Alma Mater Studiorum – Università di Bologna

DOTTORATO DI RICERCA IN ECONOMIA

Ciclo XXIII

Settore scientifico-disciplinare di afferenza: M-GGR/01

THE PHYSICAL CITY AND THE URBAN STRUCTURE: DETECTING AMENITY ZONES AND APPLYING URBAN MORPHOLOGY TO NEW YORK

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Esame Finale Anno 2011

To my source of inspiration,
To New York

" [..]Concrete jungle where dreams are made of,
There's nothing you can't do,
Now you're in New York,
these streets will make you feel brand new,
the lights will inspire you,
lets here it for New York, New York, New York [..]"

ACKNOWLEDGEMENTS

First of all, I would like to thank *Alma Mater Studiorum- University of Bologna*, particularly the Department of Economics, which sponsored the Ph.D program in Economics - Curriculum Culture and Politics of the Territory, for its institutional and economical support. Without the sponsorship my field research and my studies in the United States would have not been possible.

I first thank my supervisor Prof.ssa Silvia Gaddoni for her steady support during these three years. Exceptional thanks go to Prof. Michael Conzen from the *University of Chicago* (USA). I thank him for inspiring me with his writings and our conversations, and for introducing me to the urban morphology community. During these three years he has offered me many insightful and precious suggestions which I will never forget. By challenging me, he motivated my research and pushed me to do better. This thesis would not appear in its present form without his support and his help making everything as accurate as possible.

Another special thank goes to Richard Greene, from *Northern Illinois University* (USA) who, besides teaching me how to apply GIS to the field of urban geography, shared his scientific work with me and introduced me to the concept of High Amenity Zones. This concept, which he theorized in 2006, has become the fundamental essence of my Ph.D research and a major source of interest. I will be always thankful to him for this reason.

I thank Samuel Zipp from *Brown University* (USA) for his availability for tutoring part of my project, and Seth Spielman also from Brown University for his precious GIS technical advice and stimulating conversations. I thank Sarah Williams from *Columbia University* (USA) who gave me the opportunity to be part of the Graduate School of Architecture, Planning and Preservation community, and to Prof. Robert Berglund who accepted my candidature as a visiting scholar. Thanks to their support I had the opportunity to carry out an important part of my field research and take advantage of the Avery Library, where I found the necessary material for my urban morphology research project. A special thank goes to Prof. Eliott Sclar from *Columbia University* for his availability and enthusiasm. He believed in my research project and at any "down moment" urged me to continue. I am thankful for his support.

Many thanks also to all the librarians who guided and assisted me in finding the material I needed, to the artist community in Long Island City and to all the fascinating people I met in the United States whose knowledge and openness enabled me to familiarize myself with the urban realm I was investigating.

Finally, I wish to express my greatest thanks to my parents, Mario and Adriana, because they have always believed in my capabilities and encouraged my explorative nature. A kind thanks to my grandmother, Elisabetta, for her love. Very special thanks go to my partner, Fabrizio, for his continuous encouragement, for believing in me and loving me. With his patience and kind words, he is the only person able to bring a semblance of calm to a spirit in constant motion. I thank my friend, Federica, because in these three years she has always been present when I have needed, and all my closest friends for their warm words of encouragement. I also thank all friends I made during my study periods whom I have never forgotten. Last, I wish to thank myself for the passion, the enthusiasm and the determination I always put in my work. Despite all the critical moments I remained committed to this project.

Elisa Ravazzoli
March 7, 2011

PREFACE

This work is the product of three years of intense independent research and learning, the majority of which was carried out in the United States at the University of Chicago (Chicago, IL), Brown University (Providence, RI), and Columbia University (New York, NY), where I collected the necessary material and conducted field research.

The results of this research have been presented at two international conferences. The research on the Amenity Zones of New York was presented at the Meeting of the Association of American Geographers (Washington D.C., April 2010) as a research paper, while the study on the Physical Analysis of the City: Atlantic Avenue was presented at the International Seminar on Urban Form (Hamburg, August, 2010) as a working progress paper.

To the best of my knowledge, this thesis does not contain material previously published or written by another person except where due references have been made.

ABSTRACT

The city is a collection of built structures and infrastructure embedded in socio-cultural processes: any investigation into a city's transformations involves considerations on the degree to which its composite elements respond to socio-economical changes. The main purpose of this research is to investigate how transformations in the functional requirements of New York's society have spurred, since the 1970s, changes in both the city's urban structure and physical form. The present work examines the rise of Amenity Zones in New York, and investigates the transformations that have occurred in New York's built environment since the 1970s.

By applying qualitative measures and analyzing the relationship between urban amenities and the creative class, the present work has investigated changes in the urban structure and detected a hierarchical series of amenity zones classes, namely, Super Amenity Zones (SAZs), Nodal Amenity Zones (NAZs) and Peripheral Amenity Zones (PAZs). This series allows for a more comprehensive reading of the urban structure in a complex city like New York, bringing advancements to the amenity zone's methodology.

In order to examine the manner in which the other component of the city, the physical form, has changed or adapted to the new socio-economic condition, the present research has applied Conzenian analysis to a select study area, Atlantic Avenue. The results of this analysis reveal that, contrary to the urban structure, which changes rapidly, the physical form of New York is hard to modify completely, due to the resilience of the town plan and its elements, and to preservation laws; the city rather adapts to socio-economical changes through process of adaptive reuses or conversion.

Concluding, this research has examined the dialectic between the ever-changing needs of society and the complexity of the built environment and urban structure, showing the different degrees to which the urban landscape modifies, reacts and sometimes adapts to the population's functional requirements.

Keywords: Urban Geography, Amenity Zones, Urban Morphology, GIS Spatial Analysis, New York.

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List of abbreviations

HAZ: High Amenity Zone

AZ: Amenity Zone

SAZ: Super Amenity Zone

NAZ: Nodal Amenity Zone

PAZ: Pheripheral Amenity Zone

GAZ: Green Amenity Zone

GIS: Geographical Information System

LIC: Long Island City

LIRR: Long Island Railroad

CBD: Central Business District

FD: Financial District

ITALIAN SUMMARY

Introduzione

L'avvento di un'economia basata sul capitale umano e sulla creatività, il crollo di un sistema economico fondato sulla produzione di beni materiali, il diffondersi della *gentrification* quale mezzo di rinnovamento urbano e strumento di creazione di una "nuova classe" di *elité*, la globalizzazione economica, delle merci e delle persone, insieme all'affermarsi di una società consumistica basata sull'etica dell'apparire, sono alcuni degli elementi che hanno trasformato la struttura urbana e la forma fisica delle città contemporanee. La città globale di New York, centro nevralgico dell'economia finanziaria e capitale creativa ha accolto in maniera dinamica queste spinte, e negli ultimi anni è cambiata considerevolmente. New York non è più soltanto una città post-moderna come tante altre, ma è diventata la città del lusso, dei quartieri *gentrificati*, dove la cultura consumista ha reso l'effimero uno stile di vita.

Nella struttura urbana di New York, dove per struttura urbana s'intende l'organizzazione degli usi e delle funzioni urbane, i cambiamenti sono visibili a occhio nudo. Camminando per le strade della città e immergendosi nei principali quartieri di Manhattan e Brooklyn si attraversano aree esteticamente belle, sia per i caratteri architettonici degli edifici storici che per le architetture contemporanee, ma anche ricche di ogni tipo di amenità quali negozi vintage, boutique, ristoranti, bar, teatri, e musei ecc. Queste aree sono state definite dal Prof. Richard Greene (2006) come *High Amenity Zones (HAZs), zone molto attrattive.* Contraddistinte da attrazioni quali ristoranti, negozi, bar, teatri, club, e altre attività legate allo svago, le HAZs sorgono generalmente nelle vicinanze o in prossimità del centro finanziario e degli affari e si contraddistinguono dalle aree residenziali perché, pur avendo un'alta densità abitativa, hanno anche un'elevata densità lavorativa, soprattutto legata alle attività commerciali, di ristorazione e di consumo in generale. In queste aree la funzione residenziale si mischia a quella commerciale e a quella lavorativa, offrendo ai propri residenti un paesaggio urbano molto variegato.

L'affermarsi di tali aree in particolare e le trasformazioni socio-economiche avvenute negli ultimi anni in generale hanno prodotto cambiamenti non solo nella struttura urbana della città di New York e nella riorganizzazione funzionale degli spazi, ma anche nella forma urbana della città stessa, che reagendo ai nuovi stili di vita e alle pressioni sociali, cambia, si modifica o si adatta. Lo studio della forma fisica delle città (morfologia urbana) ha suscitato nel corso del tempo l'interesse di molte discipline, le quali, attraverso l'uso di lenti metodologiche differenti, hanno

analizzato sia l'evoluzione storica del tessuto costruttivo consolidato sia le trasformazioni urbane avvenute, arricchendo la letteratura scientifica di numerosi contributi, soprattutto legati alle città europee. In ambito storico e geografico e più ampliamente all'interno delle scienze umanistiche il tema della "perdita della forma fisica della città" è oggi d'attualità, soprattutto se si considera la città globale di New York. Tuttavia, non esistono studi scientifici che testimoniano come la forma fisica di New York sia cambiata storicamente, né sembrano essere presenti analisi morfologiche in grado di illustrare in maniera esaustiva le caratteristiche fisiche del tessuto urbano consolidato.
In conformità a quanto appena presentato, questo lavoro di tesi offre un contributo geografico originale allo studio dei cambiamenti urbani, analizzando com'è cambiata la città di New York nella sua struttura urbana e nella sua forma fisica.

Obiettivi della ricerca

Il presente lavoro di tesi ha la finalità di analizzare la maniera in cui i cambiamenti socio-economici, riscontrabili a New York in seguito al crollo del sistema fordista e all'emergere dell'economia immateriale, hanno generato trasformazioni sia nella struttura urbana della città che nella sua morfologia.
Per cogliere le alterazioni avvenute nel sistema funzionale della città, il presente lavoro si pone l'obiettivo di identificare geograficamente le cosiddette *zone molto attrattive* (HAZs) per poi studiarle. Nel fare ciò, esso va a raffinare il metodo e il concetto introdotto dal Prof. Richard Greene e a individuare gli strumenti metodologici maggiormente appropriati alla determinazione delle *zone molto attrattive* (HAZs) nella città New York. A tal fine sarà condotto uno studio approfondito sulle *amenità urbane* e sulla *classe creativa* e l'analisi statistica sarà supportata dall'indagine spaziale attraverso lo strumento del GIS (Sistema Informativo Geografico). Il cambiamento nelle funzioni urbane genera necessariamente delle trasformazioni nella forma fisica della città. Lo studio di come la composizione spaziale della città sia mutata o si sia adattata ai nuovi processi socio-economici costituisce un livello di analisi determinante per capire la città nella sua evoluzione storica e le sue metamorfosi. Al fine di comprendere le dinamiche trasformative tale lavoro applica l'analisi morfologica a una piccola porzione di territorio, Atlantic Avenue (Brooklyn, New York), scelta poiché esplicativa dei processi di trasformazione prima menzionati. A tale fine, saranno esaminati gli elementi che compongono la struttura fisica di Atlantic Avenue e saranno individuate le fasi principali del suo sviluppo storico per poi focalizzare

l'attenzione sui processi trasformativi che hanno determinato il cambiamento all'interno dell'area d'indagine.

Un'analisi di questo tipo consente di comprendere non solo come le trasformazioni abbiano modificato la realtà urbana di New York, ma ci permettono di esplorare anche il rapporto dialettico tra la società e il tessuto edilizio consolidato e la maniera in cui i due elementi dialogano e si modificano reciprocamente.

Metodologia

Al fine di raggiungere gli obiettivi preposti, l'identificazione geografica delle *zone molto attrattive* (HAZs) e l'analisi della forma fisica della città sono state eseguite utilizzando differenti metodologie e avvalendosi di speciali *datasets*.

Per la determinazione delle *zone molto attrattive* (HAZs) ci si è avvalsi di due database commerciali, *Zagat Guide 2009 e Reference USA*, i quali hanno permesso di identificare e indagare le *amenità urbane*. Ogni amenità è stata mappata e a essa è stato attribuito un valore qualitativo; in questo modo sono stati valutati non solo gli aspetti dimensionali del paesaggio urbano, ma anche quelli sostanziali. L'analisi delle amenità urbane è stata supportata dallo studio sulla classe creativa, ossia sulla distribuzione di residenti impiegati nei "settori creativi". Attraverso l'uso del GIS e la potenzialità di sovrapporre molteplici strati informativi, è stato possibile riconoscere una relazione molto intensa tra la densità di amenità urbane e la classe creativa e discernere così differenti tipi di *zone attrattive* che abbiamo definito *Amenity Zones* (AZs). Il concetto di HAZs introdotto da Greene sembra troppo restrittivo per rappresentare la realtà di New York quindi è stato sostituito a quello di AZs, concetto più aperto e in grado di accogliere una classificazione più ampia.

Al fine di ultimare l'indagine, l'analisi del tessuto urbano costruttivo e dei processi trasformativi, avvenuti nella porzione di territorio selezionata (Atlantic Avenue), è stata eseguita utilizzando l'approccio teorico della Scuola Geografica di Morfologia Urbana (Scuola di Conzen). Le teorie e i concetti ideati da M.P.R.G. Conzen sono stati applicati al tessuto urbano di riferimento e hanno permesso di comprendere la forma fisica di Atlantic Avenue. Congiuntamente sono state sfruttate le potenzialità del GIS, con il quale è stato possibile geo-referenziare le mappe e i catasti storici, mentre il materiale bibliografico è stato adoperato per comprendere come la congiuntura socio-economica abbia agito sul tessuto costruttivo, modificandolo e alterandolo.

Attraverso l'utilizzo di questi strumenti metodologici è stato possibile individuare le *zone attrattive* e cogliere alcuni dei processi trasformativi che hanno alterato la forma fisica e la struttura spaziale della città.

Risultati

Questo studio, basato sull'utilizzo del GIS e supportato da un'intensa attività di ricerca sul campo, ha prodotto considerevoli risultati. Innanzitutto ha individuato una nuova tipologia di dati e innovati strumenti di analisi che hanno permesso di riconoscere le *zone attrattive* (AZs) nella città New York, e di studiarle. Inoltre tale lavoro ha mostrato l'attualità dell'approccio della Scuola Britannica di Morfologia Urbana e la sua fondatezza nel comprendere le trasformazioni morfologiche anche nel tessuto urbano consolidato americano. Di seguito saranno sintetizzati i punti di forza di tale lavoro e i principali risultati ottenuti:

1- L'analisi sulla struttura urbana ha individuato tre tipi di *zone attrattive* (AZs) classificate in base alle loro caratteristiche principali e a distinti parametri qualitativi. Le *zone attrattive* si suddividono in: *zone attrattive di prim'ordine* (SAZs); *zone attrattive nodali* (NAZs) e *zone attrattive periferiche* (PAZs). Insieme a queste aree sono state mappate anche le aree verdi che compongono le *zone attrattive verdi* (GAZs). Durante il processo di analisi è emersa l'importanza di analizzare sia le amenità urbane sia la classe creativa; i risultati documentano come le due non possano essere considerate separatamente. Esse sembrano influenzarsi a vicenda, confermando le teorie esistenti nel settore, e vanno considerate come due forze motrici del cambiamento della struttura urbana newyorkese. Inoltre, tale ricerca ha rilevato che le amenità urbane tendono a concentrarsi proprio nelle aree in cui si localizza il sistema culturale, facendo risaltare quindi una stretta connessione con il sistema della produzione creativa esistente a New York.

2- L'analisi morfologica di Atlantic Avenue ha invece individuato aree di persistenza e aree di cambiamento, documentando la resistenza del tessuto urbano consolidato e degli elementi che lo compongono ai cambiamenti socio-economici, come ampiamente discusso nelle teorie conzeniane. Applicando i concetti della Scuola Britannica di Morfologia Urbana all'area selezionata, il presente studio ha compiuto un'analisi spaziale della forma urbana della città, e nello stesso tempo ha identificato i processi trasformativi che hanno plasmato il tessuto urbano costruttivo, analizzando in maniera dettagliata gli elementi del piano urbano. Focalizzandosi sui processi trasformativi più che formativi,

tale lavoro di studio ha dimostrato come la forma urbana nell'area di analisi (Atlantic Avenue) sia stata alterata ma non completamente distrutta o modificata dai fenomeni moderni, quali la *gentrification*, mostrando che anche nelle città statunitensi il tessuto urbano tende a reagire alle pressioni socio-economiche e si trasforma lentamente.

Conclusioni

Il presente lavoro di tesi ha apportato apprezzabili miglioramenti alle esistenti teorie nel settore delle *amenità urbane*, nell'approccio metodologico d'identificazione delle *zone attrattive* (HAZs) e nel settore della *morfologia urbana* applicata alle città americane. Nello specifico, le metodologie applicate hanno consentito di analizzare la città di New York, strutturalmente e fisicamente, offrendo quindi uno studio completo delle trasformazioni urbane post-moderne da un punto di vista socio-geografico.

Innanzitutto è da riconoscere l'apporto che tale lavoro ha portato alla ricerca sulle amenità urbane. Esso consiste non solo nell'aver localizzato le amenità alla scala comunale, ma anche e soprattutto nell'aver individuato uno strumento in grado di studiare la qualità delle amenità e di mapparle. Inoltre, è indicativo l'aver dimostrato visibilmente il grado d'influenza tra le amenità urbane e la classe creativa rendendo evidente la correlazione tra le due. Nel fare questo ha raffinato la metodologia in uso per individuare le *zone attrattive* (AZs) all'interno di città globali molto complesse come New York, consentendo una maggiore applicabilità e accuratezza. Nello stesso tempo, questa ricerca, nell'applicare per la prima volta i concetti della scuola Conzeniana al contesto newyorkese, ha dimostrando la validità del metodo, e soprattutto offerto un contributo particolare ai fini dello studio del tessuto urbano esistente e dei suoi processi trasformativi.

L'uso del GIS, sia nell'analisi storico-geografica sia nello studio dei fenomeni contemporanei di natura socio-funzionale, ha reso evidente l'importanza delle nuove tecnologie per lo studio dei fenomeni spaziali, le cui dinamiche sono difficilmente individuabili attraverso l'analisi statistica o storica, elementi comunque essenziali nello studio di una realtà urbana complessa quale la città.

PART I — OBJECTIVES

CHAPTER ONE: GENERAL INTRODUCTION

At the time Lewis Mumford (1937) asked the question "What is a city?" American cities had been undergoing immense changes and rational planning was the leading paradigm. Breaking with tradition, he proposed a "broad socio-historical approach" that could expand the definition of the city by declaring it an architectural, natural, social, and/or cultural object. By using a sociological approach, Mumford did not confine the definition of a city simply to the built environment, but considered the city as a social fact, defined as a theatre of social action where everything else - art, politics, education, and commerce - was the social drama. He argued that (1996) "*The city in its complete sense is a geographical plexus, an economic organization, an institutional symbol of collective unity, the city fosters art and it is art; the city creates the theater and it is a theater; it is in the city as a theater that man's more purposive activities are focused and work out, through conflicting and cooperating personalities, events, groups, into more significant culminations"* (LeGates and Stout, 1996, p.87).

In arguing that the physical design of cities and their economic functions were secondary to their relationship to the natural environment and to the spiritual values of human community, he inaugurated a "new era" for city planning, and inspired many urban scholars worldwide.

Today, after almost eighty years, in a period of huge urban transformation where disciplines like architecture and planning are re-considering their foundational paradigms, scholars continue to ask the same question. Since 1937 numerous urban scholars have tried to respond to Mumford's inquiry by proposing physical, ecological, and sociological criteria to define the city, producing a vast quantity of definitions that often do not coincide.

Given its multifunctional character, the definition of what constitutes a city has been elusive throughout the course of history. Some scholars have proposed a statistical measure such as the size and density (Writh,1938), evaluating the city as an concentration of buildings wider than a village (Farinelli, 2003, p.132); others had in mind an ideal type of city (Howard, 1902; Le Corbusier, 1929); still others have looked at the nature of the city (Yi Fu Tuan, 1978); some evaluated the functional aspects, considering the city as a concentration of many people located close together for residential and productive purpose (Davis, 1974), or as a place where large numbers of people live and work; and others have considered the sociological aspects, analyzing the city as a social entity (Jacobs, 1961; Mumford, 1961; Lefebvre, 1996; Harvey,1973; Castells, 1977).

Considering the complexity of today's cities, it seems futile to seek a definition of the city that commands universal acceptance for two reasons:

- The concept of the city is conditioned by the perspective of the person who is studying it, thus scholars from different disciplines have different images of what the city is like, what the city offers and what they want a city to be;
- The city changes continuously in time and space so it is impossible to find an enduring definition with a global application. As a result, when urban researchers talk about the city the definition takes on a variety of forms.

Nevertheless, after decades of research in urban theory, there seems to be an agreement among urban scholars about the basic constituent elements of the city and the central role society plays in shaping the built environment. Whereas in social science (geography, history, philosophy and sociology), considerations on the social nature of the city are strongly rooted, in the field of architecture and urban planning the built environment has long been assigned the role of an independent variable and considered as a product of design. In 1987 Paul L. Knox (1987) recognized the need for a new approach: "*What is needed is an approach which encompasses the reciprocal relationships between individuals, the built environment and society at large"* (Knox, 1987, p. 355). He asked for *"a new approach in which the built environment is regarded as a reflection of economic, social and political relationships within society and as a mean through which these relationships are produced, sustained or modified"* (Knox, 1987, p.355).

The purpose of this paper is not to judge whether or not Knox's approach has improved the urban planning method, however it is important to note that the same approach is still relevant today.

In the 12th International Architecture Exhibition *People Meet in Architecture* and at the 10th International Architecture Exhibition *Cities. Architecture and Society* there emerged a strong interest in the city as a collective entity and not merely as a cluster of buildings. Ignacio Pedrosa and Garcia De Paredes (2010) argued that "*Planning and architecture must provide a precise response to the need imposed by society and must make use of their capacity of development to articulate the relationship between urban space and landscape*; Accordingly, Beatriz-Corredor-Sierra (2010) argued that *The current will of architecture and urban planning is to act as recipient and listen the most pressing needs of society and the natural environment in order to foster changes able to respond to the social demand, which has changed as well in the course of history* (Beatriz-Corredor- Sierra, 2010).

Today, it seems to be restrictive to identify the city by size (With, 1938) because the city has something more than simply "largeness" (Massey, 2000, p.6); it is incorrect to identify the city simply by the built environment because the city is primarily a socio-cultural product (M.R.G.

Conzen, 1960); also, if it is true that the city consists of many different physical elements such as buildings and infrastructure, and it is a combination of many things (visible and invisible), it is much more than simply a collection of images and elements. It is something that has social significance (Robson, 1975, p.184). As argued by Doreen B. Massey (2000) "*Cities are living system, made, transformed and experienced by people that attached to them a special meaning: like all environments they are text in which are inscribed values, beliefs and the exercise of struggle for power*".

As a result, the city is made up by physical visible objects like the built environment, and immaterial, invisible elements such as society, thus it can be considered both as a physical entity and a social organism. It represents the past, the present and the future; it is the best and most complex "collective production" that expresses society's needs through changes in the built environment (Sassen, 2010). So defined, the general object of the present research is the **city as a social and physical entity**. The city both as a physical entity and a social system transforms continuously throughout the course of time: while the physical city shapes how we live, work and play, at the same time, the society shapes the character of the city's physical form. Therefore, transformations in the city result from both the city's socio-cultural system and the way the physical city and its elements have been spatially organized. But why do cities change and how? In order to understand cities and their transformations it is necessary to determine the mechanisms through which spatial structures and physical forms are transformed and urban meaning is redefined. Given that cities are historical products not only in their physical materiality but in their cultural meaning, the city changes when society assigns a new meaning to the urban realm or to a particular spatial form, and decides what the city will be. Urban form is not only a combination of materials, volumes and heights, but it is full of representations whose significance changes with time, cultures, and social groups.

There have been a number of contributions to urban study literature that have analyzed cases in which the built environment has shaped people attitudes and cases in which the society has shaped the urban form. The most recent contributions, however, have analyzed social or economic changes within the city without truly investigating the relationship between society and the built environment. Exempting studies that apply the urban morphology approach to the analysis of the city, contributions tend to focus either on the analysis of the city's physical form or on the city's social component.

The present work seeks to analyze both the society and the built environment of the city by looking specifically at the way in which the social system shapes both city's urban structure and the built form. The main area of investigation is the city of New York, which has been selected for

many reasons. In New York, forces of globalization (people, goods, services and ideas) spur urban transformations that appear at a faster pace compared to other urban contexts worldwide, both in the city's physical form and in the social structure. This allows for the investigation of phenomena and trends that appear only in New York (which may at some point appear in smaller places), making New York a **predictor** of broader trends; New York's complexity and size allow for the examination of more complicated interrelationships and spatial correlations, thus enabling for the extensive use of **GIS** applications; compared to large European cities such as London, New York has been chosen for its **dynamism**, which enables one to grasp the pressures of the socio-economic conjuncture in transforming the built environment.

Moreover, personal familiarity with the city, due to previous research on the field, and the large availability of statistical, geographical and historical data reinforced the selection of New York as area of investigation.

1.1.The research aim

Over the last ten years, New York has transformed completely: from the luxury residential towers surrounding the High Line in Chelsea to the massive commercial and residential developments along the waterfront in Long Island City; from Atlantic Yards in Downtown Brooklyn to the New Yankee Stadium; from the former landfill in Fresh Kills to the extension of the number 7 train, New York is centered within an explosion of buildings and planning projects from individual buildings to neighborhood scale master plans, now under construction or in planning. All these planning and architectural projects, resulting from a new economic cycle as well as social and demographic processes have transformed and continue to transform major portions of the city.

By considering the city as a collection of built structures and infrastructures embedded in a socio-cultural system of meaning and values, the principal aim of the present work is to examine the relationship between changes the functional requirements of society and transformations in the built environment. Specifically, by taking into consideration New York in the post-industrial era this research aims to analyze how the "new economy of city" has modified both its urban structure and its physical form, where urban structure is defined as the organization of land uses and urban functions, and physical form is intended to indicate the physical layout of the city.

In order to understand how various aspects of New York's urban structure have changed during the last ten years as a reaction of new urban meanings, the present study seeks to explain the rise of areas that Richard P. Greene (2006) has defined as *High Amenity Zones* (HAZs) with the intention to geographically individuate them. The HAZs have been defined by Richard P. Greene

as *"high densely upscale residential areas whose residents support neighborhoods retailing and service employment"* (Greene, 2008, p.14). They represent the new upscale residential models that postindustrial societies have produced during the last twenty years that is now spreading in many American cities. This contemporary phenomenon is particularly interesting to the main research objectives because it explains how the appearance of a new economy, based on human capital and ephemeral urban lifestyles, have fostered the need to live and work in vibrant and authentic mixed environments, rich in urban amenities and close to the city center. The decision to identify HAZs in New York and not in another American city relates to two facts, mainly:

- HAZs have been appearing in many residential neighborhoods outside of Manhattan, where the process of residential gentrification and up-scaling has been shaping the urban structure and character of the city. Unlike Chicago or Los Angeles, where HAZs have been restricted to a particular area, close to the business core, in New York HAZs are more widespread, thus need to be investigated;
- Moreover, applying the concept of HAZs to New York and geographically identifying them enables one to understand how New York's society has decided the city will be, foreseeing possible development and demonstrating the rise of a luxury New York.

Most of the changes that have occurred are also visible in the physical aspects of the city. In order to obtain a glimpse of how the physical form of the city and its elements has altered as a reaction to the rise of a new socio-economic conjuncture, the present research seeks to investigate the processes of transformation from an historical-geographical prospective. To examine in detail the elements of the city's physical form such as the streets, the lots, the plots and the buildings, the present research applies the urban morphology analysis, the study of the physical form of the city, to New York. Until now there have been many studies of aspects of New York's built environment; however, this approach analyzes in detail, through the use of historical records, the formative and transformative processes, detecting the causes, the effects and the nature of the transformations. Moreover, the morphological analysis has rarely been applied to neighborhoods within New York, thus it might offer promising results to research in the field. Considering both the size of New York at large and that urban morphology analysis necessitates a detailed study, the present investigation focuses on a select portion of the city, specifically Atlantic Avenue in Brooklyn. The reasons for the selection of Atlantic Avenue, one of the oldest streets in Brooklyn, are related to two elements: The street has been under-ongoing a process of residential gentrification and up-scaling which suggests it will become a HAZ soon, thus it is an interesting case for a detailed study; By analyzing a linear zone (Atlantic Avenue is 9 miles long), instead of a rounded district, it is possible to use the street as a timeline and study the formative

processes from West to East, from the past to the modern time. Moreover, Atlantic Avenue is a special street because along its length it is possible to identify most of the urban phenomena that have characterized America urban history. Brooklyn has been chosen not only because it is under-studied compared to Manhattan but because, at the light of the new urban (planning) transformations that have been occurring, it shows contemporary trends and spatial patterns fascinating for research.

