T/A/S

# Entangled Data: Modelling and Resistance in the Megacity

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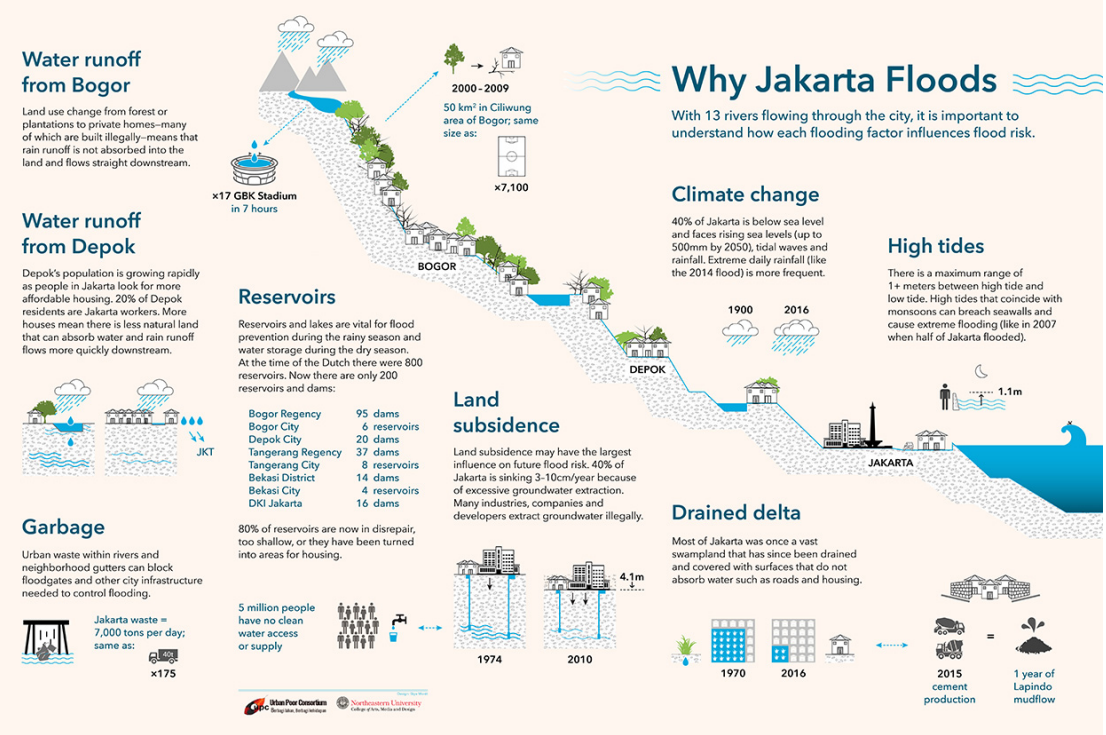
**The commercial housing projects that arise from gentrification in Jakarta are inseparable from the longstanding neighbourhoods and markets they displace, each defining the social landscape. Alessandra Renzi observes that in Jakarta this process of 'modelling,' in which disembodied data is used to control disenfranchised populations and further corporate development, is being turned on its head. Groups are engaging with this same data, but in the interest of creating 'counter-models' towards rezoning and sustainable housing solutions that still fit the larger plan.**

## Introduction: Baywalk Mall




Data visualization poster 'Current vs. Ideal Solutions', research and development: UPC & Alessandra Renzi, design: Skye Moret-Ferguson.

# Current Solutions

## Normalization

**Straightening the river**
Replacing the natural riverbank with cement causes increased water runoff that moves more quickly downstream.

**Embanking with concrete**
Pouring cement along rivers prevents water absorption and threatens groundwater availability for local residents who need it.

47%, or 9km, of the Ciliwung River has already been normalized of the 19km slated for normalization.





33% of 2015 evictions (>2600 families) occurred because of normalization.




## Green zones

The designation of 'green zones' to increase water absorption mostly affects the poor while the wealthy can build over existing reservoirs and green areas.



TOTAL EVICTIONS

| 2014 | 2015 |
|---|---|
| 4,667 families | 8,145 families |
| 25 locations | 113 locations |

## Land reclamation

The creation of artificial islands limits water flow from Jakarta's 13 rivers into the sea, causing the pooling of sewage and increasing toxins in coastal waters. Reclamation also restricts fisherman access to the sea and causes higher coastal water levels that increase flood risk.

Terrible impacts on fisheries, flood risk, and the environment.




## Increase catchment areas

Construction of new homes and any land-use change are monitored to protect permeable surfaces (that allow water to soak into the ground). Natural areas–such as forests, riverbanks, and lakes–along with existing reservoirs are preserved to catch water and recharge groundwater. People collect and reuse rainwater for household tasks. Land-use change is unnecessary and evictions are reduced.

