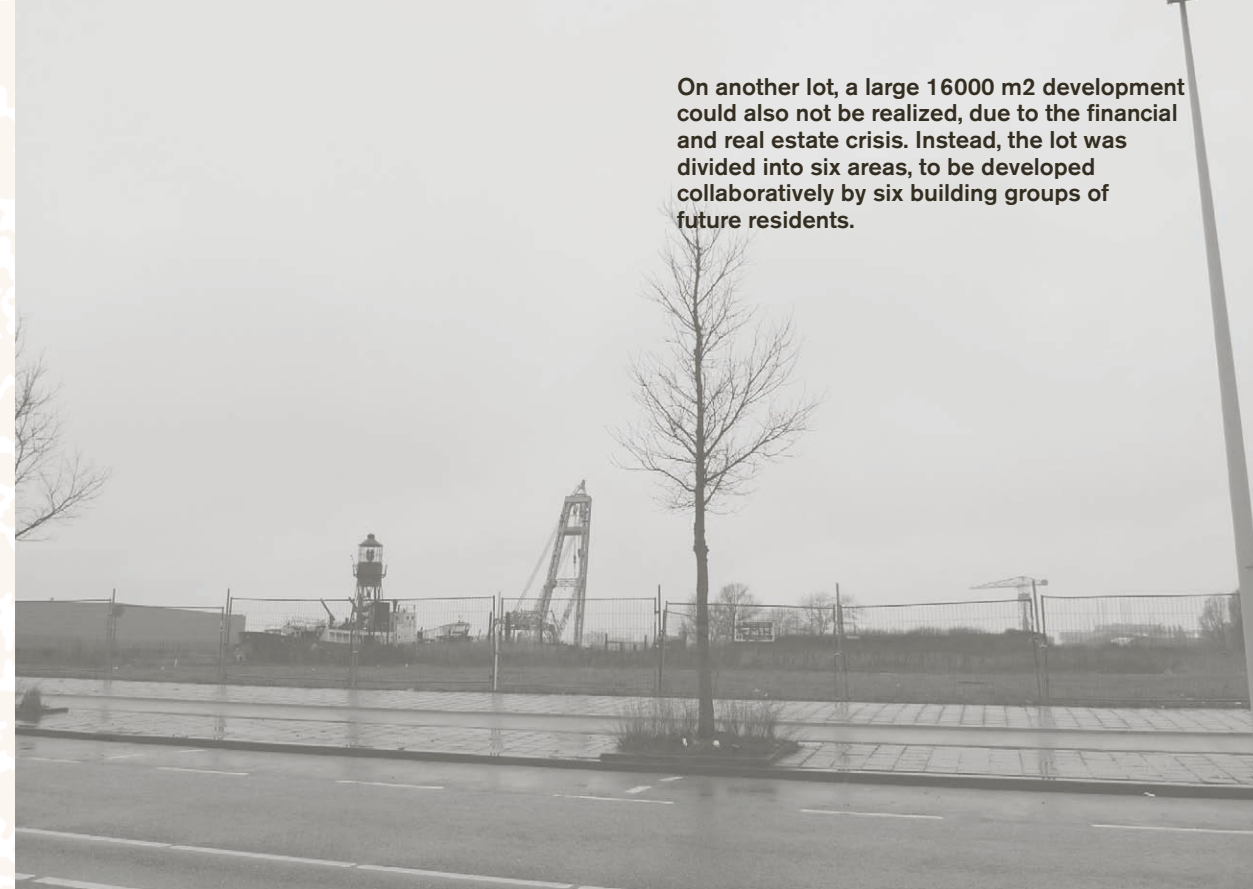
Working towards a common goal and public interests

Hacking cultures can take different forms. They can be rather individualistic, in which hacks are pursued to scratch a personal itch, or to gain an individual profit, sometimes even by illegal tactics or by breaking into computer systems. They can take on a contrarian or autonomous character, in which hackers establish their own systems as alternatives to dominant modes of production or governance that they may deem unfair, unjust or authoritarian. We are most interested here in instances of hacker cultures in which participants work together towards the common good and in support of public values.

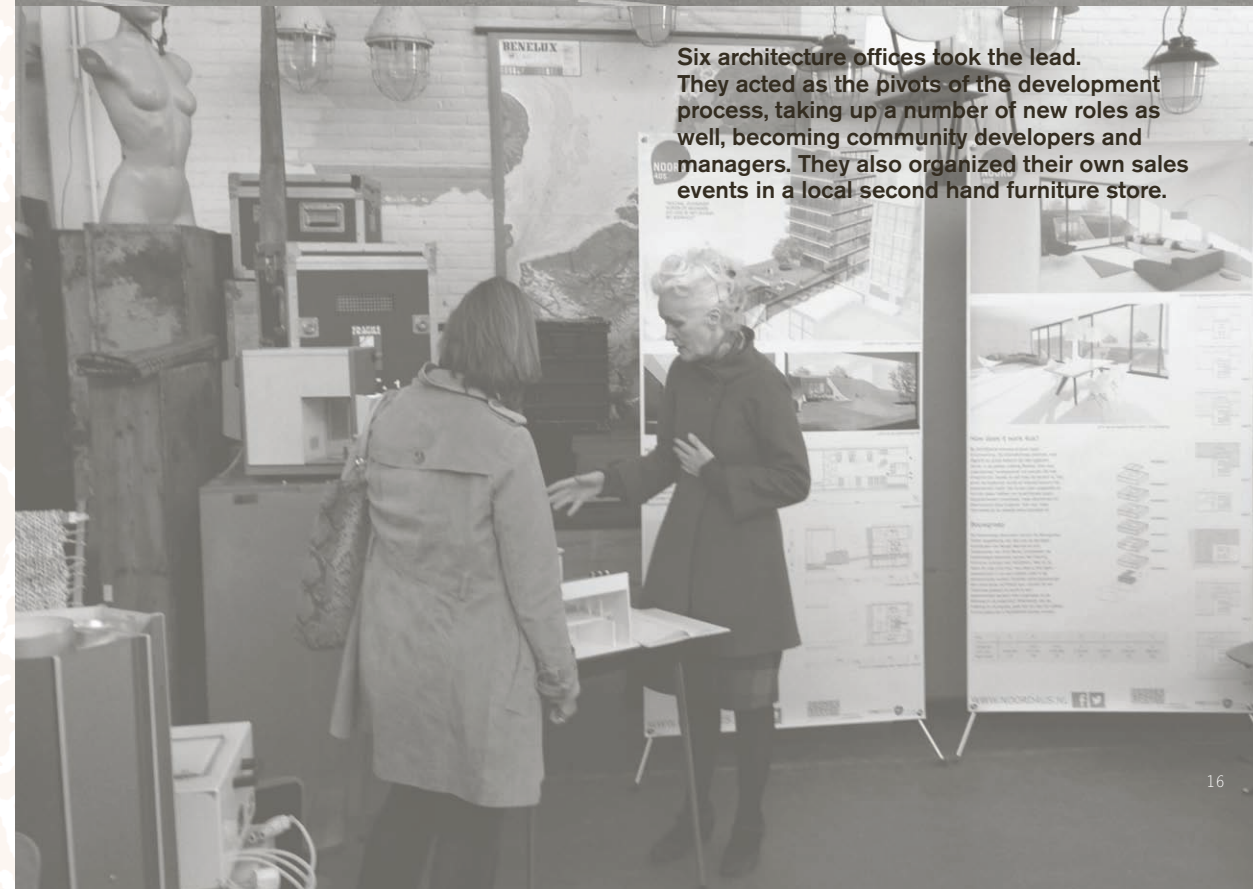
As we have argued in our manifesto, we would like to link this ethos to the model of the commons – the collective development and management of communal resources. The 'commons' in medieval feudal England was land that belonged to a manor but over which the inhabitants of the estate had certain rights, like collecting firewood, hunting, or maintaining pastures. Later the term was extended to include all resources to which a community has rights. These resources could be natural, as in the case of pastureland and access to water, or they could be technological resources, for example TV and radio frequencies. Interestingly, the word 'common' derives from the Norman word '*commun*', which itself has its roots in the Latin word '*munus*', which combines the meanings of 'gift' and 'duty', stemming from the social obligation of having to return a gift to the person that gave you one. The commons, then, is not just a collection of particular rights, but also an intricate social and economic system that demands collective responsibility for the commons as a whole and promotes stewardship to take care of communal resources.²³

On the one hand, communal knowledge can be seen as an 'information commons'. In his *Hacker Manifesto*, McKenzie Wark explicitly calls for the safeguarding of an information commons, a shared pool of resources free for all to use – and to contribute to.²⁴ At the same time, in citymaking there is an emerging interest in commons-based approaches to resource management, as alternatives for both state-led action as well as the commercial and extractive models of the market. In his *Compendium for the Civic Economy*, Joost Beunderman provides an overview of numerous initiatives that have started exploring new organization and business models to organize local communities around issues of public interest.²⁵ Similarly, British innovation foundation Nesta published an overview of similar initiatives called *Digital Social Innovation*. They see a Europe-wide rise of 'collaborative methods for financing, development and production, leading to services that are provided neither by the state nor by the market.'²⁶

On another lot, a large 16000 m2 development could also not be realized, due to the financial and real estate crisis. Instead, the lot was divided into six areas, to be developed collaboratively by six building groups of future residents.



Six architecture offices took the lead. They acted as the pivots of the development process, taking up a number of new roles as well, becoming community developers and managers. They also organized their own sales events in a local second hand furniture store.



