Urban Voids & Other Hidden Resources

Recycling the Infrastructural Networks of Bogotá

P4 Reflections
Methods and Analysis, Graduation Studio 2016 / 2017
Positions in Practice / Creating the Commons
Martine Huijsmans | 4432886

Voids as a City Resources

The project began with two givens, Bogota and the Commons, the Graduation Studio holds that the city should be understood as the ultimate common: a collective social, cultural and material construct that is composed by and for its inhabitants. We are faced with the dilemma that the possibilities of participation of citizens in the development and experience of the urban common realm is decreasing, at the extent that there are little spaces in the city where citizens can cooperate to produce the city and its resources. So as a start of my investigation the idea of a city resource became central, who share these resources and who defines the rules according to which they are accessed and used?

In my preliminary city research I quickly noticed the surprising amount of un-build space within the city center, a city center that at first sight seems very dense. Bogotá has grown tremendously during the last decades and has sprawled out over a large area, leaving many of its citizens frustrated with a lack of space and long commuting journeys. I propose that the urban voids found in Bogotá are a key resource for the development of a successful city in the coming years. These seemingly vacant areas make up a significant part of everyday surroundings, so it is all the more important that they be given their fair due.

With this phenomenon of urban voids or "terrain vague" as my main architectural theme I formulated the research question;
What hidden resources do the urban voids of Bogotá hold and how can these potential resources be activated?

A derelict plot in the center of the city

Underused spaces are often transformed into parking lots or dump yards

Visible and Invisible Perspectives

Architecture's destiny has always been colonization, the imposing of limits, order, and form, the introduction into strange space of the elements of identity necessary to make it recognizable, identical, universal. In essence, architecture acts as an instrument of organization, of rationalization, and of productive efficiency capable of transforming the uncivilized into the cultivated, the fallow into the productive, the void into the built.

– Sola Morales, Terrain Vague[1]

The urban voids are the spaces which disrupt the urban tissue, leaving it incomplete and throw into question the use of those spaces. Sometimes called urban ruins, they are at the limit between private and public space, without belonging either to the one or to the other. They are spaces where the original use had been abandoned and often replaced by various informal activities. According to De Sola-Morales these 'strange places exist outside the city's effective circuits and productive structures,' and from an economic point of view represent places, 'where the city is no longer.'[2] Void space thus appears as space temporarily out of order.

Examining the theory on voids I came upon the work of Doron, in which he addresses terminological perspective of the void. Arguing that naming something a void contributes to creating the void, the terminology used is not descriptive but constitutive.[3] When a plot is named wasteland, vacant, vacuum or dead it is essentially marked as a potential site for development – diminishing and denying all that was already there. This terminological denial of content opens a place up for a tabula rasa approach, thereby undermining social, historical and political values. When we look at Colombia and zoom in on Bogotá, this notion of the void is present in many ways. The land of South America was seen as a void by colonial intruders – a void in which no civilized use existed. Indigenous Americans were not eligible for sovereignty because of their assumed inferiority on the development ladder. [4] Another example of this can be read through the work of Jacobs, she shows how slums are seen as a void in the city, derelict areas which were ripe for so-called rehabilitation. [5] Doron describes such interventions of regeneration as acts of re-colonization on an urban scale.

Somewhere every culture has an imaginary line for what it excludes and what it includes, or what is visible and what is invisible. Marginalized communities in Bogotá like the homeless and beggars, previously tolerated, must now evict from the center of the city, driving them into equally marginalized spaces. Slums are demolished and pushed towards the boundaries of the city, excluding the inhabitants from the "visible" city life. In my project I use the term invisible to describe that and those who fall outside of the hegemonic view in architecture, urban planning or society at large.

This research led me to see how throughout time there has been a strong connection between void space and the invisible inhabitants of the city, formulating the second research question; Can a balance between visible and invisible communities be restored by introducing a common network?