## Naturalization

Rivers are no longer straightened and the practice of applying cement along the riverbank is discontinued. Rivers naturally absorb water into the sides of the riverbank, which slows water flow, allows groundwater to recharge, and lowers flood risk.



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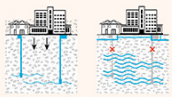
# Ideal Solutions



Jakarta can still reduce flood risk while maintaining the quality of forests, rivers, coasts, and communities.

## Reduce groundwater pumping

Water pipeline infrastructure now supports residential areas, businesses, and industry needs. Grey water is recycled. Because the ground sediment is naturally saturated with water, Jakarta land subsidence has slowed. With less sinking areas, flood risk is reduced and homes and businesses are safer.




## No reclamation

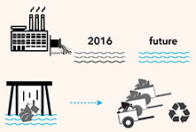
Jakarta Bay reclamation no longer blocks river flow into the sea and fisherman have full access to the bay and marine resources. Jakarta's coastal and river embankments are strengthened and flood risk is much lower. Water quality in the Bay of Jakarta improves because rivers flow with gravity to the sea.



Rp 500 billion saved per year.

## Waste management

Jakarta has a sewage treatment plant that improves water quality in the Bay of Jakarta (only 2% of waste water is managed in 2016). With a better management system, rivers are clean and water quality along the coast is improved. Small communities, such as kampongs, self-manage waste to reduce garbage buildup and clean rivers.




## Limpasan air dari Bogor

Perubahan penggunaan lahan dari hutan menjadi kebun atau rumah pribadi–seringkali dibangun secara ilegal–mengakibatkan limpasan hujan tidak terserap ke dalam tanah sehingga air mengalir langsung ke hilir.

## Limpasan air dari Depok

Populasi Depok tumbuh dengan pesat seiring dengan meningkatknya kebutuhan akan tempat tinggal terjangkau bagi penduduk Jakarta. 20% penduduk Depok adalah pekerja di Jakarta. Lebih banyak rumah berarti lebih sedikit tanah yang dapat menyerap air, sehingga limpasan air mengalir lebih cepat dari hilir ke hulu.




## Sampah

Sampah perkotaan di sungai dan selokan dapat menyumbat pintu air dan infrastruktur kota lain yang dibutuhkan dalam mengontrol banjir.







# Mengapa Jakarta Banjir

Dengan 13 sungai yang mengalir di tegah kota, penting untuk dipahami bagaimana masing-masing faktor mempengaruhi risiko banjir.

## Perubahan iklim

40% Jakarta berada di bawah permukaan air laut dan menghadapi risiko peningkatan muka air laut (hingga 500mm per tahun 2050) dan curah hujan. Hujan ekstrem (seperti saat banjir 2014) lebih sering terjadi.




## Ombak tinggi

Selisih maksimum antara air pasang dan surut adalah >1 meter. Ombak pasang yang bertepatan dengan musim hujan dapat menembus tanggul laut dan menyebabkan banjir ekstrem (seperti tahun 2007 ketika setengah dari Jakarta terendam banjir).

## Waduk

Waduk dan danau berperan vital dalam pencegahan banjir selama musim hujan dan penyimpanan air selama musim kering. Terdapat sekitar 800 waduk pada zaman Belanda, kini hanya ada 200 waduk dan danau tersisa:

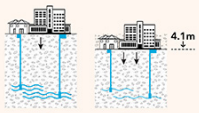
| | | |
|---|---|---|
| Kab. Bogor | 95 | dam |
| Kota Bogor | 6 | waduk |
| Kota Depok | 20 | dam |
| Kab. Tangerang | 37 | dam |
| Kota Tangerang | 8 | waduk |
| Kab. Bekasi | 14 | dam |
| Kota Bekasi | 4 | waduk |
| DKI Jakarta | 16 | dam |

80% waduk kini dalam kondisi rusak, terlalu dangkal, atau telah diubah menjadi area perumahan.

5 juta orang tidak memiliki akses terhadap air bersih.

## Penurunan muka tanah

Penurunan muka tanah mungkin memiliki pengaruh terbesar terhadap risiko banjir di masa depan. 40% Jakarta kini tenggelam 3-10cm/tahun akibat pengambilan air tanah yang berlebihan. Banyak industri, perusahaan, dan pengembang mengambil air tanah secara ilegal.




## Rawa yang mengering

Sebagian besar Jakarta dahulu merupakan daerah rawa yang kini telah dikeringkan dan ditutupi dengan permukaan yang tidak dapat menyerap air seperti jalan dan rumah.

