

SPACEBOOK

NETWORKED PUBLIC PLACES IN THE PERSONALIZED METROPOLIS

By

Tristan van Leur

A thesis
presented to the University of Waterloo
in fulfilment of the
thesis requirement for the degree of
Master of Architecture
in
Engineering

Waterloo, Ontario, Canada 2015
©Tristan van Leur 2015

AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

ABSTRACT

Today's society is more connected than ever; we have constant access to information, to communication, and to various forms of social media. Ubiquitous mobile computing has significantly changed the public realm in a way that cannot be ignored. Socializing no longer relies on face-to-face interaction, and instead, vast quantities of people's social lives unfold online via virtual platforms such as Facebook, WeChat, or Instagram. These virtual spaces have joined parks, plazas, and streets as spaces of public communication and interaction. However, these spaces create new questions of privatization and segregation, and may erode the public sphere as much as they extend it. Online discourse can be controlled and customized, allowing citizens to voluntarily segregate themselves with people to whom they are similar. This thesis suggests that physical public space needs to function as spaces that bring people of difference together: a role that is crucial to the health of our multicultural metropolises. *Spacebook: Networked Public Places in the Personalized Metropolis* embraces information technologies as public resources, and suggests a set

of urban public space interventions that use interactive and sentient technologies to locate the network in physical spaces. As an attempt to counteract the segregation and privatization of the public sphere, these new spaces encourage greater user participation and agency in public space.

In this research, two components of the public sphere were examined: virtual networks and physical public spaces. Physical public spaces were discovered as having been privatized through a number of policies of ownership and regulation. Virtual social networks were examined at two scales. The first explores these networks at the scale of the individual; in an attempt to understand the spatial implications of social networks, the second part explores the networks at the scale of the metropolis. This research proposes that we have produced a new condition, where the city is augmented and expanded by the individual's networks, forming a personalized metropolis.

Spacebook proposes a set of public spaces, called *Networked Public Places (NPPs)*, which localize the global networks, and turn them into an interactive collective experience. NPPs are a set of interfaces operating at the border between online and physical public spaces. NPPs do not completely transform the public realm, but instead offer provocations for a way that architecture and information technologies can come together to benefit the public sphere. By embracing information as a public resource and asking what should (and can) be shared, *Spacebook* suggests a beginning of a more participatory and open public realm.

ACKNOWLEDGEMENTS

Thank you DIALOG and the Scholarship in Honour of Micahel Evamy for the financial assistance in the completion of this degree.

I have poured a lot of my energy, time and spirit into the pages of this thesis over the last 16 months. If it wasn't for the incredible support and knowledge provided by my friends, colleagues, and advisor's, I have no idea how I would have made it through this whole process.

Mona El Khafif, thank you for pushing me since the very first day of masters. Sometimes the pace and expectations felt insurmountable, but the drive you had pushed me to produce the best work I was capable of.

Maya Przybylski, thank you for your constant support, understanding and perspective. This thesis wouldn't have been able to be completed without those qualities; especially in the last four months.

Ila Berman, thank you for your consistent voice of criticism and insight throughout the process.

Adrian Blackwell, thank you for scepticism that you provided throughout M2. The introduction to various theorists you provided me was critical to the core of this work.

Ali Fard, your course on urban and ICTs theory was an eye-opening experience, as were many of your suggested readings, NG7, and our conversations. All of them helped contribute to the theories posited in this thesis.

Thank you to all of my friends who offered conversation and critiques over the last 16 months. All of our conversations were more and an inspiration to me than any of you know. Everyone that

I have shared a studio with; your perspectives I am sure have made it into this thesis in some (bizarre) form. Thank you to my old Roman house mates (La Famiglia) for being truly amazing friends. Carol and Quinn. Thank you for being amazing roommates. Home was always a welcoming, fun and calming place because of you two.

Piper, I just wanted to join the list of the 100 acknowledgements you will receive. There is a reason why there are so many.

Zak, thank you for pushing me to join BRIDGE in a leadership role. I had a lot of fun scheming with you, and learnt a lot from everyone that I worked with.

Matt Lawson, although you weren't in Cambridge for much of the process, your visits and conversations provided a much needed respite from the depths of thesis.

Matthew Spemulli, thank you for your friendship, critiques, and encouragement. Our conversations helped guide my work forward more than you probably know.

Connelly, thank for your editing skills at various points throughout my academic career, especially in completing this thesis.

Mum and Dad, I am incredibly lucky to have two such supportive parents. There is no way I would be where I am today without the two of you. This acknowledgement will never be able to convey my gratitude.

And finally, thank you Sammy. Your unwavering support, belief, kindness, criticism, compassion and love has helped guide me through this process. I would never have been able to have done this without you.

To Distance and Connection

TABLE OF CONTENTS

0.0 PREFACE

Abstract	v
Acknowledgements	vii
Dedication	ix
List of Figures	xii
Introduction	22

PART 1: THEORY TOWARDS A PERSONALIZED METROPOLIS

1.0 ON CONTEMPORARY PUBLICS 26

1.1	The Expanding Public Sphere
1.2	The Importance of Public Spaces in Cities
1.3	The Privatization and Regulation of Public Space
1.4	ICT networks in Public Space

2.0 SOCIAL ICT NETWORKS 40

2.1	History of Online Social Communities
2.2	Catalogue of Networked Publics
2.3	Networked Publics to Controlled Micropublics
2.4	Location and the Network
2.5	Conditions of Social ICTs

3.0 ON THE PERSONALIZED METROPOLIS 76

3.1	Personalized Augmentation Bubbles
3.2	The Personalized Metropolis
3.3	A Public Sphere for the Personalized Metropolis

PART 2: SPACEBOOK –NETWORKED PUBLIC PLACES

4.0 TOWARDS A SPACEBOOK 94

- 4.1 Introduction and Intentions
- 4.2 The Public Sphere in the Personalized Metropolis
- 4.3 Public Place Networks
- 4.4 POPS Site Analysis and Opportunities
- 4.5 Components for a Healthy Public Sphere

5.0 NETWORKED PUBLIC PLACES 144

- 5.1 Networked Public Places (NPPs)
- 5.2 NPPs Typologies
- 5.3 Networked Public Walkway
- 5.4 Networked Public Garden
- 5.5 Networked Public Commons
- 5.6 Conclusions

Bibliography 192

LIST OF FIGURES

- Fig.1 on page 06 **Mobile Computing in Public Space**
Accessed on November 25, 2015. <http://www.independent.co.uk/life-style/gadgets-and-tech/news/mobile-bills-could-rocket-up-as-ofcom-announces-that-it-will-charge-networks-far-more-to-use-phone-10515613.html>
- Fig.2 on page 08 **Summer Pools in Godella**
Accessed on November 25, 2015. <http://architizer.com/blog/8-outdoor-pools/>
- Fig.3 on page 08 **I Just go to Shows for the Texting**
Accessed on November 25, 2015. <https://musicnotmagic.wordpress.com/2011/09/21/i-just-go-to-shows-for-the-texting/>
- Fig.4 on page 10 **Sitting in an Audience with an Ipad**
Accessed on November 25, 2015. <http://gotham-magazine.com/what-not-to-do-at-new-york-fashion-week>
- Fig.5 on page 12 **Example of an 18th Century Salon**
Painting By: Anicet Charles Gabriel Lemonnier. Accessed on November 25, 2015. https://commons.wikimedia.org/wiki/File:Les_salons_au_XVIIIe_si%C3%A8cle_-_Histoire_Image.jpg
- Fig.6 on page 12 **Occupy Protest in Zucotti Park**
Photo by: Henry Ray Abrams, modified by Author. Accessed on November 25, 2015. <https://cryptome.org/info/ows-19/ows-19.htm>
- Fig.7 on page 14 **Rules of Bryant Park**
Photo by Author
- Fig.8 on page 14 **View of Bryant Park**
Photo by Author
- Fig.9 on page 16 **Golf in Bryant Park**
Photo by Author
- Fig.10 on page 16 **Ping-Pong in Bryant Park - Regulated by the BPC**
Photo by Author
- Fig.11 on page 18 **Users are so occupied by their networks that they become unaware of their surroundings**
Image by Author
- Fig.12 on page 20 **Group Accessing Musical Network**
Accessed on November 25, 2015. <https://answermethis.wordpress.com/2015/11/05/tp051115/>
- Fig.13 on page 22 **Whole Earth Catalogue**
Accessed on November 25, 2015. <http://www.spatialagency.net/database/why/ecological/whole.earth.catalog>
- Fig.14 on page 22 **Blackplanet.com Splashpage**
Accessed on November 25, 2015. <http://streetknowledge.nyc/2008/04/15/radio-one-acquires-black-planet-parent-company/>
- Fig.15 on page 23 **A Short history of Social Media**
Accessed On November 25, 2015. <http://www.adweek.com/socialtimes/history-social-media/454254>

SPACEBOOK: NETWORKED PUBLIC PLACES

- Fig.16 on page 26 **Facebook Newsfeed**
Image of Author's Facebook Newsfeed. www.facebook.com
- Fig.17 on page 27 **Yplan Interface**
Accessed on November 25, 2015. <http://www.codigosocial.es/app-social-la-nueva-generacion-de-redes-sociales/>
- Fig.18 on page 28 **Circle Interface**
Accessed on November 25, 2015. <http://www.lifehack.org/articles/technology/what-this-weekend-15-top-local-happenings-apps-that-find-you-fun-things.html>
- Fig.19 on page 29 **Tinder Interface**
Accessed on November 25, 2015. <https://www.turn-on.de/news/wie-facebook-tinder-hat-jetzt-auch-verifizierte-profile-35151>
- Fig.20 on page 30 **Grindr Interface**
Accessed on November 25, 2015. <http://logoonline.mtvnimages.com/uri/mgid:uma:image:logotv.com:10695106?quality=0.8&format=jpg&width=1440&height=810&.jpg>
- Fig.21 on page 31 **Foursquare Interface**
Accessed on November 25, 2015. <http://www.fastcodesign.com/1669984/the-redesigned-foursquare-is-about-radical-simplicity-and-a-new-way-to-search>
- Fig.22 on page 32 **Yelp Interface**
Accessed on November 25, 2015. Author generated screen capture from www.yelp.com
- Fig.23 on page 33 **Soundcloud Interface**
Image of Author's soundcloud feed. www.soundcloud.com
- Fig.24 on page 34 **Vine Interface**
Accessed on November 25, 2015. <http://bablonos.ru/wp-content/uploads/2013/02/TwitterVine-02.jpg>
- Fig.25 on page 35 **Instagram Interface**
Accessed on November 25, 2015. <http://www.apekamod.com/2015/05/og-instagram-apk-save-and-zoom-images.html>
- Fig.26 on page 36 **Meetup Interface**
Accessed on November 25, 2015. Author generated screen capture from <http://www.meetup.com/>
- Fig.27 on page 37 **Youtube Interface**
Accessed on November 25, 2015. Image of Author's youtube stream. www.youtube.com
- Fig.28 on page 38 **A Tumblr Blog**
Accessed on November 25, 2015. Screenshot by Author from <http://madebyfolks.tumblr.com/>
- Fig.29 on page 39 **Twitter Interface**
Accessed on November 25, 2015. <https://99designs.com/designer-blog/2014/01/15/7-unbreakable-laws-of-user-interface-design/>
- Fig.30 on page 40 **SMS Interface**
Accessed on November 25, 2015. <http://simpleiphone.com/2014/01/22/how-to-see-when-text-was-sent-on-ios-7/>
- Fig.31 on page 41 **WhatsApp Interface**
Accessed on November 25, 2015. <http://www.igen.fr/app-store/2014/11/whatsapp-optimise-son-interface-pour-les-iphone-6-88569>
- Fig.32 on page 42 **Skype Interface**
Accessed on November 25, 2015. <http://www.tecnologiaegadgets.com/whatsapp-icq-kik-ou-skype-qual-o-mensageiro-perfeito-para-voce/2096>

PREFACE

- Fig.33 on page 43 **Snapchat Interface**
Accessed on November 25, 2015. <http://tech.firstpost.com/news-analysis/snapchat-says-it-hands-over-some-unopened-snaps-to-law-enforcement-on-search-warrant-106709.html>
- Fig.34 on page 44 **Wechat Interface**
Accessed on November 25, 2015. <http://www.lukeyishandsome.com/2013/06/wechat-commentary.html>
- Fig.35 on page 46 **Controlled Micropublic Diagram**
Image by Author
- Fig.36 on page 48 **Matrix of Social Media Networks that use Locative Technologies**
Image by Author. Logos retrieved from: www.plan.com, www.tinder.com, www.grinder.com, <http://a650.phobos.apple.com/us/r1000/084/Purple/v4/b5/84/08/b58408f2-0f09-0645-c00a-0a4279580d02/mzl.cgaegvqq.png>, www.yelp.com, www.foursquare.com, www.facebook.com, www.wechat.com
- Fig.37 on page 51 **User absorbed in her cellphone**
Accessed November 25, 2015. <https://plus.google.com/+SolucionesWindroid/posts>
- Fig.38 on page 52 **Chart Locating Virtual Space on Conditions of Collective vs. Individual and Local vs. Global**
Image by Author
- Fig.39 on page 55 **Users occupying their virtual networks in the bodily presence of their friends**
Accessed November 25, 2015. <http://jasonfnsaint.tumblr.com/post/98253947901/it-has-become-ap-pally-clear-that-our>. Image modified by Author.
- Fig.40 on page 56 **Diagram display major online social networks.**
Image by Author.
- Fig.41 on page 59 **User connects to the global network, sharing experiences iwth friends who are located around the world**
Image by Author.
- Fig.42 on page 60 **Yelp**
Image by Author
- Fig.43 on page 61 **Instagram**
Image by Author
- Fig.44 on page 62 **Facebook**
Image by Author
- Fig.45 on page 63 **Space is flooded by individualized information.**
Image by Author
- Fig.46 on page 64 **Traditional Public Realm**
Image by Author
- Fig.47 on page 65 **Contemporary Public Realm**
Image by Author
- Fig.48 on page 73 **Map of van Eyck's Playgrounds in Amsterdam**
Image by Author. Locations compiled from:
Lifaivre and de Roode, *Aldo van Eyck: the playgrounds and the city.*
Liana Lefaiivre "A Psychogeographical bicycle tour of Aldo van Eyck's Amsterdam Playgrounds." 134
Accessed on Novmeber 25, 2015. https://ryanmwithrow.files.wordpress.com/2010/11/van-eyck_playgrounds.jpg?w=962
- Fig.49 on page 74 **Clityspeak Installation by Jason Lewis**
Accessed November 25, 2015. <http://www.obxlabs.net/shows/everything/>

- Fig.50 on page 75 **Makeout Installation by Rafael Lozano-Hemmer**
Accessed November 25, 2015 http://www.lozano-hemmer.com/showimage.php?img=buenos_aires_2012&proj=1&type=artwork&id=2
- Fig.51 on page 76 **Map of Playgrounds in Amsterdam**
Image by Author. Locations compiled from:
Lifaivre and de Roode, *Aldo van Eyck: the playgrounds and the city.*
Liana Lefaivre "A Psychogeographical bicycle tour of Aldo van Eyck's Amsterdam Playgrounds." 134
Accessed on November 25, 2015. https://ryanmwithrow.files.wordpress.com/2010/11/van-eyck_playgrounds.jpg?w=962
- Fig.52 on page 78 **Diagram of van Eyck's Design Process**
Image by Author.
- Fig.53 on page 79 **Two Playgrounds in Amsterdam**
Accessed November 25, 2015. <http://www.thepolisblog.org/2012/06/ethic-of-care-in-urban-interventions.html>
- Fig.54 on page 80 **Van Hogendorpplean, 1953**
Accessed November 25, 2015. <http://www.architekturfuerkinder.ch/index.php?pioniere/aldo-van-eyck/>
- Fig.55 on page 80 **Typologies of spaces playground occupied**
Image by Author.
- Fig.56 on page 83 **Types of Components by van Eyck**
Image by Author.
- Fig.57 on page 84 **Boulevard**
Image by Author.
- Fig.58 on page 85 **Plaza**
Image by Author.
- Fig.59 on page 86 **Courtyard**
Image by Author.
- Fig.60 on page 87 **Park**
Image by Author.
- Fig.61 on page 88 **Paper Streets in San Francisco**
Image by Author. Data traced from <https://livablecity.org/wp-content/uploads/2013/08/Unaccepted.pdf>
- Fig.62 on page 90 **Diagram of Local Code 'Machine'**
Image by Author.
- Fig.63 on page 91 **Diagram of Site Construction**
Image by Author.
- Fig.64 on page 92 **Children playing on a van Eyck Designed Playground in Amsterdam**
Accessed on November 25, 2015. <http://serialmother.yoopies.fr/page/6/>
- Fig.65 on page 95 **Toronto**
Image by Empty Quarter. Accessed November 25, 2015. <http://urbantoronto.ca/news/2013/02/photo-day-toronto-black-and-white>
- Fig.66 on page 95 **New York City**
Accessed November 25, 2015. http://wallpaperbeta.com/black_and_white_new_york_nyc_gray_city_hd-wallpaper-235341/

PREFACE

- Fig.67 on page 95 **San Francisco**
Accessed November 25, 2015. http://hdwyn.com/wallpaper_gray/gray_usa_california_san_francisco_city_hd-wallpaper-91150.jpg
- Fig.68 on page 95 **Seattle**
Accessed November 25, 2015. <http://blackandwhitewallpapers.com/black-and-white-seattle-wallpaper/>
- Fig.69 on page 96 **New York, San Francisco, Seattle, Toronto POPS Networks.**
Image by Author. Basemaps by:
Accessed November 25, 2015. <http://www.sf-planning.org/index.aspx?page=3339#map>
Accessed November 25, 2015. <http://apops.mas.org/find-a-pops/>
Accessed November 25, 2015. http://www.seattle.gov/council/Licata/public_space.htm
Accessed November 25, 2015. <http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=7b-0c1459a55e4410VgnVCM10000071d60f89RCRD>
- Fig.70 on page 99 **Seagram Building and Tower**
Accessed November 25, 2015. <http://www.thegorgeousdaily.com/seagram-building/>
- Fig.71 on page 100 **A Picture of the POPS from the Anecdote**
Image by Author
- Fig.72 on page 102 **A series of snapshots form Toronto POPS**
Images Manipulated by Author. Baseplate from Google Streeview.
- Fig.73 on page 104 **Toronto Downtown POPS**
Image by Author. Data Source: City of Toronto, November 04, 2014.
- Fig.74 on page 104 **Map of Toronto POPS**
Image by Author. Data Source: City of Toronto, November 04, 2014.
- Fig.75 on page 106 **Matrix of Toronto POPS Typologies**
Image by Author
- Fig.76 on page 108 **POPS Analysis**
Images by Author.
Blackplates from Google Streetview.
Data from Canadian 2011 Census. Accessed November 25, 2015. <http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=2394fe17e5648410VgnVCM10000071d60f89RCRD>
- Fig.77 on page 114 **POPS Use Categories**
Images by Author.
Blackplates from Google Streetview.
Data from Canadian 2011 Census. Accessed November 25, 2015. <http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=2394fe17e5648410VgnVCM10000071d60f89RCRD>
- Fig.78 on page 116 **POPS Opportunies Map**
Image by Author
- Fig.79 on page 119 **DIY City 0.01a by Usman Haque**
Photo by Rik Leigh. Accessed November 25, 2015. <http://3amcode.blogspot.ca/2012/06/diy-city-interactive-html5-projection.html>
- Fig.80 on page 119 **Estonoesunsolar**
Accessed November 25, 2015. <https://estonoesunsolar.wordpress.com/category/san-pablo/01san-blas-n%C2%BA94-100/>
- Fig.81 on page 119 **Place Au Changement**
Photo by Collectif ETC. Accessed November 25, 2015 <http://www.archdaily.com/179874/place-au-changement-public-plaza-collectif-etc>

SPACEBOOK: NETWORKED PUBLIC PLACES

Fig.82 on page 120	Diagram representing the goals and ambitions of Spacebook Image by Author.
Fig.83 on page 126	Map of POPS Test Sites Image by Author.
Fig.84 on page 128	Matrix of sites selected to test NPPs Image by Author
Fig.85 on page 130	Matrix of components that make up NPPs Image by Author
Fig.86 on page 132	Matrix of proposed NPPs Image by Author
Fig.87 on page 134	Diagram representing composition of the NPG Image by Author
Fig.88 on page 136	Community Scale axonometric of the NPG Image by Author
Fig.89 on page 138	NPG Use Diagram stage 1 Image by Author
Fig.90 on page 138	NPG Use Diagram stage 2 Image by Author
Fig.91 on page 139	NPG Use Diagram stage 3 Image by Author
Fig.92 on page 139	NPG Use Diagram stage 4 Image by Author
Fig.94 on page 142	Axonometric of NPG Systems Image by Author
Fig.95 on page 143	Perspective of NPG Image by Author
Fig.93 on page 141	Architecture scale axonometric of NPG Image by Author
Fig.96 on page 144	Diagram representing composition of the NPG Image by Author
Fig.97 on page 146	Community Scale axonometric of the NPG Image by Author
Fig.98 on page 148	NPW Use Diagram stage 1 Image by Author
Fig.99 on page 148	NPW Use Diagram stage 2 Image by Author
Fig.100 on page 149	NPG Use Diagram stage 3 Image by Author
Fig.101 on page 149	NPG Use Diagram stage 4 Image by Author

PREFACE

Fig.102 on page 151	Architecture scale axonometric of NPG Image by Author
Fig.103 on page 152	NPW Event starting Image by Author
Fig.104 on page 153	NPW Event Developing Image by Author
Fig.105 on page 154	NPW Event Commentary Image by Author
Fig.106 on page 155	NPW Event Assembly Image by Author
Fig.107 on page 156	Diagram representing composition of the NPC Image by Author
Fig.108 on page 159	Community Scale axonometric of the NPC Image by Author
Fig.109 on page 160	NPC Use Diagram stage 1 Image by Author
Fig.110 on page 160	NPC Use Diagram stage 2 Image by Author
Fig.111 on page 161	NPC Use Diagram stage 3 Image by Author
Fig.112 on page 161	NPC Use Diagram stage 4 Image by Author
Fig.113 on page 163	Architecture Scale axonometric of the NPC Image by Author
Fig.114 on page 164	Transformations of the NPC 1 Image by Author
Fig.115 on page 165	Transformations of the NPC 2 Image by Author
Fig.116 on page 166	Transformations of the NPC 3 Image by Author
Fig.117 on page 167	Transformations of the NPC 4 Image by Author

"Whether network culture plants seeds of greater democratic participation and deliberation, or whether it will only be used to mobilize already like-minded individuals remains an open question. The question we face at the dawn of network culture is whether we, the inhabitants of our networked publics, can reach across our microclustered worlds to coalesce into a force capable of understanding the condition we are in and produce positive change, preserving what is good about network culture and changing what is bad—or whether we are doomed only to dissipate into the network."

—Kazys Varnelis, *MICROPUBLIC PLACES*, 160

Introduction

“Technology presents itself as a one-way street; we are likely to dismiss discontents about its direction because we read them as growing out of nostalgia or a Luddite impulse or as simply in vain. But when we ask what we “miss” we may discover what we care about, what we believe to be worth protecting. We prepare ourselves not necessarily to reject technology but to shape it in ways that honor what we hold dear.” (Turkle, 19)

Architecture and technology historian Antoine Picon made a provocation in the introduction of *Digital Culture in Architecture* where he states “We are now past these initial reactions of enthusiasm or concern (regarding digital culture in architecture). The question is no longer whether digital technology is a good or bad thing for design; it is rather about the direction architecture is taking under its influence.”¹ By exploring manners in which certain digital cultures—namely Social Media and Information and Communications Technologies (ICTs) have transformed the way we interact with, and within, space, this thesis reacts to Picon's statement. The thesis explores the way digital culture is transforming the individual (and as a consequence, society); the way in which architecture is affected by these transformations; and the response architecture and architects can make towards emerging behaviours based on digital technologies. The research will focus on the social changes digital culture has caused, and the spatial

1 Picon, *Digital Culture in Architecture, and Introduction for the Design Professions*, 8

implication of the affected social interactions within the public sphere.

Mobile computing has expanded both our platforms and capabilities for socializing to a state where we are no longer affected by such constraints as location, proximity, or schedules. Instead, we can constantly connect, share, debate, and chat seemingly instantaneously, with people all over the world. Ubiquitous mobile computing² has changed the way in which we interact with each other, as well as where we interact with each other. It can be argued that the public realm has grown, contracted, transformed and disappeared simultaneously.

Twentieth century philosopher Jürgen Habermas had a notion of the public sphere where, in the 18th century, sites such as salons and cafés served as open forums for debate and discussion between citizens; these sites of discourse were outside of the control of the state. Inside of these spaces, Habermas regarded the importance of media, citing pamphlets and newspapers as critical facilitators of news and discussion within the public sphere.³ The public sphere itself wasn't so much a physical place, but a site of discourse.⁴ Considering Habermas, social media platforms can be seen not only as an extension of public spaces of streets, squares and parlours, but as a new spatial condition facilitating interaction and communication. With these new spaces come emerging issues of privacy, ownership, and control.⁵

To date, many writings focused on the interaction between physical space and ICTs focus on a series of theoretical dichotomies (physical vs. virtual, connection vs. disconnection, global vs.

2 Ubiquitous Mobile Computing refers to mobile devices - or smartphones, that allow users to connect to global data driven ICTs (the Internet).

3 See Jürgen Habermas, *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*, trans. Thomas Burger and Frederick Lawrence (Cambridge, MA: MIT Press, 1991).

4 Friedberg and Varnelis, “Place,” 16

5 Fard and Meshkani, “Geographies of Information,” In *New Geographies 007: Geographies of Information*, ed. Ali Fard and Taraneh Meshkani, (Cambridge: Harvard University Press, 2015), 7.

local). These polarizing comparisons are reductive to reading the complexities that exist in the overlap, or interface. In today's connected age, we operate in worlds that all contain elements of physicality, connectedness, globalization and virtual spaces.⁶ This research will focus on exploring elements at the intersection of many of the previously mentioned conceptual dualities: analysing what has been gained and lost in our rapidly changing digital culture.

With the expansion of the public realm into online virtual networks come simultaneous changes to the physical realm of public space. Neoliberalism⁷ has introduced new issues of ownership, regulation, and governance to public spaces within North American metropolises; many cities are relying on the private sector to create and maintain public space.⁸ These issues of ownership, regulation and governance have changed the way people can use and occupy public space.

Spacebook: Networked Public Places in the Personalized Metropolis investigates the transforming public realm in North American cities caused by the privatization of public space and the introduction of ubiquitous mobile computing (and accompanying social networks). *Spacebook* suggests that a sentient public realm⁹, one which leverages and engages features of both physical and virtual publics, is a productive way to explore the dynamic nature of our contemporary society.

Many of the transformations that are

caused by ICT networks seem like everyday occurrences, and although they are seemingly small and mundane, they are causing radical shifts to our concepts of publicness, community, interaction and daily urban lives. This research attempts to highlight issues of connectivity, publicness, location, and socializing in our everyday lives; helping us to understand what we have gained, what we have lost, and what is most important to us.

The following thesis is broken into two parts. The first part, *Towards a Theory of the Personalized Metropolis*, looks at changes to the public sphere since the introduction of ubiquitous mobile computing.¹⁰ *Towards a Theory of the Personalized Metropolis* examines emerging types of platforms for public discourse, and the relations between mobile ICTs and the public spaces of cities.

The second part, *Spacebook: Public Place Networks* proposes possible designs for alternative public spaces in North American metropolises. *Spacebook: Public Place Networks* looks at an emerging form of public spaces in many cities—Privately Owned Public Spaces (POPS)—and proposes a series of designed spaces that engages the physical realm of the city, along with pervasive virtual networks associated with Mobile ICTs and ubiquitous mobile computing.

6 Fard and Meshkani, "Geographies of Information", 8

7 Economic and political policies over the last four decades have increased privatization and deregulation, enhancing the role of the private sector in daily life, as well as the creation of the urban realm. These policies of privatization have led many scholars to refer to this economic philosophy as Neoliberalism.

8 For a comprehensive guide to Privately-Owned Public Spaces, and their history in NYC, consult Kayden, *Privately Owned Public Space : The New York City Experience*

9 The term sentient refers to Mark Shepards notions of The Sentient City. Sentience refers to the ability to feel or perceive subjectively but does not necessarily include faculties of reasoning or self-awareness. For more information see Mark Shepard, *The Sentient City: ubiquitous computing, architecture, and the future of urban space*.

10 Ubiquitous Mobile computing started sometime shortly after the summer of 2009 – after the release of the first iPhone. Ubiquitous mobile computing refers to devices that are commonly referred to as smartphones, tablets, and other easily portable computing devices.

PART I:

TOWARDS A

Towards a Personalized Metropolis looks to establish the primary changes to the public realm that are taking place in North American Metropolises. This part is divided into three chapters. The first of these looks to establish a broad set of technological, societal, political and economic changes that are occurring in public space. The second section examines online social networks, to understand issues of publicness, interaction, privatization and control. The third section looks to summarize the changes to the city, but understand our current urban condition as *the personalized metropolis*.

PERSONALIZED METROPOLIS

On Contemporary Publics

The public realm has dramatically changed in the last 15 years. The changes are due to several factors: from privatization of space, to the expanding ubiquity of mobile Information and Communication Technologies (ICTs). The instantaneous connection that is commonplace in today's society has led many to refer the present as the Connected Age. Today, socialization no longer relies on face-to-face interactivity and instead, vast quantities of people's social lives have moved online to social ICT networks such as Facebook, WeChat, or Instagram. This shift has changed the population's perception of time and space, as online social networks make interaction across continents instantaneous. Since people can interact from anywhere, there has been a decentralization of social activity that has impacted the function and use of public spaces.

The following chapter will examine the changes to the public sphere that have come with ubiquitous mobile computing. It explores these changes to the public realm in four parts. The first part examines the ways that social media networks affect the public sphere—understanding their place in the realm of public discourse and interactions. The second part looks at the importance and role of physical public spaces in healthy cities. The third part looks at the effects on physical public spaces by the privatization of ownership and policies of heavy regulation. The final section examines the changes in public behaviour that are a consequence of ubiquitous mobile computing within the physical public spaces of the city



Fig.1 Mobile Computing in Public Space

1.0_

1.1 THE EXPANDING (AND DISAPPEARING) PUBLIC SPHERE

“It is the site of collective performance that brings together those who are different from one another precisely because they are different. Thus with the rise of particular and compliant publics the question of the public (in singular) must be replanted.”¹¹

- Frei and Bohlen, describing Arendt’s *Public Realm*

Many theorists have provided varying definitions of public spaces, public spheres, or public realms; a space that promotes social encounters, ensconces community, and serves the conduct of public affairs; a landscape that reflects us; a place that hopefully engenders tolerance of diverse interests and behaviours.¹² With emerging typologies of virtual spaces for communication, interactivity and discourse, such as social media ICTs (Facebook, WeChat, Twitter, etc), the public sphere may no longer be tied to physical sites, and therefore, we need to re-examine how it is described.

One of the most famous proponents of the public sphere is theorist Jürgen Habermas. For Habermas, the public sphere emerged in the salons and cafés of early eighteenth century England, France, and Germany.¹³ Architecture theorists

Fard and Meshkani describe the Habermasian notion of the public sphere as “a constellation of communicative and deliberative spaces that link citizens to states”.¹⁴ What makes Habermas’ notion of the public sphere an interesting starting point in today’s digital age, is how Habermas understood the critical role media played in activating discussion. Citizens would debate issues brought up in newspapers, pamphlets and broadsides; often the discussants would write a letter to the editor. The media forged a link between the various coffee houses that would participate in similar conversations.¹⁵ For Habermas, the public sphere wasn’t so much a physical site, as it was a discursive site in which citizens could conduct open discussion and debate.¹⁶

FROM PUBLIC SPHERE TO PUBLICS

In today’s age of online discourse and connectivity, the critical role media plays in the public sphere must be understood—or we risk dissipating into the network.¹⁷ With a large portion of conversation, debate, and intellectual discourse happening online, social media ICTs can be considered not only an extension of the physical spaces of streets, parks, or plazas, but also a new platform that is critical to facilitating interaction and communication in civic life.¹⁸ The complexity of today’s public life has led many theorists to move away from viewing the public sphere as a singular entity, and has them understanding the public realm as a series of *publics*: these publics accounting for the plurality in today’s platforms of discourse.

American theorist Michael Warner builds a theory of publics where, provided they have appropriate levels of openness and control, pieces of media, writing, and assemblies along with their

11 Marc Bohlen and Hans Frei, *Situated Technologies 6: MicroPublicPlaces*, 14

12 Anne Beamish, "The City in Cyberspace", 277

13 Jürgen Habermas, *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*, trans. Thomas Burger and Frederick Lawrence (Cambridge, MA: MIT Press, 1991).

14 Fard and Meshkani, "Geographies of Information", 7.

15 Martijn de Waal, "The Urban Culture of Sentient Cities: From an Internet of Things to a Public Sphere of Things", 192

16 Friedberg and Varnelis, "Place," 16

17 Kazys Varnelis, *Networked Publics*, 160

18 Fard and Meshkani, "Geographies of Information", 7.

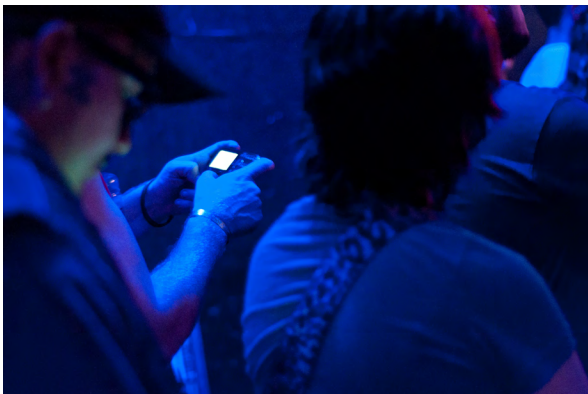


Fig.2

Above: Summer Pools in Godella

Fig.3

Below: I just go to Shows for the Texting



audiences are each defined as publics. However Warner struggles with the issues of temporality that are associated with pieces from online media, unsure if they can be considered as publics.¹⁹ Bruno Latour suggests that the public sphere is comprised of a series of assemblies formed around *thing*—or objects and issues.²⁰ In Latour's vision people assemble their differences around these things, where people must come to present their concerns, and others must defend their claims. The purpose of assembling around things to, Latour, isn't to assemble because we agree, but that we are brought together in a neutral space to discuss and (hopefully) come to a makeshift resolution.²¹ Frei and Bohlen point out that Arendt actually speaks in a very similar way to Latour about the public sphere when she uses the metaphor of a table. To Arendt the table is an object around which people gather, and "gathering together differences is more important than forming a perfect unity."²²

This isn't to say that the public sphere doesn't exist, but instead that today it is formed through a collection of assemblies, or publics, happening simultaneously in both virtual and physical worlds.

NETWORKED PUBLICS

In an attempt to re-categorize online public networks, the Annenberg Centre for Communication (ACC) devised the term *networked publics*. Networked publics are "groups of often-wide-dispersed individuals who come together online (although these interactions sometimes erupt in physical space as well) to share a common experience or interest."²³ Network theorist Kazys Varnelis

19 Michael Warner, *Public and Counterpublics*, 97-98

20 Bruno Latour, "From realpolitik to Dingpolitik: An Introduction," 14-41

21 Bruno Latour, "From Realpolitik to Dingpolitik: an Introduction," 23

22 Bohlen and Frei, "Situated Technologies 6: MicroPublicPlaces," , 17

23 Helen Nissenbaum and Kazys Varnelis, *Modulated cities: Networked spaces, reconstituted subjects*, 14

(and member of the ACC) goes on to dismiss social media ICTs as corporate-sponsored platforms and not networked publics. Why Varnelis is dismissive of privately-owned social media platforms as publics is understandable: since social media ICTs (similar to issues surrounding physical spaces) have their own issues of access, control, privacy, and ownership (which will be examined in more depth in the next chapter). However by dismissing social media ICTs, you eliminate one of the most common devices for discourse, information, and communication in contemporary society.

In today's age of extreme surveillance, information ownership, and privatized online and offline social spaces, it very well may be that the public sphere does not exist in a way that is truly public. Even in social, cultural, or political interest groups, which are described by Varnelis as networked publics, there are issues of ownership, editability, temporality, and control. Instead of dismissing these platforms as non-public, it may be more productive to embrace the public qualities that exist in social media ICTs, and understand the expansion they have caused to what could be considered as part of the public sphere. This hypothesis does not suggest that virtual social media platforms are publics in their idealized sense, just that they are a new hybrid of space that contributes to the discourse of the public sphere. It could then be argued that the public sphere is at the moment both rapidly expanding with the incredible growth of online social platforms and information, as well as disappearing, as the line between what is public and what is private becomes increasingly difficult to decipher.



Fig.4 Sitting in an Audience with Ipad

1.2 THE IMPORTANCE OF PUBLIC SPACE FOR THE CITY

Spatial transformation must be understood in the broader context of social transformation: space does not reflect society, it expresses it, it is a fundamental dimension of society, inseparable from the overall process of social organisation and social change.

-Manuel Castells²⁴

Although it is important to understand the way that the public sphere has gone through a rapid series of modifications, it is equally critical to understand the importance of physical public spaces in cities. In the spring of 2009, the scale tipped and more of the world lived in cities than in rural settings.²⁵ Our world is urbanized, and that doesn't appear to be changing as the United Nations predicts that the world's urban population will balloon to 6.5 billion by 2050.²⁶ Space is limited within dense urban centres, but healthy and active cities rely on engaged and interactive public space.²⁷

Network theorist and sociologist Manuel Castells suggests that there has been a shift from the privatized public sphere of Habermas to accessible and democratic public places. He argues that "public places, as sites of spontaneous interaction, are the communicative devices of our society;

while formal, political institutions have become a specialized domain that hardly affects the private lives of people, that is, what most people value most... Therefore, in the practice of the city, its public spaces... become the communicative devices of city life."²⁸ In a society where a large portion of discourse and interaction happens within privatized online social networks, this idea of public space as a collective communication device for the city is an important one.

Hannah Arendt and Richard Sennett, two famous proponents of the public sphere, warn about the dangers of people's ability to segregate themselves socially; curating their social circle to include only people of their own liking. They go so far as to warn that this segregation may erode the capacity to empathize with people of differing backgrounds and opinions.²⁹ Although this may seem extreme, it is hard to argue that with social ICT networks, we are now more able than ever to curate our social circles and make opinions we don't like, simply disappear. One could also argue that politically, we are more divided than we ever have been, as evidenced by America's fascination with both Bernie Sanders, and Donald Trump, while (traditional) centrist candidates continue to bleed support.

This isn't to say that the importance of public space is strictly focused on issues of political discourse and education –in fact, it is the opposite. Today, public life is as much about pleasure, leisure, and enjoyment as it is about reason, information, and education. The idea that public life is enjoyable and accessible to all is important in activating the public sphere, and allowing people of differences to come together and engaging in shared public life.³⁰

24 Manuel Castells, "Urbanism in the Information Age," 83
25 Anthony Townsend, *Smart Cities*, 1
26 Anthony Townsend, *Smart Cities*, 2
27 Jan Gehl, *Cities for People*, 65

28 Manuel Castells, "Urbanism in the Information Age," 87
29 Martijn de Waal, "The Urban Culture of Sentient Cities: From an Internet of Things to a Public Sphere of Things", 192
30 Clive Barnett, "Neither Poison Nor Cure: Space, scale and public life in media theory," 65

SPACEBOOK: NETWORKED PUBLIC PLACES

Public space is a communication device that links local and global issues; functioning as a tool of expression for civic life. In an increasingly dense, urban and privatized world, it is important to have healthy, engaged, and interactive public spaces. The spaces bring people together and allow them to share in an experience, message and collective identity. It is important for all people to have access public space and come together with people of differences, discuss disagreements, and attempt to form resolutions. The ability to come together with people of difference is critical to the health of our multicultural North American metropolises.

Fig.5 Example of a 18th Century Salon
Fig.6 Occupy Protests in Zucotti Park



1.3 PRIVATIZATION AND REGULATION OF PUBLIC SPACE

In this century, we are facing a different kind of threat to public space –not one of disuse, but of patterns of design, management and systems of ownership that reduce diversity. In some cases these designs are a deliberate program to reduce the number of undesirables, and in others, a by-product of privatization, commercialization, historic preservation and poor planning design
-Setha M Low³¹

The issue of ownership of public space seems like a counter-intuitive one, but in today's neoliberal condition, public space is being privatized through multiple means. Surveillance, sponsorship, regulation, and ownership have made the issues of ownership and governance of public space unclear. As mentioned in the previous sub-chapter, active, open and participatory public space is critical to the civic health and identity of a city, which makes issues of over-regulation and privatization critical when discussing the condition and design of public spaces. The following section will analyse the privatization and regulation of public spaces in North America as an attempt to identify what is important and what is under threat. The section will also aim to bring us to a better understanding of the condition in which we design.

31 Setha M Low, "Erosion of public Space and the Public Realm: Paranoia, surveillance and privatization in New York City", 44

PRIVATIZATION OF OWNERSHIP

With urban centres increasing in density, land has become a very valuable commodity. In this context, cities no longer have the resources to purchase unused land, and instead of creating new public parks and squares, they are creating a secondary set of Privately-Owned Public Spaces (POPS). POPS are created and maintained by the private sector in exchange for floor space that exceeds the amount allotted in the city plan.³² The problem with POPS isn't that their financing is in the hands of the Private sector, it is that the design, use and regulation of the POPS is not in the interest of service the public, but is inherently in the interest of the private stakeholders. The issues and opportunities that POPS present will be examined later in the thesis in greater depth.

OVER-REGULATION AND PUBLIC SPACE

Simultaneously as public space has privatized, changes have occurred with its regulations occupation, programming, and use. Public space is believed to belong to everybody, and we consider spaces public when they are accessible to all.³³ Urban

researchers Walter Siebel and Jan Wehrheim proposes four dimensions to identify what are public spaces: legal, functional, social, and material/symbolic. They suggests that the relationship between what is public and private in cities constantly changes, and that changes to one dimension affect all dimensions.³⁴ As we experience a shift in the legal nature of public spaces, to many now being owned by private entities, we also experience shifts in function, social behaviour, and design.

32 "Privately-Owned Publicly Accessible Spaces: Draft Urban Design Guidelines," City of Toronto, Accessed December 4, 2014, http://www1.toronto.ca/City%20of%20Toronto/City%20Planning/Urban%20Design/Files/pdf/P/POPS_guidelines_Final_140529.pdf

33 Walter Seibel and Jan Wehrheim, "Security and the urban public sphere," 20

34 Ibid, 19-24

With private ownership and security risks, public space is governed by an increasingly strict set of regulations and guidelines that limit diversity and agency of the public realm. If you want to alter its appearance, “you can buy advertising, but that takes money. Or you can do graffiti, but that’s illegal.”³⁵ The agency of individuals to participate and affect their public spaces is extremely limited, to a point where public spaces can barely be considered public. Setha M. Low points out there are different concerns over public space today than there have been in the past and that the threat is “not one of disuse, but patterns of design, management and systems of ownership that reduce diversity. In some cases these designs are a deliberate program to reduce the number of undesirables.”³⁶ The lack of opportunity for diversity and spontaneity in over-regulated public spaces reduces the vitality of and interaction within public spaces.

BRYANT PARK

Bryant Park is largely heralded as a success story in the private management of public space. However, it is actually a story of both success and failure, and offers many lessons about the opportunities and issues of private ownership of public spaces and amenities.

Bryant Park is one of New York’s most active and famous parks. The park has gone through a massive overhaul at the hands of the Bryant Park Corporation(BPC). The BPC is a managing company that looks after the day-to-day affairs, maintenance and programming in the park. Major corporations that hold office space and other real-estate surrounding the park fund the BPC. Although there are many positives that the corporation has implemented since taking it over in 1980 ,there are issues in the way the space is governed.³⁷

35 Liliana Bounegru. "Interactive Media Artworks for Public Space: The Potential of Art to Influence Consciousness and Behaviour in Relation to Public Spaces.", 209

36 Setha M Low, "The Erosion of Public Space," 44

37 "Bryant Park: Our Mission"



Fig.7 Rules of Bryant Park
Fig.8 View of Bryant Park



Bryant Park is managed in a way where it is more a private amusement park for urban leisure, than a public space. There are set of guidelines for how to use the space, dictating what can and cannot be done in the park. Some of these include dictating the hours that the public can use the lawn, what type of materials can be placed on the lawn, what type of games are allowed (and to an extent who plays them), and what music is allowed to be played. These regulations have caused a public park to transform into an event forum that is dictated by the stakeholders surrounding the park. The rules and regulations leave one to question what is actually public in Bryant Park, beyond the fact that you don't have to pay.

Bryant Park is a good example of the change of management of public space. No longer does the public dictate the way public space is used; instead, management companies or municipalities, which choose how the public should sit, behave, and enjoy the space, increasingly control public space. It is important to point out that all changes in ownership and regulation are not negative; Bryant Park is a safer place than it was before the corporation took over, and the private funds allow for an increased budget for public events, activities, and amenities. Unfortunately, what has been lost is a sense of publicness; civilians no longer possess a sense of agency within the space. The public do not perform or arrange civic demonstrations; they do not choose programming or even where to sit.



Fig.9 Golf in Bryant Park - Regulated by the BPC



Fig.10 Ping-Pong in Bryant Park - Regulated by the BPC

1.4 MOBILE COMPUTING IN PUBLIC SPACE

Mobile computing is a relatively new phenomenon in the history of ICTs, but it is also one that is rapidly changing the way we interact in, and navigate through, space. People no longer occupy only the physical space that surrounds them, but also the landscapes of the networks that their mobile computing devices contain. These networks offer various augmentations to the user's cityscape: such as personalized soundscapes, interactions, or informatic networks.

Although ubiquitous mobile computing is a new field, the device-based personalization of space started when Sony introduced the Walkman in 1979. The Walkman changed behaviour within the public sphere; people were able to disengage with their surroundings and move into a personalized soundscape. The Walkman augments the experience of the user, shifting the perception of the world around them in a way that is imperceptible to anyone else. Personal stereo users report such an alteration to their environment and experience where they suggest that it changes their mood and spatial atmosphere, while increasing their sense of

personal space. By entering an altered audioscape, the users disconnect themselves from their public surroundings, and disappear as interacting subjects from the streetscape.³⁸

Since the introduction (and subsequent success) of the Walkman, more media has become mobile. The public realm has become increasingly saturated with different forms of mobile media: telephones, text messaging, internet, social media. Today, most of these are contained within mobile computing devices. Despite its illusion of proximity and intimacy mobile computing is contributing to the privatization of public space.³⁹ As users access their phones, be it through text message, data or phone call, they disconnect themselves from the social surrounding and enter a 'bubble' of personalized media. This 'bubble' exerts a force of alienation on their surroundings, and also a sense of ownership to their location. As Michael Bull explains "public privacy and expressions of intimacy are usually experienced by others as (urban-social) noise".⁴⁰

Ubiquitous mobile computing has allowed users to bring aspects of their private life into the public sphere, hybridizing elements of the private and public world. Mobile computing allows users to bring aspects of home with them at all times. This allowance exerts a force of privatization on the surroundings of the user; although their surroundings and existence are part of public space, the screen of their device is something that is not to be experienced publicly, even if what they are reading or posting is entering some part of the public sphere. The customizable and private nature of mobile computing forms a personalized bubble around the user; a bubble that exerts introverted existence into public spaces.

38 Michael Bull, "To Each Their Own Bubble", 283-285
 39 Ibid, 278
 40 Ibid, 278

Why am I so Cold?



Fig.11 Users are so occupied by their networks that they become unaware of their surroundings.

The illustration depicts a woman on her cellphone who doesn't really her presence is opening an automatic door, allowing cold air to flood into her local environment, making her cold.

Source: Image by Author

Social ICT Networks

As mentioned earlier, in an attempt to better define the condition of virtual online discourse and sociability, the Annenberg Centre for Communication (ACC) coined the term *Networked Publics*.⁴¹ The following chapter will examine the history and emergence of online networked publics, and will try to categorize a new typology of online spaces that includes the public discourse contained within private online platforms such as Facebook.

By exploring issues of ownership, publicness, popularity, control, and content, the chapter establishes a better understanding of the assembly of publics that forms the collective public sphere.

41 Ito, introduction, 2-3, Mizuko Ito from the ACC defines networked publics as “an alternative to terms such as audience or consumer. Rather than assume that everyday media engagement is passive or consumptive, the term publics foregrounds a more engaged stance. Network publics take this further; now publics are communicating more and more through complex networks that are bottom-up, top-down, as well as side-to-side. Publics can be reactors, (re)makers and (re)distributors, engaging in shared culture and knowledge through discourse and social exchange as well as through acts of media reception.



Fig.12 Group accessing Musical Network

2.0

2.1 HISTORY OF ONLINE SOCIAL COMMUNITIES

Social media networks have become so pervasive that we often forget how young they are as a typology. In order to better understand the way networked publics operate, it is important to look into their history.

THE EMERGENCE OF CROSS-NATIONAL MEDIA NETWORKS

In order for us to understand the typologies of online social networks, we must understand where they began. Television and national newspapers changed the way information was communicated, moving news to a more global scale. Although the publics of media companies were national or even global, their audience formed passive publics, where users would only consume the information, and not interact or participate in the discourse; many critics believe that this passivity led people to become disconnected citizens who were strictly consumers.⁴² This consumer society resulted in

greater privatization and suburbanization, and finally the formation of disconnected communities in the 1950s and '60s.

In the late 1960s, perhaps as a response to the inactive media publics, there emerged in a new type of cross-national media network. Instead of inactive consumers, the new network relied on an active and immersed consumer base. Founded by Stewart Brand, *The Whole Earth Catalogue* was a magazine oriented towards do-it-yourselfers. The catalogue was released biannually, and was akit of tools for do it yourselfers; it was a review of technology, hand tools, books and magazines. By submitting letter and reviews, users themselves were able to participate in the network, thus creating a discourse between dispersed readerships.⁴³ *The Whole Earth Catalogue* formed networked public of like-minded countercultural people spread across a vast geographical landscape.