In conclusion, by identifying HAZs in New York and applying urban morphology concepts to Atlantic Avenue, this research seeks to investigate changes both in the city's urban functions and in its physical form.

1.2. The method

Considering the complexity of the New York's built environment, in order to achieve the research objectives, the present work applies a multidisciplinary method characterized by select theories and methodological approaches. The theoretical framework consists of research findings from acknowledged international scholars who come from different but interconnected disciplines such as urban geography, sociology, economics, architecture, urban planning and history. Within this context, the present work applies different methodologies: it uses the geographical historical approach to study the evolution of Atlantic Avenue in Brooklyn since its formation; it uses the urban morphology approach for examining Atlantic Avenue's built form; it uses the statistical method to study New York's urban structure and identify the HAZs; it utilizes the Geographical Information System (GIS) tools for visualizing and processing data, thus studying spatial patterns significance within the study area. These methods are applied to several datasets:

- Institutional data: Census data 1990 and 2000, Population estimate 2009; Brooklyn Business City Directory 1885 and 1977;
- Commercial data: Reference Usa 2009; Zagat 2009.
- Historical data: Maps, Atlas, historical reports, monographic materials;
- Personal Photographs

1.3. The structure

The dissertation is composed of four sections: part one is a general introduction, part two, entitled "The amenity zones of New York", aims to both study and geographically individualize HAZs, part three, entitled "The study of the physical form of the city: The case of Atlantic Avenue", concerns the study of Atlantic Avenue's urban morphology, and part IV offers some general conclusions.

Parts two and three have a similar structure. Each has an opening chapter that contains an introduction, a theoretical background and conceptual foundations. By setting the fundamental theories and concepts, this chapter is necessary for framing the main research objectives. The next chapter is a methodological in nature. It contains the research aims, the methodology and the description of both the dataset and study area. The following chapter presents the principal research results. Each part ends with a closing chapter that contains closing remarks and considerations of the present research's contribution to the field and future developments.

In its entirety, the thesis contains 16 tables, 102 figures and an Italian summary, at the beginning the research. The bibliography includes at a whole 180 items. The overall size of the thesis is 197 pages.

PART II — THE AMENITY ZONES OF NEW YORK

CHAPTER TWO: THE CONTEX OF AMENITY ZONES RESEARCH

The chapter is structured as follows: section one is an introduction; section two explains how New York has acquired its present urban structure; section three concerns the theoretical background and it introduces some important concepts namely creative class, urban amenity, gentrification and High amenity zones (HAZs); section four concerns the conceptual groundwork.

2.1. Introduction

With the fall of the manufacturing industry in 1970 New York saw a post industrial transformation: a new global economy emerged with substantial growth in the financial sector. This new economy based on human capital and service, spawned a new class of professionals. The "new inner economy of city" (Hutton, 2008) and the role of corporate branding reshaped old neighborhoods and new spaces were created for the creative age and for its creative class. Wholesale warehouse spaces evolved into expensive art galleries. Old stores were replaced by new luxurious condos. Mom and pop shops disappeared as new boutiques emerged. New stores, cafés and bars became hangouts for both bohemians and the gentry or as places for social networking among strollers (Zukin, 1995). The relationship between the new professional class, the creative economy and the "new urban amenities" (Florida, 2000) explains the emergence of areas within the city that have be defined as **High Amenity Zones** (HAZs) (Greene, 2006). This concept describes a dense upscale residential area within or close to downtown whose residents support neighborhood retailing and service employment (Greene, 2008, p.14). The peculiar character of these zones relies on both the residential nature and the presence of an intense urban life supported by a variety of urban amenities. According to Greene (2006) they are where "the city as an entertainment machine" (Clark, 2004) plays out most fully and where the creative class (Florida, 2002a) lives. The aesthetic of their offerings and the atmosphere reinforces a sense of the neighborhood's creative cultural distinction (Zukin, 2009, p. 47), showing a new residential trend. They are the "*novel* upscale residential model" that creative communities have produced and now support.

HAZs have been detected in Los Angeles, Chicago and in Guangzhou (China) but no studies can be traced for this phenomenon in New York. Hence, this work aims to geographically define HAZs in New York and improve the methodology used to identify them.

2.2. New York goes postmodern

New York has always been an important city since its origin. Thanks to the bustle of the port, its manufacturing industry, its theatres and entertainment activities, its financial and business district as well as its artistic scenes, New York has always been known as a powerful city and renowned as the quintessential metropolis, culturally, ethnically and economically, exciting and chaotic, elusive and spontaneous (Hammett and Hammett, 2007, p.19).

The decline in the manufacturing industry and the rise of the finance, insurance and real estate (FIRE) and service economy explain the affirmation of a post-industrial society (Bell, 1973) based on non-material skills, information processing and services, and set the basis for the present "creative economy". Starting from the1960s and with slack and peak periods, the city opened up to a new kind of economy based on services, immaterial features and human capital, and progressively became known as a creative hub an incubator of art, culture, media, fashion and related industries (Currid, 2006).

The decline of blue collar jobs -such as manufacturing and construction- during the '70s and '80s and the rise of categories such as F.I.R.E., services, accounting, advertising, management and administration indicated that a "new era" was arising. As argued by Elisabeth Currid (2007a) in her book "*New York as a skilled city was on the rise and supplanted manufacturing as the city's economic driver"* (Currid, 2007a, p.61). For instance, in Manhattan manufacturing jobs dropped considerably, replaced by a combination of F.I.R.E. and service jobs: between 1971 and 1982 the urban core lost over 139.000 manufacturing jobs (from 27,2% to 19,3%) while post-industrial sectors gained 62.000 (service increased from 34,7% to 41,1% and FIRE from 23,2% to 28,1%).

Table 2.1. – Employment by occupation in New York (by percentage), 1980.

	New York City	Bronx	Kings	Queens	Richmond
Manager and Professionals	41,7	17,6	20,0	22,5	24,6
Tecnical and Administrative	30,0	37,6	38,0	39,1	38,4
Services	13,4	0,8	15,0	13,7	14,5
Skilled Manual	4,3	9,3	9,5	10,0	10,6
Unskilled manual	10,4	17,1	17,3	14,4	11,4
Farming, Foresty and Fishing	0,2	0,3	0,2	0,3	0,5

Source: 1980 Census of Population, Characteristics of People and Housing, New York State Department of Commerce (Savitch, 1991, p. 41)

As the manufacturing industry rapidly declined in the 1970s and other industries emerged, such as finance, management, entertainment and service, telecommunication and globalization have appeared as major forces shaping the organization of urban space[1]. The growth of a global market for finance and specialized services, the need for transnational service networks, the ascendance of global markets and corporate headquarters all favored the expansion of the transnational network of cities (Sassen, 1991). By 1986 85% of all jobs in the city were in the service sector: between 1977 and 1984 the number of stockbrokers and dealers in New York increased from 56.000 to 99.000; during the 1980s 350 foreign and many out-of-state financial institutions opened regional operations in New York. Of the 600.000 jobs in finance and business services that existed in New York in 1986, 184.000 had been created since 1977 (Stern, 1995). New York became a global city (Sassen, 1991) together with London and Tokyo, a center of command and control by a managerial elite as well as one of the most important world financial cores. As a result, a new class of professionals appeared that has been instrumental in creating innovation. Peter F. Drucker (1992) in the 1960s described the growing role and importance of the new group of workers he called "knowledge workers"; Daniel Bell (1973) referred to a class structure of scientists, engineers, managers and administrators supporting the shift to a postindustrial economy; Erik Olin Wright (1979) wrote about the rise of what he called a "new professional-managerial class"; Robert B. Reich (1992) spoke about the "symbolic analyst" to describe the members of the workforce who manipulated ideas and symbols; David Brooks (2000) outlined the emergence of bohemian values and a new social group he called the "bobos"; Richard Florida (2002a) spoke about the "creative class".

In 1979 Blake Fleetwood writing in the *New York Times Magazine* describes the emergence of a *new elite* in an "*American urban renaissance"* and particularly in New York where the evidence of the late '70s suggested that New York of the '80s and '90s will no longer be a magnet for the poor people but a *"city primarily for the ambitious and educated"* […] "*New York is attracting a new professional upper class"* […]. The people who are moving to New York, young lawyers, architects, and doctors would come to be known as "yuppies" (young urban professionals). A*s we have lost industrial workers from the population, we have gained higher paid, higher educated*

[1] As stated by Saskia Sassen (1991) in the financial district of Manhattan the use of advanced information and telecommunication technologies has had a strong impact on the spatial organization of the district because of the added spatial requirements of intelligent buildings. Many office buildings meeting these new requirements were built over the last decade immediately around the old Wall Street core.

administrative personnel that makes New York an unparalleled consumer's market" […] (Stern, 2006, p.19).

Accordingly, H. V. Savitch (1991) argued that Manhattan has been absorbing an influx of high income professionals such as physicians, lawyers, therapists, and professionals in general, having the largest concentration of managers and professionals in the region. In 1980, compared to the other boroughs, Manhattan held more than twice the percentage of college graduates as did Queens, it held more than twice the per capita income of the Bronx and Queens, and had the highest cluster of upper income earners in the city (Table 2.2). On the contrary, Bronx and Kings counties had the lowest percentage of college graduates in the city and the lowest income per capita.

Table 2.2. – Income per capita in New York, 1980

County	Income per capita 1980
New York City	$ 10,863
Bronx	$ 4,502
Kings	$ 5,779
Queens	$ 7,596
Richmond	$ 7,706

Source: 1980 Census of Population, Characteristics of People and Housing, New York State Department of Commerce (Savitch, 1991, p. 42)

At the end of the 1990s with the diffusion of the World Wide Web and the consolidation of the service sectors, New York's economy boomed in the "new media industry" attracting talent working in fields like advertising, publishing, and graphic design. The media industry took root in 1995 and developed into the city's fastest-growing economic sector: between 1995 and 2000 jobs in new media grew from 27.000 to 138.000 making it a bigger employer than banking, construction and legal services, which were in decline already (Stern, 2006, p.33). If San Francisco was home to techies, New York and the Silicon Alley (Indergaar, 2009) specifically became the new home for those who create the pictures, the stories, the advertising, and emerged as the center of the fledgling multimedia industry.

Rapidly it has become a creative city. In the study realized by the Center for an Urban Future (2005), a full picture of **New York's creative core** is given. The city creative core is made up of 11.671 business and non-profit organizations and provides employment to 309,142 people, accounting for more than 8.1 % of all those employed in the five boroughs. The total includes 278,388 employed in the creative industries, as well as another 30,754 involved in creative

occupations, such as fashion designer working in apparel manufacturing. As reported in the study, creative industries have recently added jobs at a considerably faster rate than the overall city economy: between 1998 and 2002, employment in New York's creative core grew by 13.1 % (adding 32,000 jobs) while the city's overall job totals increased by 6.5 percent during this period (see the study for the data). The New York metropolitan region's true distinction and competitive advantage is in its artistic and cultural production (Currid, 2006). "*There are more than 150,000 jobs in arts and culture, and this number grew 52% from 1992 to 2001, offering more potential growth than even the much revered financial industry*" (Currid, 2006, p.342). It is in the art, design, media and entertainment that the New York region possesses its greatest strengths and possibilities for prosperity. "*New York City's real competitive advantage and unique position as a global city lies in its skills and ideas, and particularly, its position as a great center of art and culture"* (Currid, 2007a, p.62).

The materialization of the new economy of the city as well as the rise of a new class of professionals brought consequences to the urban landscape: it not only increased the social fragmentation and social disparities within the city creating a "*dual city"* (Reichl 2007; Marcuse 1989), but the new socio-economic conditions promoted new lifestyles, new cultural values, a preference for consumerism and aesthetics, the commodification of culture (Scott, 2000), as well as residential gentrification and neighborhoods' up-scaling (Lees, Slater and Wyly, 2010). Beginning in the 1970s, developers of downtown shopping centers turned derelict industrial and waterfront land into profitable attractions to compete with suburban malls; the financial and real estate industry reshaped the local economy; cultural districts, ethnic tourist zones, new boutiques and brand name chain stores emerged; sidewalk cafes offered a clean image of the diversity for mass consumption; high rise condominiums, converted lofts for the young urban professionals as well as deluxe hotels, represented the symbolic setting of the period and the new cultural power.

In the global cities around the world, artists and the gentry moved into old shabby neighborhoods taking out the working class bars and services stores and replacing them with new upscale restaurants and art galleries.

As argued by Sharon Zukin (2010) "*since the 1940s the gentrifiers had begun to move into poor neighborhoods, buying and restoring late nineteenth century houses with great symbolic value to nurture an urban lifestyle untainted by modernity* (Zukin, 2010, p.11). Nevertheless, redeveloping neighborhoods were only a small part of the worldwide campaign to modernize cities. In the 1980s changes reached its tipping point. Hipsters, gentrifiers, creative retail entrepreneurs and

new immigrants established niches that reshaped the urban experience in many ways, making the city cleaner, safer, more interesting and more modern. This new set of values reinforces the image in politicians' rhetoric of upscale growth and they make the city *"a 24/7 entertainment zone with safe, clean, predictable space and modern, upscale neighborhoods*" (Zukin, 2010, p.4). In fact, the government is not only making the city more attractive for tourists and dwellers, but it is using gentrification as an authentic strategy for branding New York and re-zoning it as a luxurious city for wealthy people.

In conclusion, the "new economy of city" (Hutton, 2008) changed the dynamics of employment and citizens' urban lifestyle. The trendy consumption spaces supply the material needs of the more affluent residents and newcomers (Bridge and Dowling, 2001) and people, especially the professional class that have "time value issues" (Gleaser, 2001), started to enjoy living in the places where they work, putting new demands on the territory, especially related to available amenities and commodities. As the government responds to these needs with gentrification, the city gets glittery, upscale, alluring and modern, and loses the genuineness and the historical stratification of the tradition environment it had inherited.

2.3. Theoretical background and concepts

The present section aims to clarify some concepts and theories which are useful in framing the present work as well as relevant in accomplishing the main objectives of the research. Theories related to contemporary lifestyle, the creative class, urban amenities, and gentrification are useful in comprehending how changes in the social-economic composition and socio-cultural patterns spurred the rise of the HAZs in New York.

2.3.1. Postmodern life-style

Although cities still retain their centrality as "command-and-control centers" (Sassen, 1991), as well as sites of manufacturing, their identities have changed. They could no longer be seen as centers of production but rather as landscapes of consumption. They have not only become centers of consumer goods consumption but from the 1980s up to now there has been a change in the type of consumption spaces, even though urban consumption still involves the satisfaction of everyday needs. Many urban consumption spaces relate to the new pattern of leisure, travel and culture (Zukin, 1998). Attention to lifestyle has given rise to new consumption spaces,

nouvelle cuisine restaurants, boutiques, chain stores and coffee shops. These are the new consumption spaces of the postindustrial society.

The culture and the geography of consumption spaces has shifts from the suburban shopping malls to the mixed-use complexes, that include office, shopping and entertainment spaces (Zukin, 1998), reflecting the movement of residents from the suburbs to the city centers. In fact, in the 1950s educated people and artists started occupying empty lofts and buildings in commercial and manufacturing spaces in the city center and made them their new home (Zukin, 1989). This movement of young singles and educated people, as well as the rise of the new creative economy, has produced a "back to the city" trend and a cultural movement that lead people away from the alienated life of the suburbs. The young workforce of the creative and gentrifiers started to prefer living near the workplace where they could enjoy the vitality of the urban life which they created. By establishing an ensemble of urban consumption activity - shopping, cultural amenities, restaurants and art galleries - they built up the base for the cultural production and consumption system that became the infrastructure for the symbolic economy (Zukin, 1998). What has emerged is a tendency to work, live and shop in the same areas that are frequently close to the Central Business Districts (CBDs) or Financial District. As the value of time increased and the demand for consumption rises (Gleaser, 2001), areas close to the CBD turn out to be the most valued within the city and the most appealing ones. As Graham Bowley (2007) argues in his article on *The New York Times*, "*People now want to live in dense areas because dense areas offer what people want to consume - opera, sports teams, art museums, varied cuisine"* (Bowley, 2007, p. 2). In various North American cities (Toronto and New York) in recent years, planners, residents, and others have started rethinking about mixed-use places and buildings, in which an apartment or condo tower may exist above an office or retail building. The new upcoming trend is to have a "live-work space" conceived in the same way as an artist studio, where professionals can work and be home at the same time.

Nevertheless, there is also another trend which needs to be illustrated and concerns the rediscovery of the importance of nature, broadly speaking. The importance of nature has spurred the growth of urban agriculture sites within the city where people can till the soil, and has intensified the interest in healthy food and practices, thus asking for consumerist places which have natural amenities and are sustainable posing new demands on the territory related to the environmental sustainability.

2.3.2. Creative Class

The term “creative class” was introduced in the literature by Richard Florida (2002a) and refers to a socio-economic class consisting of young, highly educated people working in scientific, professional art and related industries who add economic value through creativity, including many knowledge workers, symbolic analysts and professional - technical workers. He describes the creative class as consisting of two components: the super creative core and the creative professionals.

The **super creative core** consists of scientists and engineers, university professors, artists, poets, novelists, entertainers, actors, designers, and architects as well as the "thought leadership" of modern society: nonfiction writers, editors, cultural figures, think-tank researchers, analysts, and other opinion-makers, which are fully engaged in the creative process, in producing new forms.

Creative professionals instead are those who work in a wide range of knowledge intensive industries such as high-tech sectors, financial services, and business management as well as many technicians and professionals and bohemians who add “creative value”. As stated by Florida (2002a) creative people typically have a high degree of formal education and thus a high level of human capital. The rise of the creative class is reflected in a powerful and significant shift in values, norms and attitudes (individuality, meritocracy, diversity, openness). According to Florida’s analysis, the *creative class* includes 38.3 million Americans, 30% of the entire US workforce; at the heart of the creative class is the super creative core, comprising 15 million workers or 12% of the workforce. The *traditional working class* has today 33 million workers while the *service class* includes 55.2.million workers or 43% of the US workforce, making it the largest group as a whole.

In recent years, several studies (Markusen, 2006) have criticized Florida's notion of the creative class and its application to cities. According to Ann Markusen (2006), “*by using census definitions based on training-related criteria, he conflates creativity with high levels of education. He does not seem to understand the nature of the occupational statistics he uses” (Markusen, 2006, p. 1922-23)*. Moreover, Florida does not seem to have looked inside each of these categories to see what they contain. The category “business and financial” occupations, for instance, includes claims adjusters and purchasing agents, “managers” includes sales and food-service managers and funeral directors, “computer and mathematical” occupations includes actuaries and tax collectors, “engineers” includes surveyors and drafting technicians, etc. Moreover, another

important critique addresses Florida's conceptual treatment of creativity: creativity cannot be conflated with higher education and schooling but it is a native quality, as in the case of artists, sculptor, and novelists. For these reasons, Florida's concept of the creative class will be used in this research with a different meaning.

2.3.3. Urban amenities

In recent years there has been a tremendous increase in urban amenities especially in the northern part of the United States and in the main capital cities. Administrations started investing money in making their cities cleaner, nicer and more attractive places for residents to live and tourists to visit. Many public spaces were destroyed by urban renewal, deprived areas were gentrified, new trendy boutiques replaced old shops, new restaurants and clubs opened, and important cultural events occurred more often. During the last fifteen years there is much evidence to show how amenities spur growth and in doing so greatly influence the economic future of a location.

Theorists of the new economy suggest that amenities drive urban development. Edward Glaeser, Jed Kolko and Albert Saiz (2001) found a significant relationship between amenities and city growth and believe that amenities are important in determining the attractiveness of a place and decide the location's destiny. They stress the relationship between consumption and amenities as new drivers of urban dynamics. Nicholas Terry Clark (2004) argues that amenities are a key component of modern cities, referring to the "city as an entertainment machine". The more recent research suggests that places attract people by providing a range of lifestyle amenities (Gottlieb, 1995) and that amenities attract the creative class (Florida, 2002b).

The agreement among human capital economists that the attractiveness of a location depends on amenities and that amenities attract human capital is well known (Ren, 2004). The contemporary model of development argues that in order to attract people, cities must cultivate places that offer the qualities that people want in a place to live and work (Brooks 2002). In fact, creative class is attracted by places that are rich in amenities, diverse, multi-ethnics, tolerant and full of people of different ages, sexuality and alternative appearances. The success of cities is related to amenities, but not all amenities matter. Casual amenities, the new economy amenities, such as outdoor recreation, juice bars, and music events matter more than traditional cultural amenities like theatres, museums or performances. Smaller-scale, street level amenities can better attract talented people than traditional big-ticket attractions such as professional sports (Ren, 2004).

Glaeser, Kolko and Albert Saiz (2001) found out that the presence of live performance and restaurants both predict the growth at the county level, while bowling alleys and movie theatres have very little importance. Talented people are fascinated by places that are varied, cosmopolitan and authentic in terms of lifestyle, that mix historical buildings, the music scene and culture (Florida, 2002a). They are moving away from the traditional corporate communities to types of places that Florida calls “creative centers”, areas with a high concentration of high tech industries and urban attractions (Florida, 2005).

The strong relationship between the creative class and urban amenities is well supported by the amenity theories which suggest that amenities attract especially innovative people who have mobility. Together with natural resources, public services and access to ground transportation, the concentration of these types of urban amenities affects people’s decisions on where to live and thus classify places as “hip or trendy” or as just “out of it” (Clark, 2004, p. 105). Therefore, the allocation of amenities determines the localization of the creative class and, vice versa, the creative class spurs the rise of amenities.

The definitions of urban amenities are various. According to the Oxford dictionary, they epitomizes objects located in urban spaces, whose aim is either making the environment pleasant and alluring or offering a service that increases the resident’s quality of life. Because it does not refer to any object in particular, the term is multi-semantic and it might symbolize different things: a sculpture in the street, a restaurant, an art gallery, a bench or a museum. It could also be related to a public service or to a particular residential service paid for its population.

For instance, Clark (2004) subdivided amenities into natural-physical amenities or constructed amenities such as libraries, opera houses, and Whole Foods supermarkets. Glaeser, Kolko and Saiz (2001) identify three types of urban amenities, namely, consumer goods, physical setting and good public services, and put emphasis on the role of cities as places of consumption. Florida (2002) highlighted the difference between the amenities of the new and old economies: while old economy amenities emphasize “big ticket” amenities and tend to focus on passive culture like professional sports, fine arts, museums and theatres. They believe that the new economy’s amenities revolve around outdoor recreational activities and lifestyle amenities.

Many analysts of the human capital theory neglected amenities such as restaurants, cafeterias or nightspots because they classified them as purely private goods. Even though this statement is true, these amenities are important for two reasons: First, they are primarily a good proxy of visible physical changes in the urban environment and help to define attractive locations; second,

for people pondering where to live and work, amenities of this kind are more than a place to eat. : The presence of fine restaurants, snack bars, little shops as well as known art galleries and good clubs characterize the local context, conferring to the area a "peculiar style" (Clark, 2004, p. 104).

2.3.4. Gentrification

Nearly fifty years have passed since the term "gentrification" was first used in Britain by the sociologist Ruth Grass in 1964. When it first appeared in the 1970s it described a process which operates in the residential housing market and referred to the rehabilitation of working class derelict houses by middle class residents. Today if we look back at this definition it is quite evident that we are concerned with a process much broader than merely residential rehabilitation. The rehabilitation of architecturally attractive but unmaintained buildings is only one facet of a more profound economic, social, political, cultural and spatial restructuring where various forces are responsible for the major reshaping of global societies.

As stated by Neil Smith and Peter Williams (1986) "*gentrification is only a visible spatial component of social transformation. A highly dynamic process, it is not amenable to overly restrictive definitions"* (Smith and Williams, 1986, p. 3), and it is a very chaotic concept (Beauregard, 1986), different from the gentrification in the early 1970s and 1980s. Within the literature the number of contributions that both try to underline the causes and describe the effects is beyond counting, as well as the number of works that base their considerations on case studies (Bourne, 1993; Hackworth and Smith, 2001). After three decades of research, the debate on the meaning of gentrification in theory and practice remains intense and nowadays involves many diverse disciplines (Marcuse 1985; Beauregard 1986; Smith 1987; Zukin 1987; Ley 1994).
Robert A. Beauregard (1986) assess the *gentrification process as expressed in rehabilitated buildings, stores and restaurants designed for new, affluent and well dressed inhabitants […]; the gentrifiers live in historically preserved or high tech domestic environments which reflect their sense of taste […]; these residential areas are located close to the central business district, and often have peculiar amenities such as views of the skyline, access to parks or some historical significance […];they shop at specialty stores where unique and higher quality clothing and food convey and reinforce a sense of status […]; Trendy restaurants provide them with places to be seen and admired […];The gentrifiers desire to live in the city close to their jobs, where they can establish an urban life-style and capture a financially secure position in the housing market* […];

They feel the need to consume outside, desire to make friends thus they represent an up-scale class of consumer who frequent restaurants and bars and treat shopping as a social event […] (Beauregard, 1986, p. 11-12).

Marcuse (1985) defines gentrification as "the movement into a previously working-class area by upper-income households, generally professionals, managers, technicians, the new gentry, resulting in the displacement of the former lower-income residents" (Marcuse, 1985). In fact, what distinguished gentrification from mere intervention of urban renovation, redevelopment and renewal is the process of displacement which sometimes comes together with the up-scaling; Moreover, *gentrification is an urban strategy based on the mobilization of the urban real estate markets as vehicles of capital accumulation* (Smith, 2002) that appears on a global scale; it is directly related to how cities experience economic transformation and policy intervention.

In New York starting in the late 1970s most neighborhoods have experienced gentrification processes. Three waves can be detected (Hackworth and Smith, 2001):

1- The first wave of gentrification (1968-1973): it happened prior to the economic recession in the late 1973. The process of gentrification was isolated and sporadic. From 1974 to 1976 developers and investors used the downturn in property values to consume large portions of de-valorized neighborhoods, setting the stage for the '80s.
2- The second wave of gentrification (1979-1988): it occurred thanks to the key role played by the art community. It served to smooth the flow of capital into neighborhoods like Soho, Tribecca, the Lower East Side and Clinton. This wave that lasted until the end of the 1980s was characterized by the integration of gentrification into a wide range of economic and cultural processes at the global scale.
3- The third wave of gentrification (1994-1999): gentrification appeared to have been overstated as many neighborhoods continued to gentrify. Gentrification is expanding both within the inner-city neighborhoods that it affected during earlier waves and to more remote neighborhoods beyond the immediate core.

There are many cases of gentrification in New York City. In order to illustrate the extent of the process the following are some examples: Soho, East Village-Lower East Side- Chinatown, Clinton-Midtown, Brooklyn Height, Fort Green, Park Slope, Tribecca, Meatpacking District, Central Harlem, Williamsburg-GreenPoint, DUMBO-Downtown Brooklyn, Red Hook, Long island

city. The maps below demonstrate the gentrifying neighborhoods (Fig. 2.1) and the process of up-scaling Chinatown (Fig. 2.2).