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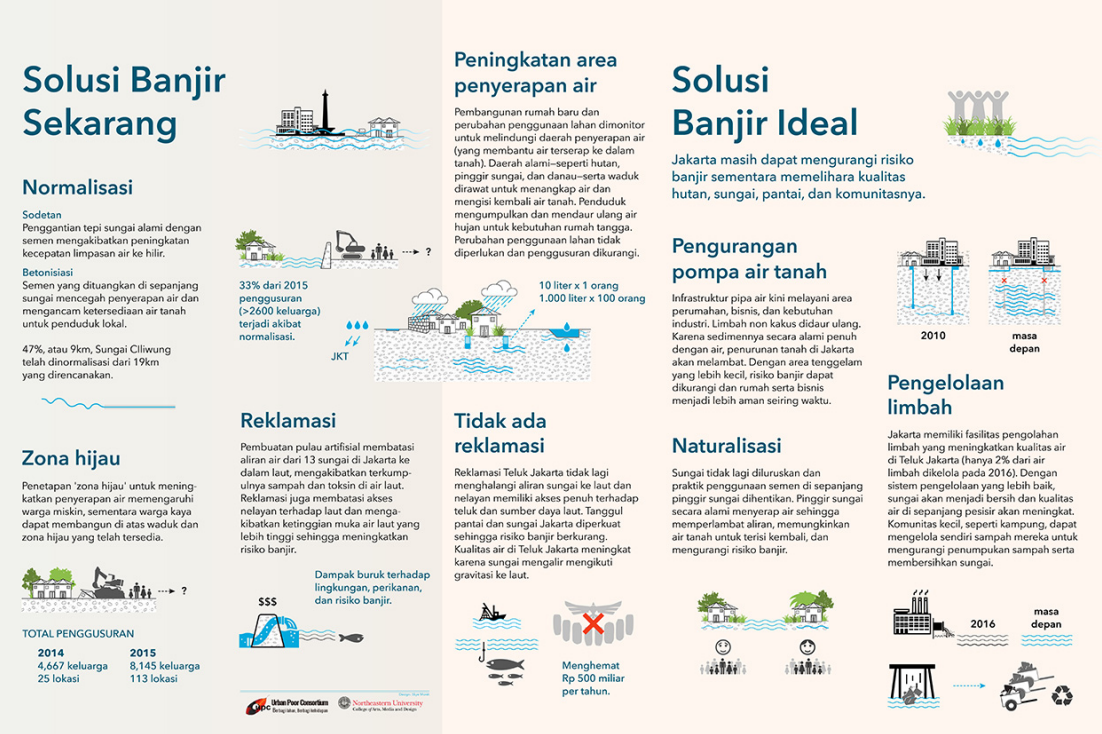


Baywalk Mall is one of Jakarta's newest commercial developments, inviting visitors to 'Enjoy True Leisure!' The mall is located in the Green Bay Pluit super block and provides for a ***complete*** shopping and time out adventure for the residents of the seafront apartments and condominiums. This packaged experience delivers a sought-after elite lifestyle for Jakartans – for whom the water sports recreation centre; the kids entertainment zone; the fitness centre; the restaurants, cafe s and boutiques; the BBQ area; the plaza and swimming pool; the three-hectare botanical park for cycling, fishing, jogging and relaxing; the twenty-four-hour security; and the closeness to the airport, medical facilities, international schools and shopping centres provide 'a high value investment.'[1] In addition to residential units, Green Bay Pluit also offers business kiosks to reach its estimated 20,000 inhabitants with new services and products.




On the ground floor of Baywalk Mall is an extremely large model of yet another ambitious development connected to Green Bay Pluit by multiple stylish bridges. Pluit City will be a 160- hectare 'stunning modern city' on reclaimed artificial land half the size of New York City's Central Park. Green Bay Pluit and Pluit City are but two examples of the massive developments that followed the vertiginous twenty-year growth of the Indonesian capital, now one of the largest cities in the world. [2] Pluit City is one of the seventeen artificial islands of the National Capital Integrated Coastal Development (NCICD) master plan, also known as the 'Great Garuda' sea wall. The NCICD master plan consists of a thirty-two-kilometre-wide dike – a 4,000 hectare earthwork hosting an airport, harbour, toll road, residential area, industrial area, waste treatment, water reservoir and green areas – in the shape of the mythical Garuda bird, Indonesia's national symbol. This mega project aims to enhance flood prevention, foster urban development and transform Jakarta into a more prestigious metropolis. [3]