The architects leading these collectives also organized numerous co-design sessions with prospective residents and with architects who signed up. They'd like to think of this process as 'hackathons' for housing. This collaboration led to a broad variety of housing types. A future challenge is to make these collaborative citymaking practices more inclusive overall.



Along the way, various building groups started collaborating amongst themselves. They ran a collective marketing campaign for the area and developed a joint Geothermal Heating Installation.



The hackable city as a model for collaborative citymaking

What do examples of collaborative citymaking look like in practice? To analyze and design hackable city projects and processes, we have developed a hackable city-model that clarifies the relations between various actors in practices of collaborative citymaking. This model can inform designers and policymakers as well as researchers. It is not meant as an explanatory model, but rather as a model to think with, and as such is open to further interpretation and to additions.²⁷

The main point we want to underline with our model is that 'bottom-up' and 'top-down' should not be regarded as two conflicting modes of citymaking. Nor are there just two actors involved: government and citizens. We have found it productive to bring out the level of 'collectives'.²⁸ This level consists of groups of citizens and other stakeholders who have organized themselves or are mobilized by a third party that acts on their behalf around a particular theme or issue. It is on the level of the collective that issues are framed, narratives built, agendas set, actions planned, and (sometimes) lobbies staged for institutional approval and resources.

Professionals often play a key role at the collective level as initiators and organizers. They have taken on new roles in the process of citymaking as intermediaries, 'community orchestrators' or 'urban curators'. In our mind this involvement doesn't disqualify these collectives as 'faux-bottom-up' or 'fake citizen initiatives'. On the contrary, professional involvement and the development of a sustainable value model at the collective level can be a key factor in the success of these initiatives.

Our model also shows that these collectives do not operate in a social or legal vacuum. They generally act within legal and democratic frameworks, and often make use of the resources or infrastructure provided by institutions such as local governments or housing corporations. Often, the goal is to 'hack' these infrastructures: to appropriate existing rules or regulations, and to extend or improve upon them.

This raises the issue of the representativeness and legitimacy of these collectives. Collectives will want to argue that their initiatives or 'hacks' are justified, for instance by claiming their 'rights to the city' or by outlining the public value they produce. Sometimes they will find themselves working in cooperation with these institutions; at other times they may oppose them. Other initiatives may choose to ignore such institutions as much as they can, preferring to build their collectives around alternative social or economic regimes.

From an institutional point of view, within a democratic system the claims of collectives can only be legitimized in a political process in which democratically elected politicians representing the citizenry at large set policy goals and weigh collective and public values against each other. Actors at the institutional level have the responsibility to ensure that hacks serve the public interest, and that essential public services remain inclusive for the public at large.



Hackable citymaking revolves around the organization of individuals into collectives, often through or with the aid of digital media platforms. Individuals contribute resources, such as knowledge, time, information or money, and at the same time reap some form of reward, be it social, economic or political, on an individual or communal level.

These collectives are often (though not always) initiated and managed by professionals who have started to broaden their fields of work. They are no longer 'just' designers, but have taken up the role of community organizers, fundraisers, storytellers, project developers, etc.

Collectives are propelled by collective narratives and agendas and need a value or business model to be sustainable over time.

The collectives act within legal and democratic frameworks. They often make use of the resources or infrastructures provided by the city at large. Often, the goal is to 'hack' these infrastructures: to appropriate, extend and improve upon them.

Hackable citymaking makes this relationship between collectives and institutions interactive. How can the city's governing and administrative institutions learn from these collectives' initiatives, and when they contribute to public value, adjust their frameworks accordingly? And how can institutions encourage collectives that underwrite the policy goals they have set?

The perspective of individuals: hacking as an ethos

Citizens play an important role in hackable citymaking. Many initiatives are started by citizens, and many projects revolve around the collaboration of citizens in practices of citymaking. In these projects, citizens contribute their skills, insights and resources. In return they can learn new skills, gain access to collective resources, gain social recognition, or receive financial rewards for their contributions.

It is usually a small core group of active citizens or professionals that propel hackable citymaking projects. They are supported by broader groups and networks who make up the larger collective on whose behalf the core group operates. The core group often includes citizens with professional backgrounds related to the theme itself (e.g. energy) or with a background in design, management or communication. These core organizers usually involve larger groups of citizens, and organize various activities to include them in the process, for instance through co-design sessions or other capacity-building activities. Both in our own research as well as in the literature we have seen many initiatives set up knowledge communities in the form of mailing lists, social media groups, wikis, or informal meet-ups. Similarly we have encountered various practices that contribute to capacity building, including co-creation sessions, workshops, design journeys, storytelling or role-playing. Persuasive or serious games can also play a role here.²⁹

Individual citizens can also be represented by these collectives. Some citizens may support a particular issue, but do not have the time, resources or energy to actually participate. For instance, a local energy collective may take the initiative to collaboratively develop a solar energy plant on the roof of a local school. Not all members need to actively participate in this process, as it will usually take quite an effort and specific technological, financial and legal skills to get the idea off the ground. Some aspects can be outsourced or taken on by a small group of initiators, backed with the (financial) support of a larger group of stakeholders.

The rise of these collaborative citymaking practices can be understood in relation to shifts in the perception of citizenship. As Peter Levine has argued, citizenship has traditionally taken shape through participation in mostly top-down-organized civil institutions such as unions and churches. These institutions 'enlisted' citizens in what communication scholar W. Lance Bennett has called 'dutified citizenship'. As a citizen or worker you were expected to become a member of a local church or union, and through social mores you could expect to be mobilized for their activities such as volunteering, protesting, etc.³⁰ In contemporary, individualized societies the calls of most of these institutions are no longer considered morally obligatory. Citizens still sign up for all kinds of collectives, but they have more control over which of these groups they choose to belong to, and are generally members of multiple social groups operating at different social and geographical levels. They have become, as Barry Wellman has called them, 'networked individuals',³¹ who organize themselves in 'networked publics'.³² As Dalton has described, this development embodies a shift in the ways people interpret the notion of citizenship, 'from a space of duty and virtue facilitated by traditional mechanisms of participation to a space of personal interest, care and self-actualization, facilitated by a multitude of media platforms'.³³ In Bennett's terms, 'dutified citizenship' increasingly becomes 'actualizing citizenship'. The collectives in our model can be understood as vehicles for this process of actualization: citizens and professionals organizing themselves around issues which they are intrinsically motivated to address. Many have pointed out that this form of organizing also makes it hard to maintain a sharp distinction between citizens and professionals, as in many cases citizens bring their professional knowledge and skills to their cause, or professionals engage laypeople actively in the process.³⁴

Simon Franke, Bart Lammers and Arnold Reijndorp have shown that many examples of collaborative citymaking can be understood in terms of such a framework of shifting citizenship. Many collectives, they argue, aim to recover ground that was lost in the privatization of the public domain. As such they can be considered a new addition to a civil society that is taking on a new shape. Civil society itself used to consist of collective activities aimed at emancipation or citizen empowerment in the fields of education, housing or health. Many of these organizations have since become privatized or have become less relevant. Many of the collectives in our model can be understood as new attempts to address these issues in the era of the networked society.³⁵

Taken together, and seen through our lens of hackable citymaking, we can frame these shifts as the emergence of a 'hacker ethos': an attitude that is fueled by do-it-yourself ethics and professional-amateurism in which citizens exchange knowledge – some bring in their professional skills, others their practical everyday life knowledge. They pool resources, exchange knowledge, and collaborate towards a commonly defined goal. These activities are further grounded in the motivation to do something 'for the love of it', and/or based on the sensing of an opportunity for public value creation, or a societal need in combination with a sense of responsibility towards an issue of communal concern. This 'hacker' ethos can manifest itself at individual and collective levels, and consists of a sense of agency or 'ownership' in relation to a particular issue.

Agency or Responsibilization?

The figure of the hacker invokes the image of someone who takes control. A hacker has 'agency'; they have the knowledge, time and other resources to bend things to their will and a certain mastery over the systems that they appropriate. As such, the hackable city foregrounds the notion that citizens can take matters into their hands and claim their rights to the city.

This idea seems to match with broader policy debates about the Big Society, or Participation Society, in which governments demand a more active role from citizens in the creation of public values. There are a number of arguments being made for the more active involvement of citizens in citymaking. From a social and political perspective, the activation of citizens in policymaking and execution would empower citizens, close the 'gap' between politics and citizens, and make citizens less dependent on state bureaucracies for the fulfillment of their goals. In addition it would open up societal perspectives to a wider set of goals, that correspond with an evermore pluralistic society.³⁶

However, this development also raises a number of issues. Firstly, who actually has the capacity to become such a hacker? What skills and resources are needed to become effective as a hacker? Some research suggests that the hacker perspective is mostly a privilege of higher educated and well-connected citizens. On the other hand, many of these initiatives do include broader constituencies and aim to contribute to public value creation by practices of co-design and capacity building.³⁷

Second, the notion of the hackable city opens the way for the further 'responsibilization' of citizens by their governments. Critics have pointed out that such notions as the 'participation society' have been engaged by governments in order to sidestep their own role as producers and managers of public values, offloading responsibility for these onto citizens. While we welcome the opportunities for citizens to become more active and to contribute towards innovations in society, we also see that this could easily lead to the disfranchisement of groups of those citizens who do not have the resources, skills, energy, time or connections to organize themselves.

