Subterranean Intermission

Yiwen Dai

Follow this and additional works at: https://surface.syr.edu/architecture_theses

Part of the Architecture Commons

Recommended Citation

This Thesis, Senior is brought to you for free and open access by the School of Architecture Dissertations and Theses at SURFACE. It has been accepted for inclusion in Architecture Senior Theses by an authorized administrator of SURFACE. For more information, please contact surface@syr.edu.
SUBTERRANEAN INTERMISSION

RETHINKING THE LIFE ON UNDERGROUND PLATFORMS

Dai, Yiwen
Every space serves a purpose; therefore, all space should be valued and cherished, including what is typically perceived as the foul, dark, unstable, abandoned corners and dead ends. As designers we should take these places and make the most of them so they too can be enchanting. New York city like many other metropolitan areas are faced with shortage of available space. For example, underground development became unavoidable in order to build a reliable subway system that transports and connects its daily commuters to the spatially growing city. Along with the new infrastructure, waiting areas and platforms that form strips were created. However, they are not just components supporting transportation needs, but also magical spaces where we can change commuters’ lives. A space where if given the right attention can provide escapes (to break away from the hustle of the city) as well as bridge social gaps.

In a fast-speed society like NYC, commuters can easily get lost in their daily routines. People come and share the same platform, but they don’t understand each other’s life. Commuters live in one world, and then there’s a whole different underground world that people “above NYC” don’t realize. Their paths do not cross, and secret spaces are kept hidden. The underground subway platform is one of the spaces (habitat) that is part of the commuter’s everyday life. People use the subway platforms as an intersection (node) to meet with friends, whilst easily ignoring others sharing the same space. If there’s one portal or door between these two universes, it would be this platform. Where these designed strips of spaces can act as a portal where the different universes collide, and people from totally different worlds can engage, interact and influence each other.
the open reality of the strip of space - maps
1 The invisible infrastructure beneath, the dots on maps.

the hidden reality of the strip of space - site
7 What if the main character here is the underground platform, not the street above?
13 The Portals.
23 The Public Space That We Experience
29 What Are People Doing On The Platform? Why?

the exposed reality of the strip of space - narrative
39 The Invisible Infrastructure
"Experimental transport systems such as the Broadway pneumatic subway (1870) and Brooklyn Bridge cable railway (1883) ..., that made New York the first city in the world to have a formal underground passenger rail line (BHRA 2011)."³

"New York City’s transit system has 493 stations, more than any other subway system in the world."²

"The New York City Subway, including Staten Island Railway, is the busiest subway system in North America. Since 1990, it has seen ridership climb 60% to 1.7 billion customers annually."³

According to the MTA's 2019 report, New York City has the most subway stations in the world, 71% of New York City’s population lives within a half mile of a subway station,⁴ and yet, as can be seen in Fig. 1, 2, 3, the subway stations are presented as small dots: a Google earth search only displays 9 location dots representing 9 stations in lower Manhattan; the MTA's official subway map labels all the stations with black and white dots connected with location-accurate subway lines; Eddie Jabbour's NYC Subway KickMap has all the stations layered accurately into the fabric of the city as white dots and connects them with delineated subway lines in distortion.

Google Earth omits the subway tunnels and most of the subway stations in a broad NYC Subway search, the MTA Subway map and NYC Subway KickMap showcase the stations as dots and tunnels ad colorful lines, and in the KickMap even the subway lines are distorted for a cleaner read. All of these maps prioritize the city fabric above ground and treat the NYC subway stations and tunnels as invisible infrastructure beneath. If one has ever used the NYC subway, however, all the dots and lines we see on maps are actual spaces which are

---

1 Shi Wujun et al., Think Deep.
3 See note 2 above.
4 See note 2 above.
Fig. 2: MTA Subway Map. Source: https://new.mta.info/maps
Fig. 3: NYC Subway KickMap. Image courtesy Kick Design, Inc.
The people interaction with the subway station space can be visually shown though looking at the turnstile usage (see Fig. 4) and the heat map (see Fig. 5). Using ArcGIS mapping, the dots along the colorful lines on maps can be seen as spaces that are used in different frequency by people. The platform space is used after/before accessing the station entrance and using turnstile, by overlaying the entrance heat map and turnstile usage map, platform space usage is revealed.