Not far from the iconic modern dreams of the Pluits one can stumble upon the tents and makeshift shelters of the inhabitants of *Pasar Ikan* (taking its name from the old fish market), obstinately pitched on the rabble of their houses, which were demolished to make space for new developments. Jakarta is changing fast, shaped by a vision and force that miniature models and video simulations conjure almost magically. ***Almost*** magically because these models are not just objects: their 3D trompe l'oeil brings the future into Jakarta's present by hiding the peculiar ways in which different temporalities, relations and domains of operation – affective, social, economic, political, cultural, computational, etc. –

come to form an unstoppable engine of change. The model's tactility and visuality materialize arrangements of infrastructure, dwelling and commerce, as well as partnerships between stakeholders so far unseen in the showroom and at development meetings. At the same time, the model propagates an environment in which the city is reorganized through level-specific processes of emergence: life in Jakarta is *modelled* intra-actively level by level, from the condo to the Pluits, to the islands, to the sea wall, to the city, seeding commerce, modernity, growth. [4] The model and the modelled, Pluit City and Pasar Ikan, the NCICD and the capital are *entangled*, they constitute one another as topologies change, capital flows recombine, and relations among disparate elements (affects, individuals, materials, natural resources, discourses, data, software and hardware, infrastructure and so on) intensify and proliferate across scales. In the new entanglements of this city, Pasar Ikan becomes an icon for a bygone era, or perhaps the name of a new condo tower.

The removal of the poor from growing city centres in the so-called 'global south' is hardly a secret, even when the process is wrapped in the sanitized neoliberal packaging of 'slum clearing,' 'urban development' or 'normalization.' These economic forces and their violent impact on the most vulnerable populations may seem unlike those in the so-called 'global north,' yet the difference between evictions in Jakarta and aggressive gentrification in San Francisco, between forced relocations to far-off social housing and the banishing of migrants to the French *banlieu*, between exploitation of black and brown bodies on mining sites and in the US prison system, between the financialization of human lives in Asia, Africa, Europe and the Americas, may be more a difference in degree than in kind. Under the surface of current wealth and misery the world over, an emergent dynamic reconfigures, reconfigures and *reconfigures*. [5] In Jakarta, this dynamic crystallizes into a process of modelling that reconfigures all that is, as well as all that *can be*.

What follows here is a story of city making and struggle over land tenure and housing rights within the *model* of Jakarta. The struggle unfolds in a data-rich sociotechnical milieu where the becoming, or individuation, of the city and its inhabitants is not only tied to affect but also, and importantly, enabled and intensified by data, algorithms and software *[onlineopen.org/affect-space]*. Data – factual information about humans, commodities and processes that is put in relation through software and algorithms and can be sold as usable knowledge – is crucial for the coming-into-being of both Jakarta's material-discursive infrastructures and their users. [6] For the latter, data often mediates the circulation of affects that modulate the co-constitution of an individual *I*, and a collective *We* within the multidimensional and multi-scalar milieu of a city increasingly built around consumption, leisure and speculative capital flows. For the former, data contributes to the emergence and consolidation of assemblages with opaque mechanisms of control and more-than-human forms of agency. For both, data, in different forms and through different processes, is a vector that itself has agency in shaping the city. [7] But data is not only being used as a means of control and dispossession. Data is also a resource, which the Urban Poor Consortium (UPC) – a national coalition of city-wide grassroots organizations – consciously mobilizes to reclaim individuality and a space for the inhabitants of informal settlements (or *kampungs*) in the city.

Perhaps we could call UPC's appropriation of data, as a means of amplifying this struggle, *data activism*. But to name it as such, it is necessary to attend to the multiple layers and scales across which flows of data recombine in Jakarta, progressively structuring its socio-technical assemblages with a constantly variable step. Data transduces from and across developments like Baywalk Mall and the sea wall to the city and upwards; its intra-actions produce new connections and undo existing ones. [8] Only after following this movement do the *kampungs* – the informal settlements where UPC is most active – reveal a specific kind of data activism, what I will call a *politics of counter-modelling* the city. UPC's counter-modelling contends with forces that seem even more intense than what we commonly attribute to *neoliberalism*. [9] Their story broadens our perception of the role of technology in

emergent configurations of power; it troubles our notion of agency while it exemplifies lesser-known activist practices that directly address these emergent modes of exercising control.

### Worlds: The Platform is Your Oyster

Marketers and developers call them *worlds*: mixed-use assemblages of apartment towers, green space, entertainment, business and shopping facilities like Pluit City and Green Bay Pluit. Worlds are allegedly self-sufficient, clean, climate-controlled islands of order amidst the chaos of a polluted and traffic-gridlocked tropical megacity. All worlds reproduce a similar kind of enclosed elite living across different areas of Jakarta; in every world, middle- and upper-class dwellers find the same distribution of chains of boutiques, restaurants and shops, grocery products, entertainment centres and bars. These worlds are built to be a consumer's oyster, with everything located an escalator ride away. The reproduction of this spatial arrangement across the city facilitates the emergence of shared and familiar interfaces whose ability to guide and control individuals grows with every affective encounter, which easily turns into habituated interaction. Like the ever-present smartphones that constantly interpellate users to post and like, the physical spaces of these 'worlds' capture Jakartans' work and leisure experiences into a higher system of organization. The new Jakarta citizen-user toggles between interfaces, both computational and architectural, as she performs the daily transactions that make her what she is.

