Allographic Urbanism:
From Guerrilla to Open Source

At a time when city-wide planning strategies are failing due to a lack of governance and the widespread bankruptcy of communities, bottom-up models present themselves as an alternative approach to balancing public-private partnerships governed by corporate bodies. With even the relatively functional administrations of European cities moving away from top-down planning models, it would seem that the divergent bottom-up strategy is taking its place. Characterized by deploying *ad hoc* maneuvers, spanning guerrilla urbanism to DIY, these strategies are not an adequate response to the need for city-wide design strategies. However, bottom-up approaches do possess a potentiality for rapid change, and this potential can be realized if adequate notations and design frameworks are created to capitalize on open-source participation, while simultaneously regulating the outcome.

This paper examines strategies that employ small-scale networked design implementations as a means for large-scale transformation. These projects navigate top-down and bottom-up strategies, combining the best of both and abandoning scenarios that are rigid, generic or ad hoc. These projects utilize interim designs as a testing ground for user participation, while mediating the embedded dynamic urban notations that address the larger issue of long-term integration. The notions of multiplicity, replication and directed participation become critical components of these game-changing strategies.

MARCELLA DEL SIGNORE
Tulane University

MONA EL KHAFIF
University of Waterloo

DO IT YOURSELF URBANISM AND THE DESPERATE NEED FOR MORE IMPACT
Terms such as DIY, pop up, guerrilla-, and tactical-urbanism describe an urbanism that is nurtured by a spirit of "I can change the world." This hacker mentality allows citizens to take back their city and shape their environment through direct involvement, often without the help of an expert or designer (Quirk, 2020). The power of thinking about urbanism this way, lies in the massive mobilization of citizens (a potentially beneficial situation), but it also promotes an anti-architect attitude that undermines any widespread changes addressing community needs. While technology seems to be an excellent tool for encouraging and involving people, there remains a lack of application in regards to city-wide effects.

As Alexandra Lange (Lange, 2012) recently stated, technology is not a "magic wand," and crowdsourcing initiatives simply fall short in the large-scale, long-term urban project. These mechanisms are observed in the uprising of Facebook, utilized by political movements within the political arena. The rapidly emerging distribution and accessibility of the Internet as a virtual space in which to exchange ideas and create communities had an unprecedented effect on the generation that produced the Arab Spring. Facebook and Twitter mobilized the masses and connected people (Kneuer & Demmelhuber, 2012). However, these techniques do not write political ideologies or replace the administrative infrastructures necessary for a new society. DIY and user-generated urbanism need to be understood as tools to support and direct participation. They should not replace design and still cannot facilitate more impactful action on a larger scale.

While cities struggle with a decrease in governing powers, bottom-up strategies invested into urban frameworks and small-scale design development carry the potential to effect change by facilitating distributed participation in their large-scale application. This approach capitalizes on open-source access and the development of design frameworks that ensure the quality of the final output.

THE SITUATIONIST CITY AND CONTEMPORARY APPROACHES FOR ACTIVATION

The urban utopia that might serve as the most historically-referenced model for emerging urban actionism is The Situationist City, reread today as The Temporary City. The concept of The Temporary City, as recently published by Peter Bishop and Lesley Williams (Bishop & Williams, 2012), unfolds out of an understanding that the city, as our social, economic and ecological environment, is rooted in a four-dimensional, highly dynamic scenography: a space that changes on a daily or hourly basis in spite of consisting of more permanent elements. Bishop and Williams state that the Temporary City today has its own legitimation. They write: "In an era of increasing pressure on scarce resources, we cannot wait for long-term solutions for vacancy or dereliction. Instead, we need to view temporary uses as increasingly legitimate and important in their own right. They can be a powerful tool through which we can drip-feed initiatives for incremental change—as and when we have the resources—while being guided by a loose-fit vision" (Bishop & Williams, 2012).

As such, urban space, viewed as a cultural artifact, seems to be the materialization of its events, often standing in contrast to the static master plans and technocratic strategies that are still the traditional practice of professional urban planning and design. It is a space permanently in the making and, therefore cannot be disconnected from its interim character or transformation over time.