Comparing the colors in the heat map and the amount and size of the turnstile usage circles (see Fig. 7), it is not hard to find that the most frequently used stations are gathered in the lower Manhattan area, especially the ones has subway line intersections. This observation applies to platforms as well.
Key

- NYC Community Districts
- Turnstile Usage:
  - 100,000,000
  - 1,000,000,000
  - 10,000,000,000
  - 100,000,000,000
  - 1,000,000,000,000
- Subway Entrance Heat Map:
  - High
  - Low
- NYC Subway Stops Esri 2019
- Subway Lines

Fig. 6: NYC Subway Stations v. Lines. By author.

Fig. 7: NYC Subway Station Use Frequency. ArcGIS mapping. By author.
The New York Times released the basement plan (see Fig. 8) of the magnificent new Times Building in 1905 in its "Building Supplement" article. The Times Building was considered the tallest in the city when counting the basement, and almost half of the work is under ground, the basement is more than three times the size of the building lot.  

It's clear to see it's direct connection with the subway's west and east platforms. The total area of the two platforms looks even bigger than the Times Building's basement floor. The way of the illustration is also interesting. The subway tracks are drawn with solid lines, the building's basements which are under and above the platforms and tracks are simply omitted, the platform outline of the lower station above is drawn in dotted lines, and there is one short line on the left side marking the centre of Broadway which is above ground, giving the reader an impression that the subway platforms and tracks are the main focuses here, the landmark building and the famous street above ground are put on the side.

---

1 The New York Times, "Building Supplement".
Fig. 8: Times Building Basement Plan. Showing the connection between the building and the subway station entrance.

Kate Ascher's 2005 book *The Works* attempts to point out the not-apparent but interesting aspect of a large city like New York City: not many people pay attention to the effort and people behind the urbanists' simple everyday commute, no city is more dependent on the least visible infrastructure such as subway than New York.¹

Although in the "Moving People" chapter, Ascher reveals the invisible subway network to the readers, her emphasis is still on the importance and complexity of the network lines and the infrastructure components, however, the illustration of The Times Square Station on its page 30 is telling something else. Whether it's intentional or not, the warm ivory platforms and the people on them speak about the human occupation of this architectural space in this god view illustration (see Fig. 9).

¹ Ascher, The Works.
With the same station illustrated, architect Candy Chen visualized the complicated intertwining NYC subway station network by letting Internet navigators spin the 3D model of the structure on a web page (see Fig. 10) and unraveling the unseen spaces relative to the ghosted city buildings (see Fig. 11). Similar to the station illustration in Ascher's book, people in the platform spaces are drawn in a god view.
Chen's X-ray Station Cluster drawing (see Fig. 12) demystifies the under side of the city. An overall underground city is accurately drawn interns of the subway line colors and directions, architectural structures, and the locations relative to the city street segment. It successfully creates a visual clarity to help travelers and commuters navigate throughout the underground transportation spaces, but the mysterious quality of the hidden city in NYC is lost.

In the Japanese architect Tomoyuki Tanaka's book *Anatomical Drawings of Staircases Spaces*, the dismantled X-ray hand sketch of Shibuya Station (see Fig. 13) not only revealed the hidden underground subway spaces in Tokyo, but the mysterious atmosphere resulted from the collaging of two totally different worlds is kept.
Fig. 13: Shibuya Station X-ray Sketch. Source: Tanaka, http://www012.upp.so-net.ne.jp/tass/
Fig. 13: Lower Manhattan Portal Axon. Speculative drawing shows subways as portals between NYC above and under, and their relationship with districts. Portals are generated based on subway station entrance heat maps (see Fig. 5). By author.
Fig. 14: Lower Manhattan Site Axon. Speculative drawing shows subways portals between NYC above and Under with buildings above ground flipped under. By author.
Fig. 15: Lower Manhattan Site Axon. Speculative drawing shows subway platforms as spaces with buildings above ground flipped under. By author.
Fig. 16: Lower Manhattan Site Axon. Speculative drawing shows subway platform spaces as portals with buildings above ground omitted. By author.
Fig. 17: Site Axon Around Fulton Subway Station. Speculative drawing shows the un-seen subway platform spaces are used and occupied by people. Buildings above ground are flipped under, showing the flipped city with the "invisibles" revealed. By author.
The Public Space That We Experience