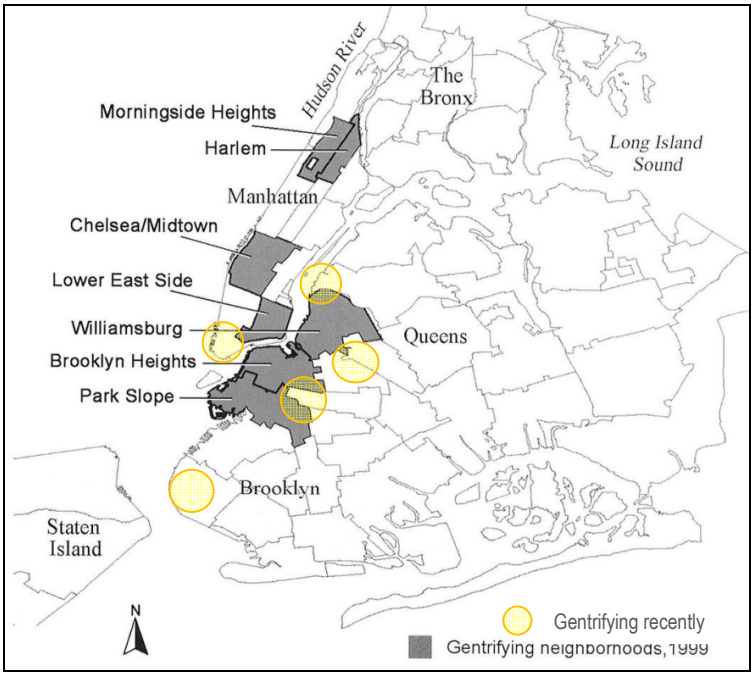


Figure 2.1. – Gentrifying neighborhoods in New York
Source: Lees, Wyly, 2010, p. 365; Re-elaborated by the author, 2011

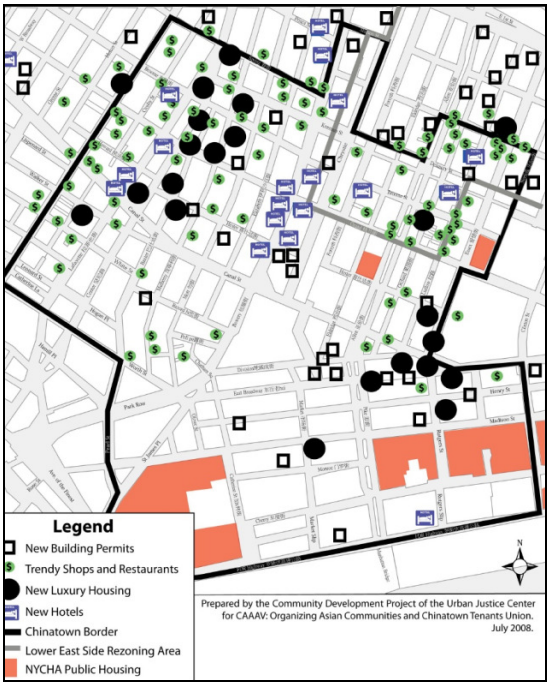


Figure 2.2. – Example of up-scaling neighborhoods in Chinatown, NY
Source: Community Development Project for the Urban Justice Center, 2008

2.3.5. High Amenity Zones

The concept of the HAZs has been introduced in the geographical literature by Richard Greene (2006) and refers to dense upscale residential areas close to downtown whose residents support neighborhood retailing and service employment. However, part of the concept dates back to the Forstall and Greene (1997) study, in which they first used an alternative employment resident ratio[2] (E/R) measure for delineating job centers in Los Angeles. The conventional method for delineating job centers is the Giuliano and Small (1991) job density measure. It resulted from the relationship between the number of jobs in an area and the territorial extent of the area. Forstall and Green in 1997 introduced the E/R measure expressed as the relationship between the n° of workers working in an area and the n° of workers residing in an area.

Job density (1991): number _ of_ jobs_ in_area / square_ mile_ of_ area
E/R ratio (1997): number_of_ workers_ working_ in_ area / number_ workers_ residing_ in_ area

When they (Forstall and Greene) compared the differences between the two techniques applied in Los Angeles, they found out that the E/R criterion missed to capturing tracts that have a high job density and that were primarily upscale residential and gentrified, close to downtown Los Angeles; the other method (Giuliano and Small, 1991) missed indentifying job centers such as airports that the E/R identified instead. When the method was applied to Chicago, the same observations were made for the upscale North Side called The Gold Coast. In order to corroborate the theory, Greene performed additional analyses and decided to call the areas as **High Amenity Zones** (Greene, 2006).

They have been identified by calculating:

1. Census tracts with job density higher than 5000 per square mile;
2. Census tract with an E/R below the 1.25 cutoff used to define job centers in the Forstall and Greene (1996) study;
3. Location quotient[3] measure for art and recreation establishments;

[2]The E/R ratio is useful in delineating job centers and identifying whether an area has more jobs than resident workers, reflecting the balance of workers and jobs. An E/R of 1.0 or greater means that a tract has more jobs than resident workers and a net commuter inflow into the tract. On the contrary, an E/R below 1.0 indicates that a tract has fewer jobs than resident workers and a net commuter outflow of workers from the tract.

[3]The location quotient, computed with data at the zip-code level, is used to measure industrial specialization and expresses the share (portion) of establishments in a given industry in a specified zip-code as a percentage of the share (portion) of establishments in the same industry within the metropolitan area. If a location quotient for a zip code is greater than 100, the zip code is considered specialized in a certain activity.

4. Map of Starbucks coffee houses.

Looking at the two case studies, Greene (2006) demonstrates a strong association between the concept and the preferences of the creative class and found out that these areas, even though they show a high job density, cannot be considered as job employment because of the residential nature of the land. The most interesting discovery derived from the research is that high-art establishments are highly clustered within cities and the largest clusters are spatially coincident with zones referred to as HAZs. As a result, **HAZs have been described as densely populated areas, of middle to high income, with several high-rise residential buildings and gentrified territory that offer a large number of local jobs, primarily services, retail shops and activities related to art and entertainment**.

Until now HAZs have only been identified for Los Angeles and Chicago, as Figure 2.4 shows. For Guangzhou (China) the study of the HAZ is still in progress.

In the case of Chicago, the North Side of Downtown has a high population density (290,833), a high job density per square mile (8,346) and different types of "happenings". Besides its residential character, HAZs offer an intense urban life supported by restaurants, cafeterias, theaters, and a variety of urban, cultural and consumer amenities that confer a "unique style" to the neighborhood. The location quotient for art and entertainment establishments showed that high culture is especially concentrated on the North Side HAZ and Downtown as well as Hyde Park, which are the zip codes that recorded high location quotients. The distribution of Starbucks, used as a cultural market indicative of tastes of the creative class, showed a strong concentration in the same areas, corroborating Greene's idea. Moreover, when he compared the population served by Starbucks in the three zones (Fig. 2.3) – the North Side HAZ, Downtown, and everywhere else –he realized the importance of Starbucks as a possible driver of growth in the North Side HAZ (Greene, 2007).

	*Number of Starbucks	**Population in 2000	Square Miles	Population Served by a Starbucks
Downtown	56	601,950	8	10,724
North side high amenity Zone	28	300,275	10	10,749
North Branch Industrial	8	35,362	4	4,420
Remaining Areas	25	2,469,312	208	98,772

Figure 2.3. – Starbucks and population served in Chicago
Source: Greene, 2006, p.70

The same methodology was applied to Los Angeles. Thus, for Los Angeles, the zone is referred to as the West Side HAZ and is made up of job centers fanned on both sides of Wilshire Boulevard by a high-job density fringe and connected to Downtown by similar high job density tracts.

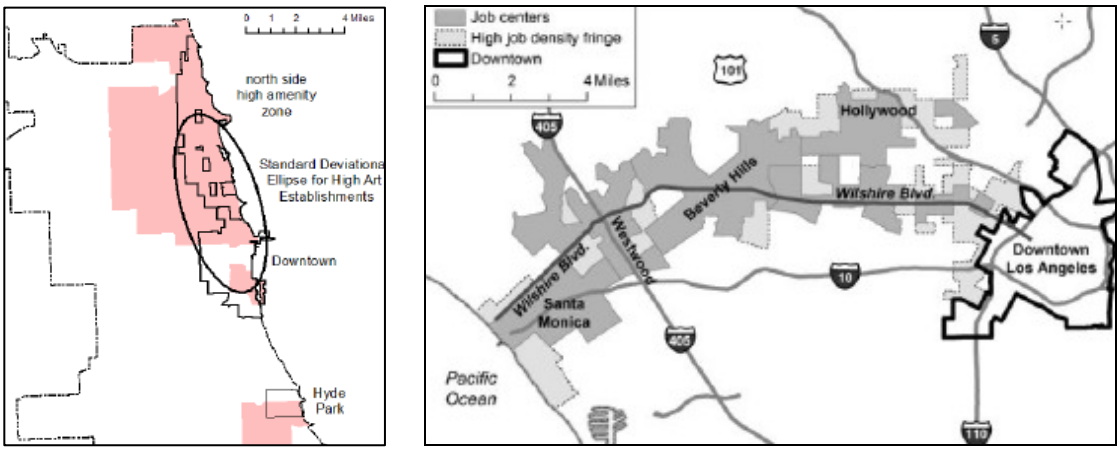


Figure 2.4. – HAZs in Chicago and Los Angeles
Source: Greene, 2007

As described by Greene (2007) HAZs exemplifies attractive places to live, work and play. Sometimes they are gentrified areas and have been planned as "urban villages"; in other case, they are just the result of urban transformations. The term "urban village" started to be used in 1995 after the Urban Village Forum (Bell and Jayne, 2004) to exemplify small "urban quarters" that are: self-sustaining, combine residential with work retail, offer leisure activities, mix different socio-economic groups, have efficient transport and are well designed (Bell and Jayne, 2004).

Urban villages are the result of a planning process of "branding places" that attempts to produce new competitiveness in a postindustrial context. One way to understand urban quarters is to see them as an act of "tidying-up" the chaotic heterogeneity of the postmodern urban landscape (Bell and Jayne, 2004, p. 251). Even though there are several differences between the two, HAZs and Urban Villages share the same principle of economic and cultural vitality and of consumption spaces that include the broadest variety of restaurants, theaters, shops and nightclubs. What is necessary to stress is the importance of mixed land uses, where arts and entertainment, retails, office as well as residential coexist.

The peculiar character of the HAZs is its multifunctional nature above all. As stated by Zeidler H. Eberhard "*our most enjoyable cities are those which quietly weave together a rich and complex pattern of different uses and activities"* (Zeidler, 1983, p. 9).

Both Urban Villages and HAZs express new forms of urban living that seek to appeal to the consumption practices of the emerging *nouveau riche* of the professional, managerial and service classes. They need to be seen as cities within a city. As theorist Sassen (1993) argues, today's large modern cities contain many cities: the corporate city of high-rise office buildings, the old dying industrial city, the immigrant city, gentrified neighborhoods and the new upscale residences. They all create a multi-dimensional space, where the "new economy clusters and sites" are found.

2.4. Conceptual groundwork

This section concerns the concepts that are relevant for the research main purpose and that allows the identification of HAZs in the city of New York. The concepts necessary for the study are summarized as follows:

- Creative class
- Urban amenities
- High Amenity Zones
- Gentrification

Creative class: In the present work the term "creative class" is not used in Florida's sense but rather it indicates residents working in the following sectors:

- Information industry (Ind8);
- F.I.R.E (Ind9);
- Professional, scientific, management, administrative and waste management service industry (Ind10);
- Art and entertainment, recreation, accommodation, and the food service industry (Ind12).

Considering the limit of the census categorization (the categories are too broad) the percentage of college graduates is also used as a proxy to map out residents working in creative, cultural and human capital sectors. For example, education, which does not imply creativity or talent, can be considered a determinant for high level jobs in the human capital economy.

Urban amenities: In the present work urban amenities are semi-public and public urban amenities, old and new economy amenities like restaurants, museums, nightspots, art galleries

and open spaces. In order to accomplish the study's objectives urban amenities were classified into three big categories:

- **Leisure amenities - category** refers to two big categories which are nightspots and restaurants. Restaurants is made up of 179 types of restaurants while nightspots include 69 different types of places;
- **Cultural amenities - category** refers to four categories which are: auditoriums and halls, theatres and performing arts centers, art galleries and dealers, and museums.
- **Green amenities - category** refers to the number of planted trees, green areas and blue resources the city offers.

Data on urban amenities are gathered from Zagat Guide 2009, Reference USA 2009 and the New York City Department of Parks and Recreation. At a whole the datasets have more than 250 amenity categories.

High Amenity Zones: In the present study the concept of HAZs, as it has been theorized by Richard Greene is a fundamental "starting point". Indeed for the identification of HAZs in New York we use some instruments introduced by Greene and refer to Greene's discoveries. However, Greene's method does not seem satisfactory to explain the patterns of HAZs in New York, thus a new method and GIS applications will be performed. They are explained widely in Chapter 3.

Gentrification: Considering that according to Greene (2006) HAZs are mostly gentrified territories, middle to high income, the concept of gentrification and the identification of gentrified neighborhoods in New York (as shown in Figure 2.1) will be very useful in detecting areas that more than others can be considered as HAZs.

CHAPTER THREE: THE AMENITY ZONES METHOD

Chapter three is structured as follows: section 3.1 identifies the area of investigation; section 3.2 describes the aims of the research and the main objectives; section 3.3 introduces the research method; section 3.4 describes the datasets namely Zagat Guide 2009 and Reference USA 2009.

3.1. The study area: the city of New York

The area of investigation is the city of New York with its Counties, namely, Bronx, Kings, New York, Queens, and Richmond (Fig. 3.1). They coincide with the Borough of Bronx, Brooklyn, Manhattan, Queens and Staten Island, respectively.

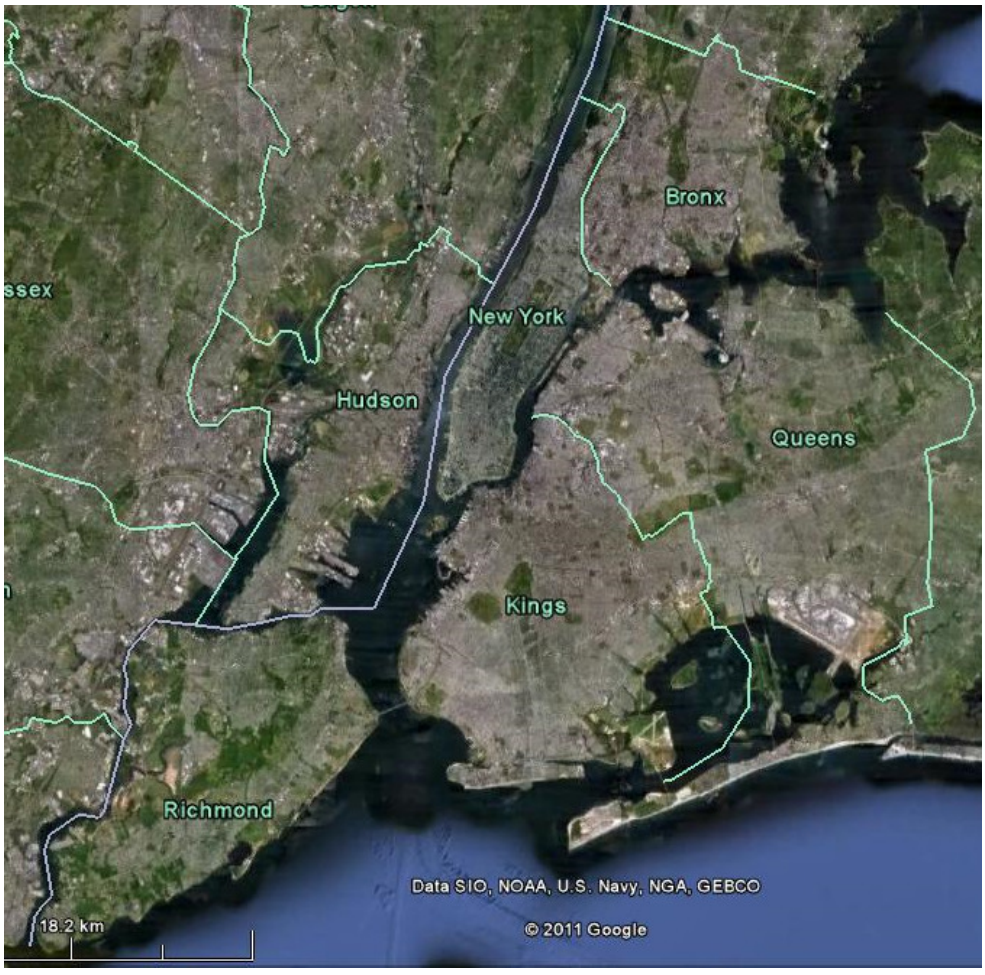


Figure 3.1. – New York's counties: Bronx; Kings, Queens, Richmond
Source: Google Earth, March, 3rd, 2011

In order to know more of the general character of the city, the following are some general information about the population, according to the United States Census Bureau, estimates for January 2009: Bronx has a population of 1.397.287 and the density is 33,269/square mile; Kings has a population of 2.567.098 and the density is 36,356/square miles; New York has a population of 1.629.054 and the density is 70,951/ square miles; Queens has a population of 2.306.712 and a density of 21,116/ square mile while Richmond has a population of 491.730 and a density of 8,408/ square mile.

Considering the aim and the objectives of the present study, the improvements that the new methodology will bring to the concept of HAZs, and by referring to the conceptual groundwork, it is necessary to specify that, among the aforementioned boroughs, the County of Richmond is not being analyzed. The reasons for this omission are explained in section 3.3.

3.2. The aim of the research

This research has two principal aims: one is to geographically identify HAZs in New York while the other is to improve the methodology used to discover them by exploring new datasets and GIS applications. In order to attain this, the present work seeks to achieve the following objectives:

1. Understand the socio-economic factors that led New York to achieve its present character;
2. Analyze the creative class's distribution and detect its distinctiveness;
3. Analyze data on college graduates;
4. Individualize job centers and creative neighborhoods;
5. Perform a study on urban amenities by looking at the spatial allocation and measuring the density;
6. Set up a method and special datasets for investigating the quality of urban amenities;
7. Identify the main character of the built environment;
8. Explore how strong the relationship between gentrification, urban amenities and creative class is.

In the present research only three main variables are taken into account and analyzed for the re-definition of HAZs: urban amenities, green amenities and the creative class. No analysis has been performed for variables such as the housing market, the school quality, the transportation system and housing affordability, which might be subject to future examinations.

3.3. The method

The main objective of this research is to identify and localize HAZs in New York. Greene (2007) first attempted to identify HAZs by applying his methodology (paragraph 2.3.5) in New York, however, his efforts failed to produce any significant results. In fact, when Greene's method was applied to the city of New York, it exaggerated the phenomenon by capturing all commercial-residential strips, not only the upscale ones or those that were rich in amenities. As visible in Figure 3.1, New York as a whole seems to resemble one large HAZ.

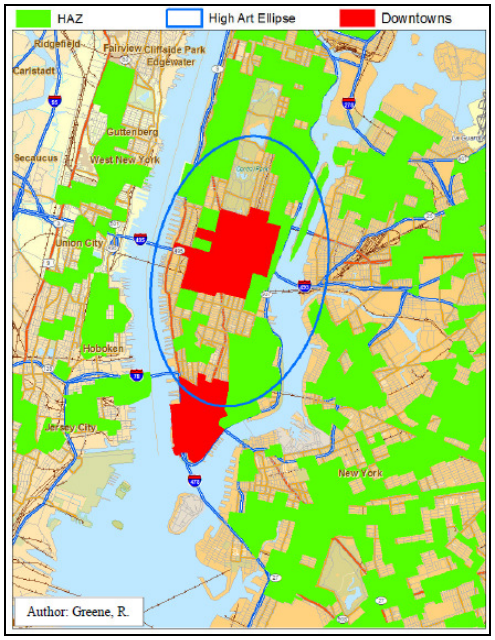


Figure 3.2. – HAZs in New York
Source: Greene, 2007

This is essentially related to the complex nature of New York's built environment and the way in which the city has developed. First, New York is a densely populated city, thus stores and secondary services are required in a large number to satisfy the population's functional requirements. Second, historically New York was built as a working and living city with the CBD and the Financial Core close to residential neighborhoods; third, the New York art and recreation industry has been active since the 1950s, therefore it is "typical" for the city to have a high location quotient in art and related industries. Moreover, most of the neighborhoods in New York have undergone gentrification and neighborhood up-scaling since the 1970s, therefore the city is becoming increasingly luxurious.

The complexity of New York's urban landscape requires additional sources of information and instruments of analysis. Thus, detecting HAZs in very large cities implies studying urban amenities deeply, analyzing the manner in which they are located in the territory, their quality and spatial patterns. It also implies studying the distribution of "creative class", as well as the spatial location of art and entertainment establishments. A high population density with a high job density and plenty of retail activities cannot automatically transform an area into a HAZ because they solely express the mix of commercial-residential use of the land, which is not enough to define an area as "attractive". It is the type and the quality of amenities that makes an area attractive, an "amenity" for people to live, work and stroll. Therefore, in order to define HAZs in the complex New York environment, Greene's method needs to be re-formulated and rigorously implemented.

The method used by Greene (2007) missed analyzing very important aspects of the urban life that in the "unique" context of New York are necessary, if not fundamental, to detect HAZs. In his theorization, he described HAZs as densely populated areas, with high job density, mainly gentrified territories, home to the creative class, high rise buildings, different types of attractions and plenty of restaurants, cafeterias, bars as well as a variety of urban, cultural and consumer amenities. However, only some of these aspects have been analyzed scientifically and presented: he statistically proved that HAZs are densely populated, with a high job density, a high concentration of Starbucks stores, and art and entertainment activities (section 2.3.5), but missed analyzing other aspects. His method failed to study the urban, cultural and consumer amenities, the concentration of the creative class, the character of the built environment and the gentrification process, and is therefore insufficient for the purpose of the present research.

In order to improve the method and detect HAZs in New York new analysis and special datasets are required, in addition to the tools identified in Greene's method (section 2.3.5).

First of all, it is necessary to analyze urban **amenities** and **creative class patterns, as well as the character of the built environment**. More precisely, this research studies the quality of urban amenities and their spatial distribution within the study area, as well as investigating the creative class distribution and concentration within the city. Moreover, it takes into account both the character of the **built environment**, which makes each neighborhood "distinctive", and the extent of **gentrification** within the city.

By considering these aspects, HAZs in New York are detected by selecting these elements:

1. **Census tracts with a E/R below 1.25 cutoff ratio for job centers;**

2. **Census tract with job density higher than 5000 per square mile;**
3. **Location quotient measure for art and recreation establishments;**
4. **Areas that have a high cluster of urban amenities (not only Starbucks);**
5. **Areas with a high concentration of people working in creative sectors;**
6. **Areas close to the CBDs, Financial District or the Creative Corridor;**
7. **Areas mostly gentrified or upscale;**
8. **Well connected by public transportation and easy to reach;**
9. **Areas with natural elements.**

The first three elements (1-3) were used by Greene (2007) to identify the HAZ in Chicago and Los Angeles, while the other six (4-9) are new elements this method proposes for the identification of the HAZs in New York.

Figure 3.3 shows the application of Green's method to New York and indicates census tracts with an E/R below 1.25 cutoff ratio for job centers, and a job density higher than 5000 per square mile**.** The number of HAZs is very high, thus explaining why a new identification is needed.

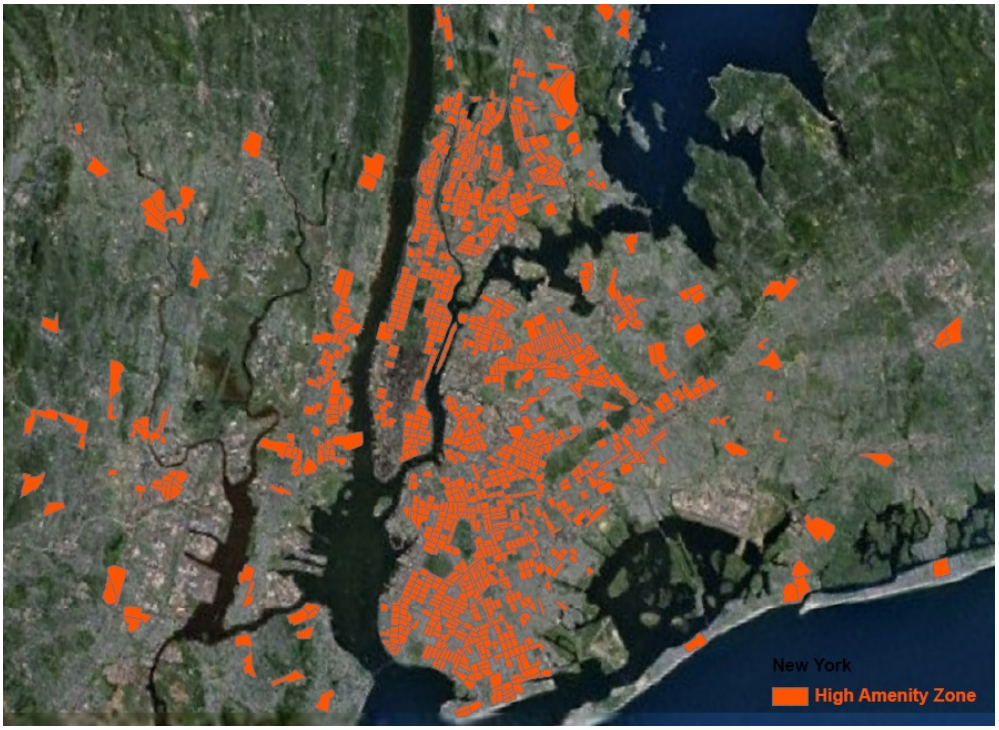


Figure 3.3. – Applying Green's methodology to New York
Source: GIS elaboration of the author

The method we are proposing in this research aims to improve Greene's methodology by introducing more instruments of analysis that would allow a more detailed and selective identification of HAZs, and therefore a more accurate investigation. By looking at the map above it is clear that Greene's method cannot be applied in this context without some improvements: in Bronx, Queens, Manhattan and Brooklyn the method identifies HAZs almost everywhere, for the reasons previously explained. In the case of Richmond instead, only six tracts were selected as HAZs, showing the "suburban" nature of Staten Island.

Considering that the aim of this work is to detect upscale residential areas that have a high job density and urban amenities the present method does not apply to Richmond County, for the following reasons:

- There is no trace of significant process of gentrification in the borough, which is an indicator for detecting HAZs;
- The borough is fairly residential: the number of tracts that have a high job density and an E/R below the 1.2 cutoff are very few;
- The area is not within or in close proximity to any CBDs, Creative Core or to the Financial District;
- In the borough there are many restaurants, which are also rated by Zagat Guide, but they do not look very "upscale" and are more likely fast food;
- The borough is connected to Manhattan by the Staten Island Ferry (a 25 minute trip), to Brooklyn by the Verrazano - Narrows Bridge and to New Jersey via three vehicular bridges and one railroad bridge. It is the only borough not serviced by the New York City Subway.

In the other boroughs, on the contrary, the number of HAZs identified by Greene (2007) is very high, thus the present method and especially the aforementioned new elements are applied together with a new datasets:

- Statistical analyses are integrated with GIS geographical spatial analysis;
- Miscellaneous bibliographical material is supported by photographs;
- Census Data for 1990 and 2000 are supported by data on urban amenities gathered from *Zagat Guide 2009* and *Reference USA 2009*
- Additional Census data are used such as *Population estimate 2009*, and 1950-2000 Census data on college graduates will be used.
- Quantitative research is supported by qualitative analysis and by the research on field

By using new spatial tools and datasets, the present method, based on the analysis of the spatial dimension of phenomena, makes the analysis of the density and the distribution of urban amenities possible, helps define the geography of the creative class, explores the relationship between amenities and creative class, describes the character of the built environment, and eventually identifies a rich array of amenity zones in New York, which are presented in Chapter Five.

Considering that the present method introduces new elements of analysis, and could offer a more descriptive investigation of the spatial pattern within the city, the concept of HAZs, as conceived by Greene (2006), seems too restrictive. Going beyond Greene's concept of HAZs the present method, by introducing more elements of analysis and applying a qualitative examination, creates a wider framework within which HAZs are only a type of the broader Amenity Zones (AZs) category. The AZs is an "**open category**" that can embrace different types of amenity zones, allowing for a more articulated classification. This articulation allows taking into account qualitative variables such as the quality of the urban amenity, the character of the built environment, the density of the creative class, etc., aspiring to a comprehensive method of investigation.
In this research **urban amenity patterns**, **creative class distribution**, and the **nature of the built environment** are the three most important elements for the identification of AZs in New York and for understanding how cities and people's lifestyles change over time. The results of the analysis of these three elements are presented in Chapter Four.

One of the challenges in identifying and studying AZs is establishing a method and data set by which it is possible to single out "cool" residential areas, gentrified, rich with amenities and cultural events, where the professional class lives, thus expanding the methodology to include an evaluation of cities around the world. Global cities are crucial in understanding of how the urban landscape accepts and responds to these socio-economic transformations by physically and materially creating or transforming existing spaces of the city. In fact, the present work aims to set up a method that can be applied globally, one that is not based merely on statistical calculations but one that is able to take into account the geographical importance of places and socio-economic factors.

3.3.1. Spatial analysis

For the purpose of this research and in order to accomplish the objectives, spatial analysis is used as the key method of investigation. Understanding the spatial distribution of data from phenomena that occur in space constitute today a great challenge to the elucidation of central questions in many areas of knowledge. In our case, spatial analysis is used for the study of urban amenities; it is useful because it allows visualizing the phenomena in space and measures the relationships that occur between the patterns. Spatial analysis's central idea is to incorporate space into the analysis and look at the very locational patterns of the events under study.

For the purpose of the present work selected G.I.S. tools are used:

10. **Geocoding**[4] allows for the spatial location of urban amenities on a map;
11. **Density Karnel for point features**[5] serves to measure the density of urban amenities;
12. **Near Neighbor Distance Index**[6] method serves to identify clusters;
13. **Moran Index**[7] enables the study of the auto-correlation between patterns;
14. **Hot spots analysis**[8] (Getis Ord G*I) allows the measurement of the quality of urban amenities.

Spatial analysis has been applied to two special datasets: Zagat Guide 2009 and Reference USA 2009. Applying Geographical Information System's spatial analysis to Zagat Guide 2009 and

[4] Geocoding is the process that allows objects with a geographic (spatial) reference to be converted into points on a map.

