

# **ADAPTIVE REUSE AND NEIGHBORHOOD CHANGE: THE CASE OF NORTH BROOKLYN**

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Introduction to GIS Methods  
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## Project Summary

This project aims to capture how adaptive reuse has contributed to, and is a part of, accelerated neighborhood change in north Brooklyn neighborhoods.

## Purpose and Background

Adaptive reuse refers to the process of developing an already existing building or structure to be utilized for a purpose other than what it was initially intended. It offers a unique way to approach design and urban development, and also offers potentials for sustainability and environmental benefits. Adaptive reuse even possesses the potential to remediate housing crises and shortages.<sup>1</sup> Since New York City is currently facing a severe lack of housing, particularly affordable housing, this potential is very exciting. However, adaptive reuse, as a form of distressed property remediation, has the likely possibility of contributing to rising property values that cause gentrification to occur and local communities to be pushed out.<sup>2</sup> Adaptive reuse projects, particularly in north Brooklyn, are often coupled with environmental remediation efforts. While environmental remediation may seem entirely like a positive trend, the combination of environmental remediation and a lack of new affordable housing units contributes further to the gentrification of a neighborhood.<sup>3</sup>

A variety of adaptive reuse style projects in Brooklyn, whose transformed purposes range from offices to artist spaces, will be explored in this project. Specifically, the five case studies that are the basis for this project and their respective transformations are:

- 1) New Lab
  - a) *Built as*: Shipbuilding factory in 1899 and
  - b) *Transformed into*: Multidisciplinary design and technology center in 2016
  - c) *Designed by*: Marvel Architects
- 2) Wythe Hotel

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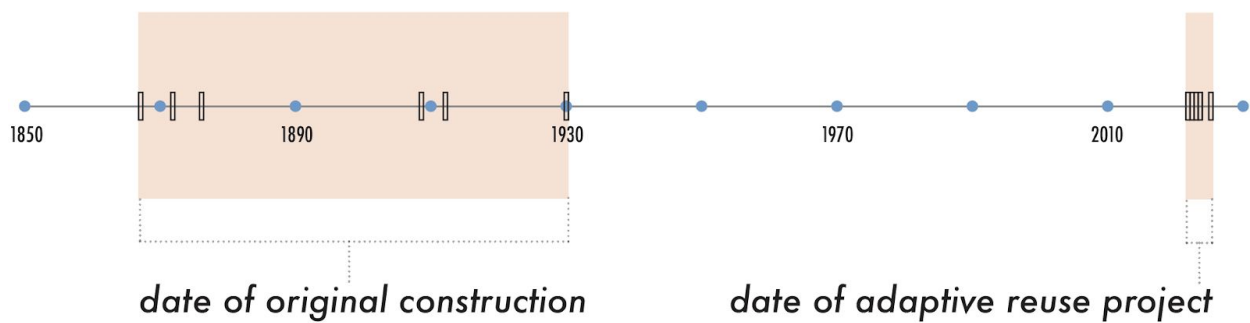
<sup>1</sup> Claire Barliant, "Adaptive Reuse: New Strategies in Response to the Housing Crisis," (*Afterall: A Journal of Art, Context and Enquiry*, no. 23 (2010): 108-19).

<sup>2</sup> Jessica Bacher and Meg Byerly Williams, "A Local Government's Strategic Approach to Distressed Property Remediation," (*The Urban Lawyer* 46, no. 4 (2014): 877-99).

<sup>3</sup> Rebecca Salima Krisel, "Gentrifying a Superfund Site: Why Gowanus, Brooklyn Is Becoming a Real Estate Hot Spot," (*Consilience*, no. 14 (2015): 214-24).