For us, striving towards a hackable city means opening up the process of citymaking to contributions by local actors outside government, and allowing their 'energy' to contribute towards the creation of public values. However, this does not mean that the upkeep of crucial public services should be off-loaded to citizens and their collectives. Not everybody has the time, resources or interest to take part in local hacking initiatives. Local institutions need to ensure that the hackable city remains an inclusive city, and to guarantee the upkeep of a high-quality public infrastructure.

The perspective of collectives: hacking as a set of practices

Collaborative citymaking takes shape at the level of the collective. These collectives consist of networked groups of citizens and/or other stakeholders organized around an issue. At the level of the collective, narratives and agendas that propel the project are constructed. Action takes place at this level, and on behalf of the collective, negotiations with institutional parties are carried out. As such the collective could be understood as a new type of actor, or perhaps better defined as a set of roles that need to be coordinated in order to be effective.

These collectives exist in many forms. Many are started by groups of local citizens. As Mariska van den Berg found in her study of citymaking collectives in The Netherlands and Germany, once they have identified an opportunity or an urgent issue, these citizens simply start to organize themselves informally, generally without waiting for formal recognition or approval. Over time such a group can take on a more formal character, or develop into a legal body such as a foundation.

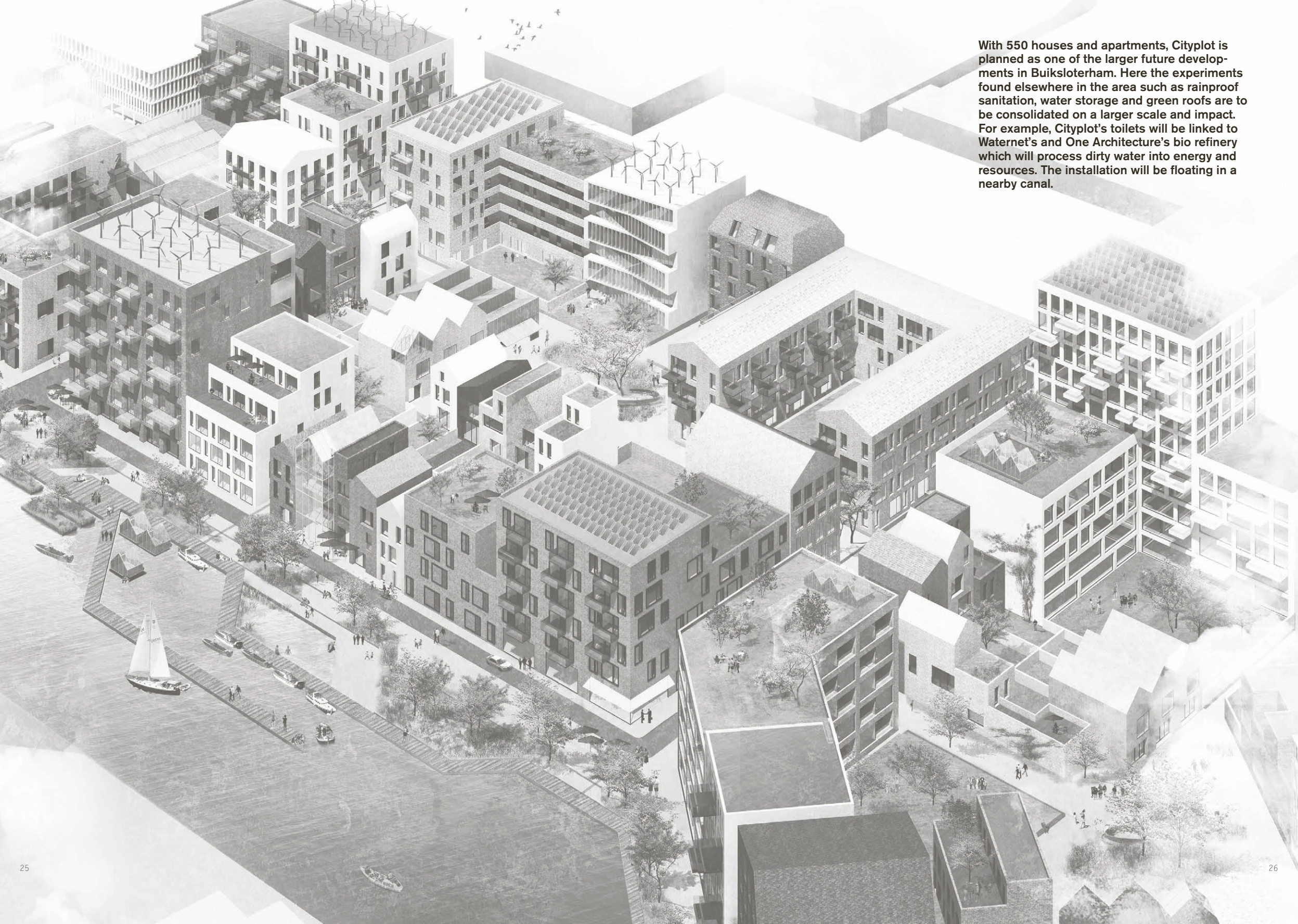
In many cases it is professionals such as designers, architects, or researchers who start a hackable city project. This corresponds to a shift in the practices of architects and designers that several authors have signaled. For these offices, design is about the identification of pressing urban issues and the organization of coalitions around these issues. Ole Bouman has named this shift the emergence of an 'unsolicited architecture'.³⁸ In many of these projects, architects and designers have started to include citizens and other stakeholders. In her book *Reactivate!* Indira van 't Klooster has shown how a series of young architectural offices have started to design new procedures of campaigning, crowd-sourcing and crowd-funding to approach citizens as co-creators.³⁹ According to Edwin Gardner, in such an approach, design practice is focused on programming rather than the design of the built environment. The work of these offices 'is almost always proactive and escapes the client-contractor relationship that has traditionally formed the basis of the design practice. They inhabit the overlapping space of the cultural entrepreneur, programmer and designer'.⁴⁰ Practitioners in this field have called themselves 'community orchestrators'⁴¹ or 'urban curators'.⁴² For instance, Saskia Beer, Sabrina Lindemann and Emilie Vlieger have described themselves as 'developers without property'. They see it as their role to explore the potential of urban transition areas, and to engage communities of local stakeholders around the opportunities they have collaboratively identified.

Design researchers Liesbeth Huybregts and her co-authors have argued that this shift is related to broader developments, especially the emergence of a so-called 'post-Fordist economy'. This term refers to the increasingly flexible and complex relations between various actors and spheres in contemporary society.⁴³ For instance, work is no longer organized mostly through hierarchical companies that offer jobs for life, with workers organizing themselves through unions to act in their interests. Citizens may hold a temporary contract; they may work through an agency; they may find employment as dependent contractors through online platforms; or they may act as freelance entrepreneurs in networks. They may work in an office, but also from home, or in a third place such as local café or co-working space. They will keep their skills updated through courses offered through various organizations, and organize (or fail to organize!) their pensions and health insurance through others. This means that the improvement of working conditions is no longer something that can be promoted simply through the actions of an institution such as a union that can set demands to an employer or to central government. Instead, specific coalitions need to be forged, bringing various stakeholders together around a specific issue in order to address it. In other words, in this vision, many of today's issues can only be addressed in collectives that are (temporarily) organized around issues.

Seen from the perspective of citizens or of the professionals orchestrating such collectives, we have identified a series of 'hackable citymaking' practices and roles. Overall, we have started to use the term 'dramaturgy' to describe the design of local settings and stories and the orchestration of events by which collective action is organized in time and place.⁴⁴ This concerns the design of a compelling and attractive setting that allows various stakeholders to come together and start collaborating and exchanging knowledge and resources in a meaningful way. It is about building a platform (whether online or offline) on which members of the collective can represent themselves and interact with each other.

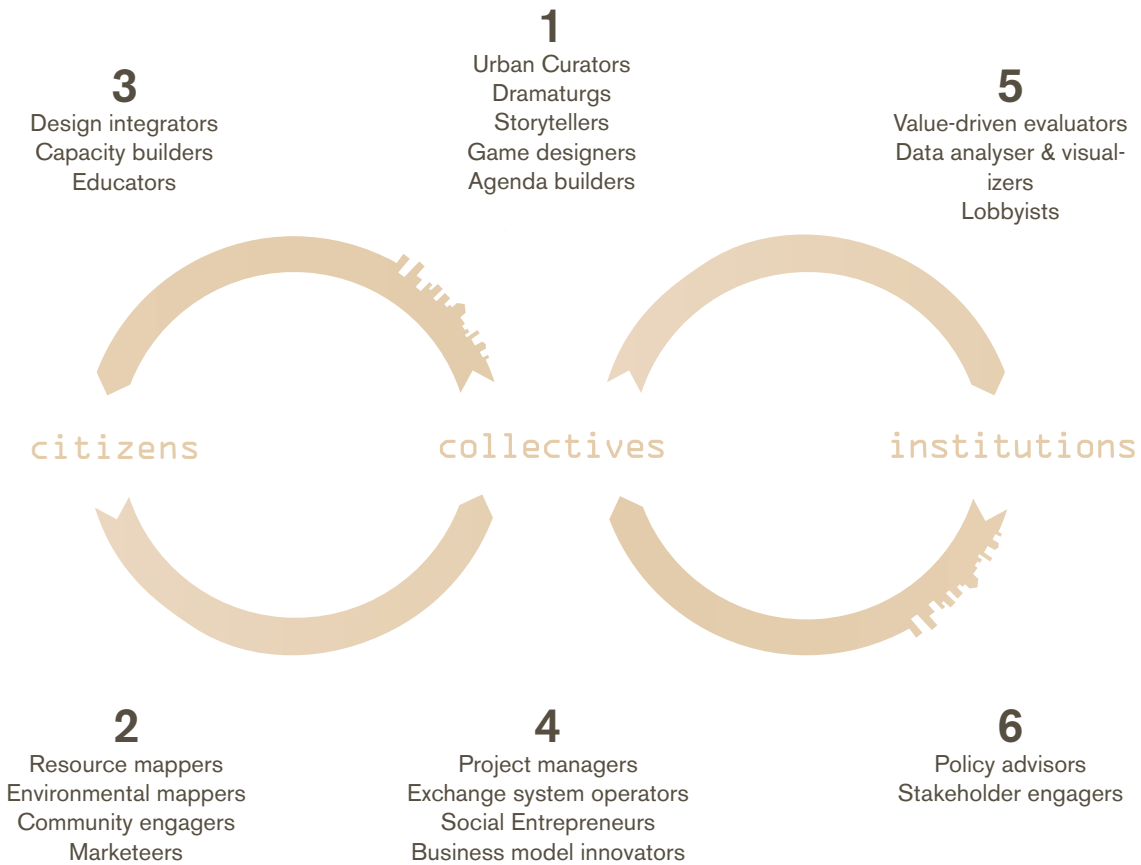
This network of building groups managed to build the same number of houses as in the original masterplan for this lot. They claim it is a more resilient way of development, as these building groups are more flexible and can adapt faster to changing demands.