[5] This method allows the creation of a density surface which is a raster image created from points, transforming a set of discrete features into a continuous phenomenal dataset. What ArcMap does, it splits the map extent into pixels of the size you indicate. Later you set the radius and it will count all the features that fall within the search radius of each feature, divide that by the total area where features are present and create a pixel with that value. A large radius will give the surface a more generalized look while a small one will reflect more local variation.

[6] The nearest neighbor index is expressed as the ratio of the observed distance divided by the expected distance. The expected distance is the average distance between the neighbors in a hypothetical random distribution. If the index is less than +1 the pattern exhibits clustering, while if it is greater than +1, the trend is toward dispersion. Z score values, associated to the index, express a test of statistical significance that helps decide whether or not to reject the null hypothesis (the null hypothesis is that there is no spatial pattern among the features and the features are randomly distributed). A high (positive) and low (negative) value of Z scores means that the patterns are very far away from the null hypothesis of a random distribution.

[7] The Global Moran Index measures the spatial autocorrelation based on both feature locations and values, simultaneously. Given a set of features and the associated attributes, it evaluates whether the pattern expressed is clustered, dispersed or random. A positive Moran Index value (+1.0) indicates a tendency toward clustering while a negative Moran Index value (-1.0) indicates tendency toward dispersion. The associated Z score, that measures the statistical significance, indicates whether or not we can reject the null hypothesis of random distribution.

[8] Given a set of weighted data points, the Getis Ord G*I statistic identifies those clusters of points with values higher in magnitude than you might expect to find by random chance. The output of the G*I function is a Z score for each feature that represents the statistical significance of clustering for a specified distance. A high z score for a feature indicates its neighbors have high attribute values, and vice versa. The higher (or lower) the z score, the stronger the association. A Z score near zero indicates no apparent concentration while a high zeta score, indicates a high correlation.

Reference USA 2009 dataset, two types of maps were produced: **density maps** and **qualitative maps**.

Density maps indicate areas within the city of New York where amenities are grouped and are created by geocoding all the amenities using Density Karnel for Point Features; Qualitative maps (created on the Zagat Guide dataset) display the spatial representation of the value that has been given to each leisure amenity (restaurants and nightspots) by consumers according to selected parameters such as food, service and décor, price and appeal. Maps showing the quality of amenities are created by using the Hot Spot Analysis. By mapping the quality of the urban amenities, these maps identify locations that express a statistical significance of spatial clustering values. Looking at the more localized nature of the data, the hot spot analysis (Getis Ord or G*I statistics) produces Z scores (output of the calculation) that denote spatial locations where there is a cluster of high value or low values, based on the high or low value of the Z score.

3.4. The Datasets: Zagat Guide and Reference USA

Using Zagat Guide 2009 and Reference USA 2009 the spatial analysis sets out to quantify the distribution of urban amenities and evaluate their quality where it is possible. Measuring the quality of an urban amenity is not easy as it is subjective and consumer dependent, but restaurants and nightspots ratings could be a good proxy. The two unique datasets presented in this paragraph seek to create a tool for quantifying urban amenities and its spatial dynamics within the geography of New York. While data from the **Zagat Guide 2009**[9] are used in the present work to measure the geography of leisure amenities (nightlife and restaurants) and estimate their quality, information gathered from **Reference USA 2009** is used to study the spatial dynamics of cultural amenities. Additional to these datasets, **County Business Patterns Data (NAICS) 2000 and 2007** are also used.

Zagat Guide 2009: Using data from Zagat Guide 2009 we collected information on 3600 restaurants (2050 of which have been rated by customers) and more than 1400 nightspots (1200 of which have been rated by consumers) in the counties of New York City (Manhattan), Kings (Brooklyn), Queens and Bronx. Zagat Guide 2009 offers information on the type of restaurant, its geographical location, and its quality rating which makes it possible to quantify leisure amenities,

[9] Zagat Guide is the world's leading provider of consumer survey-based restaurants, nightlife and leisure information, with more than 250,000 voters participating worldwide. For more information: http://www.zagat.com/.

locate them on a map and evaluate their quality. Zagat Survey's unique approach separately rates the distinct qualities of a restaurant or nightspot (food, decor, service and cost) on a 30-point scale, where the minimum and maximum values represent high and low quality amenities, providing information on where good restaurants/nightspots and bad restaurants/nightspots are located. For the purpose of our research this aspect is very important as it allows for the first time to map out the "qualitative value" of restaurants and nightspots, by offering consideration on the quality of "leisure amenities".

In the literature no research seems to have measured the quality of an individual amenity, displaying the importance of such an investigation.

In order to quantify leisure amenities, we acquired address information related to all restaurants and nightspots listed in the Zagat Guide 2009, either rated or not, and with the G.I.S. we geo-coded restaurants and nightspots to locate them precisely. To measure the quality of restaurants and nightspots we mapped their consumer ratings (quality of the food, décor, service and cost) by using Getis Ord G* that geographically locates high and low quality values.

It is important to note that the Zagat Guide 2009 dataset does not provide a comprehensive list of existing restaurants and nightspots, but only the well-known ones. Therefore, it is necessary to be aware of the fact that the data does not give a complete picture of the restaurants and nightspots that the city can offer, but it does capture the fundamental essence of this segment of urban amenities. Nevertheless the real utility of this database is related to the fact that by measuring the quality of amenities and defining "hot spots" in the distribution of values, it is possible to detect "trendy areas" and discover which places are better than others, mapping out the geography of amenities and the geography of "creative centers" (Florida, 2005).

Reference USA 2009: this database is an internet-based reference service, a leading provider that offers information on business, neighborhood, finance and consumer sectors. For the purpose of the research we used the US Business Database and we collected information on four types of business in New York:

15. Museums and important cultural institutions;
16. Theatres and performing art centers;
17. Halls and auditoriums;
18. Art galleries and dealers.

Using the complete business address we have geographically pinpointed 2371 cultural amenities in the boroughs of Brooklyn, Bronx, Queens and Manhattan. Due to the character of the data, in this case we were unable to value the quality of amenities, as the dataset does not furnish any consumer-rated data, so only a density analysis can be performed in order to quantify amenities and locate them on a map.

One of the unique characteristics of using **Zagat Guide** and **Reference USA** for the analysis of amenities is that data are aggregated at the zip-code level and that each amenity has an individual location in the territory. This means that we can study the phenomena at the city and neighborhood levels and not on the national scale, as many prior studies have revealed (Florida, 2002b; Clark, 2004; Ren, 2004: Glaeser; 2001).

CHAPTER FOUR: MEASURING AMENITIES GEOGRAPHICALLY

Chapter four aims to illustrate the current character of New York's cultural and social structure by focusing both on the study of urban amenities and the analysis of the creative class distribution. The analysis of these two elements is essential for the identification of AZs in New York, as explained in section 3.3. In detail, the chapter is structured as follows: section one provides an explanatory overview of the geography of urban amenities in the borough of New York, Brooklyn, Bronx and Queens; section two shows the concentration on natural amenities in New York; section three aims to define New York's creative job centers and creative neighborhoods within the aforementioned boroughs; section four discloses the tight relationship between urban amenities and creative class.

4.1. The geography of urban amenities in New York

The distribution of urban amenities in the city of New York is fairly uniform as Figure 4.1 shows. Urban amenities tend to be located in specific parts of the city and they show a tendency to cluster and co-cluster. Leisure amenities (restaurants and nightspots) cluster and co-cluster with cultural amenities (art galleries, theatres, halls and auditoriums, and museums) in basically all the locations where they appear. As it is possible to visualize from Table 4.1, the values of the Nearest Neighbor Distance Index (see note four, chapter three), calculated for nightspots, restaurants and art galleries, shows a predisposition for variables to cluster at least in the main boroughs. In fact, the values of the index for each variable (urban amenities) in Manhattan and Brooklyn are less than one with a high Z score, exhibiting patterns of clustering. On the contrary, in Queens and the Bronx boroughs, where the number of amenities is smaller compared to Brooklyn and Manhattan, the tendency to cluster has to be rejected because of low Z score values, according to which the hypothesis of a random distribution needs to be accepted.

Table 4.1. – Nearest Neighbor Distance Index

Area	Nightspot		Restaurant		Art gallery	
	Index	Z score	Index	Z score	Index	Z score
Bronx	No value	No value	0,50	-8,44	1,43	3,17
Brooklyn	0,28	-29,02	0,46	-20,56	0,54	-18,2
Manhattan	0,38	-42,61	0,32	-61,8	0,43	-32,74
Queens	0,47	-4,2	0,43	-15,53	1,43	3,17

As it can be seen from Figure 4.1, many cultural amenities and related cultural events are located in close proximity to restaurants and nightspots, showing a tight bond in Manhattan and in the other boroughs. This "social milieu", as Elisabeth Currid and Sarah Williams (2009) have called it , does not cluster randomly but "*branding cultural events locations as cultural hubs may partially explain why some places within the city become trendy consumption sites too"* (Currid and Williams, 2009, p.29) and spaces of intense social interactions. There is a strong interrelationship between culture amenities and leisure amenities that cannot be considered separately.

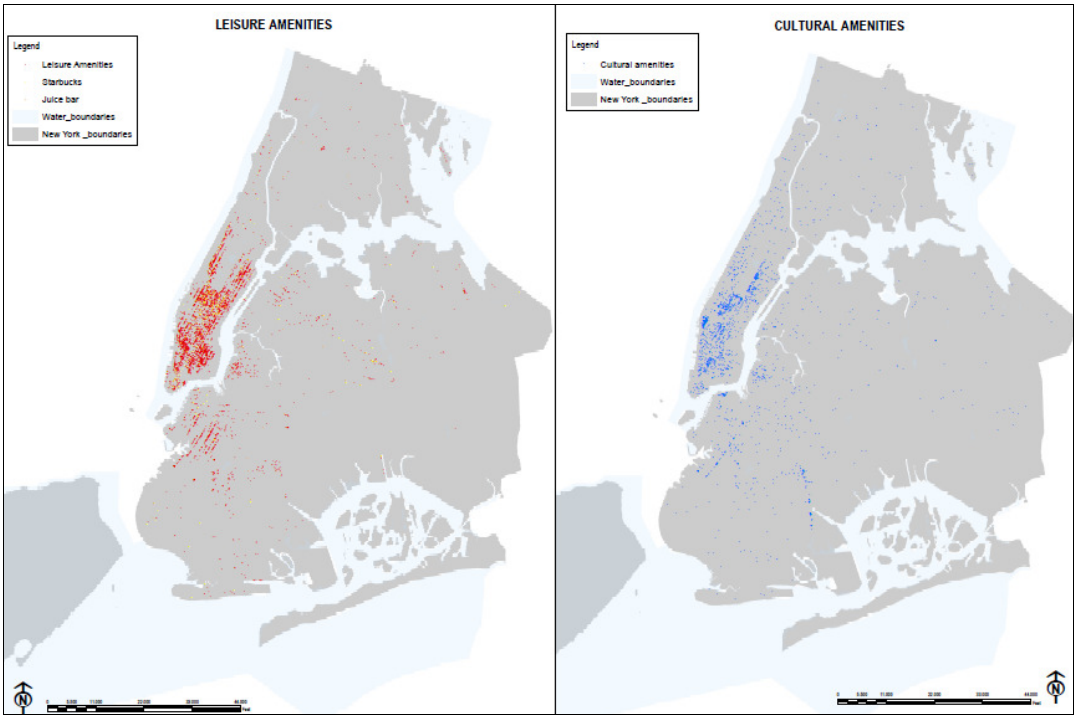


Figure 4.1. – Distribution of urban amenities
Source: GIS elaboration by the author on Zagat Guide and Reference USA 2009

In the following paragraphs we describe the character of New York's *leisure and cultural milieu* by looking deeply at the dynamics of the leisure and cultural amenities. In this case the concept of *milieu*[10] is used to specify the peculiar character of places that concern the relationship between space and the special goods of society.

4.1.1. Leisure amenities

[10]The milieu is seen as a set of localized and specific natural and socio-cultural conditions that have been stratified in a certain place and represent the territorial basis of identity.

In New York, restaurants, cafeterias, entertainment places and hotels have always played an important role in the city's economic life, but during the last twenty years or so the restaurant industry has experienced a significant boom. Although eating outside has always been an interesting venue, from the eighties "dining out" emerged as a cultural practice (Satler, 2001). There has been a tremendous expansion of both upscale restaurants and casual dining. The importance of not just food but *cuisine,* not just decoration but *authentic objects d'art* has identified a new vision of the good life and new, extremely luxurious spaces have started to appear (Satler, 2001). On the other hand, the economic forces of globalization have brought into the city a huge number of tourists, daily visitors and immigrants who needed more informal spaces. The coexistence of extremely well-off restaurants and clubs together with informal spaces is intrinsically tied to the forces of globalization, to labor market dynamics and to the polarity of socioeconomic classes (Sassen, 1991). This is principally true in Manhattan where a large number of high-end restaurants of all styles coexist with low quality pizzerias that sell food for $3.00. Thanks to its global character, Manhattan remains the command center for dominant restaurants and service establishments in New York, with more than 8, 085 eating and drinking places. However, Brooklyn and Queens have increased the number of food establishments from 2,325 to 3,237 (28%) and from 2,732 to 3,597 (24%) respectively, showing an increase in selected types of food establishments such as restaurants, drinking places and cafeterias. Table 4.2 (at the end of the section) clarifies the dynamic of the restoration sector in the period 2000-2007 and identifies the fastest growing borough and the prevalent typology of eating places in the four boroughs. In order to illustrate this, GIS spatial analyses were performed and a density map was created to explain the spatial dimension of the leisure amenities within the city of New York. Figure 4.2 demonstrates the chief role of Manhattan as the center for restaurants and nightspots and identifies spatial clusters of leisure amenities in specific areas of the City. The **density map**[11] shows that leisure amenities are spread in Manhattan's major neighborhoods, namely, the East Village, West Village - Greenwich Village - SoHo, the Meatpacking district, Little Italy - NoLita, Chelsea, the Flatiron District, Clinton, Midtown and in both the Upper East and West sides. In Brooklyn new "cool areas" are emerging especially for nightlife: Williamsburg, Park Slope, Brooklyn Heights, Fort Green, Cobble Hill, and around Sunset Park; in Queens leisure amenities

[11] The density maps have been created by applying the GIS tool Density Karnel for Point Features to Zagat Guide 2009 and by taking into consideration each borough separately.

localized in Long Island City, Astoria Bayside and Jackson Heights. In Bronx, they the major cluster is close to the Bronx zoo.

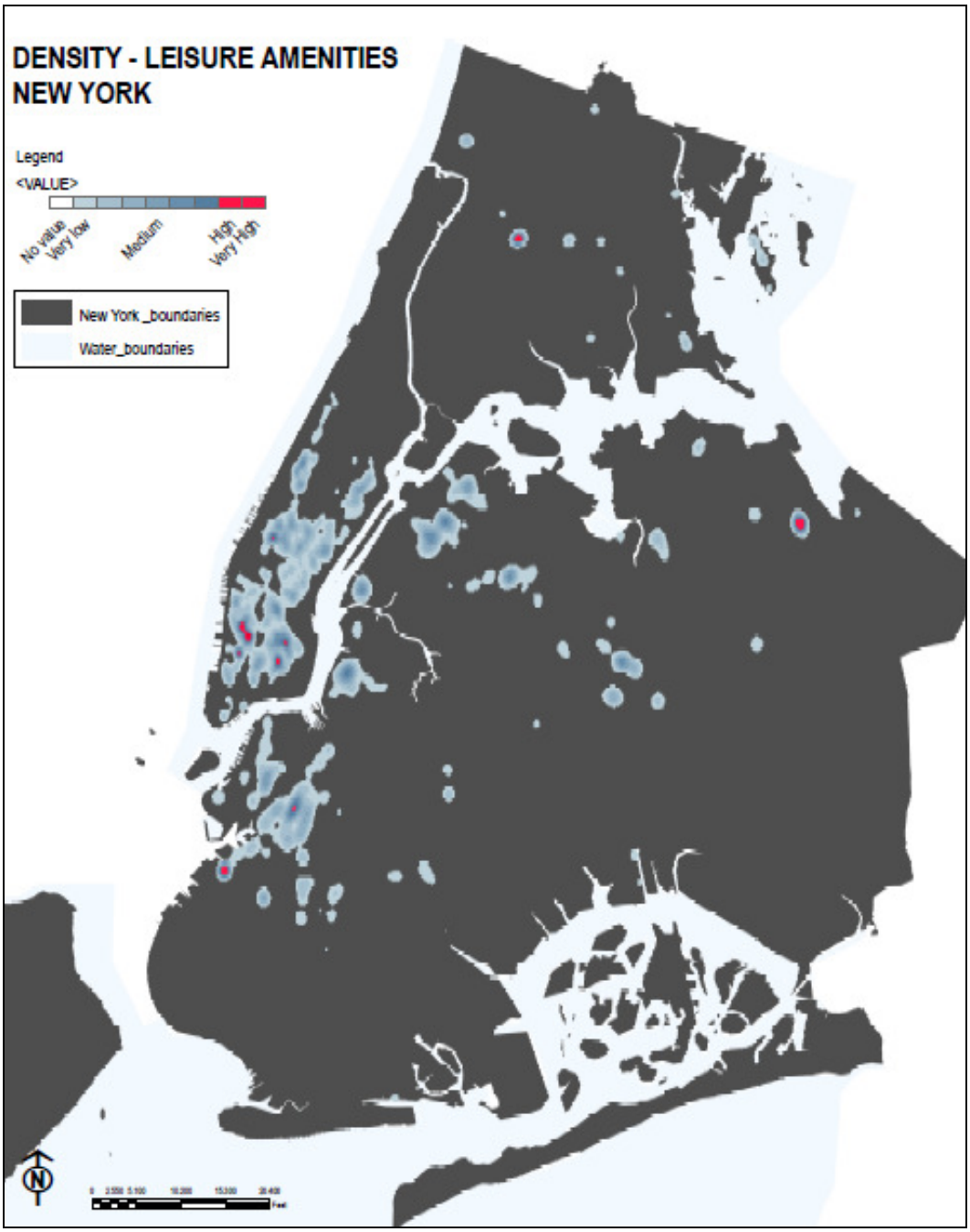


Figure 4.2. – Density of Leisure Amenities
Source: GIS elaboration by the author on Zagat Guide 2009

In some of these areas, and especially in Brooklyn, it is also possible to find the highest concentration of national retail chains. The study from the *Center for an Urban Future* reports that the areas of the East Village, the Garment District, Midtown Manhattan, Chelsea, SoHo and Murray Hill have the highest concentration of national retail chains such as Dunkin Donuts, Subway, McDonalds, and Starbucks. In his article on the Brooklyn Paper (2010) Alex Rush states: "*Brooklyn is now home to 1,330 corporate shops — with Dunkin' Donuts leading the way with 126 locations, more than twice the amount of locations of Subway and McDonald's*" […] "*Most of the action is in Downtown Brooklyn, driven by thousands of residents in new and converted buildings in and around the borough's historic civic core*" […] "*Chain stores can't outdo true Brooklyn mom-and-pop service," said Sal Casaccio, whose pizzeria, Tony's Famous on the corner of Fulton and Adams Street, was evicted last month to make room for the Manhattan-based, soon-to-be-national burger chain Shake Shack"* […] (Rush, 2010)

The peculiarity of the Zagat Guide 2009 dataset is its ability to map out the quality of the leisure amenities and not only the density. Specifically, the quality of each leisure amenity is the result of the consumer rating of the amenities according to select parameters such as: service, food, appeal and décor. In order to investigate the quality of the leisure amenities, namely restaurants and nightspots, the Getis Ord G*I method has been applied. It aims to create hot spot maps showing the concentration of high and low values and displaying the quality of the amenities.

The hot spots maps reveal that restaurants that offer the **best food** are in the West Village - Greenwich Village – Soho, Chelsea, Tribeca and Midtown up to 60th Street, while the food quality decrease in the Financial District and in the other boroughs as Figure 4.3 shows. Restaurants that offer the **best service** and **good appeal** cluster in the Meatpacking district, Chelsea, the Flatiron District, Tribeca, in the Upper East Side along 5th Avenue and in Midtown Manhattan. These are the best areas within the city to have dinner. In Brooklyn and Queens the concentration is lower than in Manhattan but fairly high in Astoria, Jackson Heights, Forest Hills, Bayside, Park Slope, Greenpoint, and Downtown Brooklyn where it is possible to find medium quality restaurants for a reasonable price. Restaurant that offer a **good décor** are spread all over the boroughs (Fig. 4.4). The importance of leisure amenities in the establishment of vibrant urban areas is not new. Nightspots and restaurants are not just places for people to "hang out" or be

entertained, but also sites of meaningful social interaction and nodes of creative and cultural exchange (Currid, 2007a, pag.95).

This is particularly true for nightlife. Table 4.2 shows that drinking places slightly decrease, between 2000 and 2007 in all the boroughs except in Brooklyn where there has been an increase of 11.4%, probably related to the young crowd that moved to the borough and to the vibrancy of certain "hipster" neighborhoods. In Brooklyn, nightspots cluster in Williamsburg, Carrol Gardens, Park Slope, Prospect Park and Brownsville where the best clubs are now located. In Manhattan the center of nightlife is in the Lower East Side-East Village, Greenwich Village-West Village-Soho and Chelsea areas; Figure 4.5 indicates nightspots with the **best décor**. Figure 4.6 indicates that the nightspots with the **best appeal** are located in the East Village and Lower East Side, but also in Midtown; in Brooklyn they locate in Williamsburg, Park Slope and around Prospect Park South and East; in Queens they locate in Long Island City and Astoria.

What emerges from the spatial analysis is that restaurants and nightspots often co-cluster according to both density and quality.

- In Manhattan hot spots are in the Upper East Side along 5th Avenue and Midtown Manhattan, the West Village, the Meatpacking District -Tribeca, the Flatiron District, SoHo – NoLita - Noho.
- In Brooklyn the trendiest places are in Park Slope, Downtown Brooklyn and DUMBO.
- In Queens and the Bronx no trendy spots can be traced according to this methodology.

While in this research **density maps** have revealed the extent of urban amenities' location in the city, **hot spots analysis** have identified "cool" and "trendy" places within the city that offer the best and the worst establishments. The results suggest that besides Manhattan, Brooklyn is emerging as a new center for urban life and as a hub for new forms of artistic and musical expression (Sisario, 2008).

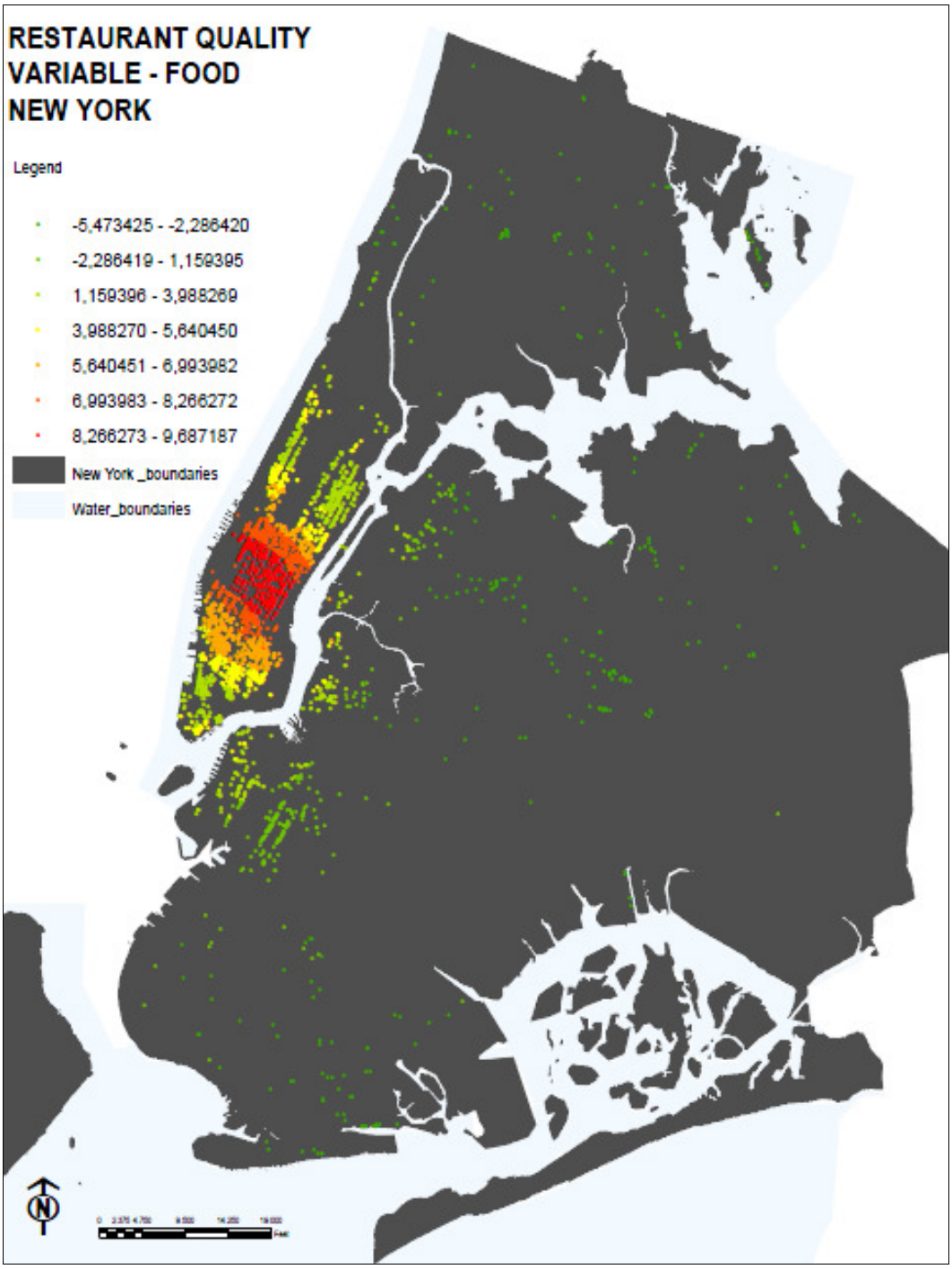


Figure 4.3. – Map representing the Getis-Ord G*I Z score values for restaurant quality Variable: food
Source: GIS elaboration by the author on Zagat Guide 2009

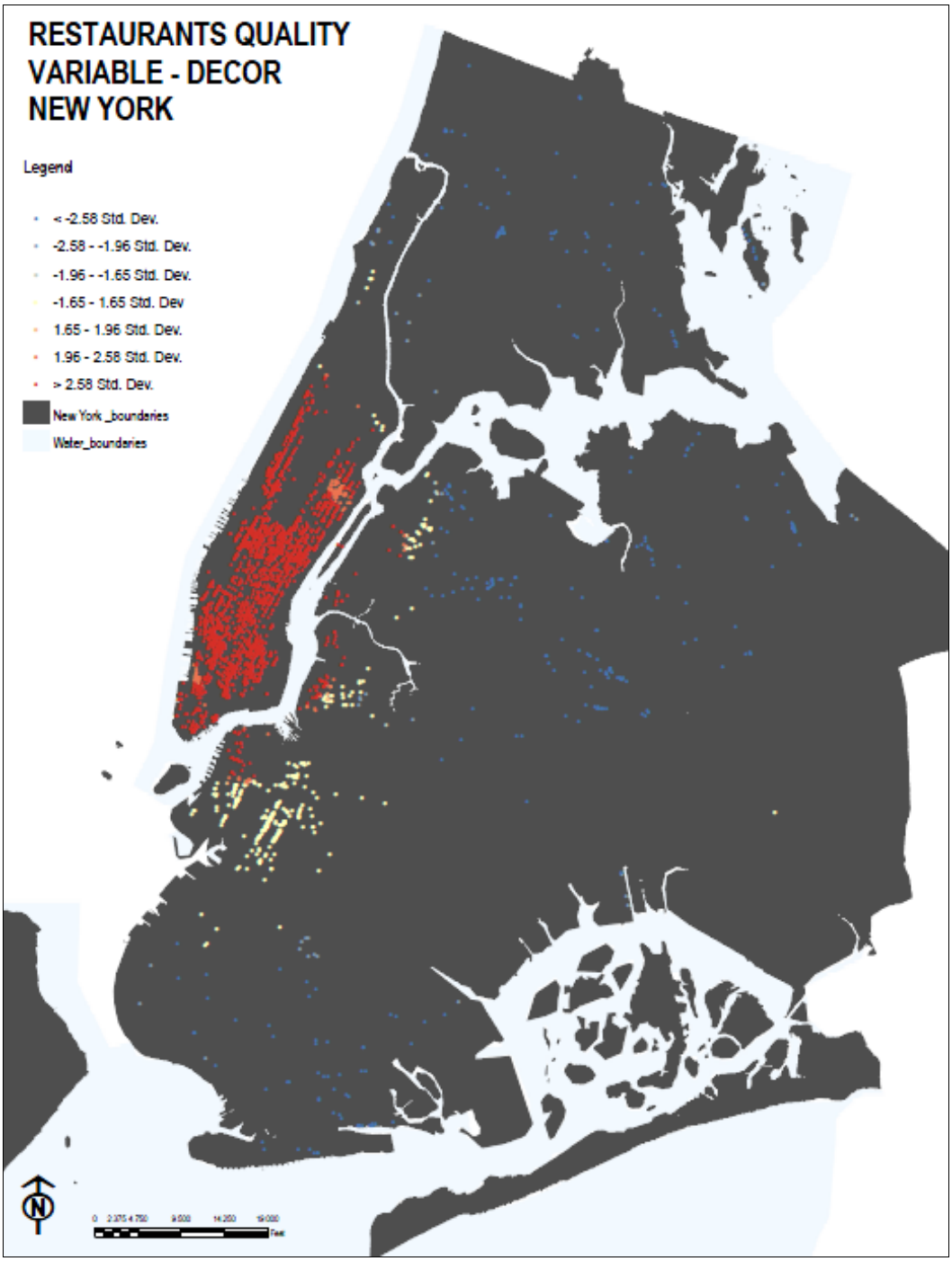


Figure 4.4. – Map representing the Getis-Ord G*I Z score values for restaurant quality Variable: decor
Source: GIS elaboration by the author on Zagat Guide 2009