Fig. 18: Historical Photos Show Human Interactions with NYC Subway Platforms. Source: Natali, https://www.enriconatali.
<table>
<thead>
<tr>
<th>Time</th>
<th>Activity/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 AM</td>
<td>Train: Every 6 min on average to the next</td>
</tr>
<tr>
<td>1 AM</td>
<td>Cleaner: 8 hours’ shift</td>
</tr>
<tr>
<td>2 AM</td>
<td>Platform Store Worker: 12 hours’ shift</td>
</tr>
<tr>
<td>3 AM</td>
<td>Violinist: 2 - 5 pm / 3 - 6 pm</td>
</tr>
<tr>
<td>4 AM</td>
<td>Violinist: only be there during rush hour rush hour</td>
</tr>
<tr>
<td>5 AM</td>
<td>Tourist: anytime with bigger bags and/or luggages, stay longer on train (5 - 30 m)</td>
</tr>
<tr>
<td>6 AM</td>
<td>The Disabled: stay longer on the train</td>
</tr>
<tr>
<td>7 AM</td>
<td>The Homeless: sleep there at night</td>
</tr>
<tr>
<td>8 AM</td>
<td>Mole Person: sleep there at night</td>
</tr>
<tr>
<td>9 AM</td>
<td>Office Worker: call my boss when you get there, please</td>
</tr>
<tr>
<td>10 AM</td>
<td>Musician: from certain entry, be on the same board</td>
</tr>
<tr>
<td>11 AM</td>
<td>Musician: anytime with bigger bags and/or luggages, stay longer on the train (5 - 30 m)</td>
</tr>
</tbody>
</table>
Fig. 20: Existing Platform Timeline. Generated based on "A Day In the Life of A Train Conductor" by Alex LaBianca and "mole people"’s interview in documentary film *Under City*. By author.
Fig. 21: The Overlapping Between Different Groups of People In A Day. Generated based on "A Day In the Life of A Train Conductor" by Alex LaBianca and "mole people"'s interview in documentary film Under City. By author.
While people are bumping into each other on the subway platforms unavoidably, especially during rush hours, with activity initiators such as musicians, performers, vendors, and beggars, majority of people there are still isolated with others. They stare at their phones or tablets, with headphones on ear, avoid eye contact with others as much as possible, pretend the people who don't look the same as themselves invisible, they come, and then they leave.

A few points from Stéphane Tonnelat and William Kornblum's "New Yorkers on the 7 Train" from the "Trust in the Subway" Chapter in their book International Express backups and explains my observation.

Daily commuters know the best routes to avoid extra walking or time cost:

"our own fieldwork confirms that most riders position themselves on the platform so as to minimize unnecessary walking by remaining close to the platform exit, or by 'pre-walking,' as subway reporter Randy Kennedy termed it."\(^1\)

They tend to follow the unspoken social order:

"They stick in our craw as we think about city life and invite us to make invidious distinctions among different groups. Nonetheless, the orderly flow of so many individual lives is always impressive."\(^1\)

"As with the formal rules established by the MTA, the informal—that is, unwritten—norms of interaction in public spaces identified by researchers in the symbolic interactionist tradition are basic to the subway’s social order. But in practice, such norms are also subject to many subtle interpretations and situationally selfish deviations. Breaches of norms, however, often prove their overall importance to maintaining social order, if not their power."\(^2\)

They are together, but they are alone:

"The is 'alone-together' paradox is a recurring themes for sociologists who write about the double effect of freedom and alienation in cities. The subway thus often stands for the most anonymous public space one can find, a 'stereotyped symbol of urban alienation.'"\(^3\)

---

1 Tonnelat and Kornblum, International Express, 114
2 See note 2 above.
3 Tonnelat and Kornblum, International Express, 120
Fig. 23: Digital Illustration of Major Architectural Elements On/Near Subway Platforms. By author.
Fig. 24: Human Interaction with Major Platform Architectural Components In a Music Video. Screenshots from Michael Jackson's music video Bad (Official Video). Source: https://www.youtube.com/watch?v=Sd4SJVsTulc
THE INVISIBLE INFRASTRUCTURE - THE MAGICAL SPACE
Fig. 25: The Magical Space Collage. As a space that is used by people from all walks of life 24/7 in different ways, it is magical because of human activities are happening non-stop on the strips of spaces, it is people who brought the invisible infrastructure to life. By author.
Fig. 25: Learning From A Fiction Movie Us - a 2019 American horror film written and directed by Jordan Peele. Diagram by author.

