Technocarpet: Supporting a Culture of Congestion

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Technocarpet
Supporting a Culture of Congestion
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A Thesis Submitted in Partial Fulfillment of the Requirements of the B. Arch Program at the School of Architecture at Syracuse University

© William Andrew Weigand
Candidate for B. Arch. Degree
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The TechnoCarpet is a public space sited in a future of resource scarcity, climate disruption, and urbanization. It provides support facilities and cultural amenities necessary to sustain super dense urban populations. It establishes an internal frontier for the city as a means to provoke density, by creating an escape from it. The TechnoCarpet is a model for parks in the 21st century.

Thank you to all the people who helped me this year; especially my friends and advisors. Also thank you to the Crown Award and Honors Program for supporting the field research contained in this book. Special thanks to Lina Bondarenko, Mario Mohan, and Steve Nowak for model assistance.
The starting point for the project is the notion that proximity is essential element of urban life, bringing together support structures for both our civil needs (water, energy, waste, sanitation) as well as our civic desires (arts, recreation, culture, food). Future public spaces are an opportunity to combine our basic needs with cultural production. To address urbanism, I carefully reread Delirious New York, Rem Koolhaas's seminal 1978 treatise on Manhattan's unique form of urbanism. This led me to examine the “Carpet,” or Central Park, as an important element in the city, as intrinsic to its development as the famous grid, elevator, or structural steel.

Examining parks in this infrastructural manner, I took time to study the emerging discourse of landscape urbanism and focused my thesis prep research on a series of projects which address the intersection of infrastructure and public space. With funding from a Crown Award, I conducted hands-on research, traveling to parks in Seattle, Portland, Madrid, and Barcelona which acted to remedy issues that resulted from the lack of integration of civil infrastructure in the city, or were planned in conjunction with new infrastructural projects. These, among other precedents, formed a body of research on an overlooked area of landscape urbanism: that of the city core.

To test this contention and apply my research, I selected a site in Sunnyside, Queens, New York, an existing rail yard, a void in one of America's largest and densest cities. The area is primed for future growth, and lacks park space for its residents. The park includes four major systems aimed at supporting a burgeoning population: electricity storage, trash processing and recycling, waste water treatment, and an inter-modal station, as well as recreation and cultural programs. Designed for a phased implementation, the park would develop through time, and is meant to be flexible enough to accommodate both a growing population with its infrastructural components as well as changing cultural desires.

As a means to support the growth of cities, the strategy employed by the Technocarpet can be applied in multiple cities around the world: rail yards are a ubiquitous part of most urban environments, and their unused airspace could be leveraged to create new centers for growth within cities.
How to Approach This Book

The book is broken into six sections; Argument, Learning from Parks, Traveling to Parks, Application, Support, and Reference. And can be read with several goals in mind:

1 - To understand the full extents of my thesis research and project, read all sections.

2 - As a presentation for my specific project, read the Argument and Application sections alone.

3 - To learn about Landscape Urbanism and infrastructural public space, read Learning from Parks, Travelling to Parks, and the reference section.

**Argument** explains my position on density, explains the foundation of the “Carpet,” and formed an agenda for the research and design work to follow.

**Learning from Parks** examines a progression of notions about landscape, and sets a position relative to the discourse of Landscape Urbanism.

**Travelling to Parks** is a vehicle to share documentation of the field research conducted in Seattle, Portland, Vancouver, Madrid, Barcelona, and Toledo.

**Application** explains the specific scenario that I have chosen to apply the idea of the Technocarpet.

**Support** contains a series of essays containing my theoretical viewpoints on several issues relevant to the thesis.

**Reference** holds a catalog of projects which form a context for the project as well as an annotated bibliography.
## Contents

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Technocarpet, n.
A public space characterized by a combination of support infrastructure and cultural amenities necessary to sustain superdense urban populations and lifestyle.
What if we simply declare that there is no crisis - redefine our relationship with the city not as its makers but as its mere subjects, as its supporters?