---

[1] (Solá-Morales, 1995, p. 28)
[2] (Solá-Morales, 1995)
[3] (Doron, 2016)
[4] (Doron, 2016, p. 99)
[5] (Jacobs, 1961)

Recycling Infrastructures

As I started to record the types and locations of urban voids in Bogotá I came across a multitude of abandoned buildings, unused parking lots, derelict plots and roadside voids. The one void I however decided to scrutinize on is the scar that has been left by the former railway system. The abandoned tracks stretch through large zones going in five directions; north, south, east, west, and northeast. Within the city boundaries there are still six stations remaining in various states of decay, the void around the main Sabana station is particularly interesting, the central site consists of a plot the size of multiple urban blocks. The particular formal aspect of this site, its linearity, poses a great opportunity for the development of a network. Infrastructural networks have a contradictory role in cities as they facilitated movement along its lines while simultaneously being an obstacle to all movement perpendicular to it.

The Graduation Studio attempts to develop an experimental attitude on the level of analysis, during this part of my research I employed a multitude of analytical approaches in order to achieve an understanding of formal and informal, visible and invisible aspects involved in the project.

My first analysis of the network is done through a technique borrowed from Jacobs; her 'eyes on the street' method approach takes the perspective of the "street" and its inhabitants as a main view. I walked along the railway tracks observing its visible and invisible particularities. This is where I discovered the informal recycling community; this community makes a living by recovering recyclable material from the streets and reselling it. In the strips of land that run parallel to the tracks many heaps of waste can be seen, scattered but also clustered or sorted into material piles. It seemed the void was being used for an unusual activity; that of informal waste processing. For the least fortunate of them, the railroad is an important space in the city – it provides them with a space in which they can work and sometimes even live.

After returning from the fieldwork I mapped the relation between the observed activities and the railroad through a rhythm analysis, this meant cutting the length of the tracks up into 50 m stretches, and analyzing all these locations on a multitude of variables, involving invisible as well as visible qualities. To further develop my knowledge of this invisible aspect of waste I visualized the process through mapping, data collection and a comic. The research shows how this process of waste management is one that in itself goes through visible and invisible layers of the city. It moves through many parts of the city as waste is produced, collected, processed and sold in various locations. It starts out with the informal street dwellers scavenging the streets to collect material, transfers into a semi-formal environment of the so-called 'bodegas' (collection and weighing centers) after which the material is resold into a more formal network of industry or municipality eventually making its way back to the consumer.

Bogotá's recycling system is emblematic of those across the global south, where the informal sector plays a central role in managing waste but faces pressure from modernization plans. It is estimated that 9000 tons of waste are generated daily, of which 1200 tons are reused and recycled informally. An estimated 20,000 recyclers work in the city to achieve this, though only 11% of the recyclers are currently affiliated with the municipality. In a matter of sharing knowledge, responsibility and resources the preferred option is to integrate the informal sector into waste management planning. The municipality of Bogotá wants to scale up its recycling model, as a pilot project it has already opened three municipal bodegas spread throughout the city.

Taking conclusion from my research my project proposes to develop a two sided intervention using the urban void left by the abandoned railway. It aims to be beneficial to both the visible and invisible inhabitants of the city. The current tracks will be replaced by a light rail system facilitating transport for the congested city while at the same time the infrastructural program will be supplemented by a program of recycling and production.

Train Station
Train Tacks
Former Train Tracks
Former Tram Tracks

A view along the abandonned tracks

A waste scavenger makig his daily round

(In)Formal Field Strategy

> *Infrastructural works not so much to propose specific buildings on given sites, but to construct the site itself.*
> *Infrastructure prepares the ground for future building and creates the condition for future event... Recognizing*
> *the collective nature of the city it allows for the participation of multiple actors. Infrastructures give direction to*
> *future work not by establishment of rules or codes (top-down) but by fixing points of service, access, and*
> *structure (bottom-up).*
>
> *- Stan Allen, Points + Lines[6]*

The proposed project led me to challenging the formal and informal aspects of the intervention. This unusual opposition of programs combined with the preconditions set by the site brought me to consider that the preceding typologies of neither stations nor factories will apply. While the invisible community is slowly integrating into a formal structure one can question how this will affect their freedom. I am inclined to consider their preference for autonomy as one of the main challenges for my design.

In search for a strategy that will allow the project to develop somewhere between the formal and informal operating mechanisms preferred by the opposing communities I sought out a multidisciplinary approach.