- The girl has a shadow
  - the rabbits got trapped in cages
  - Who
  - the girl who lives above ground
  - the shadow who lives underground

"they built the place, they know how to make the copies but not the soul" they fail

"we're human too" "hands, blood, exactly like you"

The shadow gets everything cold and bad, and turned into a monster.

They're own versions underground is doing the same thing but without soul

After they met, the miracle happened. "I thought I was special, I found my faith" "I came up with this plan" "It is our world now"
the Tethered go through the basic motions of their above-ground counterpart, a pale imitation of life and existence. This means a guy playing a game on the boardwalk will influence his Tethered counterpart to play an imaginary game himself, but without the understanding of what he’s doing, of why he’s doing it, or even the knowledge of what game is. But as Red adjusts to her nightmarish existence among the Tethered, Adelaide adjusts to life above ground. He takes up dancing, a suggestion from her therapist, and performs a stunning routine.

And below, in the tunnels, Red imitates it. And it’s flawless. And it’s beautiful. And it awakens something in the other Tethered. For the first time in their existence, have they actually seen what real life looks like? Have they tasted what means to be complete, to have an actual piece of the soul seemingly have to share? If Adelaide can do this above and Red below, what separates them from us? Naturally, this is what gives Red the confidence to lead her assault on the above-grounders."

The use of subway platform space in fictions is inspiring. Architectural space can be used to expose some of the reality in the author's mind with just a little tweak, such as giving a couple characters some kinds of superpower, so that the whole story which happens in that space is much believable but totally different than what people assume the reality is in their life.

Question:

*how do we make a real space in mind in an urban environment?*
- where 2 universes meet
- where people from all walks of society meet
- people perceive / experience differently
- possible to enter the other universe

intersection 

the portal 

door

the platform

exist in all of the parallel universe imagined in fictional writings, movies, and tv series on screen
THE INVISIBLE INFRASTRUCTURE
THE INVISIBLE SPACE
THE INVISIBLE GROUP OF PEOPLE

AND THE MAGICAL POWER

WHEN WHERE WHO WHAT HOW

MOLE PEOPLE

NIGHT

SLEEP ON THE BENCH
Fig. 27: NYC "Mole People" Dwellings. Screenshots taken from urban historian Steve Duncan's documentary film Undercity. The often invisible space and people are revealed in this film. Source: https://vimeo.com/18280328
Fig. 28: "How You May Live And Travel In The City Of 1950". Speculative illustration in the *Iron Man Project novel*, showing the tremendous underground city spaces around transportation systems, a believable fantasy which calls attention to the underground development.

Fig. 29: Manhattan Population Explorer. Manhattan was brought to life when seeing this population change non-stop, and the this is possible thanks to the transportation system. Source: Justin Fung, https://manpopex.us/
WELCOME TO NEW YORK

under

Fig. 31: Welcome to NYC Under. Animation with Video Montage. By author.
The subway is a living creature, people are sucked into the platform space through the subway entrance everyday. They get mixed and stirred on the platform, they meet people from all walks of life and they're bumping into one another, but they ignore others who look different than themselves. They got stirred by the invisible hands of the subway platform and teleported/spit out to totally different sides of the city.
Fig. 32: Magic Platform With the Violinist. By author.
Due to the high crime rate in NYC subway back in the 1960s, along with the perfect darkness, the bad smell, the non-stop machine noise and sound, the strong wind, the narrowness of the space, the distorted orientation, and the emptiness at night, the subway platform space has been an ideal location for dark stories both on paper and screen, which also helps frame people's perception towards it.

