Manhattan Above

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12.01.2017

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Introduction

Due to their economic growth and technological innovation in 1880 the New York City and Chicago introduced a new building typology: the skyscraper. In Manhattan the fast and multiplied constructions of high rise buildings lead to a problem of congestion in a short period of time. The first visionary scenarios to solve the problem of congestion came from Hugh Ferris and Harvey Wiley Corbett. In the early 1920s, they envisioned Manhattan with a secondary elevated layer of pedestrian space. The street level below, should be used only for vehicular transport.[1]

Winnie Hu states in August 2016 in The New York Times article “New York’s sidewalks are so packed, pedestrians are taking to the streets”[2]. It has been stated that Manhattan has a growing pedestrian congestion problem and the streets are at certain times too crowded to be used. New York City is a walkable city, where the streets play an important role to the quality of the public space.
Harvey Wiley Corbett proposals were aiming to solve the congestion problem with which Manhattan still struggles today. Nevertheless, since 1923 there has been only one project built that relates to their vision: The High Line by James Corner Field Operations and Diller Scofidio + Renfro.

With the goal to find a possible solution to ease the congestion in Manhattan, this thesis explores the possibilities to enlarge the public space in Midtown Manhattan. It also seeks to understand how Manhattan is similar or
different from Corbett vision today.

The island of many hills

In 1524 the Florentine explorer Giovanni da Verrazzano was the first European to visit the area that would later become New York City[1]. It took more than 100 years until the Netherland skinners, the first Europeans to settle on the island of *Manna-hata,* inhabited the area. In the 17th century a new settlement for the Dutch East India Company was raised.

According to the journalist Cay Rademancher, the island of *Manna-hata* was bought from the local native American tribe Lenape for a handful of gold. The name of the island *Manna-hata* was given by the local Indians and it is translated as “island of many hills”[2]. The Dutch immigrants called it *Nieuw Amsterdam*. This name was kept until the British colony took over the island. They call it New Yorke.

Even from the beginning when colony measured only 1500 inhabitants, there were about 18-20 languages spoken on the streets of Manna-hata, which indicates the future path that this region will take.[3]

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[1] Vgl. Knecht 1996, 372.

[2] Cay Rademancher 2008, 33.

[3] Ebda., 35.

A raster for the future

Until the beginning of the 19th century the uncontrolled layout of Manhattan, faced a change that has remained until today, the common thread for the future city development. Simeon de Witt, Gouverneur Morris and John Rutherford were commissioned for the design that will regulate the "final and conclusive tenancy of Manhattan"[4]. The result was a grid of 155 streets running east-west and 12 avenues running north-south. This grid, is a "conceptual speculation"[5] built over the existing paths, farms, hills, watercourses and over the colonial heritage.

[4] Rem Koolhaas 1994, p18.

[5] Ebda., 18.

Zoning Resolution Plan

At the end of the 19th century new technologies, such as the invention of the elevator and electricity, together with the economical growth, demanded more space. This resulted in constructing taller buildings. The skyscraper was born. At the time there was no plan to limit the height or shape of the skyscraper.

With the construction of the Equitable Building, in 1915 the space around it got desolated and "(...) became increasingly evident that the large project was a concern not only of an individual, but of the community, and that some form of restriction must be adopted"[6].

As a result, one year later a new rule was implemented for the future buildings in Manhattan. The zoning resolution plan "(...) describes on each plot or block of Manhattan's surface an imaginary envelope that defines the outlines of the maximum allowable construction."[7] This meant that at a specific hight, each building should gradually retreat from it's main shape. 25 percent of the base surface was allowed to be multiplied without any limit. Inspired by the zoning law reglementations,
architect Hugh Ferriss, created a series of paintings containing massing studies,
depicting possible forms and how to maximise the future high-rise building volumes.
Conducted by Harvey Wiley Corbett, this studies lead to a visionary plan for Manhattan in 1923,

The Zoning Resolution Plan from 1916 changed in 1961 for the first time. Since then the plan has been constantly updated by New York City Department of City Planning.

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[6] Rem Koolhaas 1994, p107.

[7] Ebda., 107.

Manhattan today

It is almost 50 years ahead from Harvey W. Corbett's vision of Manhattan and New York still hasn't implemented any of his ideas. According to BBC documentary "New York Americas busiest city"[8] is one of the most congested cities in the world. Manhattan doubles its population each week, from 1.6 million to 3.1 million as the commuters come to work in the district.

[8] James 2016, doc BBC, 2016.