The influence of *The Whole Earth Catalogue* goes beyond forming a global social network and forum. The magazine is directly involved in creating what is often described as one the most influential early online networks: *The Whole Earth 'Lectronic Link*, or the *WELL*. The *WELL* was an online forum created by Larry Brilliant in collaboration with Stewart Brand—it was a Bulletin Board System (BBS) that allowed people to exchange text-only topics with new people, friends, and colleagues. Users of these networks formed a virtual community of based on users' interests; the users reported an unexpected amount of intimacy within their relationships that were formed in the *WELL*.⁴⁴

The Whole Earth Catalogue and the subsequent *WELL* display that the origin of networked public were not riddled with the issues of privatization. Instead the early networked publics provided agency to the user, who could shape the discourse and alter the public in which they participated. It appears that in the early days, social networks

42 Anne Friedberg Kazys Varnelis, "Place", 18

43 Ibid, 492

44 Ibid, 485

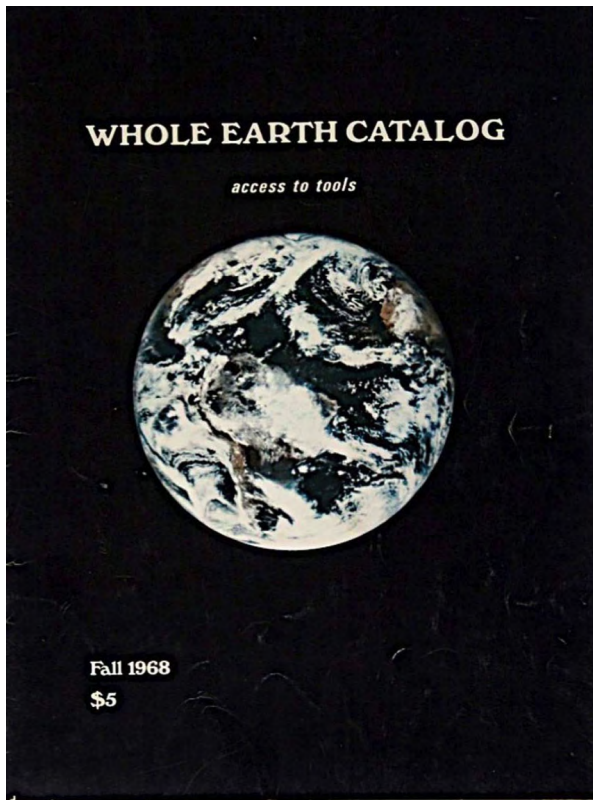


Fig.13 Whole Earth Catalogue
Fig.14 BlackPlanet.com splashpage



emerged not from privatization but from a search for communities of like-minded people—a voluntary segregation around countercultural ideologies. These communities formed a strange sense of online localism; people of similar ideologies discussed issues of interest, thus forming a collective identity around what Latour would consider a thing. This idea of virtual communities and the search for like-minded people continues in the next stage of emerging social media platforms.

BRINGING YOUR REAL LIFE CONNECTIONS ONLINE

The success of the WELL proved the potential of virtual communities. With the introduction of the World Wide Web being introduced into home in the 1990s, these online communities pushed beyond the constraints of BBS and became more pervasive in the North American home.⁴⁵ The web allowed for a larger voluntary set of participants, and led to new online communities based on finding new and reconnecting with old connections,.. Early virtual communities such as classmates.com tried to connect you with your old classmates; other emerging networks, such as Blackplanet.com, tried to connect you with people of a similar demographic. Many of these networks died early on, or never succeeded in the way their creators imagined. This failure was due, in part, to how the networks only looked at issues of connectivity, and not issues of discourse, and networked public formation. These infant networked publics tried to connect an individual to a network, either by finding old real-life connections, or discovering people of similar demographic-based traits. Because of the superficiality of the connection in these early networks, they lacked the activity and community that existed on the WELL. These sites did not provide agency to their users.

45 José van Dijk, *The Culture of Connectivity: A Critical history of Social Media*, 5

In 2002, Friendster was introduced, and relied on local, real-life connections. Friendster looked to connect people to their real-life social circle, and move a certain portion of socializing to the online sphere. Following Friendster, several other online social networks emerged, similarly aiming to move a person's real-life social circle into the virtual realm. These sites allowed the person to stay connected to their social circle at all times. The most notable and longest lasting of these networks is Facebook. Facebook aspired to create more than a network based around your real-life connections; it looked to bring all aspects of socializing online, making your life shareable with your entire network. In 2013, Facebook had more than 1.23 billion monthly active users and the majority of these users were mobile.⁴⁶

As mobile computing became pervasive, so too did social networks. People carry in their pockets multiple individualized social worlds. Worlds where, simultaneously, users can see their friend's travels in Paris, discuss the politics of Israel-Palestine, and talk with their Aunt in British Columbia. What emerged out of early networks of connectivity are complex networked platforms that bring all aspects of your social life online. These networks have comprehensively replicated all aspects of social lives in online forums. Online social networks are complex platforms of information, connectivity, and communication. These sites connect local discourse to the global continuum, while simultaneously helping you to manage your local social life, and connect with new global contacts.

Fig.15 Right: "A Short History of Social Media"

46 Jimim Kiss, "Facebook's 10th Birthday: From college dorm room to 1.23 billion users," *The Guardian*, February 4, 2014. <http://www.theguardian.com/technology/2014/feb/04/facebook-10-years-mark-zuckerberg>

A Short History of Social Media

78 **February 1978:** First dial-up BBC ("CBBS") is launched. BBSs continue to grow in popularity through the 1980s. 

95 **1995:** Personal home-page service Geocities is launched. Goes public in 1998 and is purchased by Yahoo! in 1999 for \$3.57 billion. Geocities is shuttered in 2009. 

PrairieLaw.com

97 **1997:** Early social media service SixDegrees.com is launched. At its height, the service claims 1 million users. 

99 **August 1999:** Blogging service Blogger launches. Purchased by Google in 2003. 

LexBlog

02 **March 2002:** Social media site Friendster launches. Membership peaks in 2008, then begins its steady wane. 

06 **December 2006:** Yahoo offers \$1 billion to buy Facebook, but Facebook ultimately declines the offer. 

04 **February 4, 2004:** Facebook launches. Initially open only to Harvard students, then opens to 800 colleges in May 2005. By September 2006, Facebook is available to all users 13 and over. 

03 **July 2003:** MySpace launches. The site is acquired by News Corp in 2005 for \$580 million and is receiving more than 75 million visitors per month in late 2008. 

03 **May 2003:** Corporate social networking site LinkedIn opens its doors. 


08 **April 2008:** Facebook's popularity overtakes MySpace's, based on the number of monthly unique visitors. 

09 **February 6, 2009:** Facebook changes its terms of service to include broad, perpetual UGC license. Twelve days later, after considerable pressure, the changes are rolled back. 

December 1, 2009: Revised FTC "Guides Concerning the Use of Endorsements and Testimonials" go into effect, impacting both endorsers and advertisers. 

December 2, 2009: Facebook membership hits 350 million. Climbs to 400 in February 2010 and half a billion users five months later, after surpassing Google's weekly web traffic in March 2010. 

10 **May 21, 2010:** It is revealed that MySpace, Facebook, and other social networks are sending user names and IDs to advertisers along with user LURL data.
 010110110101010
101101011010BOB
SMITH0100110010

11 **June 30, 2011:** News Corp. sells MySpace to Irvine-based digital media firm for \$35 million. Specific Media, the buyer, counts Justin Timberlake among its investors. 

June 28, 2011: Google Plus launches its closed beta—in a little over two weeks, more than ten million people have joined, sharing around one billion items per day. 

May 19, 2011: LinkedIn goes IPO, the value of its shares more than doubling in the initial day of trading. On June 3, daily deals site Groupon files to go public as well. 

March 15, 2011: Starbucks passes 20 million "Likes" on Facebook. 

November 30, 2010: Facebook valued at \$50 billion based on private market transaction. 

July 8, 2011: LinkedIn climbs to #2 in the U.S. for total monthly unique visitors, squeaking by MySpace's 33.5 million June visitors with 33.9 million of its own. 

July 13, 2011: Twitter celebrates its five-year birthday—the social media giant delivers 350,000,000,000 Tweets per day. 

Courtesy of Socially Aware, the social media law update; to subscribe, please visit www.mof.com/sociallyaware.

2.2

CATALOGUE OF NETWORKED PUBLICS

As mentioned earlier, some theorists, such as Kazys Varnelis, do not consider social media platforms as publics, but as active platforms contributing to the means, circulation, and discourse surrounding a variety of issues. Understanding different social media as active platforms means that they cannot be dismissed simply because of their private ownership. The use of these platforms is changing the way people discover the city, find information, meet up with friends, connect with family, and plan the weekend. For the purposes of this research, and to better understand social media platforms' effect on the public realm, we will accept the online networks as a form of networked publics.

The following section details prominent online social platforms: analysed based on their key features relating to topics of publicness, localism, user agency, size, and history. Specifically the catalogue will contextualize virtual publics by examining types of content that can be uploaded to each public; how user agency affects the networks; how controllers or editors of the public change them; and the currencies the publics use.⁴⁷ Each public will be categorized into the following four categories:

MEDIA DRIVEN NETWORKS

Media Driven Networks are networks that connect around uploaded pieces of media (photos, videos, music, etc.). The public is formed around the piece of media, each piece becoming its own (controlled) micropublic. More information on controlled Micropublics later

Example: Youtube

Example: Youtube

REAL LIFE SOCIAL CONDENSERS

Users of Real Life Social Condensers meet via the online network but aim to connect in real life. Real Life Social Condensers are newer types of networks that take advantage of emerging locative technology.

Example: Grindr

CONNECTED SOCIAL NETWORKS

Connected Social Networks bring social connectivity online. These networks introduce communication, sharing, and interactivity online, blending online and real life connections into one social world. Each user forms and participates in a series of controlled micropublics. The line between what is public and what is private can be very blurry in these online network.

Example: Facebook

AUGMENTED REALITY NETWORKS

Augmented Reality is the integration between digital information and the live environment. Augmented Reality Networks are ICT networks that augment space with additional information.

Example: Yelp!

⁴⁷ Currency in this case refers to reward based exchanges that exist in the online platforms, such as likes on Facebook, or Followers on Soundcloud,

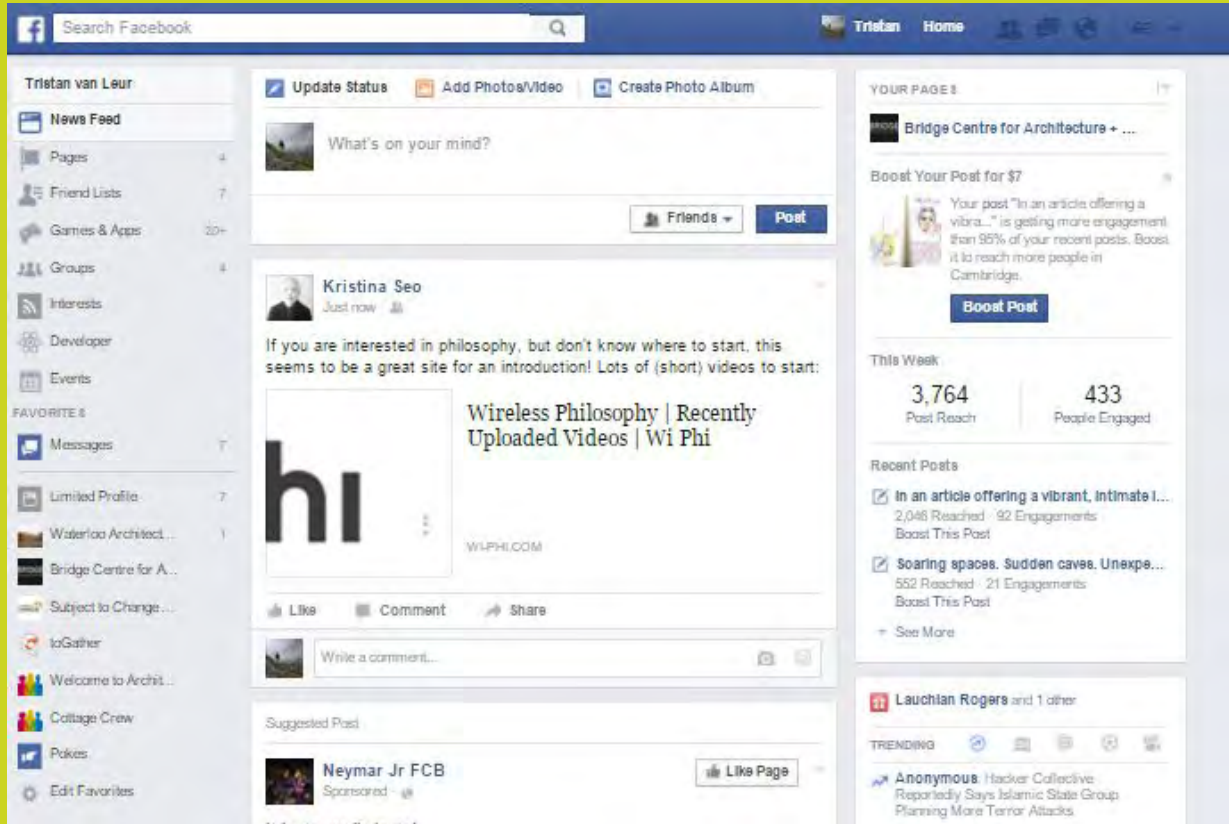
FACEBOOK

'04

1.49 Billion Users

Connected Social Network

Fig.16 Facebook Newsfeed



As the most pervasive social network, Facebook allows users to simultaneously chat, plan events, blog, share, and review. Facebook moves all aspects of your social life online. This network is a series of micropublics where all content can be edited by the author ('owner') of the wall (domain).

Content

- Links
- Photos
- Videos
- Statuses
- Messages
- Events

Agency

- Comment
- Share

Controllers

- Author
- Wall owner

Currency

- Likes
- Friends

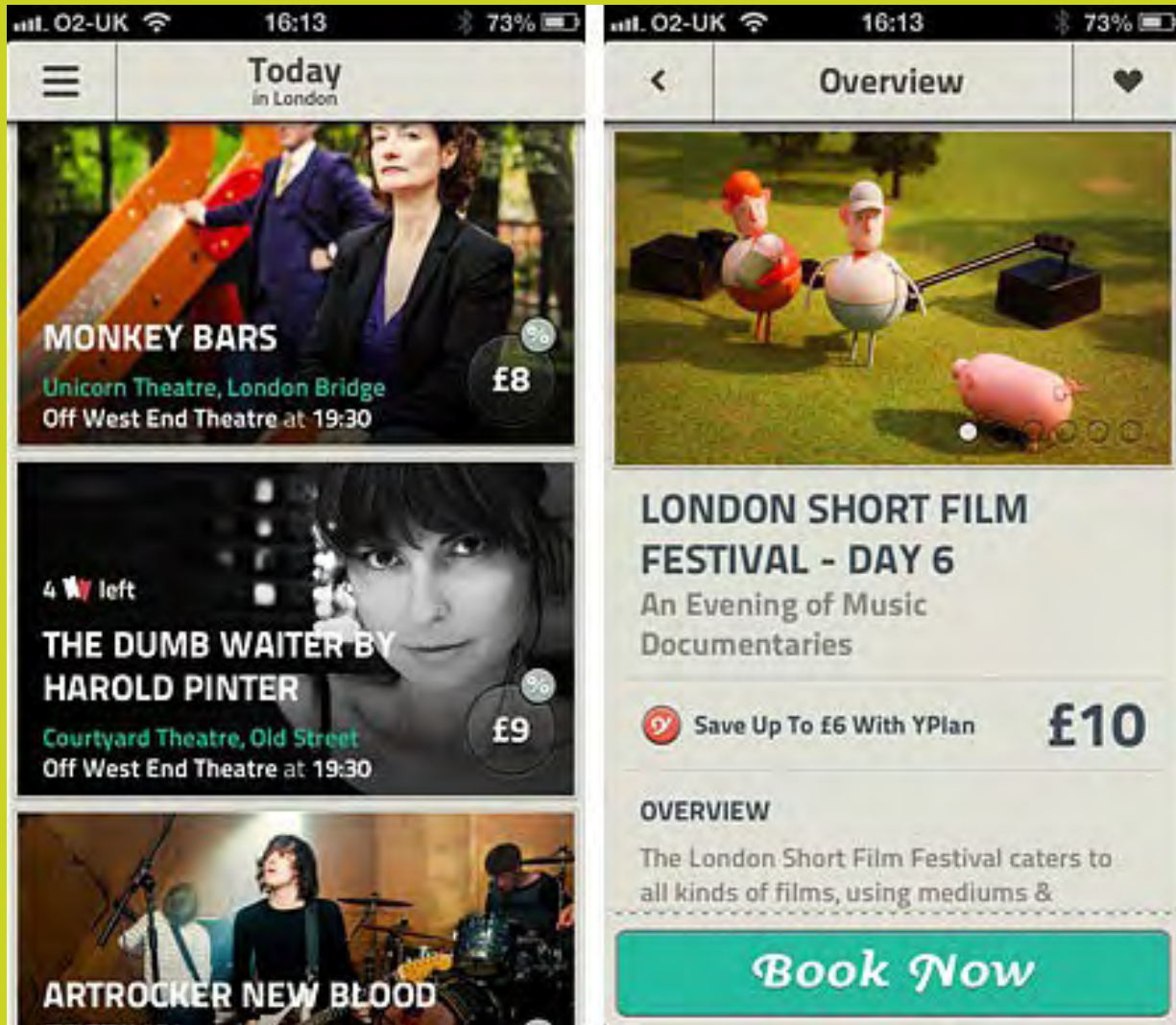
YPLAN

'12

+1 Million Downloads

Augmented Reality Network

Fig.17 YPlan Interface



Yplan is a social network that provides users with a list of events happening in their city. This list is curated based on the user's interests.

Content

Events

Controllers

Venue Owners

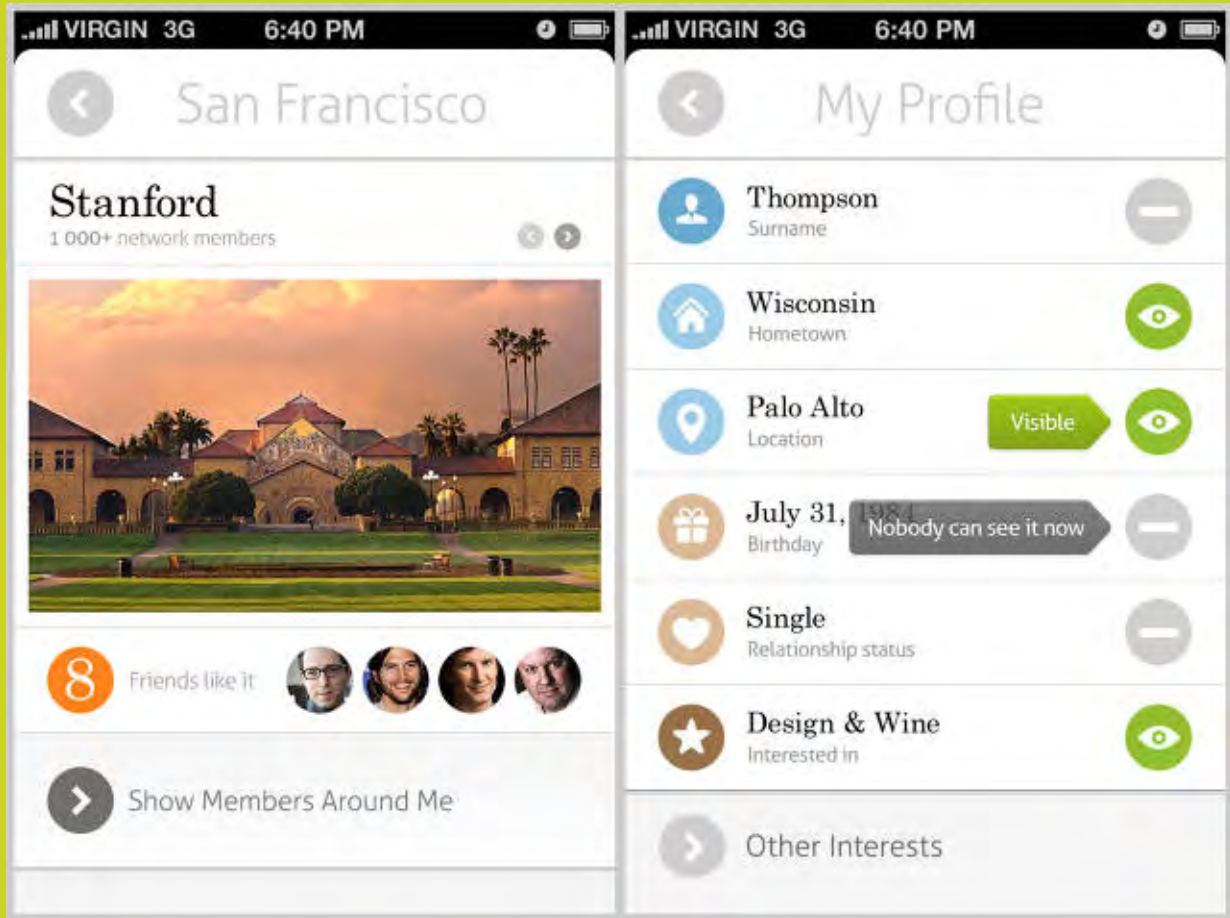
CIRCLE

'10

+4 Million users

Real Life Social Condenser

Fig.18 Circle Interface



Circle uses GPS to connect you to your nearby friends. The list of friends originates from your networked contact lists. Circle lets you know when friends are nearby.

Content

Friends

Currency

Friends

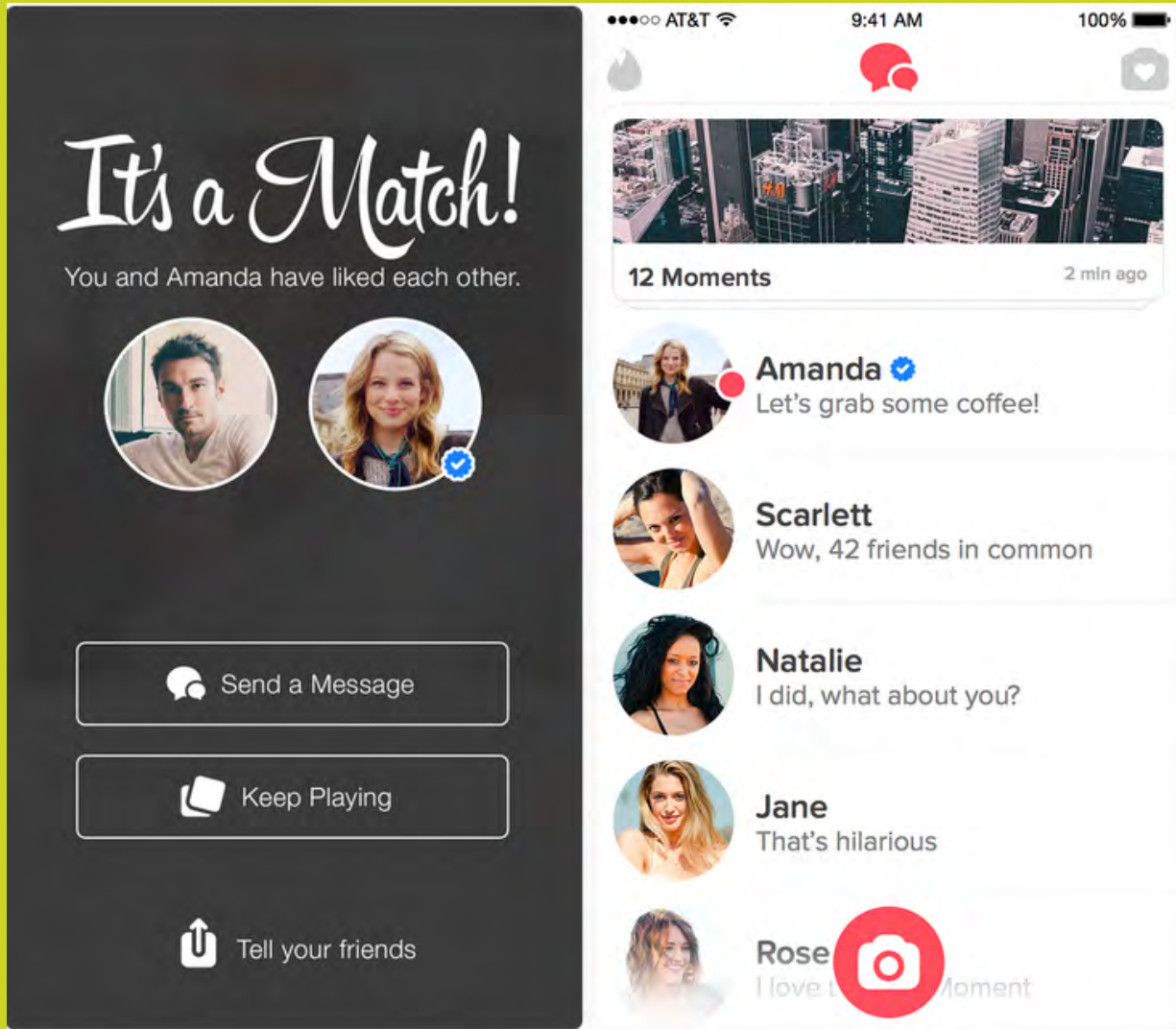
TINDER

'12

+50 Million users

Real Life Social Condenser

Fig.19 Tinder Interface



Tinder is a dating website that uses your Facebook profile to verify your existence. Tinder allows users to create a profile and then filters through other people's profiles. To see each other, both users must be within a certain (user set) geographical proximity. There is no public formed through Tinder.

Content

Profiles
Chat

Controllers

Profile owners

Currency

Matches

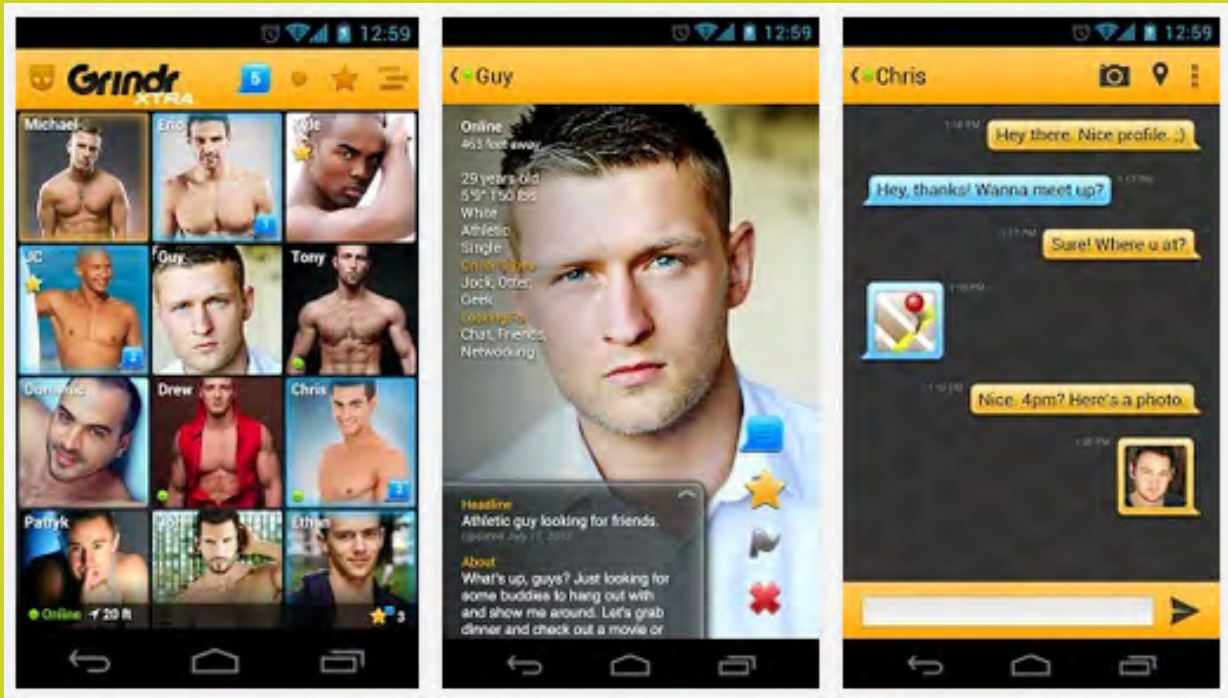
GRINDR

'09

+4 Million users

Real Life Social Condenser

Fig.20 Grindr Interface



Grindr is a dating website aimed towards gay and bisexual men. Users set up profile and can sort through possibly matches based on geographical proximity. Grindr users have begun to use the proximity features to discover where people are hanging out. Grindr has become an organizational tool for a cultural demographic, leading to the formation of a physical public.

Content

- Profiles
- Chat

Controllers

- Profile owners

Currency

- Matches

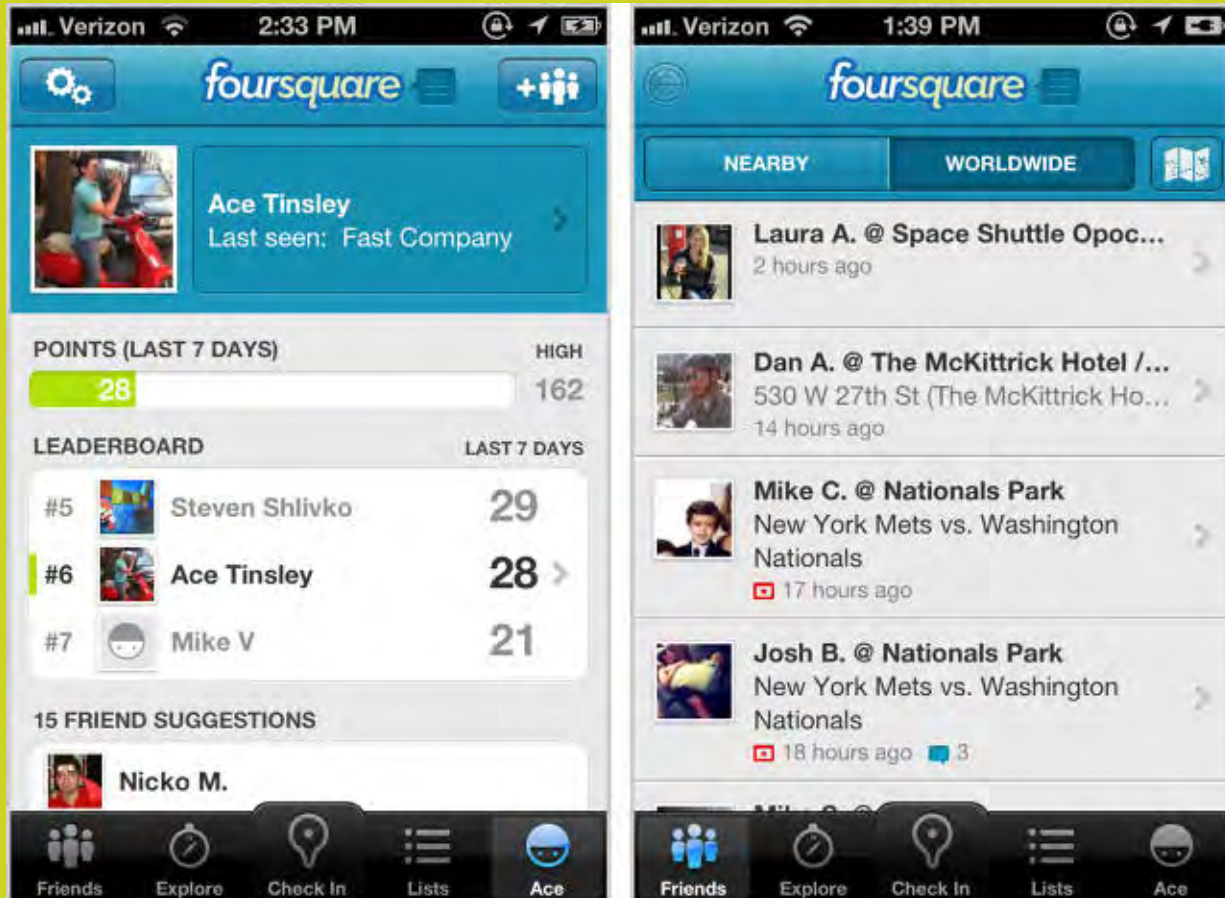
FOURSQUARE

'08

+45 Million users

Augmented Reality Network

Fig.21 Foursquare Interface



On Foursquare, users 'check in' to their location. Users are rewarded for each check-in and can earn different rewards for appearing on Foursquare more than others (including titles such as mayor). Foursquare forms an augmented virtual hierarchy in space.

Note: Foursquare recently shifted to a more 'intelligent' Yelp competitor, but their original concept was more interesting to analyse in the contemporary context; the virtual hierarchy reward system within the original Foursquare altered perceptions of ownership and social standings.

Content

Locations
Check-in
Messaging

Currency

Check ins
Titles

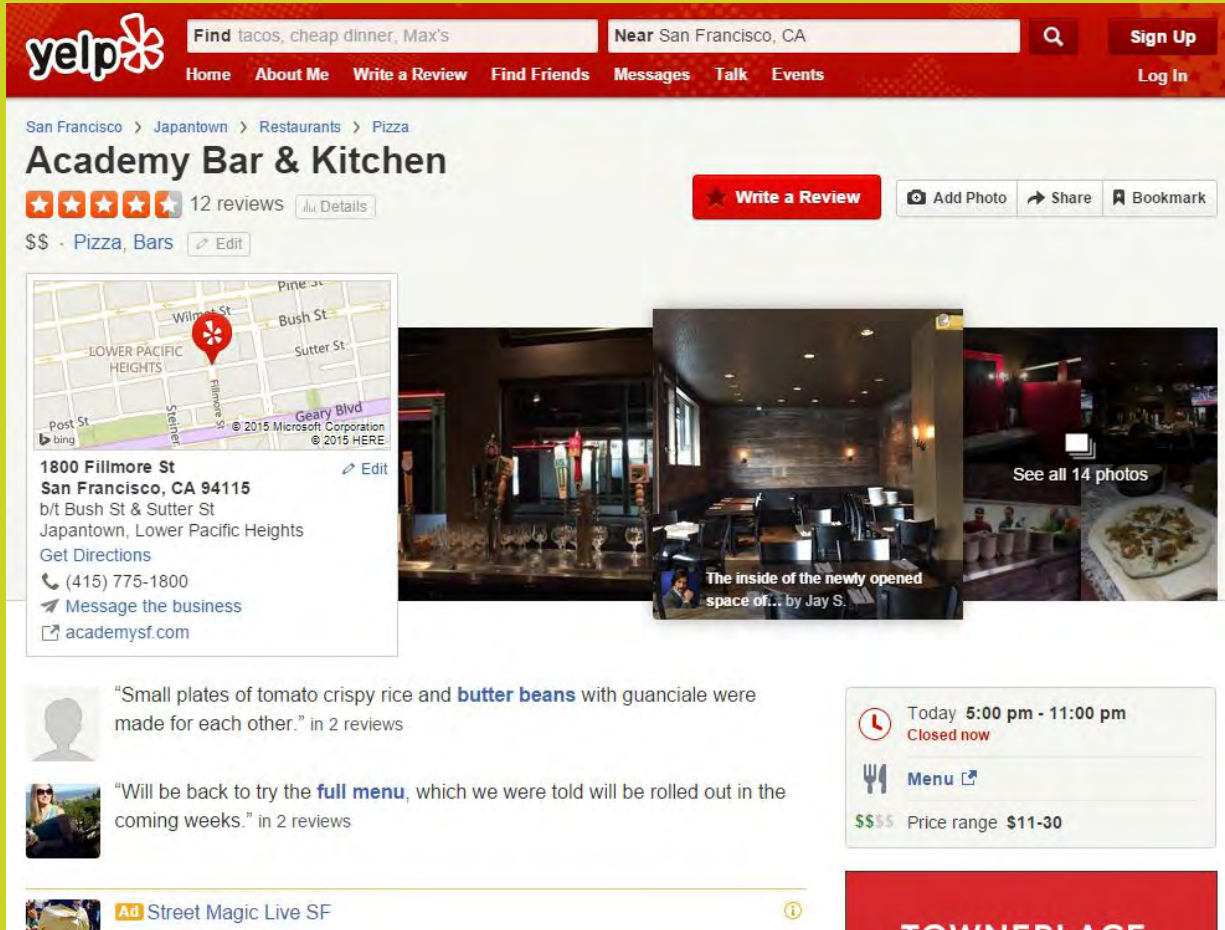
Yelp

'04

+142 Million unique monthly visitors

Fig.22 Yelp Interface

Augmented Reality Network



In terms of information quantity and user engagement, Yelp is the leading Augmented Reality Network. Yelp adds ratings and reviews to businesses and spaces in cities. Questions have been raised regarding Yelp’s use of algorithms and the levels of bias that may exist in their ratings systems.

Content

Reviews, business information, locations

Agency

Rating, Review

Controlllers

Author

Currency

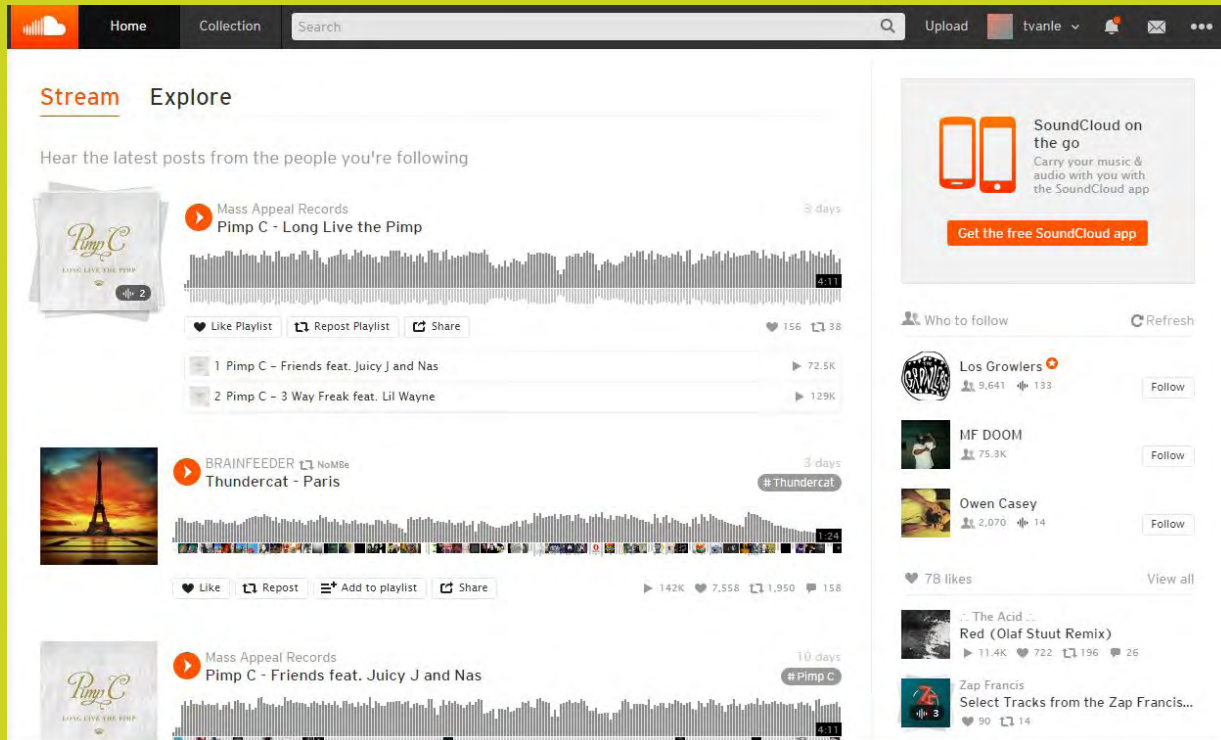
Compliments, followers, friends

SOUNDCLOUD

'07

+250 Million unique monthly visitors
Media Driven Network

Fig.23 Soundcloud Interface



Soundcloud is a network where users can upload and listen to music. Each piece of music has a public of its own, and each user has a public that consists of their followers.

Content

Songs

Agency

Comments, shares

Controllers

Author

Currency

Likes, followers, plays

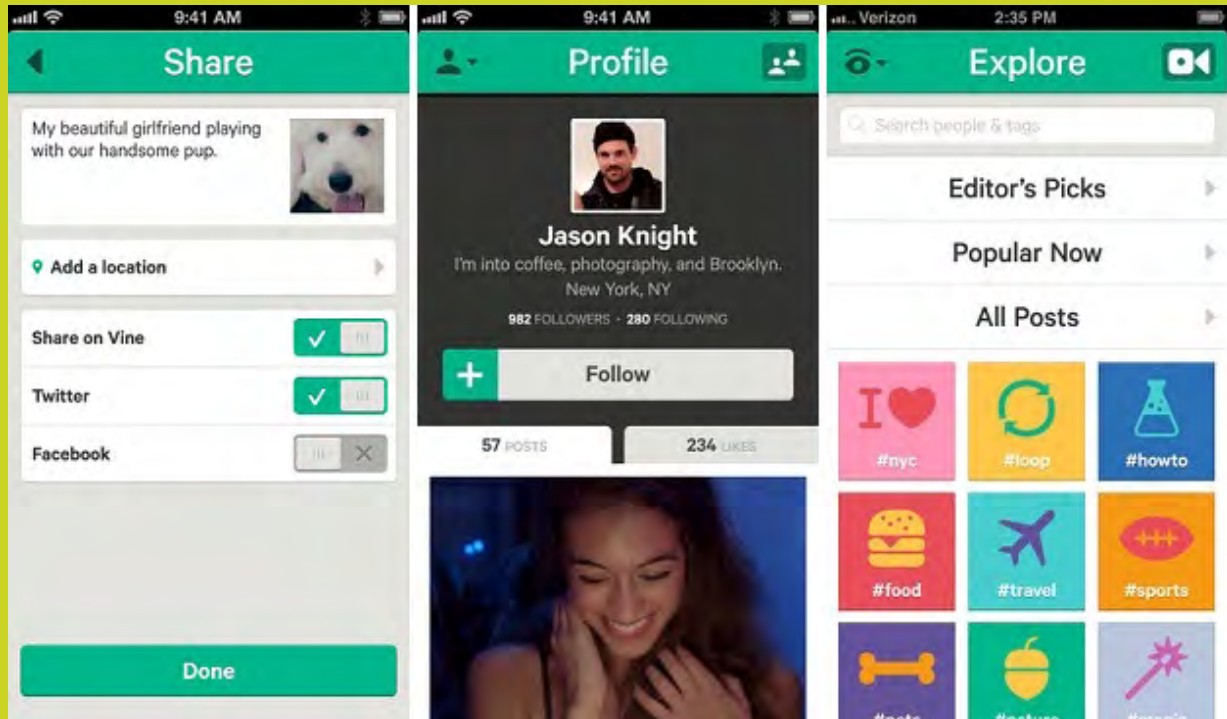
VINE

'07

+250 Million unique monthly visitors

Fig.24 Vine Interface

Media Driven Network



Vine is a short video sharing network. Users can upload content that can be shared and published online. Each piece of media has its own public.

Content

Vines (short videos)

Agency

Rating, Comment

Controllers

Author

Currency

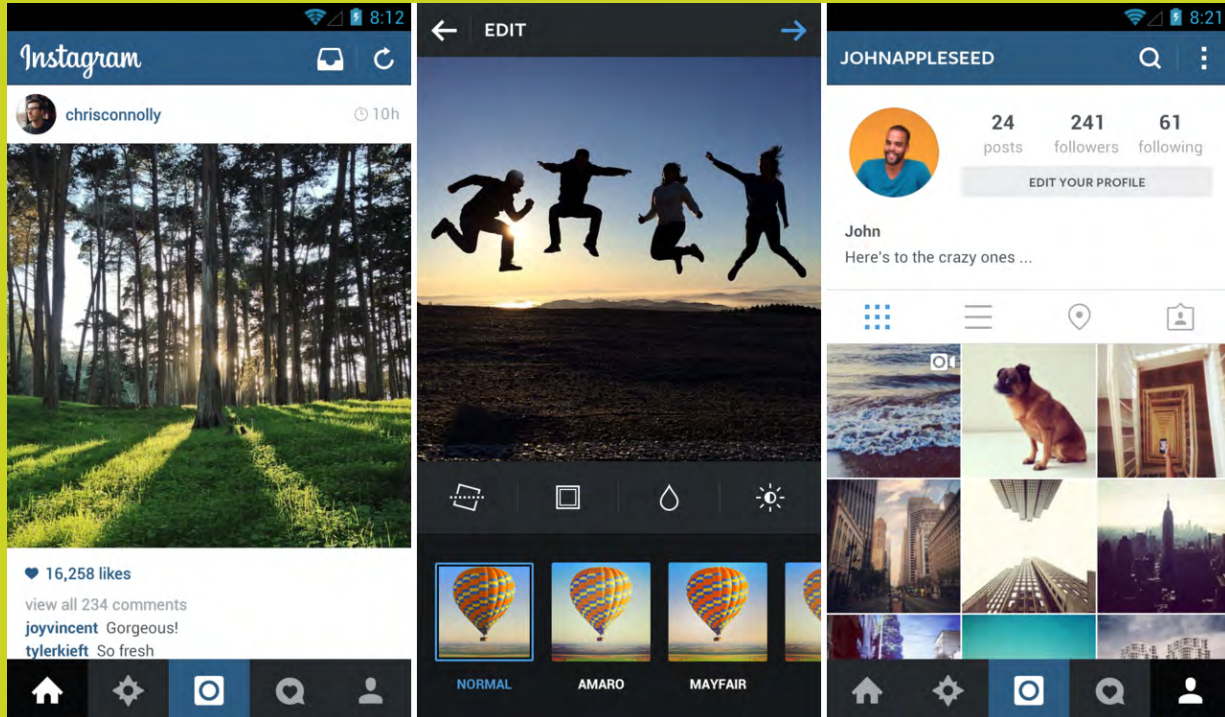
Shares, likes, loops

INSTAGRAM

'10

+300 Million unique monthly visitors
Media Driven Network

Fig.25 Youtube Interface



Network is comprised of user-uploaded photos. Depending on security settings, each photo has a micropublic of users, friends, or greater audience (general public). Each user has their own personalized public comprised of the individuals that they follow.

Content

Photos

Agency

Comments

Controllers

Author, commenter

Currency

Likes, followers

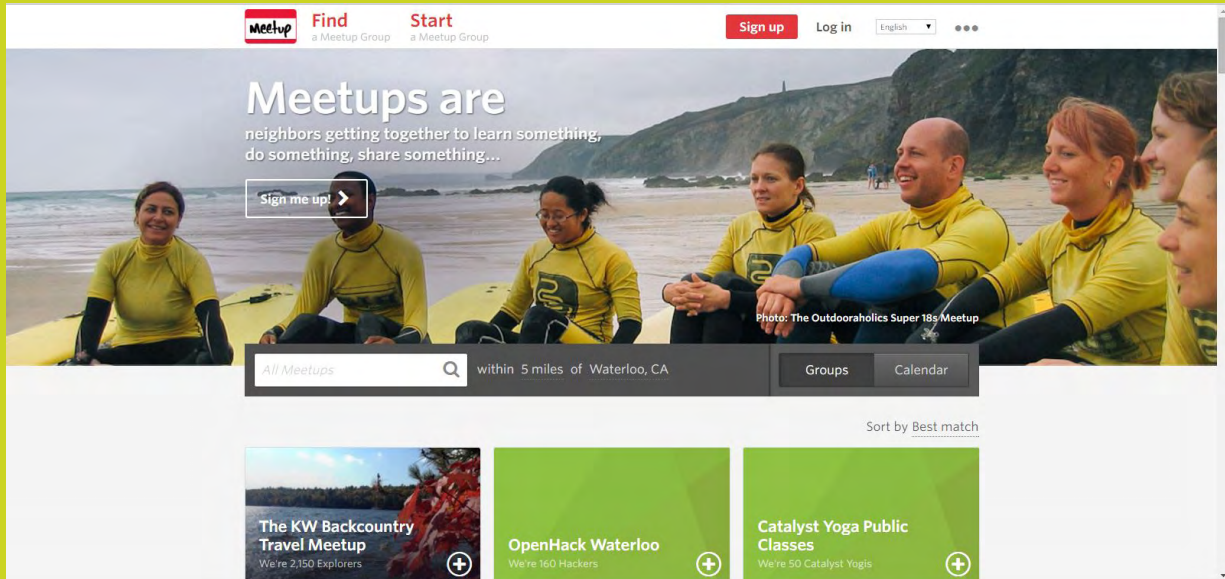
MEETUP

'02

+22 Million members

Real Life Social Condenser

Fig.26 A Tumblr Blog



On Meetup, users organize groups with common interests and then meet up in real life. People meet for many reasons including politics, books, games, events, sports, etc.

Content

Groups

Agency

Making groups

Controllers

Organizer

Currency

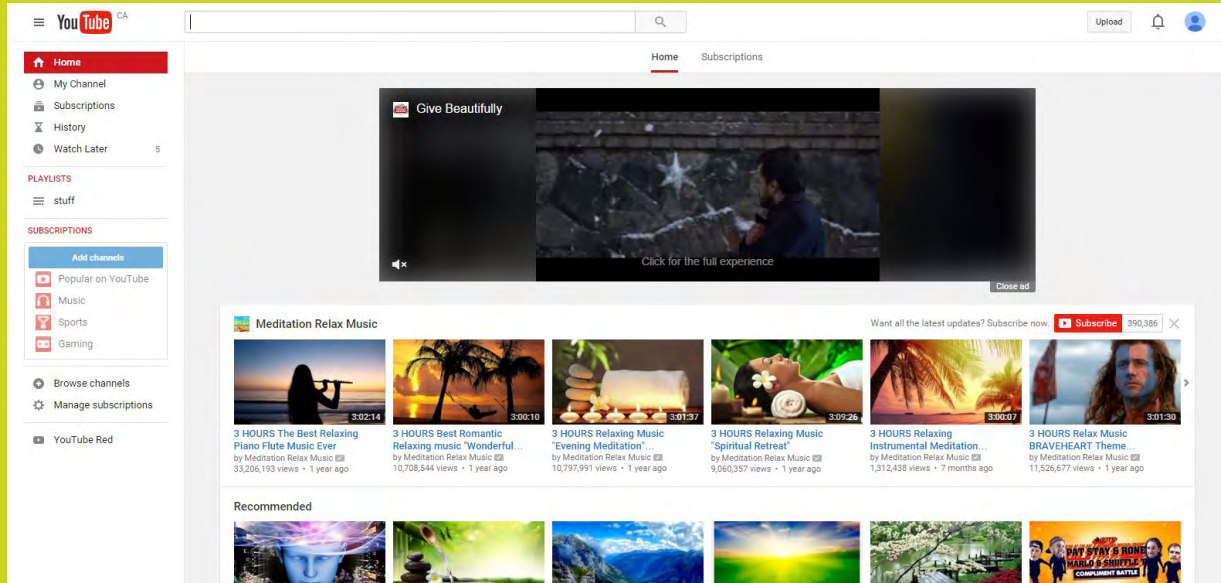
Real Life experiences, meeting new people

YOUTUBE

'05

+1 000 Million monthly users
Media Driven Network

Fig.27 Youtube Interface



Youtube is a video sharing website. Each video uploaded is its own controlled micropublic. Users are directed to videos through searches. To determine the user's preferences and location, Youtube employs an algorithm in searches.. Many videos have location gates, meaning that the publics who can view them are all in a certain country or region.

Content

Videos

Agency

Comments, likes

Controllers

Author, commenter

Currency

Views, likes

TUMBLR

'07

+50 Million users

Fig.28 A Tumblr Blog



Media Driven Network

Tumblr is a hybrid between a blog and a social network. The blog represents the author, and its readers form a public.