People see the items on the floor and the architectural components that make the environment even more unpleasant to stay (see Fig. 33), they can also imagine the supernatural stories that they've seen/read in fictions (see Fig. 34), but they never see or try to see the people who're extremely close to them physically in the space, only the violinist see all the invisibles (see Fig. 35).
Fig. 33: Initial Impression of a Subway Platform. By author.
Fig. 34: A Potential Subway Platform Imagined. By author.
Fig. 35: The Magical Space of a Subway Platform. By author.
There are two main characters: the subway platform and the violinist. The violinist is secretly guarding the platform space by manipulating time and making a small tweak whenever there’s a help needed. The subway platform sucks people in, moves and stirs people random, and then spits people out. The people do their everyday routine without knowing they’re repeating their life in a few minutes on the platform sometimes, and they’re life got changed dramatically because they react to the scenes with little tweaks differently.

The people can only see the platform as a part of the infrastructure and the violinist playing beautiful music (see Fig. 36), however, the violinist and the platform can see the invisible power and remembers the events happened within the repeated time frames (see Fig. 37).
the subway platform

the violinist

the people
Fig. 36: Perspective Drawing of the Subway Platform Space in Most of People's Eyes. By author.
Fig. 37: Perspective Drawing of the Subway Platform Space in When It’s Magic is Seen. By author.
It's 7 pm on a Monday. The people here on the subway platform just got out from work. They're exhausted and annoyed that the first day in the week didn't start well, what a bad luck. The violinist can easily tell they're totally worn-out and they can barely stand still, so she turns the time backwards for a few minutes and they platform provided some columns this time. People love columns on the platform because they can lean on them and they create the natural divisions. They don't have to interact with others anymore, what a relief.
Fig. 39: People Interact with Columns. Starting scene. By author.
Fig. 40: People Interact with Columns. Ending scene. By author.
Now they’re segregated more thanks to the columns. The violinist decides to bring the time back again, and this time the platform provides some food stands. To the violinist it seems great because now the exhausting people can snack a little and actually talk to each other.
Fig. 41: People Interact with Food Stands. By author.
Fig. 42: People Interact with Food Stands. Starting scene. By author.
Fig. 43: People Interact with Food Stands. Ending scene. By author.
The violinist is quite happy about this time. A couple hours later, it's finally quite here. The platform cleaner came to do his job, but all the trash left by the food stands and the irresponsible crowd makes him so annoyed. The smell of the trash and food make it even worse. The violinist was about to go, but she pities the cleaner so much that she couldn't leave without doing anything.
Fig. 44: The Cleaner Reacting to the Trash. By author.
Fig. 45: The Cleaner Reacting to the Trash. Starting scene. By author.
Fig. 46: The Cleaner Reacting to the Trash. Ending scene. By author.
The violinist turns the time back a little, the platform provides some CCTV and a big monitor screen. The violinist thinks this time, people should behave because they know they’re watched. What’s more, they should feel safer at night. Two birds killed at once. A girl is a little terrified when she sees herself on the screen.
Fig. 47: A Girl Reacting to the CCTV and the Monitor Screen. By author.
Fig. 48: A Girl Reacting to the CCTV and the Monitor Screen. Starting scene. By author.
Fig. 49: A Girl Reacting to the CCTV and the Monitor Screen. Ending scene. By author.
The next day, the violinist starts her play as normal, but she realizes all the people look like the same - they’re all looking at their cell phones and trying not to look around at all. She can feel they’re uncomfortable to be in the space and they want to avoid trouble and leave as soon as possible. "What's wrong," thinks the violinist, "oh the CCTV and the monitor screen!" She is sad because no matter how many times she tries, there's always something wrong. Now she needs to turn back the time one more time and hopefully this time things can be better.
Fig. 50: People Looking at Their Phones. By author.
Fig. 51: People Looking at Their Phones. Starting scene. By author.
Fig. 52: People Looking at Their Phones. Ending scene. By author.
Noticing an increasing level of discussions and actions in social injustice, a rise of people recognizing and fighting for equal rights all across the world, and my experience of the subway platform space where every movement becomes more dominant in the tiny strip of space in a city filled with diversity, I find this space is magical. Endless things happen in the strip of space everyday. People observe, they have to, so they can know the direction of going and make sure they’re not in trouble. However, most people manage to ignore others pretty easily. This is fascinating to me. By fictionalizing the my narrative, the magic of the space can be shown in a believable way, and some of the reality in terms of how people behave in the space is revealed.
Textual Media


Other Media