Worlds pull together into a predictable and desirable model different kinds of sensory stimulation, random activities and patterns of engagement, extracting data and consolidating financial operations through ads, credit cards, loans, mortgages and so on. While these processes are decentralized and undetermined, worlds increase the value of the items and entities contained within them as well as the value of the whole assemblage. In this sense, they can be thought of as *platforms* – 'simultaneously organizational forms that are highly technical, and technical forms that provide extraordinary organizational complexity to emerge.' [10] Worlds like Green Bay Pluit and Pluit City function as platforms that are also sites of governmentality, distributing interfaces and users, guiding interactions to which they assign value, standardizing components and optimizing exchanges by connecting users. [11] They are *generative* inasmuch as they provide the frame for processes to emerge within constrained terms of participation yet leave space for undetermined uses.

Seen from the level of the individual, the worlds-user becomes an urban subject as she partakes in the individuation of a supra-local cosmopolitan dimension with ties to a set of practices and commitments to development, modernity and international tastes, business and technological networks and architecture. [12] Yet at the level below the subject, this worlds-user is not a unified entity negotiating an urban identity but the concretization of various psycho-social stimuli, real and ideal re-actions, datasets, credit and other information – components that resonate with each other at different scales. The worlds-users are 'bodies-in-the-making and contingent spatio-temporalities,' [13] incongruous assemblages of affects, matter, data and flows of capital, individuating in a platform milieu that makes subjectivity the raw material for social (re)production and financial accumulation in specific ways.

### Sea Wall: Infra-structuring Financialization

Let us return to the ground floor of Baywalk Mall, where a large model of Pluit City lays out the future of a new Jakarta in minute, tree-and-people-filled detail. The design and titanic scale of the project take shape by bringing together engineering and architectural firms, planners, funders and financiers, transnational businesses and various sectors of the government. The Dutch companies Boskalis and Van Oord have already started the reclamation of circa 160 hectares of new land for Pluit's artificial island, which requires over 20 million cubic metres of dredged sand from neighbouring areas and no fewer than two jumbo trailing suction hoppers. [14]

But the dream of Pluit City extends further onto the horizon, where the Great Garuda sea wall, the city and the nation enfold one another. Just a few steps away from the old spice warehouses and transportation canals of the Dutch East India Company responsible for 340 years of colonial trade and military rule, [15] Jakarta Bay's revitalization takes *'to the next level'* what the Dutch Water Sector calls a 'long-standing relation between Indonesia and the Netherlands' that will bring to the country 'a new vision for Jakarta as a cosmopolitan waterfront city.' At this 'next level,' techno-financial tools and processes bestow new generative force on the water infrastructure that has shaped development and capital accumulation in Jakarta from colonization onwards. The NCICD is not a simple infrastructure project, it is the *mega-model of a platform* that will generate the conditions for the valorization of anything it connects, outgrowing its geographic location on the water to re-actualize Jakarta's economic potential. With the NCICD master plan, historical, individual, local, national and global dimensions are recreated through each other. This finance-based model rises from the ashes of a process of development that started with the Dutch colonization and continued with President Suharto's New Order Indonesia – the local brand of '80s–'90s neoliberalism that generated Indonesia as a global nation and Jakarta as its *ibu kota* (mother city). [16]

Ibu kota houses eighty per cent of the wealth of the country, which comes mostly from low-wage garment manufacturing and resource extraction. Indonesia is the world's largest producer of palm oil and one of the largest exporters of coal, gold and rubber. [17] Yet, more than the resource economy itself, it is the financial investment operations that predict and manipulate costs and prices of material production that feed urban development in Jakarta today. Finance capital feeds Jakarta and for finance to thrive there is a need to securitize non-financial sectors while converting one form of finance capital into another through derivatives, stocks and debts. These operations thread multiple forms of data together with lines of financial and material goods in unexpected and non-linear ways, defying the distinction between transnational, national and local scales. [18] In the whirlwind of financial transactions, the capital accrued from production, extraction but also illegal activities within and outside the Indonesian borders needs to be reinvested. Enter real estate development. The Indonesian real estate, manufacturing and resource extraction sectors are entangled through myriad financial operations enabled by reforms like the recent introduction of real-estate investment trusts (REITs). [19] REITs are companies that own, operate and finance real estate for income production. They trade not only in material buildings but also mortgages and loans. REITs do for real estate investment what mutual funds do for the stock market: they stimulate speculative capital flow and foreign investment. [20]