The new model of the Temporary City needs to be a space for strategic thinkers devising temporal, ecological and interim uses in the socio-spatial fabric. The Situationist City of the 1960s might be understood as a utopian, and even revolutionary, approach to counter the technocratic understanding of society. Contemporary design approaches are becoming increasingly founded on participation, cooperation models and an understanding of infrastructural space that captures temporal change and socio-spatial interaction as dominant conditions. Archigram's work from the Living City exhibition of 1963, for example, focused on the definition of space through interaction, rather than demarcation and boundaries. In this manifesto, Archigram declared the city to be a "sum of its atmospheres" (Shepard, 2011). Beginning in the 1960s, architectural, urban and artistic interventions conceptualized temporary architecture as a means of

moving away from objectification, and generated the notion of space-environment. In this context, Archigram's Instant City can be read as a transient event, in which the type of material space created was not relevant. Its dynamic relations with people and the functioning of a whole being comprised of many sub-parts was a real, non-spatial condition that prioritized action above form.

Contemporary approaches, however, utilize hybridized and overlapping patterns of resource consumption, and tend to foster a diverse and resilient social ecology. Designers, artists and, more recently, city planners are exploring temporary tactics to fulfill a variety of social, political and spatial objectives. These design strategies and tactics are often deployed into/onto vacant resources in order to use "Waiting Lands" during their transitional phase (Christiansen, 2006). Another strategy attempts to use activation techniques to transform underutilized local urban space within existing city fabric and public space. "Waiting Lands," as coined by Kees Christiansen, is the employment of underused spatial resources that demand the designer shift their thinking from explicit knowledge that feeds into form, to complex interactive and responsive processing. The role of the designer is then defined as curator, negotiator and collaborator. In contrast to the Situationist City, this new understanding encourages a nascent practice within the design profession to understand the Temporary City as an ongoing part of the Permanent City. This demands design strategies that allow the integration of multiple actors, and negotiation between top-down and bottom-up processes.

In *Drosscape: Wasting Land Urban America*, Alan Berger (Berger, 2006) points out how relevant the resources trapped in urban wastelands are. He identifies categories of wasteland among those lands of transition: empty real estate properties and urban infrastructures that must be understood as territories of opportunity rather than wasted land. Strategies for a temporary urbanism that moves beyond DIY, allow for the testing of scenarios in the form of a living urban laboratory. While addressing the large-scale problems of contemporary urban landscapes, they capitalize on the resources of abandoned and vacant urban territories.

A main challenge of today's Temporary City, however, is the difficulty of designing using social interaction and participation: terminologies born in the discipline of spatial sociology, describing undirected activities by a diverse set of unforeseeable users. In response to those challenges, temporary strategies need to be designed for spatial flexibility, indeterminacy and multiplicity.

Stan Allen (Allen, 2011) describes this phenomenon as "directed indeterminacy:" a condition that requests clearly articulated design implementations that are not open-ended but specific, precisely because they need to support the undirected participation of a spectrum of users. While the theories and approaches of the Situationist City were made possible by the political conditions of the 1960's (articulating urban utopias based on non-design as a reaction to executed top-down bureaucracy), today's strategies need to move beyond the paradigm of the solely tactical. Design in this new context works towards the development of small-scale design, directed notations and toolkits that capitalize on the potential impact of bottom-up user participation, while simultaneously addressing the need for large-scale strategies.

ALLOGRAPHIC URBANISM AND THE POTENTIAL OF OPEN SOURCE
In "Mapping the Unmappable," Stan Allen (Allen, 2000) describes the difference between an "autobiographic" practice that depends on the author's original production (for example, a painter), and an "allographic" practice. In the latter, Allen

refers to notations and scripts as a form of representation that allow others to follow the design instructions. A symphony written by Schubert was never meant to be directed solely by Schubert, but by many conductors who would use his original instructions as a guide. Manipulations and mutations might be possible in this process, but the originality of the outcome is embedded in the script written by Schubert himself. According to Allen, the contemporary city must be understood as a complex dynamic condition that desperately needs notational representation. While Allen highlights the significance of anticipation, time-based thinking and the potential for allographic notation to map the invisible forces of the city, he also stresses that this practice allows for a collective. A score is not a private language. It works instrumentally to coordinate the actions of multiple participants As Allen suggests "the use of notations marks a shift from the production of space to the performance of space."

While Allen specifically refers to the notation as a form of representation that describes urban events and programs, the technique of allographic practice carries even more potential when combined with the rapid evolution and implementation of open-source practice. An allographic notation that is based on small-scale design while addressing large-scale urban issues, and inviting the general public to act upon the script, has incredible power to be a significant means of change. Even the development of the original design instructions, when put out into the world through open sourcing, enables rapid evolution of the product. The rationale for open-source collaboration in this context is that a larger group of users and agents, if directed strategically, can produce a result faster and more useful than a single designer.