- a) *Built as*: Textile factory in 1902
  - b) *Transformed into*: Boutique hotel in 2012
  - c) *Designed by*: Morris Adjmi Architects
- 3) Pioneer Works
- a) *Built as*: Iron works in 1866
  - b) *Transformed into*: Artist space in 2012
  - c) *Designed by*: Architect Sam Trimble and artist Dustin Yellin
- 4) Kickstarter Headquarters
- a) *Built as*: Structure for iron merchants in 1862
  - b) *Transformed into*: Headquarters for crowdfunding platform in 2013
  - c) *Designed by*: Ole Søndresen
- 5) 1000 Dean Street
- a) *Built as*: Studebaker Service Station in 1920
  - b) *Transformed into*: Offices and food hall in 2014
  - c) *Designed by*: Annabelle Selldorf

## 1850-2020: Adaptive Reuse Timeline



The above figure shows the timeline for these buildings' original constructions and the dates of their respective adaptive reuse projects. Given the much wider span of their original construction dates in comparison with their adaptations, it is apparent that adaptive reuse is a rather new trend for these neighborhoods. The premise of the research is to answer this question: How has adaptive reuse affected north Brooklyn's neighborhoods? While this research project includes a historical element to reference the transformed uses of the buildings, this question is especially important for the current populations of the neighborhoods. Since north Brooklyn has undergone a major transition in demographics and property values in the recent decades, it is important to analyze who these adaptive reuse projects are truly serving.

## Literature Review

A report published by the German Marshall Fund of the United States in 2016 titled *The Adaptive Reuse Toolkit: How Cities Can Turn Their Industrial Legacy into Infrastructure for Innovation and Growth* serves as a great starting point for research regarding adaptive reuse. While this study does not analyze New York City specifically, it still serves as a great reference to discuss the pros, cons, and processes of adaptive reuse. Matteo Robiglio, starts the article by stating some expected benefits of adaptive reuse: "It is good for local culture... it draws investment... reuse is better for the environment... reuse strengthens a community feel by positively linking a city's past to its future, and offering cheap and robust infrastructure to emerging needs, which can spark wholesome renewal processes".<sup>4</sup> It is apparent that this study is identifying adaptive reuse as a part of urban renewal, which in and of itself holds a lot of weight. Robiglio also lays out an eight-step approach to making adaptive reuse possible in a community. When analyzing the case studies for this project, it is interesting to compare their unique approaches with the generalized one that is presented in this piece of literature.

A second significant piece of literature is *The Gentrification and Inequality in Brooklyn : New Kids on the Block* by Judith DeSena. While most studies on gentrification focus mostly on its causes and consequences through examining housing, class conflict, and the displacement of residents, this book analyzes the process of gentrification. DeSena examines how the longtime

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<sup>4</sup> Matteo Robiglio, *The Adaptive Reuse Toolkit: How Cities Can Turn Their Industrial Legacy into Infrastructure for Innovation and Growth*, (Report, German Marshall Fund of the United States, 2016), 5.

working class residents of the neighborhood remain socially segregated from the newcomers. While new residents and longtime residents inhabit the same spaces, access to amenities and the newfound “benefits” of such gentrification remain only available for the new, mostly upper class and white residents. Such adaptive reuse projects that are being examined in this research process can be understood to be a form of these new, exclusive amenities that come with gentrification.

## **Data**

- Building footprints for the area
  - Source: NYC Open Data (2019)
- Base map for the area (including roads, open spaces, etc.)
  - Source: NYC Open Data (2019)
- Year of alterations for buildings in the area
  - Source: PLUTO (Department of Finance - RPAD Master File) (2019)
- The assessed land value for each tax lot
  - Source: PLUTO (Department of Finance - RPAD Master File) (2019)
- Year built
  - Source: PLUTO (Department of Finance - RPAD Master File) (2019)
- The locations of the case studies and their years altered vs. their years originally built
  - Source: Google Maps; online research

## **Methodology**

I began by researching various adaptive reuse projects in the New York area. Unsurprisingly, I found there to be a disproportionate number of them located in north Brooklyn. Given prior research I had done on neighborhood change in Greenpoint, I chose to focus this project on north Brooklyn. I then put together a list of five adaptive reuse projects that varied in their initial constructions as well as their new intended uses. Next, I geocoded the data points utilizing their addresses and latitudes and longitudes that I had retrieved from Google Maps and then compiled onto an Excel spreadsheet.