In the sense that 'words, bonds, securities, debt obligations, and derivatives circulate and pass through each other,' [21] we can see how the (re)making of Jakarta is intensified by the financialization of information and data that become detached from their referents and circulate across a multiplicity of networks – financial and business, but also social, political, architectural, digital, administrative and so on. The making of the city, in this context, is one not merely involving human, social and material elements but one in which intensive

relations among financial tools and processes – circulating data, algorithms and protocols – emerge through the creation and manipulation of different temporalities. This calculated production of the future is part of the model's generative process, through which financial value is assigned to everything – from internal accounting operations of firms to investor confidence, from international buyers to the possibility of future accumulation. In this model, individuals and groups become datasets, risk calculations, variables in financial algorithms, and financializable units interacting and individuating in the time-space-matter of a *platformative* environment that produces and organizes value by blurring scales and obscuring connections. Again, this reconfiguring involves what is and what can be.

The engineering of water infrastructure in Jakarta has always been a vector for the accumulation of capital – first during colonization, when old Batavia was designed to circulate and deliver goods to Europe over water; and then, after independence, when international development bodies like the World Bank ushered in international water companies to manage flood canals and lubricate the engine of the free market economy.[22] In both cases, capital accumulation by water infrastructure has gone hand in hand with models for making order, organizing labour and production, for taming the wild and the unsanitary – i.e., formalizing spaces, subjects and temporalities, geographies and histories.[23] Seeing the NCICD as a generative model that seeds financial processes points to a less visible kind of formalization that takes place by enfolding different content and translating it into data – making disparate elements legible and exchangeable across networks, and thereby financializable. Bratton calls this platform milieu a space of *deep addressability* that interlocks users across *unnatural scales.*[24] From this perspective, it is impossible to disentangle the financializiation of infrastructure in order to build a city from the infra-structuring of finance in order to multiply processes of accumulation.

### Kota (City): From Planning to Modelling

On the sweltering, asbestos-filled debris of Pasar Ikan, the government plans to build a *plaza* – an ambiguous Indonesian word that may designate a park or a mall. Most of the families I interviewed lived in this area for over thirty years, yet their houses were bulldozed with their furniture still inside and without any option to appeal. Some of the families have been relocated in the *rusunawa* (low-cost rental housing) of Marunda, far removed from the waters they fish and from other possibilities for procuring a livelihood. A park or a mall? A park is the same as a mall for those who will never use it and for the developers who will profit anyway. There is physical and psychological violence encoded in the iconic designs of the architecture and platform-like apparatus that *models* Jakarta's renewable potential for investment and growth.

Worlds like Pluit City and Green Bay achieve materiality and power as they prefigure an expanding archipelago: they become material and discursive apparatuses through their relation to each other and to the abstract model of the ideal megacity – an intra-modelling, so to speak. The densification of the relations among their interconnecting spaces, practices and users possess a force that thrusts the models horizontally to other sites of the city, and upwards, towards higher degrees of interconnection and new kinds of generativity. This violent modelling seals the separation between the *kota*, the planned city, and the *kampung*, its informal counterpart. It severs the interdependence that has produced these two territories simultaneously and interdependently throughout history. Such modelling everywhere goes under the name of development and growth. In Jakarta, it has the more specific brand of *normalisasi* (normalization): the formalization of the city's waterways and water-bearing infrastructure to mitigate flooding.

At first glance, the violence of modelling manifests itself through the sheer force of the evictions. It is less visible but equally strong in regimenting the informal infrastructures that allow the majority of Jakarta residents to adapt to changing circumstances: auto-construction, informal food stalls, transportation systems like *becaks* (pedicabs) and *bajai*

(tricycle taxis), etc. Resistance to this modelling becomes a matter of changing the possibilities of change to rearrange, [25] rearticulate and rework the relationship between kota and kampung; territories and interfaces; data and bodies; materials and discourses; platform and users. Viral infection of the modelling system with alter-generative data would be ideal, but more realistically, even the slowing down of its advance could help the urban poor gain some momentum.

### Kampung: A Counter-politics of Modelling

UPC and Lembaga Bantuan Hukum (LBH) Jakarta (Jakarta Legal Aid Institute) have called an information meeting for kampung residents. With the help of the Rujak Center for Urban Studies they are showing maps of the rezoning of Jakarta. Everyone in attendance is affected since the plan rezones the sites of the kampungs for shopping malls, high-rises, green zones and roads. Beyond the technicality of the information, the colourful patches on the map make loud and clear a single message: *your houses and your lives are up for demolition*.