Rem Koolhaas, “Whatever Happened to Urbanism”, SMLXL
Argument

How can we support super dense urban life?
Future

This exists within the context of a preemptive assertion of a near future situation. It projects global conditions which may result from business-as-usual behavior and policy. Without resorting to a distopian outlook, it is a future in which, faced with bio-climatic SNAFU*, humanity overcomes its political inefficacies to make necessary changes occur to secure survival...
The continued rapid growth of the global economies and population will exacerbate our tenuous situation of resource scarcity. Space, like water, air, food, and energy, is a commodity: in a situation of rarefied resources, we will be impelled to push space to its limits to maintain our lifestyle. We alter the earth in a race of extraction, melding our environment to suit our desires: a loosing battle with the limits to growth.
Presently, we go to enormous lengths to access resources necessary to maintain our lifestyle. To change this we need to reconsider our settlement patterns, resource use, and way of life. In a near future, we will need to reclaim our suburban spaces, not to live in, but for their resources: for agriculture, energy production, and renewable material harvest, as climate disruption and a burgeoning population strain our ability to support ourselves.

Obituary

Presently, we go to enormous lengths to access resources necessary to maintain our lifestyle. To change this we need to reconsider our settlement patterns, resource use, and way of life. In a near future, we will need to reclaim our suburban spaces, not to live in, but for their resources: for agriculture, energy production, and renewable material harvest, as climate disruption and a burgeoning population strain our ability to support ourselves.
In reaction to conditions of scarcity, people move to cities. Their attraction lies in efficiency: cities enable reduced resource consumption and in the scarce reality of our near future will the only economically viable way of life - to say nothing of their lifestyle benefits and cultural amenities.
Proximity

To support the influx of new residents to cities, we need to rethink our infrastructure. It must be broadened from solely civil (transportation, waste water, streets, energy...) to include civic (parks, recreation, schools, institutions, services, contemplation...); dense cities require a broader scope of infrastructure for the city to function. Currently, the two are rarely planned or designed to be in the same place. We must make designs on this additional infrastructure; to bring together functions previously isolated to staunch our entropic behaviors.
So how to make density culturally productive? In Delirious New York, Koolhaas identifies four architectural mutations which enabled Manhattan’s “culture of congestion” to develop: the grid, tower, globe, and carpet. These tools empower culture to endlessly manipulate its environment to suit its desires — and in doing so, enabled the manufacturing of a previously unimaginable urban environment.
The mutants had specific attributes which unconsciously predicted the culture that followed: the grid speculated a vertical future for the city, and produced a coherent system for accommodating radical difference. The carpet was “synthetic arcadia,” produced through the manipulation of nature. The tower, bounded by the block, multiplied the ground to reproduce the world.
While extolled and tested as the means to catalyze urban life, the grid and tower wouldn't have reached their mythic urban status without the carpet. The Carpet sealed the fate of the city towards vertical growth; the Carpet created an artificial frontier around which the city’s growth would cluster. Without the carpet, the grid merely primed the city to expand; first subjecting the island to its relentless measure, before endlessly growing to encapsulate the globe.
Carpet

The carpet, however had the advantage of avant-garde status: predating the urbanity which followed it, the carpet disrupted the logics of the grid - creating a center for growth, providing for the future masses whom would flock to its vision of “synthetic arcadia.” (Koolhaas, Delirious)
A provocation, its lack of mass now guarantees monumentality in its context. The park has the capacity through sheer area to mediate between disparate uses, separating them not through plates, but through topography, size, and vegetation. The park is more, while doing less.
Technocarpet