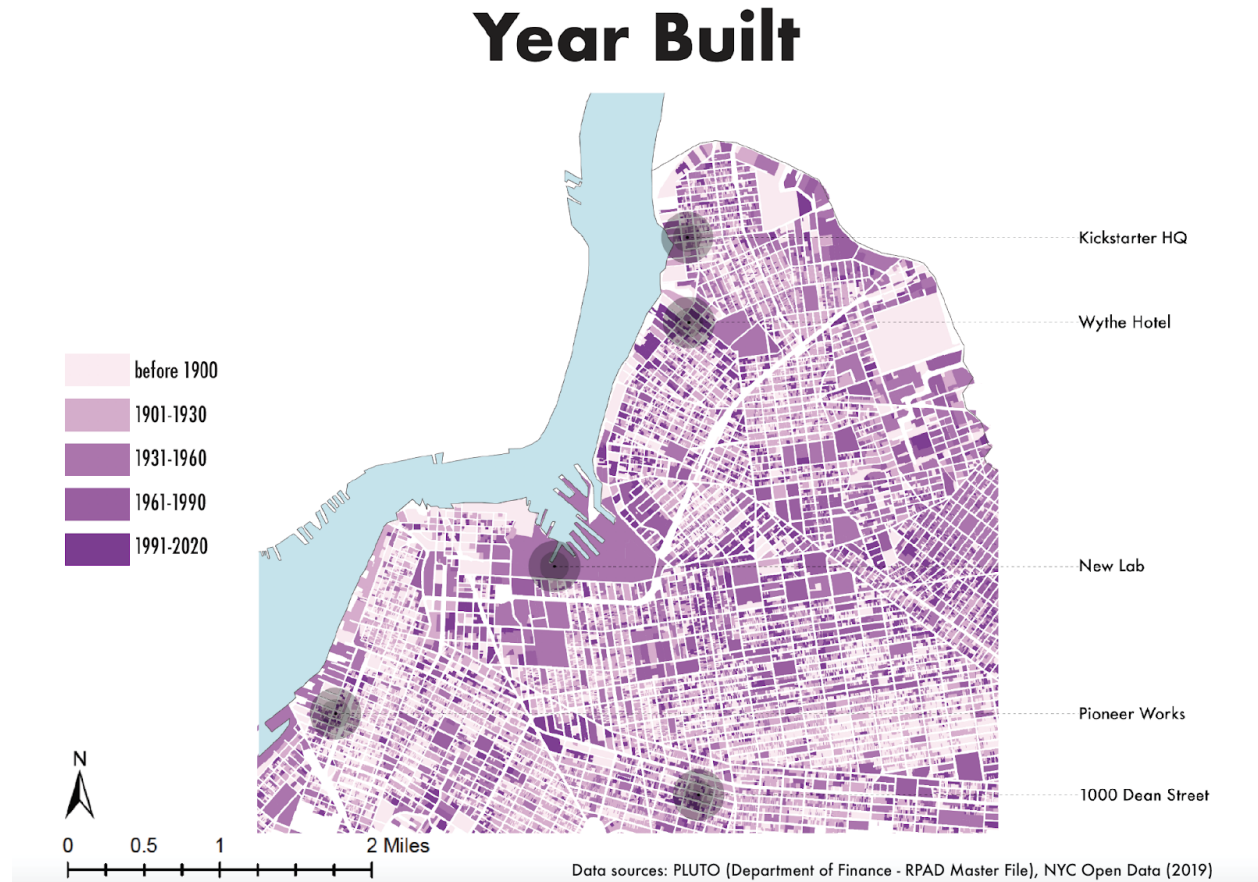
Next, I downloaded all of my data from PLUTO onto my external flash drive. I organized it neatly into folders that were dedicated to each respective map. The first data set that I mapped was the alterations over time. I overlaid the geocoded points for the case studies. I was able to verify their accuracy and the accuracy of the data through adding the additional layer of building footprints for New York City. I saw that the indicated years of alterations for the case studies' footprints accurately represented the dates that I knew that the adaptive reuse projects occurred. I chose to categorize the data in 20-year time frames beginning in 1971 since this is when the alteration data became more accurate, and is around halfway between the time when the buildings were originally constructed and when their adaptive reuse projects took place. For the maps representing year built and assessed land values, I also overlaid the data with the geocoded points of the case studies. For the year built, I divided the data into 30-year intervals, beginning in 1900 since this was around when the case studies were originally constructed, and to get a more even spread of data. For the assessed land values, I categorized the data using natural breaks, which I then slightly adjusted to make the numbers more easy to read and comprehend.