Without idealizing auto-construction or informal settlements, it is evident that these kampungs are long-standing and vibrant high-density areas often with generations of community investment in common infrastructure for living and commerce. Many of the residents have their addresses officially recorded on their IDs and pay property and other taxes. Nevertheless, lack of land tenure makes infrastructural improvements difficult, it renders kampungs invisible to planners and makes them easy scapegoats when Jakarta floods. In the majority of cases, the inhabitants of the kampungs whose houses are slated for demolition should have their property rights recognized because they have lived on site for longer than thirty years, because they paid taxes, they have IDs. Yet, this option seems more remote than ever, unless the kampungs can be enfolded into the new vision of the city. For good or bad, data about the kampung and its inhabitants places them on the map where they are otherwise invisible. So, for many years, UPC data teams have collected census information, personal and local histories, socio-economic networks maps and planning records. This data has been used to expose problems in the media and to negotiate with sympathetic administrations. [26] With the new governor unwilling to be in dialogue with the urban poor, the priorities and data collection work have shifted towards deflecting the forces that drive rezoning and flood mitigation.

UPC's counter-modelling brings together a variety of alliances, strategies and tools in the hope to change the material and discursive function of the kampung in the city. UPC is working with lawyers and planners to put a moratorium on the rezoning until they can propose alternative planning models and prototypes for sustainable housing that fit in with the master model of the city. The counter-modelling involves multiple phases for data collection, knowledge dissemination and collaborative design. During the time I was in Jakarta in spring 2016, UPC conducted interviews with planners, engineers, flood and sanitation experts to produce a comprehensive flood model that debunks accusations that kampungs cause flooding. The model also uncovers the inadequacy of solutions like normalization and the conversion of kampungs into green spaces to mitigate flooding when middle- and upper-class houses are often built over water catchment areas. This data collected is summarized in a series of visualizations (English and Indonesian) to educate kampung dwellers and a broader international public. At the same time, this more nuanced flood model is the context to design an alternative vision for the kampung that reclaims discourses on green development and climate adaptation. Indonesian antipoverty activists have often entered the terrain of struggle over the right to the city through the door of green urbanism, [27] touting the kampung as a potential model for water absorption and river preservation. The results have varied depending on the willingness of their interlocutors to capitalize on these suggestions and support the redevelopment. What *may* be different this time is the attempt to push the prototype by simultaneously inserting it

into multiple relations: with public opinion, with technicians and government officials, with legal experts and the media.

What's more, this politics of counter-modelling not only plays out at the level of the prototype (the new design for the kampung) but also at the level of the system, reorganizing the potential of the kampung to produce potential. UPC directly involves communities in the prototyping of the infrastructure through a process of visioning and research facilitated by expert volunteers. The collaboration locates the body of the kampung dweller in a data landscape where she is no longer another risk coefficient in a skewed flood model. The potential power of counter-modelling to foster more potential (i.e., its generativity) can be gleaned in the effort to establish the conditions for different individuations through a reorganization of the flow of data. This includes the conceptualization of spaces for climate adaptation as well as creating the conditions for a recomposition of individual and collective subjectivities around affective exchanges and situated knowledges that are humanizing and valorizing. In counter-modelling, the kampung user becomes part of an assemblage with the semi-autonomous agency to scale up a more sustainable vision of what constitutes the city. Importantly, dehumanization and humanization are both sociotechnical processes wherein the sociotechnical composition is tied to different relations among the data, the platform that organizes it and the psycho-social elements that make up the individual in a shared environment. Neither is a politics of counter-modelling any longer a simple matter of formality over informality, since any kind of urban design is structured and structuring. Still, counter-modelling that includes land tenure gives the informal a formation that is stable but adaptable enough to leave space for informality and reconfiguring of potential. That is, if formalization as proposed by international development and new infrastructure projects is a means to address, regiment and control, *formation* can be seen as a process of recomposition around some basic (infra)structures that still allow for adaptation, can preserve the interdependence of kota and kampung, and can facilitate structural and economic development.

## Conclusions: The Conditions of the Possible

UPC may not always succeed in producing different kinds of entanglements between the formal, the informal, the kota, the kampung, the body, the model… Even more so, what is happening in Jakarta at the moment demands that we pay more attention to the deep entanglement of computation within the fabric of the city, its inhabitants, its apparatuses of governance, financialization and overall control of the population. Both power*and* dynamics of change have become more complex and are marked by asymmetries, changing speeds and opacity that seem hard to engage. This complexity situates agency outside of cause-and-effect dynamics and within assemblages that are more than human. As Bratton poignantly signals, power is now located in an accidental megastructure – part computational apparatus and part governing architecture that shapes contemporary geopolitics. [28]

The force of the capitalist megastructure has been leaving more and more trails of human, animal and natural casualties in its wake. The thrust to reconfigure is no longer only perceived at the scale of human agency but overall at many levels of the model – from the micro-components that engender individuality to the global infra-structuring of speculative capitalism. Agency is more and more a matter of intra-action, of 'changing possibilities of change entailed in reconfiguring material discursive apparatuses.' [29] So, how can movements intra-act? This shift in perspective shakes our conceptualizations of resistance, since its contingent articulations need to account for the ways in which emergent assemblages intra-act with one another and with their external milieu. In the case of the kampungs, no sustainable and self-sustaining assemblage will last if it does not reconfigure in relation to the new model of the city – if it does not make itself addressable for the model while amplifying agency.