While it appears to do less, the park has the capacity to hold infrastructure. A Technocarpet supports our civil needs and fosters social desires. Central park was the original Technocarpet, it conceals water supply piping, subways, and traverses beneath a thin layer of nature.
As cities grow, the supporting infrastructure must be enlarged as well, affecting land use. Will our lack of planning see us to a tipping point where the destruction of public space occurs to “save” the city? The carpet is vulnerable, for it has no “essential” function. Will there be a time when developers’, farmers,’ or even ConEdison bulldozers violate the carpet in order to fund the city and provide housing for residents?
Furthermore, the Technocarpet must fulfill multiple needs and desires in close proximity. The public sphere continues to expand, from mere discourse and the market, to both nature and culture as oppositional forms. The “opposites” have merged under the auspices of leisure. The disruption of “situation normal” introduces another element into the public sphere: the unseen infrastructures that support the others, no longer distanced by cold-war urbanism.
The dense city is not nostalgic; scales of association have been scrambled by communications and fragmenting interests. Obscure yet popular fetishes demand space between the disparate dwellings of constituents. Digital culture creates links, but actions and activities are still tied to the ground. Absconding from a generic concept of public, public space must become host to a striated, changing set of publics.
“Human beings have a history because they transform nature. It is indeed the capacity which defines them as human.”

Maurice Godelier, The Mental and the Material
Learning from Parks

A progression of notions about landscape, constructing my a position relative to the discourse of Landscape Urbanism and concepts of landscape in history.
Composition

Landscape design tradition is based in painterly composition. The legacy of park and garden design has its roots in using pictorial techniques to create visually irregular and varied landscapes. “Modern” landscape designers, following architecture, shifted their language towards “functionalist” forms and cubist composition, increasing the palate of forms; yet like architectural modernity, had deep roots in classic form.
Olmstead worked to produce the dynamic sublime by harnessing the qualities of the wild. Masquerading as preservation, the plan leveraged artificial nature to produce effects.
**Production**

Contemporary landscape theory seeks to replace pictorial composition of space with systems for its *production*. Industrial technologies of specialization, modularity, replicability, and time management afford flexibility and rationalization that painterly irregularity cannot.
Using the wild to produce the sublime was superseded by a more “mathematical” approach. Systemic complexity provided the means to overwhelm both user and critic. Ostensibly, the use of systems, layers, and ‘emergence’ will produce ecologically resilient ends. Yet, unable to escape their picturesque lineage, landscape practice still employs these systems towards the production of visual effects.
Simultaneous

Within the discourse of management-as-design, different approaches towards time were developed: designs which coordinate a multiplicity of programs on a daily basis to intensify use...
...and those that manage a succession of uses or ecologies over time. Both create designs which enable a continuous process of change to be integrated; succession through accumulation over time, rather than through superimposition and change.
Superimposition

Which leads towards two spatial concepts: that of superimposition of systems to engender interaction...
or their gradual accumulation as hedge against the outbreak of eventual urbanity.
Horizontal

Buildings became a model for parks, to create “horizontal congestion.” The possibility of systemic integration of unforeseen program and maximum interface between them. Yet the bands of pure program cost architecture dearly, inciting a coup in which landscape would later lay claim to urbanism.
But when applied to a new city, “Imagining Nothingness” was difficult: the bands, “Conceptual Nevadas,” freed from architectural overture to catalyze the city, were still littered with architectonic confetti, necessary to fulfill public needs. The voids were to be occupied, not by nothingness, but by architectural objects.
Jeffersonian

Where figuration failed, the use of vernacular spatial logics were attempted: parks were modeled on American settlement patterns. A series of designs, based on existing models of spatial production...
...went so far as to mimic the practices that resulted in sub-urbanization. Re-branding its effects “Low density metropolitan life,” the privatization and dispersal of the suburban landscape is an explicit return to the irregular variety of picturesque composition; manifest in the diagram - brand of the park.
Segregation

In its segregation of circulation and use, Tree City enables simultaneity without interaction. Its genius is its downfall: the segregation of activities as a means to inclusion. The park maintains the contemporary process of the privatization of the public realm.
In theory, the design created a flexible, yet legible identity for the park - though the variety and irregularity produced through the arrangement of a regular element. In practice the result is a diagrammatic mirror of its context: suburban Toronto.