URBAN PROTOTYPING

In the fall of 2012, the Gray Area Foundation in San Francisco initiated an Urban Prototyping (UP) event. This event occurred precisely to benefit from the development of open-source accessible design addressing the undiscovered potential of cities. The event can be understood as one of many initiatives centered around creative projects for the public realm. While the event honored the spirit of tactical urbanism, it also addressed the need for long-term conversations and change. To direct this need, the initiators developed an approach consisting of 3 steps: prototyping, replication and adoption.

The Process of Prototyping: Long-term solutions, or the competition brief, can often be jump-started by building and refining quick working models. Due to their public and temporal nature, prototypes are meant to test out new ideas while the event generates visibility and dialog. Within this context, prototypes can be developed and displayed to solicit feedback from residents, city officials and stakeholders. This type of approach reflects tactical urbanism but includes a critical review of prototypes. Each prototype was required to utilize digital tools and Internet platforms.

The Requirement to Replicate: One discovered requirement for prototype development was the potentiality for nuanced replication in a variety of environments capable of ensuring the designs are adaptable and applicable to many different contexts. By opening up the designs, source code, materials, instructions and other resources necessary to recreate each project, UP aimed to catalyze a new global community for sharing urban design and technology work. All prototypes selected during the open call needed to have the potential for replication and, after the event, were submitted to an online open-source archive for direct access by others.

Cities adopting Ideas: The event also tried to create a real and lasting path for projects to be developed and implemented. The core team of UP San Francisco was comprised of nonprofits dedicated to design, technology, urbanism and the arts. In attendance were private firms on the forefront of design thinking, as well as municipal agencies that are open to participation models and have the ambition to formally integrate projects into the city's landscape. The San Francisco Mayor's Office of Civic Innovation and the San Francisco Planning Department is now examining opportunities to implement selected UP projects across the city (UPSF, 2012). While events featuring pop-up urban projects are common, UP San Francisco aimed to operate as a catalyst event, to structure and organize the potential of temporary design needed to address urban conditions that are not unique to San Francisco or the festival neighborhood. In addition, the production of prototypes was meant to evolve into long-term transformations initiated in cooperation with the city administration. The requirement of open-source access for all selected prototypes was unusual for designers; while the design of the prototype was credited, any future application and implementation was donated to the public. Following are a series of projects utilizing the development of small-scale design objects to address large-scale layers of underutilized infrastructures, networked systems and/or land resources.

URBANECOLOGY: THE 10 MILE GARDEN

Urban Context: In 2009, the San Francisco Planning Department initiated tactics to create a new set of public spaces under the Pavement to Parks program (P2P). Focusing on underused portions of the public right of way (about 25% of San Francisco's land area) each P2P project operated as a public laboratory for the City to work with communities testing strategies to reclaim selected locations as permanent public open space. One site category identified for the UP event was a proposal regarding the network of fire hydrants, which spreads across American cities at an average maximum spacing of 500 feet. As per vehicle code Section 22514, parking in front of fire hydrants is forbidden in order to protect and maintain street access in emergencies. However, there is no policy in San Francisco or any other American city that requires this access area on the street or sidewalk be paved. On the scale of a city such as San Francisco, a network of more than 9000 fire hydrants has the potential to create an additional ecological green footprint of 10 miles; implemented in small plots and programmed at the community and neighborhood level, without violating fire department regulations. Every square foot of this territory could be a bio-swale, a public pocket space or a low planting bed. On a city-wide level, this could initiate a new Flower Power movement in which resistance is understood as a productive re-interpretation of existing and unnecessary codes, in support of the urban ecology.

Prototype Notation: THE 10 MILE GARDEN, proposed for the Urban Prototyping event in October 2012, was understood as a catalyst project in which the fire hydrant sites of a neighborhood were activated on a temporary basis. The project consisted of three components:

a) Physical intervention in order to identify the sites and to create a new mental map;

b) A grasshopper-driven design toolkit that defined planting patterns and allowed user participation through defined design instructions;

c) A digital interface and QR code strategy that organized the adoption of fire hydrant sites by citizens and neighborhood organizations.

Figure 1: *The 10 Mile Garden* (Site Strategy, SF Fire Hydrant Footprint, Notational Toolkit, Prototype).   1

The power of the notation lies in its potential to engage multiple citizens simultaneously, with that participation highly directed through a framework that keeps the large-scale effects in mind. Citizen participation fosters the development of responsibility and identity, and the design script, here defined as a grasshopper script, ensures a spatial quality, with the constrains of the existing code used as an overarching design strategy.

Large-scale Relevance and Global Replication: Every American city consists of infrastructural layers, among which include a network of fire hydrants that total an impressive footprint. Though the footprint which, depending on city code, is 6x6 or 8x8 feet, is small-scale, its repetition and networked character carries the potential for a new ecologically active layer.