What I have called here a politics of counter-modelling points towards recent attempts to reconfigure the potential for change by connecting to existing structures and reconfiguring them iteratively – that is by slowly reworking the boundaries between inside and outside. More than a prefigurative proposal, a politics of counter-modelling attempts to set the conditions for resistant assemblages to connect with each other and with their outside by reclaiming the rights to retain and mobilize data, and by forging ad hoc connections to the dominant megastructure as they strive to preserve their autonomy. In the case of UPC, the connections and boundary reformations are shaped through relations based on affective encounters, autonomous knowledge production, the visualization of data, the fostering of ties and collaborations with experts, and the deployment of prototypes as models for a scalable and adaptive future.

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## Footnotes

1. See greenbaypluit.com.
2. The metropolitan area of Jabodetabek is second only to Tokyo with 30,539,000 inhabitants.
3. See indonesia-investments.com.
4. See Adam Kleinman, interview with Karen Barad, 'Intra-actions,' *Mousse* 34 (2012): 76–81.
5. See Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham, NC: Duke University Press, 2007) and Saskia Sassen, *Expulsions: Brutality and Complexity in the Global Economy* (Cambridge, MA: Belknap Press, 2014).
6. Greg Elmer, Ganaele Langlois and Joanna Redden, ed., *Compromised Data: New Paradigms in Social Media Theory and Methods* (London: Bloomsbury, 2015), 3.
7. See Ganaele Langlois and Alessandra Renzi, 'Data Activism,' in Elmer et al., *Compromised Data*.
8. I reject an understanding of scale as the geometrical nesting of preexisting layers (worlds, the city, the nation and so on). Rather, my focus in on *scale-making*, or the intra-active emergence of different layers, where bodies, gated and open communities, cities, and so on, all the way to the ecosystem, are made through one another. In their constant reconfiguration, layers not only change the arrangements of power but also reconfigure what will be possible. See Barad, *Meeting the Universe Halfway.*
9. See also Anna-Sophie Springer and Etienne Turpin, "Anxious Instantiations", 2016.transmediale.de.
10. Benjamin H. Bratton, *The Stack: On Software and Sovereignty* (Cambridge, MA: MIT Press, 2016), 41.
11. Ibid., 42.
12. Abidin Kusno, 'Cosmopolitan Temporalities,' in Etienne Turpin, Adam Bobette and Meredith Miller, ed. *Jakarta architecture + adaptation = Jakarta arsitektur + adaptasi* (Depok: Universitas Indonesia Press, 2013), 140.
13. Donna J. Haraway, *ModestWitness@SecondMillennium. FemaleManMeetsOncoMouse: feminism and technoscience* (New York: Routledge, 1997), 294.
14. See dutchwatersector.com.
15. This is the common name for the *Vereenigde Oost-Indische Compagnie* (United East Indian Company) or VOC, the powerful, chartered company that was responsible for the Dutch colonization of Indonesia, often by very violent means. The VOC is considered the first multinational to be publicly traded. See rijksmuseum.nl.
16. See Tsing, Anna, *Friction: An Ethnography of Global Connection* (Princeton: Princeton University Press, 2005) on the rise of Indonesia as a neoliberal nation and the role of international development in its growth.
17. See indonesia-investments.com.
18. AbdouMaliq Simone, *City Life from Jakarta to Dakar: Movements at the Crossroads* (New York: Routledge, 20.10), 162–169.
19. See forbesindonesia.com.
20. See sec.gov.
21. Simone, *City Life from Jakarta to Dakar*, 167.
22. Turpin et. al, *Jakarta architecture*, 30–32.
23. See ibid.
24. Bratton, *The Stack*, 65.
25. Barad*, Meeting the Universe Halfway,* 235.
26. Turpin et al., *Jakarta architecture*, 221–234.
27. See Abidin Kusno, 'The Green Governmentality in an Indonesian Metropolis,' *Singapore Journal of Tropical Geography* 32, no. 3:314–331.
28. Bratton, *The Stack,* 65.
29. Barad, *Meeting the Universe Halfway*, 235.

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Activism, Affect, Urban Space

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