Content

Images, GIFs, videos, words

Agency

Comments

Controllers

Author

Currency

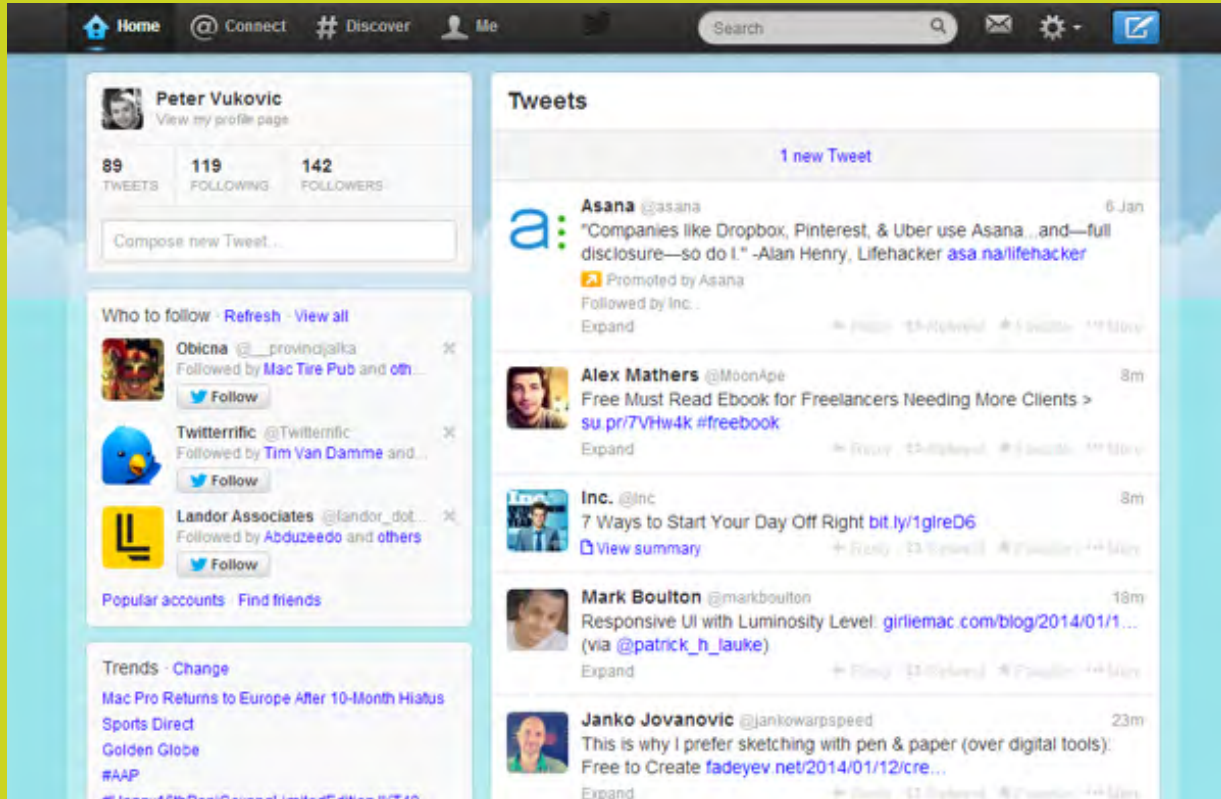
Followers, reposts

TWITTER

'06

+304 Monthly Active Users
Connected Social Network

Fig.29 Twitter Interface



Twitter is one of the most public forums for conversation. Each tweet (post) is limited to 140 characters, and forms its own controlled micropublic. Twitter currently does not use an algorithm to narrow searches. Instead it allows users to 'organically' discover the tweets they want to see. This organic quality is changing, and it will be interesting to see how these developments affect the publicness of Twitter.

Content

Tweets

Agency

Tweets, Re-tweets

Controllers

Author

Currency

Followers, re-tweets

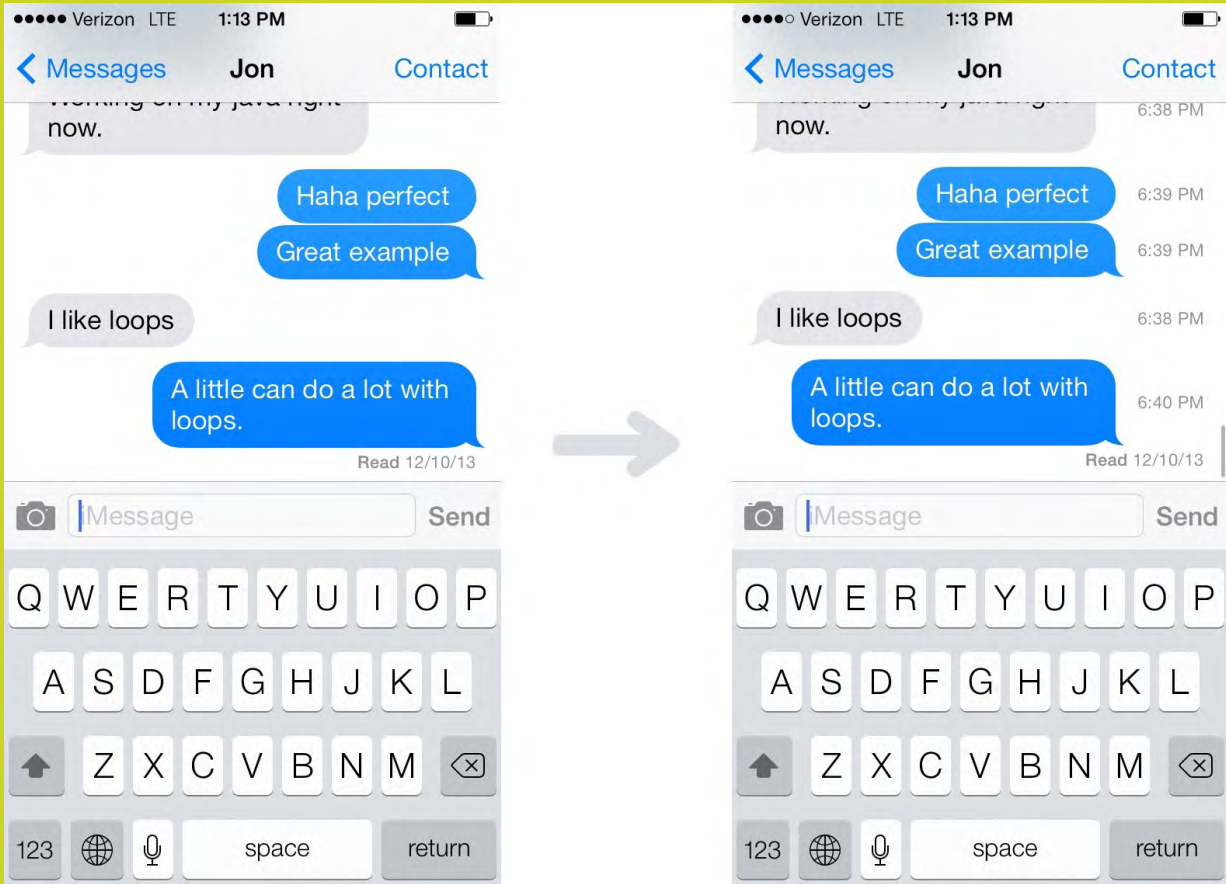
SMS

'85

+5 000 Million users

Connected Social Network

Fig.30 SMS Interface



Text messaging, or Short Message Service (SMS) is one of the original forms of peer-to-peer messaging. Individuals who send text messages to one another form an SMS network. Text messaging forms a private social network.

Content

Messages

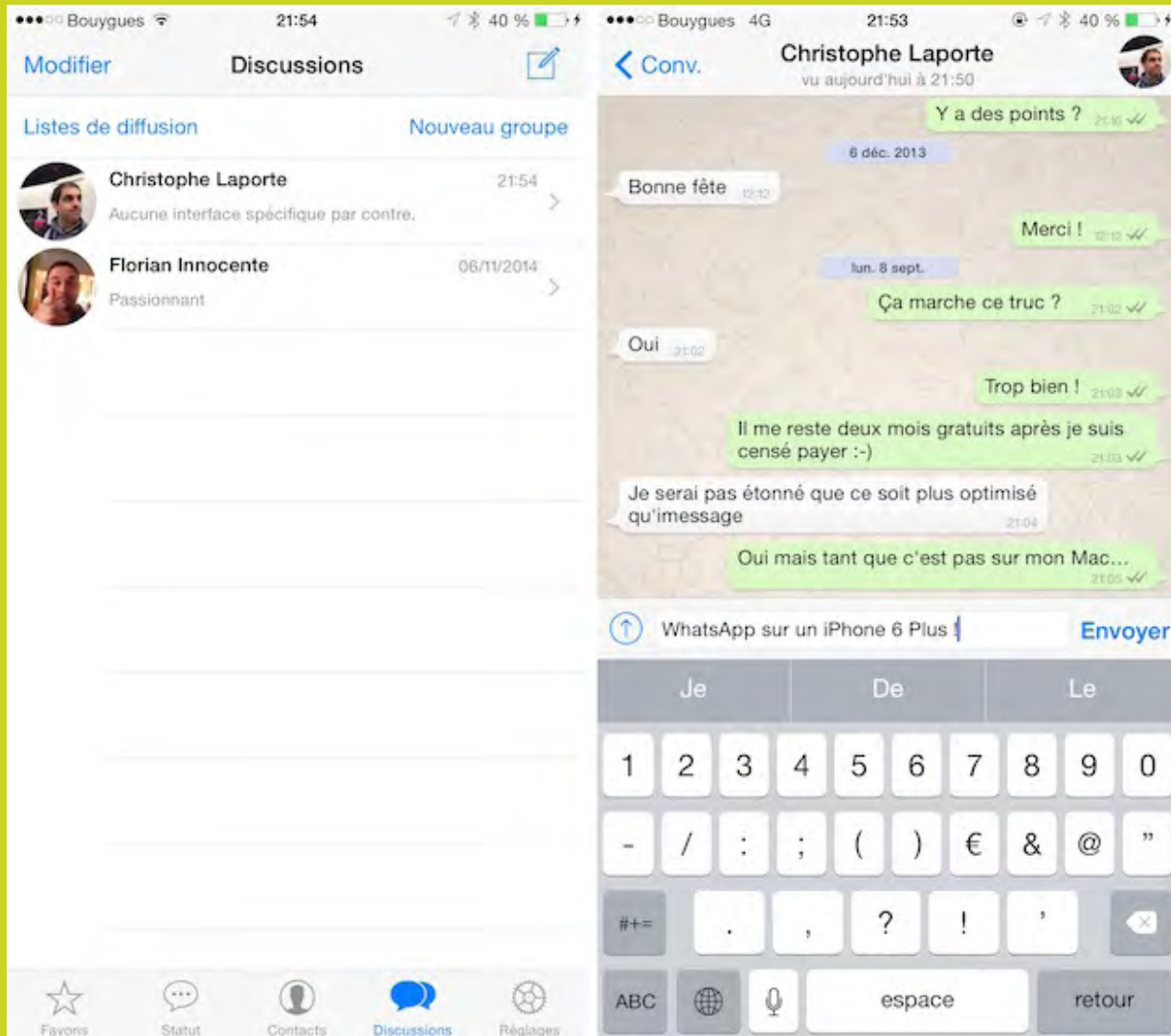
WHATSAPP

'09

+5 000 Million users

Connected Social Network

Fig.31 Whatsapp Interface



Whatsapp is a messaging service that allows users to send messages from peer-to-peer using data. Whatsapp allows for instantaneous global connectivity between users. Users of Whatsapp can create groups and share and discuss content within that larger group of participants. Whatsapp is a very private service, and is often described as a more private version of Facebook.

Content

Links, photos, videos, statuses, messages

Controllers

Author

Currency

Friends

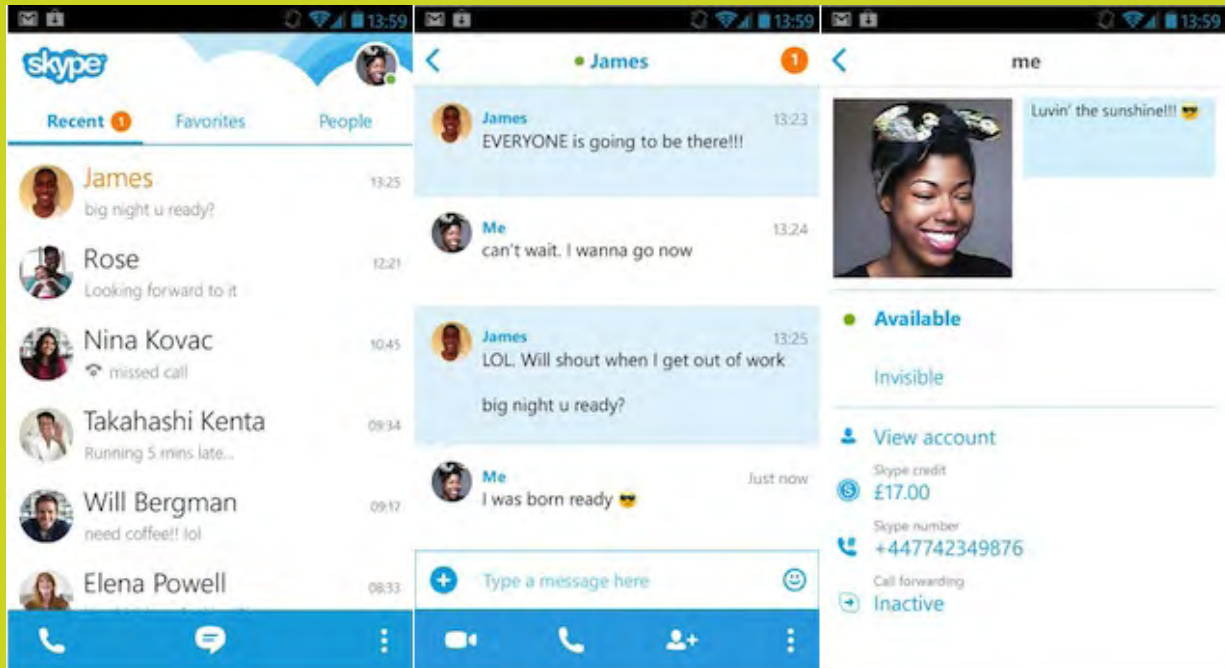
SKYPE

'03

+300 Million users

Connected Social Network

Fig.32 Skype Interface



Skype is a video conferencing service that allows for world-wide, instantaneous, visual connection amongst users.. Skype is a private network.

Content

Messages, videos

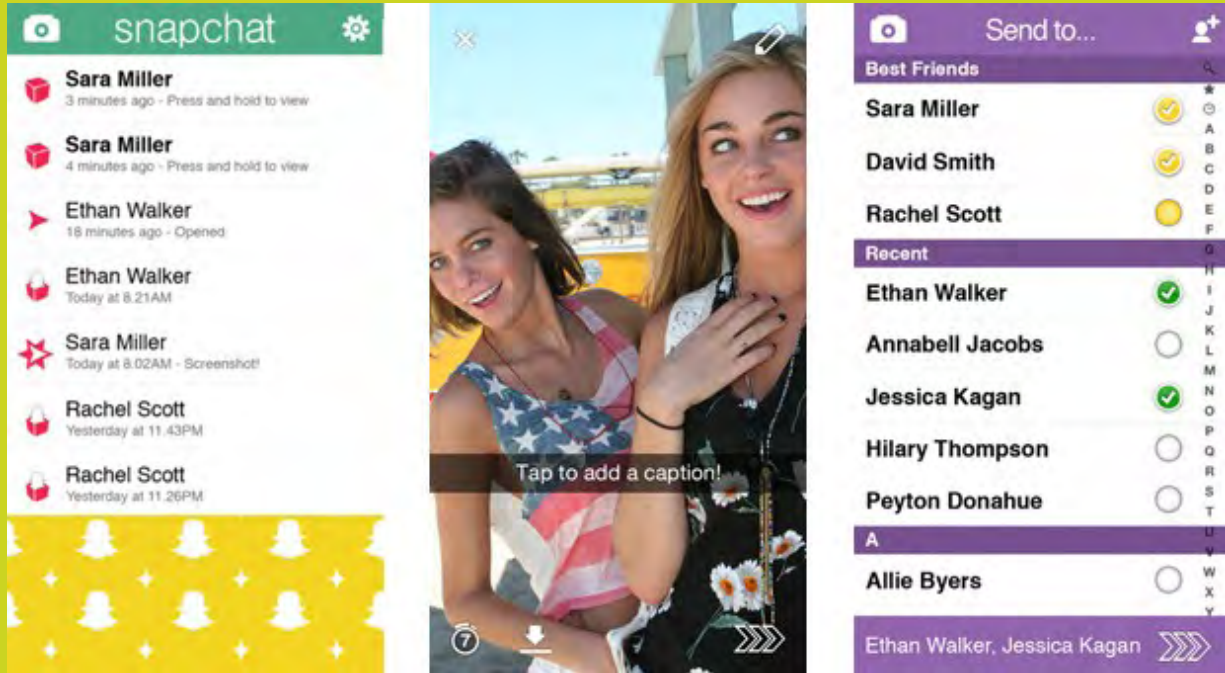
SNAPCHAT

'09

+100 Million users

Connected Social Network

Fig.33 Snapchat Interface



Allows users to send photos or videos to their contacts. The photos and videos disappear after the receiver views them.

Content

Images

Videos

WECHAT

'11

+600 Million users

Connected Social Network

Fig.34 Wechat Interface



WeChat is a direct competitor to Facebook—WeChat also looks to bring all aspects of your social life online. WeChat allows users to message and send videos to each other in a way similar to Whatsapp. Users are also able to update their profile and broadcast their messages in a one-to-many fashion. WeChat allows users to locate other users nearby.

Content

Links

Photos

Videos

Messages

Voice

Agency

Comments

Controllors

Author

Wechat (because of Chinese censorship laws)

Currency

Contacts

2.3 NETWORKED PUBLICS TO CONTROLLED MICROPUBLICS

As discussed in chapter one, a great deal of public discourse now unfolds in the virtual worlds of social media platforms. Because of this shift, we need to consider these platforms as extensions of the public sphere. As discussed in chapter one, many theorists have re-conceptualized the public sphere as a series of publics, rather than one public sphere. Theorists such as Michael Warner and Bruno Latour look at the public sphere as publics and assemblies: embracing the plurality that exists in today's sites of interaction. A group at the Annenberg Centre for Communications at USC build on these concepts of plurality. This group offers the term networked publics to embrace the networked nature of many contemporary publics.⁴⁸ Even with these broad new definitions of the public sphere, online social networks do not fit in comfortably.⁴⁹

As seen in the catalogue of networked

publics, these platforms contain issues of ownership, control, temporality, and consumerism. These issues make it uneasy to associate the word public with these spaces. At the same time, the spaces contribute to a significant portion of collective public discourse.

LATOUR'S PARLIAMENT OF THINGS

Philosopher Bruno Latour theorized of a public sphere that is more adapted towards addressing the problems of today's mass society.⁵⁰ In his essay "From Realpolitik to Dingpolitik," which is the introduction to his book *Making Things Public*, Latour build's a theory that today's public sphere is an assembly of *Things*. He derives the idea of Things from old etymological readings of the word, which "has for many centuries meant the issue that brings people together because it divides them."⁵¹ He says that the point of reviving this old etymology is "that we don't assemble because we agree, look alike, feel good, are socially compatible or wish to fuse together but because we are brought by divisive matters of concern into some neutral isolated place in order to come to some sort of provisional makeshift (dis)agreement."⁵² However, things today do not have the clarity transparency and obvious matters-of-fact,⁵³ instead they are hybridizing forums and gatherings.

The objects of science and technology, the aisles of supermarkets, financial institutions, medical establishments and computer networks are all hybrid platforms and forums that erode at the realm of pure objects, and publicness.⁵⁴ Social ICT networks are forums with ownership, and access that allow people to gather around an assembly of media objects—posts, videos, statuses, etc. These spaces are impure, and contradictory in their role as part of the collective public sphere. The

50 Frei and Böhlen, *MicroPublicPlaces*, 15

51 Bruno Latour, "From Realpolitik to Dingpolitik: an Introduction," 23

52 Ibid, 23

53 Ibid, 23

54 Ibid, 23

48 Michael Warner, *Publics and Counterpublics*. 65-124., Bruno Latour, "From Realpolitik to Dingpolitik: an Introduction,"

49 Helen Missenbaum and Kazys Varnelis, *Situated Technologies 9: Modulated Cities: Networked Spaces, Reconstituted Subjects*, 14

materials and platforms for build a public life exist, however Things lead nowhere if there publicness is not made explicit.⁵⁵

MICROPUBLICS

There is a complexity to social media platforms relationship with the public sphere; a new term is required to embraces the complicated relationship between the public sphere and social media platform. A term to better understand online media's role in the public sphere, or among Latour's Things, is *micropublic*. As seen in the catalogue of social media platforms, these platforms rely on objects and media—such as restaurants on Yelp, a song on Soundcloud, or a status of Facebook—to form groups of dialogue. Each of the platforms end up representing a new sphere that contains a series of publics formed around media and issues, or what Latour would refer to as *things*.⁵⁶ The term micro offers a scale to the thing, which suggests that the micropublics exist in coordination with larger publics. Micro also hints that there may be a temporality to the discussion.

Micropublics could be described as a group of people who (temporarily) congregate around pieces of media, and by assembly comprise the larger networked public. Although the term micropublic begins better to address the relationship between the networked publics and the media they contain, it does not deal with the underlying issues of control and ownership that exist within private social media platforms.

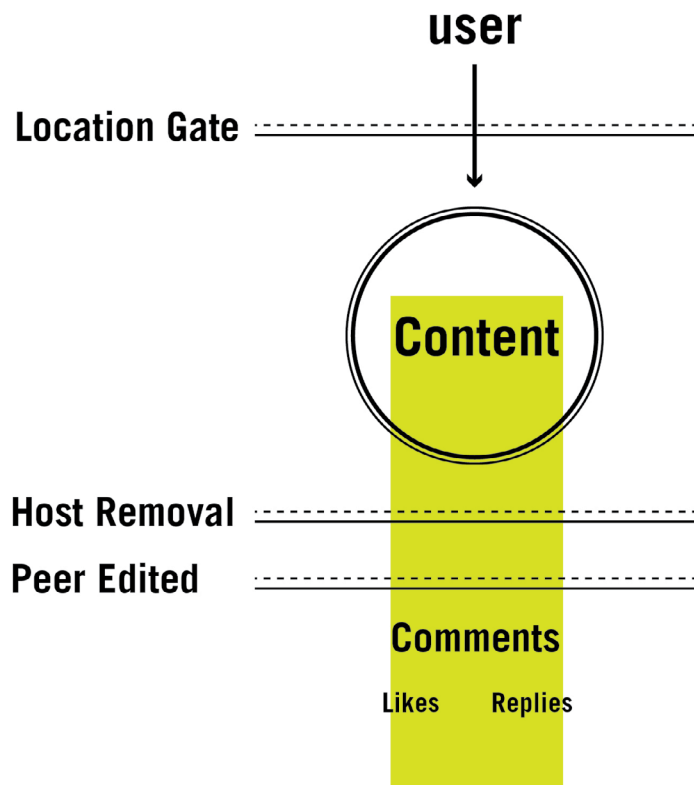


Fig.35 Controlled Micropublic Diagram

Diagram displaying the formation of a Controlled Micropublic. The public is assembled around a piece of content (this can be media, or opinion) comments and ratings are then open for the users to post. These comments can be removed by the creator of the content.

CONTROLLED MICROPUBLICS

Controlled Micropublics is a term that is as riddled in tensions and contradictions as the networks that they are describing. The term controlled micropublic offers a new alternative that embraces the complexities of the networks, while accepting their place as actors in the formation (and destruction) of the public sphere. The term embraces the network issues of ownership, editability, and temporality while also embracing these assemblies as part of today's public sphere.

55

56 Bruno Latour, "From Realpolitik to Dingpolitik: an Introduction," 13

DATA ACCESSIBILITY

Amongst issues of publicness and ownership existing in online networks are those issues of the accessibility and ownership of the background data that exists in these networks. In each controlled micropublic, there are different rules of access and privacy to the content and accompanying data sets. Although we may be purposely putting our opinion into the public sphere through platforms such as Twitter, users are commonly unaware of the secondary or tertiary processes of their data. Today's system of data ownership and control is based on a system of notice and consent. Users are accepting terms where their information may—or may not—be processed.⁵⁷ Most of these terms are built into platforms' fine print: when users choose to 'accept and agree to the terms.' In this manner, users agree to relinquish their rights to large portions of data. In addition, each controlled micropublic network has different levels of accessibility for third party users. As an example, data artist Jer Thorpe processed public Twitter streams that contained the phrase 'just landed in,' mining Twitter data for the user's home location, and the location of the tweet. Thorpe used this data to create a visualization of world air-traffic flow.⁵⁸ Although this installation may seem like a harmless exercise, it represents a series of issues and opportunities. It is easy for third parties to extract and process personal data.. Users are unaware of the ways their data can and will be used. By signing up for online networks, users relinquish ownership over the content and the opinions that they generated on that online platform. The invisibility of data processing means that users are often unaware of the rights that they have relinquished.

57 Viktor Mayer-Schönberger and Kenneth Cukier, *Big data: a Revolution that will transform how we live, work, and think*. 173

58 Jer Thorpe. "Just Landed," Accessed November 24, 2015. <http://blog.blprnt.com/blog/blprnt/just-landed-processing-twitter-metacarta-hidden-data>

2.4 LOCATION AND THE NETWORK

Up until this point, this thesis has discussed networks in terms of their relation to the public sphere. The thesis has debated issues of network publicness, control, and has aimed to better understand how the networks are situated within modern theories of the public sphere. Outside of understand behavioural changes the spatial qualities of the interface between physical space and online networks has not been discussed. Until recent technological advances, direct behavioural changes due to network use were the main condition that needed to be understood; SMS (text messaging) didn't communicate with the physical realm, instead it communicated with occupants of the physical realm. With online mobile media networks' use of emerging locative technologies, the spatial relationships between online networks and the city are growing.

Locative technologies such as Global Position Systems (GPS), Geographic Information Systems (GIS), and Radio-Frequency Identification (RFID) enable devices to track the user's position in the real world or exchange local information,

creating a bond between place and network. Many social networks are beginning to use locative media to encourage new types of connection. Through applications such as Facebook, Circle, and WeChat, people are able to discover the location of their friends, and are able to see if someone they know is nearby. This locative ability affects issues of personal liberty: constant surveillance and increasing agency given to cyber-stalkers. It also affects social behaviour within space, as well as the way in which people meet up. While acknowledging

Fig.36 Matrix of Social Networks that use Locative Technologies

the significance of personal liberty, the research is more interested in exploring the changes in the social behaviour.

Locative technologies in social networking present a new opportunity. Previously, in online networks, physical place mattered very little. There was evidence that geographic location played some part in the way people connected with each other online, but online connectivity was not feeding directly into people's physical surroundings.⁵⁹

Before locative technologies, networks and place were (mostly) separate. When users interact with their network(s) via their mobile devices, they privatize their behaviour. Locative media has the opportunity to change this, and many networks are trying. If you look at the prominent social networks, most fall into two categories: using technology to facilitate face-to-face meetings (Real Life Social Condensers), or to augment the physical realm with publicly sourced information (augmented reality networks). Both of these categories lead to a different public sphere, where the networks and space interact: networks becoming the information system and guidebook, and

59
87

Manuel Castells, "Urbanism in the Information Age,"

SPACEBOOK: NETWORKED PUBLIC PLACES



yPlan

tinder



physical space being the exciting world to play in, connect to and explore.

REAL LIFE SOCIAL CONDENSER NETWORKS

Real Life Social Condenser Networks (RLSCs) display some hopeful changes to virtual networks. They show the ability for the network to act as a facilitator for face-to-face interaction—to bring people together in real space. Unfortunately, these interactions are still relatively privatized; the facilitated meet-ups are for the privileged participants of the network. Although the meetings and nature of RLSCs are not public (they only are accessed and known by the users), the RLSCs are still affecting the public sphere. Locative technologies change the way parts of the city assemble. Dating apps are being used, especially in the gay community, to see where people are hanging out in the city. Users see which clubs, bars, or spots in the city appear to be filled with the most people, and use the locative technologies to plan their nights.⁶⁰

AUGMENTED REALITY NETWORKS

Augmented Reality Networks give a new form of agency to their users in the public realm. Users can rate, describe, and share information with their surroundings, leaving a trace of their opinion for future users. All aspects of the public realm are currently being augmented with information; this concept will be explored in more depth later on.

Many new networks, such as Parascopy, Phind, Foursquare, and Yelp are using locative technologies to tie information to physical locations; these networks allow your location to only access information that is locally relevant. Although the information is public, accessing, reading, and posting it is a private experience. The augmented reality gives the user a new (and exciting) form of agency in the public realm, all experienced privately.

CONCLUSIONS

Online networks and space are connecting in new ways, facilitating new types of relationships between the built world and information. Many of these spaces augment the city with information accessible to individual users. The users can then discover new things, or find new people to ‘hook up’ with. Events and activities are being activated and documented by virtual networks. The city feeds the virtual networks with data such as locations, events, people, and experiences to document, rate, discuss, share, and augment. Most of these networks, although fed collectively, are accessed at individual nodes (mobile computing devices). The formation and appearance of the networks is affected (sometimes created) by the information fed into it by the users and city.

The connection between the network and the city relates awkwardly to the public sphere; the networks are fed collectively, but accessed individually

60 Greg Lindsay, "How Dating Apps are Changing the Way We Behave in Public," *Next City*, January 21, 2015 <https://nextcity.org/daily/entry/how-dating-apps-are-changing-public-space>



Fig.37 User absorbed in her cellphone

2.5 CONDITIONS OF SOCIAL ICTS

The following subsection will explore the networks as key social spaces in contemporary society. The subsection will look at the networks' relationships to the local, and their ability to form a communal public. Each network, as described in the catalogue, bring different forms of media, agency, control, and currency to their associated users. Each of these forms affects levels of publicness and engagement.

In order to analyse the networks and their place in the urban realm, they will be placed on an access exploring two key contradictions: Local vs. Global and Collective vs. Individual. This exploration isn't stating that networks fit into one of those dualities. Instead, many networks negotiate between conditions of local and global, collective and individual; these links affect the user's relationship with the public sphere.

LOCAL

Local applications deal solely with the direct surroundings.

GLOBAL

Global networks focus on a global discourse while ignoring location.

COLLECTIVE

Collective spaces are used by many people at once. They represent a group and the individual is not visible.

INDIVIDUAL

Individual networks focus on a single individual and are not affected publicly by large groups.

Fig.38 Chart locating Virtual Social Spaces on conditions of Collective vs. Individual and Local vs. Global.

Source: Image by Author

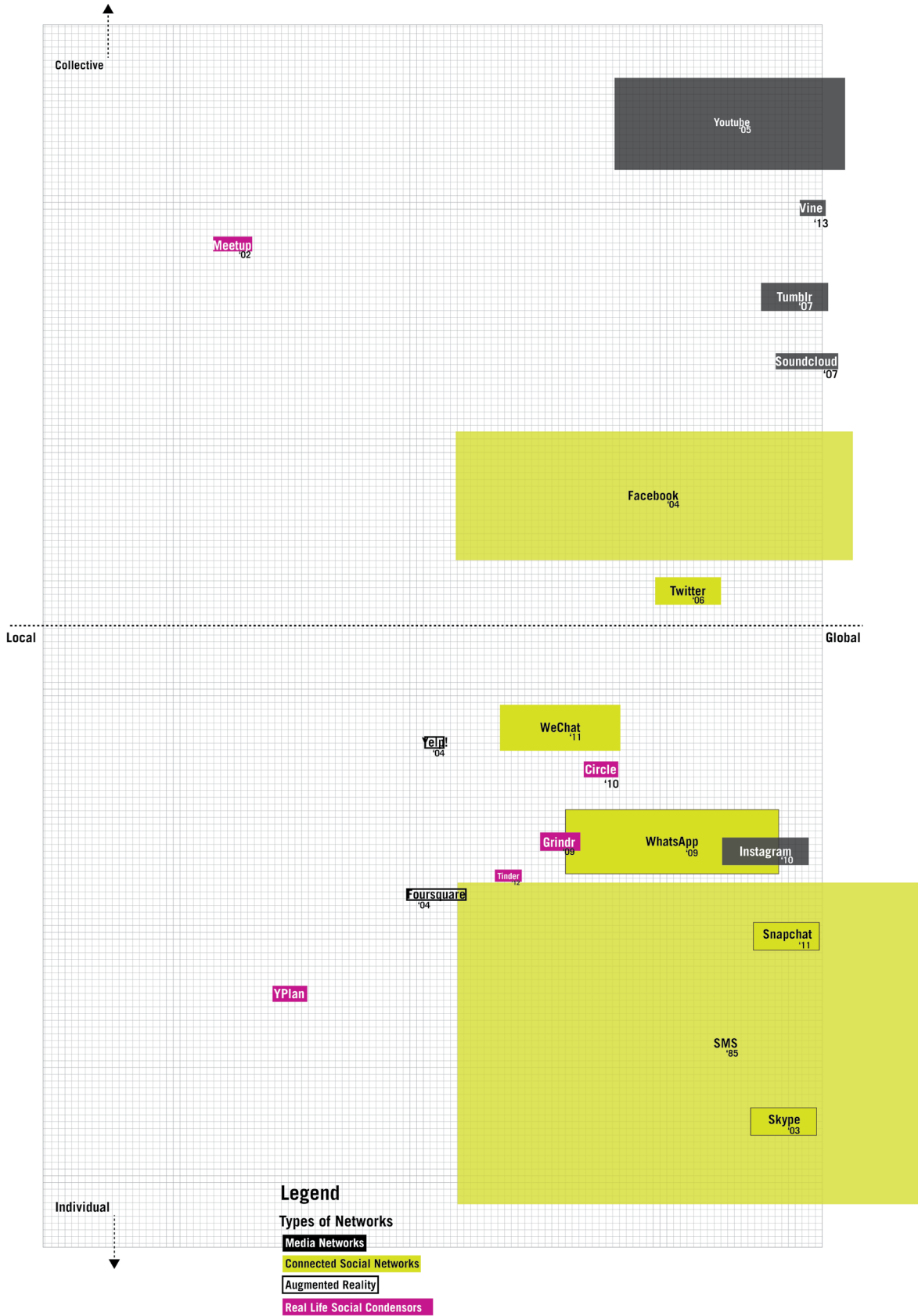
OBSERVATIONS

One of the interesting outcomes of the study was the realization that the Virtual Reality Networks (yelp and Foursquare) had almost a perfect balance between the network and local. VRNs manage to balance the local and global networks by associating the information overlay with specific geographic sites. The result is a discourse that is accessible to people looking through the network at the geographical sites. By connecting the network and space, the VRN turns the placelessness of the network into a place of identity. Unfortunately, these networks are not accessed, nor experienced, communally.

The large connected networks—WhatsApp, WeChat and Facebook, are all beginning to use locative media, and, therefore, are starting to link their networks to the physical realm. Unfortunately, interaction with those networks again happens individually. All information and contacts are stored and interacted-with through the network. The networks act as advertising machines for a person's location in real life (both as product advertising and by advertising your location to your friends); the networks are commodifying place.

SPACEBOOK: NETWORKED PUBLIC PLACES

THE CONDITION OF SOCIAL MEDIA NETWORKS



On The Personalized Metropolis

This chapter summarizes the earlier findings of the research, and examines the overall effect that social media networks have had on the North American metropolis. The chapter posits that personalized ICT networks have caused North American metropolises to become personalized metropolises. The following chapter is an assembly of observations concerning the personalized metropolis.



Fig.39 Users occupying their virtual networks in the bodily presence of their friends

3.0

3.1 PERSONALIZED AUGMENTATION BUBBLES

Ubiquitous online social networking has changed the nature of socialization in the twenty-first century, and changed the way people interact within the public realm. We spend our time accessing our network through a screen, disconnecting from the environment around us as we occupy digital heterotopic spaces. As Kazys Varnelis and Anne Friedberg state “with connection, there is also disconnection.”⁶¹ As we access our online social networks, we become increasingly disconnected from our local environment.

PERSONALIZED MOBILE AUGMENTATION BUBBLES

Users can become so immersed in the life on their mobile device that they become unaware of activities that occur around them. When involved in a mobile device, multiple, simultaneous forms of connection and disconnection act on the user. Both connecting and disconnecting experiences happen in local and global environments. Kazys

Varnelis and Anne Friedberg were correct in stating that “the always on, always-accessible network produces a broad set of changes to our concept of place, linking specific locales to a global continuum and thereby transforming our sense of proximity and distance.”⁶²

Local and Global are relative terms; most of our online social lives are filled with people who, at least at the scale of the city, share, or at one time shared, our local environment. It is neither the global connection nor local disconnection that has changed our behaviour in space, but rather the presence of the active networks that augment users’ realities into personalized zones of experience and knowledge. These personalized spaces are not shared or experienced with others and thus privatize our behaviour and experience.

Fig.40 Diagram displaying the major online social networks, who is using them, what can interact with each other and what levels of agency the users have. It serves as an outline of what each online public is comprised of: who is looking and how are they participating. It is a visual representation of the forms of media and connections that exist in the pockets of contemporary citizens.

Source: Image by Author

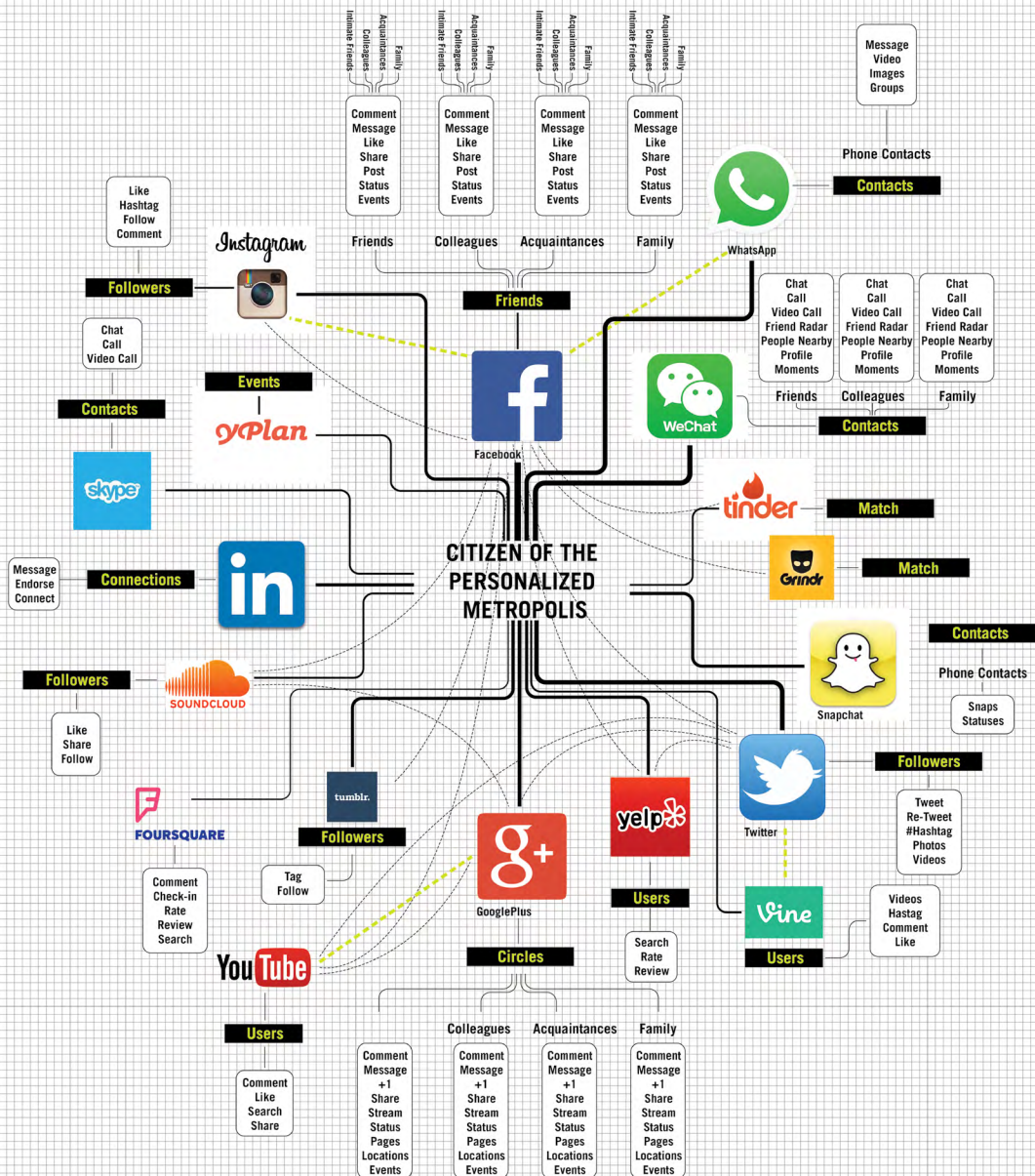
As we access these networks, we bring our virtual network into the public space, interacting with invisible (yet present) friends, and contributing to an invisible (yet present) discourse. Despite these interactions being personalized and controlled, we still seek out public places to access the network. Sociologist Sherry Turkle describes the age of mobile media as a state of being alone together. In many ways the description of being alone together; however, it is also oversimplified. We are not simply alone together; instead we are carrying around virtual worlds containing everyone we know, and everyone they know. People are augmenting space with individualized augmentation bubbles, and so-

61 Anne Friedberg Kazys Varnelis, "Place", 15.

62 Ibid, 15

SOCIAL NETWORKS

Crowding Publics - or who and what is in the room?



Legend

- User Connection
- - - Same Owners
- ⋯ Works with Eachother

cializing in customized spaces of interaction—these spaces overlaid onto the existing urban fabric. The point of access of online networks can constantly be moving, often tied to no specific location, constructing a sense of placelessness in the network. As a response to this placelessness, people often seek out public spaces to access these networks. The bodily presence of others masks the disconnections caused by networked, constant connection.⁶³

PERSONALIZED CONTROL

The ability for users to control the information and connections within their networks contributes a sense of agency to users. Customization and filtration are key features of online social networks, and allow users to create networks that feel as unique as the users are. Customized networks and searches change the way we navigate the city—there is a reliance on networks to let us find information, read the city, find food, etc. The network decides what we order, who we talk to, what concert we go to.

Network personalization is not strictly chosen by the user. Online networks are increasingly reliant on filtering data and displaying information that is user-personalized by an algorithm. Architecture and Media Theorist Mark Shepard, points out that algorithms have gained predictive and anticipatory agency.⁶⁴ In many of the controlled micropublic networks such as Facebook, algorithms are used to analyse current and historical data. The algorithms then make predictions as to what the user might want to see, or what advertising would be most suited to them. Facebook newsfeeds are sculpted not only by the content generated through your network of contacts, but also based on the algorithm's own decisions as to what you might like to see. These decisions are based on past clicks, user “likes”, how close Facebook thinks you are to someone (calculated by amount of Facebook-based interactivity), and types

of posts.⁶⁵ The computer-interpreted data means that the discourse contained within controlled micropublic networks is (partially) shaped algorithmically.

The influence and agency of the algorithm should not be downplayed. In 2014, Facebook tinkered with their algorithm in an experiment to manipulate the emotional content of people's newsfeeds. The experiment was performed on over half-a-million users' pages. The result showed that sentiment can be shaped and spread across social media platforms.⁶⁶ The experience of the public sphere is being manipulated and personalized through invisible and complex algorithms. Any sense of agency and individualism we gain through our own ability to edit, select, and filter, is relinquished through the agency given to the invisible algorithm.

PUBLIC SPACE AUGMENTATIONS

Individuals posting to and accessing their networks are constantly augmenting each space within the city. Users open portals to their friends' experiences through applications like Instagram, discuss and read about political matter through Twitter, and chat with friends through WhatsApp. These micropublics augmenting public spaces are engaging, vibrant, and participatory; they allow users to occupy their personal bubbles and segregate themselves from their local surroundings.

SIMULTANEOUS PLACE

Users are occupying multiple, controlled micropublics simultaneously. The content of these networks, especially in the day of viral media, can be experienced by multiple people in the same place at the same time; however, these users would never

63 Anne Friedberg Kazys Varnelis, "Place", 20

64 Mark Sheppard "Predictive Geographies", 133-137

65 Victor Luckerson, "Here's How Facebook's News Feed Actually Works," *Time*, July 9, 2015, <http://time.com/3950525/facebook-news-feed-algorithm/>

66 Vindu Goel, "Facebook Tinkers with Users' Emotions in News Feed Experiment, Stirring Outcry," *New York Times*, June 29, 2014, http://www.nytimes.com/2014/06/30/technology/facebook-tinkers-with-users-emotions-in-news-feed-experiment-stirring-outcry.html?_r=0



be aware of their shared experience. The place of events happen simultaneously, one at the moment of action, the other accessed and viewed through media networks, creating an infinite doubling of place. With their networks, people bring their own identities, languages, references, and connections, thus forming personalized relationships to place.⁶⁷

The power in the sheer volume of discourse in the micropublics is tremendous, but much of it is lost as the individual experiences it exclusively. The question then arises: how do we begin to share the experience and content of the network with the people around us? The solution? what if we augmented spatial conditions together.

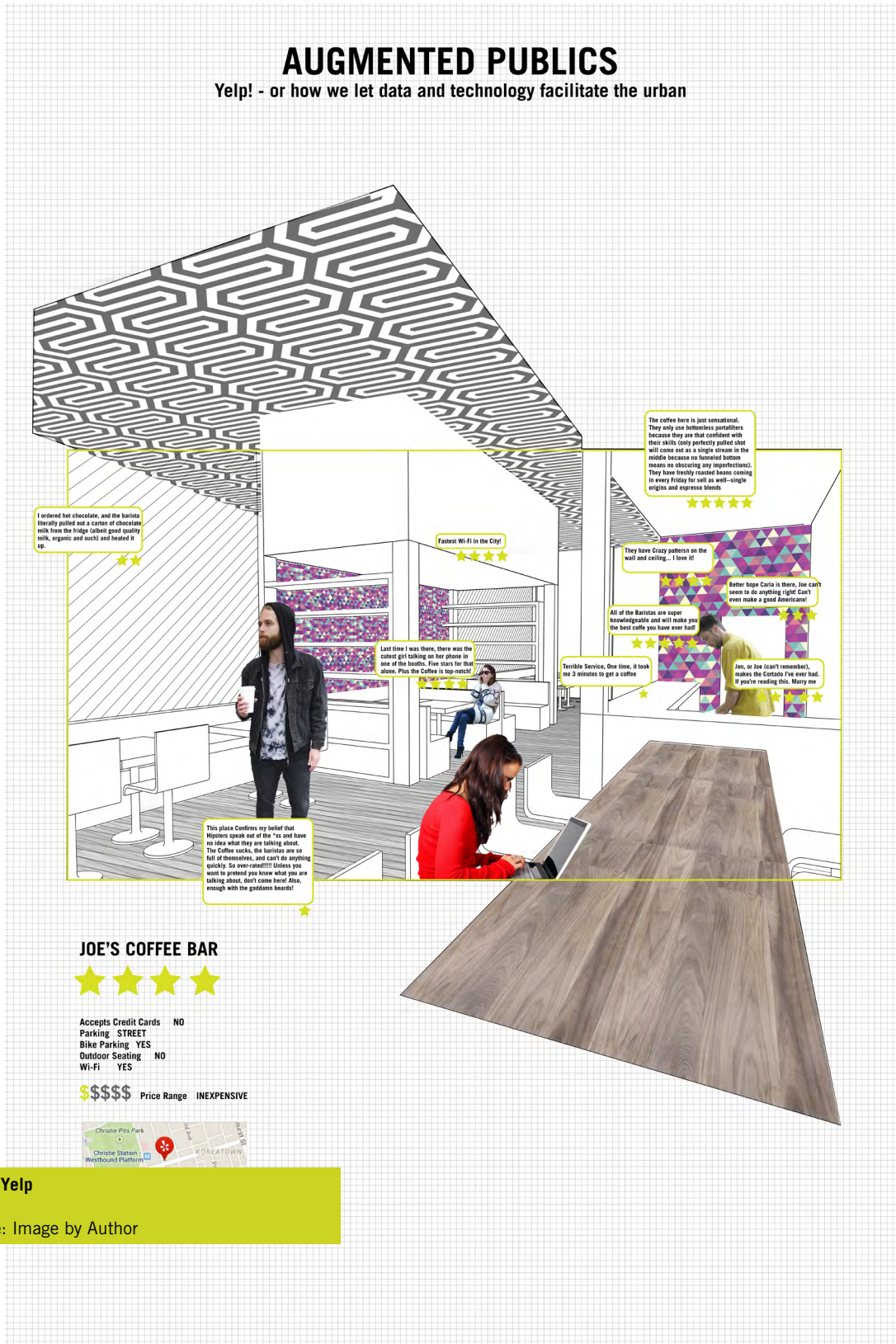
Fig.41 User connects to the global network, sharing experiences with friends who are located around the world.

The woman depicted in chapter 1.4 is now represented in the presence of her global connections. People are sharing experiences through global networks, while becoming unaware of their local surroundings.

Source: Image by Author

AUGMENTED PUBLICS

Yelp! - or how we let data and technology facilitate the urban



JOE'S COFFEE BAR



- Accepts Credit Cards NO
- Parking STREET
- Bike Parking YES
- Outdoor Seating NO
- Wi-Fi YES

\$\$\$\$ Price Range INEXPENSIVE



Fig.42 Yelp

Source: Image by Author

AUGMENTED PUBLICS

Instagram - or how we experience things cooler than our surroundings!