Potential Infrastructural Application: While budgetary reasons may limit the reproduction of this innovation, appropriation of this site category might be adopted by a new zoning code for the fire hydrant sites integrated early into the design process. This would foster a new green infrastructure. The biggest potential for THE 10 MILE GARDEN is its implementation in new master plans. Fire hydrant sites could operate as a network of connected bio-swales or mini gardens that not only add green spaces to the city but also create a new water system in support of the urban ecology.

URBANPLAY: THE INSTANT [PLAY]GROUND

Urban Context: INSTANT [play]GROUND (IpG) is a portable, instant game that can fit in a suitcase and travel to different sites to activate forgotten, unused or misused parts of the city. The game takes no longer than an hour to install and for users to start playing. The area is instantly transformed into a play-zone and, after several games, IpG is placed back into the suitcase and can travel to another site. Within the context of the Urban Prototyping event in San Francisco in October 2012, a series of sites were identified: corridor areas, alleys and residual spaces between buildings. The traveling project was tested as an instant activator to engage the players and the public audience. The project has a great potential to be used by a wide range of groups, be mass-produced, globally replicated, and be a portable urban catalyst to instigate and support civic engagement and participation.

Prototype Notation: The INSTANT [play]GROUND, as developed for the UP event, was a portable tool and catalytic agent in which a series of sites could be activated by the instant deployment of an urban game. The project was developed through three main components:

a) The instant game had to be capable of fitting in a suitcase and to travel from one site to another;

b) A toolkit composed of the playground (the existing urban floor), a game board (inscribed actions) and micro-canopy (interim and instant) with a set of rules to choreograph the user's interaction with the game;

c) A digital interface to build a permanent repository of the temporary (play) scapes produced as the game travels to different sites, enabling contact with different players and audiences.

The strategies embedded in the notation, identified in the toolkit and rule set, facilitated users to create their own playground within the given framework. Due to the game's portability and capacity for instant deployment, every instance the game is activated a new scenario is produced (with a different site and/or different users).

Figure 2: *The Instant [play]Ground* (Site Strategy, Notational Toolkit, Prototype).

2

The potential of the project's notation process lies in the capacity to engage a variety of user groups and urban sites waiting to be (temporarily) re-written.

Large-scale Relevance and Global Replication: The IpG project has the potential to transform many urban sites in different and diverse cities without requiring any preparatory infrastructure. The game can be adopted by any user (individuals, collective organizations, and city officials), inherently increasingly the potential for replication and open-source participation. When IpG occurs, the site fostering the game immediately generates a transitory public node and aggregation.

Potential Infrastructural Application: The project could become a permanent activator for pre-existing or new urban playgrounds or for sites that have been neglected, unused or misused. City officials might also adopt the IpG as an instant tool to generate a public node; it can also layer over any type of existing urban-play site and open up possibilities of long-term master plan implementations.

URBANAPPROPRIATION: NETWORKED PARKLETS ILOUNGE

Urban Context: Within the San Francisco's Pavement to Parks program, the Parklet program provides a platform to repurpose and transform a part of the streetscape, usually comprised of a few existing parking spaces, into a space for the people. One of the key components in the program's policy is that the space must remain open and accessible to the public. The iLOUNGE project is developed out of this framework and capitalizes on the parklet program to create a physical network throughout the city that also connects with the digital space.

Prototype Notation: iLOUNGE, as proposed for the Urban Prototyping event, is understood as a new parklet typology. Using a modular system, the project can break down into multiple units and be disseminated throughout the city creating a distributed physical and digital network. The project consists of three components:

a) A physical modular infrastructure acting as an anchor platform;

b) A set of instructions informed by material systems that trigger a specific type of programmatic and human occupation;

c) A set of multimedia devices hacking into the existing Wi-Fi system of the city, in order to generate forms of distributed network communication.

The power of instructions embedded in the modular system lies in the continuous exchange between the analog strategies (material systems and narratives) and the digital-hacking strategy. Each module-parklet, although being physically dislocated, is able to communicate with, and feed, the others, creating a responsive-aware network. The project harvests from the existing underused infrastructures of the city, nesting within the urban fabric and feeding into digital relational systems. The project emphasizes networked technologies and their ability to connect people, thus creating cyber-hacked communities.

Large-scale Relevance and Global Replication: The potential for global replication lies in the capacity of the modular system that supports dislocation throughout the city. Different forms of aggregations can serve different site typologies, while articulating a new form of public space. Equipped with Wi-Fi sensors that hack into open networks and media screens, users of this public space can not only interact with their direct neighbors but with online communities.