The starting point for my architectural strategy comes from into the concept of landscape urbanism. It refers to the theory in urbanism arguing that the way to organize cities is through the design of the city's surface, rather than the design of its buildings. A mayor developer in this theory is Stan Allen. In what he calls 'Field Conditions' Allen positions the architectural intervention as an emergent, open-ended configuration that begins from localized relationships and develops additively. The open ended systems are flexible and anticipatory; they work with time and are open to change. He states that by specifying what must be fixed and what is subject to change, they can be precise and interdeterminate at the same time. Allen suggests that is the degree of play designed into the system, slots left unoccupied, space left free for unanticipated development are crucial. [7] In this system the project is not so much a limited architectural composition as a field of possibilities, an explicit invitation to exercise choice within the void.

These field interventions recognize the need for a design in which multiple actors can participate. In this system there can be a combination of the formal hence visible layer and the informal or invisible. The way I address this with the project is by division into three juxtaposed systems; the field, the module and the event. In this the field is like the hardware of the project, a given formal arrangement grounded into the surface of the site, providing service, movement and overall unity to the project. The module is the software, it is something that can be plugged in or adapted over time. It creates the conditions necessary to respond to incremental adjustments in resource availability and changing conditions. The event is created by the user; they determine the future not anticipated by the architect operating outside of the control of a single author and continually evolving over time. The project or computing process thus consists of the interaction and combination of hardware, software, and user.

---

[6] (Allen, 1999, p. 55)
[7] (Allen, 1999, p. 55)

Configuration of the System

For the first step of my design implementation I looked carefully at the site givens, recognizing that although I propose to establish a network based strategy, local site condition should be integrated and individual resolutions should be accommodated in the field intervention.

I selected the site around Sabana station as a testing ground for my project. The neighborhood it is located in, Los Mártires, is a low-income area characterized by its light industrial functions and specifically its involvement in the building material market. There are a number of existing functions on the site as well as a neoclassical train station dating back to 1887. The dominant typology found on the site is the nave building, a long linear shaped building often associated with factories and infrastructure. These buildings create a strong axis of organization, as a basis for my intervention I use a grid informed by the existing buildings on site, dividing the plot up into long strips of varying width. The irregular shape and linear division of the site give potential but also weak spots, one of the obstacles that I identified is the obstructed cross circulation created by the nave buildings. They obstructed a free flow of people between areas, thereby obstructing interaction between the different user groups. Another obstacle is the site access; because the site is located in a problematic context it has closed itself of from its neighbors, visually as well as physically.

The hardware layer of the field intervention is the design of more permanent elements; the surface and the infrastructural grid. Through the analysis and division of spatial conditions on the site I allocated areas to intervene into and strengthen.

The site has an existing train station which can be recycled to provide for the light rail system. So instead of focusing on the design of a station my proposal intends to establish new connections between the areas and its users through improving the use of surface. To do this I devised a set of spatial types; the water mirror, the plaza, the street, the perimeter path and the diagonal. The water mirror is consists of a shallow pool of water, for a reflective surface. Its main function is to highlight the most fascinating vistas as well as creating visual interactions with the city along the border. The plazas signify places of gathering as well as entrance, the hardscapes are placed on strategic points to create moments for social interaction. The street is a public thoroughfare adjoining buildings and plazas in the larger context, on which people may freely assemble, interact, and move about. It aims to establish a main network for movement and exchange. The perimeter path is a narrow linear element placed along the border of the site, it has a more explorative function as it guides users towards some of the hidden treasures, for example a ruin, a mountain vista or derelict building. Finally the diagonal is a small linear element that visually guides the user to a certain view or orientation point.

The grid constructed from the existing buildings provides the placement of the service grid, by placing anchor points for the modular system. Each node is a prefabricated concrete foundation dug into the ground topped off by a tile recognizable in the landscape. When the tile is removed the modular system can be attached proving new workspace for the recycling factory. This material seeding gives direction to the field allowing it to grow over to its full capacity time. To supplement the invisible program of recycling I added one permanent volume. This volume serves as the backbone to the modular layer, as it is the place where the module elements are produced and stored as well as providing a stable space for the recycling community to organize, gather and sell their products. This factory volume, in its architectural language makes a modern interpretation of the nave typology. The structure allows for it to be divided into two linear sections, defining a served and a servant space.

The software layer of the field intervention is the design of temporary elements; something that can be plugged into the infrastructural grid. Recognizing that this is a more fluid aspect of the project, one that allows for participation of multiple authors, I decided to use a system which is not my own.