Fig.43 Instagram
Source: Image by Author

AUGMENTED PUBLICS

Facebook - or how do we connect over issues with people not around us

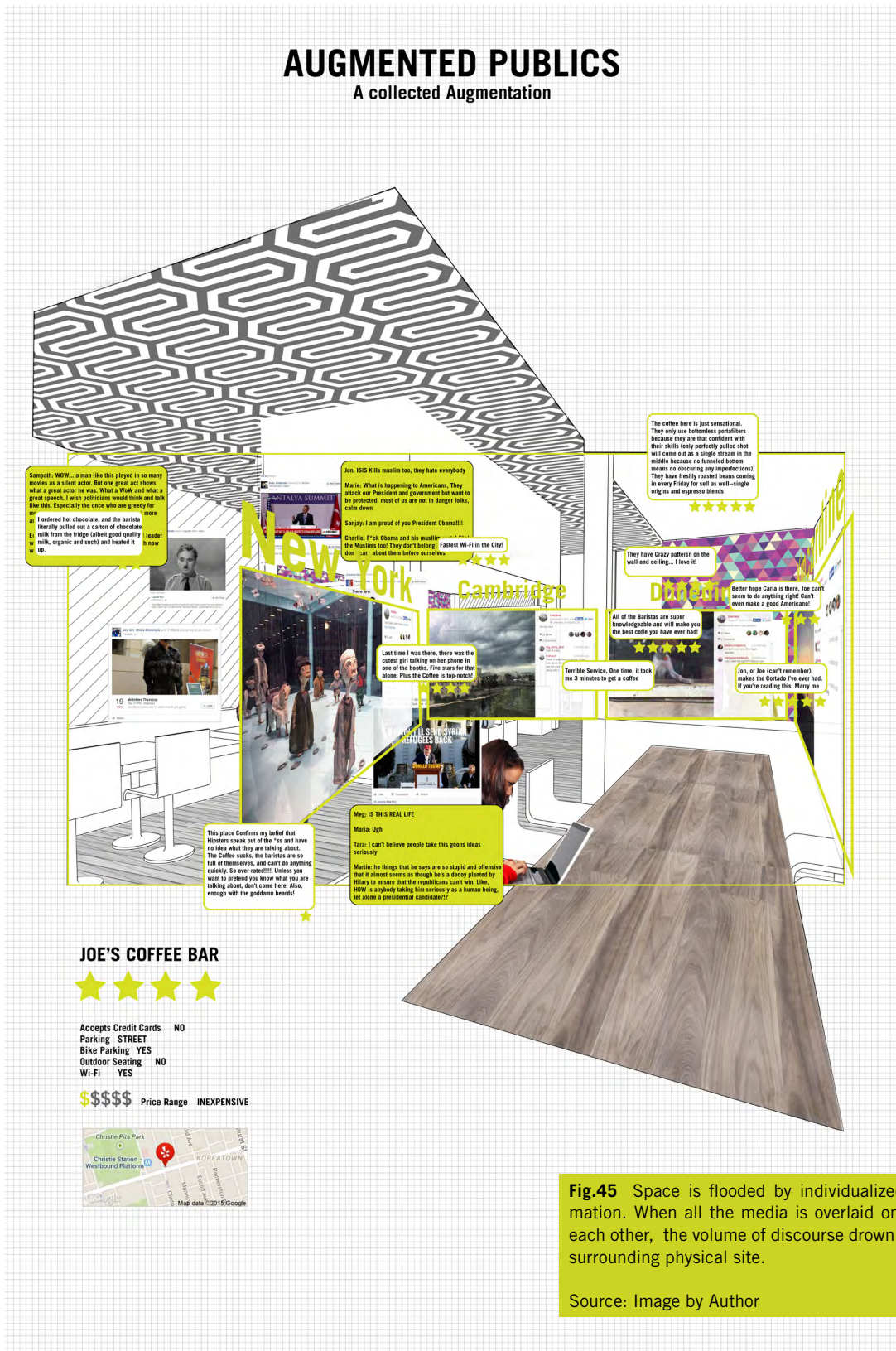


Fig.44 Facebook

Source: Image by Author

AUGMENTED PUBLICS

A collected Augmentation



Sampath: WOW... a man like this played in so many movies as a silent actor. But one great act shows what a great actor he was. What a WOW and what a great speech. I wish politicians would think and talk like him. Especially the ones who are greedy for more...

I ordered hot chocolate, and the barista literally pulled out a carton of chocolate milk from the fridge (obviously good quality milk, organic and such) and heated it h now up.



This place Confirms my belief that hipsters speak out of the "is and have no idea what they are talking about. The coffee sucks, the baristas are so full of themselves, and can't do anything quickly. So over-rated!!!! Unless you want to pretend you know what you are talking about, don't come here! Also, enough with the goddamn beards!

Job: ISIS Kills muslim too, they hate everybody

Marie: What is happening to Americans. They attack our President and government but want to be protected, most of us are not in danger folks, calm down.

Sanjay: I am proud of you President Obama!!!

Charlie: I' cck Obama and his muslim the Muslims not! They don't belong! Fastest Wi-Fi in the City! don' can' about them before ourselves.

New York Cambridge



Meg: IS THIS REAL LIFE

Marie: Ugh

Tara: I can't believe people take this goons ideas seriously

Marie: he things that he says are so stupid and offensive that it almost seems as though he's a deity planted by history to ensure that the republicans can't win. Like, NOW is anybody taking him seriously as a human being, let alone a presidential candidate???

The coffee here is just sensational. They only use bottomless portafilters because they are that confident with their skills (only perfectly pulled shot will come out as a single stream in the middle because no fouled bottom means no obstructing any imperfections). They have freshly roasted beans coming in every Friday for sale as well--single origins and espresso blends

They have Crazy patterns on the wall and ceiling... I love it!

Better than Cats is there. Joe can't seem to do anything right Can't even make a good American!

All of the Baristas are super knowledgeable and will make you the best coffee you have ever had!

Terrible Service, One time, it took me 2 minutes to get a coffee

Jan, or Joe (can't remember), makes the Cortado for ever had. If you're reading this, Mary me

JOE'S COFFEE BAR



- Accepts Credit Cards NO
- Parking STREET
- Bike Parking YES
- Outdoor Seating NO
- Wi-Fi YES

\$\$\$\$ Price Range INEXPENSIVE



Fig.45 Space is flooded by individualized information. When all the media is overlaid on top of each other, the volume of discourse drown out the surrounding physical site.

Source: Image by Author

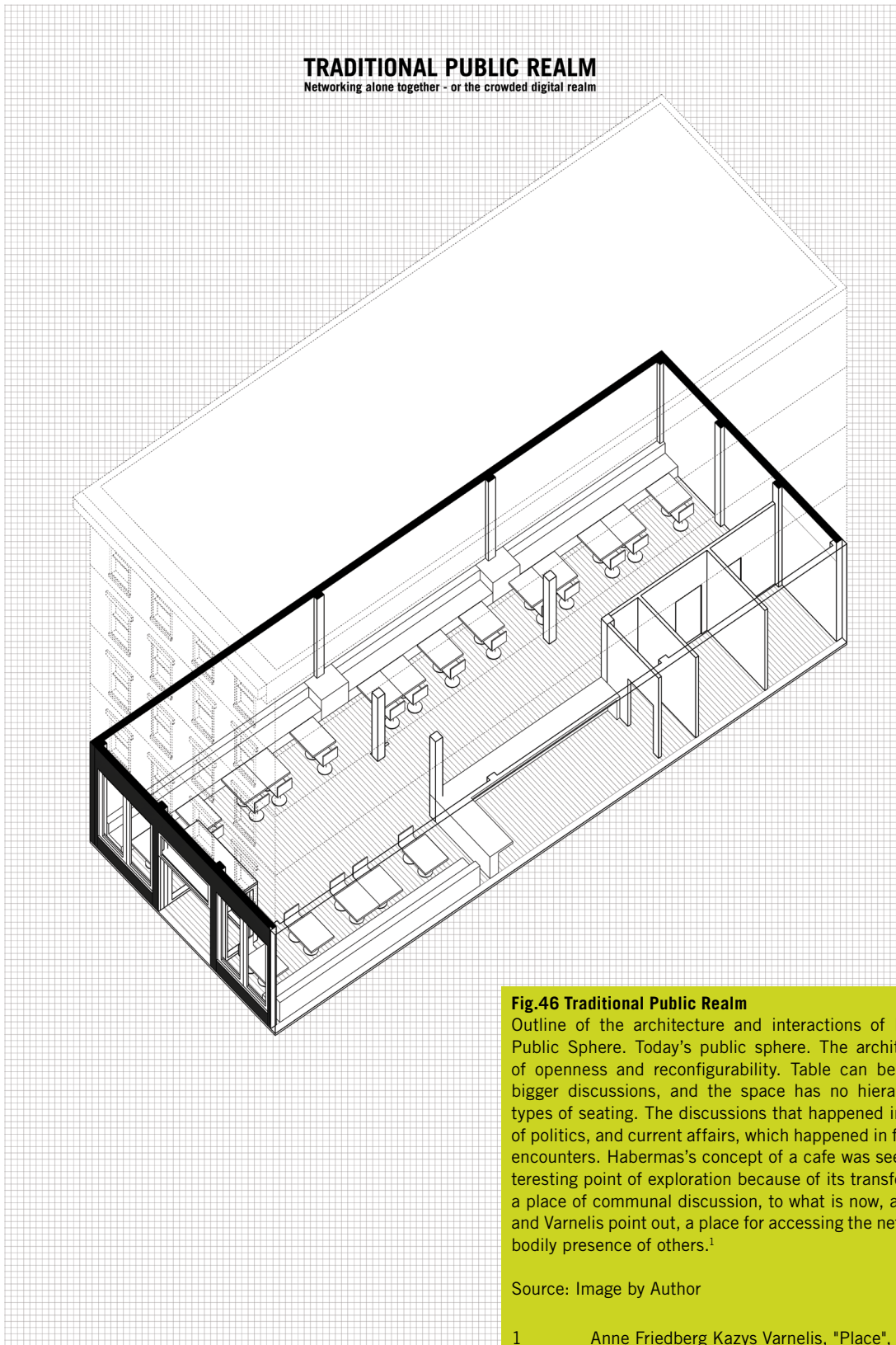


Fig.46 Traditional Public Realm

Outline of the architecture and interactions of Habermas's Public Sphere. Today's public sphere. The architecture was of openness and reconfigurability. Table can be moved for bigger discussions, and the space has no hierarchy in the types of seating. The discussions that happened in here were of politics, and current affairs, which happened in face-to-face encounters. Habermas's concept of a cafe was seen as an interesting point of exploration because of its transformation as a place of communal discussion, to what is now, as Friedberg and Varnelis point out, a place for accessing the network in the bodily presence of others.¹

Source: Image by Author

1 Anne Friedberg Kazys Varnelis, "Place", 20

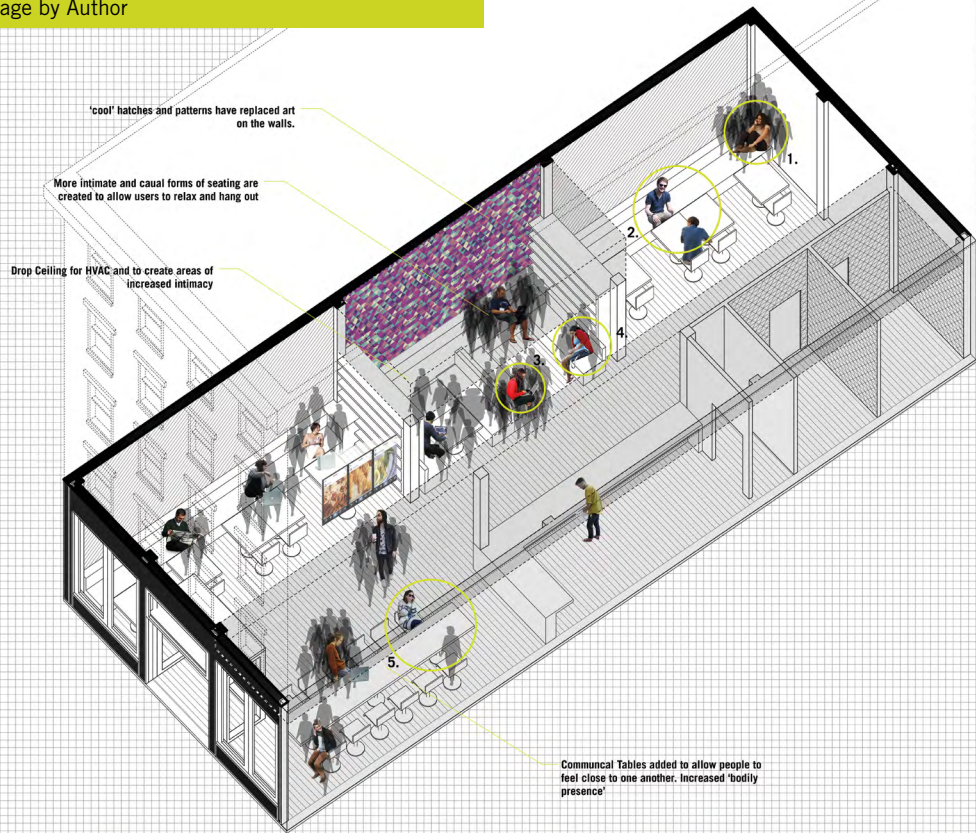
CONTEMPORARY PUBLIC REALM

Networking alone together - or the crowded digital realm

Fig.47 Contemporary Public Realm

Drawing of the contemporary public sphere. People are surrounded by each other, but are interacting with people located in different geographical space. The people are not alone in their presence, instead, each person brings their social media networks to the space with them. Filling the room with the virtual presence of others. People who many have appeared solitary, are actually communicating with vast networks.

Source: Image by Author



1. WhatsApp

Contains you and your immediate group of friends / phone list.
Peer-to-Peer, Many-to-Many
Cross Global
Users are bringing a small, more tight knit network into the space, with a very controlled and private dialogue



2. Grindr

Brought together by social media, but occupying space in a traditional manner.
Peer-to-Peer



3. Facebook

World's most pervasive Social Network. It tried to connect all aspects of your social life and circle, and bring it all online.
Peer-to-peer, many-to-many
A user on Facebook is bringing the most people into the room, along with a very diverse set of information.



4. Instagram

Users can follow their friends, making everyone a photographer and a critique
Peer-to-Many
Instagram condenses the sense of place and time. It brings people directly into the locations and experiences of their friends, creating a portal into other realms.



5. Phone Call

Kickin' it old school
Peer-to-Peer
Creates a virtual one-on-one conversation. The occupants of telephone calls take up at least as much space as a loud conversation.

3.2

THE PERSONALIZED METROPOLIS

Previous to this point, aspects of the contemporary urban realm have been examined mostly in sets of pairs: networks and public space, privatization and regulation, location and networks. These sets have examined existing tensions, which have uncovered a series of emerging changes to the urban realm: the way we interact with each other, the way we navigate the city, how we access information, the way we connect with friends. These changes have been dramatic as well as comprehensive. Combined with sixty years of the privatization caused by both suburbanization and cross-national media networks, online virtual networks have created a new reading of the urban realm. This chapter posits that the new condition of the North American urban realm can be described as the personalized metropolis. The following sub-chapter is an incomplete manifesto outlining the critical characteristics that separate the personalized metropolis from its predecessor. It is a list of things that commonly happen in cosmopolitan life due to pervasive online networks.

1. Users search and navigate space through virtual networks. Routes are predetermined by invisible algorithms (Googlemaps).
2. Events are planned online. These events are at a variety of scales: racquetball with a group of friends, yoga in the park, or a cross-national flashmob. These events are planned and promoted through social networks such as Facebook, Twitter and Instagram.
3. Politics unfolds in controlled micropublics.
4. Media is experienced piece by piece, discovered online in your personal networks.
5. Dating is facilitated through the network.
6. Protests are arranged through online networks. You have to follow and customize your network to be in the know.
7. Waiting no longer exists. You experience a designated time to check what your friends are up to.
8. Global information is as easily accessible as local information.
9. It is easier to communicate with a friend in Turkey, than it is to communicate with the person next to you.
10. You participate in multiple discourses simultaneously.
11. You order food through networks that, based on past preferences automatically suggest what you like.
12. Taxis now come with the click of a button, you as the consumer can be rated and discussed. As a consumer, you are personalized to your profile and device.

13. Television no longer dictates what you want. You can choose your schedule: what you want to watch, and when you want to watch it. You no longer share in a cross-national event with the other viewers of the program. The network also suggests personalized recommendations for shows and movies; your media network appears different from your friends'.

14. You can access and interact with aspects of private life (home) from anywhere. This happens in a variety of ways: from sitting in a public plaza and sharing intimate moments with someone across the country, to adjusting your thermostat from your favourite café.

3.3

A PUBLIC SPHERE FOR

THE PERSONALIZED METROPOLIS

In the personalized metropolis, the public sphere has grown, contracted, transformed, and disappeared simultaneously. Ubiquitous mobile computing has changed our perceptions of public, and shifted the behaviour and location of discourse. You could argue that Facebook and other online forums may have replaced the salon as Habermas's space in which issues of common concern can be discussed. However, Facebook, with its own set of controls, regulations, and interests, is more of a corporate-private forum than a public space.⁶⁸ Social Media are, instead, personalized discussion forums for issues that affect you and your friends, where you can make any information that you don't like disappear. Social media platforms are thus an arrangement of controlled micropublics, rather than conditions that are truly publics.

The truth is, the Habermasian ideal of the public sphere may never have existed; the Salons of the 18th century were always contained within private zones, limited the audience to white males, and excluded more of the public than they included. With ubiquitous computing, it is increasingly easy to exclude opinions of discourse

68 Helen Nissenbaum and Kazys Varnelis, *Situated Technologies 9: Modulated Cities: Networked Spaces, Reconstituted Subjects*, 14

that differ from one's own: online life can easily be curated. However, in urban life we have to live together with people who may have different sets of values—it is often argued that the public sphere plays an important role in bringing together people that are other. As Martijn de Waal notes “It is here that strangers are confronted with each other, become aware of one another and have to come to terms with each other.”⁶⁹

Therefore it may be better to move away from the lens of Habermas's public sphere, and to better understand what we are missing, examine the public sphere in an Arendtian sense. As Frei and Bohlen point out (while discussing Arendt's theories), the public sphere is “this site of collective performance that brings together those who are different from one another precisely because they are different. The collective that acts in the public realm is not a uniform entity such as a class, a nation, or a mass. What brings people together here is exactly what separates them from each other; in other words, according to Arendt, the public realm is like a parentheses that hold together the differences of people.”⁷⁰

Arendt's theories emerged at a time where online social platforms did not have to be accepted as contributors to the public sphere. Today, publics aren't assembling together in physical public spaces of the city, instead, people assemble around issues, and things that cause us concern.⁷¹ To this extent, online social networks should be functioning in the public sphere as forums to bring people together. The forums try to resolve differences, and promote diversity and multiculturalism. The issue with these online platforms is that they are too customized, controlled, and, in many cases, inaccessible; meaning that the assembled controlled micro-public is a grouping of like-minded (and already

69 Martijn de Waal, *The Urban Culture of Sentient Cities: From an Internet of Things to a Public Sphere of Things*, 192

70 Marc Bohlen and Hans Frei, *Situated Technologies 6: MicroPublicPlaces*, 14

71 Bruno Latour, "From Real Politik to Dingpolitik: An Introduction" 23

connected) individuals. The other problem with online networks, is the inability to actually share. Information is public and can be viewed by all, but issues of authorship and control mean that nothing but the technical matrix behind the internet is shared by the public.⁷² Without the ability to connect and share, it is impossible for people to empathize with one another: the lack of empathy makes arriving at agreement nearly impossible.

TOWARDS CONNECTED PUBLIC PLACES

Up until this point in this research, the public sphere has been examined in its two types: Physical spaces and virtual spaces. However, the public sphere actually exists at the interface between these two typologies. Discourse, communication, and interaction around issues happens online; but coming together, empathizing, and resolving happens in physical spaces. What we need is a public sphere that leverages the vast quantities of online discourse, and brings it into public spaces. We need a set of physical public places that subvert the privatized behaviour caused through personalized mobile networks.

In response to Latour and Arendt's notion of the public sphere, Frei and Bohlen propose a set of fictional spaces, where the public assemble around shared issues of concern. These issues surround public infrastructure, and suggest a set of intervening *micropublics* that might form around communal infrastructures such as zoos, schools, and water plants. Unlike using infrastructures as spaces for assembly, public space cannot just focus on single topics or areas, instead public spaces are dynamic in nature, and facilitate various forms of interaction (such as political debate, leisure, and entertainment).

Mobile computing, its controlled micropublic networks, and policy and ownership changes have brought about a physical public sphere that lacks the agency and awareness to

allow people to unite around issues. Public Space in the personalized metropolis needs to be places where people of all backgrounds are welcomed. The spaces need to determine ways to bring people together so that they are not just in the presence of one another, but share agency and experiences in creating community. By coming together in public space, connecting and interacting with our neighbours, we can reverse years of privatization, and create a healthy, active, and diverse public realm

72 Marc Bohlen and Hans Frei, *Situated Technologies 6: MicroPublicPlaces*, 24

PART II:

SPACEBOOK

The second part shifts focus from investigating changes to the public sphere, to implementing design interventions into the personalized metropolis. The following part of the book looks at possible sites to use for interventions, as well as past projects that introduce the sense of place, interaction and discourse into the urban public realm. All of this manifests itself in a set of public space designs that look to address issues of publicness, locality, publicness, and connection.

NETWORKED PUBLIC PLACES

Towards a Spacebook

Until now, this thesis has focused on the theoretical changes that mobile ICTs have caused to the North American metropolis. This chapter shifts focus, and moves towards establishing what is required for a public realm that is more responsive, accessible, and accepting towards mobile ICTs. The chapter determines a framework for designing public spaces in the personalized metropolis: identifying and analysing potential sites, looking at issues of identity and place, and identifying potential tools to help activate the public realm. *Spacebook* is a concept that aims to create a network of public places that, similarly to Facebook, contains active connection, interaction, communication, and discourse.

This chapter examines the interface between the network and public space; it posits that the interface contains the potential agency to address the needs of the public sphere. Privately-Owned Public Spaces (POPS) are explored as a potential site; one that desperately needs design interventions. Built projects are analysed to understand how senses of identity and place in the past have been injected into the city. The projects are also analysed to understand the ways that people in the past have addressed the relationship between the public sphere and ICTs. The chapter attempts to build a catalogue of concepts to bring into a design.



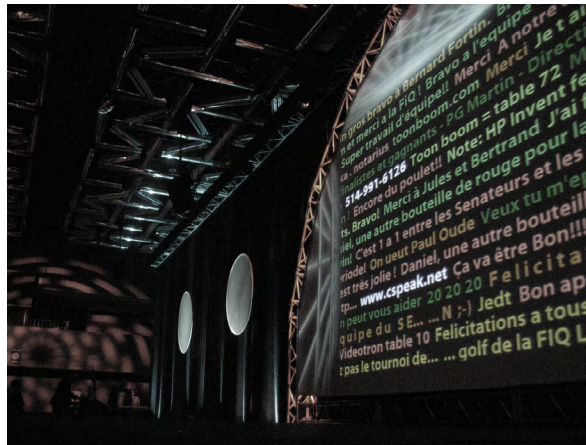
Fig.48 Map of van Eyck's Playground in Amsterdam.

4.1 INTERFACES AND INTENTIONS

Fig.49 Cityspeak installation by Jason Lewis

Mobile ICTs and physical publics have largely been designed as separate entities. Sometimes, mobile ICT applications rely on the physical realm as a backdrop for information-based overlay, but access and experience remains individual and placeless. *Spacebook* is a series of interventions that investigate ways to maximize the communal interface between the physical public sphere and online controlled micropublics.

The interface is commonly understood as the object, or moment, through which a human user and a computer communicate. More generally, the interface is the space of mediation shared between machines and humans—the point where abstract data is transformed into something comprehensible and tangible. As such, the interface is a point of enormous potential between the virtual realms of data-facilitated interaction, and physical public



spaces; the interface is the space of discourse, and of agency or interaction.⁷³ *Spacebook* proposes a series of interfaces that create new relationships between the discourse of the network, and physical public space. In order to bring people and their opinions of difference together, *Spacebook* adds expression and agency back into public space.

Since the ubiquity of mobile telephony in the early 2000s, many artists have been exploring the relationship between controlled micropublics and the physical public realm. Many of these artists, such as Canadian-Mexican artists Rafael Lozano-Hemmer, explore ways to subvert the privatization of public behaviour.

In his project, *Make Out*, Lozano-Hemmer explores the relationship between bodily presence and projected technologies. Set up as a series of interactive displays, the bodily presence of users manipulates recordings of thousands of couples beginning to kiss. The default state of couples kissing is statistically

faithful to the percentage of videos online: fifty per cent woman-woman, thirty per cent man-man, and twenty per cent woman-man. The interface creates a relationship between the bodily presence of a user in space, with digital recordings and online data and statistics altering the consciousness of the viewer.⁷⁴

Other artists, such as Jason Lewis in *CitySpeak*, more directly attempt to tackle the relationship between controlled micropublics

73 Andreas Broeckmann, "Public Sphere and Network Interfaces", 380

74 Rafael Lozano-Hemmer. "Make Out." Accessed November 25, 2015. http://www.lozano-hemmer.com/make_out.php



Fig.50 Makeout Installation by Rafael Lazano-Hemmer

and physical public spaces. *CitySpeak* is a visual display project that allows SMS messages from participants to be projected onto a public screen. The newest messages appear largest, and in the foreground, while older messages scroll across the screen from left to right. *CitySpeak* plays with the idea of public and private. Typically, SMS is a user-to-user based medium, accessed through the private screen of users' mobile computing devices. *CitySpeak* inverts this relationship by using SMS as a public medium, changing the access point of the messages to a communal one where users read, process, and debate the messages collectively.⁷⁵

Although these projects are fascinating how they intersect both virtual and physical social spheres, their temporality and scale reduce their agency to change public behaviour. *Spacebook* mediate a larger network of interventions, creating a new collective identity and behaviour spread

across the metropolis. *Spacebook* will also address different scales and typologies of behaviour, from one-on-one communication, to collective discourse, to event coordination. The public sphere is not set up to handle only one scale of interaction —instead, it unfolds on a stage that accommodates a variety of interactions, performances, and audiences. As a result, *Spacebook* is a cross-city network of interfaces, located and modified in a variety of networked sites. By creating a network of interfaces rather than a single one, *Spacebook* can become a distributed network of identity and interaction that is accessible to a greater portion of the population.

75 Liliana Bounegru, "Interactive Media Artworks For Public Space: The potential of art to influence consciousness and behaviour in relation to public spaces," 207-208

4.2 PUBLIC PLACE NETWORKS

Spacebook creates a network of sites that forges identity throughout a city; *Spacebook* activates a series of under-utilized spaces spread across the city to form a single, networked site. By creating a set of standard components and design identity, small wasted spaces can transform into a cross-city network of identity, community, and interaction. An example of this concept is the playgrounds in Amsterdam designed by Aldo van Eyck.

PRECEDENT: AMSTERDAM PLAYGROUNDS

After the Second World War, Amsterdam's Department of Public Works looked to make use of the empty sites across Amsterdam. Many of these sites were results of devastation from the War: leftover spaces that were under-designed. People in the city centre (many of them mothers) complained that in the rebuilding of Amsterdam there were no sites for children to play.⁷⁶ Aldo van Eyck was hired by the Department of Public Works to design a series of playgrounds in the city core. What transpired was

76 Lefaivre, de Roode, Fuchs, and Stedelijk Museum Amsterdam (Netherlands). "The Playgrounds and the City," 61

one of the first place-making networked sites.

Between 1947 and 1971 van Eyck designed an estimated 700-860 playgrounds in Amsterdam, forming a massive, citywide network of activity.⁷⁷ These places shaped an entire generation, and radically shifted the city's approach to urbanism, turning on its head the top-down modernist approach of the time.⁷⁸

Fig.51 Map of playgrounds in Amsterdam.

PLACE NOT SPACE

When he first started with the Department of Public works, van Eyck was thrust onto these playground projects. The goal of his work was to take advantage of the empty public space within the city and create places for children to play. The city designated the sites, and Aldo van Eyck was given the task to transform each of the spaces into places of play.⁷⁹ Van Eyck, rebelling against the idea of top-down authoritative systems, approached each site within the network as a series of constantly changing compositions that were formed out of a set of similar components.

77 Ibid, 25

78 Ibid, 27

79 Ibid, 85

SPACEBOOK: NETWORKED PUBLIC PLACES



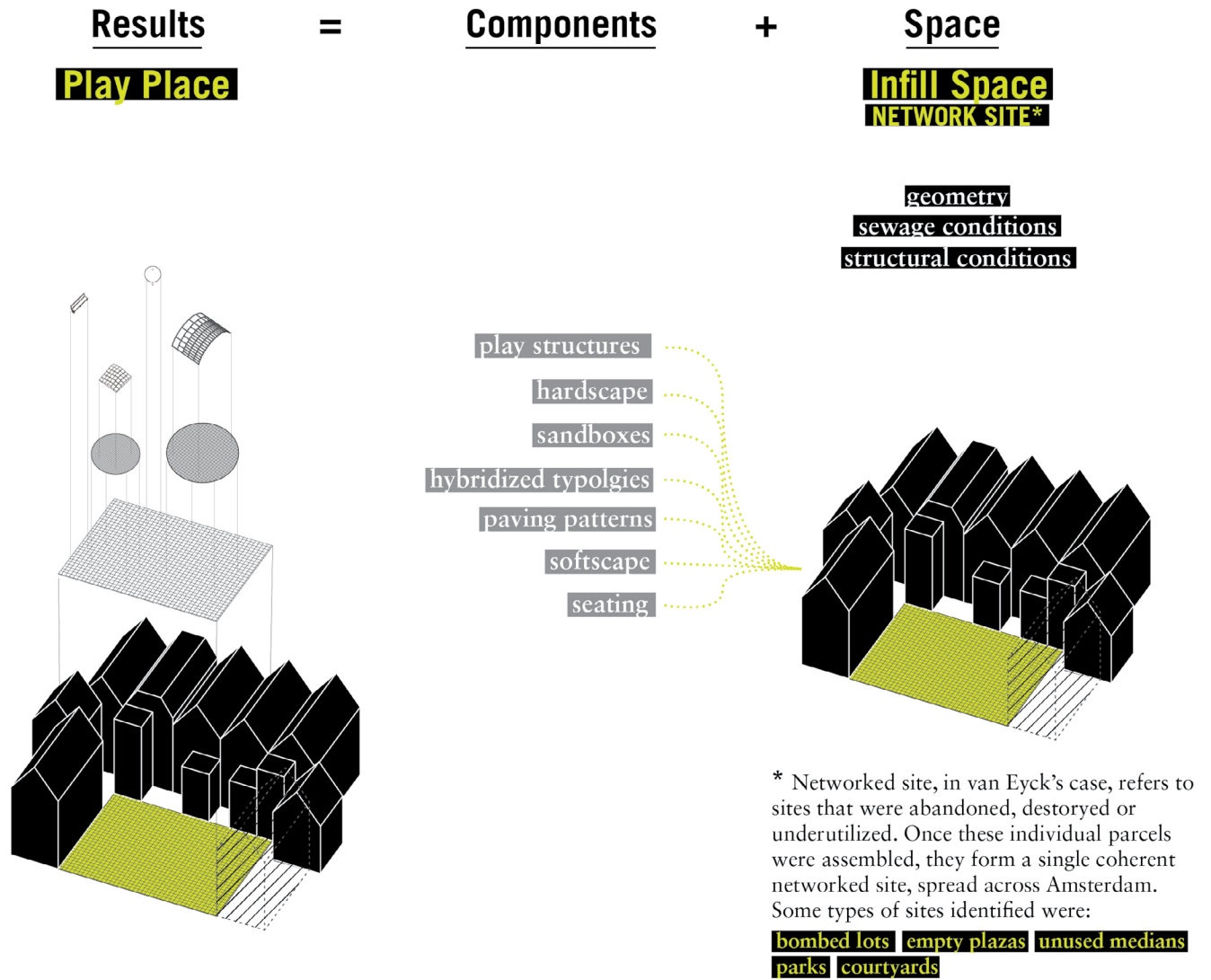


Fig.52 Diagram of van Eyck's Design Process

Despite their massive and fast growing quantity, van Eyck tried to avoid the mass production of the playgrounds. Van Eyck attempted to standardized components but allowed himself to experiment and create evolving solutions. In creating a framework for his designs, van Eyck brought together play objects and spatial elements to create a group of

constantly changing, site-specific compositions.⁸⁰

80 Ibid, p70



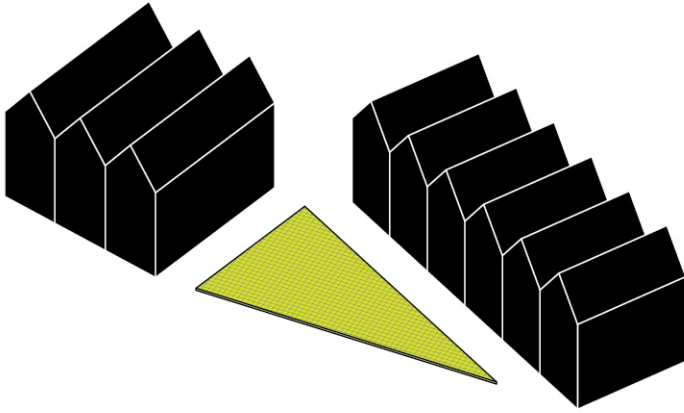
Fig.53 Two Playgrounds in Amsterdam



Fig.54 Van Hogendorpplein, 1953

Fig.55 Typologies of Spaces Playgrounds occupied

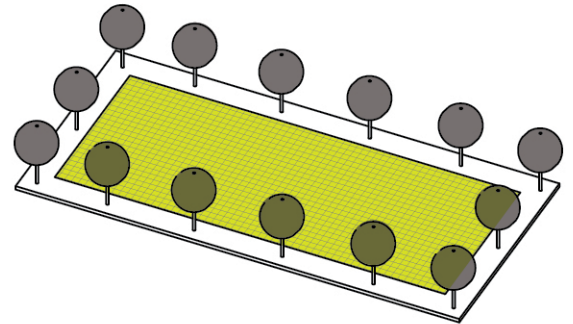
The spaces tended to emerge in the following typologies. van Eyck would respond to different site conditions in different ways.



PLAZA

KEY CHARACTERISTICS:

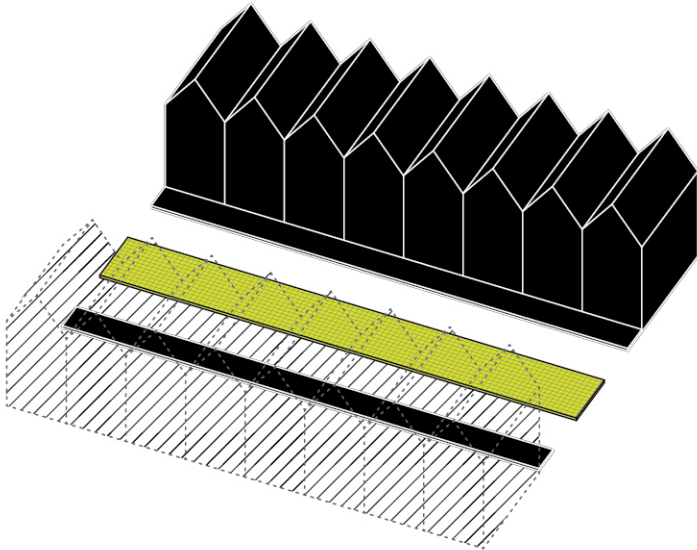
- Open
- Surrounded by streets
- Variety of shapes



PARK

KEY CHARACTERISTICS:

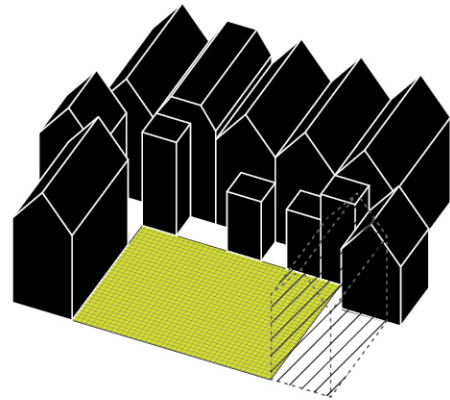
- In existing public space
- Existing softscape



BOULEVARD

KEY CHARACTERISTICS:

- median
- long and narrow
- open on all sides
- Linear



COURTYARD

KEY CHARACTERISTICS:

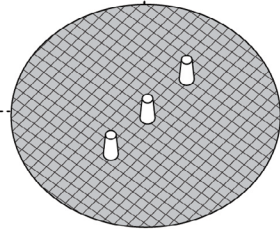
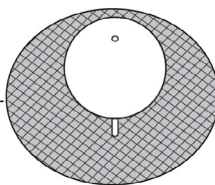
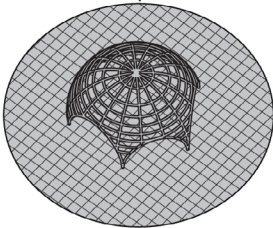
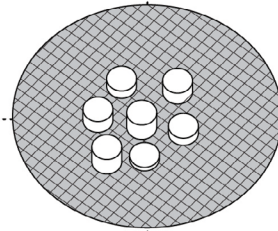
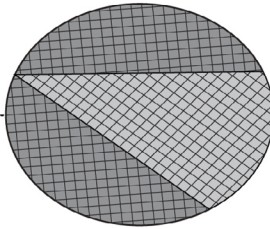
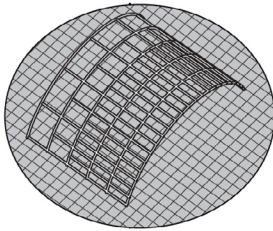
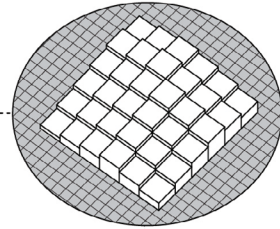
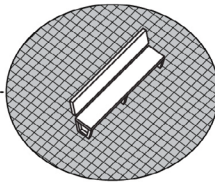
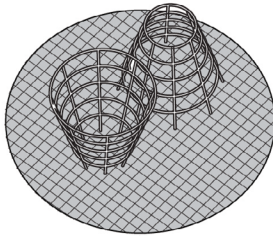
- Closed in

TOWARDS A SPACEBOOK

Play Structures

Other

Hardscapes



Sandboxes

Hybridized

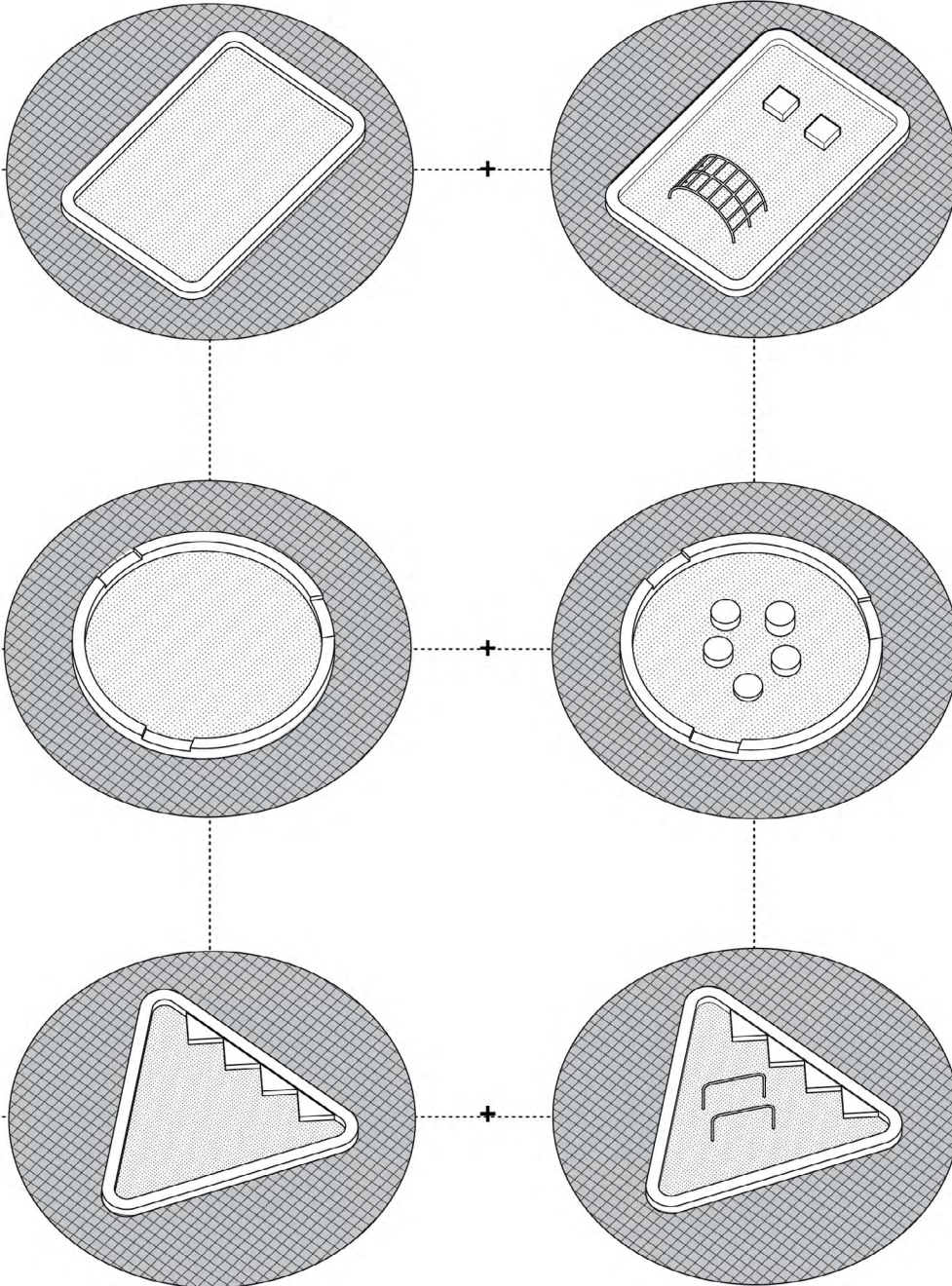


Fig.56 Types of components by van Eyck

By using a set of customized components, the playgrounds formed an identifiable network of public places. The components were not simply placed, but modified and carefully placed on site.

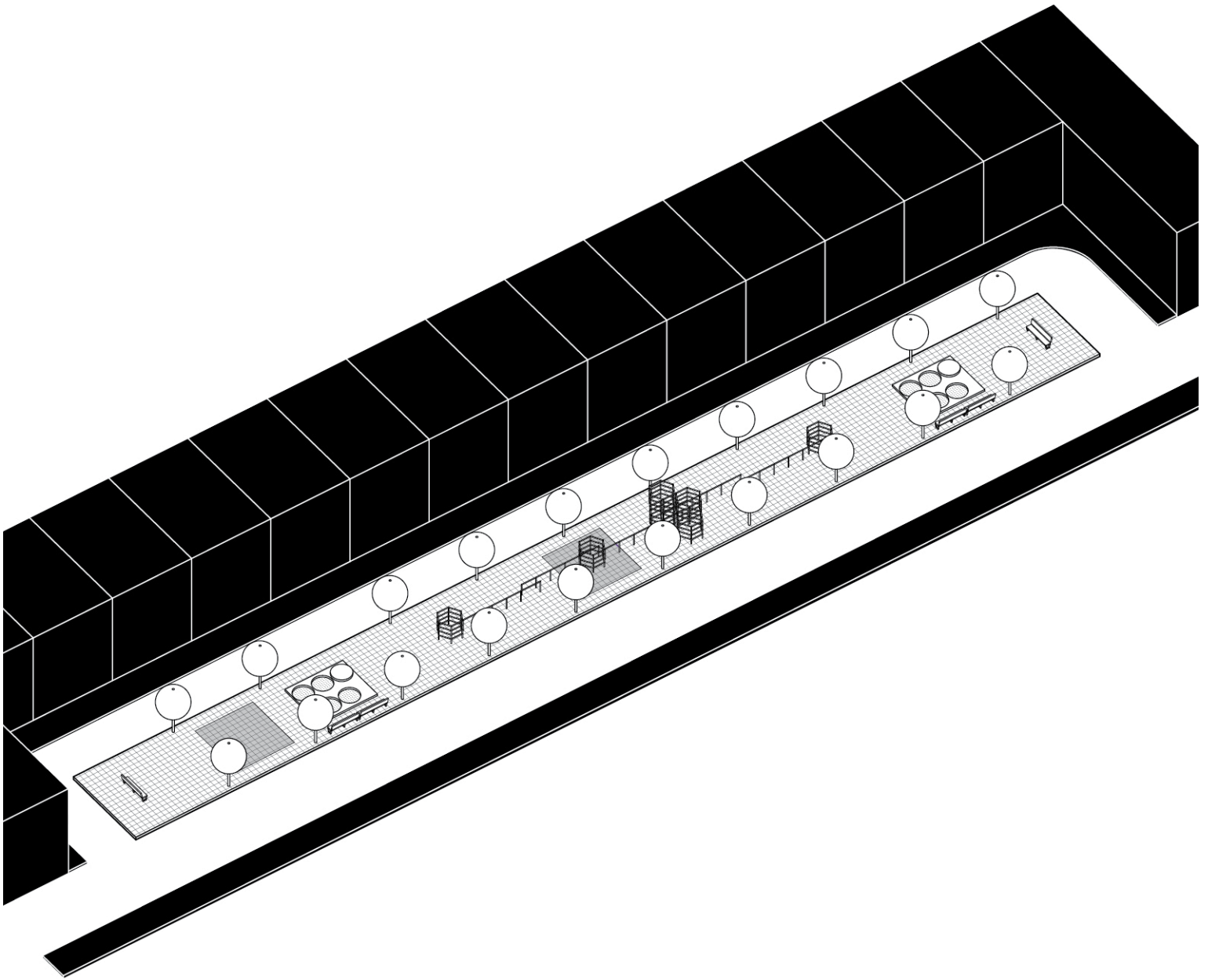


Fig.57
BOULEVARD

Somatraplantsoen, Indische Buurt, Amsterdam-Oost 1965,1966

Source: Image by Author

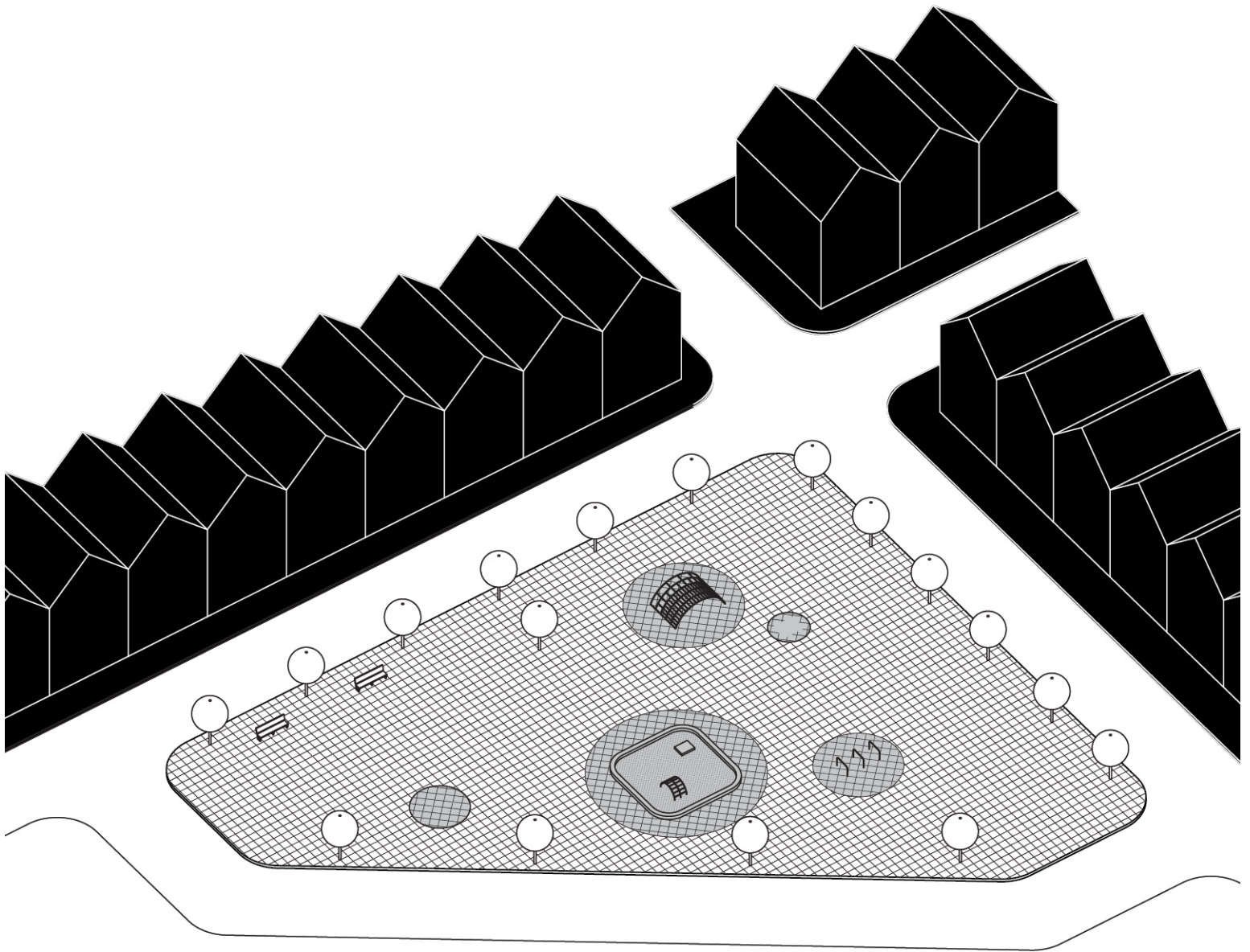


Fig.58
PLAZA

Jacop Thijssseplein, Amsterdam-Noord
1949,1950

Source: Image by Author

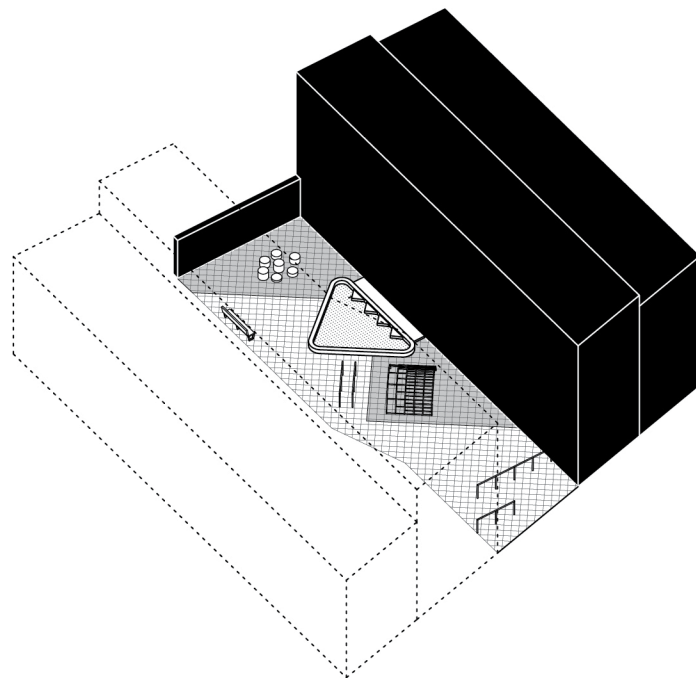


Fig.59
COURTYARD

Dijkstraat, Amsterdam Centrum
1954

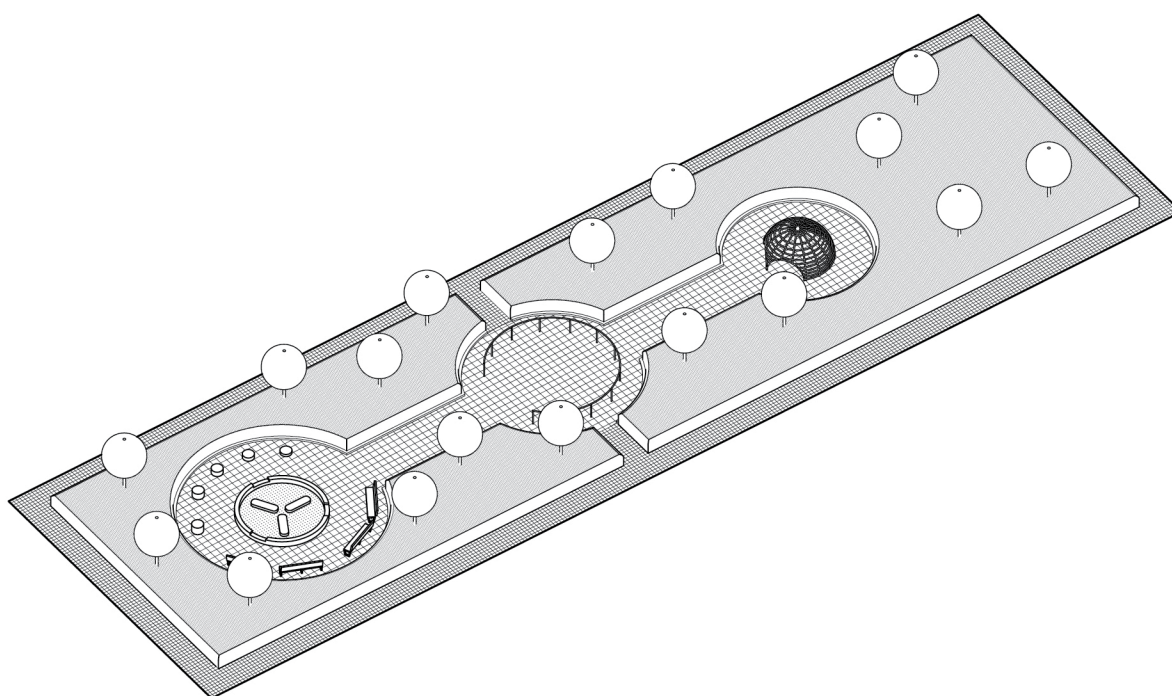


Fig.60
PARK

Mendes da Costahof, Amsterdam
Nieuwwest 1957,1960

PRECEDENT: LOCAL CODE

As new tools are presented to planning and architecture via computation, the approach to urban development changes. Information for top-down planning is readily available, and the question then becomes about how to handle the knowledge. Nicholas de Monchaux uses GIS data from San Francisco to identify sites, problems, and solutions. De Monchaux identifies sites through understanding the larger network of what are identified as “unaccepted streets.”⁸¹ These streets are owned by, but not maintained by, the city. They come in a variety of typologies, but all share a common owner, creating a single, networked site.