Low Density Metropolitan Life
Inclusion

The inclusion of disparate interests, activities, and agendas is only part of the basis for truly public space. Interaction, collision, tension between competing demands are what make this inclusion productive for the public realm - the manifestation of democracy in public space. The park can use this intensity to produce the sublime effects – without resorting to visual effects of the “wild.”
The city provides the ultimate framework for a park: independent uses and programs are contained yet related; held in a state of conflict. Proximity and coordinated movement allow for the urbanization of the carpet; they creates the potential for social interaction through the coordination of simultaneous activities.
Nothingness

La Villette and Expo ‘87 eliminated the third dimension almost completely; proposing a purely programmatic occupation. These conceptual “Nevadas,” devoid of permanence ignored a seminal lesson of Manhattanism: “the split between appearance and performance”. The effervescence of “Nothingness” is what makes it appearance attractive, as a clean slate for activity, a frontier for desire.
However, its performance is another matter. Essential infrastructure must underlie programmatic transience. The carpets of tomorrow must create “nothingness” while subsuming the world. Spatial definition is only part of the equation to produce a sublime frontier of escape: the third dimension implants the carpet with capabilities to host programs otherwise impossible for a park.
“...It proclaims the superiority of the artificial to the real, which remains, whether admitted or not, the true credo of western civilization, the source of its universal attraction.”
Rem Koolhaas, SMLXL
Traveling to Parks
SEATTLE

1 Olympic Sculpture Park 50
2 Freeway Park 56
3 Gas Works Park 62
Olympic Sculpture Park

Weiss Manfredi, 2000

OSP combined three parcels of land, bridging over a train line and highway, creating a path which accommodates sculpture and pedestrian transit. It also hosts multiple biomes for wildlife, as well as remediates the contaminated soil existing on the site from a past industrial use.
Freeway Park

Halprin Associates, 1967
The park was designed to allow pedestrian passage through downtown, bridging over Interstate 5. The park wraps over and around the highway, covers parking garages, and spans between hilltops to create a pedestrian network in the downtown, isolated acoustically and naturally from the urban surrounds.
Gas Works Park

Richard Haag, 1972

A simple design with a broad view of the harbor, the park remediates and re-uses a natural gas farm as a public space, keeping the industrial artifacts as garden “follies.”
VANCOUVER

1 Convention Center  66
2 Coal Harbor Park  70
Convention Center

LMN Architects, 2009

The convention center has a large planted roof, public square, and pedestrian route along the waterfront, linking it to a larger waterfront park.
Coal Harbour Community Center

Henriques Partners, 2000

The community center is built into a sloped site, which is leveraged to allow a park to be created on the roof of the building, concealing parking, the community center, and gymnasium.
1. Mt. Tabor Park
2. Waterfront Parks
3. Keller Fountain
4. Lovejoy Fountain
5. Tanner Springs Park
Mt. Tabor Park

John Charles Olmstead, 1903

One of Portland's largest parks, it hosts several reservoirs as well as recreational facilities on the slope of a dormant cinder cone volcano, bringing recreation and infrastructure together.
Eastbank Esplanade

Mayer/Reed

The multiple bridges and steep eastern banks of the Willamette River force this two esplanade to make extreme section shifts and adds a long floating structure to connect various points of the path.
Ira Keller Fountain

Halprin Associates, 1972
This depressed plaza and fountain catches and uses water to activate a public space, and is linked to a larger set of plazas and pedestrian streets in the south side of downtown Portland.
Lovejoy Fountain

Halprin Associates, 1966
Part of a series of public spaces, the park hosts a fountain for cooling off in the summer, and covered structure for rainy days. The plaza is almost entirely stepped, creating spaces for performance and seating.
**Tanner Springs Park**

Homer Williams and Partners, 2002

A constructed wetland manages water run off, a major issue for rainy Portland, and re-purposes train rails to create a screening device.
1 Madrid Rio 88
2 Parque de la Gavia 94
3 Parc del Pratolongo - Parque Sur 96
4 Eco Boulevard de Vallecas Via 98
5 Parc del Ribera del Manzares 100
6 Parc del 12 de Octubre 104
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8 Parc del Juan Carlos I 108
9 Toledo Escalators 112
The long linear park covers the city’s M-30 highway, and more importantly links and adds to existing parks, while returning the Rio Manzares to the city’s residents for recreation and public spaces.