I chose to use choropleth maps for these data sets in order to portray a range of values, either of time or of monetary value. This choice was essential in showing how a measurement varies across a geographic area and to show the level of variability within north Brooklyn. I also edited all of the maps in Adobe Illustrator in order to improve their legibility as well as aesthetic value. I used this opportunity to add labels for the case studies as well as a radius beyond their building footprints. I also used this software to zoom in on the specific case studies and create five additional, smaller maps of assessed land value in order to make this data set more easily analyzed.

## Findings

### Map 1: Year Built

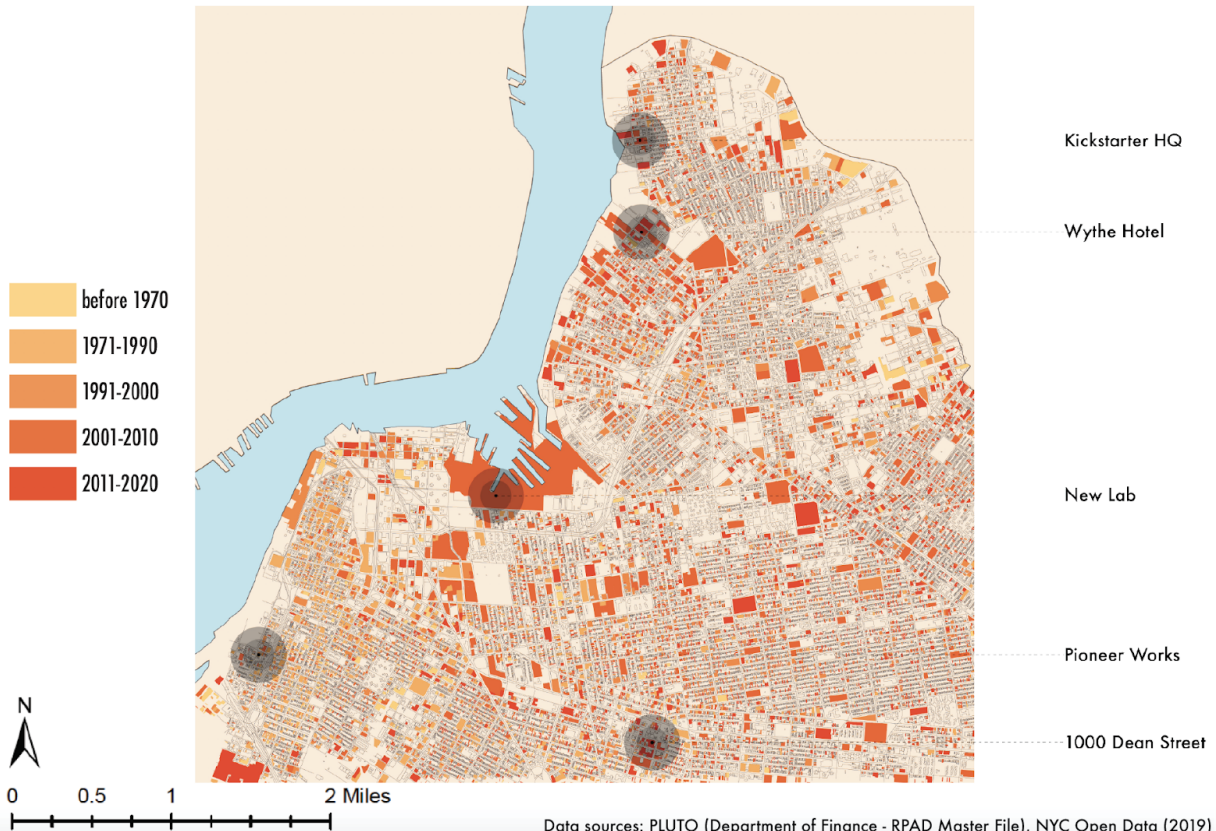
Data Sources: PLUTO (Department of Finance - RPAD Master File), NYC Open Data (2019)