After the sites are selected, they are placed into a plug-in for Grasshopper, which extracts each of their geometries. Further GIS information is then overlaid to identify problems that exist over the network site. These issues create a framework for the ground-up interventions on each site. In the case of Local Code: San Francisco, overlaid maps of the sewer congestions zones revealed a need for upgrades to the storm water treatment system and improvements to the air quality throughout the networked sites.

Two types of GIS information exist: Identifiers and Optimizers. The identifiers are used as overlays for the network site, and identify unifying issues that need to be addressed, such as the storm water issues in San Francisco. These issues can be financially quantifiable, or socially quantifiable. Optimizers are then overlaid on top of the individual site-parcels. These Optimizers are used to parametrically design the parcels so that they effectively address the overall network-site need.


Fig.61 Paper Streets in San Francisco

81 Balmori, *Groundwork : Between Landscape and Architecture*, 194

SPACEBOOK: NETWORKED PUBLIC PLACES



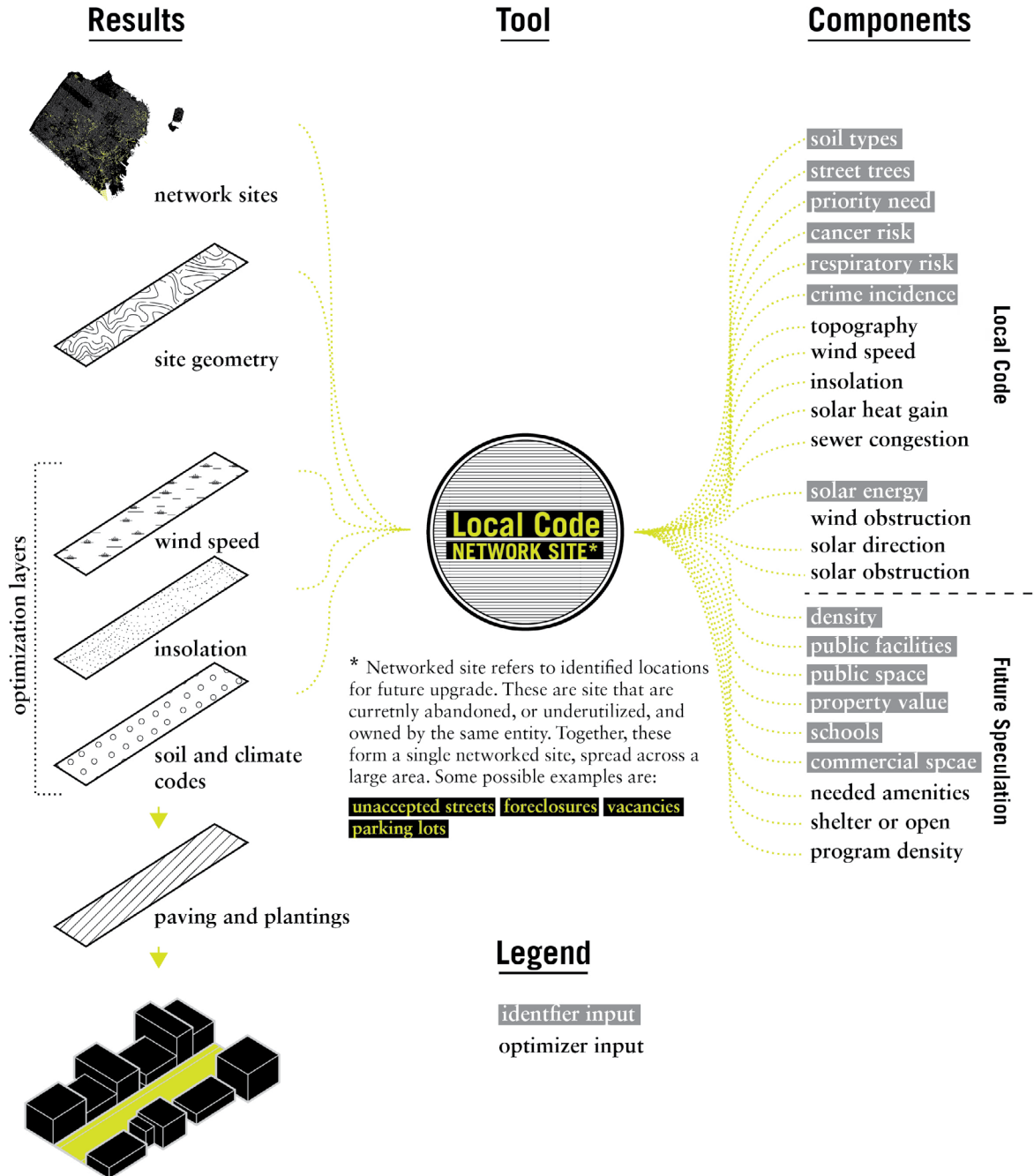
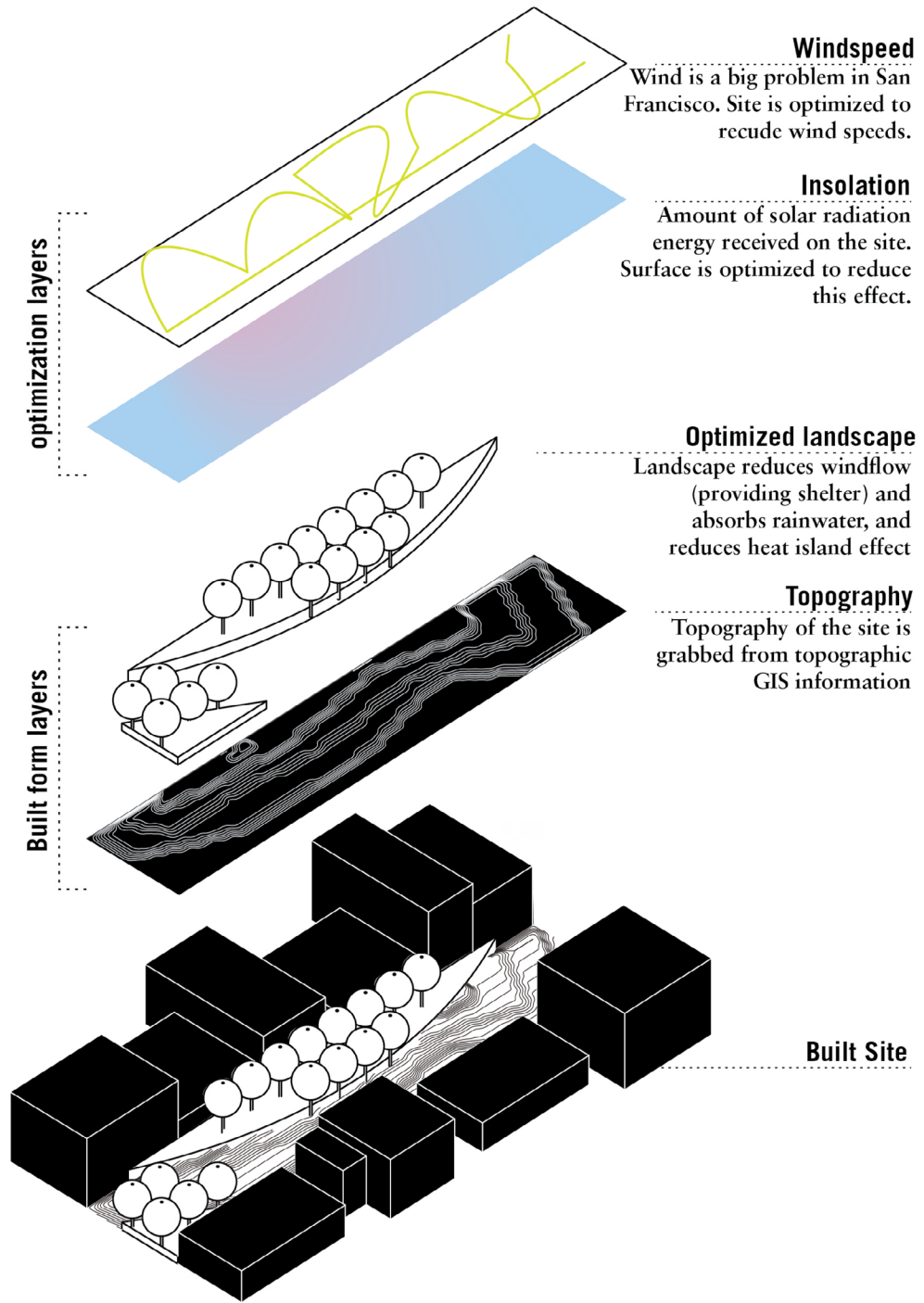


Fig.62 Diagram of Local Code 'Machine'

SPACEBOOK: NETWORKED PUBLIC PLACES



Savings:

Solar Radiation:
1091125 BTU/yr

Oxygen:
20 000 lbs/yr

Particulate Matter:
5000 ppm/day

Runoff absorbed:
234 839 gallons/yr

Financial benefits:
1091125 BTU/yr

Fig.63 Diagram of site construction

CONCLUSION

By addressing a group of dispersed parcels of land as a single network site, one has the ability to shape the identity and spirit of an entire city. In Amsterdam, the playgrounds by van Eyck created an identity shared by a generation. In San Francisco, a city benefited from the intelligent optimization of program. Through the use of recognizable components, repetition, and interaction, it is possible to turn wasted spaces of the city into vibrant places of play, identity, and community. By creating a networked site, spaces are accessible to a larger demographic of the city, affecting the day-to-day lives of greater populations. There is an efficiency in the design process. Sites can be optimized and created by a set of criteria or guidelines, eliminating redundancy, or—in van Eyck's case—can intentionally create redundancy as a technique to produce cross-city identity.

Fig.64 Children playing on a van Eyck design playground in Amsterdam



4.3

POPS SITE ANALYSIS AND OPPORTUNITIES

Public spaces within North American metropolises are being privatized. What were once young, sprawling cities are growing up and are quickly densifying their downtown cores. What once were parking lots are now condominium and commercial towers. With the increased density, land is an increasingly valuable commodity. Municipalities can no longer afford to buy up large swaths of land to make grand civic spaces; and when municipalities do buy the land, they have to rely on private donors (such as Chicago's Millennium Park and New York's Highline). Instead, many municipalities are looking at alternative ways to introduce public spaces into the dense urban fabric. With today's neo-liberalized metropolis, cities are looking to the private sector to build public spaces. As mentioned in chapter one, these spaces bring issues of regulation, accessibility, ownership, and private versus public interests. Many of these concerns align with the issues that have arisen from the introduction of ubiquitous mobile computing in the public sphere. The mobile computing makes Privately-Owned Public Spaces (POPS) in cities ideal sites to investigate ways to counteract the segregation and privatization of the (physical and virtual) public sphere.

EMERGENCE OF POPS IN NORTH AMERICA

Privately-Owned Public Space networks have been around since 1961. At this time, POPS were officially introduced in midtown Manhattan's 1961 Zoning resolution as a reaction to two famous midtown modernist plazas: the Lever House and the Seagram Building.⁸² Since this time, New York has seen a great number of POPS be created in exchange (mostly) for zoning incentives. Today, in

New York City there are roughly 525 POPS spaces and this number continues to grow.

Since the induction of POPS to New York City, other cities have followed suit, implementing POPS into the denser parts of their urban fabric. San Francisco, Seattle, and Toronto have all introduced official Privately-Owned Public Space policies. Many cities also have an informal network of Privately Owned Public Spaces. In general, POPS are an incentive-based program for developers to create public space in exchange for variances on increased amounts of gross floor area.

EXISTING NETWORKS

In North America, there are at least four cities with official Privately-Owned Public Space policies: New York, San Francisco, Seattle, and Toronto. New York's network is the largest and most diverse. In this section of the thesis, the four networks will be explored for size and spatial typologies, as well as interesting policy notes. The overall concept of Privately-Owned Public Space will be addressed in context of the previous spatial theories that have been established in this research.

Toronto will be examined in further depth. Since Toronto is a fast growing metropolis, and POPS are a relatively new designation of space, it makes it an ideal prototype city.

82 Kayden, *Privately Owned Public Space: The New York Experience*, 9-11

SPACEBOOK: NETWORKED PUBLIC PLACES



Fig.65 Toronto.



Fig.66 New York City



Fig.67 San Francisco



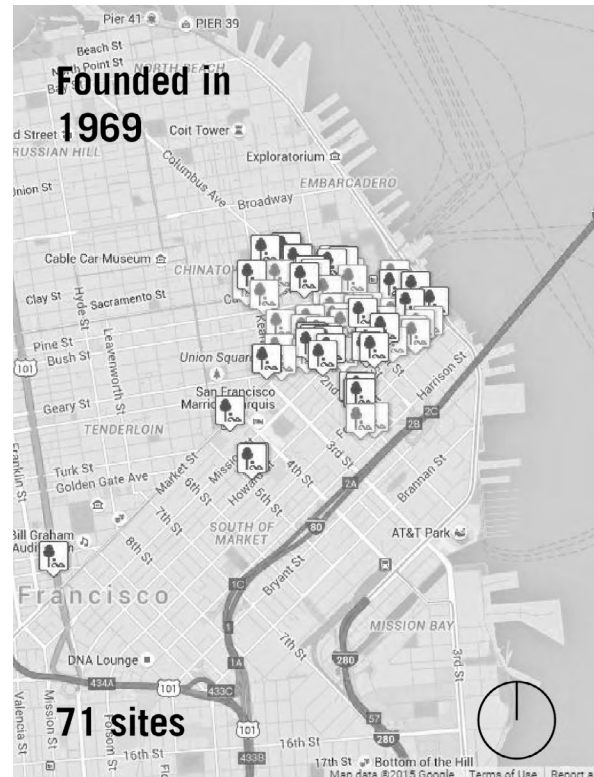
Fig.68 Seattle

Fig.69 New York, San Francisco, Seattle, Toronto POPS Networks

NEW YORK



SAN FRANCISCO (POPOS)



First and largest POPS network in North America.⁸³

Typologies:

Plaza

Arcade

Elevated Plaza

Through Block Arcade

Covered Pedestrian Space

Open Air Concourse

Urban Plaza

Sidewalk Widening

Residential Plaza

Through Block Connection

Through Block Galleria 3

50 sf of commercial space = 1 sf of POPS

Typologies:

Plazas

Urban Parks

Greenhouses

Urban Gardens

View or Sun Terraces

Atriums

Indoor Parks

Snippets

Sitting areas in public walkways⁸⁴

83 Kayden, *Privately Owned Public Space: The New York Experience*, 48

84 "Secrets of San Francisco," Accessed November 25, 2015, <http://www.spur.org/publications/spur-report/2009-01-01/secrets-san-francisco>

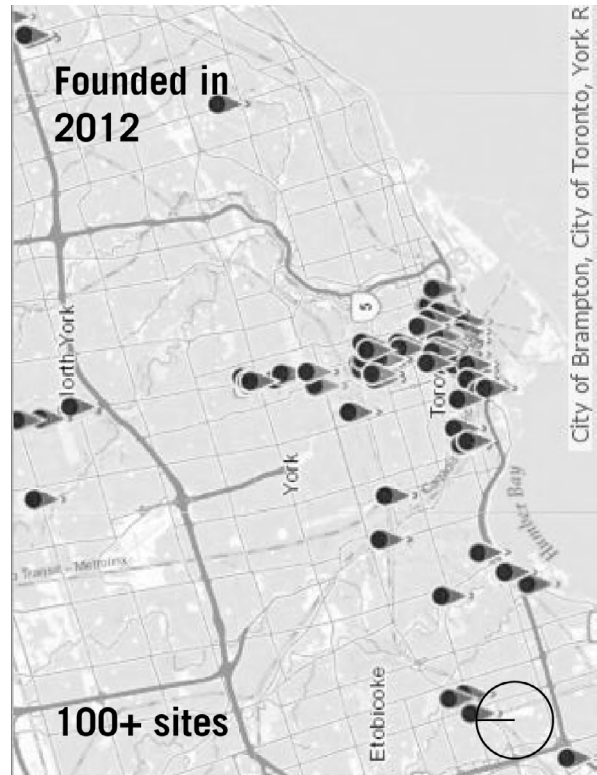
SEATTLE



- Typologies:
- Plazas
 - Rooftops
 - Parks
 - Seating⁸⁵

85 "Seattle's Privately Owned Public Space," Accessed November 25, 2015, <http://www.theurbanist.org/2014/05/09/seattles-privately-owned-public-spaces/>

TORONTO



- Typologies:
- Courtyard
 - Plazas
 - Gardens
 - Walkways
 - Forecourts
 - Landscaped Setbacks
 - Interior Public Connections⁸⁶

86 "Privately-Owned Publicly Accessible Spaces: Draft Design Guidelines" Last modified June 19, 2014. http://www1.toronto.ca/City%20of%20Toronto/City%20Planning/Urban%20Design/Files/pdf/P/POPS_guidelines_Final_140529.pdf

OPPORTUNITIES

Although there are many issues with private ownership of public spaces, the spaces also represent a network with new potential. POPS represent a growing network of spaces with untapped potential. Most of these spaces are underutilized, under-designed, and disconnected from the activities of the urban realm. POPS form a spatial network that lacks identity, and because of this, they represent an enormous opportunity for intervention.

Although the private ownership is problematic, it also allows for new media-based possibilities. The private ownership leaves open many legal grey areas, especially when it comes to media and copyrights. People watching a movie in a POPS could be argued to be no different from a person watching a movie in their private residence with their friends (provided there is no profit made). Likewise, a similar idea with Netflix could happen, where media that is shared with and chosen by the users of the space, takes advantage of the shifting laws and regulations of the connected age. This use of POPS would be exploiting a legal grey area much in the way of AirBnB and Uber. Many other opportunities may exist if users are given more agency within the spaces. The following represent some of the key reasons why the POPS represent an intriguing opportunity for public-space design:

POPS are Privately-Owned

POPS have a new set of legal regulations—private ownership of public space is an idea that needs to be addressed.

POPS is a Distributed Network Across a City

These sites are not located in one spot, but represent a diverse network spread across a large swath of the cities.

Creation Follows Development (and therefore density)

This means that as the city grows up, the POPS network grows with it.

POPS are Diverse

There is not one type of space, which make the design potential limitless.

CONCERNS OF PRIVATIZATION

A Privately-Owned Public Space seems to be an oxymoron, and in many cases these spaces do function as such. Each of these spaces struggles to deal with balancing Private versus Public interests. Since public space is supposed to act as a communicative device for society, while private space is supposed to serve the political, financial economic, and social interests of the owner, these are two conflicting ideologies.⁸⁷ The conflict essentially rips POPS from the inside while it tries to manage the Private and Public in balance.

Stephen Carr, Mark Francis, Leanne G. Rivin and Andrew M. Stone state that “Public is the stage upon which the drama of communal life unfolds.”⁸⁸ If you take this statement to be true,,also consider that, in order for communal life to unfold, place must be freely accessible and shaped by its citizens. Thus, a controlling group of private owners diminishes this ideology.⁸⁹ Municipalities and governments have tried to reduce the agency of the owners by imposing sets of regulations on hours, access, size, space, and design features. However, the space’s owners largely govern the

THE AGENCY OF CITIZENS TO FREELY EXPRESS THEMSELVES IN AN OPEN PLACE IS COMPLETELY REMOVED

overall regulation of the space.. This regulation has led to spaces that may be mostly occupied by the public, but are serving and protecting private interests.⁹⁰ An example of this is an anecdote from time spent in a POPS in New York City:

87 Manuel Castells, "Urbanism in the Information Age," 91
 88 Stephen Carr, , *Public Space*, 3
 89 Anne Beamish, "The City in Cyberspace," 277
 90 Kayden, *Privately Own Public Space: The New York Experience*, 65-77

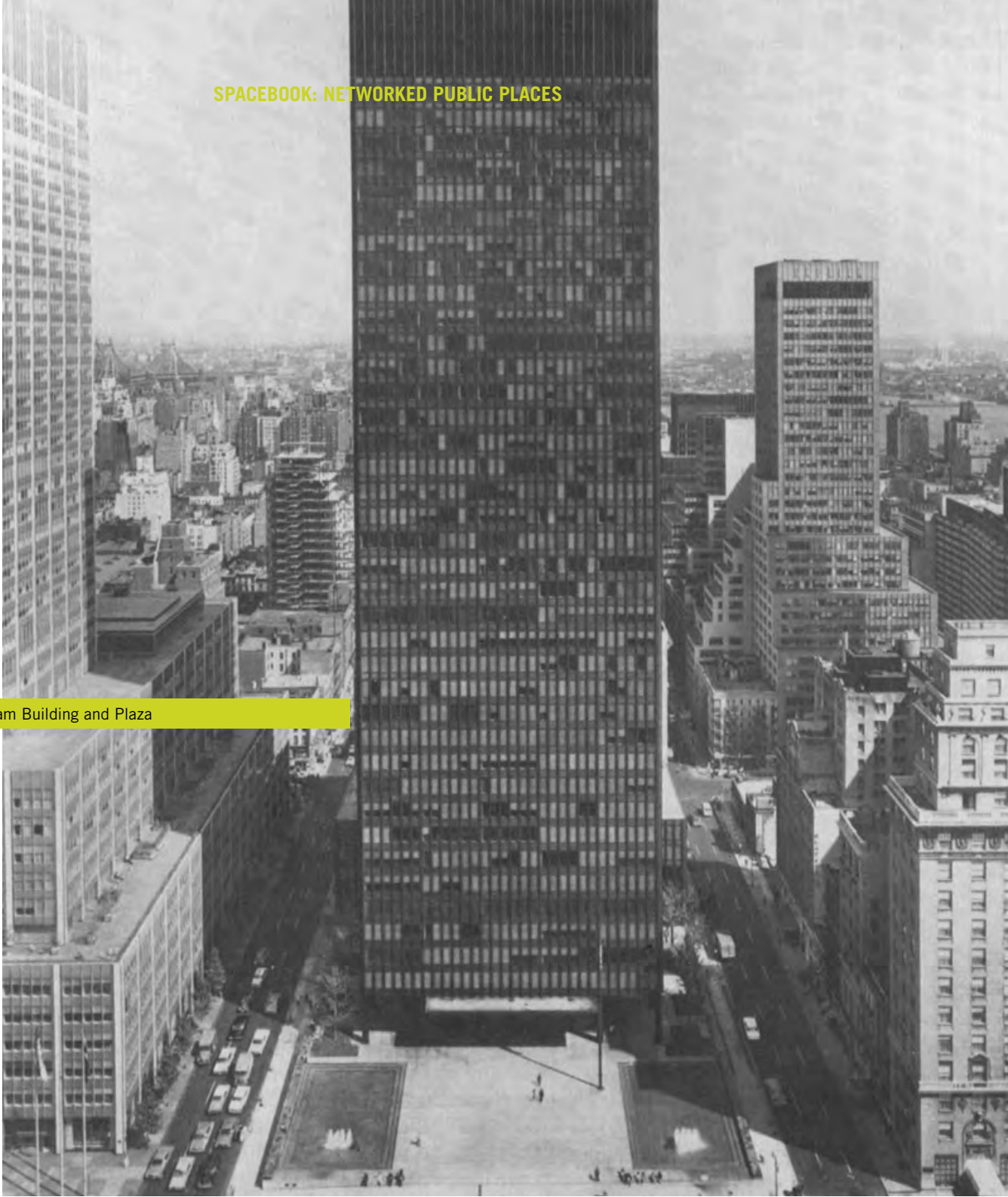


Fig.70 Seagram Building and Plaza

It has been well documented on the Internet and in writings about the over-regulation of many public spaces (both privately-owned and not) in North American cities, and the strict type of behaviour that is tolerated in Privately-Owned Public Spaces, I decided to do a quick test to discover how quickly

my (non-offensive) actions would be tolerated for.⁹¹

I was aware that many of the interior POPS in New York, prefer users not to take photos. I walked into a POPS around 52nd and 5th avenue. It was a newly built interior atrium that had some benches and a few table to allow people

91 Setha M Low, "The Erosion of Public Space," 45

to eat their lunch, warm up or rest their feet. There is a Starbucks that exists on the eastern edge of the atrium. I decided that I would go in and take a few photos, and maybe record a short video of the space, to see just how regulated these spaces were. Before I even walked over to the side of the atrium I wanted to take a photo from, the security guards (there were two) had already gone over to a group of youths and asked them to stop sitting on the ground. I then took out my camera and went to take a photo, I managed to get two photos taken, before the security guard came up and told me they don't permit photos to be taken here, and reminded me that it was private property.

Although it was a friendly exchange, with little impact on my own day, other than providing me with an anecdote, there are several key things to note here. The first is that non-destructive, or illegal behaviour is being regulated; the owners don't want photos possibly for security reasons, and they don't want people sitting on the floor. The way that the space is to be used is governed by the private interests of the owner. Users are not allowed to gather in large groups or perform public activities in the space. The users of the space are not treated as if they are in a public, instead they are being granted permission to be there, provided that their actions meet a prescribed code. The agency of citizens to freely express themselves in an open place is completely removed.⁹²

Fig.71A picture of the POPS from the anecdote.

92 Seth M. Low, "The Erosion of Public Space and the Public Realm: paranoia, surveillance and privatization in New York City," 44-47

SPACEBOOK: NETWORKED PUBLIC PLACES



TORONTO POPS

Toronto POPS are a network of underutilized spaces spread across the downtown core. The POPS are also places of emerging growth. Due to the large number of condominium projects being built in Toronto's downtown, the city's POPS is a quickly expanding network. Of the four cities with official POPS plans, Toronto is the fastest growing metro region. Toronto is also the second largest metro region after New York. Because of Toronto's rapid growth, strong economy, quickly growing (and poorly designed) POPS network, it is an ideal test site for *Spacebook* to create a prototypical network of public interfaces for the North American Metropolis.

The existing guidelines in Toronto are vague in terms of design, pleading for seating and greenery. The access and levels of control are grossly under-suggested. The typologies of POPS chosen in the city lack diversity. As a prototype city, Toronto needs to implement a set of categorized design-guidelines: guidelines to forge an identity spread across multiple sites. Currently, the POPS in Toronto are identity-less, marked online by a poorly designed graphic sign. Without a clear set of design interventions, each space is left alone, confined to its limited borders. Since most of the sites are quite small, the spaces do not impact the urban fabric as they should.⁹³

Spacebook conceives POPS as a single, networked site; the sites creating places of identity across the city. This isn't to say that all the sites would all be similar. The spaces would be designed to spread out programming and typologies, creating a democratically distributed amenity throughout the city. *Spacebook* also introduces a new set of policy guidelines for the implementation of Privately-Owned Public Space networks, assuring certain levels of Publicness and diversity in spatial typologies.

Fig.72 A Right, a series of snapshots from Toronto POPS.

93 City of Toronto. "Privately-Owned Publicly Accessible Spaces: draft urban design guidelines."

SPACEBOOK: NETWORKED PUBLIC PLACES



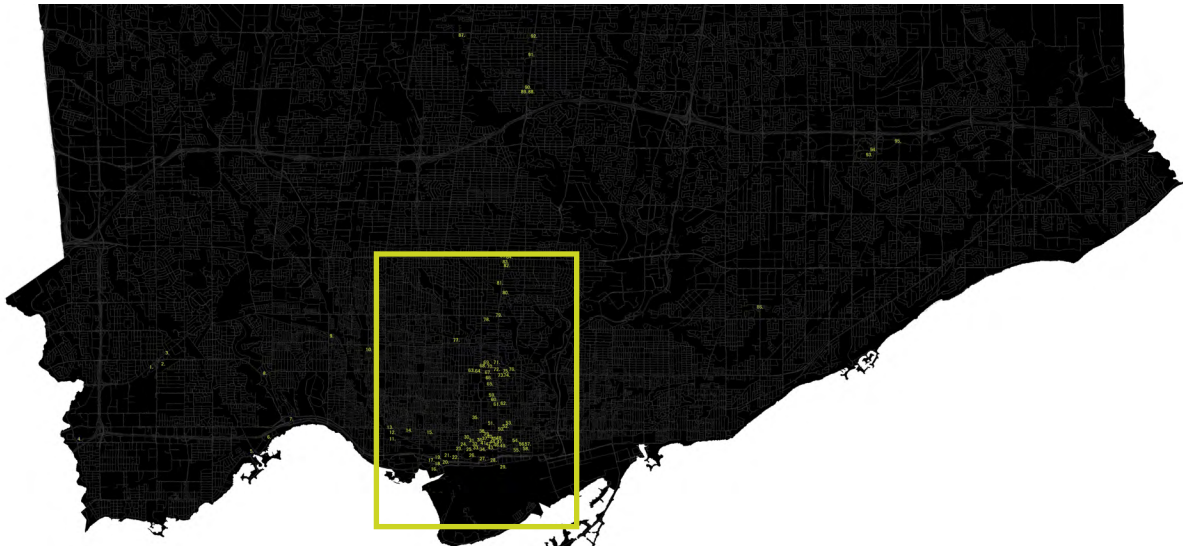
TOWARDS A SPACED BOOK



Fig.73 Toronto Downtown POPs
Fig.74 Right, Map of Toronto POPs

- 83.
- 82.
- 81.
- 80.
- 79.
- 78.
- 77.
- 69. 71.
- 68. 70.
- 63. 64. 67. 72. 75. 76.
- 66. 73. 74.
- 65.
- 59.
- 60.
- 61. 62.
- 35.
- 51. 53.
- 50. 52.
- 13. 12. 14. 15.
- 38. 39. 40. 45. 48.
- 24. 31. 36. 37. 41. 42. 44. 47.
- 54. 56. 57.
- 23. 25. 33. 34. 43. 46. 49.
- 55. 58.
- 17. 19. 21. 22.
- 18. 20.
- 26. 27. 28.
- 16. 29.

SPACEBOOK: NETWORKED PUBLIC PLACES



- | | | | |
|-----|--|-----|--|
| 1. | 5233 Dundas St W - Walkway | 49. | 33 Yonge St - Plaza |
| 2. | 35 Fieldway Rd - Garden | 50. | 2 Queen St E - Plaza |
| 3. | 5055 Dundas St W - Walkway | 51. | 532-570 Bay St - Walkway |
| 4. | 700 Evans Avenue - Walkway | 52. | 56 Queen St E - Walkway |
| 5. | 2230 Lakeshore - Walkway | 53. | 30 Mutal St, 88 Queen St E - Walkway |
| 6. | 2115-2139 Lakeshore Blvd West - Garden | 54. | 108-118 George St - Walkway |
| 7. | 103 + 105 The Queensway - Garden | 55. | 160 The Esplanade - Walkway |
| 8. | 2500 Bloor St W - Forecourt | 56. | 406 Adelaide St E - Garden |
| 9. | 403 Keele St - Plaza | 57. | 460 Adelaide St E - Garden |
| 10. | 800 Lansdown Ave - Walkway | 58. | 260 King St E - Walkway |
| 11. | 1100 King St W - Walkway | 59. | 832 Bay St - Landscaped Setback |
| 12. | 38 Abell St - Walkway | 60. | 40 College St - Plaza |
| 13. | 1155 Queen St W - Courtyard | 61. | 444 Yonge St - Plaza |
| 14. | 1001 Queen St W - Walkway | 62. | 21 Carlton St - Walkway |
| 15. | 751 King St W - Courtyard | 63. | 50 St Joseph St - Garden |
| 16. | 90 Stadium Rd - Landscaped Setback | 64. | 1.3 Sultan St. - Walkway |
| 17. | 21 Grand Magazine St - Walkway | 65. | 86-100 Bloor St W - Walkway |
| 18. | 600 Fleet St - Walkway | 66. | 1 Bedform Rd - Courtyard |
| 19. | 24 Bathurst St - Walkway | 67. | 192-200 Bloor St W - Landscaped Setback |
| 20. | 450, 470 Lakeshore blvd W - Walkway | 68. | 55 Avenue Rd - Walkway |
| 1. | 100 Fort York Blvd - Walkway | 69. | 41 Hazelton Ave - Walkway |
| 22. | 15 Fort York Blvd - Garden | 70. | 100 Yorkville, 95, 115-121 Scollard St - Walkway |
| 23. | 352 Front St W - Walkway | 71. | 76 Davenport Rd. - Courtyard |
| 24. | 320 Front St W - Plaza | 72. | Rose Garden - Garden |
| 25. | 300 Front St W - Garden | 73. | 1, 23 Bloor St E - Landscaped Setbacks |
| 26. | 301 Front St W - Walkway | 74. | 85 Bloor St E - Walkway |
| 27. | 16 York St - Courtyard | 75. | 120 Bloor St E - Garden |
| 28. | 30,33 Bay St, 60 Harbour St - Walkway | 76. | 200 Bloor St E - Garden |
| 29. | 25 Queen Quay E - Garden | 77. | 160 Kendal Ave - Plaza |
| 30. | 295 Adelaide St W - Plaza | 78. | 129 St Clair Ave W - Courtyard |
| 31. | 225 King St W - Plaza | 79. | 1501 Yonge St, 25,27,29, Heath St - Garden |
| 32. | 200 Wellington St W - Garden | 80. | 137, 147 Merton St - Walkway |
| 33. | RBC Centre, Ritz-Carlton - Walkway | 81. | 1910 Yonge St - Forecourt |
| 34. | 123 Front St W - Garden | 82. | 2195 Yonge St - Courtyard |
| 35. | 273,279 Dundas St W - Walkway | 83. | 2255 Yonge St - Plaza |
| 36. | 200 King St W - Plaza | 84. | 8 Eglinton Ave E - Plaza |
| 37. | King St W - Plaza | 85. | 2300 Yonge St - Plaza |
| 38. | 145 Queen St W - Plaza | 86. | 725 Warden Ave - Walkway |
| 39. | 100-130 Adelaide St W - Plaza | 87. | 555 Finch Ave W - Walkway |
| 40. | 77 Adelaide St W - Courtyard | 88. | 27-49 Bales Ave - Walkway |
| 41. | 70 York St - Walkway | 89. | 4726-4750 Yonge St - Landscaped Setback |
| 42. | 100 Wellington St W - Walkway | 90. | Hullmark Centre - Plaza |
| 43. | 79 Wellington St - Plaza | 91. | 5170 Yonge St - Garden |
| 44. | 77 King St W - Plaza | 92. | 5435 Younge St - Garden |
| 45. | 55 King St W - Plaza | 93. | 1,11 Town Centre Court - Garden |
| 46. | 220 Bay St - Walkway | 94. | 61, 63-67 Town Centre - Walkway |
| 47. | 199 Bay St - Plaza | 95. | 740 Progress Ave - Walkway |
| 48. | 40 King St W - Plaza | | |

FUTURE POPS TYPOLOGIES

As mentioned earlier in this chapter, the range of spatial typologies found in POPS are diverse. The typologies range from sidewalk widening, to plazas, to rooftop patios. Each city has their own way of categorizing the different POPS. For example, New York has twelve specific categories, each with their own set of design guidelines and requirements; Toronto has seven typological categories.

Although each city has different POPS categories, and each network has some very unique spaces, there are a general set of typologies that exist amongst most cities. Across all four cities, the majority of POPS fit into the following seven typological categories.

COURTYARDS

Courtyards vary greatly in size and quality, but they are usually urban in nature and are more often exterior than interior. There are exceptions: in New York there are many interior, covered courtyards

PLAZAS

These open spaces sit in front of a building and are highly accessible. Plazas have one of the highest levels of publicness, goes hand-in-hand with their open nature. Their publicness makes Plazas harder to regulate.

GARDENS

Gardens vary greatly in form, but are usually highly greenscaped. Gardens are more for individual or small-group activities.

WALKWAYS

Walkways are exterior pedestrian routes that are highly accessible by the public. The walkways often come in the form of sidewalk widening.

FORE COURTS

Forecourts are landscaped open spaces that exist between a building entrance and a sidewalk.

INTERIOR PEDESTRIAN CONNECTIONS

Interior Pedestrian Connections are accessible interior space. These connections are often in the form of an arcade, or through-connection.

LANDSCAPED SETBACKS

Landscaped setbacks are open space between a building and the public sidewalk. The setbacks are characterized by hard or soft landscaping. Seating is often included.

Spacebook proposes the introduction of two new typologies in Toronto's POPS network:

1. PUBLIC TERRACES

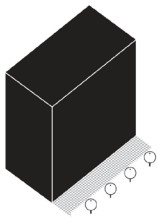
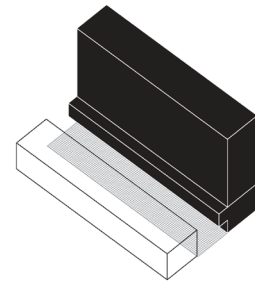
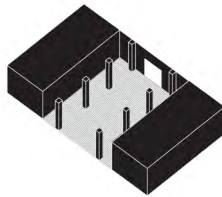
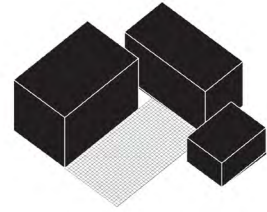
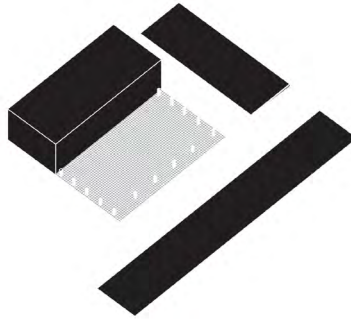
Public terraces are a common typology in New York and San Francisco. The typology creates a series of intimate alternative spaces throughout the city.

2. INTERIOR OPEN SPACES

Toronto does have a series of interior through connections, but they are highly transient spaces. In cities with cold winters—or cities with high levels of precipitation—interior public spaces are very important. Toronto currently lacks these spaces, as do many other cities.

Fig.75 Matrix of POPS Typologies. From Top Right: Courtyards, Plazas, Gardens, Walkways, Forecourts, Interior Pedestrian Connections, Landscaped Setbacks, Public Terraces, Interior Open Spaces.

SPACEBOOK: NETWORKED PUBLIC PLACES



PROPOSED

CATALOGUE OF ANALYSIS

In order to gain better understanding of the diversity of spaces within the network, thirty-five POPS were analysed.. POPS were analysed based on census data, size, and landscaping conditions.

Note: Any diagrams without a background image are future POPS that have been pre-approved. Sometimes size data has not been made available.

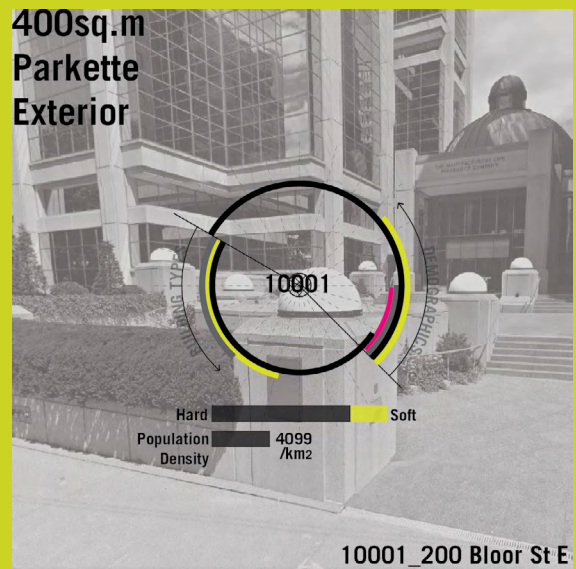
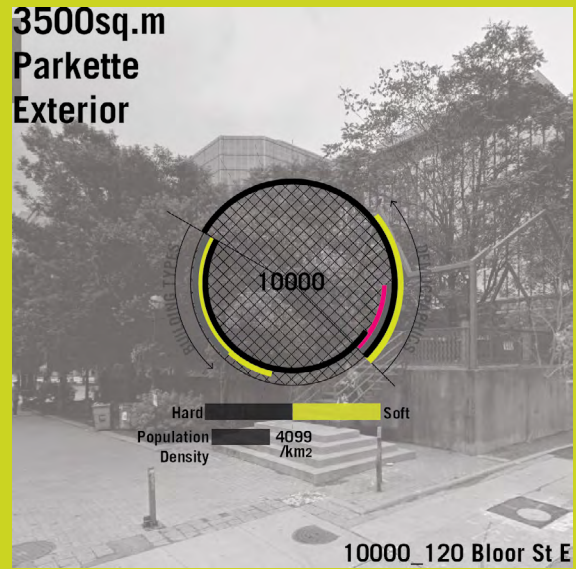
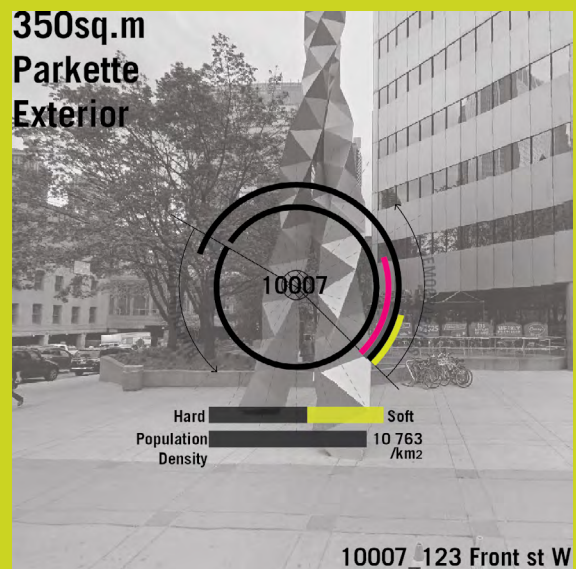
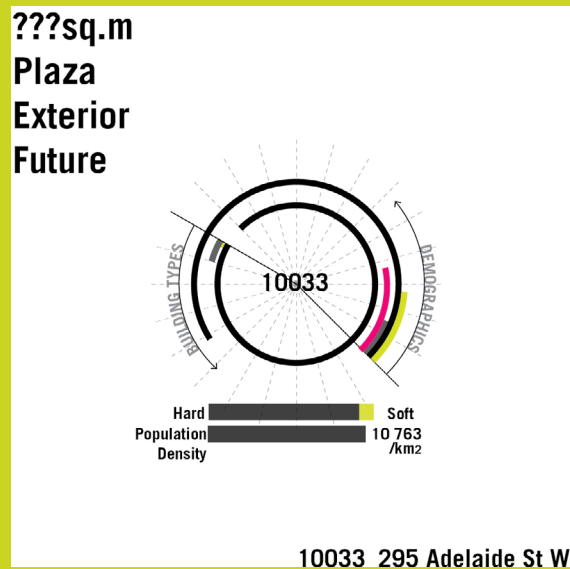
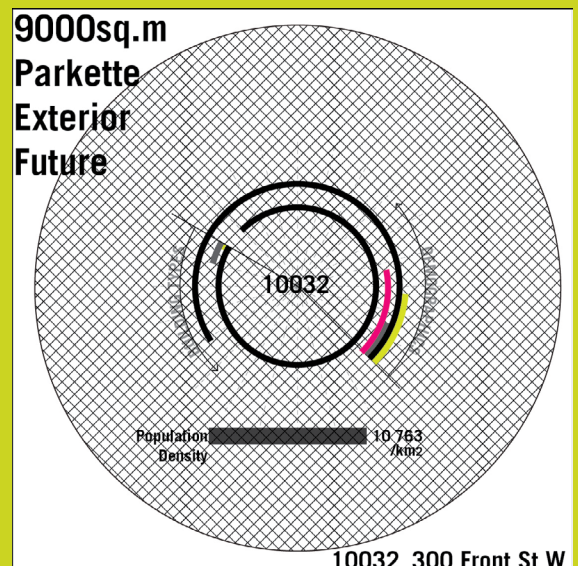
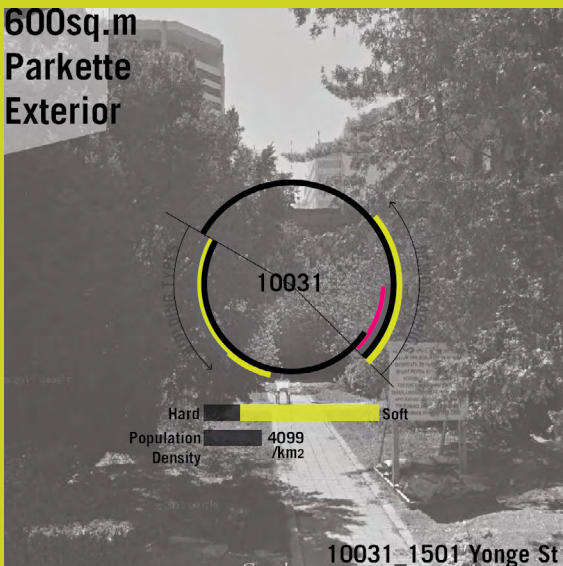
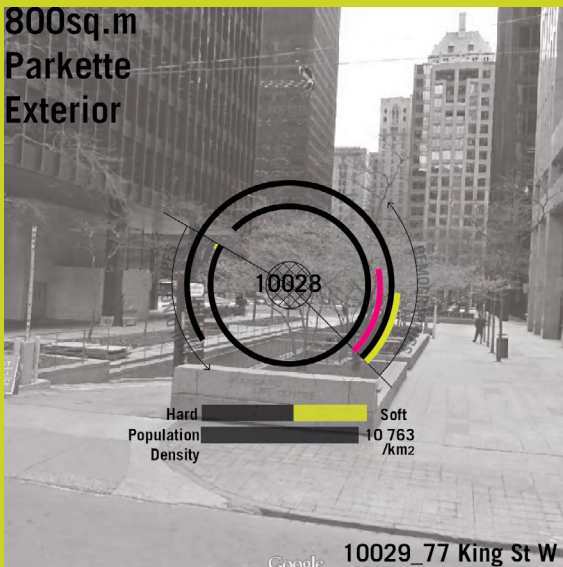
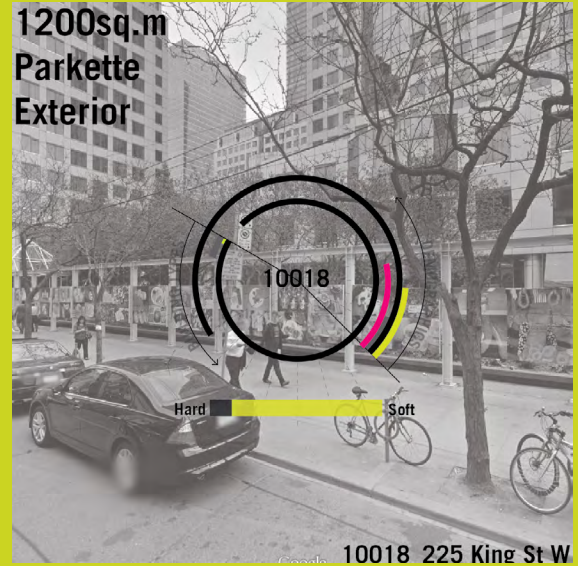
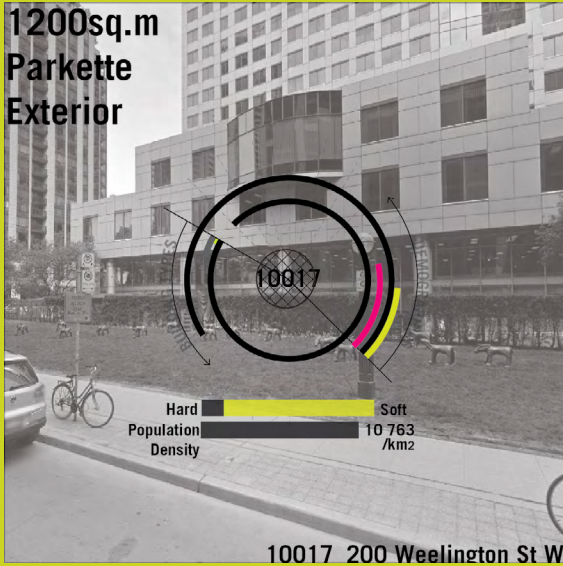
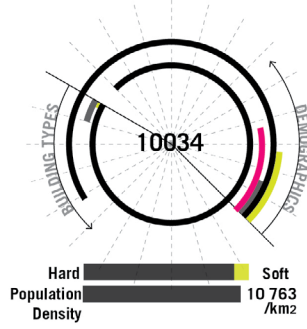