Manhattan's climate

New York, USA, 40.78°N 73.97°W

Whereas New York state climate is mostly humid continental, the southeastern part - New York City area - enjoys the humid subtropical climate zone. Spring and automn are barely noticeable, winter and summer are the only distinguishable seasons. The warm season usualy lasts between April until November.[9]

The selected climate data for New York City from Meteoblue, are based on hourly weather model simulations gathered over 30 years.

[9] worldweatheronline.com/new-york-weather, 23.12.2016.

Overcrowded Sidewalks

“Veteran pedestrians have tried to adapt. They shoulder their way into bike lanes or walk purposefully on the street alongside cars — eyes ahead, earphones in — forming a de facto express lane.”[10]

“[...]overcrowded sidewalks topped the list of residents’ concerns, in a survey conducted last year for the local community board.”[11]

“As many as 14,000 pedestrians an hour walk in front of the Modell’s Sporting Goods store on Seventh Avenue near West 34th Street, according to 2015 data collected by the partnership.”[12]

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[10] Hu 2016, New York Times.

[11] Ebda

[12] Ebda

Manhattan's public space

In order to ease the pedestrian congestion in Manhattan, the thesis seeks possibilities to extend the public space.

To do this, understanding the current situation of public space in Manhattan is mandatory. Therefore I will look at some examples that were chosen because of their scale, diversity and vertical positioning in the city.

Manhattan's streets

Manhattans's sidewalks contain the essence of the public space. The street level, as well as underground passages, offer art space of all kinds, including small commercial areas. The following photos showcase some examples.

Pocket park Paley

Pocket Park Paley is a privately owned public space, located in Midtown Manhattan. The 390m^2 square park is retreated and enclosed between the dense urban fabric - surrounded manly by high-rise buildings - having only one side open the street. The park is slightly elevated from street level and can be accessed from a small set of stairs and ramps. Equally spaced honey locust trees lay at about 6 meter distance from each other. They create a natural canopy to shade the public space during the hot days. The park's side walls are covered in ivy and act as vertical green space, while occupying the rear wall with a 6 meter high artificial waterfall. Wire mesh chairs and marble coffee tables can be moved and rearranged to the user's needs.[13]

Pocket Park Paley is an example for under-
standing that expanding the public space in Manhattan requires different scales in oder to create different possibilities. Manhattan urban fabric contains many similar spaces, with the potential to create new the public space.

Central Park

[13] Supinsky/ Lu 2014, 1.

At the beginning Manhattan's grid was planed for a maximum economic efficiency. Besides the street space, there was almost no room allocated for public space. Due to this, the inhabitants of Manhattan had low quality of life, bad living conditions and dangerous streets.

Designed in 1853 by the landscape architect Frederick Law Olmsted, Central Park is built upon Manhattan's exploding population and desire to offer public space.
Like the city itself, the natural environment of the park is artificially recreated "to increase and develop landscape effects, [...]. Its lakes are artificial, its trees (trans)plated, its accidents engineered, its incidents supported by an invisible infrastructure that controls their assembly "[14] It has been implemented between Fifth and Eight avenues and 59th and 104th streets.[15]

The High Line

"The goal was to focus attention not on the High Line but on everything around it"[16]

The High Line elevated park, is the main contemporary example for expanding the public space above the street level. Due to it's importance, the project is detailed in the next chapter, in the context of a three dimensional public space.

The Low Line

[14] Koolhaas 1994, 23.

[15] Ebda., 21.

[16] thelowline.org.

"The Lowline Lab is a long-term open laboratory and technical exhibit designed to test and showcase how the Lowline will grow and sustain plants underground."[17]

Dan Barasch and James Ramsey are seeking to create an underground public space filled with greenery, underneath the New York City. The so called Low Line is located in Midtown Manhattan in an abandoned trolley terminal since 1948. Similar to the High Line project, their intention is to extend the public space in the existing and unused spaces of the city. Being build as an indoor space, the Low Line would be open the entire year, without having seasonal changes.

The main problem of building an artificial underground park is the absence of daylight. Barasch and Ramsey try to solve this problem by harvesting the sunlight from above the ground and redirecting it down below.[18]

The Ford Foundation

The Ford Foundation is "a twelve-story box-shaped building"[19] designed by Kevin Roche, and is an example for creating indoor public space without commercial activities. It distinguishes from other buildings in Manhattan, by expanding the public space into its large atrium surrounded by offices. Kevin Roche's intention was to encourage interaction between the office workers.[20]

Roy and Diana Vangelos Education Center

[17] thelowline.org.

[18] Dan Barasch 2014, ted.com.

[19] Roche/ Dinkeloo 1974, 8.

[20] Ebda., 11.