## Map 2: Building Alterations Over Time

Data Sources: PLUTO (Department of Finance - RPAD Master File), NYC Open Data (2019)

# Building Alterations Over Time

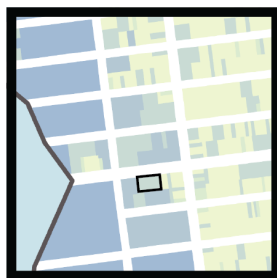
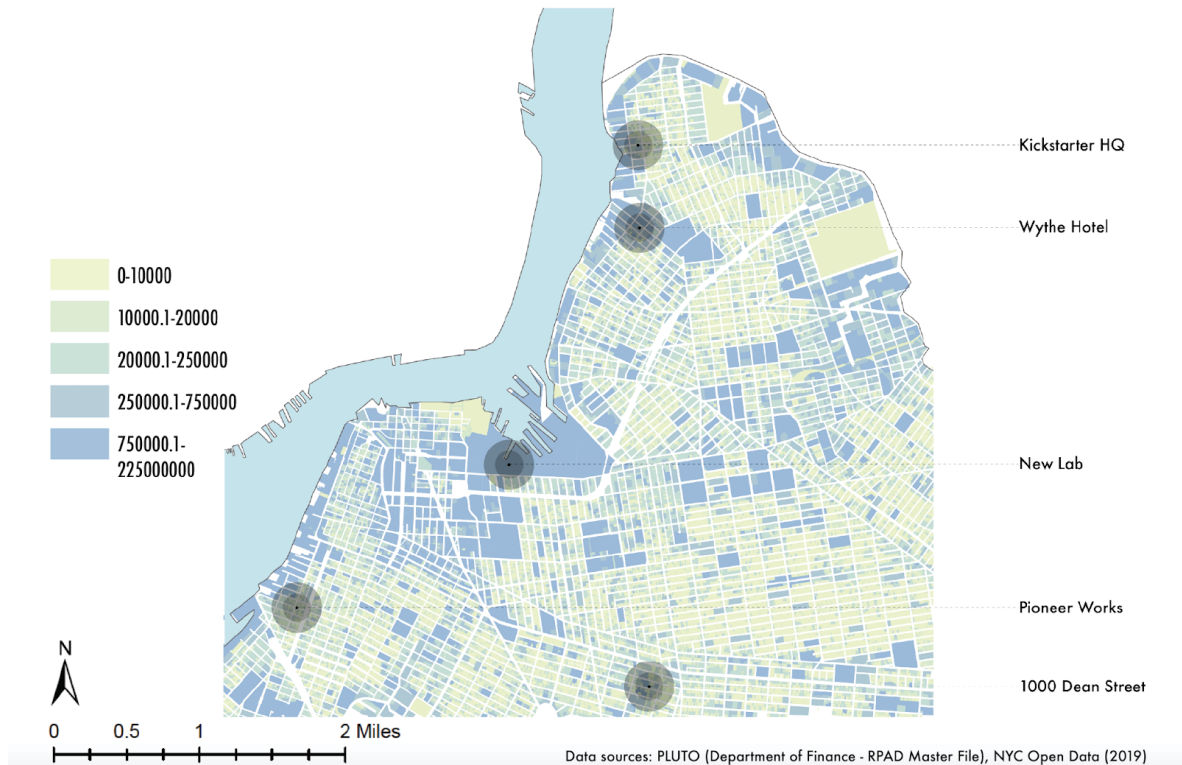