Fig.76 POPS Analysis



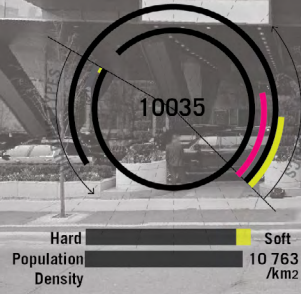


???sq.m
Park Extension
Exterior
Future



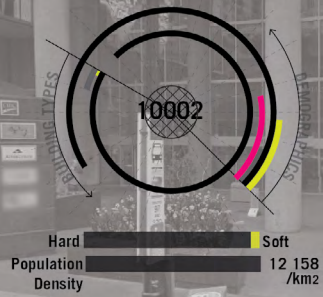
10034 50 St Joseph St

100sq.m
Sidewalk
Exterior
Future



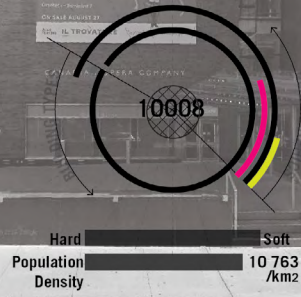
10035 181 Wellington St W

900sq.m
Plaza
Exterior



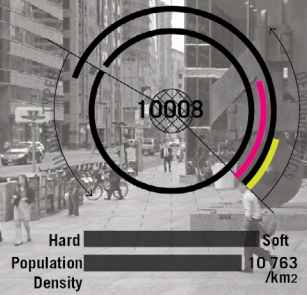
10002 33 Yonge St

900sq.m
Plaza
Exterior



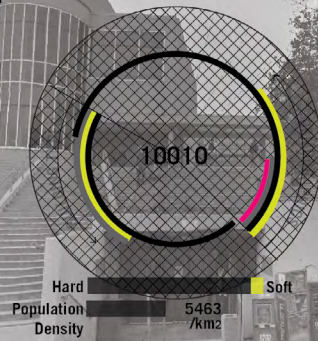
10008 145 Queen St W

775sq.m
Plaza
Exterior

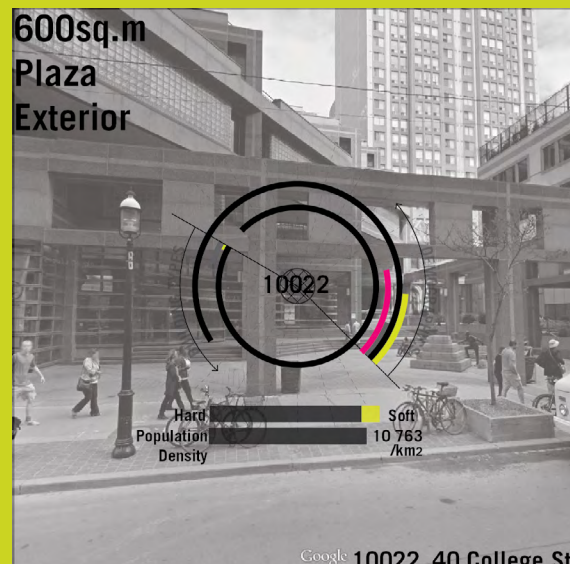
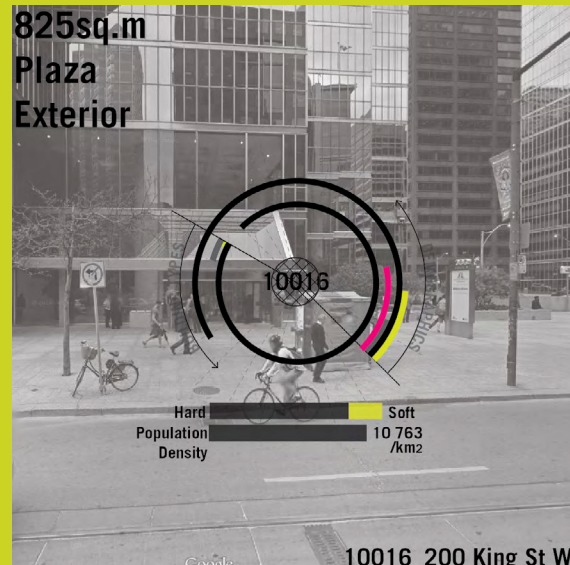
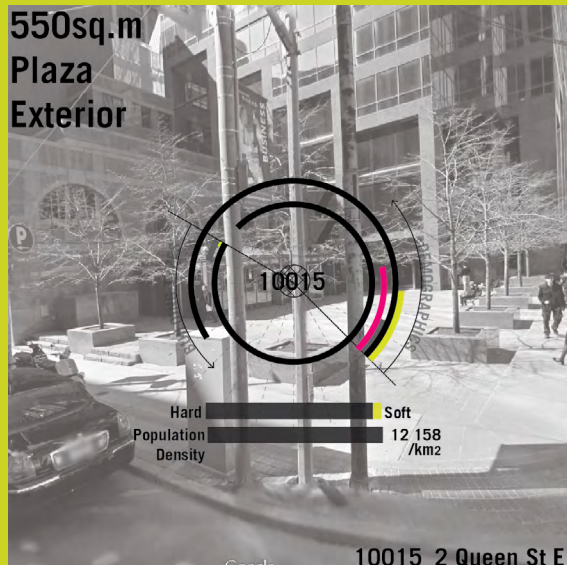
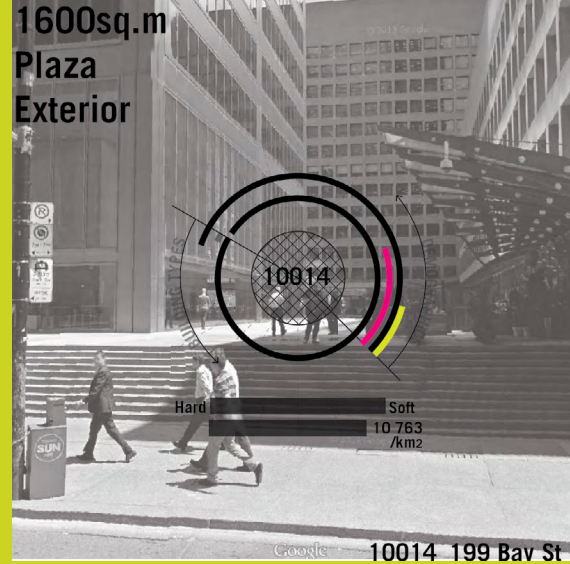
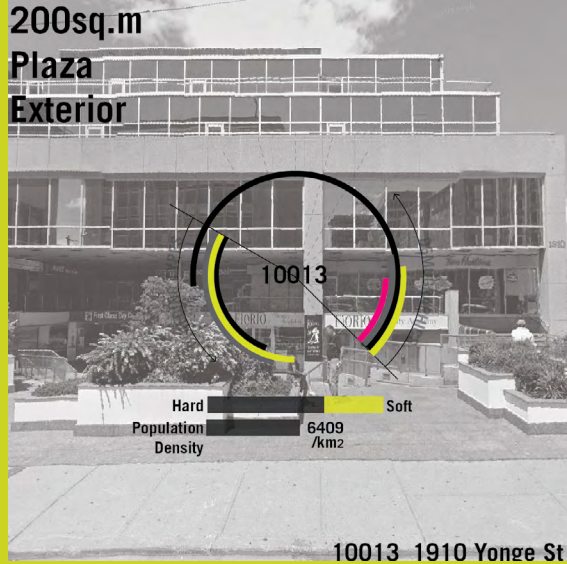


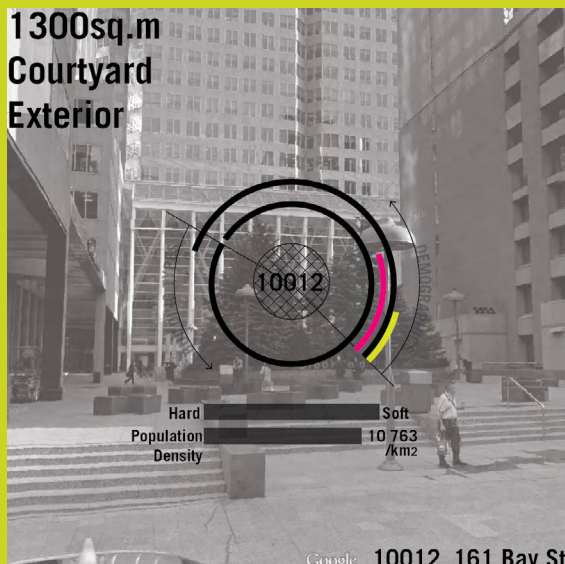
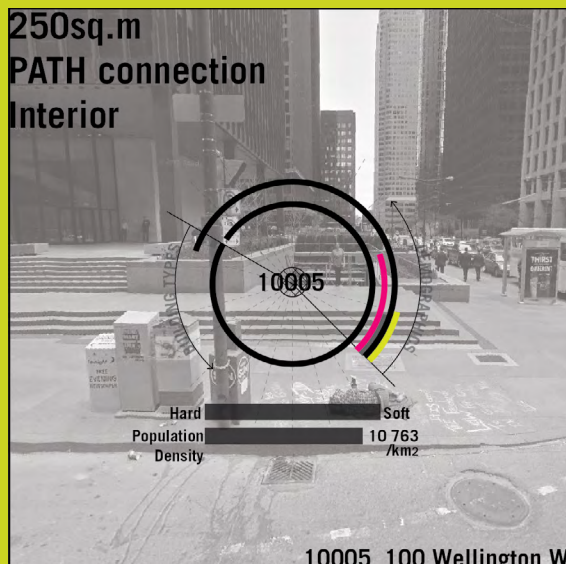
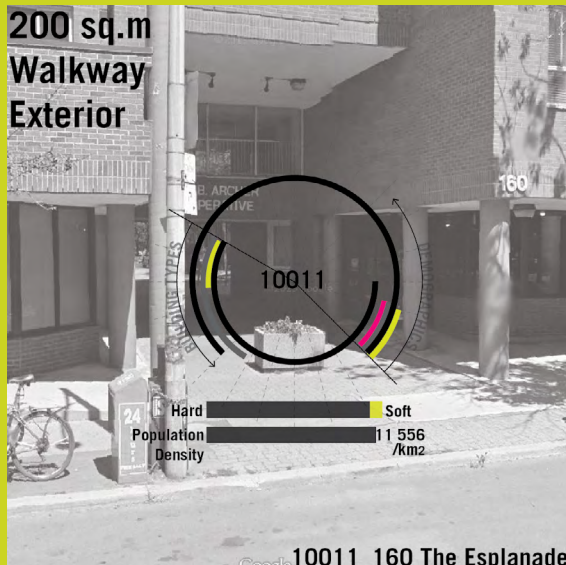
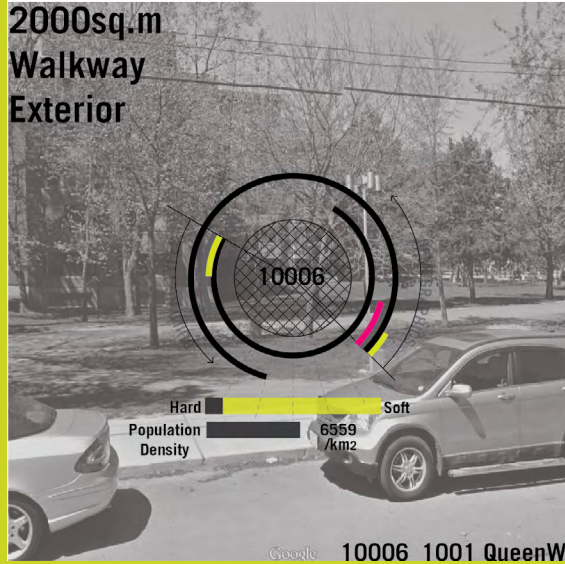
10009 150 King St W

5000sq.m
Plaza
Exterior

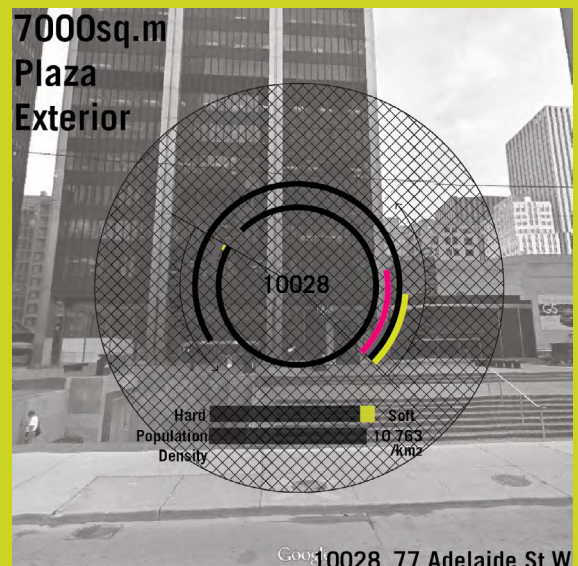
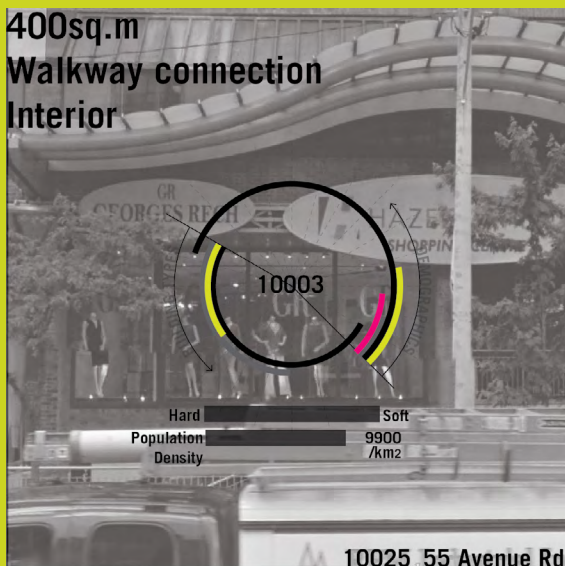
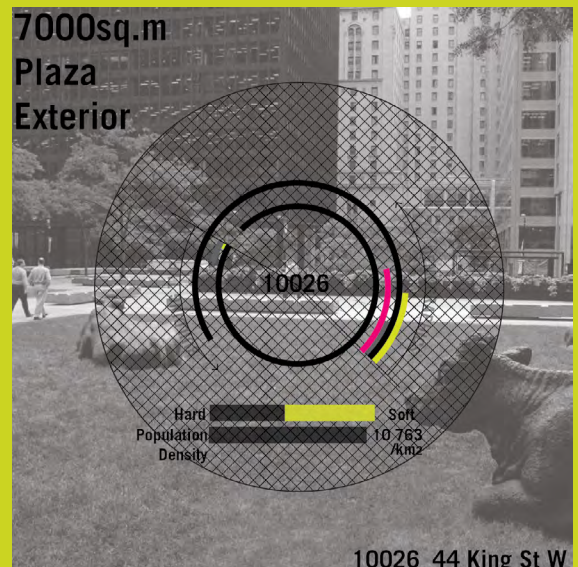
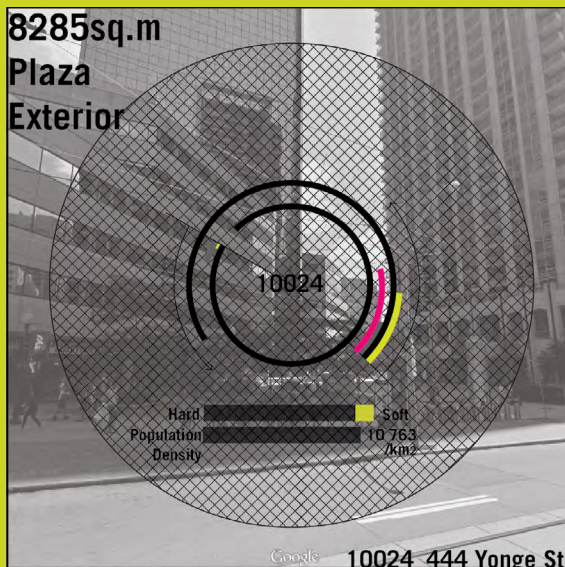
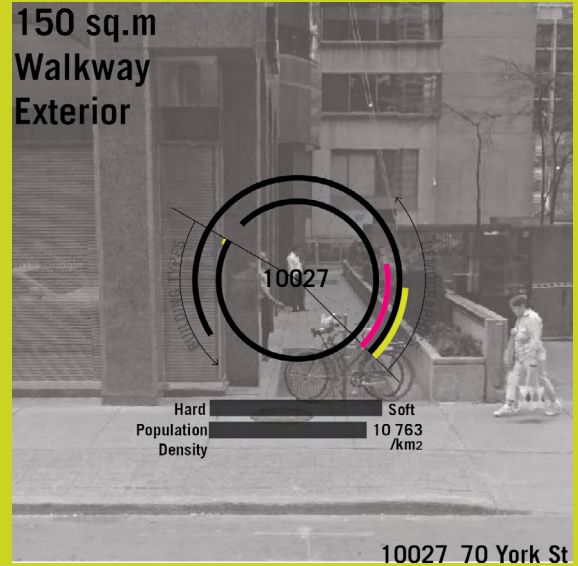
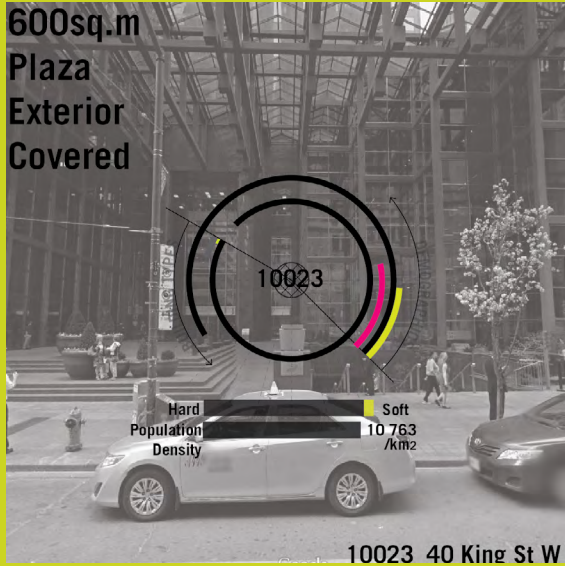


10010 160 Kendal Ave





SPACEBOOK: NETWORKED PUBLIC PLACES



USES OF POPS

As demonstrated earlier, POPS come in a variety of spatial typologies. Each of these typologies bring with their own design characteristics and social atmospheres. Currently, the POPS network in Toronto is a series of under-designed spaces. The network is disconnected and without a collective identity, keeping the POPS outside of the city's collective conscious. In an attempt to create an identity and awareness of the sites, Toronto implemented a standardized signage into the POPS design guidelines. The actual design guidelines for Toronto's POPS do not offer too much more in terms of identity-creating features. Beyond stating that there should be seating, the guidelines mostly suggest a limited and vague series of landscaping suggestions.⁹⁴

Since the design guidelines allow for mediocrity in design-implementation, and a lack of spatial identity, the POPS cannot be considered only by their spatial typology—it is also important to understand the spaces' situation within the urban context. Through the study of the POPS, this research has suggested there are 3 main categories to Toronto's POPS: Transient spaces, Community Spaces, and Social Condensers.

Transient spaces are largely walkways, landscaped setbacks, and mid-block connections. The majority of the users of these spaces passes through, but does not linger. Community spaces are slower-paced spaces: often gardens, parkettes and residential courtyards. These are spaces where people come together to connect, to linger, and to relax. Social Condensers are faster-paced urban zones. They have a higher volume of traffic, and have the ability to act as open civic spaces for large gatherings.

Fig.77 POPS Use Categories

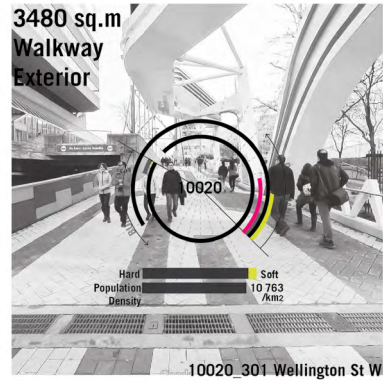
94 "Privately-Owned Publicly Accessible Spaces: Draft Design Guidelines" Last modified June 19, 2014. http://www1.toronto.ca/City%20of%20Toronto/City%20Planning/Urban%20Design/Files/pdf/P/POPS_guidelines_Final_140529.pdf

USE TYPOLOGIES

These can then be categorized under 3 types of patterns of general use:

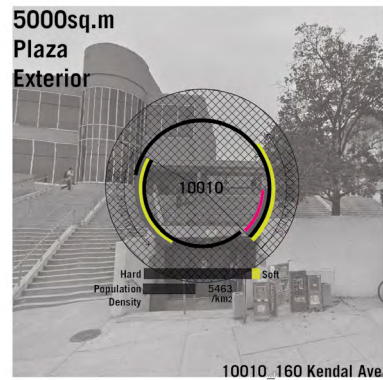
Transient

- Walkways
- Alleys
- Sidewalks
- Interior Walkways



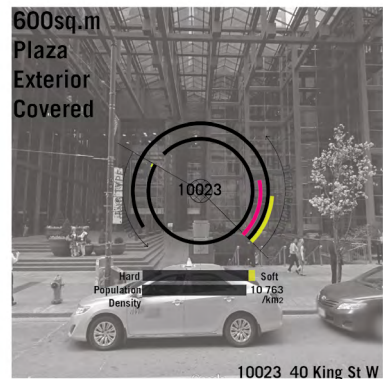
Community

- Residential neighbourhoods
- Parkettes
- Residential Plazas
- Interior Plazas
- Forecourts
- Gardens



Social Condensers

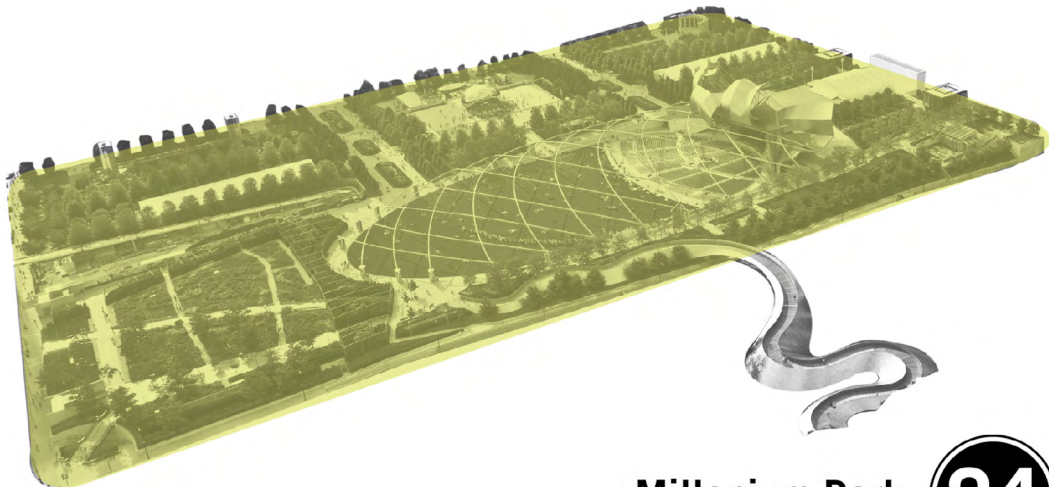
- Urban Plazas
- Urban Parks
- Interior Courtyard
- Courtyards



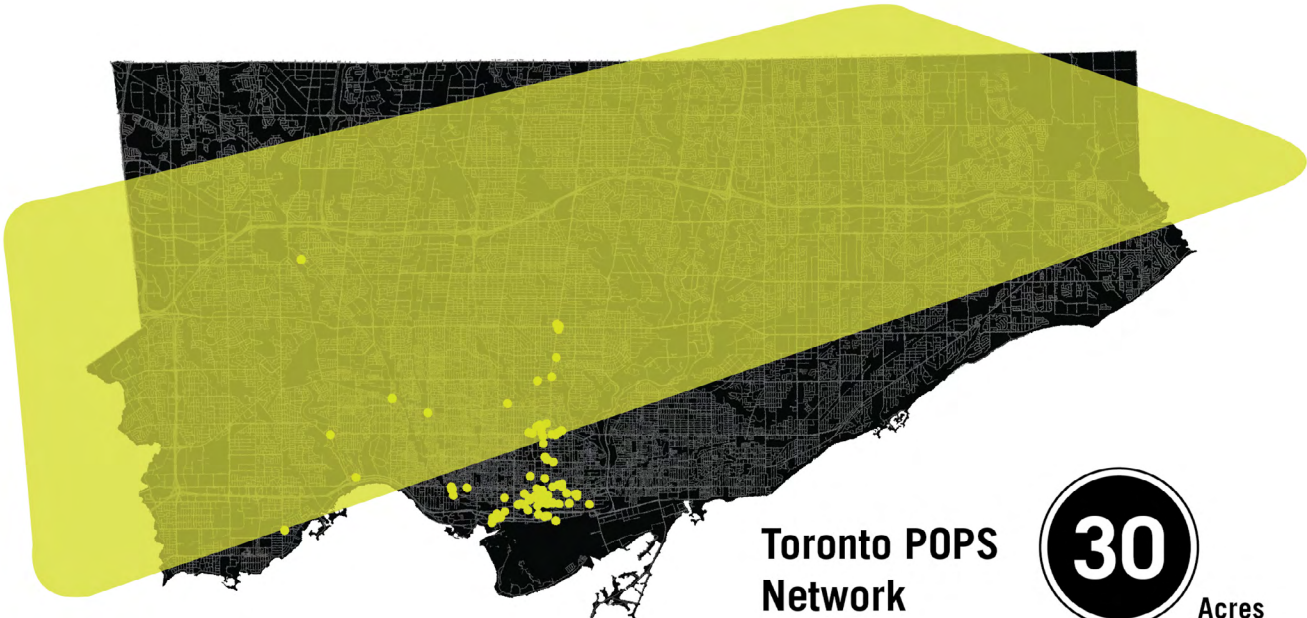
THE SCALE OF OPPORTUNITY

Toronto POPS are a series of sites scattered across the city. When conceptualized as a single site, the POPS represent a thirty-acre opportunity. As a point of reference, Chicago's Millennium Park is twenty-four acres.

Fig.78 POPS Opportunities Map



Millenium Park **24** Acres



Toronto POPS Network **30** Acres +Growing

4.4

COMPONENTS FOR A HEALTHY PUBLIC SPHERE

Spacebook looks to create a set of public spaces that brings people together around issues and objects in the public realm. It allows a space for people to interact with each other socially, sharing in a common identity. *Spacebook* is a place for people to assemble around their differences, rather than segregate because of them. *Spacebook* looks to propose a series of networked places that subvert the privatization of public space: creating spaces that are centres of interaction, discourse, and identity. In these networked places, citizens have increased agency to help construct the public spirit and identity of their city.

Architecture is the most public of all art forms, and ICTs are the most public of technologies. It is their commonality that suggests that the interfaces of these two fields could yield interesting results in public spaces. As a series of spaces, *Spacebook* will look to achieve the following set of criteria.

BRING PEOPLE TOGETHER

The first step in subverting voluntary segregation

and privatization is to simply bring people together: allow people of all different background and ideologies to share a public space. It means that these public spaces can't just form around issues and objects in the way of Latour, or how Frei and Bohlen suggest in their project *MicroPublicPlaces* Public spaces are communicative devices of the city and part of that designation speaks to leisure, neighbourhood and community.⁹⁵ Although *Spacebook* may ultimately create a spatialized forum to locate public discourse, that discourse is not its only purpose; the first step is to provide places that facilitate people connecting with one another.

CREATE A PLACE NETWORK

The creation of place networks can be traced back to van Eyck's playgrounds. Van Eyck devised a systemic approach to design that created a series of sites spread across Amsterdam that were united by identity. *Spacebook* looks to do something similar: taking the fragmented, identity-less network of POPS and transforming it into a cohesive network of identity, interaction, and meaning.

ACTIVATE BOTH VIRTUAL AND PHYSICAL PUBLICS

In this research, a lot has been discussed about the existence of online social networks, and their relationship to the public sphere. The research has discussed how social medias exhibit extreme issues of control, ownership, and accessibility. However, the medias are generating a mass amount of public discourse—they are simultaneously expanding and eroding the public sphere.⁹⁶

ALLOW THE DIGITAL TO FILL THE PHYSICAL WITH INFORMATION

As mentioned earlier in this research, a lot of discourse is generated online. This discourse happens in controlled micropublics. No matter

95 Castells, "Urbanism in the Information Age," 86

96 Look at Chapter 1.1 for a more in-depth analysis of these conditions.

how large the audience is that can access the piece of media, the experience of discussion cannot be shared between users. There is always an author or owner of the piece of media who act as regulator. Therefore, possession is not shared. What would happen if we took advantage of this discourse and brought it into the public realm?

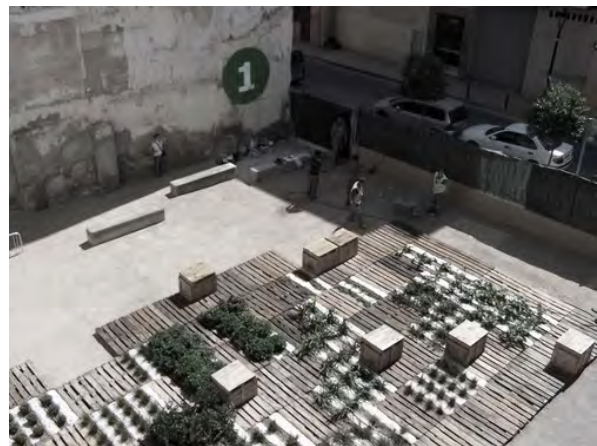
The physical realm of the city (and its associated publics) has long been a source of information for virtual networks. Networks such as Yelp rely on the physical realm to provide locations to rate; Facebook displays the events, connections, and business that take place everyday. How about if we invert this relationship? What would happen if online discourse augmented and shaped our public spaces?

GIVE AGENCY TO THE USERS

Giving agency to citizens makes people feel like they have a stake in public space—which is important, because they do. Over-regulation and private ownership have reduced the agency of citizens in public space.⁹⁷ Private ownership and event planning have turned citizens into the actors in public, not its producers and directors.

Projects by the architect Usman Haque have experimented with this concept. In his installation *DIY City 0.01a* he allows the users to configure space by allowing them control of the location of pieces in the projected space.⁹⁸

Other projects such as *Estonoesunsolar* which translates to "this is not an empty site," is an urban acupuncture project that workshops ways to allow citizens in Zaragoza, Spain to shape the city's abandoned sites into public places.⁹⁹ Other projects such as *Place au Changement* by Collectif Etc attempt a similar idea, but take it one step further, allowing the community to actually build



97 For more indepth discussion surrounding this, please refer back to chapters 1.3 and 4.4,

98 Haque Design & Research."DIY City 2.0," Accessed November 25, 2015, <http://www.haque.co.uk/diycity.php>

99 <http://www.pps.org/blog/not-empty-plot-finding-opportunity-emptiness-historical-city-zaragoza-2/>

Fig.79 Top DIY City 0.01a by Usman Haque
Fig.80 Middle Estonoesunsolar
Fig.81 Above Place Au Changement

and assemble the site, creating a sense of personal connection to the people who will eventually become the users of the space.¹⁰⁰

Spacebook will create sites that subvert the trends towards regulation and privatization, allowing users to shape the public sites around them.

ALLOW A SPACE FOR PEOPLE TO ASSEMBLE AROUND AN ISSUE.

Outside of institutions, it is hard to find spaces assemble physically around an issue. If people want to meet up, discuss, or debate a topic, they will have difficulty finding space to do so within a city. Some coffee shops might allow assembly, but the owner would need to give permission, and assembly would most likely be limited to those associated with initiator’s circle of friends. The personalized metropolis is not a friendly place for people to assemble and discuss their opinions; but the public sphere's role is to provide a place for people of differences to come together. *Spacebook* will provide places for groups to come together and discuss issues outside of the control of private interests or the state.

THE NETWORK AND INFORMATION INFRASTRUCTURE NEED TO BE VISIBLE

Engineer's over the years have responded to Computer Scientist Weiser's assertion in *Desinging Calm Technology*, that technology and the computer should be an invisible servant—that information infrastructure should be moved into the background.¹⁰¹ This has led to an invisibility in the processing of data and information in ICT networks, where no one knows what it is doing, which has led to an increasing amount of public outcry. *Spacebook* will look to visualize, or realise the information that exists in networks, and deliberately give users agency in the shaping

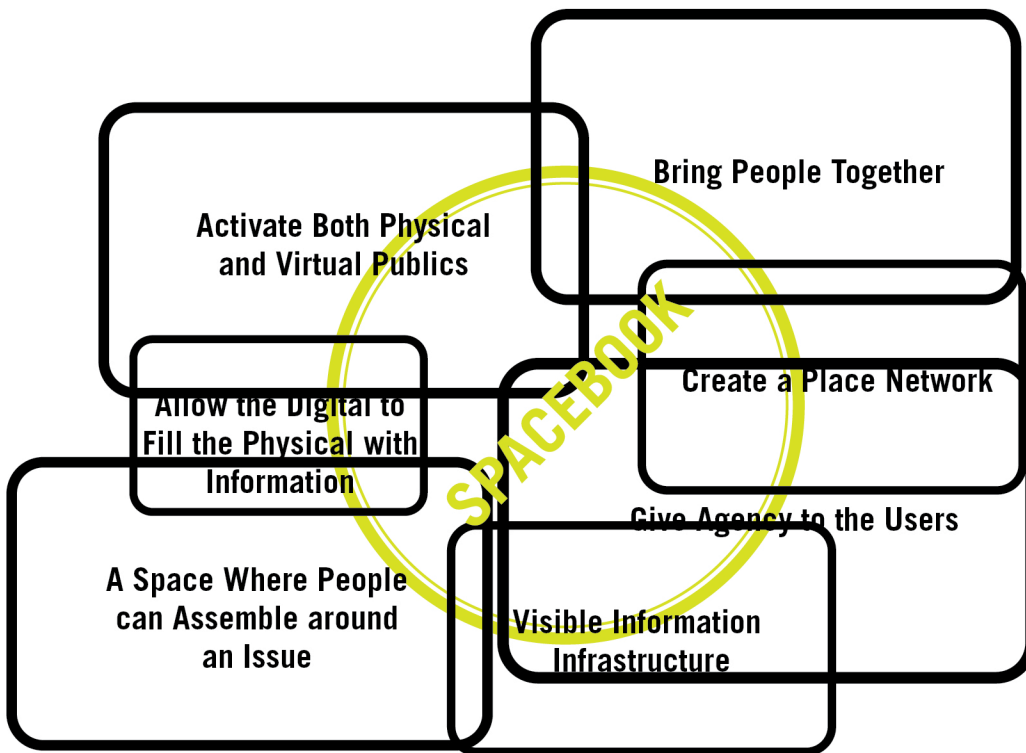
of the network. *Spacebook* accepts information as a cultural good, and not something that should invisibly be stripped and processed by private stakeholders.¹⁰²

Fig.82 Diagram representing the goals and ambitions of *Spacebook*.

100 Archdaily. "Place Au Changement Public Plaza / Collectif Etc. Accessed Novemeber 25, 2015, <http://www.archdaily.com/179874/place-au-changement-public-plaza-collectif-etc>

101 Frei and Böhlen, *MicroPublicPlaces*, 28

102 Ibid, 28



Networked Public Places

Throughout the second part of this thesis, the promise of the design of a public place network has been referred to as *Spacebook*. *Spacebook* proposes a set of public spaces in Toronto, Canada as a framework for the development of Privately-Owned Public Spaces in North American metropolises. The following chapter proposes a set of new public space typologies that joins virtual networks with physical locations; this new typology will be referred to as *Networked Public Places* (NPPs).

NPPs are situated in a series of test sites, and explore different conditions for design, and possible typologies that will emerge from the existing spatial conditions of the POPS. The designs of these networks incorporate the six design ambitions outline in chapter 4.4: Activate both physical and virtual publics; bring people together in physical space; create a place network; give agency to citizens; allow information from digital forums to fill the physical realm; and create a space where people can assemble around an issue. The chapter suggests nine possible typologies that could emerge. Three typologies are then designed in more depth: the Networked Public Garden, the Networked Walkway, and the Networked Public Commons.

5.0—

5.1 NETWORKED PUBLIC PLACES

Networked Public Places (NPPs) are a series of spaces in Toronto, Canada that are located in real and suggested new typologies of Privately-Owned Public Spaces (POPS). NPPs emphasize the use of public spaces as places for people of difference another to come together: in sites that are outside of the interest of the private domain. NPPs are spaces that use sentient technologies to reconfigure public space. NPPs bring together aspects of the virtual network and physical space to foster interaction, connection, participation, and civic discourse.

Networked Public Places builds off of Frei and Bohlen's *Situated Technologies* pamphlet titled *MicroPublicPlaces* that in turn draws on Latour's *Parliament of Things*, a theory that suggests publics are formed around things—or objects. *MicroPublicPlaces* aim to localize global issues in assemblies that represent Arendt's notion of the public sphere as a place where people of differences can come together.¹⁰³ Frei and Bohlen propose a series

of mini-institutions that lie at the intersections of public interest.¹⁰⁴ Each institution represents a different issue or resource, such as water treatment and consumption, which concern both a global and local audiences. To create an improved and more intelligent atmosphere, the institutions increase user activity and then assemble people around an issue. *MicroPublicPlaces* use systems of machine learning, data mining and predictive analytics to accomplish this goal.¹⁰⁵

As a starting point, *Networked Public Places* uses the *MicroPublicPlaces* idea that the combination of ICTs and architecture can create typologies that can "facilitate new relationships among participants, new links between the local and the global, ... real and virtual resources, reality without speech and speech without reality... They are laboratories for experiments on the construction of public spirit rather than public department stores we know can be easily looted."¹⁰⁶ NPPs are public spaces that lie at the intersection of individual and collective interests.

The Internet has created a new set of networked publics that can be viewed and known by all; however, only the technical platform behind the internet is shared by all.¹⁰⁷ Kazys Varnelis asks at the end of *Networked Publics* whether network culture "plants the seeds of greater democratic participation and deliberation, or whether it will be used to mobilize already like-minded individuals[?]..." "the inhabitants of our networked publics, can reach across our microclustered worlds to coalesce into a force capable of understanding the condition we are in and produce positive change, preserving what is good about network culture and changing what is bad—or whether we are doomed only to dissipate into the network."¹⁰⁸ *Networked Public Places* looks to produce positive change and

103 Arendt's notion of the public sphere was introduced in Chapter 1.1.

104 Bohlen and Frei, *Situated Technologies 6: Micropublicplaces*, 17

105 *Ibid*, 32-45

106 *Ibid*, 18

107 *Ibid*, 24

108 Kazys Varnelis, *Networked Publics*, 160

ensure that people do not simply dissipate into the network.

NPPs use sentient networked technologies to allow space-users to affect their surroundings; this affect produces a sense of user-agency in public space, and distributes the experience of creation amongst all participants. By sharing the space, and by giving agency to users, the NPPs subvert the voluntary segregation of society caused by suburbanization and privatization.

Networked Public Places are not intended to replace all public space in North America, nor should they be expected to change the contemporary use patterns of North American public spaces; instead, NPPs offer a network of imagined spaces that expand upon the relationship between networked publics and the city. Information and communication are understood as shared resources that are critical in forming a diverse, multicultural metropolis.

The technology implemented in Networked Public Places does not necessarily exist today, but it builds off of ideas of existing technologies, processing, and machine learning. Unfortunately, the current state of machine learning is not of much use to architecture: up until recently they have mostly been conceptualized as distinctly separate fields. Systems and algorithms built for search engine optimization and robot artificial technologies are not prepared to deliver the social intelligence and systemic diversity necessary for the types of systems that are being proposed. Instead, these designs look to propose ideas that ICT engineers and architects can develop together using a more holistic approach—hybridizing fields that have traditionally been kept too far apart. Sentient technologies and machine learning present an opportunity to unite virtual discourse and the public realm. These technologies envisage a new way for users to share opinions and ideas while connecting simultaneously to local and global discourse.

NPPs experiment with the interface between physical and virtual publics. In different examples, users take passive (where the NPP makes

the decision for them), or active (where they contribute to the formation of the NPP) roles. Each of these experiments provokes a different type of experience for the user, creating diversity in the interaction within the network. Although all NPPs incorporate some variety of virtual networks, they all have the ability to function and be used without being connected: an ability that allows for democratic accessibility. NPPs are designed to be approachable and accessible to all.

5.2 NETWORKED PUBLIC PLACES TYPOLOGIES

Networked Public Places exist at a variety of scales and typologies, each encouraging a different scale and type of interaction. The NPPs comprise of a sentient and interactive network of spaces spread across the city. The NPPs are diverse in typology with each type attempting to address a different aspect and scale of interaction; identity; and discourse currently lacking in North American public spaces. The NPPs hope to create an engaged and diverse network.




Each typology is situated in a test location; some are situated in existing POPS, and others are suggested typologies for cities that encourage the creation of POPS

Fig.83 Map of POPS test sites.



SPACEBOOK: NETWORKED PUBLIC PLACES



-  Existing POPS for NPP
-  Proposed POPS for NPP
-  Current POPS - Future NPPs

TEST SITES FOR NETWORKED PUBLIC PLACES

Nine test sites were chosen: one for each typology of space that exists within the POPS network, and two for the new proposed typologies. Sites are analysed within the network based on their surroundings and user-typologies.

Fig.84 Matrix of sites selected to test NPPs

SPACEBOOK: NETWORKED PUBLIC PLACES

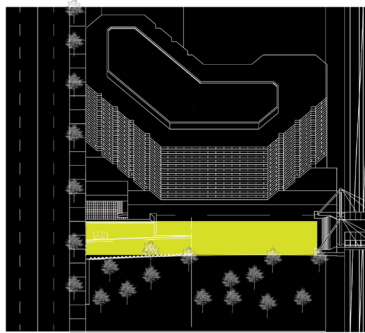
CITY SCALE



Garden



Plaza



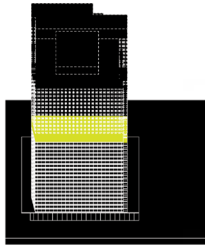
Walkway



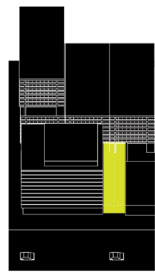
Interior Space



Landscaped Setback



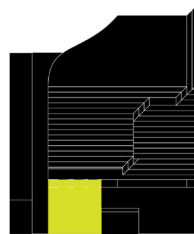
Terrace



Interior Pedestrian Connection



Forecourt



Courtyard

COMPONENTS OF THE NPPS

The NPPs are formed by using a series of standardized components. Building off of what was learned in the case study of van Eyck's playgrounds, an identifiable and semi-standardized set bring a collective identity to a set of dispersed spaces.

The components are set into two categories: Permanent—or fixed—components, and Impermanent—or moveable—components. Activating both categories allows for a variety of spatial conditions and relations on sites. The permanent components are located in sites that are in less of a state of flux. These sites are not spaces that rely on multiplicity of program for activation. These spaces are either intimate spaces, such as community gardens and indoor spaces, or highly transient spaces, such as walkways and setbacks.

What also emerge are different relations with the network. The permanent components look for ways that they can control and filter the network to encourage new relationships. These components look to forge a new network of identity throughout the city. The impermanent components experiment with the idea that a network can give agency to users who are shaping their own public realm. The users control the network, and the network controls the public realm.

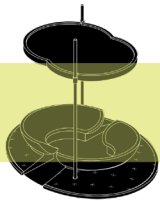
$$\begin{array}{c}
 \text{COMPONENTS} \\
 + \\
 \text{NETWORKS} \\
 + \\
 \text{POPS NETWORK (SITE)} \\
 = \\
 \text{NETWORKED PUBLIC PLACES}
 \end{array}$$

Fig.85 Matrix of components that make up NPPs. NPPs are created through the integration of sites and components.

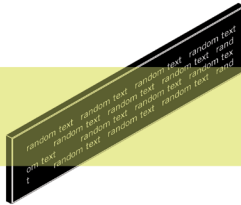
Source: Image by Author

SPACEBOOK: NETWORKED PUBLIC PLACES

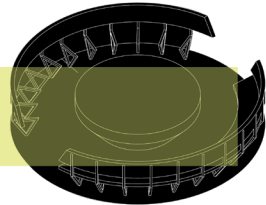
PERMANENT COMPONENTS



Communal Garden Benches

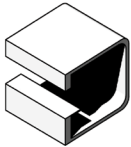


Urban Public Screen

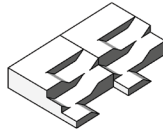


Public Forum Bench

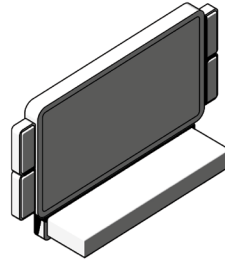
IMPERMANENT COMPONENTS



Market Stall

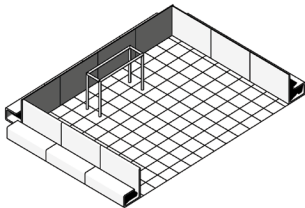


Bleachers

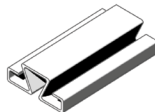


Media Screen

IMPERMANENT COMPONENTS



Games



Workshop



Networked Connector

NPP TYPOLOGIES

The following set of NPPs are typologies that could emerge from inserting networked components into the spatial network of Toronto's POPS. Each one imagines a new relationship between networks and the spatial fabric of the city. It is an incomplete list, that offers a set of possible conditions for further exploration. It should be looked at as a beginning. The first three typologies will be developed in further detail.

1. NETWORKED PUBLIC GARDEN

Small and intimate in scale, these spaces are about encouraging interaction between two people. These spaces are located in slower-paced and more intimate residential courtyards and gardens.

2. NETWORKED PUBLIC COMMONS

These are located in large, open, civic spaces that thrive on flexibility. The associated network is equally flexible and allows users to program and manage the spaces themselves.

3. NETWORKED PUBLIC WALKWAY

The Networked Public Walkways are busy, transient spaces. These spaces use components to bring the invisible discourse happening online into the public realm.

4. NETWORKED PUBLIC FORUM

The Forum is an extension of Habermas' public sphere. The forums are urban spaces that encourage small groups to discuss matters in civic space.

5. NETWORKED PUBLIC STOP

As users wait, the network engages them to share a piece of media that represents what they are thinking. These spaces are located in POPS that are by transit stops and cab stands.

6. NETWORKED PUBLIC TERRACE

Networked Public Terraces are the most intimate typology. Located within a building, the terraces form intimate spaces for community interaction.

Networked Public Terraces create spaces where residents can assemble and discuss issues.

7. NETWORKED PUBLIC GALLERY

Located in interior connections, these spaces allow users to share interesting ideas and artwork with each other.

8. NETWORKED PUBLIC FORECOURT

Networked Public Forecourts are small spaces that exist as thresholds between the urban realm and private buildings. The network creates a forum of dialogue, allowing expression between the general public and the occupants of the building. Networked Public Forecourt acts as an interface between the two (public and building).

9. NETWORKED PUBLIC MARKET

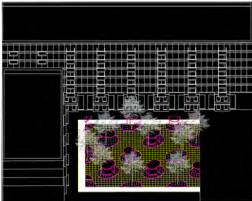
The Networked Public Market is located in high-traffic, open, hardscaped spaces through the city. The market allows the public and small independent businesses to connect with each other.

Fig.86 Matrix of proposed NPPs, with the network and space brought together.

Source: Image by Author

SPACEBOOK: NETWORKED PUBLIC PLACES

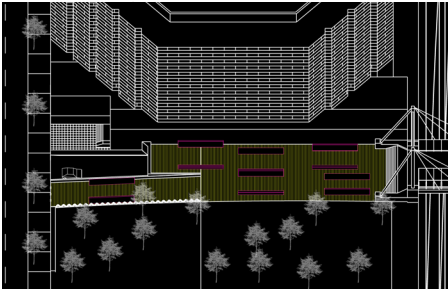
CITY SCALE



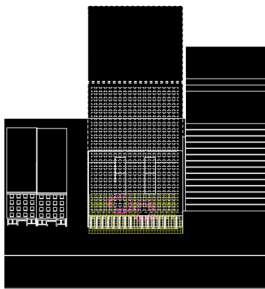
Networked Public Garden



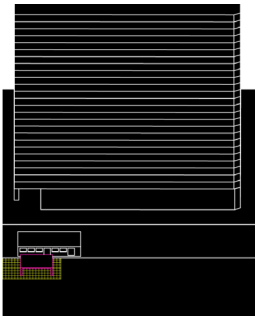
Networked Public Commons



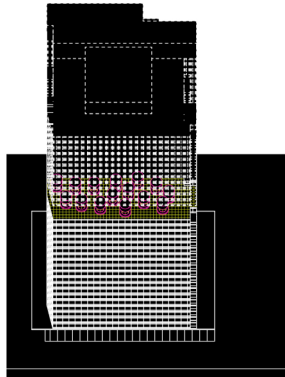
Networked Public Walkway



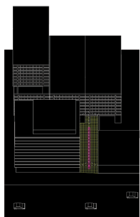
Networked Public Forum



Networked Public Stop



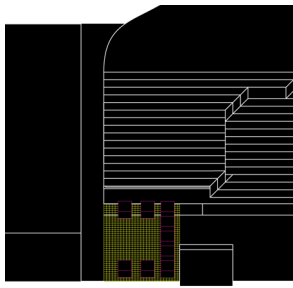
Networked Public Terrace



Networked Public Gallery



Networked Public Forecourt



Networked Public Market

5.3 NETWORKED PUBLIC GARDEN

The first typology of NPP that will be explored is the Networked Public Garden (NPG). The sample NPG is situated in Toronto's City Place, South of the Gardiner and West of Spadina, on Fort York Boulevard. NPGs are located in more residential and mixed-use neighbourhoods. The goal of the NPG is simple: to connect people in physical space. A common criticism of City Place, and many emerging high-rise communities, is that they lack a diversity in typology, ownership, and program. The lack of architectural diversity creates a public realm that lacks activity, interaction, and life (personalized, individual etc.). The lack of active street-life makes it difficult to meet your neighbours and form a sense of community.

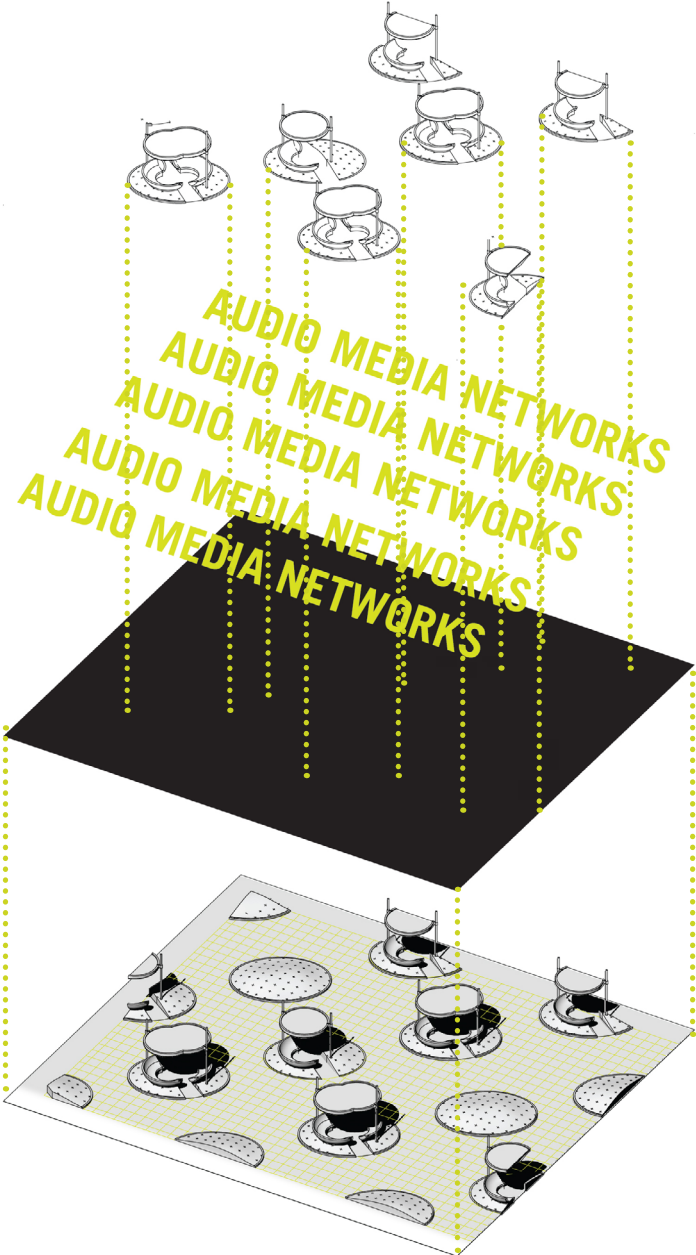
The Networked Public Gardens aim to create intimate spaces that encourage meeting people one-on-one. NPGs are spaces of relaxation and socialization, in non-contested political zones. Nestled in between a set of high-rise residential towers, the ownership of the space is clear and the park serves as a community amenity for the local residents. With a combination of physical and sentient computational interventions, the NPG encourages one-on-one meetings and interactions. The NPG experiments with ways the users in the space take a passive role, but the space is still highly

active in connection and discourse. The NPG has an app that allows users to grant the NPG access to their publicly accessible media networks, such as Soundcloud, Youtube, or Spotify.