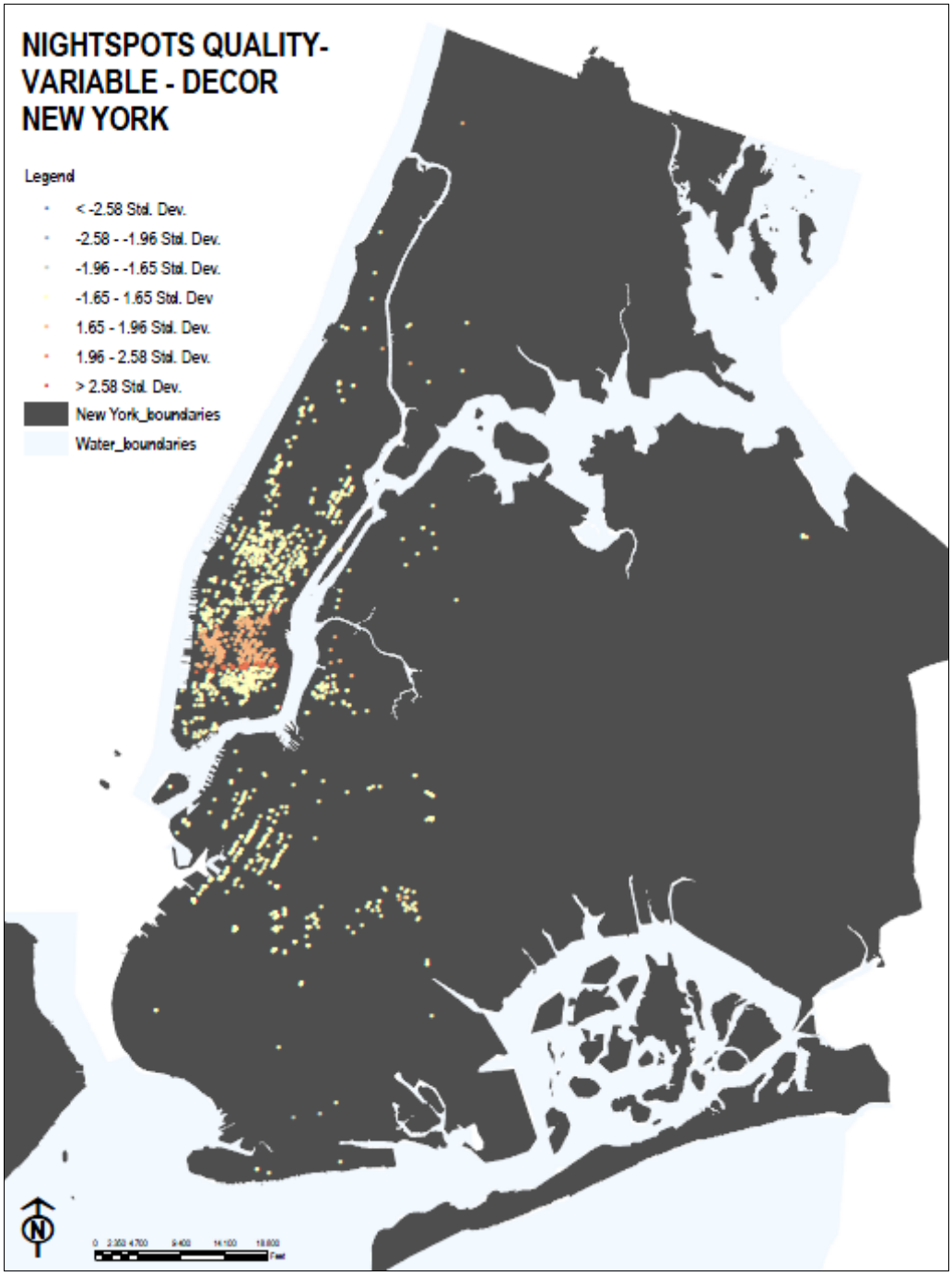


Figure 4.5. – Map representing the Getis-Ord G*I Z score values for nightspots quality Variable: decor
Source: GIS elaboration by the author on Zagat Guide 2009

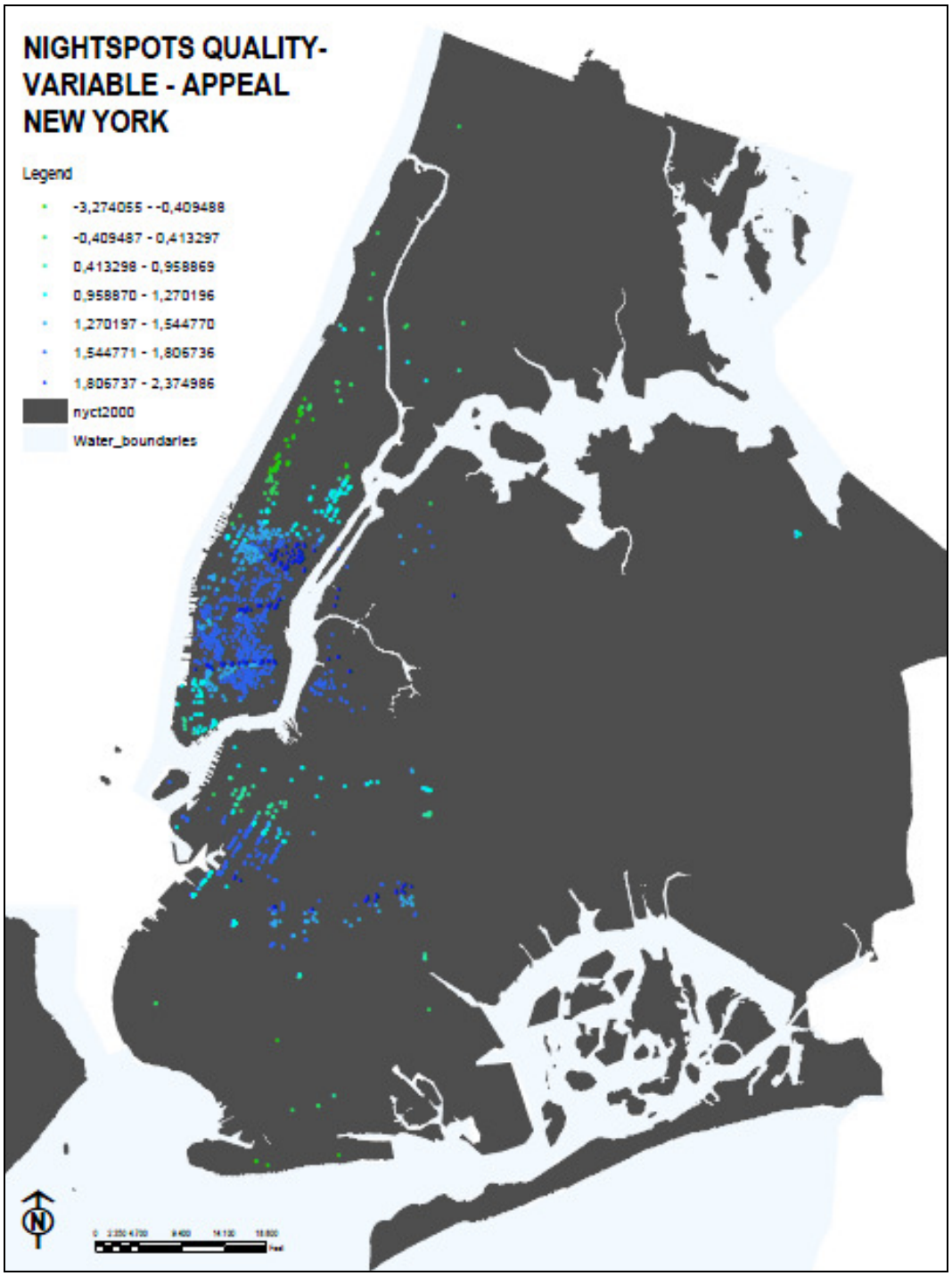


Figure 4.6. – Map representing the Getis-Ord G*I Z score values for nightspots quality Variable: appeal
Source: GIS elaboration by the author on Zagat Guide 2009

4.1.2. Cultural amenities

Culture has always been treated more as an amenity and as a lure for professionals in other industries who want to live and work in vibrant communities than as a real economic driver. However, in this economy based on human capital, the increasing consciousness of its importance for the city's economy has grown and today it takes its own place alongside the finance, business and the creative sectors. In New York, art and recreation industries grew significantly in the last ten years as Table 4.3 shows: the art and entertainment sectors rose 3% in the Bronx, 33% in Brooklyn, 21% in Manhattan and 32% in Queens in the period 2000-2007. In particular, there has been an increase in performing arts companies and independent artists. Currid's analysis shows that the Getis Ord G*I Z Score for art and independent artists is very high in Chelsea, the Upper East side, SoHo, the West Village and Tribeca, while the "hot" neighborhoods for performing arts establishments are Clinton, Midtown, SoHo and Tribeca (Currid, 2007b). A slight increase in the number of museums and historical sites is visible in Brooklyn and in Manhattan, by looking at Table 4.3. Despite the positive trends in the boroughs of Brooklyn and Queens, Manhattan remains the core of arts and related activities with more than 4000 establishments.

The results of the spatial analysis for cultural amenities (Fig. 4.7) and the density maps (Fig. 4.8) show that cultural amenities exhibit different spatial patterns. Art galleries are densely clustered in Brooklyn, Queens and the Bronx and show a high concentration in Manhattan.

- In Manhattan art galleries are located in: Chelsea, SoHo, the Upper East Side along 5th avenue, the West Village, Tribeca and in the East Village.
- In Queens, art galleries are concentrated in: Long Island City and Astoria
- In Brooklyn art galleries are mainly distributed in Williamsburg, DUMBO, Park Slope - Prospect Park and in Brownsville.

Museums cluster especially in Manhattan along 5th Avenue, Midtown, the East Village and in the Financial District. Halls and auditoriums show a random distribution. Theatres cluster in the theatre district (between 9th Avenue and 5th Street and 59th and 40th), in Times Square and along Broadway and in the East Village.

As well as leisure amenities, cultural amenities show a tendency to co-cluster. Halls, auditoriums and theatres co-cluster in the Theatre District and Midtown Manhattan mainly while museums concentrate along 5th Avenue, the East Village as far as the Financial District. On the contrary, art

galleries show an independent distribution in all the boroughs and only in some spots of the city they co-cluster with formal institutions (in 5th Avenue, the Financial District and the East Village).

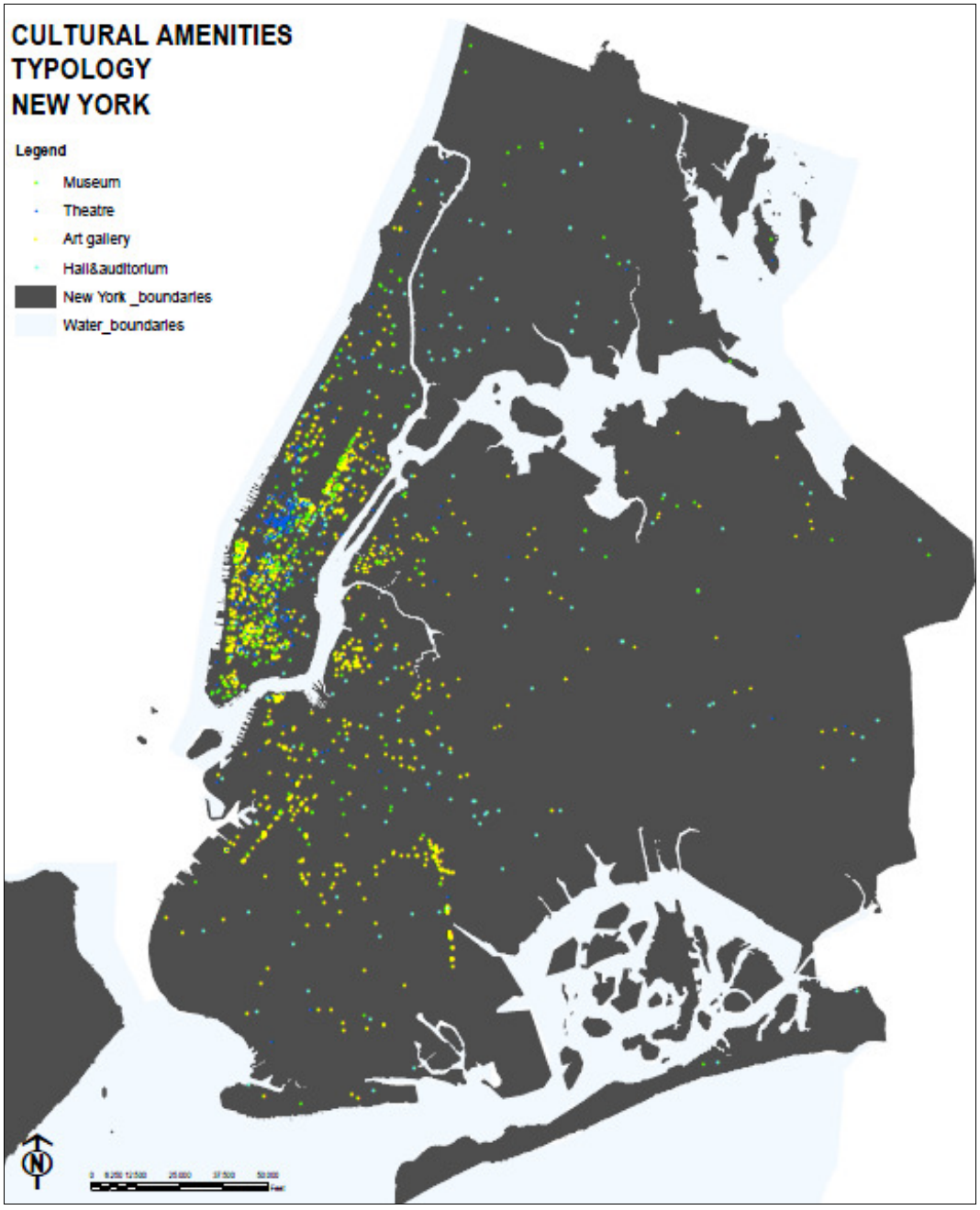


Figure 4.7. – Map showing cultural amenities by categories
Source: GIS elaboration by the author on Reference USA 2009

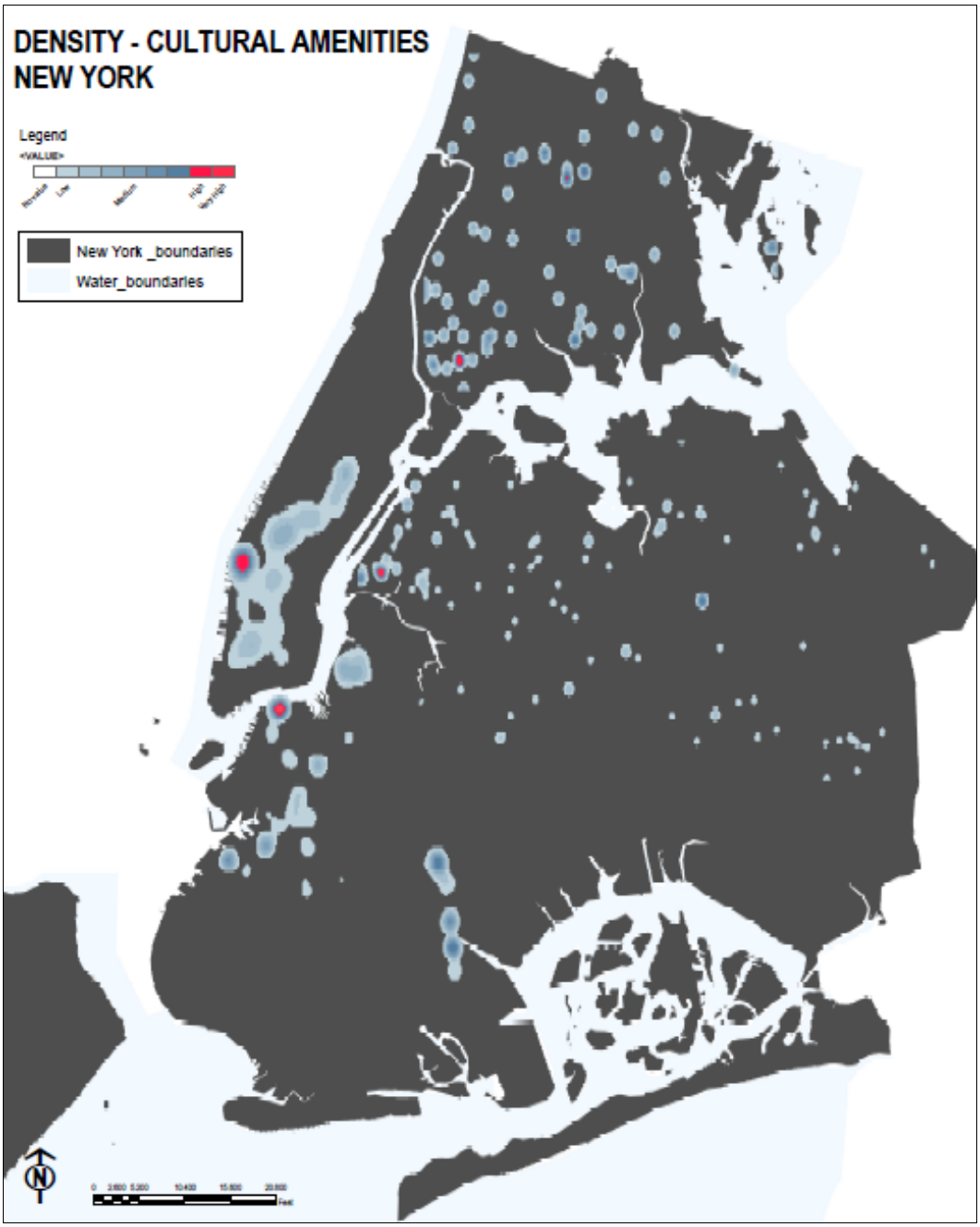


Figure 4.8. – Map showing the density of cultural amenities
Source: GIS elaboration by the author on Reference USA 2009

It is in these “hot spots”, where there is a high cluster of urban amenities that the main cultural events happen. With the aim of measuring the social milieu of cultural industries in Manhattan, Currid and Williams (2009) mapped cultural and artistic social events in the locations where they occurred. They found out that the “social consumption of art is not spatially random” but instead cultural events tend to appear in particular “nodes” within the city (Fig. 4.9). In New York “event enclaves” (Currid and Williams, 2009) or, better, “locations in the city where events happen at a statistically higher rate than the rest of the city” locate in 5th Ave. between Rockefeller Center and Central Park, Midtown West near Lincoln Center, down Broadway, in SoHo, the West Village and Chelsea as the maps show.

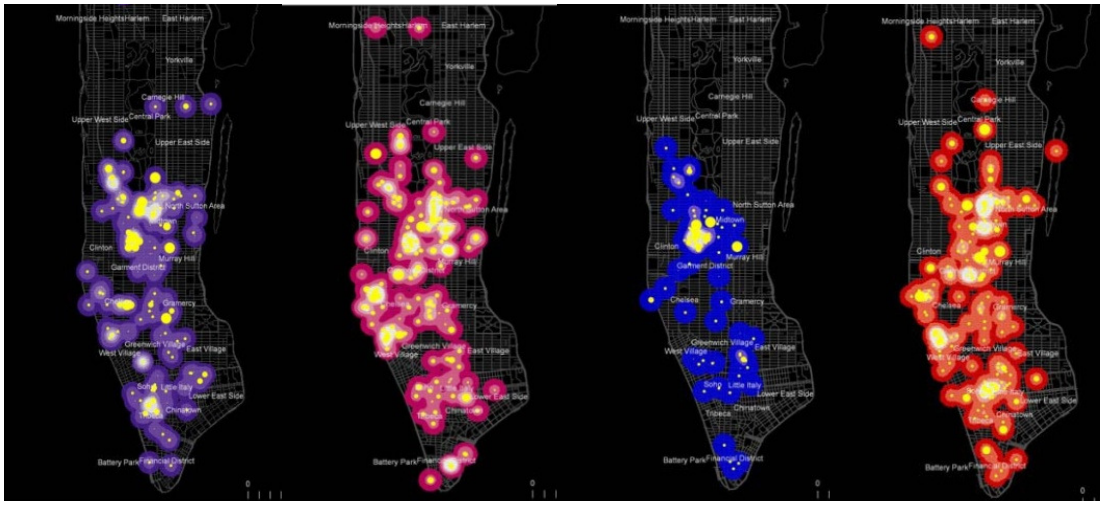


Figure 4.9. – Fashion, film, management and theatre events in Manhattan
Source: Currid and Williams, 2009 (with permission from the authors)

According to the results presented in this section, related to leisure and cultural amenities (Fig. 4.2; Fig. 4.8) it is possible to state that these “nodes of cultural events” (Currid and Williams, 2009) coincide in most of the cases, at least in Manhattan, with places where the cluster of urban amenities is high, as the previous maps have shown.

While Currid and Williams (2009) have mapped the locations where cultural and art-related events happens at a higher rate, the present work has studied instead where the best leisure amenities locate and cluster, showing a high link between cultural amenities and leisure amenities, which cannot be considered separately.

The results of this study bring one to the conclusion that cultural amenities cluster in particular places in the city, which are also “cultural events locations” (Currid and Williams, 2009), creating

cultural agglomerations and local advantages. Moreover, what emerges from this analysis is that cultural amenities are linked to leisure amenities as they appear in the same spots. The concentration of cultural amenities, leisure amenities and cultural events location generates vibrant urban areas that we can define as "hot spots".

In **Manhattan**, nightspots and restaurants cluster where the cultural events take place and where the distribution of cultural establishments is significant. They co-cluster in the Lower East Side – the East Village, Soho - Little Italy, the Financial District, the Meatpacking district - Tribeca, the West Village - Chelsea, Midtown and along 5th Avenue. In these areas the connection between leisure amenities (restaurants, nightspots, and clubs) and the cultural milieu is very strong. In **Brooklyn** a different trend emerges: nightspots seem to follow the distribution of art galleries. This is visible in Williamsburg - GreenPoint, Brownsville, Prospect Park and Park Slope, DUMBO and Clinton Hill. In **Queens**, leisure amenities are found mainly in Astoria while all the cultural institutions and art galleries are located in Long Island City.

In conclusion, this investigation on urban amenities has highlighted the strong connection between cultural amenities, leisure amenities and the social milieu (Currid and Williams, 2009) within the city of New York. The geography of New York, the spread of urban amenities as well as the capacity of the city to create connectivity determines the degree of a neighborhood's appeal and allows us to detect different amenity zones within the city.

4.2. Green Amenities

Together with urban amenities are relevant also natural amenities. In this section we study the distribution on natural and green amenity within the city of New York. The data were gathered from the New York City Department of Park & Recreation and elaborated by the GIS software. In detail the map (Figure 4.10) contains three types of information: number of planted trees, location of parks and open spaces and number of botanic gardens. There is no reference to public spaces and privately owned public space because, even though they sometimes contain natural elements such as trees, flowers and water, they are mainly made of concrete (Ravazzoli, 2010a). Taking into consideration the number of planted trees at the neighborhood scales could be an interesting element of investigation which can constitutes a good proxy for the examination of the natural amenities' concentration/distribution.

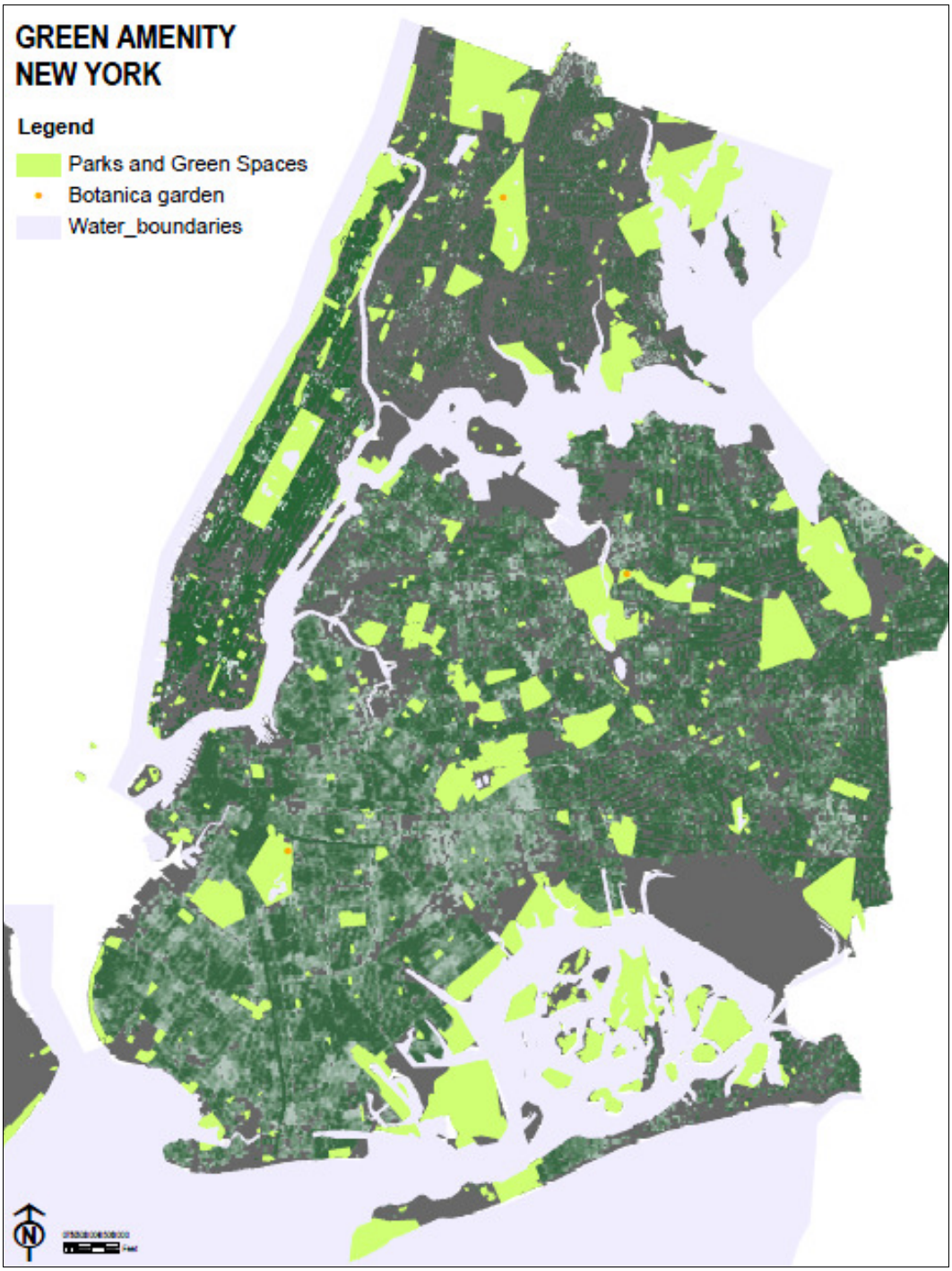


Figure 4.10. – Green amenities
Source: GIS elaboration by the author on Department of Park and Recreation Data 2010

Among the boroughs under examination, Queens is the one that has the most planted trees, 254.859, followed by Brooklyn with 150.541 trees. The Bronx and Manhattan have less, respectively 65.048 and 51.660. The distribution of parks instead shows a different geography: Bronx has 25 parks, Brooklyn has 39, and Manhattan has 44 while Queens has only 20 parks.