Roy and Diana Vangelos Education Center contains a vertical network of social and study spaces, distributed along its 14 stories.[21] This semi-public space, is a great example for connecting multiple floors and making the use of elevators less needed. The resulted space is like an artificial vertical landscape, where the slopes and staircases become more than just circulation area but also offer additional functions: multi-purpose auditorium, stepped lounge and study spaces.

[21] archdaily.com/793971.

The vision from 1923

Separating pedestrian sideways from the vehicular traffic in order to make room for more public space and decongest Manhattan is the vision from 1923 offered by Hugh Ferriss and Harvey Wiley Corbett.
In Delirious New York Rem Koolhaas states that "The most precise and literal proposal to solve the problem of congestion comes from Harvey Wiley Corbett"[22]. Inspired by Hugh Feriss', Corbett envisions a possible future of Manhattan of 1975. Corbett's drawings, created in 1923, depict elevated arcaded walkways and the city's ground dedicated solely to vehicular traffic.[23]

His vision is exemplified in four stages:

- A depiction of the present situation of Manhattan in 1923.

- In the first stage the pedestrians are removed from the ground floor to an elevated layer, which can be described as an extension of the first level of the building. This new layer "moves" the pedestrians from the street that is now only used by vehicles.

- In the second stage the buildings are partially cut out to make room for more vehicular lanes.

- The third stage of Harvey's vision contains an "ocean of cars, increasing traffic potential to 700 percent." The buildings contain cut-ins also at the second pedestrian level. They cross streets over bridges. [24]

Manhattans street section, as it is in 1923.
First step: elevating the pedestrian space.

Second step: Making room for more vehicular traffic.
Third step: The buildings float above the ocean of cars.
Manhattan public space would be similar to high-rise Venice.

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[22] Rem Koolhaas 1994, 120.

[23] Ebda., 120.

[24] Ebda., 124.

The vision today - the High Line?

This vision proposal elevates Manhattans public space to a new - third - dimension. Today, 2017, almost 100 years later, there is only one built project that can relate to this vision: The High Line. Would Manhattan's problem of congestion be non-existent if it contained more of elevated pedestrian space? By understanding the impact of the High Line on the city, we can make a step further and imagine Corbett's visions as a possible reality.

A 2,4 km long, elevated stretch, called the High Line was built in the 1930's to service for the freight transport in the West Side Manhattan.[25] As the cover page of the article *May Live to See* from 1925 shows, it was believed that the High Line will be the start, of what will become a solution to solve the problem of congestion in Manhattan. With the construction of the High Line, the freight trains where travelling 7 meters above the street level, therefore the problems of the vehicular traffic and pedestrian safety were solved for this area. At the time of construction, the project was considered as "one of the most important works of infrastructure in the history of Manhattan."[26]
In the 1970s, as the industrial business fled from Manhattan, the High Line dissolved from its use. After a controversial debate, whether to keep the structure or not, a competition was held in 2004. James Corner Field Operations and Diller Scofidio + Renfro won the competition.

"The goal was to focus attention not on the High Line but on everything around it"[27]

The designers' propose was to keep the High Line a slowly walkable park. Elizabeth Diller states that it was adamant not to allow the High Line to become another city's street. It was important to keep the cafes, shops and bookstores - "the whole consumer leisure world"[28]
- away from the elevated structure.

"The High Line allows you to experience the middle of a block. On the street, you cross avenues and streets but you never stand at the center of the intersection for more than a moment. On the High Line, you can occupy the middle of a street intersection without getting run over. You can also walk for 2,4km and not stop for a single red light."[29]

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[25] Corner 2015, 9.

[26] Ebda., 19.

[27] Ebda., 13.

[28] Ebda., 19.

[29] Corner 2015, 19.

The project brings the public space to the third dimension. It's design is favours natural habitats, micro-climates, connections, ecosystems, nocturnal Life, economies and communities.

The High Line does not sustain typical park programs, such as biking, running, sports, arts and play, "the High Line should not duplicate these programs. It should be distinctive and offer uses and experiences that are unique to it."[30]

[30] Ebda., 139.

What goes above?

Visionary as well as the built projects suggest that a solution to solve the Manhattan's problem of congestion is to elevate the public space on multiple levels. Even if the High Line was originally built to solve such a problem, the current transformation was not intended to serve the same purpose.

James Corner states in the High Line that most of the competition entries for renovating the High Line were proposing to make it similar to the street level.[31] Their design was totally the opposite, focusing on preserving and further development of it's potential values: a walkable park, micro-climate, connecting to the existing surroundings and improving them, therefore aiming for making the High Line different than the street level. Due to its success, their decision seemed to be the right one. According to The High Line publication, the elevated park has exceeded expectations despite being "just" an urban promenade.