Potential Infrastructural Application: The potential infrastructural application lies in the transformation of identified parking zones into an interactive network of

Figure 3: *The Networked iLOUNGE* (Site Strategy, Sections, Notational Diagram, Prototype).

3

digital and physical spaces. The mobility and flexibility of the project allows for the search of "fertile" urban ground, where these units can be anchored to hack existing systems and foster new communities. iLOUNGE is highly equipped, aggregated public furniture that can be rented by anyone, connecting users on multiple levels.

CONCLUSIONS

The Urban Prototyping event offered an approach that is unique in the administrative realities of our cities. Defined through the 3 step model - prototyping, replicating and adopting - we were able foster direct bottom-up participation, while the design strategies addressed replicable large-scale and long-term implementation. Though these projects dealt with the recycling of underused territories for social appropriation, the largest potential of Allographic Urbanism lies in the strategic choreography of bottom-up participation through the design of networked systems, big data collection and widely distributed small-scale designs that manipulate and improve the intelligence of our cities. This approach capitalizes on the notational practice as a direct and powerful agent of change, able to embody open source strategies as an instrument of collective empowerment.

A series of projects have been developed within this framework - harvesting a fertile ground for future change representing solutions and the possibilities of defining operational parameters. Local Code (Nicholas de Monchaux) is developed as a software tool that scripts multiple vacant sites as a network within the city according to their environmental capacities. Smart phone applications, such as Local Data (Alicia Rouault, Matt Hampel. Prashant Singh), are digital toolkits that allow communities to collect and manage place-based data production. Urban Sensing FutureSF (German Aparicio), on the other hand, invests in the development of a sensor kit that is available through open source and can be built and mounted on house facades by every citizen. The collected data feed into a database that tracks microclimates, and allows designers to understand the complexity of our environment. This knowledge can be used to design building envelopes that harvest sun and wind energy. What these approaches all have in common is the utilization of bottom-up power, to take advantage of open source and employ digital technology in order to act faster than top-down administration. A common denominator is the development of a strategic framework that directs participation and, finally, serves the large-scale, long-term urban project.

ENDNOTES

1. Rafkin, J., Preface in Lahman, S., Absolutely Public, Images Publishing Group, 2006.

2. Bishop, P. and Williams, L., 2012. The Temporary City, Routledge.

3. Shepard M., Toward the Sentient City, MIT Press, 22, 2011.

4. Christiaansen, K., van den Born, H., Gietema, R., van Oort, I., 2006. Situation, KCAP, Waiting Land, Rotterdam: Birkhaeuser.

5. Lefebvre, H., 1970. La Revolution Urbaine, Paris: Gallimand, Collection Idées.

6. Allen, S., 2011. Landform Building, Discussion Stan Allen, Kenneth Frampton, Hashim Sarkins, Princeton: Lars Müller Publishers, 257.

7. Allen, S., 2000. Mapping the Unmappable, in Practice: Architecture, Technique and Representation, The Netherlands, 2000, 42.

8. Del Signore M., El Khafif M., 2012, TAW Conference, Appropriation of the City. Architecture as a Tool for the Re-appropriation of the Contemporary City, 235.

9. Allen, S., 2011. Landform Building, Discussion Stan Allen, Kenneth Frampton, Hashim Sarkins, Princeton: Lars Müller Publishers, 257.

10. Lange, A., Against Kickstarter Urbanism, Design Observer, 2012: http://observatory.designobserver.com/feature/against-kickstarter-urbanism/34008/.

11. Quirk, V., 2012. Can you Crowedsource a City?, Arch Daily, 2012 http://www.archdaily.com/tag/diy-urbanism/.

12. Kneuer, M., Demmelhuber, T., The Role of New Media for Democratization Processes, Information for Political Education Nr. 35, Innsbruck, Wien, 2012.

13. Berger, A., Drosscape. Wasting Land in Urban America, Princeton Architectural Press New York, 2006.

14. Urban Prototyping San Francisco: http://sf.urbanprototyping.org/sabout/program-model/.

15. Local Data, Alicia Rouault, Matt Hampel. Prashant Singh: http://www.codeforamerica.org/?cfa_app=localdata.

16. Local Code, Nicholas de Monchaux: http://wpa2.aud.ucla.edu/info/index.php?/theprojects/local-code.

17. Urban Sensing FutureSF, German Aparicio, Personalized environmental exposure: http://urban.cens.ucla.edu.