With 550 houses and apartments, Cityplot is planned as one of the larger future developments in Buikslooterham. Here the experiments found elsewhere in the area such as rainproof sanitation, water storage and green roofs are to be consolidated on a larger scale and impact. For example, Cityplot's toilets will be linked to Waternet's and One Architecture's bio refinery which will process dirty water into energy and resources. The installation will be floating in a nearby canal.

Hackable Citymaking: new practices and roles for professionals



1

In hackable citymaking, we are seeing – first and foremost - a new dynamic emerging at the collective level. Each project starts with an attempt by an individual or a group of people to name and frame a particular issue. Some have called this role that of the ‘urban curator’ or ‘orchestrator’, a person or institution that identifies a theme and builds up and manages a process to address it in a collaborative manner. There are a number of important roles here. One is the role of ‘storyteller’, someone who can frame the issue in an engaging way, so that it becomes an urgent and attractive initiative for wider audiences to participate in as well as for other institutions to engage with. A related role is that of the ‘agenda-builder’: the development of a process in which citizens can come together to collaboratively assess the issue and translate it into a number of concrete action points. One way to do this, for instance, could be through the design of urban games. We have started to use the term ‘dramaturgy’ to describe the design of local settings and stories and the orchestration of events by which collective action is organized in time and place. This role concerns the design of a compelling and attractive setting that allows various stakeholders to come together and start collaborating and exchanging knowledge and resources in a meaningful way. It is about building a platform (whether online or offline) on which members of the collective can represent themselves and interact with each other.

2

A second set of roles concerns the activation and involvement of a broader set of participants, through marketing or community engagement. This includes the mapping and assessment of the current environment, potential resources, and skills.

4

In order to sustain a hackable city-intervention over time, it will be necessary to find a way to capture the values that are created, and to reward the contributions of participants and organizers, in monetary terms or otherwise. Projects need managers that can sustain them over time, and they usually need a business model to make this continuous management possible.

5

Hackable city-projects often seek to gain institutional support and recognition. In some cases they may even bend legal or other boundaries in order to improve local infrastructures. This means that their urgency and legitimacy needs to be explained to institutions, as well as being demonstrated by defining indicators and collecting both qualitative and quantitative evidence that a given hack is producing public value. From an institutional perspective, institutions can then incorporate the outcomes (e.g. new insights or knowledge) into their own operations, archives or collections.

3

A third set of roles concerns the transfer of expertise. In order for broader publics to meaningfully participate, it might be necessary to engage in capacity-building or in the education of potential participants. In a related approach, designers could insert their particular expertise into the development of a concerted action. Members of a collective could, for instance, be engaged in a particular dramaturgy to build a collaborative agenda for the development of their neighborhood; but they may not have the professional or technical skills to turn their vision into a concrete design.

6

From an institutional perspective, hackable city initiatives that do produce public value should be encouraged and facilitated. This means on the one hand that current regulations and other frameworks may need to be revised. On the other hand, institutions should also develop the tools needed to engage stakeholders with current policy goals. From an institutional perspective, institutions can provide expertise, knowledge and other resources.



Various 'dramaturgies' are staged in which Buiksloterham based collectives develop a vision and collaboratively build an agenda for the whole area.



Knowledge and local issues are discussed in various forums about the future of the city in Amsterdam, interacting with key institutional players such as the local government.

In the interaction with citizens and other individual stakeholders (on the left-hand side of the scheme), two main roles are of importance. The first is the activation of these parties around the theme and their inclusion in, for instance, trajectories of co-creation. The second is a role we have called 'design integration'. This is where professionals can contribute value by adding their specific domain and design expertise; for instance, by integrating ideas that have been brought into a co-creation trajectory in a design that is technologically sound and aesthetically interesting.

The right-hand side of our hackable city model scheme represents interactions between collectives and institutions. On the one hand, collectives will typically engage in activities such as lobbying and assembling evidence for the contributions they are making to the creation of public value. Many hackable city initiatives may engage in activities that aim to bring about a transition in society, for instance in the domain of renewable energy. However, their application may be in a legal grey area, or may even be illegal according to standing legislation. In that sense their activities can literally be understood as hacks: a temporary appropriation of a system beyond its intended use, with the goal of systematic change. This means that their urgency and legitimacy needs to be explained to institutions, as well as being demonstrated by defining indicators and collecting both qualitative and quantitative evidence that their hacks are producing public value. These consist of practices that Huybrechts *et al.* have called 'institutioning': collective activities take place in various forms of collaboration with, and in opposition to, existing institutional frameworks.⁴⁵ Neither the collectives nor these institutions are stable entities, and their purposes and logic may shift or be remade through these interactions. In the course of these interactions, the actions of collectives may actively change the institutions and their frameworks. It should however be noted that not all hackable city initiatives are particularly interested in maintaining relations with traditional institutions. Some of them present themselves as autonomous, and strive to build alternative economic and social models that are not compatible with dominant regimes.

Finally, these collectives need a value or business model in order to thrive. Various options are available: institutional subsidies in exchange for public value creation, crowd-funding, or the design of exchange platforms that administer contributions of various kinds as well as the consumption of collective resources. Some projects are just temporary 'hacks' and dissolve after a while.

Others would want to adopt a strategy of either 'formatizing' or 'formalizing'. 'Formatizing' means that they aim to translate the lessons learned into a 'format' or 'toolbox' that other organizations could apply to comparable situations in other localities. 'Formalizing' means that projects will try to find ways to sustain themselves over time by institutionalizing themselves, either as independent organizations or as spin-offs that could be adapted by an existing institution. Here, project initiators need to think of themselves as 'social' or 'civic entrepreneurs' who are inventing new business models around collective action; alternatively, institutions can make funding available to collectives that contribute to public value creation. Both directions have proved hard to get off the ground.⁴⁶

For hackable citymaking to be sustainable over time, new financial arrangements for the production of public value are clearly needed. How should civic hacks that contribute to public value be rewarded? If citizens or professionals take initiatives on behalf of a larger group of citizens, and in the interest of the public at large, can we devise new models to remunerate these efforts? A commons-based or public value approach to citymaking does not mean that everyone should work for free, and that there is no business model; rather, in a hackable city, reward systems and value models exist that foster contributions to public value and stimulate stewardship of the commons. The search for sustainable business models that produce both social and economic value is key to the instantiation of hackable citymaking.



Part of the struggle at Buiksloterham is the 'institutioning' of all these experiments. How can lessons learned be implemented elsewhere and scaled up?



A collective vision was formalized by the writing and signing of a Manifesto Circular Buiksloterham, in which institutional parties, Buiksloterham-based collectives and companies committed to a further circular development of Buiksloterham.

The institutional perspective: the 'hackability' of the city

Various institutions at national and local levels have – at least on paper – shown an interest in engaging with hackable citymaking collectives, and there are various ways to describe the perspectives of institutions. First of all, institutions can play a role as the initiators of collaborative citymaking projects. So far, most of our attention has been devoted to citizens – often also bringing in their professional backgrounds – who initiate collective projects. But there are also many examples of institutions that have themselves taken the initiative for collective action. Governments around the world have organized open calls around set issues that were opened up to collectives, and cultural institutions in particular have a long track record of organizing 'dramaturgies' that activate citizens in collectives around particular issues.⁴⁷ Likewise, institutions have always functioned as centers of expertise, with professional experts working as civil servants in various departments as well as in specialized institutions such as libraries, archives and institutes for education and research. The expertise and resources they have can be extremely useful in processes of hackable citymaking. Conversely, new opportunities have also emerged for these institutions to capture or further operationalize the knowledge produced in hackable citymaking collectives. When proven successful or urgent, particular collective initiatives can also be incorporated into institutional frameworks.