The Following are some data on the distribution of trees within some of the major neighborhoods in Manhattan, Brooklyn, Queens and Bronx. This helps to understand the importance neighborhoods have given and give to the natural and green elements.

Neighborhoods	Trees
Dumbo and Downtown Brooklyn	218
Nolita -Little Italy	255
Tribecca	800
Soho	914
Financial District-battery park	1019
Lower East side	1171
Brighton Beach	1245
East Village	1394
Prospect Park	1470
Williamsburg	1588
Murray Hill	1787
Chelsea	1805
Long Island City	1911
Carroll Gardens	2102
Brooklyn Height	2139
Midtown East	2177
Woodside	2807
Greenpoint	2893
Gramercy Park – flatiron	3003
West village - Meatpacking District	3138
Greenwich Village	3187
Fort Green-Clinton Hill	3425
Cobble Hill- Boerum Hill	3438
Astoria	3566
Upper East side	4180
Park Slope	5061
Upper West side	5535
Flushing	6594
Bay Ridge	6933
Jackson Heights	7482

In Manhattan, the Upper West and East Side have the most planted trees (Central Park influence); Greenwich Village, West Village and Gramercy Park have more than 3000 planted trees, while in the "hipster" neighborhoods and close to the creative centers such as Murray Hill, Tribecca, SoHo and Lower East Side the availability of natural amenities is restricted due to the landscape's urban morphology and the character of the streetscape.

Most of the green seems to be located in the other borough, where the urban morphology allows more open spaces. In Queens, Jackson Height is the neighborhood that has the most trees, followed by Astoria, Woodside, Flushing and Bay Ridge. In Brooklyn Park Slope, which have more than 5000 trees, is the greenest neighborhood. Brooklyn Height, Prospect Park does not have many trees but have green areas instead; DUMBO, the emerging neighborhood, has only 218 trees, mainly located along the waterfront park.

Concerning the green areas' accessibility it is shown in the map below, where buffers have been built for areas within a ten minute walk from a park. It is interesting to notice that in 2007, 76% of New Yorkers lived within a quarter-mile of a park, while in 2010 84% do (NYCDPR, 2010), showing the increasing interest in green resources and natural amenities.

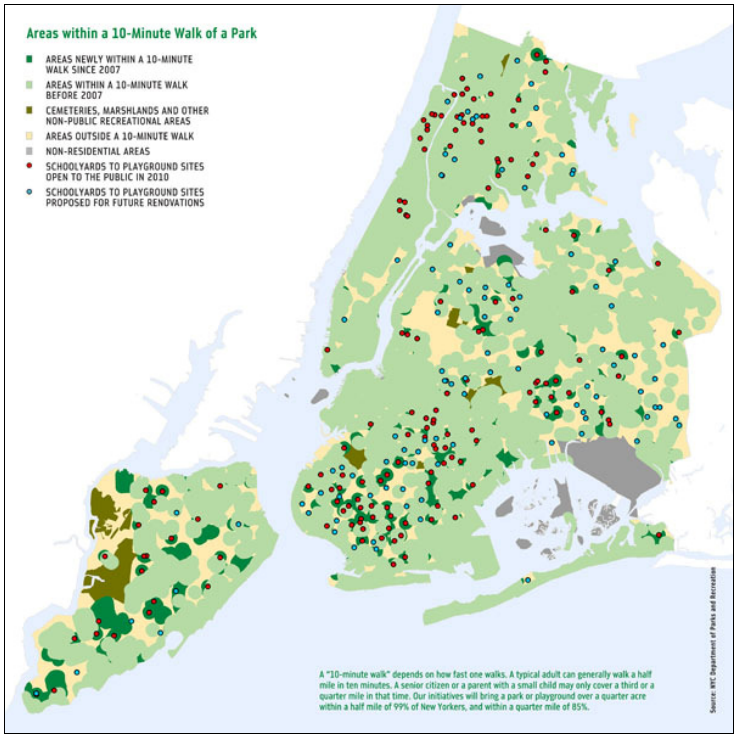


Figure 4.11. – Accessibility to parks
Source: New York City Department of Park & Recreation, 2010

With the new plan for the city (New York 2030) this percentage will increase soon. The plan will ensure that all New Yorkers live within a 10 minute walk of a park. Today New York City has less open space per person than almost any other major city in America. "*With the vision and resources provided by the new plan for New York City, the Department of Parks and Recreation will launch the most ambitious parks program in half a century, creating new open spaces and expanding the city´s urban forest"* (NYCDPR, 2010).

Concluding, we can infer that the amount of natural elements and green amenities is substantial in New York and especially in the Brooklyn borough at a whole and in Queens, while is lower in Bronx and in Manhattan. Considering that New York is home of professionals who enjoy being active in nature and practicing sports (Florida, 2004) it is possible to assume that in the next few years the natural elements will become as much important as urban amenities are today, constituting the new elements of neighborhoods' appeal and the "*plus*" creative class will look and pay for. The importance of public spaces for people's quality of life it is not new and the interest in ecology and natural elements will further increase in the next years to come, becoming a very important parameter for the delimitation of AZs, besides urban amenities (leisure and culture).

Table 4.2. – Accommodation and food establishments in New York's main boroughs.

ACCOMODATION AND FOOD SERVICE		Bronx			Brooklyn			New York City			Queens		
Ind.Code	Industry code description	2000	2007	%	2000	2007	%	2000	2007	%	2000	2007	%
721	Accommodation	29	31	6.5	30	45	33.3	349	412	15.3	57	90	36.7
722	Food Services and Drinking Places	1,021	1,323	22.8	2,295	3,182	27.9	7,362	8,085	8.9	2,674	3,507	23.8
	Full-Service Restaurants	313	435	28	799	1,277	37.4	3,485	3,961	12	995	1,404	29.1
	Limited-Service Eating Places	519	725	28.4	1,148	1,512	24.1	2,690	2,716	1	1,185	1,630	27.3
	Cafeterias	10	16	37.5	18	25	28	88	63	-39.7	24	30	20
	Snack and Nonalcoholic Beverage Bars	113	110	-2.7	268	373	28.2	613	631	2.9	298	335	11
	Special Food Services	60	72	16.7	138	156	11.5	548	773	29.1	160	177	9.6
	Food Service Contractors	29	41	29.3	48	55	12.7	372	597	37.7	90	102	11.8
	Caterers	22	22	0	78	92	15.2	147	162	9.3	52	65	20
	Mobile Food Services	9	9	0	12	9	-33.3	29	14	-107.1	18	10	-80
	Drinking Places (Alcoholic Beverages)	129	91	-41.8	210	237	11.4	639	635	-0.6	334	296	-12.8
	Total establishments	1,050	1,354	22.5	2,325	3,227	28	7,711	8,497	9.3	2,731	3,597	24.1

Source: County business Pattern (NAICS) 2000, 2007

Table 4.3. – Art and entertainment establishments in New York's main boroughs.

ART, ENTERTAINMENT, RECREATION		Bronx			Brooklyn			New York City			Queens		
Ind.code	Industry code description	2000	2007	%	2000	2007	%	2000	2007	%	2000	2007	%
711	Performing Arts, Spectator Sports, and Related Industries	30	39	23.1	148	297	50.2	2,641	3,365	21.5	93	176	47.2
	Performing Arts Companies	11	13	15.4	41	66	37.9	826	888	7	22	43	48.8
	Spectator Sports	2	1	-100	6	2	-200	35	25	-40	17	19	10.5
	Promoters of Performing Arts, Sports, and Similar Events	3	6	50	18	30	40	247	349	29.2	13	25	48
	Agents and Managers for Artists, Athletes, Entertainers and Other	6	7	14.3	16	32	50	509	626	18.7	6	18	66.7
	Independent Artists, Writers, and Performers	8	12	33.3	67	167	59.9	1,024	1,477	30.7	35	71	50.7
712	Museums, Historical Sites, and Similar Institutions	9	8	-12.5	12	22	45.5	116	157	26.1	17	26	34.6
	Museums	5	4	-25	7	14	50	102	128	20.3	9	17	47.1
	Historical Sites	1	1	0	1	4	75	7	14	50	3	3	0
	Zoos and Botanical Gardens	3	3	0	4	3	-33.3	4	3	-33.3	4	5	20
	Nature Parks and Other Similar Institutions	0	0	0	0	1	100	3	12	75	1	1	0
713	Amusement, Gambling, and Recreation Industries	91	88	-3.4	184	197	6.6	434	538	19.3	170	210	19
	Amusement Parks and Arcades	2	4	50	17	10	-70	12	10	-20	7	5	-40
	Other Gambling Industries	6	1	-500	3	2	-50	11	6	-83.3	1	2	50
	Other Amusement and Recreation Industries	83	83	0	164	185	11.4	411	522	21.3	162	203	20.2
	Total establishments	130	135	3.7	344	516	33.3	3,191	4,060	21.4	280	412	32

Source: County Business Pattern (NAICS) 2000, 2007

4.3. Creative job centers and creative neighborhoods

The definitions of creative industries are various (Caves, 2002; Hartley, 2005). In this research the term "creative industries" relates to the sector where the creative class works: information industry (Ind8); finance, insurance, real estate, rental and leasing industry - F.I.R.E (Ind9); professional, scientific, management, administrative and waste management service industry (Ind10); art and entertainment, recreation, accommodation and food service industry (Ind12). These industries together with a community of creative people give rise to what De Poppis (De Poppis, 2008) has defined as "creative clusters". With this term he refers to a catalyzing place where people, relationships, ideas and talents can speak to each other and where the environment offers diversity, stimulation and freedom of speech. Looking at the City of New York, two types of creative components will be analyzed: *job centers* and *creative neighborhoods.*

Job centers

In this research, job centers have been identified both by looking at the value of the E/R ratio[12] (Greene, 1997) and by referring to work in the creative sectors (Currid, 2006; Indegaard, 2009; Cooke and Lazzarettti, 2008). The map created by applying the E/R ratio to the city of New York (Fig. 4.12) seems fairly different from the one created by the Pratt Center (Fig. 4.13) and based on the traditional method, showing the difference between the two methods, as previously explained (see section 2.3.5, Chapter 2). Creative jobs are mainly concentrated in Manhattan where more than two million jobs were offered, according to census data 2000 (Tab. 4.4). Actually the city specialization is in FIRE (18%), professional, scientific, management (18%), education (15%) and art and entertainments (9%). On the other hand, the Bronx, Brooklyn and Queens have numerous jobs in education and retail trade.

In New York we can identify principally two types of job centers: the **Commercial Business Districts** and the **Creative Corridors**. The first includes the Financial District, located in Lower Manhattan, the Business District in Midtown Manhattan and important branches in Long Island City (Court Square area) and Downtown Brooklyn; the creative corridor, which is the new force of the city's economy and is characterized by a concentration of creative industries, is located in Lower Manhattan. The creative corridor is the area between Midtown South and Downtown bounded by the East Village, SoHo, NoHo, Greenwich Village, Tribeca, the Garment district and Chelsea (Indergaard, 2009). In this "space of production" are concentrated establishments related

[12] See note n°2.

to advertising services, design, computer service, information industries, film production, studios and fashion establishments. Even though each industry exhibits its own unique pattern[13], they show a tendency to co-cluster in Midtown, Chelsea and SoHo (Currid and Williams, 2009). The creative corridor has made branches in several spots in Brooklyn and Queens specifically DUMBO, Green Point, Williamsburg and Long Island City.

Besides Manhattan's CBD and its Financial District dynamics, it is important to understand how the creative corridor has appeared as the driving force in New York's postindustrial society, occupying a prominent place next to finance in the city's economy.

The creative corridor's origin goes back to the 1980s when New York City became a global creative center. As manufacturing declined, human capital based occupations were already in motion to take over as the economic drivers of the region (Currid, 2007a). After being a writing center in 1910, in 1980 with the collapse of manufacturing establishments and an abundance of empty loft spaces, Lower Manhattan became the center of cultural production. The Fashion industry became established in the Garment District, publishing industries started to cluster in Greenwich Village, media firms located in the "Silicon Alley" extending along Broadway from the Flatiron district through SoHo and artists and musicians created in SoHo and the East Village a district of "loft living" (Zukin, 1989). The concentration of cultural industries in a limited geography produced a zone of "perpetual innovation" which to a substantial extent dictates the direction of fashion, art and music across the world. These creative co-clusters generate economies of scale and a territorial innovation system.

What is extremely important to notice for the purpose of this research is not only the emergence of a new economy parallel to the financial sector, but the role job centers play in neighborhoods dynamics. Creative people work and live in job centers or in residential areas very close to them, which offer many retail opportunities. The "creative corridor" and the "CBD" cannot be conceived only as job centers and the residential neighborhood could not be thought of as only residential areas.

In many cities today CBDs are no longer conceived and planned as "reserved areas for finance and commerce only" but instead as areas that can offer a mixed use of spaces: art and related institutions, residential opportunity, retail services as well as parks and public spaces. Illustration

[13]The author discovered that the film industry has two "distinct nodes" which are Midtown and Chelsea that spill over into several different neighborhoods involving different cultural industries; art activities cluster in SoHo and Chelsea while the fashion cluster is mono-nuclear as it can be found primarily in Clinton. On the contrary, design industry can be found in different spots in Manhattan, namely the East Village, Murray Hill, Chelsea and TriBeCa.

of this is the new plan for Lower Manhattan, where several activities besides work have been developed in the area. Likewise, the creative corridor is a mix of technology industries, cultural performance, retails shops, urban amenities and high dense residential buildings. As Scott argued (2006) creativity and innovation evolve through an "*interweaving of relations of production, work and social life in specific urban contexts*" (Scott, 2006, p.15) therefore creative industries (Ind8, Ind9, Ind10, Ind12) operate not as anonymous entities within the urban economy but rather as production ensembles intimately linked with the local consumption fields. In addition to the proximity of industries to cultural and art-related institutions, the values of urban amenities and the social milieu are the cultural production system's main components. Creative industries and financial sectors generate new consumption spending that works with the practices of gentrification and urban renewal in the improvement of the neighborhood's vibrancy and livability, transforming them into desirable places to live and work. On the contrary, it could happen that some residential areas of the city show a high job density and many retail establishments such as in the case of HAZs (Greene, 2006).

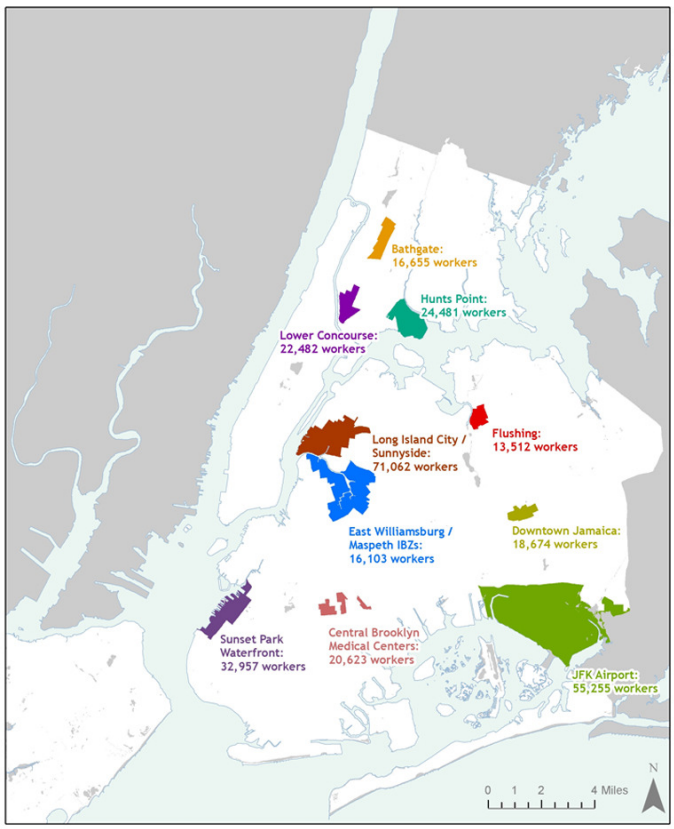


Figure 4.12. – New York's Job Centers, 2000 US Census data
Source: Pratt Center; http://prattcenter.net/transportation-equity-atlas

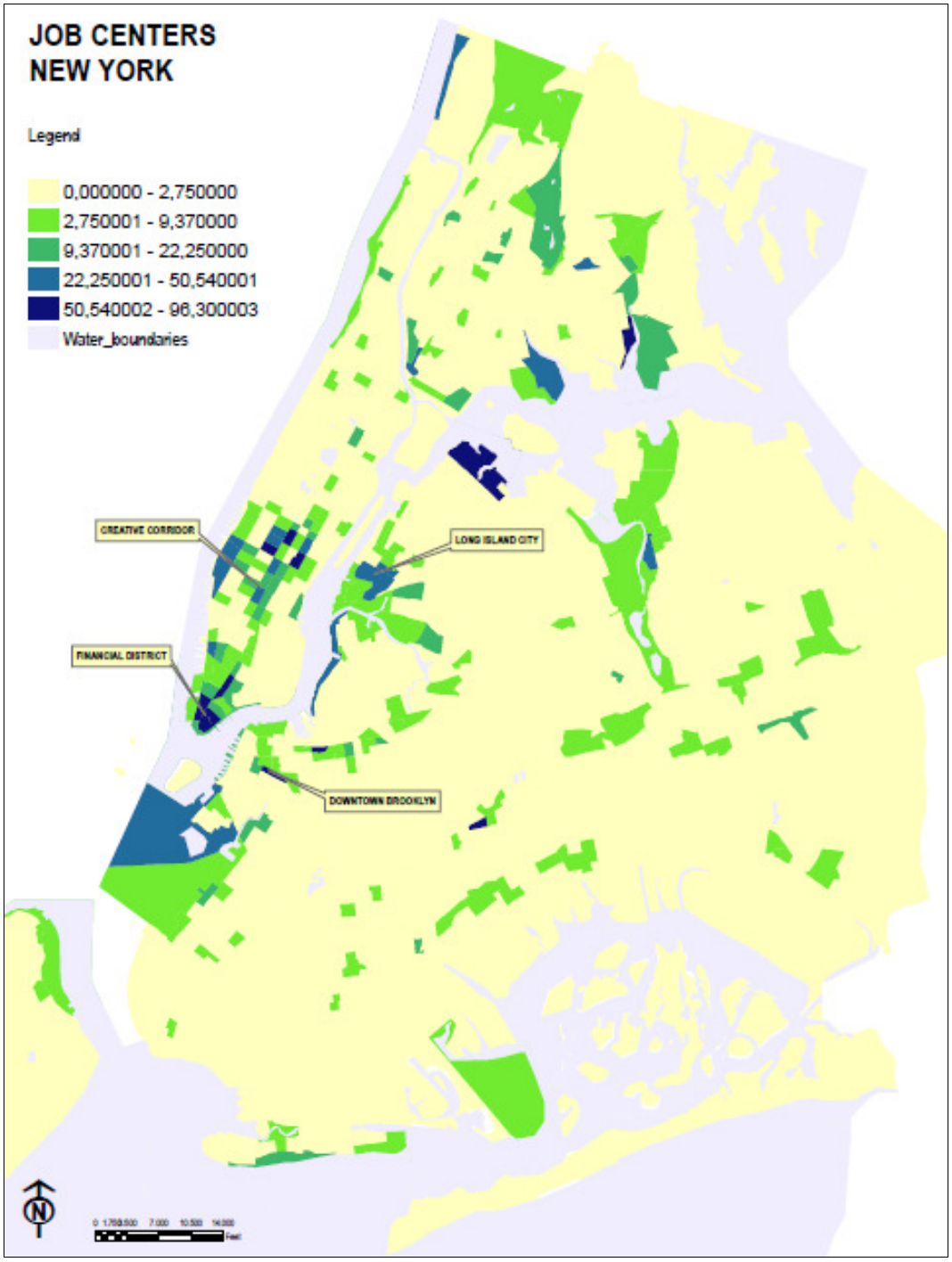


Figure 4.13. – Map representing the distribution of E/R (to delineate Job Center)
Source: GIS elaboration of the author; 2000 US Census data

Creative neighborhoods

In the four boroughs of New York we can identify several "creative neighborhoods" or "creative centers" (Florida, 2005) which are areas where the "creative class" lives. Using US Census data 2000 (Census Transportation Planning Package) we can affirm that most of the people working in "creative industries" reside in Manhattan (50%) and Brooklyn (36%) and are employed in Ind9 and Ind10 (Tab. 4.5). However, a discrete number of residents in Manhattan work in the art and entertainment sector which ranks third after the F.I.R.E. industries and the professional industry. Using US Department of Commerce data (1990, 2000, 2005) it is observable that resident workers in the information sector[14] were the driving force (in terms of numbers of residents) in both Manhattan and Brooklyn between 1990 and 2000. In contrast, the number of residents working in the F.I.R.E. industries declined in Brooklyn, Queens and the Bronx and increased in Manhattan (3%). Resident workers employed in art, entertainment and recreational activities, (including accommodation and restoration) increased in all of the boroughs by 8%. The patterns were very different from 2000 to 2005. The number of residents employed in F.I.R.E. rose 15% in Manhattan and it became the driving-force industry while residents in the information industries declined and residents employed in art-related jobs barely increased.

In the other major "jobs pool", Brooklyn, the number of residents employed in the professional sector rose 18.9%, people working in art showed an increased 14%, while residents employed in F.I.R.E. industries continued to fall from 94,825 to 90,371 (Indergaard, 2009, p. 1076).

These trends and the movement of people among the boroughs and neighborhoods of the city relate to the gentrification dynamics and urban renewal policies as well as the action of the real estate market. For instance, Newman and Wyly (2006) noted that nearly 90,000 residents were displaced by rising rents in the period 1990-2000. In art districts like Chelsea, rents rose from $15.78 to $ 57.67 per square foot, and in Williamsburg after gentrification, rents climbed more than 20% (Indergaard, 2009, p.1070). In fact, most of the resident workers employed in art and entertainments (especially artists) moved to other neighborhoods in Brooklyn and Queens like Williamsburg, DUMBO, Astoria or found homes in places like Harlem. More than 1,000 artists left the city altogether between 2000 and 2004 to find cheaper and more spacious places (Gerson, 2004). As a reaction, residents in the F.I.R.E. industry instead began to occupy many sites in Lower Manhattan which have been gentrified by artists before 2000, like the East Village, Soho or Chelsea and made their homes there.

[14] It is remarkable to notice that the category "Information industry" was not present in the 1990 Census and that the categories Professional-scientific-management and art and entertainment did not appear fully in the classification yet.

The GIS analysis[15], performed by using 2000 Census data, shows that 15% to 25% of the residents working in Information Industry are more concentrated in Manhattan, predominantly in the Lower East Side, Little Italy, the East Village, the Financial District and in Chelsea (Fig. 4.14). In Brooklyn they were scattered in Brooklyn Heights and the areas close to Park Slope. Some lived in Harlem also. Residents working in F.I.R.E. industries were scattered in the four boroughs but the highest concentration (15% to 25%) resided in Manhattan, particularly in Chelsea, the Flatiron District, the East Village, NoLita, NoHo and Lower Manhattan in general. A discrete proportion lived in Brooklyn Heights - Downtown Brooklyn, and Park Slope, while between 15% and 25% lived in Forest Hills and near Terrace Heights in Queens. Residents employed in professional and management sectors lived in Manhattan above 57th Street in neighborhoods such as Murray Hill, Chelsea, Greenwich Village and Clinton. Some resided in Downtown Brooklyn, DUMBO, in Williamsburg and in South Brooklyn. Residents working in art and entertainment (Ind12) lived in a few neighborhoods in Manhattan like the Financial District, close to the New York University campus and in the Garment District. The highest concentration was in Long Island City, Astoria and in the west part of Queens. In Brooklyn, they were mainly located in Red Hook, Williamsburg, DUMBO, and in Park Slope.

Park Slope ranks first; Williamsburg comes in second with a little less than 3,000 “self-employed creative”, followed by Brooklyn Heights (around 2,600), and BoCoCa (around 1,700). Red Hook and Prospect Heights tied for fifth with 1,600 each. In summary, the concentration of residents working in creative sectors was particularly elevated in the following areas:

- In Manhattan: Chelsea-West Village, East Village and the Upper East and West side
- In Brooklyn: Downtown Brooklyn and the area of Park Slope
- In Queens: Astoria, East Corona and Woodside
- In The Bronx: High Bridge

Nevertheless, it is necessary to specify that the categories we have used to determine the “creative neighborhoods” might be sometimes misleading due to the census broad classification. For instance, the art and entertainment category gathers together both residents working in the arts as artists and people working as staff in restaurants. For this reason the analysis is supported by other data. The level of education or the percentage of college graduates could be a good proxy for detecting professionals working in creative sectors.

[15] The map made by using GIS shows the percentage of resident workers in the creative sectors, living in the four boroughs. The calculations were computed at the census tract level and by relating the number of resident workers living in a tract *x*, working in a specific creative industries *y* over the total resident workers living in that tract *x*.

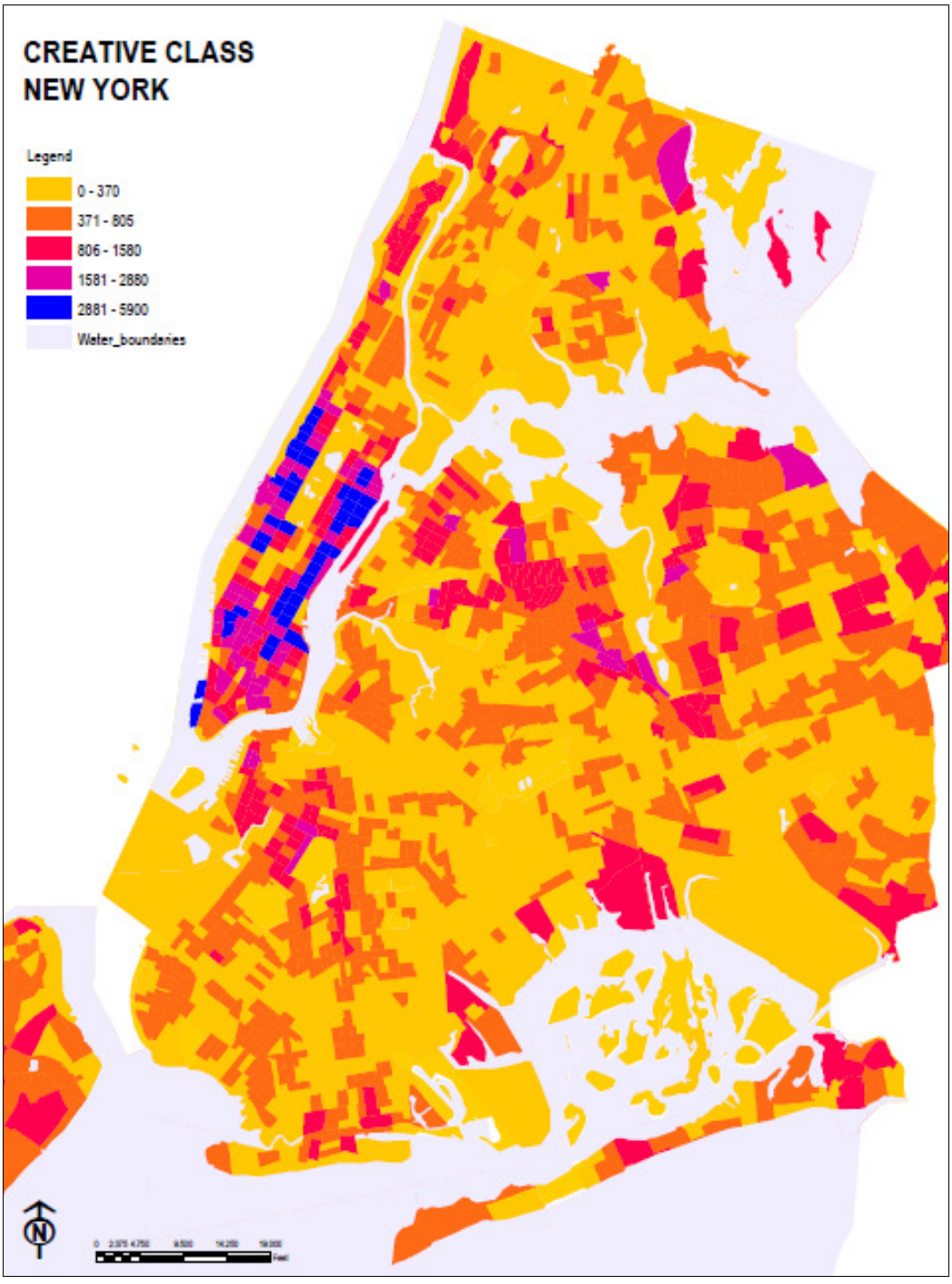


Figure 4.14. – Map illustrating the distribution of creative class
Source: GIS elaboration of the author on 2000 US Census data

Table 4.4. – Distribution of workers working in creative sectors.