The modular system used is an existing one, Moduli 225 devised by Kristian Gullichsen and Juhani Pallasmaa in 1968. Next to the aesthetical quality the modules have they are also designed with a strong DIY attitude. The individual elements consisting of columns, floors, walls and roofs are premade and assembled on site in a low-tech manner. Users can select the preferred infill, regarding size, openness and lighting to construct a space to individual needs giving them a high degree of control. To adapt the system from its former setting (Finland, 1970s, dwelling) to its new setting (Bogota, 2017, light industry) I made slight alterations concerning size, material and load bearing abilities.
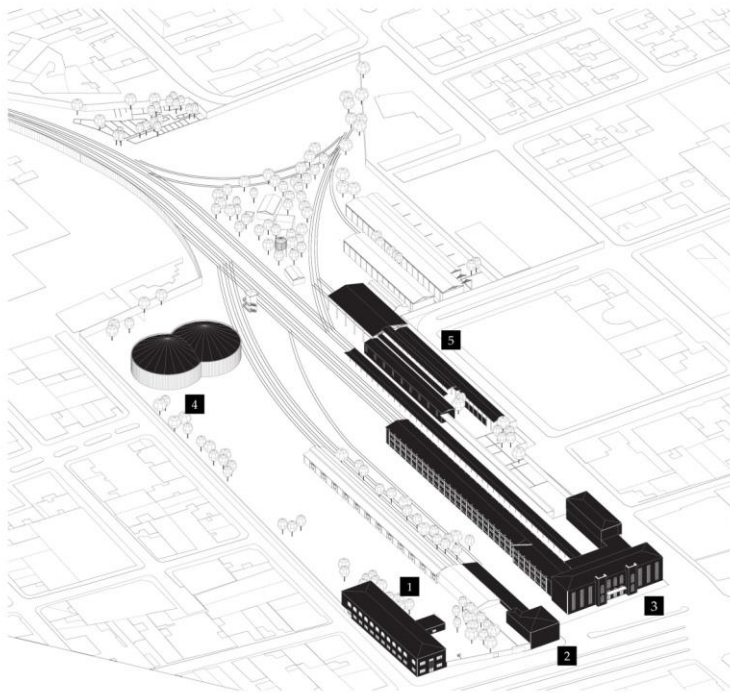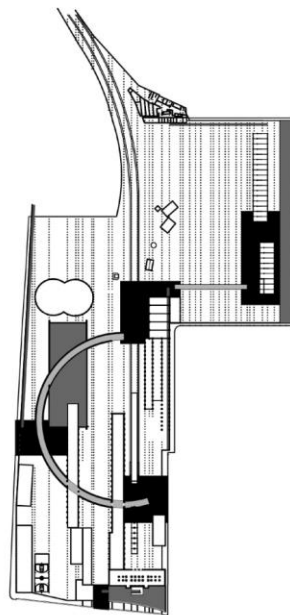
1. Escuala Taller
2. Traffic Police
3. Train station
4. Circus School
5. Train Workshop

Existing situation on Sabana site
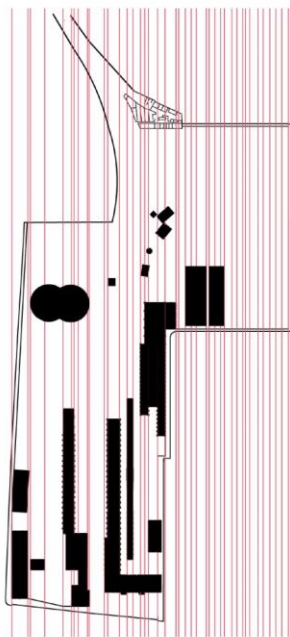
Rythm analysis Sabana