Over the last few years a number of actors have set out to construct visions and frameworks that allow the further theorization or shaping of the interaction between traditional institutions and the more volatile, informal, interdisciplinary network-shaped field of collectives we have described here.⁴⁸ How can these two fields, each with its own logic, formal responsibilities, rules and ways of doing and thinking, be better aligned? How could collectives play a more active role in public value creation, and how could traditional institutions become more responsive to them?

The frameworks of the 'energetic society' and the 'spontaneous city', for instance, have explored this direction, arguing for a local or national government that sets the larger policy frameworks, for instance working towards an energy transition. To realize this agenda it is argued, it should make use of the 'energy' found in the various collectives already dealing with this theme, and provide frameworks and resources for them to contribute to these goals.⁴⁹ Likewise, in a 'spontaneous city' urban areas should be developed 'spontaneously', where again the government sets up the overall frameworks while various collectives play a role in the actual development of a neighborhood.⁵⁰

In our scheme, this means that governments should set out a vision and translate that vision into infrastructures and frameworks that invite and enable collectives to operate on them. This vision identifies a strong role for national and local institutions as the actors that define societal visions and establish which public values should be put on the agenda. Similarly, these institutions should develop tools to closely monitor and understand the goals, directions and values at stake in the collectives, and use these tools to inform visions, their translation into policies, and the execution of policy frameworks. A more participatory society in this vision does not necessarily mean a government that retreats, but rather one that redefines its role in relation to other societal actors.

A related vision is found in *The Responsive City*. In this book, Goldsmith and Crawford argue that governments need to change the ways they work. The authors challenge them to start making use of digital media and data technologies to become more responsive to the needs of society. For example, governments could make use of all kinds of data to monitor citizens' collectives and anticipate or capitalize on their efforts if they match up with policy goals. Such an approach, the authors claim, could help to bring about an institutional shift away from compliance and towards a focus on results, giving civic servants leeway to deviate from standard procedures when an argument could be made that a particular intervention would contribute to public value creation or to the realization of policy goals. Governments themselves could also build tools and platforms that allowed citizens and collectives to interact with them in new ways. Governments could also make available various resources that collectives could use in their own projects. The provision of open data could be an example of this, although the authors argue that simply making data available is usually not enough. Data needs to be offered in ways that make it understandable and actionable.⁵¹

To a large extent, a hackable city perspective is congruent with these two views.⁵² It calls for legitimate institutions to develop a vision for the city or nation at large, and to open up the formation and realization of these visions to hackable citymaking collectives. On the one hand the activities of these collectives can inform policy; on the other, institutions should use these frameworks to support the activities of the collectives.

In turn, numerous events and workshops have been organized. Their aim was to translate the collective ambitions set in the manifesto into concrete strategies for actors on the ground.

DOORBRAAK

ROUCLAIRE STADSWYK BUNKSLOTERHAN
pensioenfonds

HOOFDPRINCIPE pensioen!

✓ FEEDBACK SYSTEEM VOOR [LE]

↳ POSITIEF ⇒ DIRECT BELONEN (ZONEL FINANCIËEL)
↳ NEGATIEF (SOCIALE WAARDEN)

✓ TRANSPARANT: ALS DIT... DAN...

IN (PROCES) STAPPEN

1. GEZAMENLIJK WERKEN AAN
FEEDBACK SYSTEEM

2. OPSTELLEN MANIFEST WYK

↳ VIA COOP MET

↳ MEER PARTIJEN BY COOP

C ⇒ HACK THE CITY = ICT

3. BENEDELEN CONCRETE ACTIES NIVEAU'S

a - DYNAMISCHE RELATIE 2 NIVEAU'S

b - LOCAL CURRENCY

↳ INDIVIDUEEL

↳ WYKNIVEAU (BU STUURING
WUURSTUUR)

3. CONCRETE ONDERZOEKEN

↳ WATER BELASTING
↳ CATEGORIEËN

4. CONCRETE FEEDBACKS
GEZAMENLIJK IN BRENGEN
IN BU SIMCITIE

⇒ EN DAAR WYK SYSTEEM
VAN MAKEN (BU PUNTEN SYSTEEM
↳ BUNKSLOTERHANMUTUES
(BAMMETJES))

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In practice, the transition to such a hackable city model has proven difficult. One of the reasons for this is that institutions and collectives do not always share the same agenda. In their rhetoric surrounding participatory societies, institutions at times express a vision that revolves around activating citizens to carry out their policy goals, or to take over some of their tasks. The real-world dynamic between citizens and institutions is clearly more complicated than this. As we have explained above, citizens do not necessarily act out of a sense of duty, but rather from an intrinsic motivation. This means that citizens are not always interested in taking over the goals and tasks set out by local institutions. Rather, they are looking for ways in which local institutions can help them to realize their own goals.⁵³

Another issue is the mismatch between the logic of institutions and the modes of operation of collectives. Many civic initiatives spring from what we have called a 'hacker's ethos'. They just start to address the issues they care about in a DIY approach, and are not very interested in engaging in extensive procurement processes.⁵⁴ Governments often find it difficult to deal with the open-ended approach of many hackable city initiatives. Governments are also looking for processes that are risk-averse, with steady and predictable outcomes. There is an obvious rationale for this: governments need to protect their citizens and act as reliable partners. However, the learning-by-doing approach of hackable citymaking is not a good match with the formal working methods of many institutions. This is why Goldsmith and Crawford argue that procurement procedures need to change. Rather than the high level of detail required in current calls that narrowly describe all facets of a particular product or process, governments should state the desired outcomes and leave the exact execution process more open.⁵⁵

Research by Joost Beunderman has also shown that regulation around the Big Society ideal in the United Kingdom has not produced many opportunities for hackable citymaking collectives. Opportunities such as the Right to Challenge or the Right to Bid – regulations that in theory allow citizen groups to challenge or bid on government provisions and propose alternative models for the organization of public services – have mainly been seized by private outsourcing companies rather than civic initiatives. One of the reasons for this is that governments find it easier to deal with large subcontractors rather than with a broad variety of local initiatives.

In a similar vein, Mariska van den Berg has shown that the instruments that governments do possess seem to be poorly adjusted to collectives. Firstly, many of these collectives get their finances from funding in arts, culture and design. Budget cuts in these domains make it harder for professionals to apply for this form of funding to sustain hackable citymaking practices. At the same time, the funding that is available for community projects is often targeted at hyperlocal short-term interventions such as the organization of neighborhood barbecues.⁵⁷ It would appear that governments have so far not fully recognized collectives as a new type of actor. Once professionals are involved, however, these initiatives are no longer considered as being 'bottom-up'. What is needed here, according to Van den Berg, is a new approach that could be called 'public-collective partnerships'. Local governments should recognize collectives for their innovative capacity and potential to create public value, and look for new ways to engage them.

Looking at these issues at the institutional level through our lens of the hackable city, the notion of 'hackability' is a useful one. Whereas a hacker's ethos and praxis describe the will, capacity and actual activities through which various actors have engaged in examples of collaborative citymaking, the notion of 'hackability' shifts attention to the system that is to be hacked. To what extent are local institutions, their procedures and informal ways of operating, welcoming or even inviting to contributions from (citizen's) collectives? Cities can be ecosystems for innovation, yet the extent to which this potential is actually realized is partly influenced by institutional policy. City governments may or may not set all kinds of legal rules that either facilitate or prohibit the appropriation of urban infrastructures. Is it possible to experiment with alternative energy systems at a collective level? Is this encouraged through policies and/or resources? Or is it actually very difficult to navigate the legal procedures that protect established order? In effect, as our evaluation above shows, institutions need to find new ways to interact with the open-ended 'messiness' of hackable city initiatives in a process of continual exchange, yet at the same time they need to safeguard public values. This has so far proven a difficult proposition. Although there is no lack of vision on how to make cities more 'hackable' and on why it might be important to do so, there is still little experience or knowledge about how exactly this could be achieved.⁵⁸ As we have seen, to embrace the ideal of the hackable city, much more experimenting and learning is needed at the institutional level and at the interface between the institutional and the collective levels.

Collective vs. Public Values

Hacking has so far been defined as a positive quality, as an ethic and a set of practices that inspire actors to collaborate towards commonly established goals. In reality, of course, cities are sites of contestation. Existing power relations do not suddenly disappear with the emergence of collaborative digital media platforms or new planning paradigms. Different groups of citizens may have different preferences or economic interests. Conflicts may arise between the public interest at large and the interests of smaller groups of citizens.

In other words, a hackable city assumes a form of (civic) empowerment, giving agency to the public to take initiative upon issues of their concern, but at the same time it raises the question of legitimacy. How do new opportunities for self-organization compare to institutional practices of democratic decision-making? In the framework of a hackable city, who ensures that the purposes of a self-organized group will not overshadow the interests of the general public? Despite the charm of people joining forces to initiate change in their own environments, we must not forget that these are also unsolicited actions that may be undemocratic, or may even undermine public values or services.

For example, let us suppose that a group of citizens organize themselves in order to produce their own local energy grid. While in itself this could be a positive development, contributing to the development of a more sustainable energy provision for the city, it also raises questions about infrastructure provision at the city level. At what point would the proliferation of such collective grids make the upkeep of a public grid too expensive to maintain? And could that mean that only well-organized groups of civic hackers would be serviced by future urban infrastructures?

This means that hackable citymaking does not come in lieu of traditional democratic processes; neither will it form an easy replacement of government tasks by citizens. Whereas the invocation of a hacker ethos may focus attention on the design and regulation of collaborative practices and platforms that would allow individuals to organize themselves as collectives around communal issues of interest, at the same time these practices somehow need to be embedded in institutional frameworks that can safeguard public interests.