Users are invited into a configuration of fixed components that is easily accessible and very permeable for pedestrians. The space is comprised of a set of intimate seating pods as well as plantings. When users approach an empty bench to sit down, nothing happens. The bench simply acts as a space for an individual to sit. However, if the user approaches a pod that already contains another citizen, the pod begins to form a microclimate, conditioning the temperature in the space to 'room temperature.' In a city with harsh winters and hot and humid summers, the conditioning of space is a way for people to connect and share in a micro-condition. After some time, if the NPG doesn't sense any discourse or connection between the users, the NPG searches through the users' public media networks (Youtube, Soundcloud, Facebook, Twitter) for audio links. When a connection is found, the space begins to play the music, or podcast. The users then share an experience at that moment, as well as a common interest, which can allow for the beginning of a conversation. The interesting thing about the NPG's suggestions is that they are not necessarily biased towards likes, instead they are based on the existence of a link in the network. This link could be that one user has posted a song or video because they love it, while the other could have posted because they found the media to be offensive and deplorable.

Fig.87 Diagram representing composition of the NPG.

The NPG attempts to allow the users agency in the maintenance of their local environment. When the NPG senses discourse, it automatically waters, drains, and maintains the rooftop garden of that particular pod, giving users the ability to positively affect their environment.



NETWORKED PUBLIC PLACES

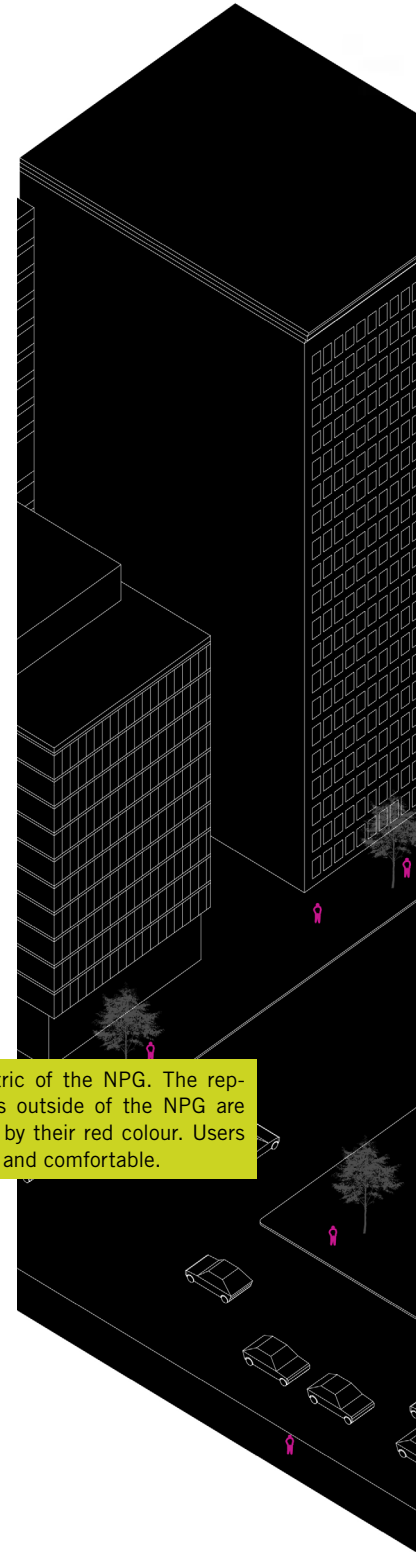
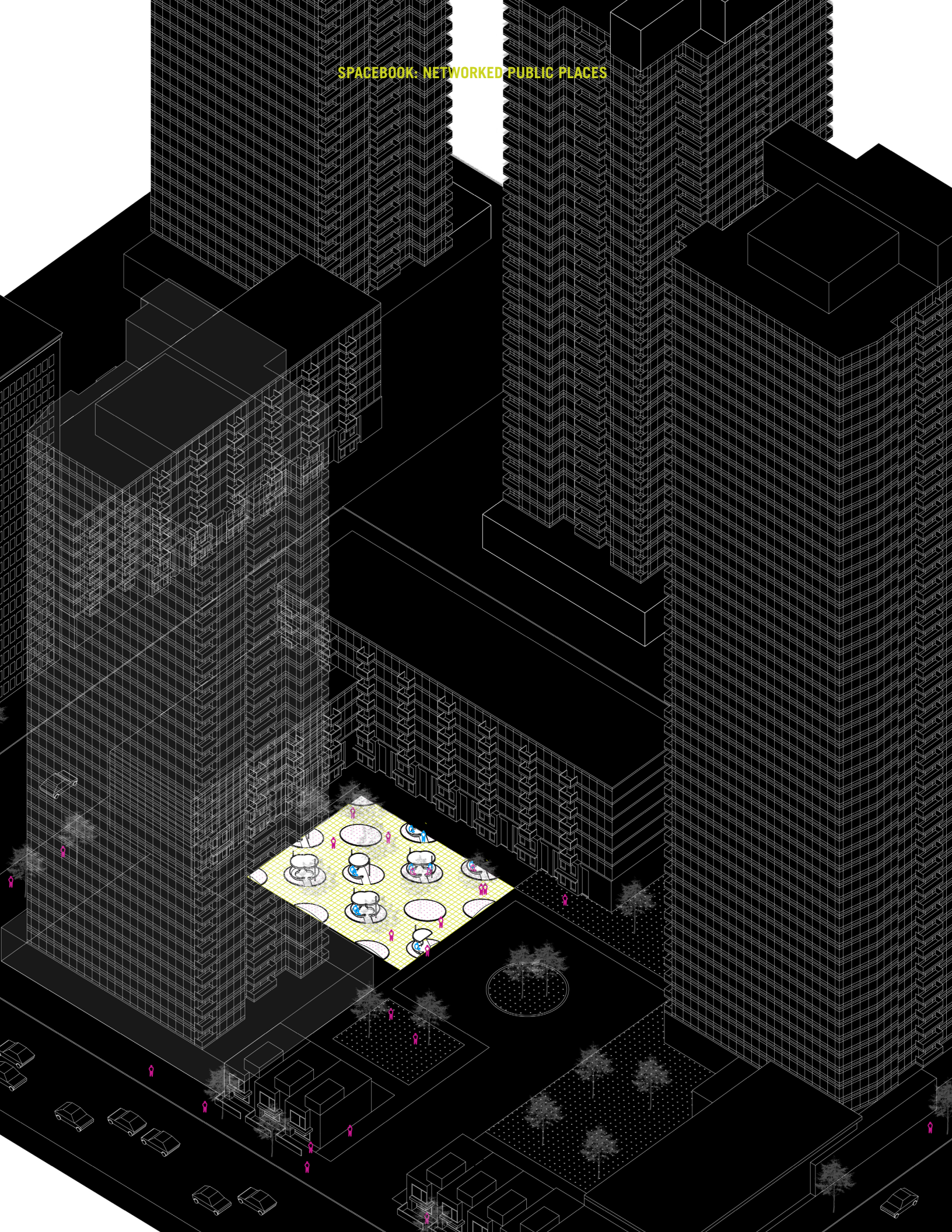


Fig.88 Community scale axonometric of the NPG. The representation is on a hot day. Users outside of the NPG are uncomfortably hot, as represented by their red colour. Users inside the interactive pods are cool and comfortable.

SPACEBOOK: NETWORKED PUBLIC PLACES



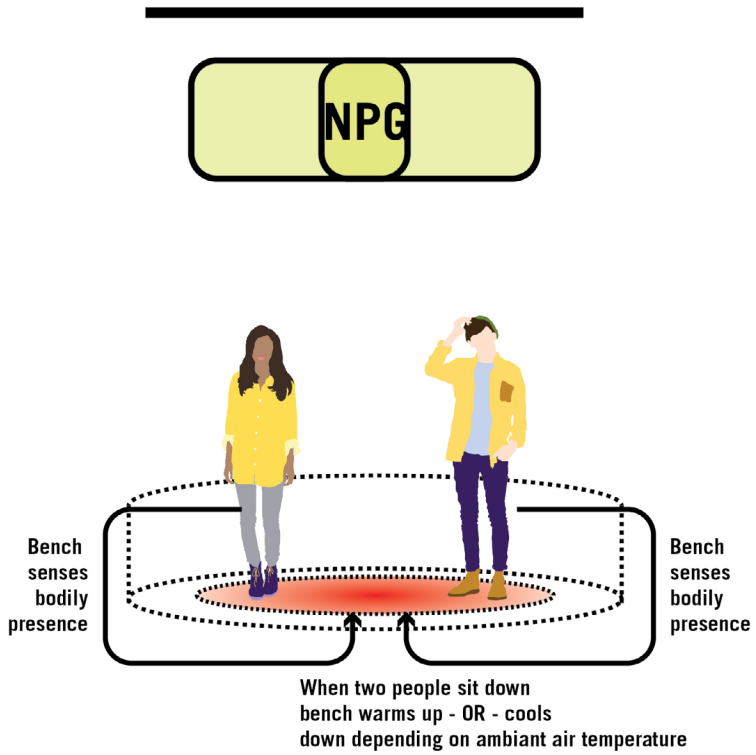
NETWORKED PUBLIC PLACES

1

Fig.89 NPG Use Diagram stage 1

Users engage with the space. When two or more people come together in the benches. The benches warm up, or cool down. In Cities such as New York and Toronto, where winters are freezing, and Summer are hot and humid, conditioned outdoor spaces are very appealing.

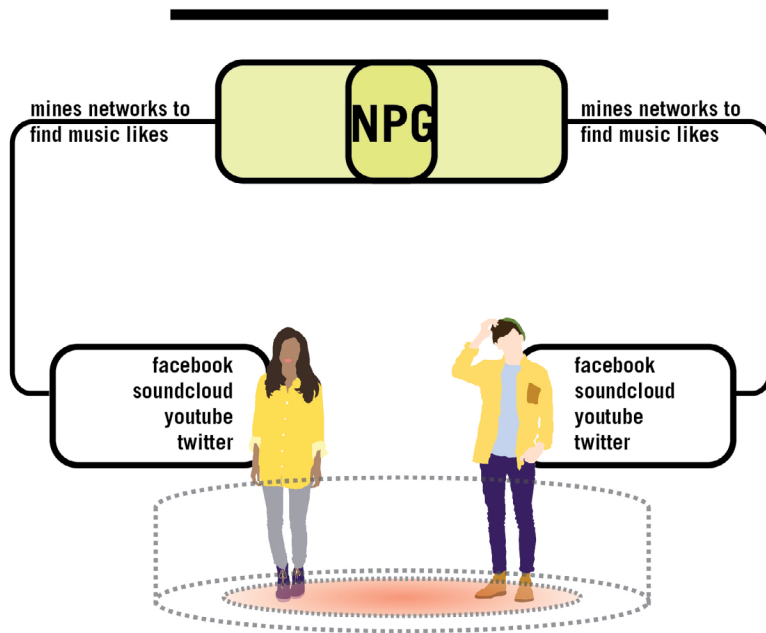
By simply requiring too people to assemble around the Garden Bench in order to modify the microclimate, the space not only suggests physical connection, but requires it. The users are passive in their engagement with the network.

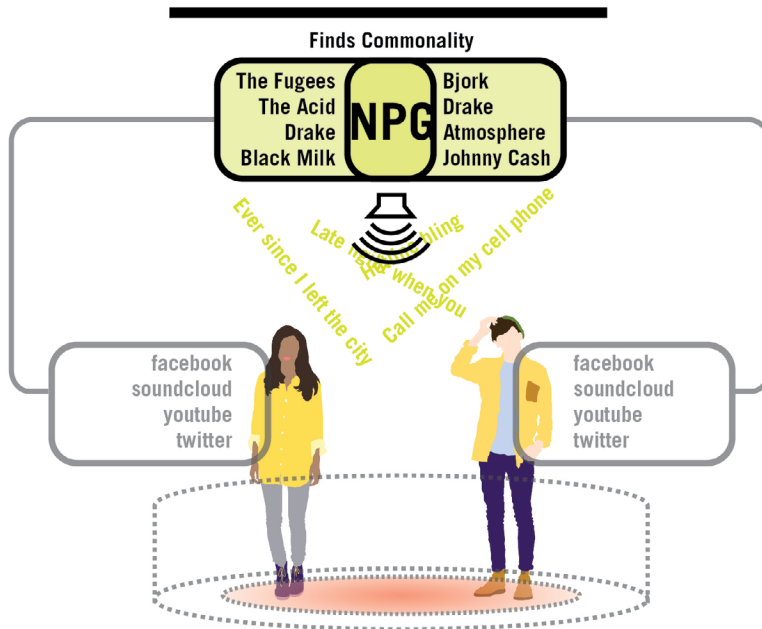


2

Fig.90 NPG Use Diagram stage 2

The Garden Benches are sentient to the invisible networks that are around them. They access public profiles from the controlled micropublics that surround them. The cloud portion of the NPG searches for music based media through networks such as Soundcloud, Youtube, or links to music that may have been posted to Twitter, or Facebook.



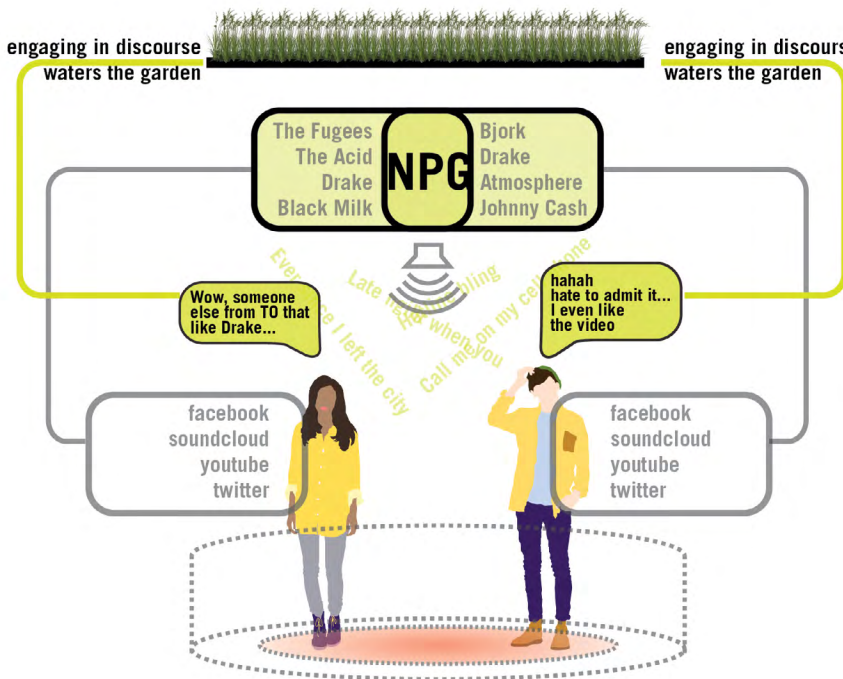


3

Fig.91 NPG Use Diagram stage 3

The NPG processes the music and tastes of two users. If there is not discourse happening in the site, the NPG quietly begins to play the song. The fact the two users enjoy the same music could spark conversation.

This obviously isn't a perfect system for finding a shared territory, but that is part of the beauty. Users may have posted memes, or links to the video while blasted it over social media, and this will allow the two users to engage and discuss the song or podcast and come together over their difference.

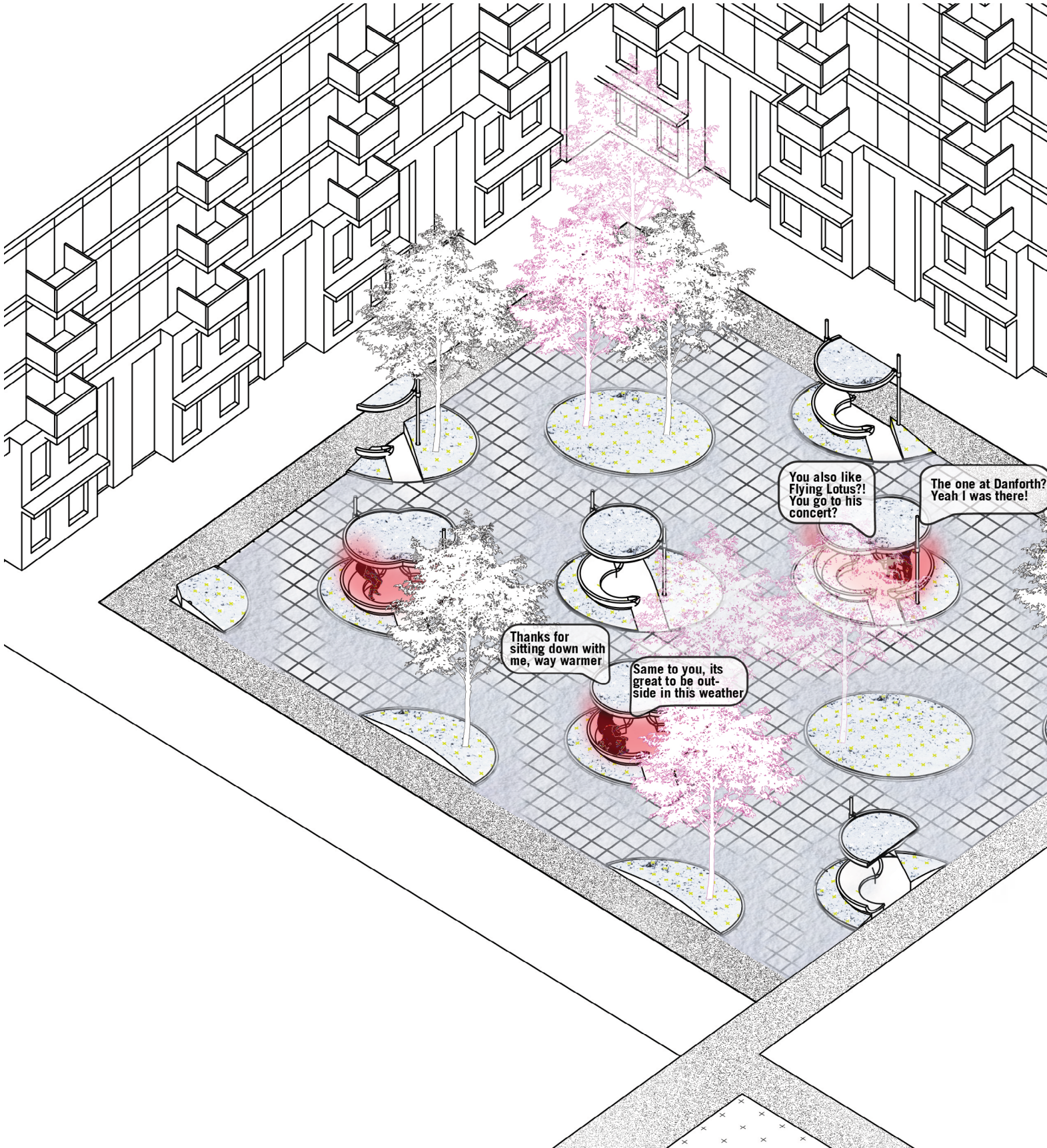


4

Fig.92 NPG Use Diagram stage 4

The NPG also encourages user interaction and use by allowing the health of the garden to be determined by the users. As users discuss things in the are of the NPG, it waters (or allows the water to drain), ensuring the health of the rooftop garden.

NETWORKED PUBLIC PLACES



You also like Flying Lotus?! You go to his concert?

The one at Danforth? Yeah I was there!

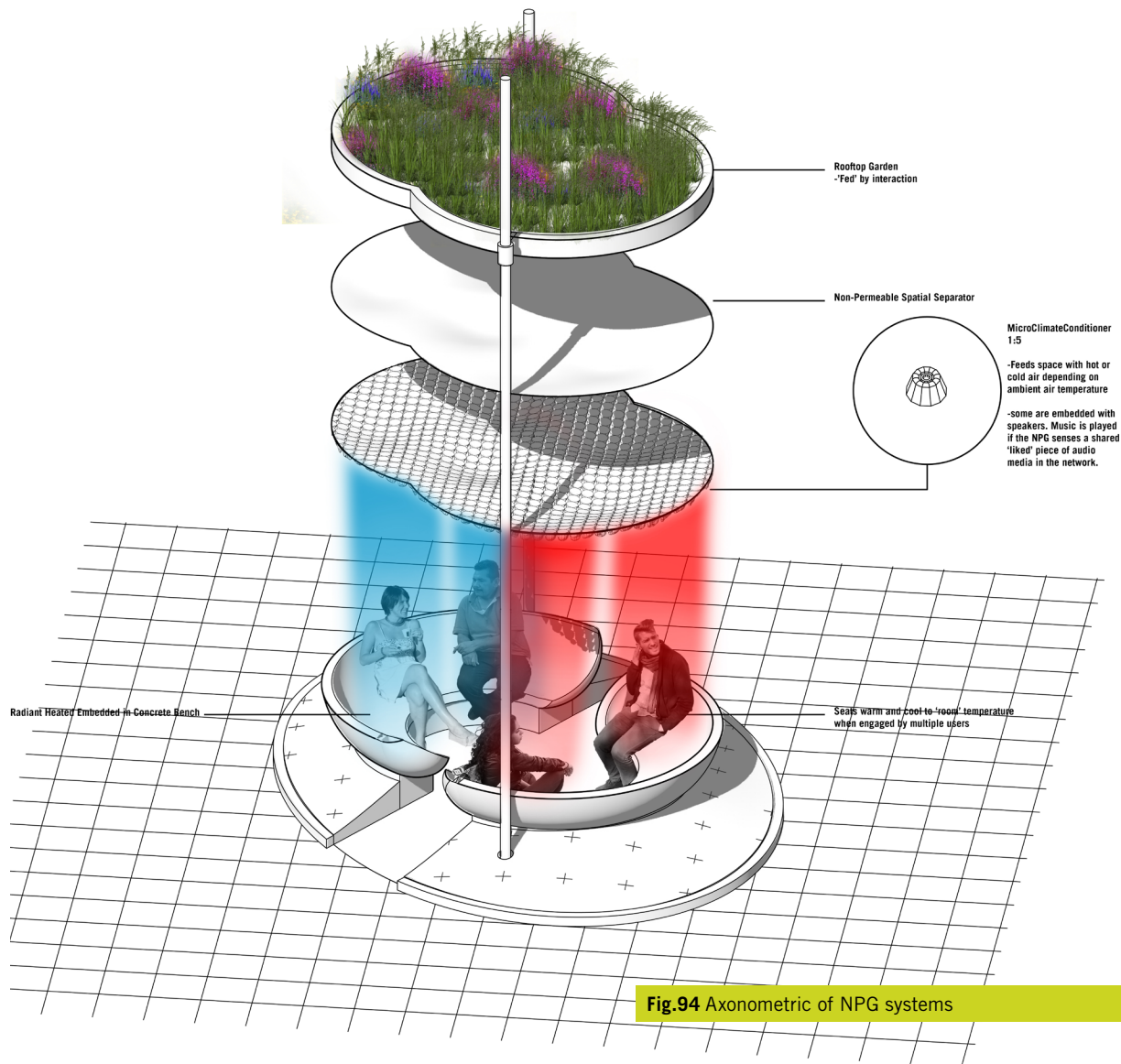
Thanks for sitting down with me, way warmer

Same to you, its great to be outside in this weather



Fig.93 Architecture scale axonometric of NPG

NETWORKED PUBLIC PLACES



SCALE 1:20



Fig.95 Perspective of NPG

5.3

NETWORKED PUBLIC WALKWAY (NPW)

NPWs are transient spaces interspersed around busy parts of the city. These zones are sometimes interior connections, widened sidewalks, or exterior pathways: each offering a slightly altered version of the typical sidewalk. These zones act as social condensers, where all users have equal rights to use the spaces. NPWs encourage spaces of collision, where not only people, but ideas and information overlap and collide.

The test NPW is located in downtown Toronto, at 301 Front St. It is a connecting path that spans over the rail tracks. As one of the few (and most pleasant) paths across the rail tracks, it can be a place of very high volume pedestrian traffic. People move as a flow, often checking their mobile computing devices: accessing their personalized networks.

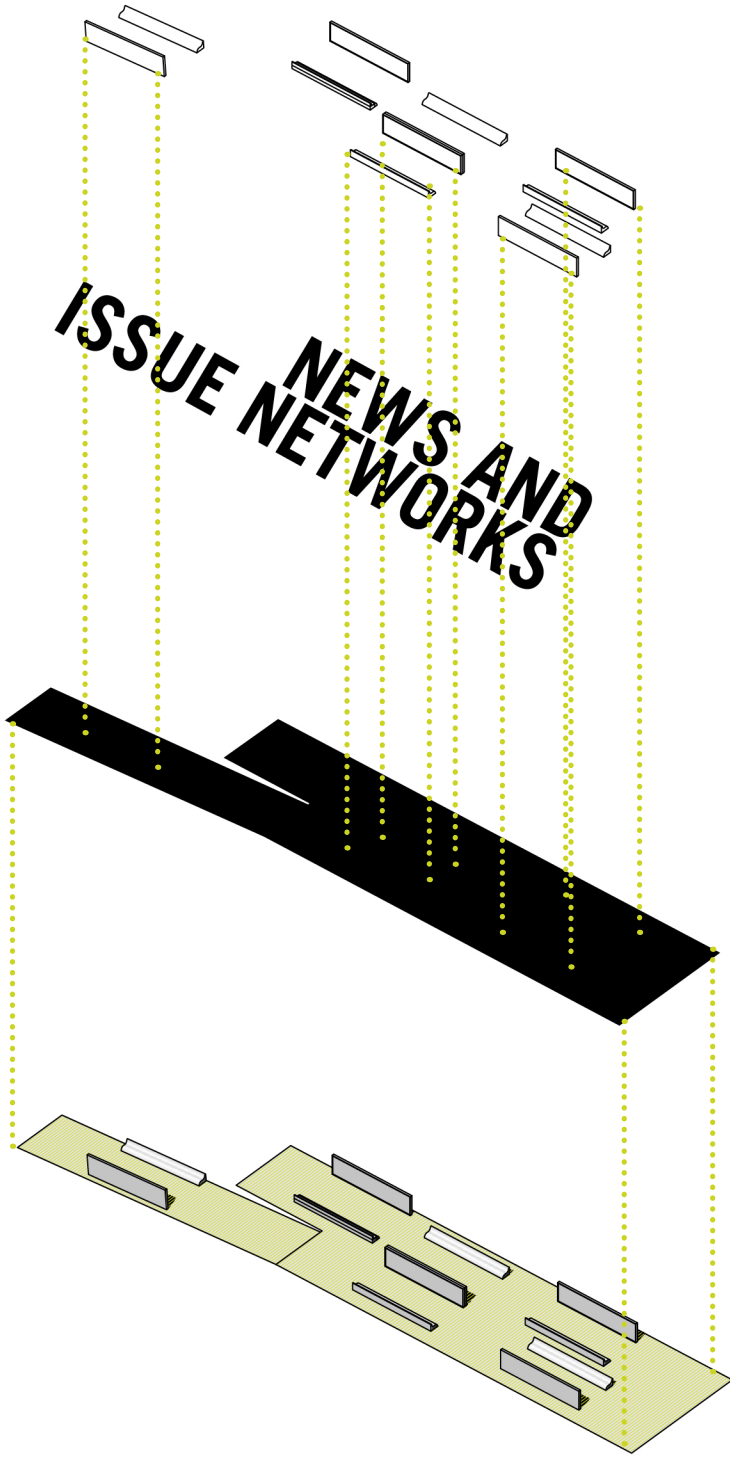
The NPW tries to bring the individuals out of their personalized network, and bring their thoughts into the light of the public, forming a collective memory. Geolocated technology searches common social media networks (Facebook, Twitter, Instagram) for trending articles and comments.

These local thoughts and media are displayed on urban screens. Users that pass by can comment and interact with these screens by either using “#NPW” or by communicating @NetworkedPublicWalkway.

The NPW raises people’s awareness of issues and opinions at a local scale by activating information that is trending locally and allows local users to respond to their surroundings. However, the NPW also plays off of the idea that in contemporary society, people are global citizens—The NPW displays articles that are trending across the world, not just locally. Through this display, the NPW allows the local area to debate and critique global issues.

The NPW has effects at two scales; it displays the collective consciousness of the users and allows each individual a voice. The NPW creates a new layer of social activity and awareness. The walkway allows for people of differences to collide, discuss, and provoke in a way that may generate unprecedented events, interaction, and awareness.

Fig.96 Diagram representing the composition of the NPW



NETWORKED PUBLIC PLACES

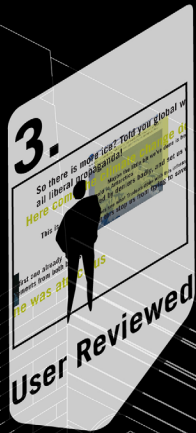
Fig.97 The NPW turns the experience of passing through, into an introduction into public discourse. Urban screen display the invisible discourse happening in controlled micropublic networks, and bring it into the public eye. Users can engage with, and contribute to, the discourse through physical and virtual interaction.

SPACEBOOK: NETWORKED PUBLIC PLACES

1. **#GLOBALWARMING**
Now Trending

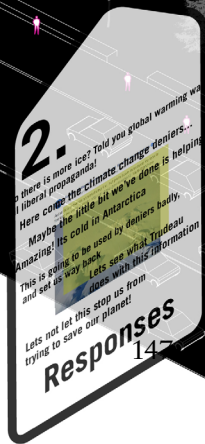


3. **User Reviewed**

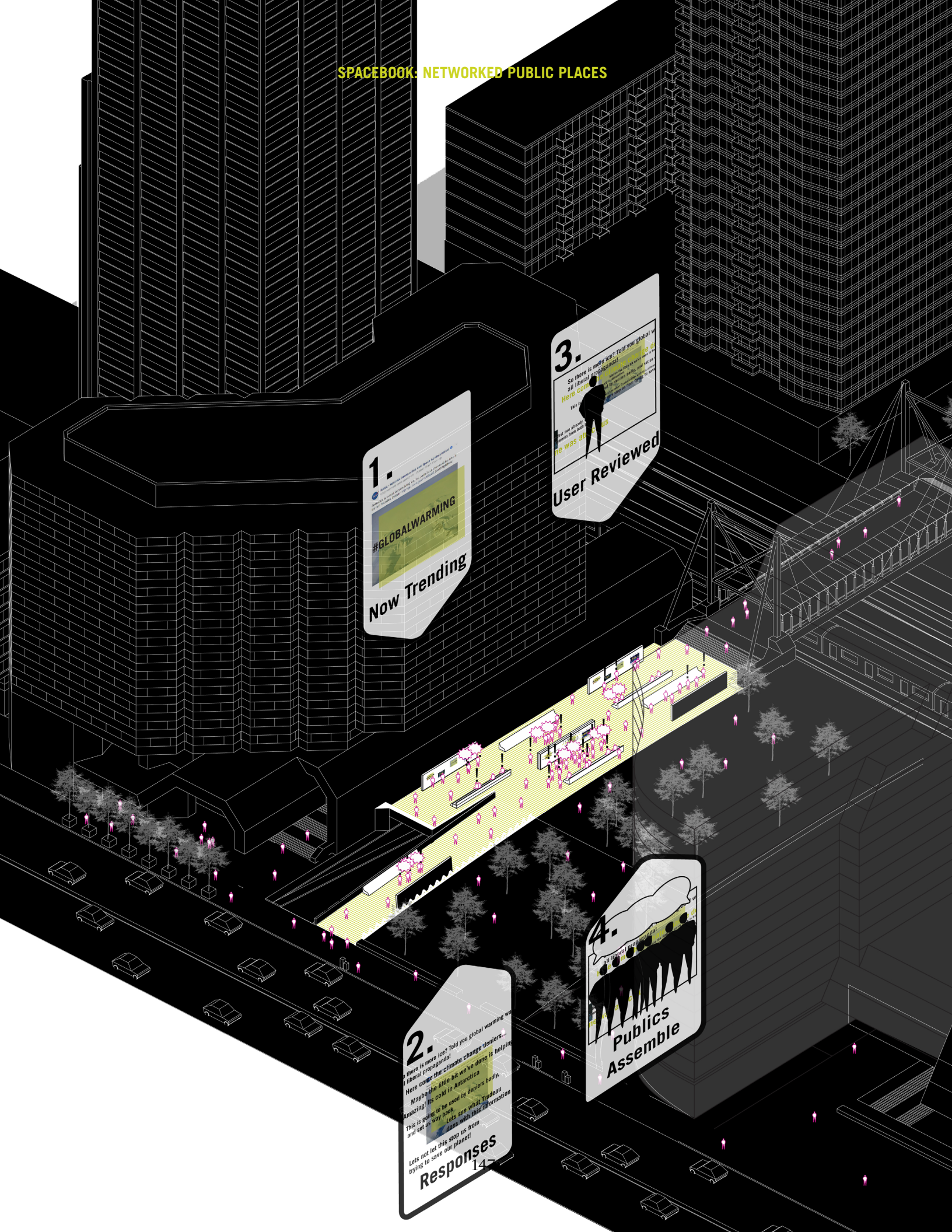


2. **Responses**

So there is more ice? Told you global warming was liberal propaganda!
Here come the climate change deniers...
Here come the little bit we've done is helping...
Maybe its cold in Antarctica.
Amazing! Its cold by deniers badly.
This is going to be great! Trudeau and see us way back.
Lets see what Trudeau does with this information.
Lets not let this stop us from trying to save our planet!



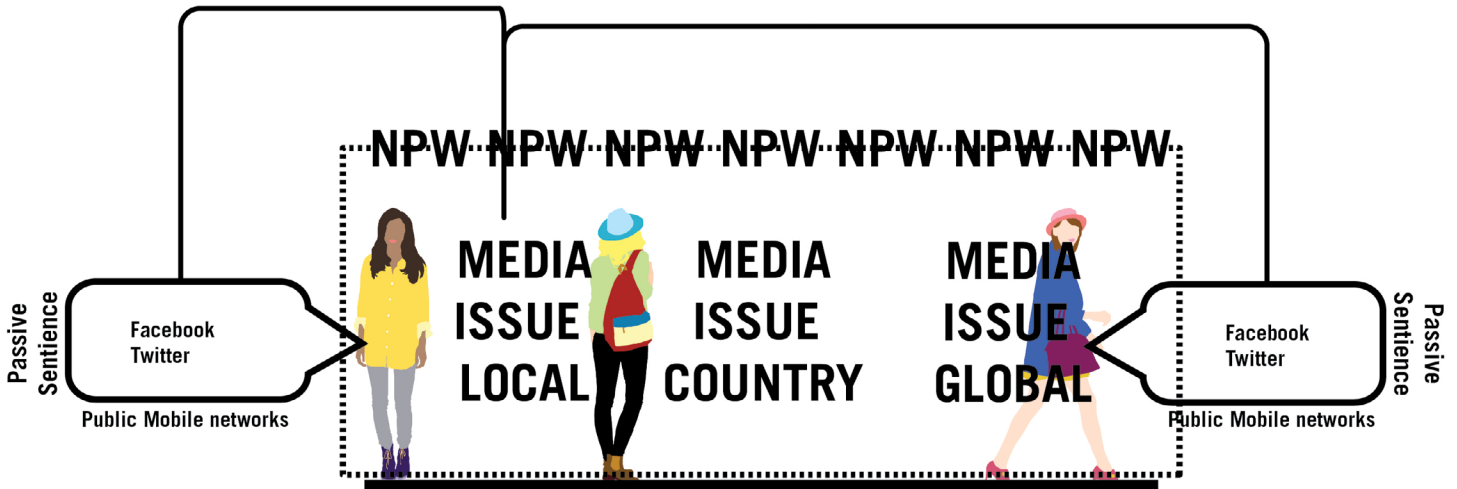
4. **Publics Assemble**



1

Fig.99 NPW Use Diagram stage 1

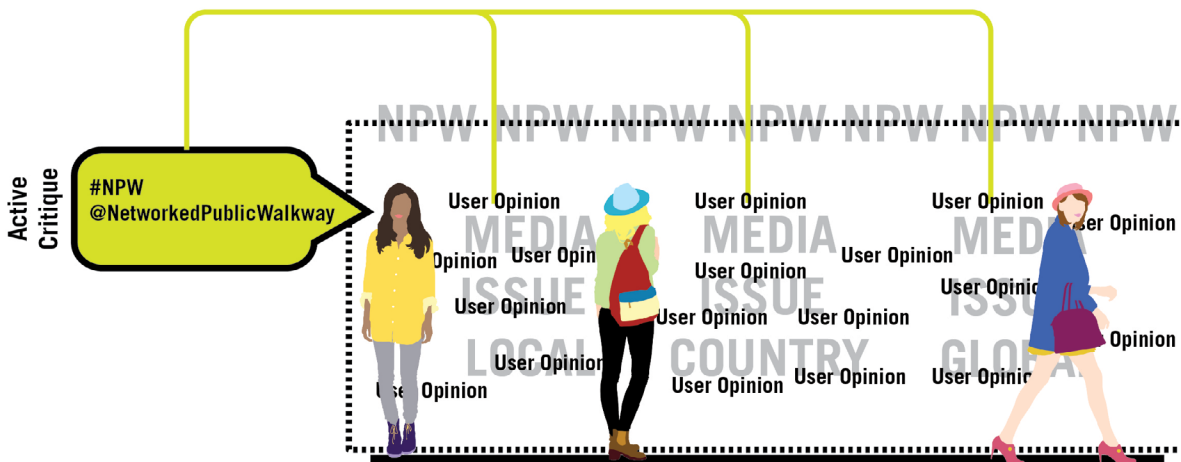
The Networked Public Walkway urban screens mine the data of networks. It sense and displays 'trending' media items based on sensory zones at three levels: Global, Country, and Local. The local scale actually is based on sensing and mining the networks of the transient occupants that pass through the space.



2

Fig.98 NPW Use Diagram stage 2

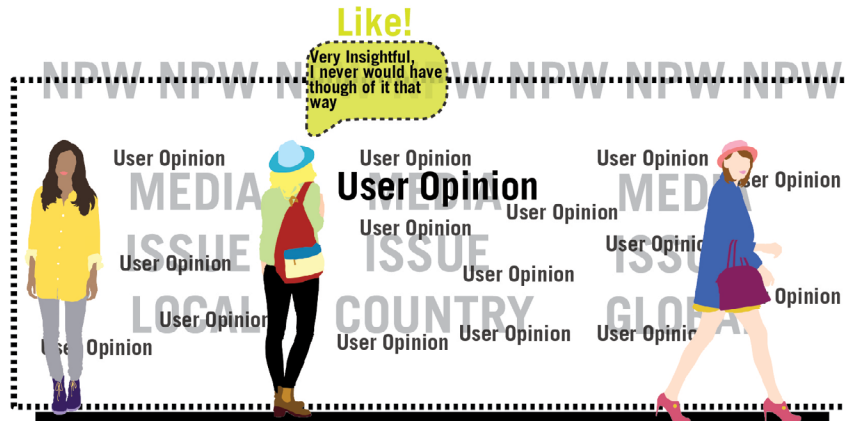
Users can critique the messages that appear on the urban screens, subverting the privatization caused in behaviour by person mobile computing devices. They do this using hashtags and tweeting at something.



3

Fig.100 NPG Use Diagram stage 3

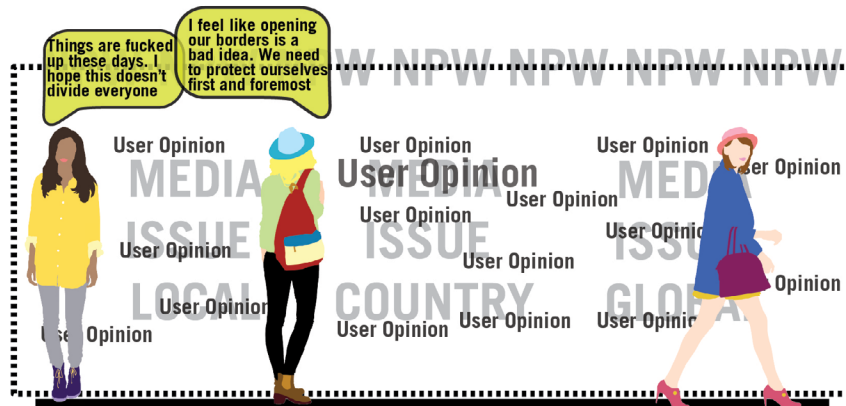
Users can click on users opinions to give them 'likes'. The clicks make those opinions larger, bringing them to the forefront of the conversation.



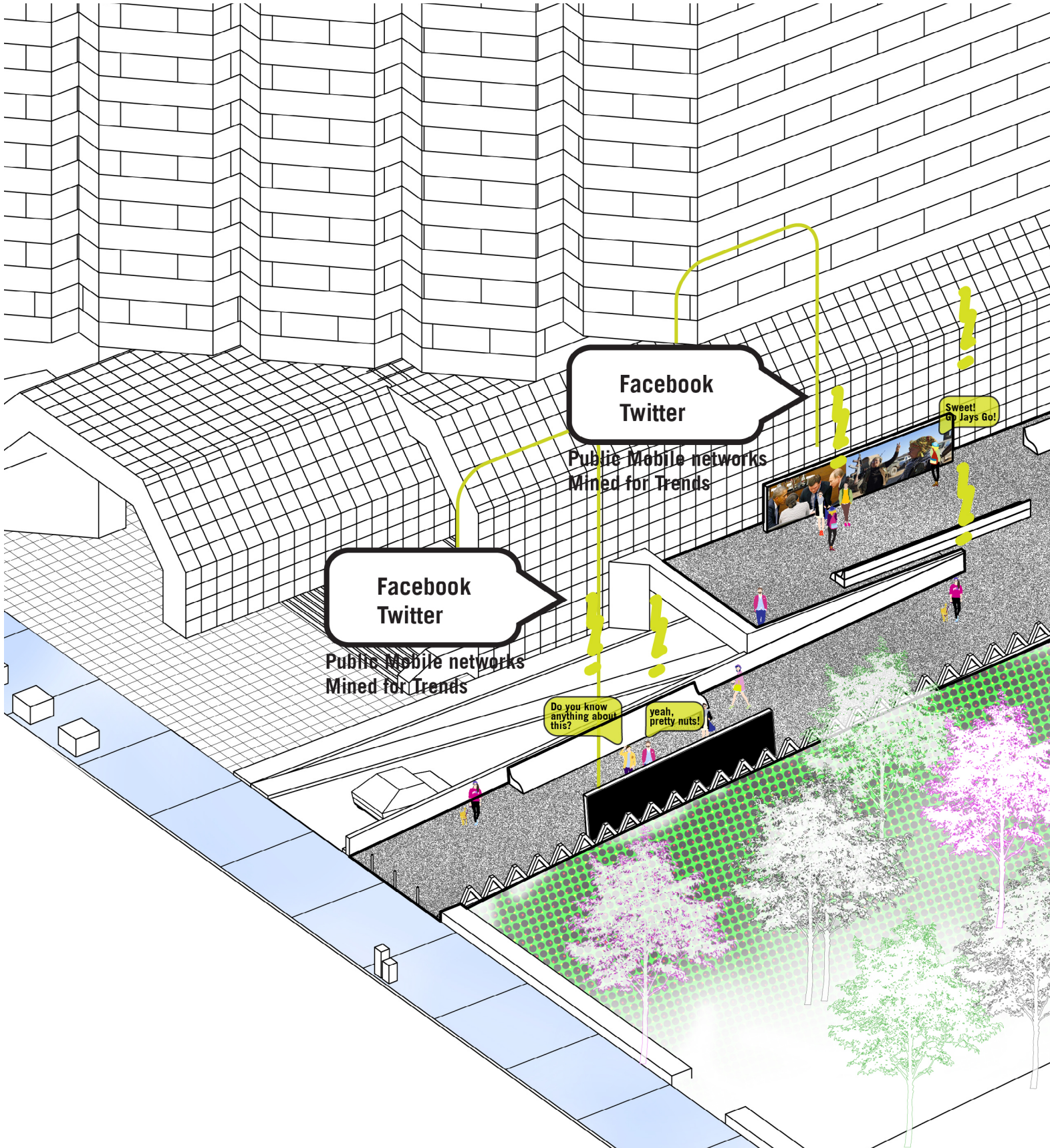
4

Fig.101 NPG Use Diagram stage 4

It allows the users an opportunity to come together over issues, ideas and concepts. People can assemble to discuss issues and attempt to come to a resolution. The screen acts as an interface for people to come together with people of different opinions and backgrounds.



NETWORKED PUBLIC PLACES



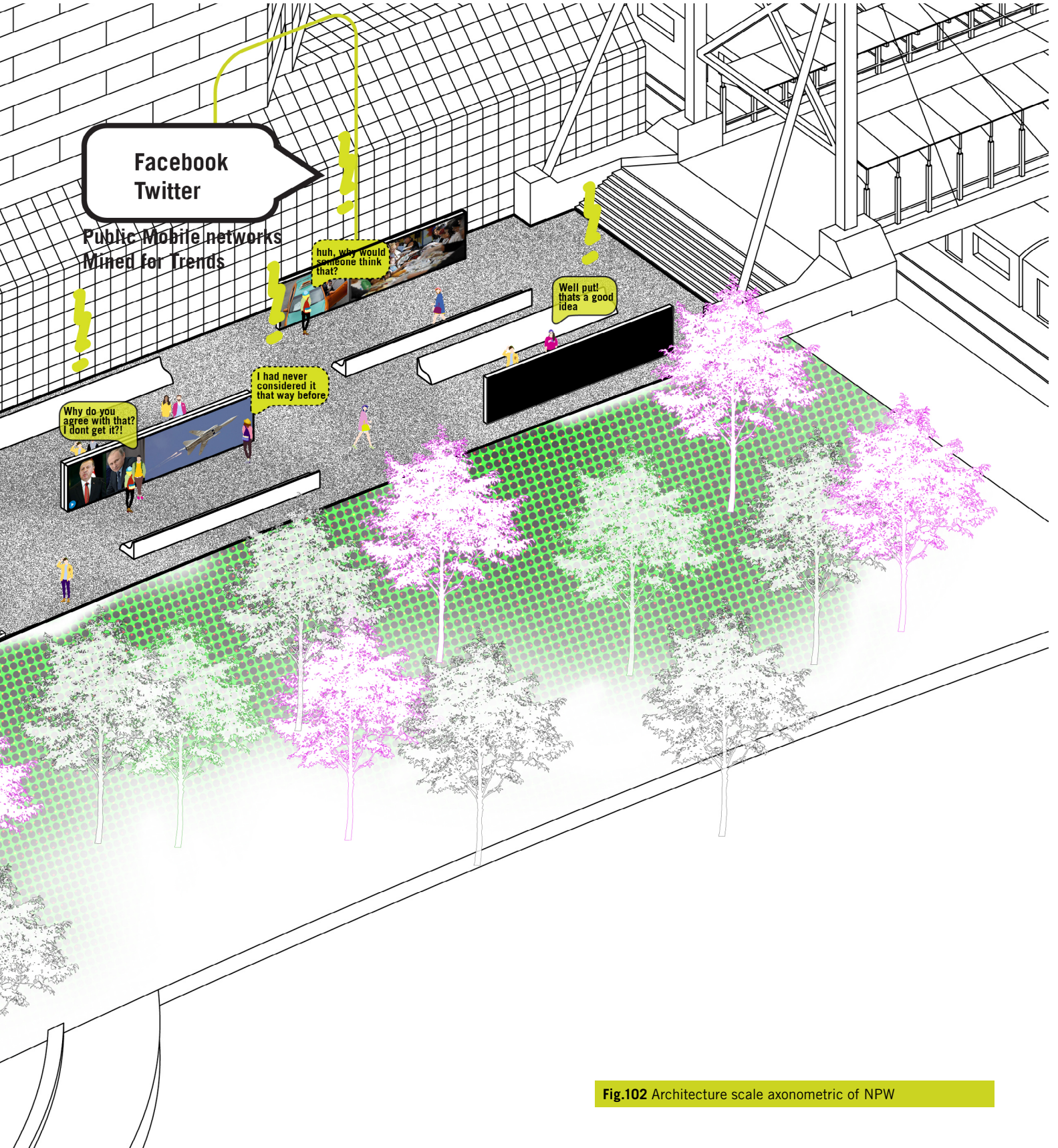


Fig.102 Architecture scale axonometric of NPW

NETWORKED PUBLIC PLACES

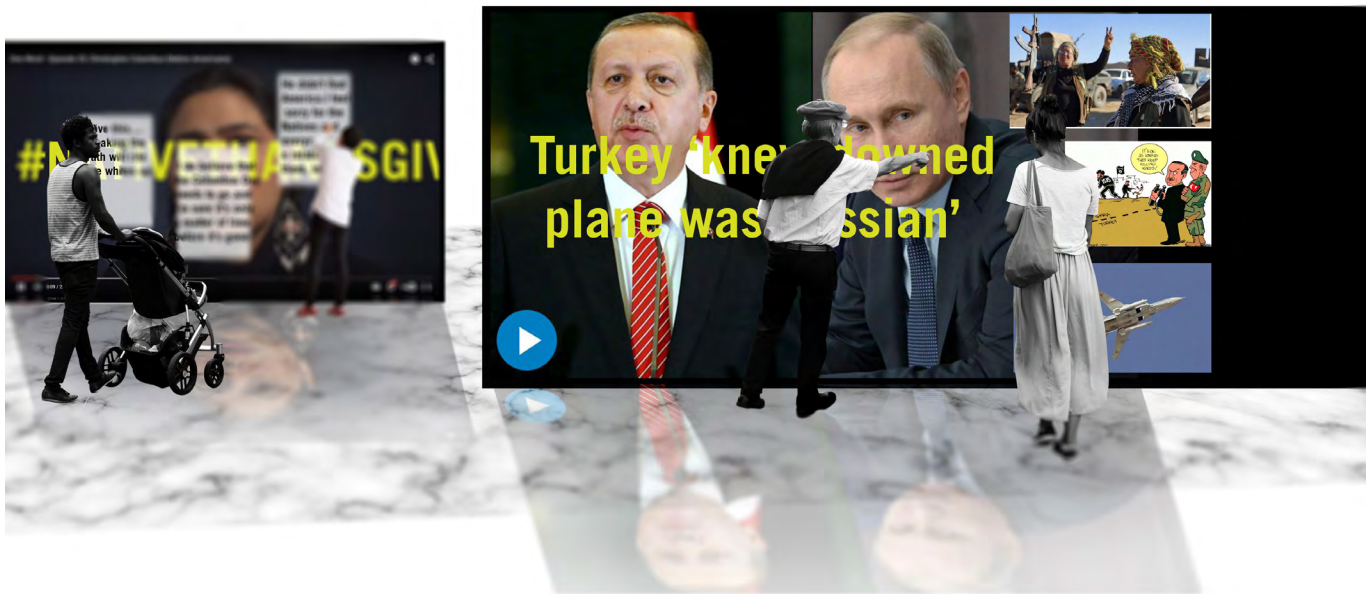


Fig.103 NPW Event Starting

The NPW brings attention to a breaking new story that begins to trend. Bringing awareness to the public passing by

Source: Image by Author

SPACEBOOK: NETWORKED PUBLIC PLACES

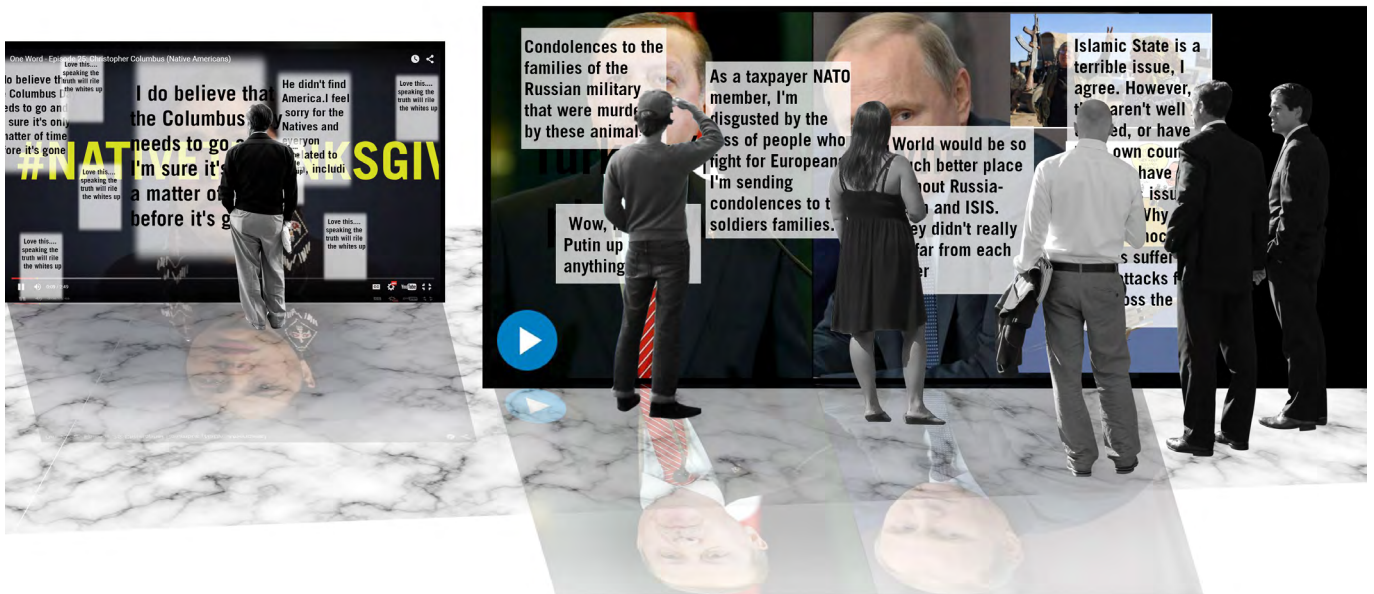


Fig.104 NPW Event Developing

Users comment on the media that are displayed. Publics begin to assemble around issues.