### Map 3: Assessed Land Value

Data Sources: PLUTO (Department of Finance - RPAD Master File), NYC Open Data (2019)

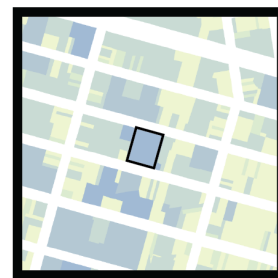
## Assessed Land Value



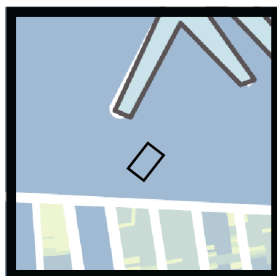
Kickstarter HQ



Wythe Hotel



1000 Dean Street



New Lab



Pioneer Works

From a purely visual look at these maps, it appears as though there is an overall correlation between more recent building constructions, higher land values, and more recent building alterations in North Brooklyn. Additionally, it appears as though this correlation is clustered around the waterfront areas, including the East River and Newton Creek. These areas, especially Newtown Creek, are the same areas that have, as mentioned in the background, undergone much environmental remediation in recent years. As such, it seems as though there is a relationship between various sustainable efforts, including remediation and adaptive reuse, and land value increase. It is not possible to confirm whether adaptive reuse projects are a cause for gentrification/land value increase or are a result. However, it is clear that they are part of the greater picture of neighborhood change. This can be seen through what is shown in the map Building Alterations Over Time - north Brooklyn building alterations have occurred at a greater rate in the more recent years. This trend can be attributed to gentrification and can be seen as a cause for the higher assessed land values in the third map. In Map 3, Assessed Land Value, it is shown that some of the building footprints of the case studies have higher assessed land values than that of the areas surrounding them. This trend is not entirely consistent, but in no case do the adaptive reuse projects have significantly lower assessed land values than other buildings in their direct proximity.

## **Limitations**

One major limitation of this research is the accuracy of the data provided by the Department of Finance. These data sets include the year of alterations, assessed land value, and year built. The Department of Finance uses a high frequency of estimates for their data sets. For example, the year built is often rounded to the nearest decade, rather than the exact date. As such, the maps created from this data portray a rough estimate of these neighborhood attributes, and can not be taken to be read as astutely accurate. Another limitation was met when attempting to map neighborhood change through rising land values. The only data for land value that is publicly available is for the most recent time frame, and can not be found for previous years. So, it was impossible to map rising land values in the neighborhood in relation to adaptive reuse projects. However, one can assume that adaptive reuse does enact rising land values since the

Department of Finance determines any alteration to mean any time changes were made to a tax lot that increased their value. Another limitation is that the building alteration data only takes into account the building's first alteration, not its most recent.

### **Recommendations/Conclusions**

Given the increasing land and property values and gentrification processes that north Brooklyn has experienced in recent years, I encourage architects, planners, and policy makers are applying adaptive reuse in north Brooklyn neighborhoods to take the longtime local residents into account. Since adaptive reuse possesses the ability to counter housing shortages, it is recommended that projects are enacted to serve the communities that are experiencing the hardships that come with gentrification. Projects such as these five case studies serve a very selective population - namely, those who are able to afford them. Rather than catering to the wealthy, gentrifying populations and contributing to accelerated neighborhood change in north Brooklyn, the city should encourage and prioritize adaptive reuse projects that promote the furthering of affordable housing or other services that benefit populations that are being forced out their homes due to the rising land values. This potential, coupled with the environmental benefits, makes adaptive reuse a way to combat multiple issues simultaneously.

## Bibliography

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