All this could mean, perhaps counterintuitively, that in a hackable city the process of citymaking should not be left to hackers alone. Procedures of institutional democratic governance may even become *more* important, not less. When space is made for hacking initiatives, institutions that are able to legitimately determine and uphold the public interest will have to play a central role. On the one hand, they will have to make sure that the city remains an open system, and safeguard (or even promote) its hackability. At the same time, these institutions are well-positioned with the legitimacy to safeguard inclusiveness and public interest in the hackable city.

Conclusion

In this series of cahiers we introduce the 'hackable city' as an urban imaginary that could guide both citymaking practices and policy development towards more collaborative processes of urban planning, with the goal of making cities more resilient and providing citizens with a sense of ownership of their surroundings.

Our vision of the hackable city builds upon a number of emerging practices of collaborative citymaking found in cities around the world. In line with these initiatives, it has found inspiration in a broad variety of online hacker cultures that can be characterized by the often playful and sometimes subversive appropriation of technologies in an iterative process, where participants often collaborate towards a common good, and in an open process in which knowledge is shared and participants continuously learn from one another.

To further develop and institutionalize the hackable city perspective we need new conceptual frameworks for design, financing, evaluation and governance, as well as a broader debate on the principles of such an approach. Our hackable city research project should be understood as a contribution to that debate. Our model highlights the role of collectives in processes of collaborative citymaking, and has made a start at defining numerous roles to be fulfilled in the process. Urban curators often play a seminal role in these processes as persons or organizations that frame issues and stage a dramaturgy for engaging citizens and institutions in a collaborative process. Recognizing this particular role is a first step in opening up the frameworks of the city for hackable city initiatives.

Yet, opening up infrastructures for 'civic hacks' is only one aspect of the hackable city approach. Striving towards a hackable city means searching for a new set of processes that interface between the level of collectives and those institutions that have the legitimacy to weigh collective values against public ones. Collectives have to define indicators and gain evidence of their contributions to public values; institutions have to find ways to incorporate those findings into their frameworks. This process of mutual exchange itself needs to be redefined, and to become less formalized, so that institutions can become more responsive towards collective action. Can they find new ways to embrace the everyday, open-ended 'messiness' of collective action and respond to it in more effective ways, in a continuous process of exchange?

In our one-year research trajectory we have come to a first version of a hackable city model, experimenting with various 'design probes' in the Amsterdam neighborhood of Buiksloterham, and we have explored a number of international citymaking initiatives. The model we have established can help in setting up hackable city initiatives or develop policy. It can be used to lay out particular roles and think through specific conditions for new projects. Similarly, we encourage policymakers to adopt our model in order to further think through how they could reshape their relations with collectives. In fact, in the spirit of iterative development, mutual learning, and the exchange of knowledge, we invite everyone to take up our model, appropriate it, take it apart and build new plugins or extensions to it. There is much still to be discovered in terms of developing specific strategies, business models, and policy frameworks in each of the fields laid out in our model. We look forward to hearing from you!

¹ For a first exploration of these themes by us, see Martijn de Waal and Michiel de Lange, *Klik. Like. Share. Hoe Digitale Media de Publieke Ruimte Veranderen* (Amsterdam; Haarlem: The Mobile City; Trancity, 2014).

² Simon Franke, Bart Lammers and Arnold Reijndorp, 'De (Her)ontdekking van de Publieke Zaak', in *Het Nieuwe Stadmaken. Van Gedreven Pionieren Naar Gelijk Speelveld.*, ed. by Simon Franke, Jeroen Niemans, and Frans Soeterbroek (Haarlem; Amsterdam: Trancity; Valiz, 2015), pp. 43-58.

³ For more on the resemblance between hacking and citymaking practices, see amongst others Edwin Gardner, 'Hack the City!', *Amateur Cities*, 12 October 2015 <<http://amateurcities.com/hack-the-city/>>; Anthony Townsend, *Smart Cities: Big Data, Civic Hackers and the Quest for a New Utopia* (New York: W.W. Norton & Company, 2013); Glenda Amayo Caldwell and Marcus Foth, 'DIY Media Architecture: Open and Participatory Approaches to Community Engagement', *Proceedings of the 2014 Media Architecture Biennale, 2014* <<http://dx.doi.org/10.1145/2682884.2682893>>; Michiel de Lange and Martijn De Waal, 'Owning the City: New Media and Citizen Engagement in Urban Design', *First Monday*, Special issue 'Media & the City', 18.11 (2013) <<http://dx.doi.org/doi:10.5210/fm.v18i11>>.

⁴ For more on urban imaginaries, see Martijn de Waal, 'The Ideas and Ideals in Urban Media', in *From Social Butterfly to Engaged Citizen: Urban Informatics, Social Media, Ubiquitous Computing, and Mobile Technology to Support Citizen Engagement*, ed. by Marcus Foth and others (Cambridge, MA: MIT Press, 2011); Maarten Hajer, *De Macht van Verbeelding* (Utrecht: Utrecht University, 2017).

⁵ See for instance Maarten Hajer and Ton Dassen, *Smart about Cities: Visualising the Challenge for 21st Century Urbanism*. (Rotterdam: Nai10 Publishers, 2014).

⁶ De Lange and de Waal.

⁷ Example taken from Suzanne Potjer and Maarten Hajer, *Learning with Cities, Learning for Cities. The Golden Opportunity of the Urban Agenda for the EU* (Utrecht: Urban Futures Studio, 2017).

⁸ M Hajer, *The Energetic Society. In Search of a Governance Philosophy for a Clean Economy*, PBL Nether (Den Haag, 2011). <<http://dx.doi.org/10.1177/1745691612459060>>.

⁹ <http://www.pbl.nl/infographic/leegstand-van-kantoren#gmnr=0&year=2017&type=kantoren>

¹⁰ <https://nos.nl/artikel/553608-rijksbouwmeester-wil-bouwstop.html>

¹¹ For a broader analysis of these critiques, see for instance Gert-Joost Peek, *Veranderstad. Stedelijke Gebiedsontwikkeling in Transitie* (Rotterdam: Rotterdam Hogeschool Uitgeverij, 2015).

¹² Matthijs Bouw and Despo Toma, 'Economic Resilience through Community-Driven (Real Estate) Development in Amsterdam-Noord', in *The Hackable City.*, ed. by Michiel de Lange and Martijn de Waal (Singapore: Springer, 2018).

¹³ Peek.

¹⁴ See for instance A. Greenfield, *Against the Smart City* (New York: Do projects, 2013); Robert G. Hollands, 'Will the Real Smart City Please Stand Up?', *City*, 12.3 (2008), pp. 303-20 <<http://dx.doi.org/10.1080/13604810802479126>>; Robert G. Hollands, 'Critical Interventions into the Corporate Smart City', *Cambridge Journal of Regions, Economy and Society*, 8.1 (2015), pp. 61-77 <<http://dx.doi.org/10.1093/cjres/rsu011>>; de Lange and de Waal.

¹⁵ José van Dijk, Thomas Poell and Martijn de Waal, *De Platformsamenleving. Strijd Om Publieke Waarden in Een Online Wereld*. (Amsterdam: Amsterdam University Press, 2016).

¹⁶ For more on smart citizens, see Drew Hemment and Anthony Townsend, *Smart Citizens* (Manchester: FutureEverything Publications, 2013).

¹⁷ Trebor Scholz, *Platform Cooperativism. Challenging the Corporate Sharing Economy* (New York: Rosa Luxemburg Stiftung, 2016).

¹⁸ Dan Hill, 'The Social and the Democratic, in the Social Democratic European City.', in *Medium.com*, 23 May 2016 <<https://medium.com/dark-matter-and-trojan-horses/the-social-and-the-democratic-in-social-democratic-european-cities-31e0bc169b0b>>.

¹⁹ Mike Lydon and Anthony Garcia, *Tactical Urbanism: Short-Term Action for Long-Term Change* (Washington,

D.C.: Island Press, 2015); Jeroen Beekmans and Joop de Boer, *Pop-up City: City-Making in a Fluid World* (Amsterdam: BIS, 2014); Susan Crawford and Stephen Goldsmith, *The Responsive City: Engaging Communities Through Data-Smart Governance* (San Francisco: Jossey-Bass, 2014); Thomas Ermacora and Lucy Bullivant, *Recorded City: Co-Creating Urban Futures* (Abingdon, Oxon ; New York: Routledge, 2016).

²⁰ Ampatzidou, Cristina, et al. *The Hackable City: A Research Manifesto and Design Toolkit*. Amsterdam Creative Industries Network, 2014.

²¹ Lydon, Mike, and Anthony Garcia. *Tactical Urbanism: Short-Term Action for Long-Term Change*. Island Press, 2015.

²² Dimitri Schuurman and others, 'Living Labs as Quasi-Experiments: Results from the Flemish LeYLab', *Proceedings of the XXIV ISPII Conference - Innovating in Global Markets: Challenges for Sustainable Growth, 2013*. (Baccarne, Mechant, Schuurma, De Marez, & Colpaert, 2014).

²³ Sheila Foster and Christian Iaione, 'The City as a Commons', in *Yale Law & Policy Review*, 34.2 (2016), pp. 281-349 <<http://dx.doi.org/10.1300/J452v06n01>>.

²⁴ McKenzie Wark, *A Hacker Manifesto* (Cambridge: Harvard University Press, 2004).