Source: Image by Author



Fig.106 NPW Event Assembly

For important issues, publics assemble in large groups around the urban screens, holding spontaneous discussions or protests.

Source: Image by Author

5.4 NETWORKED PUBLIC COMMONS (NPC)

The Commons is a place in society where cultural and natural resources are accessible to all. The NPC looks to create a new typology of open civic forums in the Personalized Metropolis; it looks to create a space that is collectively shared and personalized. The NPC creates collectively personalized space by replicating many aspects of social networks; however, it removes the network owner's gates of control. Instead of being controlled, the network is embedded with and collectively filled by the occupants of space.

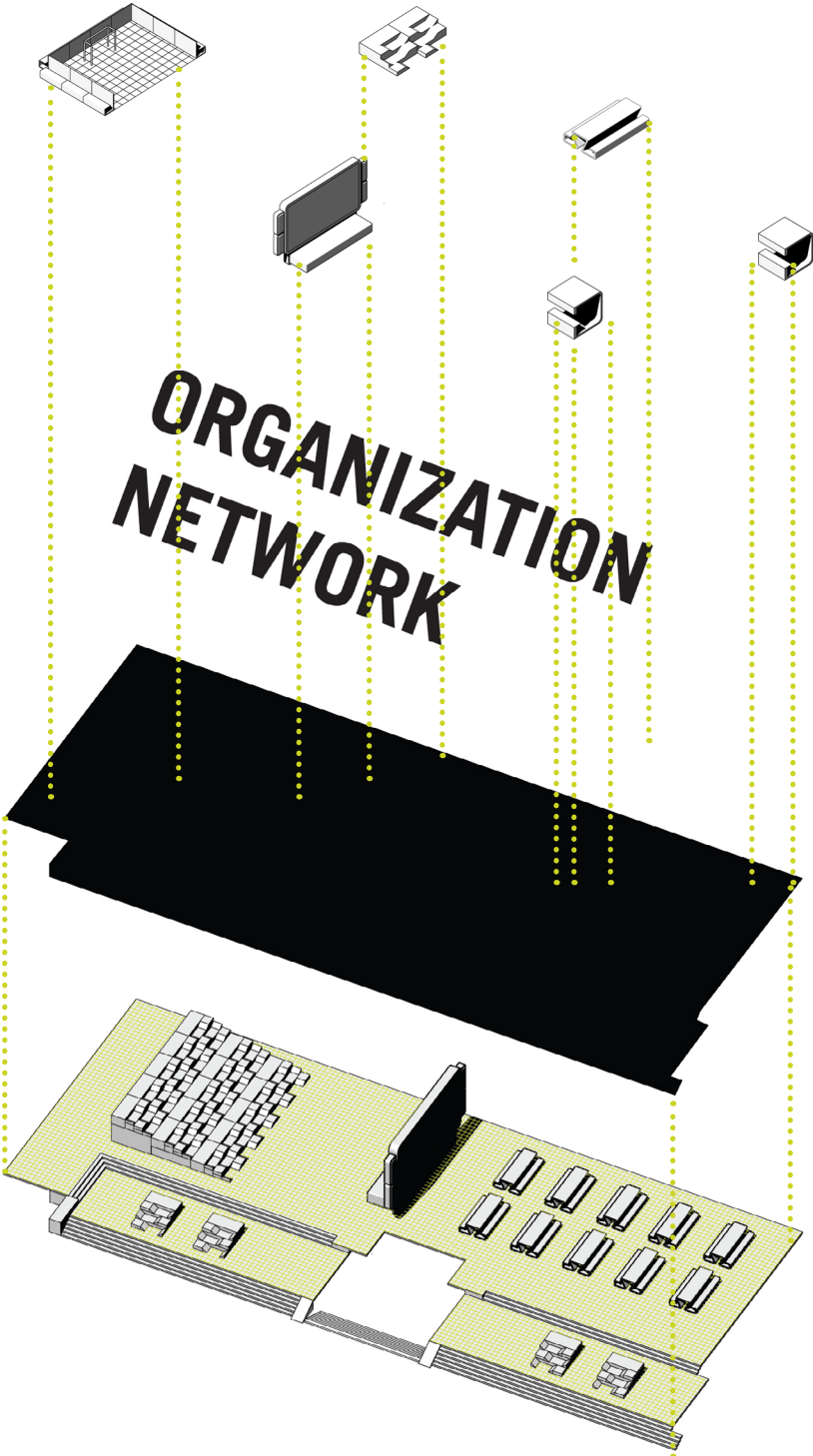
The NPC is a large, open, civic space located on Adelaide Street, just west of Bay Street in Toronto's financial district. The commons is a flexible civic space, used by citizens to engage in a variety of activities, such as issues of politics and protest, farmers markets, and performances. It is the openness and flexibility of plazas that have traditionally allow them to play such a crucial role in civic life; it isn't necessarily the architecture or landscape of the spaces, but the events and programming that activate civic plazas. Likewise, the NPC augments the flexible physical space with an

equally flexible network. A network that allows events to be created, shared, and discussed within a broad community while also allowing the users agency in the programming and configuration of their civic square.

The NPC is formed of a simple network of three parts: modular components, mobile computing, and distribution. The components are a simple set of multi-purpose seating modules that can be configured for small groups watching an event, a movie, a speech. The modules embrace multiple scales of interaction, allowing a small group of two to four people to sit facing multiple directions, or large groups of 100+ people to form a public around an event.

Based on needs, components can be re-distributed across a network of sites. The NPC is managed through an app and website that allows users to suggest and vote on programming, giving people agency in their public spaces.

Fig.107 Diagram representing the composition of the NPC



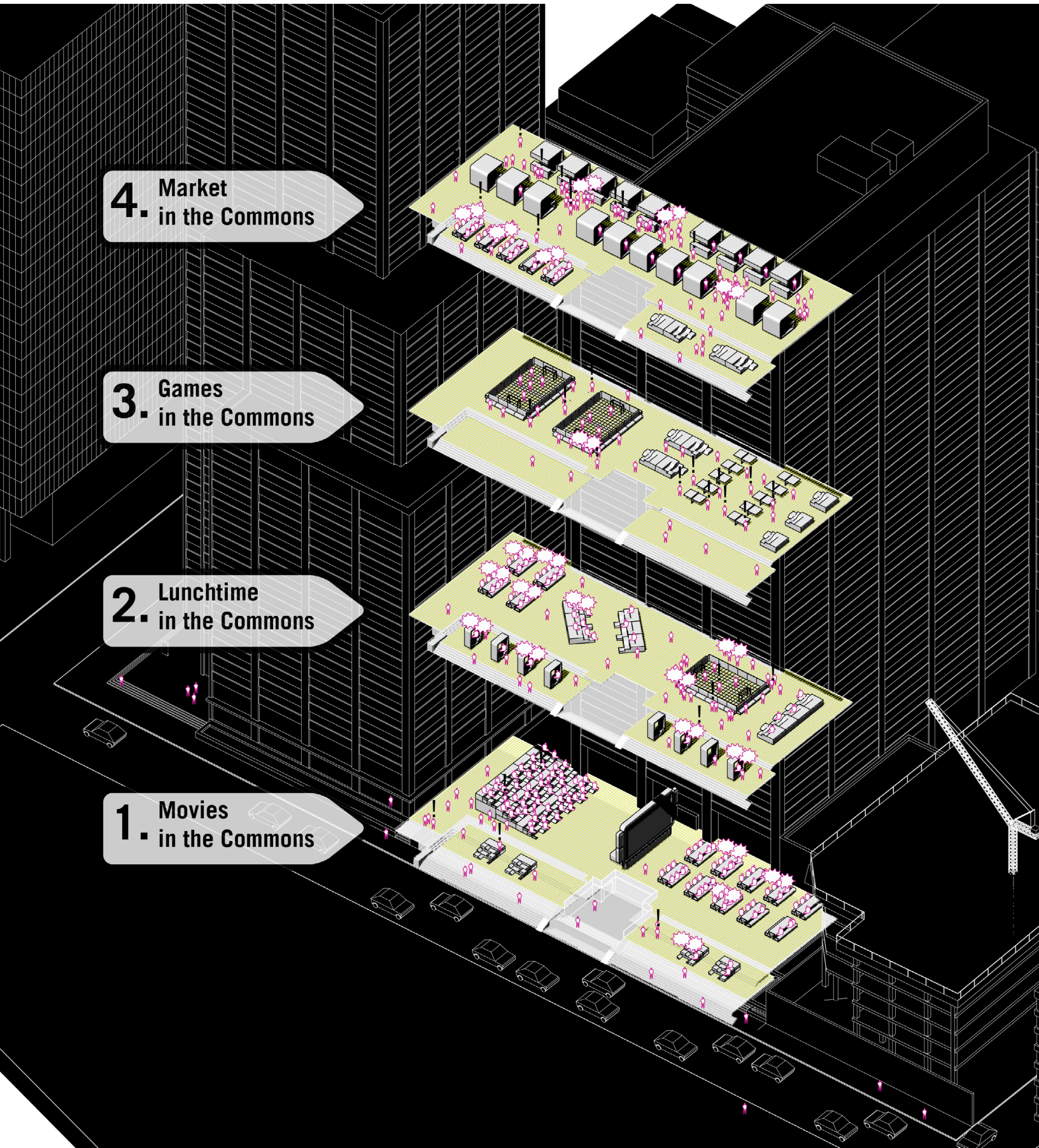
NETWORKED PUBLIC PLACES

4 Market
in the Commons

3 Games
in the Commons

2 Lunchtime
in the Commons

1 Movies
in the Commons



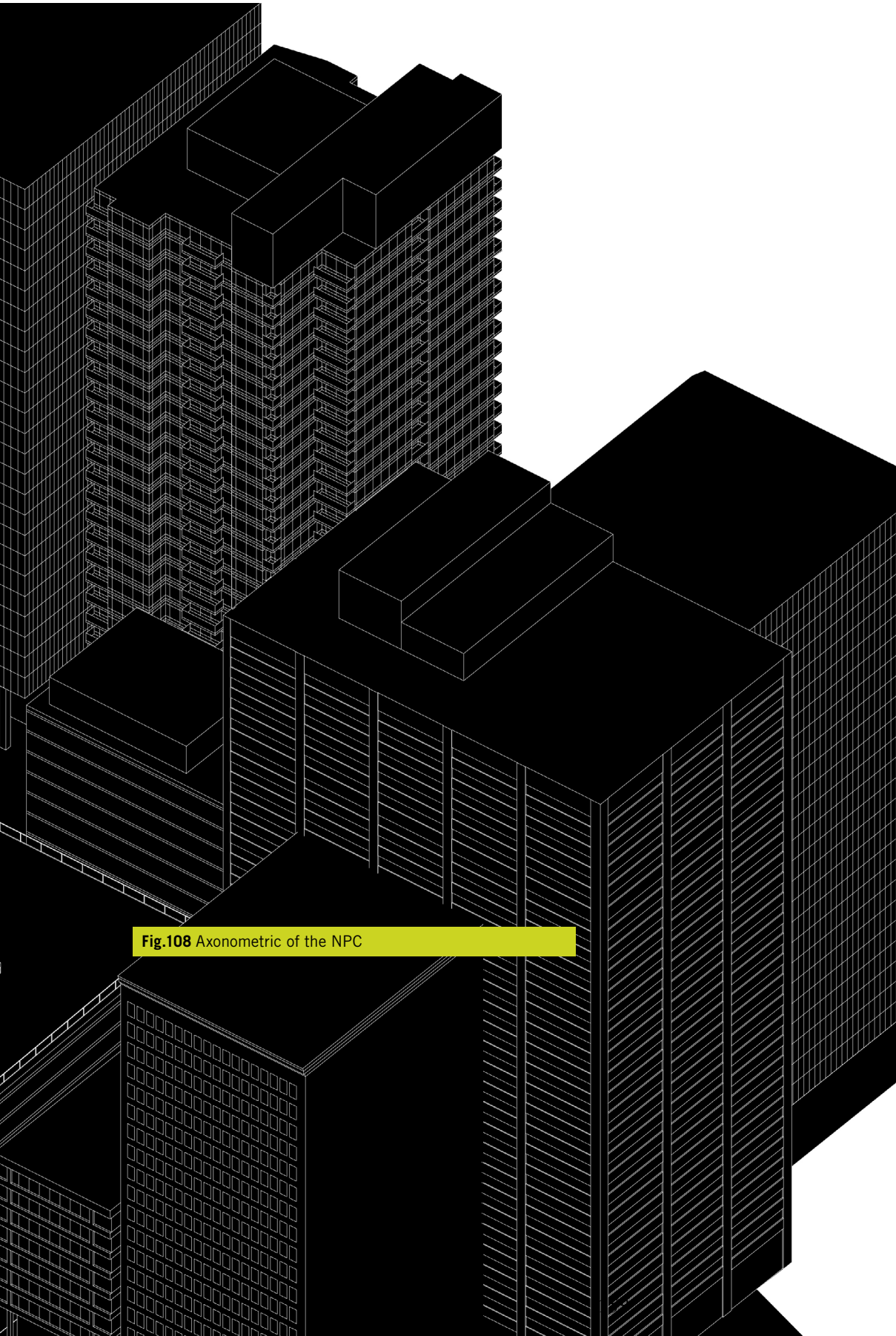
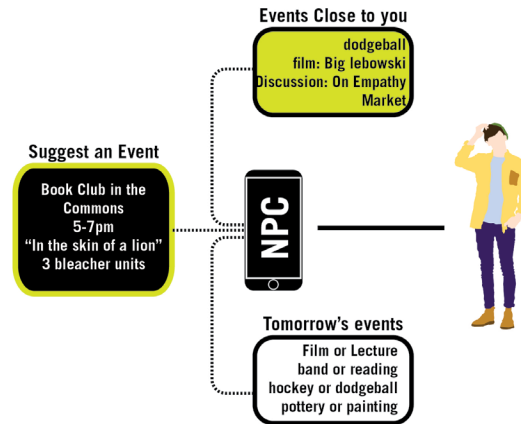


Fig.108 Axonometric of the NPC

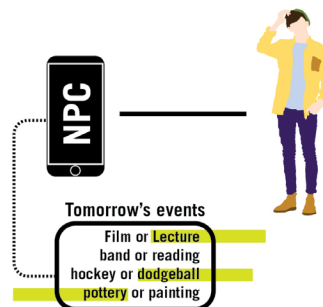
NETWORKED PUBLIC PLACES



1

Fig.109 NPC Use Diagram Stage 1

The user accessed the NPC through either a website or an app. The site gives the user the choice to either search for what is happening in local POPS, vote on an event, or suggest an activity for a POPS for a later time.



2

Fig.110 NPC Use Diagram Stage 2

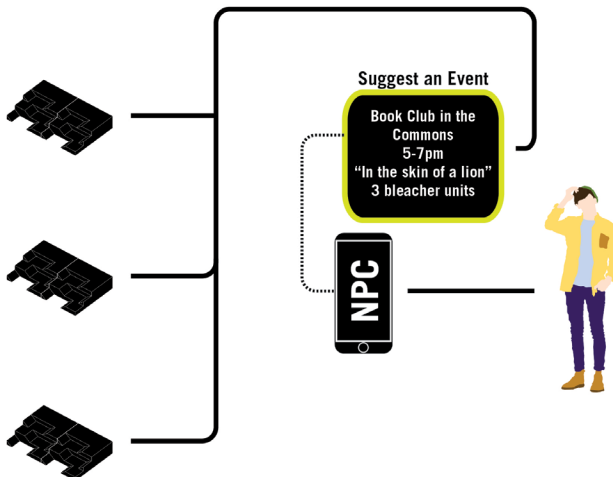
The user can choose from a series of events, and votes on things that might be of interest to him.



3

Fig.111 NPC Use Diagram Stage 3

The user suggests an event for a pop, along with a time, location, theme and number of component pieces that the event would need.

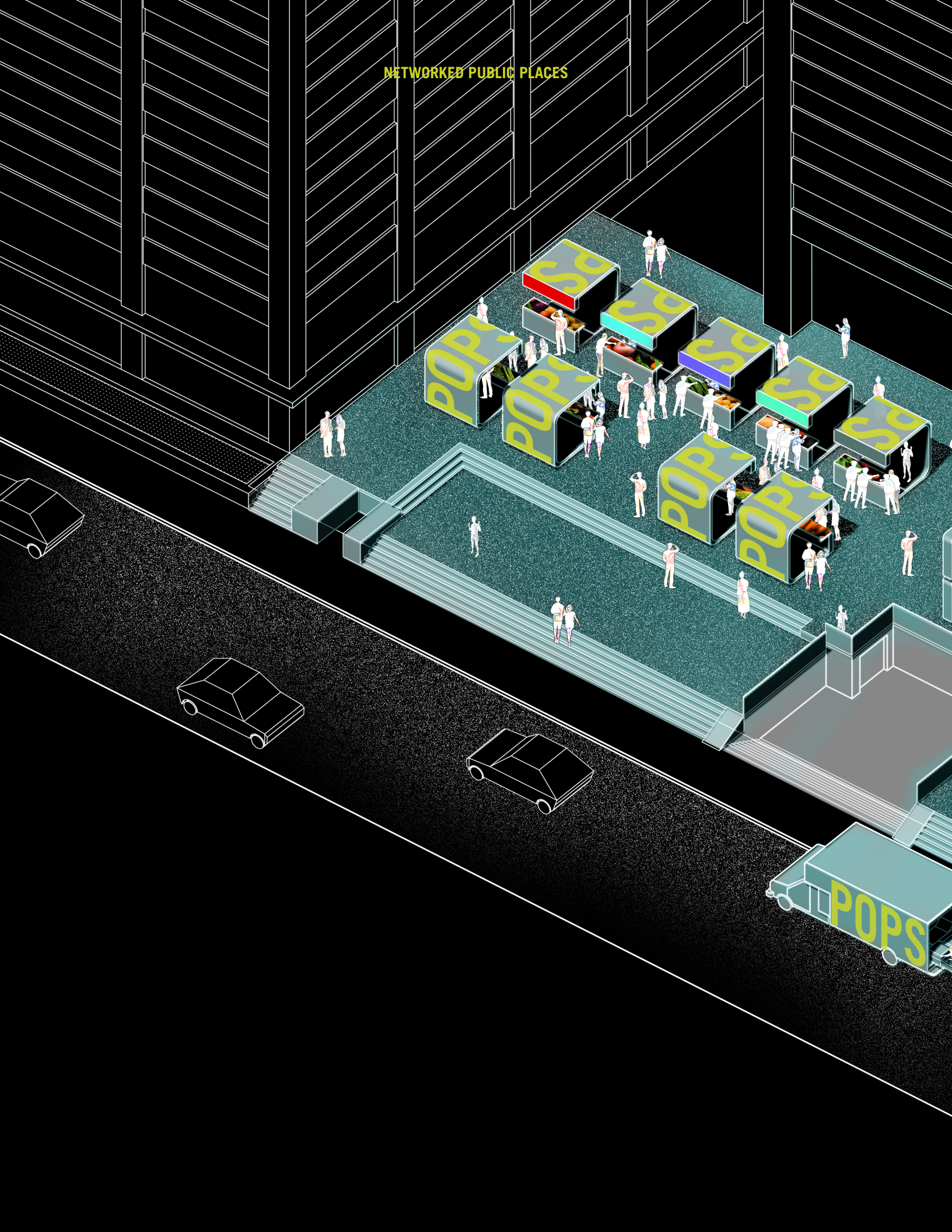


4

Fig.112 NPC Use Diagram Stage 4

If the event goes through, the website manages the components that are needed, coordinating the movement and shuffling on items between sites.

NETWORKED PUBLIC PLACES



SPACEBOOK: NETWORKED PUBLIC PLACES

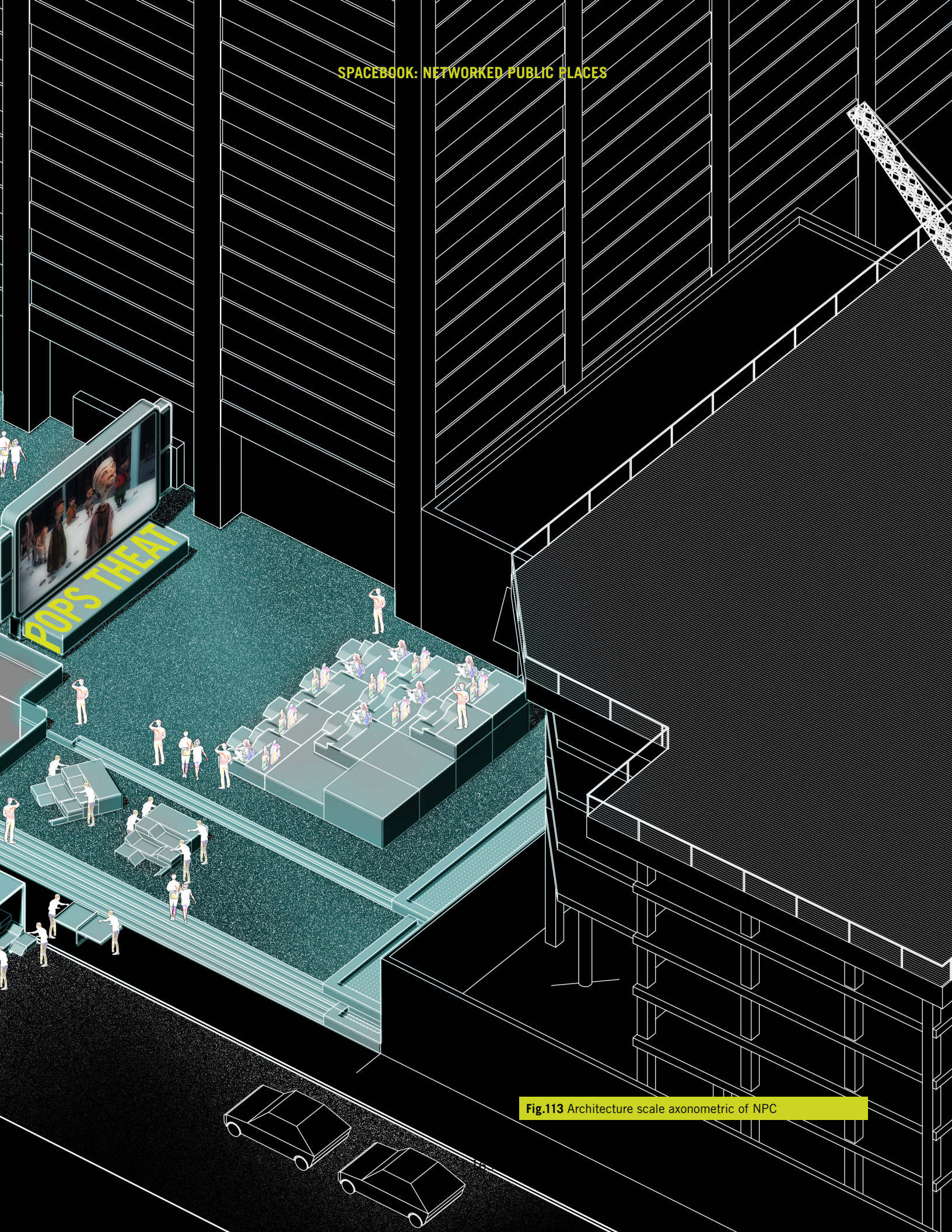


Fig.113 Architecture scale axonometric of NPC

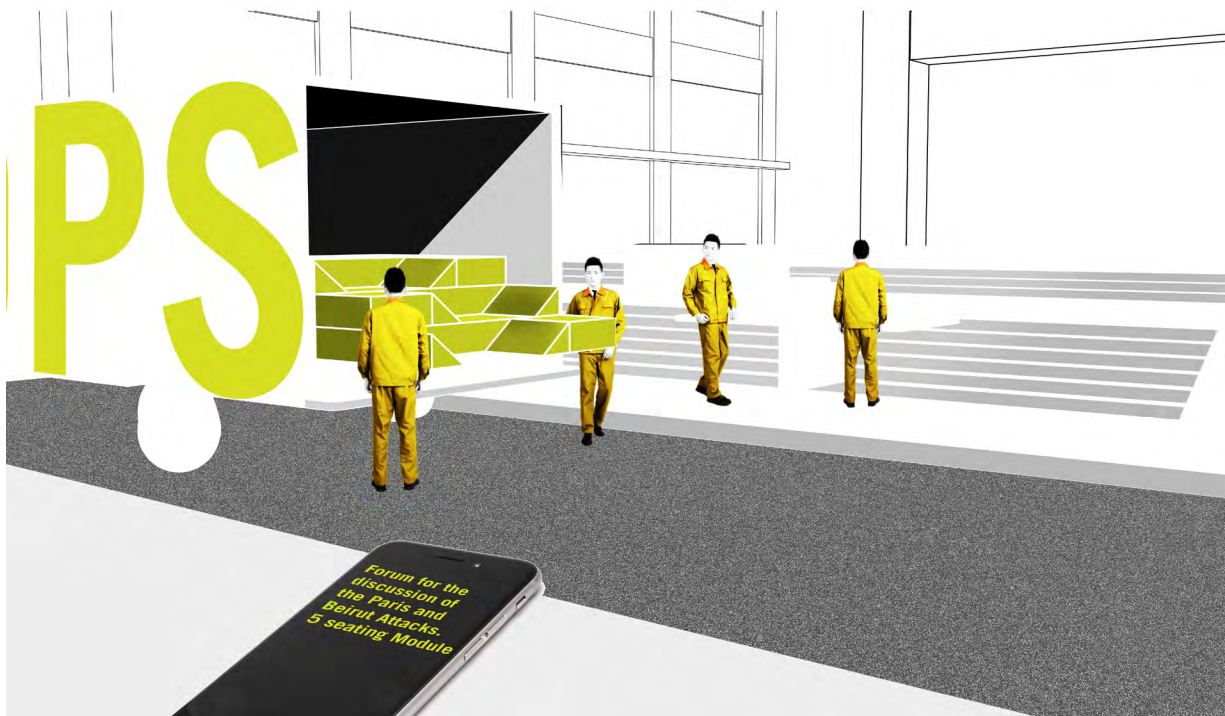


Fig.114 Transformation of the NPC 1

The NPC redistributes components based on the demands on the public makes.

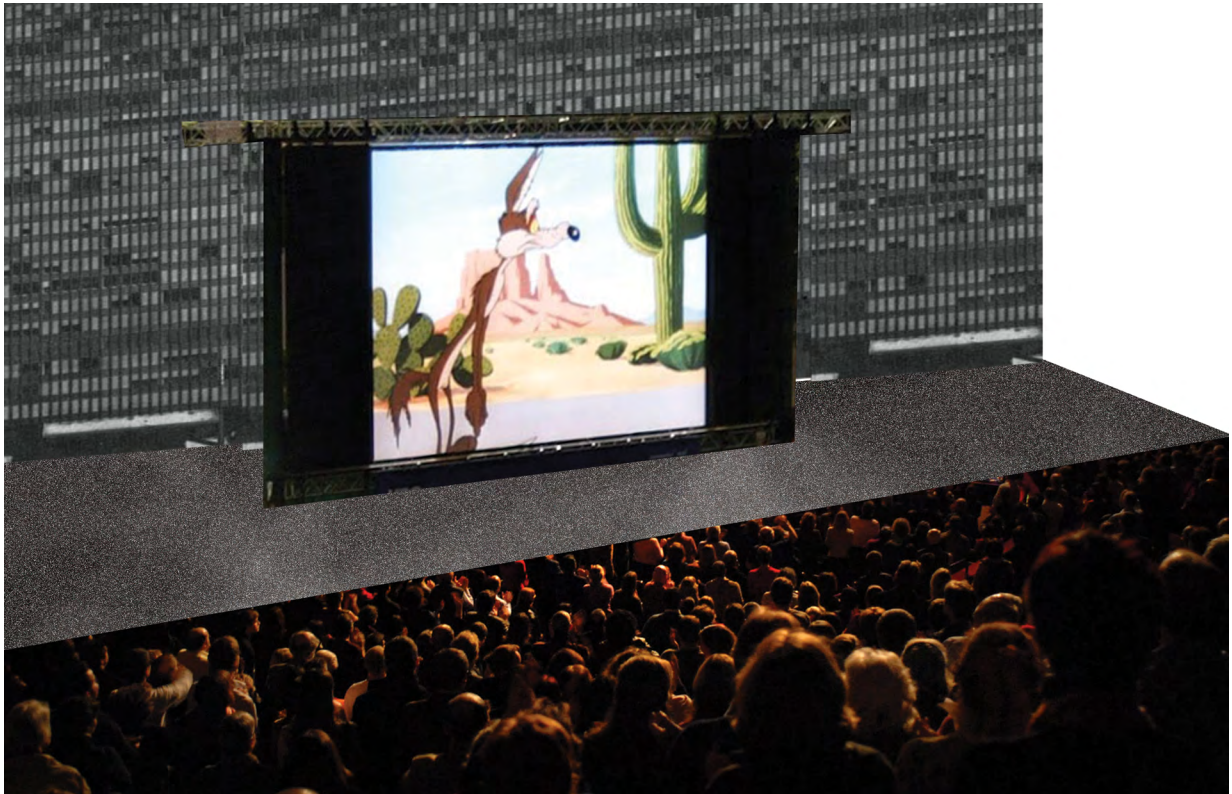


Fig.115 Transformation of the NPC 2

The NPC is an extremely flexible space that can transform its configuration for a variety of different events. The public has the power to transform the space.

NETWORKED PUBLIC PLACES



Fig.116 Transformation of the NPC 3

Citizens can suggest organized games in the NPC as well, providing an open platform for participation.

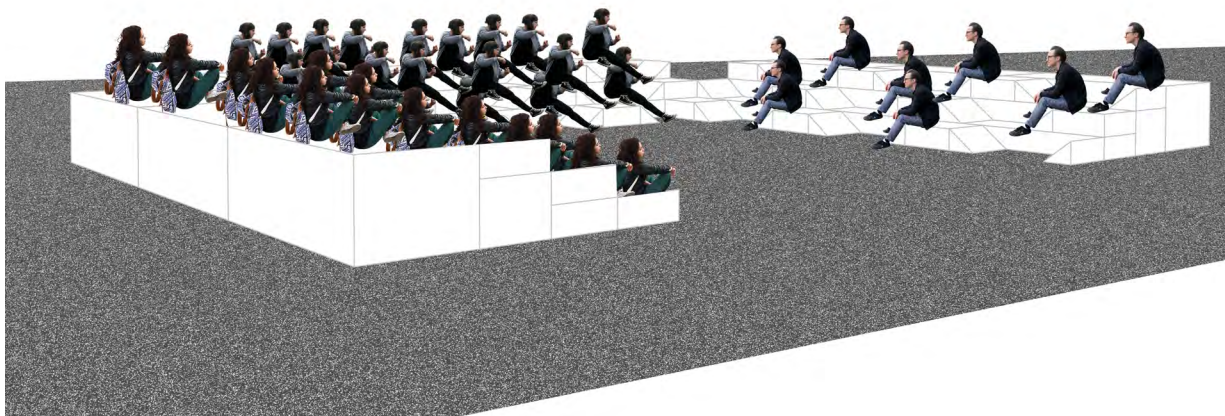


Fig.117 Transformation of the NPC 4

The NPC allows people to gather freely and discuss issues with other citizens. It provides a venue that is outside of the interests of the state and private institutions. The components fade into the background, while events and civic life unfold.

5.6 CONCLUSION

The question Kazys Varnelis asks at the end of *Networked Publics* seems like an appropriate point of reflection. He asks, "whether network culture plants the seeds of greater democratic participation and deliberation, or whether it will only be used to mobilize already like-minded individuals?" This question remains open, but patterns of self-segregation have certainly been seen. Online social media platforms have proven to be incredible generators of communication, interaction, and discourse: it is their levels of control and access that keep them from shaping the collective public sphere. Instead, social medias create a new series of controlled discursive spaces—or *controlled micropublics*.

In *the personalized metropolis*, these spaces do not connect directly enough with the physical public spaces of the city. Currently, the city feeds online networks with information in the forms of locations, events, and connections. The networked activity does not, however, feed back into the discourse of the public spaces of streets, cafés, squares, and malls. Instead, our social networks give us a false sense of connectivity to public discourse. It allows us to express our opinion in a forum that we think of as public, but

is actually comprised of our family, friends, and acquaintances. This discourse allows us to express ourselves in a situation where people are inclined to agree with, or at least 'like' what they read. These online forums are not allowing people to assemble around their differences; instead they are allowing people to control the audience that responds to their opinions.

Varnelis suggests that, as inhabitants of our networked publics, it is our role to understand the condition we are in so we can produce positive change. It is for us to determine what is good about networked culture, as well as what is bad: otherwise "we are doomed only to dissipate into the network."¹⁰⁹ As designers, it is our role to be proactive in the analysis of and reaction to the contemporary condition of networked culture—we should be at the forefront of the discussion. Design has the agency to turn analysis and criticism into a new public sphere. A public sphere that is responsive to contemporary conditions, and, rather than increased privatization and segregation, plants greater seeds of democratic participation and deliberation. As a reaction to Varnelis' previously mentioned provocation regarding inhabitants not dissipating into the network, but coming together and producing positive change, *Spacebook* proposed a set of *Networked Public Places* (NPPs).

The NPPs of *Spacebook* were never an attempt to definitively reconfigure the public spaces of the city. Instead, *Spacebook* was intended as a proposition to produce a dialogue on the ways that social networks and physical public spaces of cities can come together to produce exciting results. *Spacebook* outlined six critical criteria as conditions for design while considering public places in the personalized metropolis. The spaces should activate both physical and virtual publics, bring people together, create a place network, give increased agency to their users, allow people to assemble around an issue, and allow the digital to fill the physical with information and discourse.

109 Kazys Varnelis, *Networked Publics*, 160

Each of the different interventions were successful at addressing the various components required to create a public sphere that brings people of difference together.

NETWORKED PUBLIC GARDEN (NPG)

There is something both deeply beautiful and troubling about the NPG. The conversion of network data, such as Soundcloud and Youtube clips to create a shared experience is an intriguing one. The space uses sentient technologies to allow strangers to come together as it creates a climatic and experiential condition only meaningfully understood by the specific strangers. As well as bringing people together, the NPG succeeds in allowing the digital networks to fill and shape the physical environment. The troubling part is the constant (and invisible) mining of data from the users' networks. In this system, the users have no agency in what is selected—or even if something is selected—the network takes the driver's seat. This discussion is important when designing using online networks: to what extent should the network make decisions? What is lost and what is gained by taking decision-making power away from the individual? In the case of the NPG, the provocation of spontaneous, shared experiences increases the space's ability to bring people together; however, individual agency is sacrificed to the power of the machine.

The NPG may be better suited as a temporary installation, rather than a permanent one. The constant networked connection may become tiring when all you want to do is sit and read a book in your local park. The NPG begs the question, *how much connection, is too much connection?*

NETWORKED PUBLIC WALKWAY (NPW)

The NPW is an experiment in how to bring the personalized access and discourse in controlled micropublic networks into public space. The NPW is successful in converting the point of access for discourse from a private screen to a public one.

Through this conversion, users gain the chance to build something collectively, and assemble with other citizens around an issue. However, questions of temporality remain: how long should comments and articles stay present? Another questions is whether the urban screen component is dynamic enough of a medium to facilitate public discourse. Typing-based interaction may lack the spontaneity required to allow people to come to a collective resolution.

NETWORKED PUBLIC COMMONS (NPC)

The NPC has a different relationship with the network. The two previous typologies had the network embedded within components. The NPC, instead, uses the network to configure the components themselves. The NPC gives an enormous amount of agency and power to citizens; it allows users to configure sites, suggest programming, and facilitate events. The NPC successfully subverts the over-regulation of public space, but allows citizens to collectively decide on how their public space should be used.

The NPC also produces many questions. Through reliance on collective approval, is the sense of individual expression lost? Is the space now being collectively regulated to a point where spontaneity and dynamism is lost? If so, how do you regulate when programming can and can't happen, and does this form of regulation contradict the agency the NPC previously claimed to encourage?

Each of the three NPP typologies that were explored in depth certainly creates many new issues, but they also provide hope. The point of this thesis wasn't to conclusively determine what the public sphere requires, but rather to offer a set of components that address issues that currently exist in the personalized metropolis. *Spacebook: Networked Public Places in the Personalized Metropolis* offers three ways to locate the network within physical public spaces of the city—*Spacebook* attempts to facilitate increased public discourse, interaction, and participation.

BIBLIOGRAPHY

CRITICAL

- Arendt, Hannah. *The Human Condition*. 2nd ed. ed. Chicago : University of Chicago Press, 1998.
- Castells, Manuel. *The Rise of the Network Society*. 2nd ed., with a new pref. ed. Chichester, West Sussex ; Malden, MA : Wiley-Blackwell, 2010.
- Fard, Ali and Meshkani, Taraneh, "Geographies of Information." In *New Geographies 007: Geographies of Information*, edited by Ali Fard and Taraneh Meshkani, 5-11. Cambridge, Mass: Harvard University Press, 2015.
- Fard, Ali and Meshkani, Taraneh, ed. *New Geographies 007: Geographies of Information*. Cambridge, Mass: Harvard University Press, 2015.
- Frei, Hans and Böhlen, Marc. *Situated Technologies 6: Micropublicplaces*. Edited by Omar Khan, Trebor Scholz, and Mark Shepard. New York: The Architectural League of New York, 2010. Accessed November 23, 2015. <http://www.situatedtechnologies.net/files/ST6-MicroPublicPlaces.pdf>
- Friedberg, Anne, and Kazys Varnelis, "Place." In *Networked Publics*, edited by Kayzys Varnelis, 15-42. Cambridge, Mass: MIT Press, 2008
- Gehl, Jan. *Cities for People*, edited by ebrary, Inc. Washington, D.C. : Island Press, 2010.
- Graham, Stephen. *The Cybercities Reader*. London ; New York: Routledge, 2004.
- Habermas, Jürgen. *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*. Translated by Thomas Burger and Frederick Lawrence. Cambridge, Mass: MIT Press, 1991.
- Kayden, Jerold S. *Privately Owned Public Space : The New York City Experience*, edited by New York (N.Y.). Department of City Planning, Municipal Art Society of New York. New York : John Wiley, 2000.
- Latour, Bruno "From Realpolitik to Dingpolitik: an Introduction." In *Making things Public: Atmospheres of Democracy*. Edited by Bruno Latour and Peter Weibel, 14-41. Cambridge, Mass. : MIT Press ; Karlsruhe, Germany : ZKM/Center for Art and Media in Karlsruhe, 2005.
- Lefavre, Liane, Ingeborg de Roode, Rudi Fuchs, and Stedelijk Museum Amsterdam (Netherlands). *Aldo Van Eyck : The Playgrounds and the City*. Amsterdam : Stedelijk Museum ; Rotterdam : NAI Publishers, 2002.
- Low, Setha M., "The Erosion of Public Space and the Public Realm: Paranoia, surveillance and privatization in New York City." *City & Society* Vol. 18, Issue 1 (2006): 43-49
- Mayer-Schönberger, Viktor, and Cukier, Kenneth. *Big Data: A Revolution that Will Transform how we Live, Work, and Think*. New York: Houghton Mifflin Harcourt, 2013
- Moss, Eric Owen, Jeffrey Kipnis, Joe Day, and Julianna Morais. *Sessions : George Yu, Marcelo Spina, Marta Malé-Alemay, Benjamin H. Bratton, Hernan Diaz-Alonso*. Los Angeles, Calif. : Southern California Institute of Architecture Press, 2004.
- Offenhuber, Dietmar, Katja Schechtner, Architekturforum Oberösterreich, of Technology Austrian Institute, and Ars Electronica (2011 : Linz, Austria). *Inscribing a Square : Urban Data as Public Space*. Wien, Austria ; New York: Springer Verlag, 2012.
- Picon, Antoine. *Digital Culture in Architecture : An Introduction for the Design Professions*. Basel : Birkhäuser, 2010.
- Shepard, Mark. *Sentient City : Ubiquitous Computing, Architecture, and the Future of Urban Space*. New York City : Architectural League of New York ; Cambridge, MA : MIT Press distributor, 2011.

SPACEBOOK: NETWORKED PUBLIC PLACES

- Townsend, Anthony M. *Smart Cities : Big Data, Civic Hackers, and the Quest for a New Utopia*. First edition. ed. New York : W.W. Norton & Company, Inc, 2013.
- Turkle, Sherry. *Alone Together Why we Expect More from Technology and Less from each Other*, edited by ebrary, Inc. New York : Basic Books, 2011.
- Turner, Fred. *From Counterculture to Cyberculture : Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism*. Chicago: University of Chicago Press, 2006.
- Varnelis, Kazys and Annenberg Center for Communication (University of,Southern California. *Networked Publics*. Cambridge, Mass. : MIT Press, 2008.
- Warner, Michael. *Publics and Counterpublics*. New York : Zone Books ; Cambridge, Mass. : Distributed by MIT Press, 2005.

OF NOTE

- Balmori, Diana. 2011. *Groundwork : Between Landscape and Architecture*, edited by Joel Sanders. 1st ed. ed. New York: Monacelli Press.
- Barnett, Clive. "Neither Poison Nor Cure: Space, scale and public life in media theory." *MediaSpace Place, Scale, and Culture in a Media Age*. Edited by Nick Couldry and Anna McCarthy, 58-74. London ; New York: Routledge, 2004.
- Beamish, Anne. "The City in Cyberspace" in *The Cybercities Reader*, edited by Stephen Graham. 273-278. London ; New York: Routledge, 2004.
- Berger, Alan. *Drosscape : Wasting Land in Urban America*. 1st ed. ed. New York: Princeton Architectural Press, 2006.
- Bounegru, Liliana. "Interactive Media Artworks for Public Space: The Potential of Art to Influence Consciousness and Behaviour in Relation to Public Spaces." in *Urban Screens Reader*. Edited by Scott McQuire, Meredith Martin and Sabine Niederer, 199-215. Amsterdam: Institute of Network Cultures, 2009
- Broeckmann, Andreas. "Public Sphere and Network Interfaces." In *The Cybercities Reader*. Edited by Stephen Graham, 378-383. London ; New York: Routledge, 2004.
- Bryant Park Corporation. "Bryant Park: Our Mission" Accessed November 24, 2015. <http://www.bryantpark.org/about-us/mission.html>
- Bull, Michael. "To Each Their Own Bubble: Mobile spaces of sound in the city." *MediaSpace Place, Scale, and Culture in a Media Age*. Edited by Nick Couldry and Anna McCarthy, 275-299. London ; New York: Routledge, 2004.
- Castells, Manuel. "Urbanism in the Information Age," In *The Cybercities Reader*. Edited by Stephen Graham, 82-93. London ; New York: Routledge, 2004.
- Carr, Stephen. *Public Space*. Cambridge: Cambridge : Cambridge University Press, 1992.
- City of Toronto. "Privately-Owned Publicly Accessible Spaces: Draft Design Guidelines" Last modified June 19, 2014. http://www1.toronto.ca/City%20of%20Toronto/City%20Planning/Urban%20Design/Files/pdf/P/POPS_guidelines_Final_140529.pdf
- Coleman, Beth. *Hello Avatar : Rise of the Networked Generation*, edited by ebrary, Inc,distributor: Cambridge, Mass. : MIT Press, 2011.
- Couldry, Nick and Anna McCarthy. *MediaSpace Place, Scale, and Culture in a Media Age*. London ; New York: Routledge, 2004.

BIBLIOGRAPHY

- Ito, Mizuko. Introduction to *Networked Publics*, 1-14. Cambridge, Mass. : MIT Press, 2008.
- McQuire, Scott, Meredith Martin, Sabine Niederer, ed. *Urban Screens Reader*. Amsterdam: Insitute of Network Cultures, 2009
- Nissenbaum, Helen, and Varnelis, Kazys. *Situated Technologies 9: Modulated Cities: Networked Spaces, Reconstituted Subjects*. Edited by Omar Khan, Trebor Scholz, and Mark Shepard. New York: The Architectural League of New York, 2010. Accessed November 23, 2015. http://www.situatedtechnologies.net/files/ST9_ModulatedCities_web.pdf
- Seibel, Walter and Wehrheim, Jan. "Security and the urban public sphere." *German Policy Studies* 3, no.1 (2006): 19-46
- Turner, Fred. "Where Counterculture Met the New Economy." In *Technology and Culture - Technol Culture* 46 (2005): 485 - 512
- van Dijk, José. *The Culture of Connectivity: A Critical history of Social Media*. New York: Oxford University Press, 2013

OF INTEREST

- Advanced, Architecture Contest. *City Sense : Shaping our Environment with Real-Time Data : 4th Advanced Architecture Contest*, edited by Institut d'Arquitectura Avançada de Catalunya, organizer of meeting, Lucas Cappelli and Institut d'Arquitectura Avançada de Catalunya; Barcelona : Actar, 2012.
- Burke, Anthony and Therese Tierney. *Network Practices : New Strategies in Architecture and Design*. 1st ed. ed. New York : Princeton Architectural Press, 2007.
- Dehaene, Michiel and Lieven de Caeter. *Heterotopia and the City Public Space in a Postcivil Society*. London ; New York : Routledge, 2008.
- Easterling, Keller. *Extrastatecraft : The Power of Infrastructure Space*. London ; Brooklyn, NY : Verso, 2014
- Graham, Stephen. *Splintering Urbanism Networked Infrastructures, Technological Mobilities and the Urban Condition*, edited by Marvin, Simon. London ; New York : Routledge, 2001.
- Gualart, Vicente. *The Self-Sufficient City*. New York : Actar Publishers, 2014.
- Kwinter, Sanford. *Architectures of Time Toward a Theory of the Event in Modernist Culture*. London: Cambridge, MA : MIT Press, 2001.
- Maas, Winy and (Firm) MVRDV. *Metacity Datatown*. Rotterdam: MVRDV/010 Publishers, 1999.
- Mandiberg, Michael and Learned Societies American Council of. *The Social Media Reader*. New York : New York University Press, 2012.
- McCullough, Malcolm. *Digital Ground : Architecture, Pervasive Computing, and Environmental Knowing*. Cambridge, Mass. : MIT Press, 2004.
- Mitchell, William J. (William John). *Me++ : The Cyborg Self and the Networked City*. Cambridge, Mass. ; London : MIT Press, 2003.
- Lally, Sean. *Air from Other Planets : A Brief History of Architecture to Come*. Zürich : Lars Müller Publishers, 2014.
- Latour, Bruno and Peter Weibel. *Making Things Public : Atmospheres of Democracy*. Cambridge, Mass. : MIT Press ; Karlsruhe, Germany : ZKM/Center for Art and Media in Karlsruhe, 2005.
- Sennett, Richard. *The Uses of Disorder : Personal Identity and City Life*. 1st ed. ed. New York: New York : Knopf, 1970.
- Virilio, Paul. *Open Sky*. London ; New York : Verso, 2003.