**Madrid Rio**

West 8, 2010

The long linear park covers the city’s M-30 highway, and more importantly links and adds to existing parks, while returning the Rio Manzares to the city’s residents for recreation and public spaces.
Parque de la Gavia

Toyo Ito, Ongoing
This large park sculpts hills to capture and channel rainwater, part of a larger strategy for municipal water treatment and re-use.
Parc del Pratolongo - Parque Sur

Jose Luis Esteban Penelas
Drainage channels and multiple levels of circulation crisscross this park; which holds diverse program such as a botanical garden, boating pond, and waterfront amphitheaters.
Eco Boulevard de Vallecas Via

Ecosistema Urbano, 2000
A series of outdoor shelters shade and cool plazas along a boulevard in a new quarter outside the center city. The spaces are geared to create pedestrian activity and public life in the street, as well as be an example of sustainable practices with their solar lighting, hanging gardens, and natural ventilation.
Parc del Ribera de Manzares

Ricardo Boffo, 2003
Containing a waste treatment facility, the park uses artificial hills to both conceal infrastructure as well as create the opportunities for prospect over the city.
Parc del 12 de Octubre

This park uses the tectonics of infrastructure to create a maze-like series of open spaces as part of a hospital and residential development.
Parque del Valbernardo

This park links water retention ponds, artificial hills, and a large community garden with a series of open piazzas and play areas.
Parc del Juan Carlos I

This large park is organized around a circular loop of water, and links diverse program, ranging from a winter garden to solar energy demonstration facilities. The park was developed as part of a larger convention center project, in an outlying area of the city.
Toledo Escalators

Jose Antonio Martinez, 2001
This series of escalators enables access to the historic center of Toledo. It conceals the access system by embedding the stairways and escalator in the hillside.
1 Parc en Val de Hebron 116
2 Parc de la Trinitat Nova 118
   Parc del Tramvia 122
   Marina Parc, Viladecans 126
3 Parc del Besos 128
4 Parc del Auditoris - Parc Lineal de Maresme 130
5 Parc de la Pau - Parc Fluvial del Besos - Parc Littoral 132
6 Les Cortes Catalans (Gran Via) 136
7 Parc del Joan Miro 138
Parc en Val de Hebron

Eduardo Bru, 1992
This park, mainly devoted to recreational facilities, links a series of parcels with unified furniture and lighting, as well as creates several overlook structures from which to view the various activities.
Parc de la Trinitat Nova

Battle I Roig, 2010

Ensnconced in a highway interchange, integrating a subway stop, the "node" offers a mix of programs and spaces within a small footprint, through the manipulation of its section and the adjacency between different uses.
Parc del Tramvia

Battle i Roig, 2002
This linear park caps a major highway, distributing different programs along its length, differentiating the spaces through the use of surface textures and different planting and urban furniture.
Artificial berms are used to retain water, reducing run-off to a channelized creek flowing towards a coastal estuary. These berms are populated with activities and linked by paths which extend into the context, bridging above surface streets, creating a network of pedestrian access to a new portion of this bedroom community.

Marina Park

AAAID / Battle i Roig 2008
Parc del Besos

Viaplana & Piñón, Arquitectes, 1986
A series of linear drains creates increments of space which are then distributed to recreational activities.
Parc del Auditoris - Parc Lineal de Maresme

Foreign Office Architects, 2004
This park is adjacent to the city's “Solar Forum,” an outdoor exhibition space. The park itself creates artificial dunes that host amphitheaters for public performance as well as a variety of swimming and wading facilities in a former port berth.
Parc de la Pau - Parc Fluvial del Besos - Parc Littoral

Albalos Herreros Architects, 2004

The park is situated at the end of one of the city’s major diagonal avenues, and brings together the coast with a waste treatment facility and incinerator.
Les Cortes Catalans (Gran Via)

Arriola & Fiol Arquitectes, 2002-6

This series of public spaces runs alongside the Gran Via, a depressed arterial road. They include access points for a tram, as well as serve as an acoustic buffer for the residential areas surrounding the road.
Parc del Joan Miro
Beth Galí, 1979

This park integrates parking and water retention gardens, as well has containing a large covered outdoor sports facility within a larger “forest” of trees.