	Bronx			Brooklyn			Manhattan			Queens		
Industry	1990	2000	%	1990	2000	%	1990	2000	%	1990	2000	%
Information Industry	--	5475	--	--	15626	--	-	176772	--	--	14917	--
Finance, Insurance, real estate	14667	14460	-1.432	40865	44282	7.716	414676	381123	-8.8	34717	34874	0.4502
Professional, scientific, management	21875	12175	-79.67	49260	43087	-14.33	261991	366859	28.59	32277	35407	8.8401
Art and entertainment	3143	14290	78.01	7736	33334	76.79	49226	180190	72.68	7883	35563	77.834
Total	39685	40925	3.03	97861	120703	18.92	725893	928172	21.79	74877	105844	29.257

Source: US Census Transportation Planning Package 1990, 2000

Table 4.5. – Distribution of resident working in creative sectors.

	Bronx			Brooklyn			Manhattan			Queens		
Industries	1990	2000	%	1990	2000	%	1990	2000	%	1990	2000	%
Information Industry	--	15103	--	--	89615	--	--	62100	--	--	37078	--
Finance, Insurance, real estate	41787	36395	-14.82	115075	89615	-28.41	102930	106249	3.12	105525	98003	-7.68
Professional, scientific, management	35005	36352	3.71	78967	93271	15.34	112954	126909	11	71069	96974	26.71
Art and entertainment	5472	31019	82.36	11179	66744	83.25	30849	68540	54.99	11907	83159	85.68
Total	82264	103766	71.25	205221	249630	17.79	246733	301698	18.22	188501	278136	32.23

Source: US Census Transportation Planning Package 1990, 2000

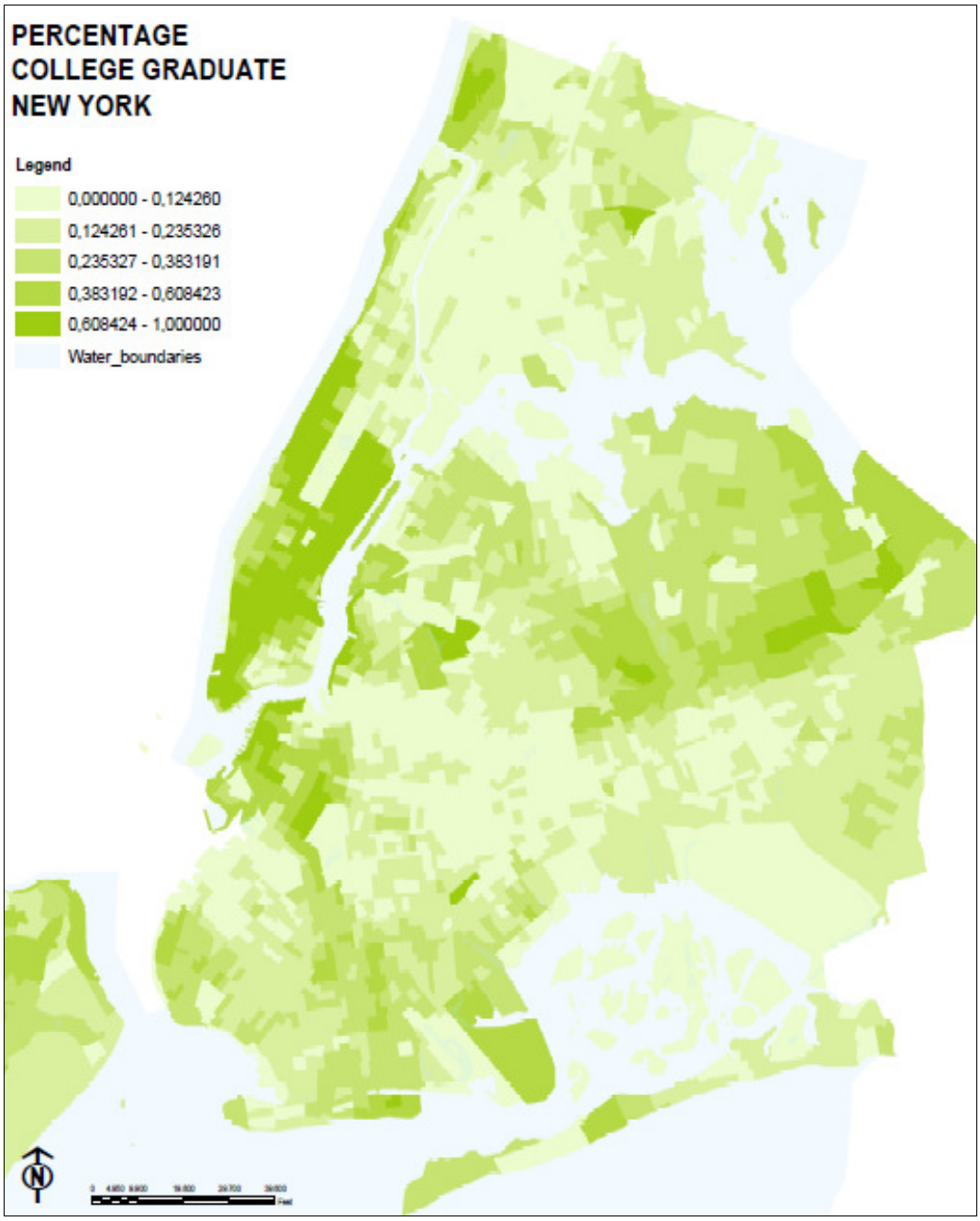


Figure 4.15. – Map representing the percentage of College Graduate, New York
Source: GIS elaboration by the author on 2000 US Census Data

Figure 4.15 describes the percentage of college graduates within the city of New York using 2000 US Census data. The map reveals that college graduates reside mainly in the following neighborhoods:

- In Manhattan: chiefly everywhere except in Spanish Harlem, Hamilton Heights, East Village- Lower East Side.
- In Brooklyn: Brooklyn Height, Downtown Brooklyn, Carroll Gardens, Fort Green-Clinton Hill and Park Slope.
- In Queens: Astoria, Corona, Flushing
- In the Bronx: Kingsbridge

It is needed to highlight that the data we have used for analyzing job centers and creative neighborhoods are from the US Census 2000, therefore they might not be able to describe the present situation. Nevertheless they are the only data available, and we believe are still able to show geographical patterns that. Even though they might have changed a little bit during these ten years, they cannot be changed completely. In order to show the validity of this data we have looked at the population estimates for 2009 (American community survey) to see if there are important changes to highlight. Looking at the population estimate 2009 on education, a similar situation appears: Manhattan is the borough with the highest percentage of educated residents, followed by Brooklyn and Queens, which have the topmost number of high school graduates.

Table 4.6. – ACS Demographic and Housing Estimates 2009

EDUCATION	Bronx	Brooklyn	Manhattan	Queens
Population 25 years and over	858,344	1,694,150	1,223,894	1,620,558
Less than 9th grade	141,524	181,740	95,393	171,594
9th to 12th grade, no diploma	126,886	192,333	76,420	161,407
High school graduate	223,883	472,590	148,024	444,970
Some college, no degree	146,833	240,440	129,479	249,083
Associate's degree	55,559	108,879	47,372	124,941
Bachelor's degree	106,984	302,903	372,653	301,642
Graduate or professional degree	56,675	195,265	354,553	166,921
Percent high school graduate or higher	68.7%	77.9%	86.0%	79.5%
Percent bachelor's degree or higher	19.1%	29.4%	59.4%	28.9%

Source: 2009 American Community Survey 1-Year Estimates

If we consider the distribution of residents working in the creative sector, we notice that residents employed in management, F.I.RE. and professional, scientific and management jobs live mainly

in Manhattan, while residents employed in art and entertainment live in Brooklyn, thus still explaining the patterns discussed above.

Table 4.7. – ACS Demographic and Housing Estimates 2009

INDUSTRY	Bronx	Brooklyn	Manhattan	Queens
Civilian employed population 16 years and over	541,170	1,108,085	861,784	1,101,383
Agriculture, forestry, fishing and hunting, and mining	1,686	857	264	1,666
Construction	24,960	63,928	12,437	78,006
Manufacturing	19,215	46,973	29,925	53,619
Wholesale trade	10,762	26,212	23,195	29,288
Retail trade	60,907	98,706	65,760	114,149
Transportation and warehousing, and utilities	39,729	70,665	19,194	86,799
Information Industry	12,209	43,252	57,077	30,289
Finance and insurance, and real estate and rental and leasing	39,824	86,445	144,918	94,495
Professional, scientific, management, administrative services	43,500	133,208	165,868	110,361
Educational services, and health care and social assistance	178,529	317,459	191,203	266,570
Arts, entertainment, recreation, and accommodation services	52,868	104,452	90,117	115,192
Other services, except public administration	34,775	64,437	37,582	73,440
Public administration	22,206	51,491	24,244	47,509

Source: 2009 American Community Survey 1-Year Estimates

In conclusion, the data are still valid and able to show the main urban patterns: the distribution of creative jobs and creative residents appears to be very homogeneous so that we cannot longer think about “places to work” and “places to reside”, but instead a mixed communities where jobs, families, leisure activities and entertainment all coexist in the same built environment.

4.4. Urban amenities and creative class

Urban amenities like symphonies, opera companies, museums, and art galleries are certainly desirable and attract the creative class (Florida, 2002a). In the present research no clear relationship has been detected between formal cultural amenities and the ability to attract knowledge workers. On the other hand, there is a slight relationship between a "coolness" indicator (developed by POV Magazine to measure a region's appeal related to nightlife, bars, and restaurants) and knowledge workers. Even though traditional cultural amenities are still important, they have been replaced by more casual, open, inclusive, and participative activities such as outdoor amenities (rowing, cycling, rock climbing) and other lifestyle activities (vibrant music scene, outdoor restaurants, organic supermarkets, juice bars).

Creative workers are attracted by a wider range of nightlife activities that are diverse, open, and inclusive of other young people, and are less interested in more expensive and exclusive amenities like the symphony or even professional sports (Florida, 2002a). This is illustrated in Figure 4.16. As can be seen from the map there is a strong visible relationship between urban amenities and places where the creative class lives. More specifically, residents working in creative industries are located in areas where there is a fairly high concentration of leisure amenities, while no significant relation can be found between cultural amenities and places where the creative class resides.

If we considered the percentage of college graduates, then we can see the same pattern. By overlapping leisure amenities and the percentage of college graduates, the relation looks even stronger, as Figure 4.17 shows. Leisure amenities cluster in areas where the concentration of college graduates is elevated. On the contrary, cultural amenities show a different independent pattern. The map reveals that cultural amenities and essentially art galleries do not cluster in neighborhoods where the college graduates live but indeed at the edge of these neighborhoods thus explaining the role of the art community in driving the development and in smoothing the flow of capital into the neighborhoods.

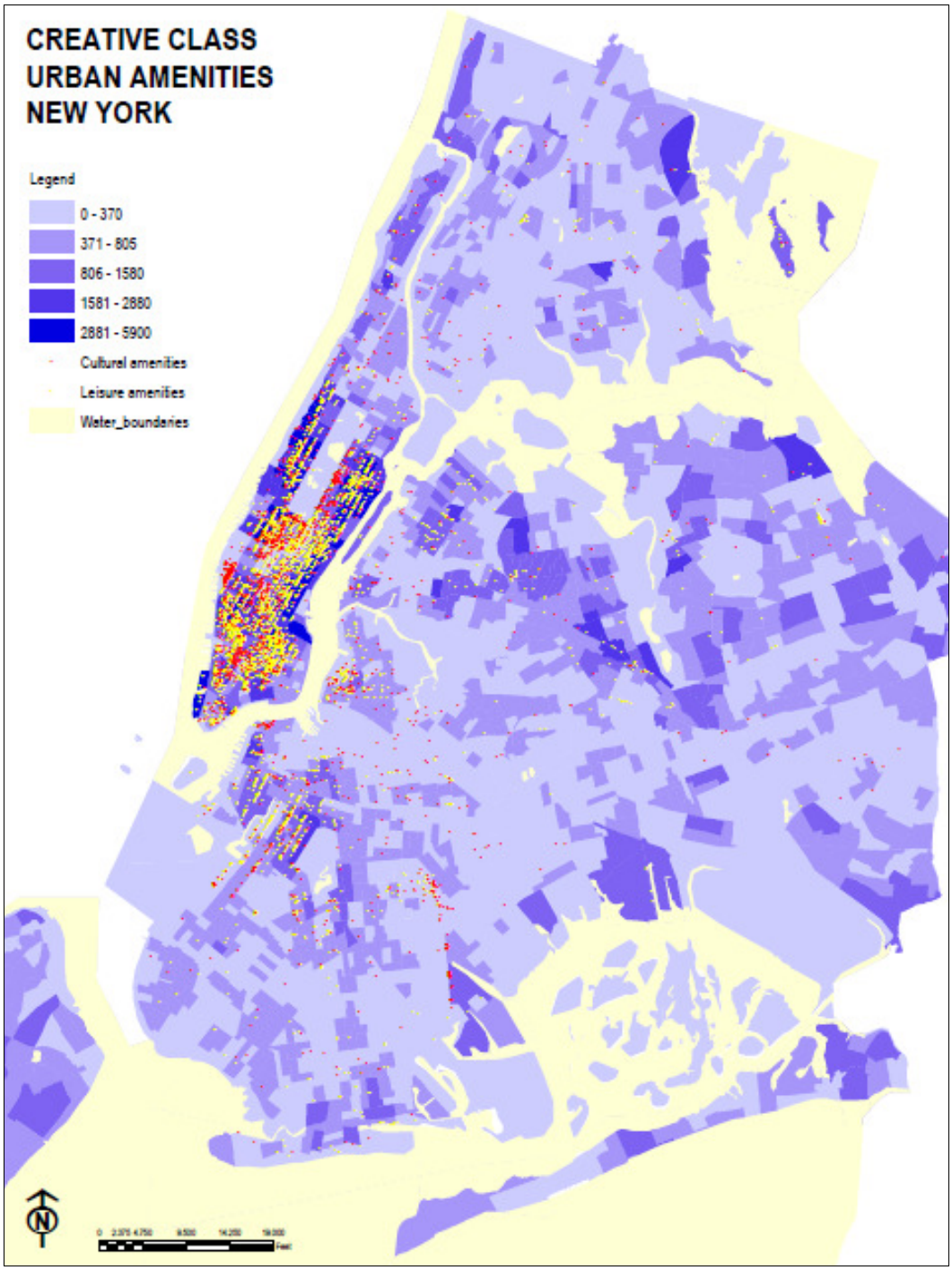


Figure 4.16. – Distribution of Urban Amenities and Creative Class
Source: GIS elaboration of the author on US Census Data 2000 and Zagat Guide 2009

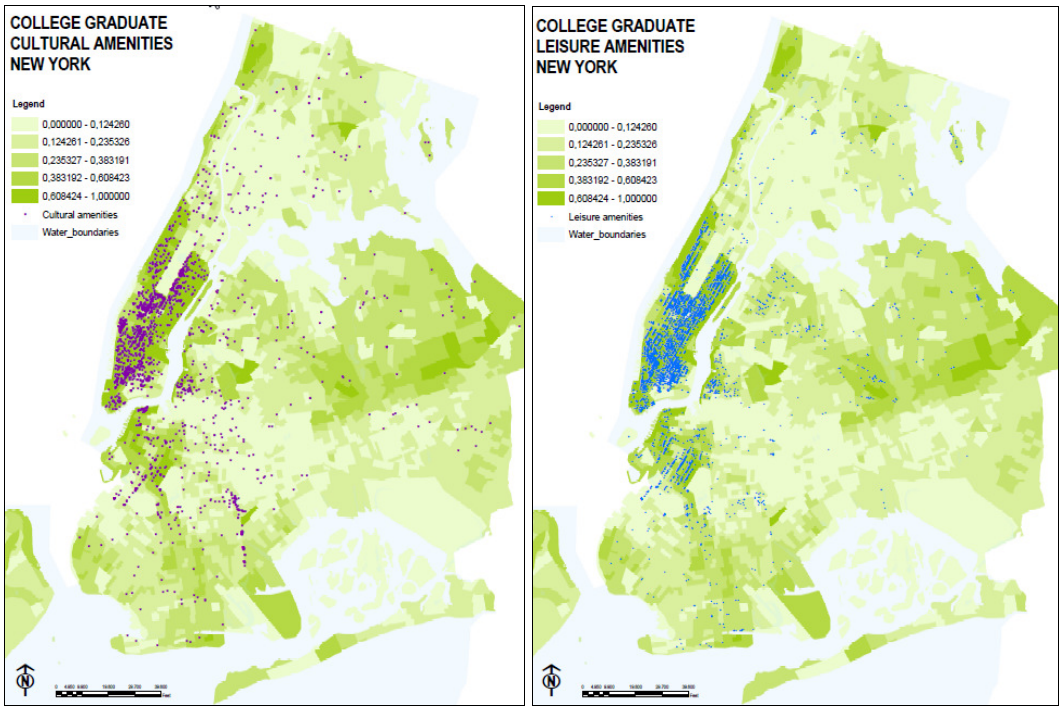


Figure 4.17. – Maps resulting from overlapping urban amenities and college graduates
Sources: GIS elaboration of the author on US Census data 2000 and Zagat Guide 2009

Concluding, the strong relationship between leisure amenities and the creative class or college graduates is clear. In order to make it systematic we tried to apply the Geographical Weight Regression to the datasets but the results were not significant thus no statistical proof of this relationship is available. New statistical models need to be identified as a measure of statistical relevance for both leisure and cultural amenities.

The analyses performed in this chapter and the results are essential for the spatial identification of the amenity zones, which is the subject of the next chapter.

CHAPTER FIVE: NEW YORK'S AMENITY ZONES

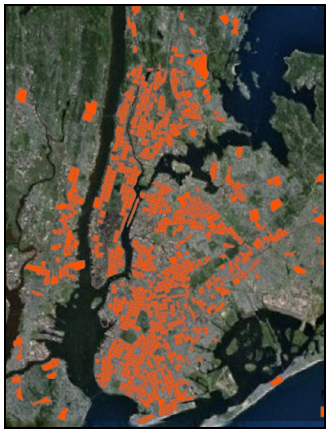
Chapter five detects the amenity zones (AZs) in New York, describing their location within the city as well as their distinctiveness. The chapter is structured as follows: section 5.1 maps out the AZs of New York and describes their main characteristics in detail while section 5.2 focuses on describing Long Island City as a potential AZ.

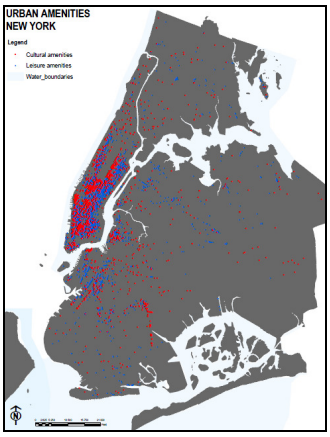
5.1. The Amenity Zones of New York

The identification of the AZs in New York was achieved by taking into consideration the analysis on urban amenities and the study on the creative class, predominantly. It was possible to detect the AZs in New York by considering the following factors: the study on urban amenities, which has identified locations within the city where there is a cluster of both high quality leisure amenities and cultural amenities; the distribution of the creative class and its tight connection with the leisure amenities; gentrification and the process of up-scaling neighborhoods in Brooklyn; the peculiar character of the built environment. This identification is a result of a process of "qualitative selection" which is summarized in the following lines.

First, we mapped out census tracts within the city of New York with a job density higher than 5000 per square mile and a E/R ration below the 1.25 cutoff used to define job centers in the Forstall and Greene' study (1997). This enables us to identify areas with a *high job density* but prevalently *residential* (Fig. 5.1). After detecting areas that are mixed residential and commercial, we did a geo-code of urban amenities and studied their quality, using amenities as a proxy to detect areas that have a variety of *upscale amenities*, *different types of happenings* and are *appealing*. Therefore, we identified "hot spot locations" that have a cluster of high quality leisure amenities and cultural amenities and that are widely gentrified (Fig. 5.2). Considering the correlation between the level of urban amenities and the distribution of the creative class, we studied the geographical distribution of residents working in creative sectors, examining the preferences of the creative class in terms of residence (Fig. 5.3) and detecting creative neighborhoods. Moreover, we did some considerations on green amenities, by mapping out the green spaces and the number of trees within each neighborhood in New York.

By combining these findings and overlapping the maps resulting from the analyses performed in Chapter 4, it was possible to select places that were suitable for the concept of AZs.





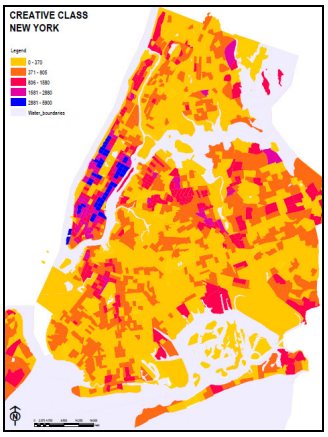


Figure 5.1. – Tracts with high job density and with a lower E/R; Figure 5.2. – Distribution of Urban Amenities ; Figure 5.3. – Distribution of Creative Class
Source: GIS elaboration of the author

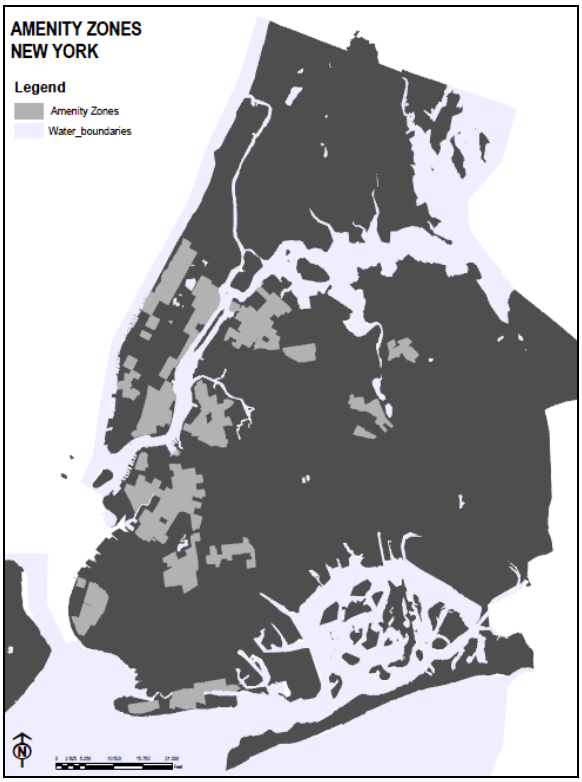


Figure 5.4. – Amenity zones of New York
Source: GIS elaboration of the author

Considering that within the AZs the degree of urban amenities and the distribution of the creative class manifest differently, in a similar manner as natural elements, we selected nine parameters and evaluated each area accordingly (Table 5.1), thus establishing a method to define cut-offs between different types of AZs.

Table 5.1. – Parameters for the qualitative evaluation of AZs in Manhattan

PARAMETERS	Upper West Side	Upper East side	Greenwich Village	Soho	Chelsea	Clinton	Lower East Side	East Village	Murray Hill
Proximity or inside the Creative Corridor, CBD or FD	H	H	H	H	H	H	H	H	H
Density of urban amenities	G	G	H	H	H	H	H	H	H
Variety of urban amenities	G	G	H	H	H	H	H	H	H
Cluster of best-quality restaurants and nightspots	G	G	H	H	H	H	H	H	H
Cluster of cultural amenities	G	H	H	H	H	G	L	G	L
Concentration of creative class residents	H	H	H	H	H	H	H	H	H
Gentrified territory or Historical district	H	H	H	H	H	H	H	H	H
Well connected to the public transportation	H	H	H	H	H	H	H	H	H
Close to natural elements / green amenities	H	H	G	L	G	G	L	L	L

Table 5.2. – Parameters for the qualitative evaluation of AZs in Brooklyn

PARAMETERS	Williamsburg	GreenPoint	Dumbo-Downtown	Brooklyn Height	Fort Green	Cobble Hill	Park Slope	Prospect Park - South	Brigton Beach	Bay Ridge
Proximity or inside the Creative Corridor, CBD or FD	H	H	H	H	H	H	H	H	L	L
Density of urban amenities	H	H	G	G	G	H	H	H	L	L
Variety of urban amenities	H	G	G	G	G	G	H	G	L	L
Cluster of best-quality restaurants and nightspots	G	G	G	G	G	G	H	G	L	L
Cluster of cultural amenities	G	G	G	G	G	G	G	G	L	L

Concentration of creative class residents	H	H	H	H	H	H	H	H	G	G
Gentrified territory or Historical district	H	H	H	H	H	H	H	H	G	G
Well connected to the public transportation	H	H	H	H	H	H	H	H	L	L
Close to natural elements / green amenities	G	H	L	H	H	H	H	H	G	G

Table 5.3. – Parameters for the qualitative evaluation of AZs in Queens

PARAMETERS	Astoria	JacKson Height	Ditmars Steinways	Flushing	Forest Hills
Proximity or inside the Creative Corridor, CBD or FD	G	G	G	L	L
Density of urban amenities	G	G	G	L	L
Variety of urban amenities	L	L	L	L	L
Cluster of best-quality restaurants and nightspots	G	G	G	L	L
Cluster of cultural amenities	G	G	L	L	L
Concentration of creative class residents	H	H	H	G	G
Gentrified territory or Historical district	H	G	G	G	G
Well connected to the public transportation	H	H	H	G	G
Close to natural elements / green amenities	H	G	G	H	H

Legend: H= High G= Good L = Low

The results of the qualitative evaluation show that within the AZs of New York some areas have a high cluster of both urban amenities and natural amenities, others have a low concentration of urban amenities but many green spaces and other again have a fairly good concentration of urban amenities and creative class but are no well connected with the main production cores. As a result, different types of AZs have been identified, namely, **Super Amenity Zones** (SAZs), **Nodal Amenity Zones** (NAZs) and **Peripheral Amenity Zones** (PAZs).

This classification is required for essentially five reasons:

- First, amenities do not distribute in the same way in the city so there are areas where the density of urban amenities is higher and zones where only few amenities can be traced.
- Second, some zones of the city offer a good assortment (variety) of urban amenities (type) while others do not so the former are more attractive.
- Third, there are places where the concentration of high quality restaurants is significant so they should be qualified differently from places where the number of good quality amenities is limited.
- Fourth, there are areas in the city where the availability of parks and green open space is superior, thus having more natural amenities, which is an important variable for a neighborhood's appeal.
- Fifth, some areas of the city have more "character" than others. This depends on landscape authenticity and on the fact that amenities are a kind of "place product" (Molotoch, 2002) so they depend on the "location" where they are produced. For instance, eating in the Meatpacking District would be a fairly different experience than eating in Astoria because of the character of the urban fabric, people, price and so on.
- Last but not least, the degree of creative class distribution is important. There are areas in the city where the concentration of professionals, artists and creative people is higher so these areas, rather than places where the density is low, need to be considered as AZs, because they are more vibrant and "hip" (Florida, 2002a).

Together with three types of "constructed" AZs, Green Amenities Zones (GAZs) were also mapped out. The GAZs are concentrations of open spaces, landmarks and green areas, as identified by the New York City Department of Parks and Recreations.