²⁵ 00:/ (Architectural Practice), *Compendium for the Civic Economy: What Our Cities, Towns and Neighbourhoods Should Learn from 25 Trailblazers* (London: Trancity Valiz, 2012).

²⁶ Francesca Bria, *Growing a Digital Social Innovation Ecosystem for Europe. DS1 Final* (Bruxelles, 2015) <<http://dx.doi.org/10.2759/448169>>.

²⁷ This heuristic model was constructed in a 'grounded theory' approach, that is: we combined literature study, empirical observations in and outside Amsterdam, the discussions around the design probes we introduced in Buiksloterham, and conceptual reflections.

²⁸ Alternatively, these could be named 'publics', 'communities' or 'assemblages'.

²⁹ Mariska van den Berg, *Stedelingen Veranderen de Stad. Over Nieuwe Collectieve Publiek Domein En Transitie*. (Amsterdam, Haarlem: Trancity; Valiz, 2013); Cristina Ampatzidou and others, *The Hackable City: A Research Manifesto and Design Toolkit* (Amsterdam: Amsterdam Creative Industries Network, 2014).

³⁰ Peter Levine, 'Democracy in the Digital Age', in *Civic Media. Technology | Design | Practice*, ed. by Eric Gordon and Paul Mihailidis (Cambridge: The MIT Press, 2016).

³¹ Barry Wellman and others, 'The Social Affordances of the Internet for Networked Individualism', *Journal of Computer-Mediated Communication*, 8.3 (2003).

³² Kazys Varnelis, *Networked Publics* (Cambridge, Mass.: The MIT Press, 2008).

³³ R.J. Dalton, *The Good Citizen: How a Younger Generation Is Reshaping American Politics* (Washington, D.C.: CQ Press, 2008).

³⁴ Harry C Boyte and Eric Fretz, 'Civic Professionalism', *Journal of Higher Education Outreach and Engagement*, 14.2010 (2010), pp. 67-90.

³⁵ Franke, Lammers and Reijndorp.

³⁶ Beitske Boonstra and Luuk Boelens, 'Self-Organization in Urban Development: Towards a New Perspective on Spatial Planning', *Urban Research & Practice*, 4.2 (2011), pp. 99-122 <<http://dx.doi.org/10.1080/17535069.2011.579767>>.

³⁷ Evelien Tonkens and others, *Montessori-Democratie. Spanningen Tussen Burgerparticipatie En de Lokale Politiek* (Amsterdam: Amsterdam University Press, 2015); Van den Berg.

³⁸ Ole Bouman, 'Unsolicited, or: The New Autonomy of Architecture', *Volume*, 14.26 (2008).

³⁹ Indira van 't. Klooster, *Reactivate!: Vernieuwers van de Nederlandse Architectuur* (Amsterdam: trancity valiz, 2013).

⁴⁰ Gardner.

⁴¹ Mara Balestrini and others, 'A City in Common', in *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems - CHI '17*, 2017, pp. 2282-94 <<http://dx.doi.org/10.1145/3025453.3025915>>.

⁴² Saskia Beer, Sabrina Lindemann and Emilie Vlieger, 'Urban Curators. Ontwikkelen Zonder Eigendom', in *Het Nieuwe Stadmaken. Van Gedreven Pionieren Naar Gelijk Speelveld.*, ed. by Simon Franke, Jeroen Niemans, and Frans Soeterbroek (Haarlem: Trancity Valiz, 2015), pp. 85-97.

⁴³ Liesbeth Huybrechts, Henric Benesch and Jon Geib, 'Institutioning: Participatory Design, Co-Design and the Public Realm', *CoDesign*, 13.3 (2017), pp. 148-59 <<http://dx.doi.org/10.1080/15710882.2017.1355006>>.

⁴⁴ This term is derived from M. A. Hajer, 'Setting the Stage: A Dramaturgy of Policy Deliberation', *Administration & Society*, 36.6 (2005), pp. 624-47 <<http://dx.doi.org/10.1177/0095399704270586>>. It was used first in this context in the Street Values Research project, see: *Straatwaarden: In Het Nieuwe Speelveld van Maatschappelijke Erfgoedpraktijken*, ed. by Riemer Knoop and Michiel Schwarz (Amsterdam: Reinwardt Academie, 2017).

⁴⁵ Huybrechts, Benesch and Geib.

⁴⁶ Franke, Lammers and Reijndorp.

⁴⁷ For examples and reflection on the role of cultural institutions, see Knoop and Schwarz.

⁴⁸ See for instance Marcus Foth, 'Some Thoughts on Digital Placemaking', in *Media Architecture Compendium: Digital Placemaking*, ed. by Hank M. Haeusler and others (Stuttgart: aedition, 2017), pp. 202-13. <<http://dx.doi.org/10.7238/d.v0112.915>>; Marcus Foth, 'The Next Urban Paradigm: Cohabitation in the Smart City', *It - Information Technology*, 59. September (2017), pp. 259-62.

⁴⁹ Hajer.

⁵⁰ Planbureau voor de Leefomgeving en Uhrhan Design, *Vormgeven Aan de Spontane Stad. Belemmeringen En Kansen Voor Organische Stedelijke Ontwikkeling* (Den Haag, 2012).

⁵¹ Crawford and Goldsmith.

⁵² Although the Responsive City framework could be critiqued for its at times overtly rationalist and positivist trust in technology and data as enablers of better relations between citizens, collectives and institutions. In our view they could be helpful, but they are not a panacea, and they can also be problematic from a perspective of civic activation in democratic processes. See Eric Gordon and Stephen Walter, 'Meaningful Inefficiencies: Resisting the Logic of Technological Efficiency in the Design of Civic Systems', in *Civic Media. Technology | Design | Practice*, ed. by Eric Gordon and Paul Mihailidis (Cambridge: The MIT Press, 2016). for a critique of all too rationalist and efficient approaches to civic tech.

⁵³ Van den Berg.

⁵⁴ Joost Beunderman, 'Financiering van de Uitkomsteneconomie', in *Het Nieuwe Stadmaken. Van Gedreven Pionieren Naar Gelijk Speelveld.*, ed. by Simon Franke, Jeroen Niemans, and Frans Soeterbroek (Haarlem; Amsterdam: Trancity; Valiz, 2015), pp. 129-42.

⁵⁵ Crawford and Goldsmith.

⁵⁶ See also Van den Berg.

⁵⁷ Van den Berg.

⁵⁸ Beth Simone Noveck, 'Five Hacks for Digital Democracy', *Nature News*, 544 (2017), p. 287 <<http://dx.doi.org/10.1038/544287a>>; Beitske Boonstra, 'Planning Strategies in an Age of Active Citizenship. A Post-Structuralist Agenda for Self-Organization in Spatial Planning Planningsstrategieën' (Utrecht University, 2015).