Different levels in the city may have different impacts on public space. Therefore trying to solve the problem of congestion by merely elevating the street space may not be enough. Having a character differentiation for each level may be the key. This explains why Manhattan still hasn't implemented Corbett's visions of the elevated pedestrian level, probably because changing something in the city that already works best - the street life - would only take away the best of what it offers.

[31] Corner 2015, 17-19.

Hong Kong's elevated public space.

"Hong Kong is a city without ground. This is true both physically (built on steep slopes, the city has no ground plane) and culturally (there is no concept of ground). Density obliterates figure-ground in the city, and in turn re-defines public-private spatial relationships. Perception of distance and time is distorted through compact networks of pedestrian infrastructure, public transport and natural topography in the urban landscape."[32]

Facing the similar problem of congestion, Hong Kong City allowed the landlords to build higher, if they expand the public space inside the high-rise buildings. The intention behind this idea of vertical public space expansion is a desire to "make Hong Kong an Asia's World City in order to develop its tourism industry"[33]. This led to a new type of a three-dimensional public space in which tunnels or bridges are connecting the pedestrian parts of the city on multiple levels.

Similar to Corbett's vision of Manhattan, Hong Kong offers elevated pedestrian spaces that separate it from vehicular traffic. But there is a major difference between Wiley's vision and Hong Kong's three dimensional public space. "If you want to get from one part of the city to another you simply get there by MTR without walking outdoors."[34] Corbett envisioned open pedestrian spaces, similar to the canals of Venice, where the water resembles the vehicular traffic, and the pedestrians are connected throughout bridges above it. Hong Kong has done the opposite, making an artificial environment, that feels like a giant mall.

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[32] http://citieswithoutground.com.

[33] Claire 2013, 6.

[34] Ebda,.

The (over)controlled public space

For a Hong Kong pedestrian, the walking experience feels more fluid than usually in a big city. The resulted elevated and artificial environment connects large portions of the city. For example by crossing streets over bridges, instead of waiting for the green light, or feeling the same temperature because of the constant controlled climate that is being offered by the shopping galleries.

The main advantage of the fluid experience is that one does not have to wait and can be constantly on the move. Nevertheless, the awareness of the surrounding space is therefore reduced. As a pedestrian, one's attention is reduced to watching out for stairs. Maybe not even that, considering the moving stairs. This interconnected and elevated pedestrian space resembles the factory line. Productivity is at it's best. There is almost no space for retreat, no escape from the Another problem is that these public spaces are mainly oriented - if not only - towards economical win. Having the possibility of making the building even taller and therefore owning more expensive space is not enough for the landlords. The shared space for the public use is mainly a large shopping mall. A pedestrian journey in a typical day in Hong Kong City is similar to a shopping mall journey. This would not be a problem, if there was an alternative way. For example "[...] if you live in Telford Garden and you go home by MTR, you are forced to pass through Telford Plaza."[35] As the public space is replaced by this "quasi-public spaces [...] there is little power and right to choose where to go except to follow the designated routes by the private developers."[36] Entering this public space means entering a space of prefabricated control. "We can only eat the food provided by the restaurants inside, we are encouraged to consume and we cannot sit on the floor or shout in the malls etc."[37]

Another example for missing an alternative solution are the fixed links between these public spaces. Some streets keep the ground level only for vehicles. There is no crossing, the only way to cross the street is by reentering the mall-ride. Below, the sideways can be very small or non-

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[35] Frampton/ Solomon/Wong 2012, 18.

[36] Claire 2013, 5.

[37] Ebda., 6.

existing. Getting down, out on the street feels like breaking a rule, breaking out of the convention. This is actually the opposite of what a public space should be.[38]

Conclusion

What New York City could learn from Hong Kong City, is the possibility of expanding and elevating the public space into the existing buildings. A mixture of enclosed and open spaces and alternative paths would be necessary in order to not merely create a large commercial space.

Pedestrians are attracted not only to commercial program, there are more types of indoor and outdoor public spaces that bring people together.

A three dimensional public space may be the key sollution, but Manhattan has a well functioning ground level that defines the city. The vertical expansion of the public space should not replace the existing street level.

[38] Frampton/Solomon/Wong 2012, 5.

Michael Wallraff - Verti City

Before coming back to Manhattan we look to Michael Wallraff's contemporary ideas for making a vertical public space. As a study for his experiments he chose the twin apartment buildings Lake Shore Drive Apartments in Chicago. Designed by Mies van der Rohe, they suite well such an experiment due to their flexible plan configuration.