Placing of field elements

Atmosphere at Sabana

Moduli 225 by Kristian Gullichsen and Juhani Pallasmaa
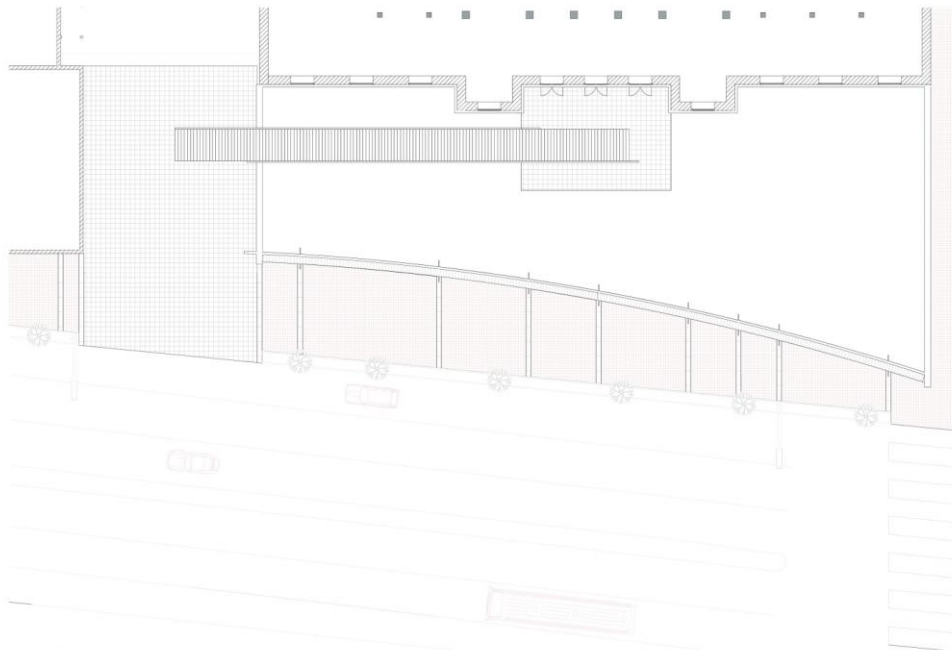
Fabric Materiality

With the strategy, elements and placement of the project defined I moved on to question of materiality and detail. Because the site is too large for me to thoroughly design in a graduation studio I determined 5 samples to develop on a smaller scale; reasoning borrowed from the field of civil engineering, where an overall profile of the ground condition is constructed through the boring of samples on strategically chosen locations.

The sample are chosen to give a wide impression of the various conditions in the project, how the project meets the city but also how the project operates on an internal level with existing as well as new elements. The geometry used for the design of the elements is largely informed by the site givens and the railway, filling in and reusing existing lines based on the straight line and the simple curve. By using simple geometry it aims to create a coherent and clear base for the project. Materially I chose to use a fabric based approach for the surface, because it suggests interconnected wholes made of parts which are created through process. It allows for the weaving new and old, through texture changes and layering of material. The approach is one that I observed during the field research in Bogotá; citizens paved their 'antejardin' or front garden with a material of choice but instead of stopping at their private plot line they extend onto the public pavement. This creates a fluid patchwork of material layers and blurs the hardness of the border between public and private. Using this strategy on my project will help anchor it into fabric of the site and on a larger scale that of the city.

The existing atmosphere of Sabana is quite surrealistic, a green oasis in the dense city center. One filled with almost magical elements such as the circus school, ruins, old rusted train carriages, derelict industrial structures, and a wide variety of spontaneous vegetation. The color and material pallet I chose stems from two main considerations; (1) the reuse of material taken out from the old train lines and (2) the expression of juxtaposing a new fabric. The old train lines give me a lot of wooden sleepers and steel tracks to incorporate; I supplement this with a selection of dark monochrome pavements, using texture as expression of layers and color as a unifying element.
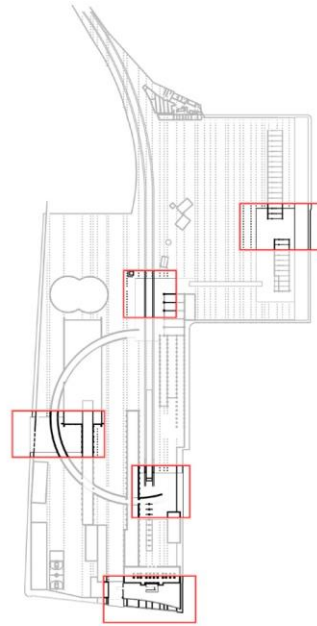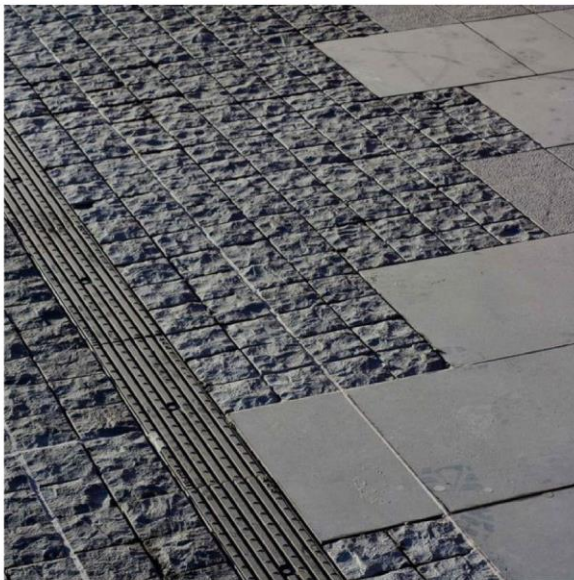
Selection of sample areas