Bibliography

- 00:/ (Architectural Practice), *Compendium for the Civic Economy: What Our Cities, Towns and Neighbourhoods Should Learn from 25 Trailblazers* (London: Trancity Valiz, 2012)
- Ampatzidou, Cristina, Matthijs Bouw, Froukje van de Klundert, Michiel de Lange, and Martijn de Waal, *The Hackable City: A Research Manifesto and Design Toolkit* (Amsterdam: Amsterdam Creative Industries Network, 2014)
- Balestrini, Mara, Yvonne Rogers, Carolyn Hassan, Javi Creus, Martha King, and Paul Marshall, 'A City in Common', in *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems - CHI '17*, 2017, pp. 2282–94 <<http://dx.doi.org/10.1145/3025453.3025915>>
- Beekmans, Jeroen, and Joop de Boer, *Pop-up City: City-Making in a Fluid World* (Amsterdam: BIS, 2014)
- Beer, Saskia, Sabrina Lindemann, and Emilie Vlioger, 'Urban Curators. Ontwikkelen Zonder Eigendom', in *Het Nieuwe Stadmaken. Van Gedreven Pionieren Naar Gelijk Speelveld.*, ed. by Simon Franke, Jeroen Niemans, and Frans Soeterbroek (Haarlem: Trancity Valiz, 2015), pp. 85–97
- Berg, Mariska van den, *Stedelingen Veranderen de Stad. Over Nieuwe Collectieven Publiek Domein En Transitie*. (Amsterdam, Haarlem: Trancity; Valiz, 2013)
- Beunderman, Joost, 'Financiering van de Uitkomsteneconomie', in *Het Nieuwe Stadmaken. Van Gedreven Pionieren Naar Gelijk Speelveld.*, ed. by Simon Franke, Jeroen Niemans, and Frans Soeterbroek (Haarlem; Amsterdam: Trancity; Valiz, 2015), pp. 129–42
- Boonstra, Beitske, 'Planning Strategies in an Age of Active Citizenship. A Post-Structuralist Agenda for Self-Organization in Spatial Planning Planningsstrategieën' (Utrecht University, 2015)
- Boonstra, Beitske, and Luuk Boelens, 'Self-Organization in Urban Development: Towards a New Perspective on Spatial Planning', in *Urban Research & Practice*, 4 (2011), pp. 99–122 <<http://dx.doi.org/10.1080/17535069.2011.579767>>
- Bouman, Ole, 'Unsolicited, or: The New Autonomy of Architecture', *Volume*, 14 (2008)
- Bouw, Matthijs, and Despo Toma, 'Economic Resilience through Community-Driven (Real Estate) Development in Amsterdam-Noord', in *The Hackable City.*, ed. by Michiel de Lange and Martijn de Waal (Singapore: Springer, 2018)
- Boyte, Harry C, and Eric Fretz, 'Civic Professionalism', in *Journal of Higher Education Outreach and Engagement*, 14 (2010), pp. 67–90
- Bria, Francesca, *Growing a Digital Social Innovation Ecosystem for Europe. DSI Final* (Bruxelles, 2015) <<http://dx.doi.org/10.2759/448169>>
- Caldwell, Glenda Amayo, and Marcus Foth, 'DIY Media Architecture: Open and Participatory Approaches to Community Engagement', in *Proceedings of the 2014 Media Architecture Biennale*, 2014 <<http://dx.doi.org/10.1145/2682884.2682893>>
- Crawford, Susan, and Stephen Goldsmith, *The Responsive City: Engaging Communities Through Data-Smart Governance* (San Francisco: Jossey-Bass, 2014)
- Dalton, R.J., *The Good Citizen: How a Younger Generation Is Reshaping American Politics* (Washington, D.C.: CQ Press, 2008)
- van Dijk, Jose, Thomas Poell, and Martijn de Waal, *De Platform-samenleving. Strijd Om Publieke Waarden in Een Online Wereld* (Amsterdam: Amsterdam University Press, 2016)
- Ermacora, Thomas, and Lucy Bullivant, *Recoded City: Co-Creating Urban Futures* (Abingdon, Oxon; New York: Routledge, 2016)
- Foster, Sheila, and Christian Iaione, 'The City as a Commons', in *Yale Law & Policy Review*, 34 (2016), pp. 281–349 <<http://dx.doi.org/10.1300/J452v06n01>>
- Foth, Marcus, 'Some Thoughts on Digital Placemaking', in *Media Architecture Compendium: Digital Placemaking*, ed. by Hank M. Haeusler and others (Stuttgart: avedition, 2017), pp. 202–13 <<http://dx.doi.org/10.7238/d.v0i12.915>>
- , 'The Next Urban Paradigm: Cohabitation in the Smart City', in *It - Information Technology*, 59 (2017), pp. 259–62
- Franke, Simon, Bart Lammers, and Arnold Reijndorp, 'De (Her)ontdekking van de Publieke Zaak', in *Het Nieuwe Stadmaken. Van Gedreven Pionieren Naar Gelijk Speelveld.*, ed. by Simon Franke, Jeroen Niemans, and Frans Soeterbroek (Haarlem; Amsterdam: Trancity; Valiz, 2015), pp. 43–58
- Gardner, Edwin, 'Hack the City!', in *Amateur Cities*, 12 October 2015 <amateurcities.com/hack-the-city>
- Gordon, Eric, and Stephen Walter, 'Meaningful Inefficiencies: Resisting the Logic of Technological Efficiency in the Design of Civic Systems', in *Civic Media. Technology | Design | Practice*, ed. by Eric Gordon and Paul Mihailidis (Cambridge: The MIT Press, 2016)
- Greenfield, A, *Against the Smart City* (New York: Do projects, 2013)
- Hajer, M, *The Energetic Society. In Search of a Governance Philosophy for a Clean Economy*, PBL Nether (Den Haag, 2011) <<http://dx.doi.org/10.1177/1745691612459060>>
- Hajer, M. A., 'Setting the Stage: A Dramaturgy of Policy Deliberation', in *Administration & Society*, 36 (2005), pp. 624–47 <<http://dx.doi.org/10.1177/0095399704270586>>
- Hajer, Maarten, *De Macht van Verbeelding* (Utrecht: Utrecht University, 2017)
- Hajer, Maarten, and Ton Dassen, *Smart about Cities: Visualising the Challenge for 21st Century Urbanism*. (Rotterdam: Nai010 Publishers, 2014)
- Hemment, Drew, and Anthony Townsend, *Smart Citizens* (Manchester: FutureEverything Publications, 2013)
- Hill, Dan, 'The Social and the Democratic, in the Social Democratic European City', in *Medium.com*, 23 May 2016 <<https://medium.com/dark-matter-and-trojan-horses/the-social-and-the-democratic-in-social-democratic-european-cities-31e0bc169b0b>>
- Hollands, Robert G., 'Critical Interventions into the Corporate Smart City', in *Cambridge Journal of Regions, Economy and Society*, 8 (2015), pp. 61–77 <<http://dx.doi.org/10.1093/cjres/rsu011>>
- , 'Will the Real Smart City Please Stand Up?', *City*, 12 (2008), pp. 303–20 <<http://dx.doi.org/10.1080/13604810802479126>>
- Huybrechts, Liesbeth, Henric Benesch, and Jon Geib, 'Institutioning: Participatory Design, Co-Design and the Public Realm', in *CoDesign*, 13 (2017), pp. 148–59 <<http://dx.doi.org/10.1080/15710882.2017.1355006>>
- Klooster, Indira van 't., *Reactivate!: Vernieuwers van de Nederlandse Architectuur* (Amsterdam: trancity valiz, 2013)
- Knoop, Riemer, and Michiel Schwarz, eds., *Straatwaarden: In Het Nieuwe Speelveld van Maatschappelijke Erfgoedpraktijken* (Amsterdam: Reinwardt Academie, 2017)
- Lange, Michiel de, and Martijn De Waal, 'Owning the City: New Media and Citizen Engagement in Urban Design', in *First Monday, Special issue 'Media & the City'*, 18 (2013) <<http://dx.doi.org/doi:10.5210/fm.v18i11>>
- Levine, Peter, 'Democracy in the Digital Age', in *Civic Media. Technology | Design | Practice*, ed. by Eric Gordon and Paul Mihailidis (Cambridge: The MIT Press, 2016)
- Lydon, Mike, and Anthony Garcia, *Tactical Urbanism: Short-Term Action for Long-Term Change* (Washington, D.C.: Island Press, 2015)
- Noveck, Beth Simone, 'Five Hacks for Digital Democracy', in *Nature News*, 544 (2017), p. 287 <<http://dx.doi.org/10.1038/544287a>>
- Peek, Gert-Joost, *Veranderstad. Stedelijke Gebiedsontwikkeling in Transitie* (Rotterdam: Rotterdam Hogeschool Uitgeverij, 2015)
- Planbureau voor de Leefomgeving and Urhahn Urban Design, *Vormgeven Aan de Spontane Stad. Belemmeringen En Kansen Voor Organische Stedelijke Ontwikkeling* (Den Haag, 2012)
- Potjer, Suzanne, and Maarten Hajer, *Learning with Cities, Learning for Cities. The Golden Opportunity of the Urban Agenda for the EU* (Utrecht: Urban Futures Studio, 2017)
- Scholz, Trebor, *Platform Cooperativism. Challenging the Corporate Sharing Economy* (New York: Rosa Luxemburg Stiftung, 2016)
- Schuurman, Dimitri, Bastiaan Baccarne, Fahim Kaswar, Constantijn Seys, Carina Veeckman, Lieven De Marez, and others, 'Living Labs as Quasi-Experiments: Results from the Flemish LeYLab', in *Proceedings of the XXIV ISPIM Conference – Innovating in Global Markets: Challenges for Sustainable Growth*, 2013
- Tonkens, Evelien, Margo Trappenburg, Menno Hurenkamp, and Jante Schmidt, *Montessori-Democratie. Spannigen Tusssen Burgerparticipatie En de Lokale Politiek* (Amsterdam: Amsterdam University Press, 2015)
- Townsend, Anthony, *Smart Cities: Big Data, Civic Hackers and the Quest for a New Utopia* (New York: W.W. Norton & Company, 2013)
- Varnelis, Kazys, *Networked Publics* (Cambridge, Mass.: The MIT Press, 2008)
- de Waal, Martijn, 'The Ideas and Ideals in Urban Media', in *From Social Butterfly to Engaged Citizen: Urban Informatics, Social Media, Ubiquitous Computing, and Mobile Technology to Support Citizen Engagement*, ed. by Marcus Foth and others (Cambridge, MA: MIT Press, 2011)
- de Waal, Martijn, and Michiel de Lange, *Klik. Like. Share. Hoe Digitale Media de Publieke Ruimte Veranderen* (Amsterdam; Haarlem: The Mobile City; Trancity, 2014)
- Wark, McKenzie, *A Hacker Manifesto* (Cambridge: Harvard University Press, 2004)
- Wellman, Barry, Anabel Quan-Haase, Jeffrey Boase, Wenhong Chen, Keith Hampton, Isabel Diaz, and others, 'The Social Affordances of the Internet for Networked Individualism', in *Journal of Computer-Mediated Communication*, 8 (2003)

Colophon

The Hackable City is a research project that explores the potential for new modes of collaborative citymaking in a network society. The team's primary case study is Buiksloterham, a brownfield regeneration project in Amsterdam North.

The first contours for this project were laid out by One Architecture and The Mobile City during the Metropool NL workshop organized by the Deltametropool Society in 2012, resulting in the publication Eindhoven, Hackable World City.

This was followed by an 'embedded researcher' project executed by Cristina Ampatzidou, hosted at the University of Amsterdam and One Architecture and funded by the Creative Industries Research Centre Amsterdam, with contributions from Utrecht University.

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In 2016 with Delva Landscape Architects, Studioninedots and Stadslab Buiksloterham the entry Hackable Cityplot and a series of events was developed for the International Architecture Biennale Rotterdam.

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Stadslab Buiksloterham
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