Michael Wallraff proposes a prototype "that aims at spatial diversification and the improvement of quality of life in densely populated areas."[39] His vertical structures are "Porous, [...]with interwoven spaces that unfold in narrow locations and provide spaces for relaxation, social interaction and unplanned communication."[40]

In the first step the stacked apartments are loosened. The cores of the towers act as magnets that are able to "attract units from the opposite tower and dissolve [...] the respective system of apartments. A spongy, porous structure emerges between the two apartment buildings."[41] The entire process is mathematically optimised for view, structural efficiency and maximum daylight access.

"The public bridges are connected through escalators, staircases and ramps and form a kind of promenade, a vertically folded public park."[42] The sunlight disadvantaged apartments are used for collective programs like: cafes, indoor playgrounds etc. The outer skin - the netlike skin - covers the entire insertion.

The resulted plan contains prototypes grouped as a network to "improve super dense residential areas"[43]. According to his drawings (fig. 99) implementing such an idea in Manhattan (fig. 100) would result in less density.

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[39] wallraff.at/detail.php?xp=88&menu=rp.

[40] Ebda

[41] Ebda

[42] Ebda

[43] Ebda

Above - how far?

The aim of this thesis is to expand Manhattan's public space on different levels, where each layer contains different public programs. But how far and at which scale should the public space be extended? In the next step I look at this three distinctive scenarios:

First scenario: Public space grows from street level up to the highest floors.
- parasite public space -

The public space grows inside the entire bluilding, it "attacks" it with public space at different levels, creating a three dimensional network.

Private space is mixed with public space.

Second scenario:
The elevated public space is separated from the ground level. It exists in the middle of the high rise buildings as a secondary level.

This scenario is similar to the one suggested by Hugh Ferris's drawings for the future Manhattan. It is a public space that flows trough the middle of the high rise buildings. Even if at first sight such an idea might be seen as a good, a closer look underlines some problems. It can be the answer for the reason why Corbett's vision remained only on paper.

One inconvenience is the lack of privacy for the space between ground level and the elevated public level. The pedestrian traffic between the ground level and the elevated public space in the middle of the skyscrapers requires many vertical connections. The private space would be surrounded by vertical elevators and staircases. The second problem is that the large amount of vertical connections demands a lot of space. Technical and vertical connections, such as elevators and staircases, already use a major

part from the buildings' area. This would result in inefficient spaces, where large parts of the inbetween space would be there only to sustain the public level above.
The third problematic aspect is the

energy required to move and connect the two public levels if they are too far apart.
The public pedestrian space should be
rather walkable than moved by escalators.

Therefore the elevated public space should be considered closer to the ground level and
and not raised too far up.

Third scenario: Elevated public space close to street level.

The public level is extended only in the lower part of the buildings. The space is developed inside of the buildings. The required vertical connections are integrated into the urban landscape. The space above remains private, there is a clear limitation between the open and private space. The resulted spaces offers new city perspectives and possibilities to explore space. The resulted in-between-space that remains private, but can also be used to connect and extend to the public space functions. Having the secondary public space near to the ground level reduces the necessity of using elevators. As mentioned in the Hong Kong case study, the optimal distance of a three dimensional space is from the street level to up to 8 floors.

Manhattan above - expansion concept

Current public space
Manhattan's current two dimensional public space that is mostly at a street level.

Elevating public space
The public space is raised and connected, inside of the lower levels of existing buildings.
The elevation varies between 5 to 40 meters.

Manhattan above
The resulted public space works as a three dimensional network inside of the existing buildings.
This space literally opens new
perspectives. The street level is kept as it is.
Room for more
As the public space is expanded,
pedestrian and vehicular congestion are loosened. Therefore Manhattan can grow even more.

The six selected blocks are cutted by elevated public space. Due to Manhattan's climate, the proposed public level is composed from
outdoor (open or covered) as well as indoor space.

The resulted space is open for the public. The blocks can also be connected through bridges in order to facilitate a continuous upper public level.

Manhattan Above

The following images represent the resulted cutout public space for the entire 6 blocks. In order to have a closer look at the resulted landscape, each group of buildings is randomly formed and presented apart.

Prof. Brian Cody states in DBZ in the article Stadt der Zukunft that increasing a skyscraper height will result in increasing it's vertical core.[44] By elevating the public space at the lower levels of the high rise towers, the thesis concept enables vertical expansion without increasing the center core. This is possible because a part of buildings core may start above the expanded public space.

[44] Cody, DBZ 11/2010, 17.