Detailed sample showing how the surface extends itself into the existing fabric
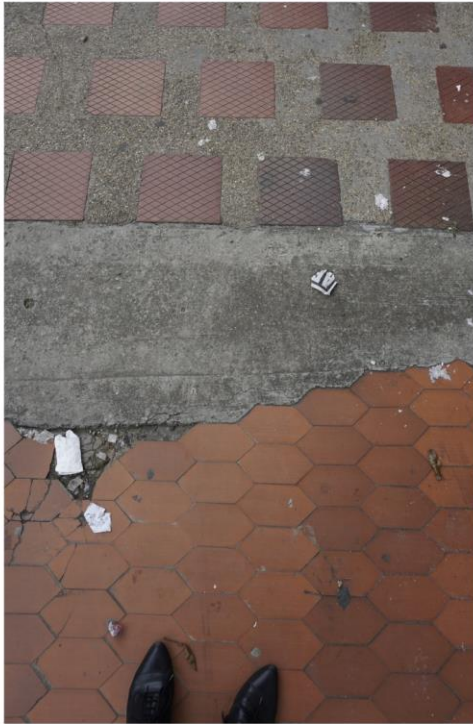
Fabric Materiality; extension of the private into the public

Color as unifying element, texture as expression of layers

Personal Reflections

How can we make our cities more socially inclusive? How can we improve mobility and security? How can we ensure a happier life for all of our citizens?

- Enrique Peñalosa, Mayor of Bogotá

While writing this reflection text I looked back at some of the introduction presentations given to the studio and I came across this quote by Peñalosa. If asked the question of how my project relates to the wider social context I would say that it is precisely these subjects that I touch upon. It is the idea that while doing a large scale city-enhancement such as the implementation of a light rail system, one can also include a second layer. The second layer not being purely focused on the immediate visible side of society but a more inclusive approach to all the citizens. Resources have to be used in common the get the most out of them and the success of a project is understood depending on who's viewing it. I believe that interventions done with a more sensitive eye to these opportunities might be a way to negotiate between the different goals a growing city has.

As a designer I would like to reflect on the way I have had to mediate scale and discipline during the development of this project. By nature I am drawn to large strategic ideas and systems, often formulating projects that seem a bit overambitious. As was the case in this project; going from the idea of developing the whole system at P2, developing two sites completely at P3 and eventually focusing on parts of one site at P4. The project kept pushing me to clearly define what parts of the project I personally develop and what part of the project is left open-ended. Additionally it has led me to touch upon different disciplines as I operated in the field of urbanism, infrastructure and landscaping. Increasing my understanding that each of these fields, even though they are strongly related to architecture, has their own skill-set and way of viewing. A valuable learning experience has come from the idea of treating the project as something to be continued. The strategies used such as incorporating an existing modular system and selecting specific samples to further materialize have made it possible for me to go through all the necessary scales. Working towards P5 I aim to keep this focus on selective designing, giving priority to developing all the scales on the right level, creating a coherent total picture of the total project.

Bibliography

Allen, S. (1999). *Points + Lines.* New York: Princeton Architectural Press.

Doron, G. M. (2016). *The Dead Zone & the Architecture of Transgression.* Delft: TU Delft.

Jacobs, J. (1961). *The Death and Life of Great American Cities.* New York: Random House Inc.

Solá-Morales, I. d. (1995). Terrain Vague. In C. Davidson, *Anyplace* (pp. 118-223). Cambridge: MIT Press.