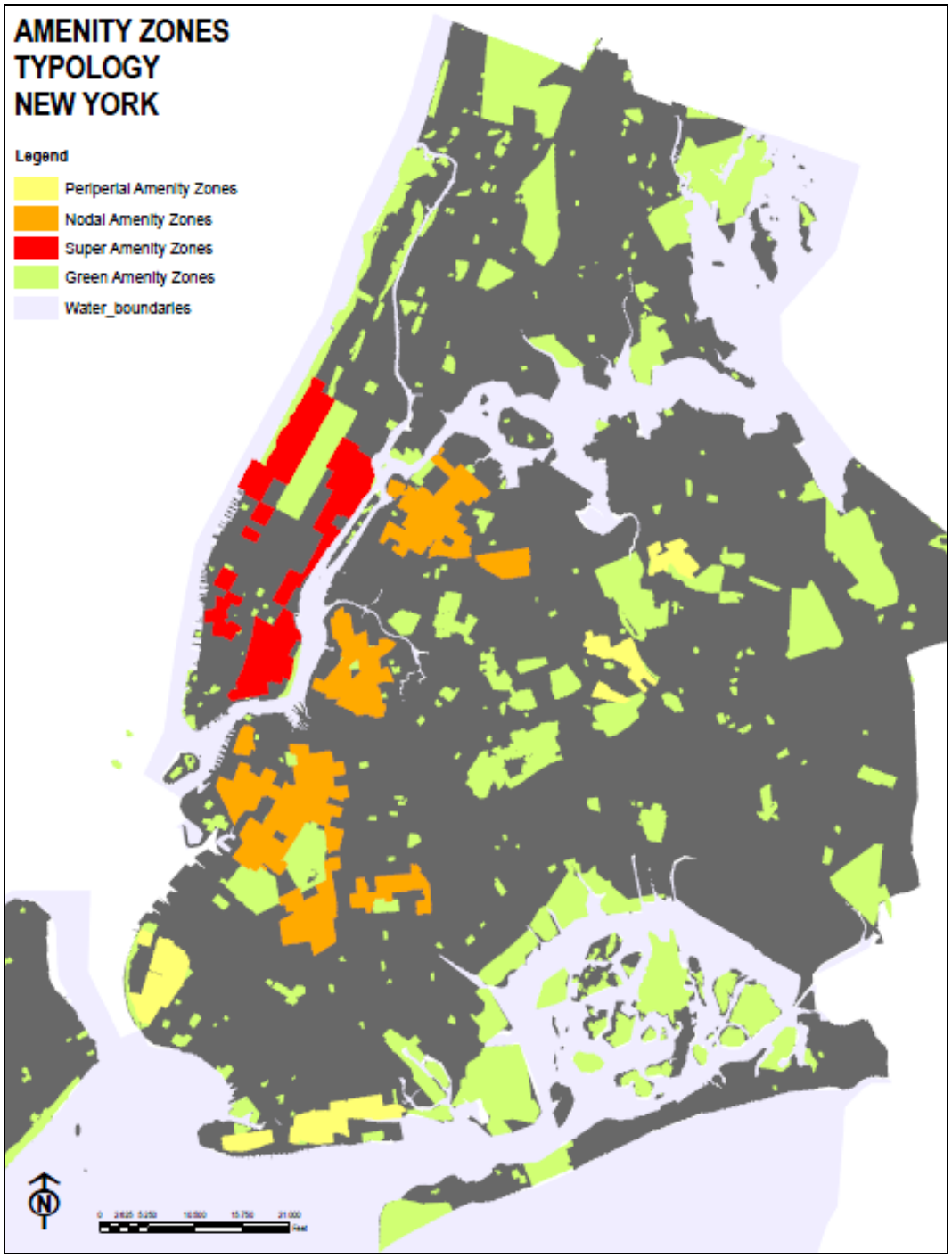


Figure 5.5. – Constructed AZs and GAZs
Source: GIS elaboration of the author

Summing up, the degree of density, the mixture of urban amenities, the neighborhood's historicity, the availability of natural amenities and the distribution of the creative class, together with the calculation of the E/R ratio are the main reasons why we identify three types of amenity zones. It is misleading to consider an amenity zone in Manhattan identical to one in Brooklyn as it is deceptive to consider a restaurant in Chelsea as the same to one in DUMBO. In addition to their quality (in term of food, décor, service and cost), urban amenities acquire their appeal and "status" for being located in a particular spot in the city. The "place" still matter and it is an "added value" people pay for, especially tourists and businessmen who come to the city for a short period of time. Place is not a discrete element; the precise condition of its use determines how other elements will used it (Molotch, 2002). The following is a description of the constructed AZs' distinctiveness.

5.1.1. Super Amenity Zones (SAZs)

The **super amenity zones** are founded mainly in Manhattan and in its neighborhoods. The residential areas that form the super amenity zones are located below 97th street and are the **Upper East Side, Upper West Side, Murray Hill, Clinton, East Village-Lower East Side, West Village-Greenwich Village and Chelsea and par of SoHo**. Most of these areas do belong or are close to the creative corridor and commercial core from which they receive spillover effects; these are the areas that show the biggest concentration of urban amenities (leisure amenities, cultural amenities), and many high-quality restaurants and nightspots; most of these areas are gentrified territory and are very upscale; they have a high concentration of creative class residents (people working in creative sectors/ percentage of college graduate); they are well connected to the public transpiration system; they offer a good availability of natural amenities and a unique built environment.

Manhattan boast all the AZs because is the Big Apple; it is where every thought about New York starts; it is the cultural capital of the art, finance, entertainment, theatre, the reign for fashion designers and artists; it is a tourist destination; it is becoming a green city and it is even more, the "center of the world" in a number of way. Among the boroughs taken into consideration the SAZs are the ones that host more creatives: the population estimates 2009 have shown that most of the people working in F.I.R.E. and professional services live in Manhattan. According to 2000 US Census data, in some tracts the concentration of residents working in creative sectors range from 2450 to 5900, in the West Village, the Upper East Side and in the West Side. Thus, Manhattan

remains the most appealing borough for wealthy professionals that can afford the high rents and the high standard of living. Also for those who cannot afford the lofty rents, Manhattan still remains the "quintessential city", the center of New York's urban life. It ranks first among the other amenity zones because of its unique concentration of urban amenities (cultural and leisure).

Cultural amenities are scattered all among the boroughs but they co-cluster principally in Manhattan, and especially inside and close to the super amenity zones. Accordingly, leisure amenities co-cluster with cultural amenities, showing a strong connection between the urban amenities and the "art and cultural world". Concerning, urban amenities such as nightspots and restaurants, are mainly concentrated in the East Village, West Village - Greenwich Village, SoHo, Midtown Manhattan and both in the Upper East and West Sides. Moreover, the spatial analysis results show that the best quality restaurants tend to locate in Manhattan, just outside the SAZs in particular in the Theatre District, Meatpacking District-Tribecca, SoHo and in Midtown Manhattan at the corner with 5th Avenue.

The same pattern could be seen for nightspots: the best ones are in the Meatpacking District-Tribecca and Midtown Central. The locations within the super amenity zones where it is possible to find good restaurants and nightspots are mainly in the Greenwich Village and Chelsea. As the maps, presented in chapter four, show, for the most part the "best places" are located in or are close to Manhattan's creative corridor and the Business District, explaining the strong connection between networking, creative jobs and amenities.

The creative world would not exist without the social life that takes place in restaurants, clubs, and nightspots. These places are the real nodes of creative and cultural exchange where the formal and informal businesses meet to make business. Leisure amenities therefore support cultural amenities and allow the broad art and entertainment field to make a profit. However, the geography is vital. As Currid and Williams (2009) argue in their work "*geography plays an important role because everything happens in the same limited geographic space, the island of Manhattan and selected places in Brooklyn. The parties, the nightlife, the artists, fashion designer, museums and so on are sharing the same twenty-five square miles or so"* (Currid and Williams, 2009, p. 7).

Figure 5.6. – Streetscape's character - SAZs
Source: miscellaneous

5.1.2. Nodal Amenity Zones (NAZs)

The **nodal amenity zones** are residential areas located mainly in Brooklyn and Queens where there is a relevant concentration of different types of urban amenities, people working in creative sectors, and natural amenities.

In Brooklyn the NAZs are **Williamsburg, Green Points, DUMBO- Downtown Brooklyn, part of Cobble Hill, Park Slope, Prospect Park and some spots in Brownsville.** In Queens they locate in **Astoria** and **Jackson Heights**. These areas are called nodal amenity zones because the concentration of urban amenities is not as high as in Manhattan and the types of cultural amenities are fairly limited. Nevertheless, they are well connected with the super amenity zones by public transportation; they cluster close to the creative corridors and the CBDs; they do offer an intense urban life, especially in the case of Brooklyn, and have a fairly good distribution of green areas and planted trees, a good indicator of a neighborhood's livability. Some of these neighborhoods, namely Williamsburg, DUMBO, Green Points, because of their proximity to Manhattan and the growing reputation as new art and entertainment destinations as well as spaces for performances, have become hip and trendy neighborhoods drawing a discrete crowd of younger newcomers and creatives (Zukin, 2009, p.53). However they have not acquired yet the same historical "scene" that Manhattan has.

Maps show that good restaurants and nightspots concentrate mainly in the AZs, where they co-cluster with art galleries, cultural institutions and green amenities. These areas are also home to creatives and young professionals. As reported by numerous newspaper articles (Brydson, 2008; Webber, 2010) and contributions on gentrification in Brooklyn (Lees, 2003; Curran, 2007; Zukin, 2010), the process of up-scaling neighborhoods as well as the booming of art gallery openings explain why areas such as Downtown Brooklyn, Park Slope, GreenPonit, DUMBO and Williamsburg have become and are becoming charming destinations and start to attain a hipster aesthetic which will make them international tourist destinations very soon.

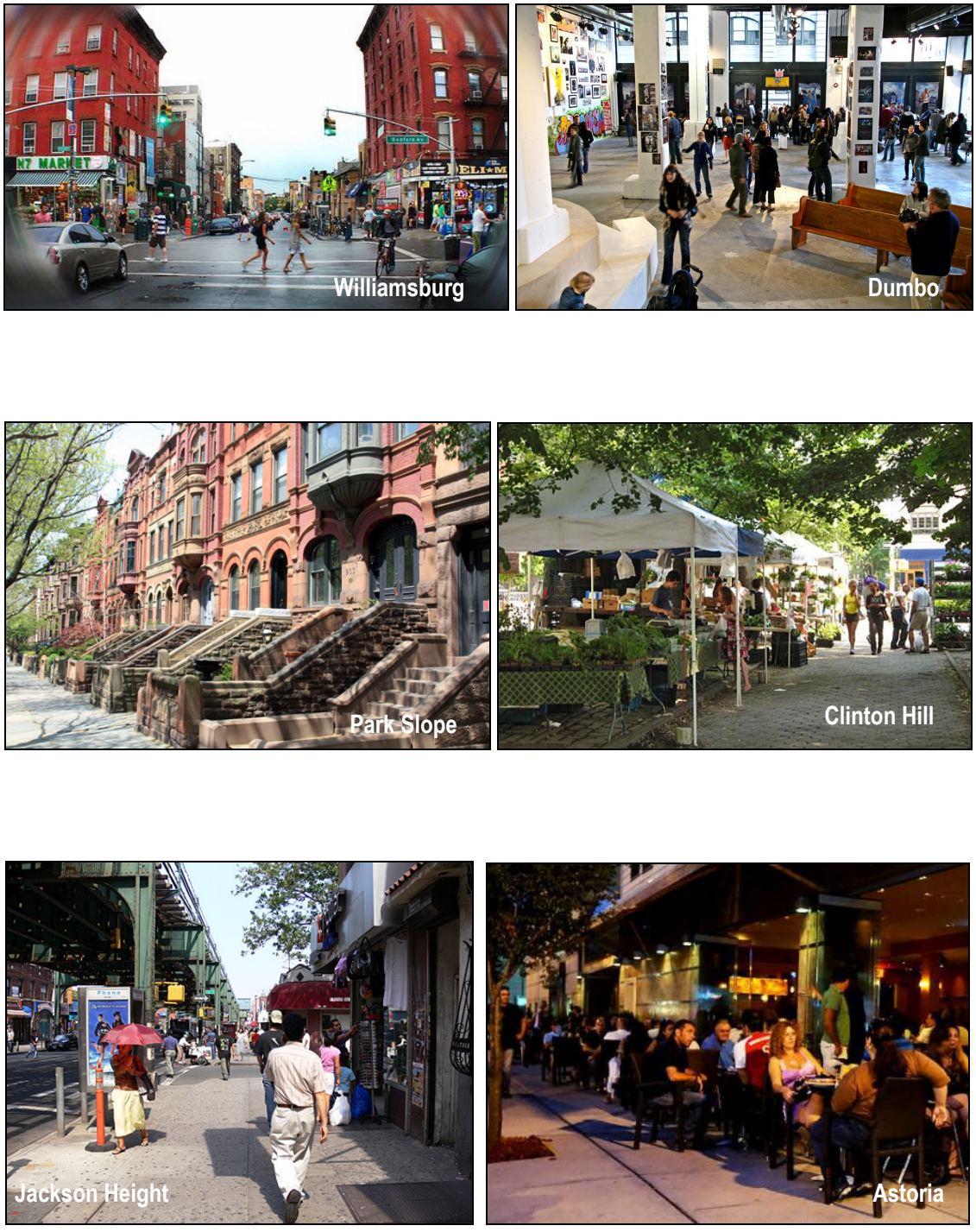


Figure 5.7. – Streetscape's character – NAZs
Source: miscellaneous

5.1.3. Peripheral Amenity Zones (PAZs)

The **peripheral amenity zones** are limited geographic areas in Queens and Brooklyn that show a sparse concentration of leisure and cultural amenities and have a fairly good distribution of residents working in creative sectors. PAZs are founded in **Bay Ridge** and **Brighton Beach** in Brooklyn and in **Forest Hill, Flushing** in Queens.

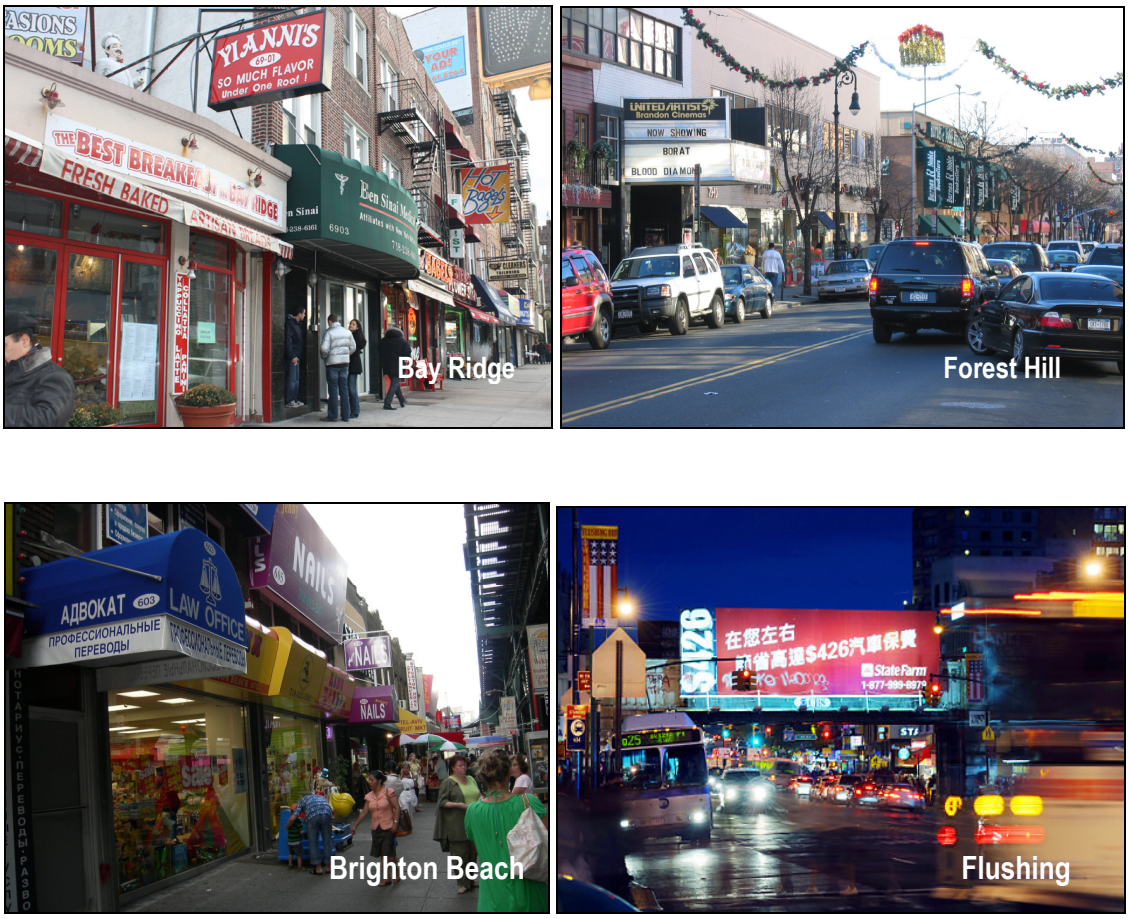


Figure 5.8. – Streetscape' character – PAZs
Source: miscellaneous

Concluding, the method we have used, combining both special datasets and spatial analysis, identifies the AZs in New York. It not only shows the trendiest areas where people like to live and work, but also proves the tied relationship between urban amenities, the creative class and creative jobs. These three variables appear closely associated and find in specific geographic locations their expression. The creative class tends to locate where the concentration of urban amenities is high, especially leisure amenities; creative jobs tend to locate close to the leisure amenities while natural amenities show independent patterns.

5.2. The future of amenity zones

Considering the significance of urban amenities to postmodern lifestyle, the increase in "creative" jobs, the spread of residential gentrification and the process of up-scaling neighborhoods it is believable that the AZs will increase significantly in the next years. The remaining stagnant areas within the city will be re-zoned and re-planned as mixed commercial residential neighborhoods, Lower Manhattan as well as the Financial District, due to the 2009 Economic Recession and the September 11th, will become prevalently residential, while the city at a whole will become more luxurious and an amenity in itself.

Taking as an example Long Island City (LIC, Queens), this section aims to illustrate how this area, not currently listed as an AZ due to its high E/R, is progressively developing to become such.

As reported by the *New York Times*: *It's got sushi bars. A teahouse. An upscale grocery store. All the luxury amenities that people want in the yuppie crows. A cocktail lounge where the word "mixologist" could reasonably be uttered. It's one stop from Manhattan and the views are fabulous* (Vandam, 2010). The evidence that Long Island City is approaching some kind of important and creative crowd is growing. Many new and converted condominium developments have opened in recent years, and many are still under construction; urban amenities are appearing all over the neighborhoods and today there are more than 280 leisure amenities, cultural amenities, more than 400 secondary services, 80 shopping stores and more than 100 groceries. Moreover, it has trees, green spaces and art nonprofits recycle and reuse materials, becoming the frontier of a "green revolution" in New York.

Once prevalently a manufacturing neighborhood- with the highest concentration of industry and day light factories[16] in the United States- , in the 1970s it underwent a period of transition: some of the larger factories closed down due to the deindustrialization while others were converted to alternative uses. Artists from SoHo started to move into the area looking for cheap rent and lofty spaces. From a small community of artists, there are nowadays more than 150 artists working in Long Island City, 10 cultural institutions and more than 140 artist studios, becoming in the last twenty a major cultural center with world-class art and working artists. All along the East River

[16] Earlier factories, which were built mainly of brick, had little structural support and relied on the brick to remain stable, and have little windows allowing minimal sunlight and ventilation. As new concepts in building and factory construction advanced, steel and other materials were used in their fabrication. This allowed more of the buildings walls to contain large windows. Therefore the new style factories were called "light factories" because they were now filled with light and fresh air. The quality and versatility of these buildings allows them to be converted for several purposes, and many of them are still functioning today.

waterfronts in Queens West and Hunters Point South, and in and around the Core business area Court Square, developers are working to keep pace with demand as young artists, business professionals, and families move in from all around the City. They all want to live here, attracted by new shops, exciting bars and restaurants, new art and theater venues carved from the area's classic industrial façade, the natural amenities and by the postcard view of Manhattan skyline.

The Long Island City's urban renaissance raises questions about the future of Long Island City as an Amenity Zones, and opens a debate whether it could become simply an extension of Midtown Manhattan and thus be linked to the SAZs, or whether it could become NAZs, such as Williamsburg, Astoria, and Brooklyn Height.

CHAPTER SIX: DISCUSSION OF AMENITY ZONES FINDINGS

The present chapter is the closing one. It is structured into three sections: section 6.1 concerns the implications and advances the present work has brought into the research field on a whole; section 6.2 introduced a consideration on future research improvements, while section 6.3 presents the conclusive remarks.

6.1. Implication and improvement of the research

The present research has produced some important results and in doing so it has achieved the main research aim and objective, which was to detect Amenity Zones in the city of New York. First of all, three types of AZs have been identified for New York according to principles of density, quality, resident's typology and location's importance. Considerations on green amenities have also been used for the classification of AZs. Secondly, the study on urban amenities (leisure and cultural) has revealed that they tend to co-cluster in particular spots of the city that are also nodes of cultural production. Thirdly, creative class and leisure amenities show a tied relationship, which we were not able to measure statistically.

The results have implications both for urban amenities theory and for HAZ methodology introduced by Greene (2006).

The present study has improved the research on urban amenities in the following ways:

1. First, it offers an analysis of urban amenities at the scale of the city. In fact, data were collected at the zip-code level and not at the national level allowing a detailed spatial analysis.
2. Secondly, thanks to the GIS spatial analysis it has been possible not only to geographically individualize each individual amenity and create density maps, but also to map out their quality.
3. Thirdly, it has been possible to study urban amenities in their relationship with space and measure their spatial dynamic as well as their tendency to cluster and co-cluster.
4. Fourthly, the study makes visible the correlation between urban amenities and the creative class, which many authors have spoken about, without showing a measure of statistical relevance.

On the whole, the present contribution has questioned the density and the quality of urban amenities and has described amenities spatially, extending the geographical perspective in the

study of amenities. The results we obtained have also better clarified the spatial dimension of the "social milieu" (Currid and Williams, 2009) and the tight connection between the cultural production system and the leisure amenities.

Moreover, it has improved the methodology used to identify High Amenity Zones and demonstrates that spatial analysis applied to urban amenities as well as the study on the distribution of creative class are fundamental tools in the definition of amenities zones as conceived by Greene. These instruments and type of data should be applied to other case study to corroborate their potentiality and the concept should be continuously improved and revised as society's values change through time.

6.2. Research future improvements

As society evolves towards more sustainable forms of development and new forms of sociability spread, advances need to be made in the way we think about neighborhoods. In a recent article published in the *New York*, Nate Silver (2010) by using a *livability calculator*[17]*,* sets up a list of the 50 most livable neighborhoods within the city according to a set of categories. Trying to incorporate in the evaluation anything that could affect people's quality of life in a neighborhood, Silver sorted the dozens and dozens of statistics available into twelve broad categories[18] and each neighborhood has been given a value and ranked. According to his analysis the twenty most livable neighborhoods within the city of New York are: 1.Park Slope; 2.Lower East Side; 3.Sunnyside; 4.Cobble Hill; 5.GreenPoint; 6.Brooklyn Height; 7.Carroll Gardens; 8.Murray Hill; 9.Prospect Heights; 10.East Village; 11.Astoria; 12.Bay Ridge; 13.Woodside; 14.Tribecca; 15.Jackson Heights; 16.Long Island City; 17.Midtown East; 18.Fort Green; 19.Dumbo; 20.Williamsburg. It is clearly visible that most of the best places to live are outside of Manhattan in boroughs such as Queens and Brooklyn, where rent is cheaper and there are more open spaces available at a walking distance. Figure 5.1 displays categories, scores and rank of the best neighborhoods in New York, Murray Hill.

[17] After dividing the population into five different types of New Yorkers, the author averaged their answers together. On the other hand, we conducted an online survey of over 3,000 people nationwide and 700 in New York, asking respondents to rate the factors most important to them

[18] *housing cost* (as measured on a price-per-square-foot basis, for both renters and buyers), *housing quality* (historic districts, code violations, cockroaches), *transit and proximity* (commute times to lower Manhattan and midtown, the density of subway coverage), *safety* (as measured by violent- and nonviolent-crime rates), *public schools* (test scores and parent satisfaction), *shopping and services* (the number of neighborhood amenities, especially supermarkets), *food and restaurants* (judged by density and quality of options), bars and nightlife (ditto), *creative capital* (arts venues as well as the number of residents engaged in the arts), diversity (in terms of both race and income), *green space* (park and waterfront access, street trees), and *health and environment* (noise, air quality, overall cleanliness).

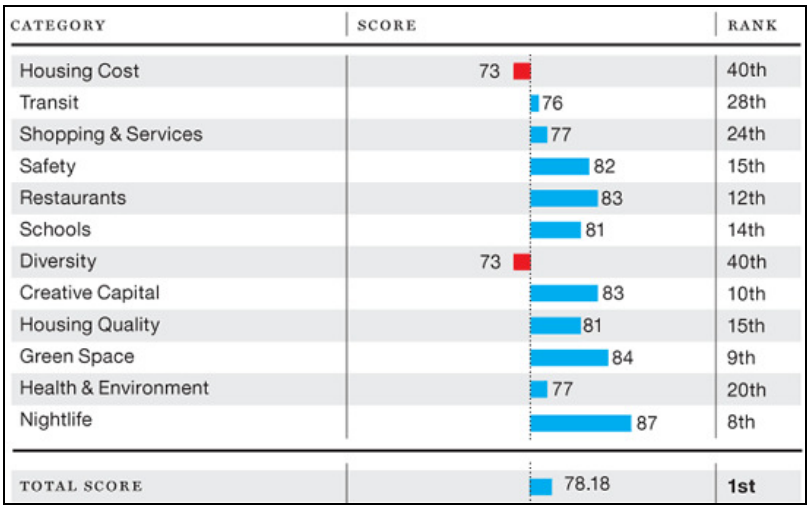


Figure 6.1. – Park Slope, the best neighborhood in New York
Source: Silver, 2010

In assessing this research, one can question how comprehensive and up-to-date it is in detecting amenities zones by simply looking at urban amenities (leisure, cultural and natural) and and the creative class or if new variables should be taken into consideration.

AZs have been described as gentrified areas of the city where "the city as an entertainment machine plays out most fully", where residents, mainly professionals, "support neighborhood retailing and cultural activities" (Greene, 2006); they have been detected by searching for the "*hip*" and for the "*cool*" and there is no allusion to principles of "neighborhoods' good quality of life" and to "sustainability" (environmental, social and economic) in general. Nevertheless, these topics are becoming big issues for NewYorkers and are among the main goals of the NYC Plan 2030 that cannot be neglected.

In order to make the concept of amenity zones a mirror image of what society will become and thus a representation of people's lifestyle, fresh considerations need to be integrated, and variables related to environmental, social and economic sustainability must be included into the future conceptualization of AZs. By analyzing in details the quantity and quality of natural amenities (green and blue amenities), evaluating projects of energy efficiency as well as the quantity and quality of social services and even more, the concept of amenity zones could gain a new identity, becoming more inclusive and contemporary. By including these new elements it could then single out cool residential neighborhoods, rich in urban amenities, home of creatives that apply sustainable principles of urban ecology, a contemporary indicator of neighborhoods' appeal.

6.3. Closing remarks

The present work has geographically identified amenity zones (AZs) within the city of New York and improved the method used to identify them. Described by Greene (2006) as "*upscale residential neighborhoods, mainly gentrified territory, whose residents support neighborhood's retailing*" AZs have been detected in this work by applying GIS spatial analysis to special datasets such as Zagat Guide 2009 and Reference USA 2009*,* and by deepening the study of both urban amenities and the creative class. By singling out AZs, the present work has made improvements in the urban amenities field and studied for the first time urban amenities spatially and qualitatively. Particularly, it has shown a tendency for good quality amenities to co-cluster in the same nodes of the cultural production system, thus explaining a close relationship between urban amenities and the creative economy. By articulating the relationship between the creative class and urban amenities, the present work has displayed the relationship between the two variables which cannot be considered separately. The present research has also included green elements (number of trees, parks) into the analysis, allowing for a more complex formulation of the AZs.

Identifying AZs in the city permits observations both of how socio-economic transformations have been manifested in the urban landscape, and of the population's functional requirements. It reveals a new desire to live in a mixed commercial-residential environment, charming and appealing, and a tendency for people to both dwell and work in the same geographical spaces.

Cities like New York that have chosen to lure the affluent, the "hip" and the "young talented class" as a primary strategy of development not only undergo a process of "urban beautification" and "residential gentrification", but sponsor and support the proliferation of restaurants, nightclubs, art exhibitions and trendy shops. All these urban and cultural amenities mainly co-cluster in the same limited geographic spaces in the city, transforming areas in alluring "multifunctional spots". Spatially, the "boutique cities" (Kotkin, 2006, p.22) can be found in certain sites in Manhattan and can best be viewed as an interconnected archipelago of inter-related communities or neighborhoods close to each other. In these neighborhoods located close to the creative corridor and the business-financial districts, the dense concentration of creative residents and urban amenities produce a "leisure and cultural milieu" that makes Manhattan and some other spots in Brooklyn and Queens amenity zones. The close proximity of galleries in Chelsea, nightlife in Lower East Side, the artistic communities of the West Village and the creative corridor all establish the dominance of Manhattan over the other boroughs. Although in Brooklyn the geography of proximity does not create the same "buzz" (Currid and Williams, 2009) because

neighborhoods are more distant from each other, it still generates a slight connection between Downtown Brooklyn – Brooklyn Heights – DUMBO, Green Point and Williamsburg. In Queens and The Bronx the spatially random distribution of the creative class and urban amenities does not allow for identifying such a cluster.

The capability of a place to show different uses and integrate urban amenities in a commercial and residential urban structure is what makes amenities zones interesting places to live in. The capability of these areas to offer a large number of amenities for different types of activities produces an urban fabric that is extremely varied and attractive. However, new challenges are emerging that relate to principles of sustainability and urban ecology which will be soon manifested in new trends, thus modifying the present way amenities zones are conceived and studied.

PART III — THE PHYSICAL ANALYSIS OF THE CITY: THE CASE OF ATLANTIC AVENUE

CHAPTER SEVEN: THE CONTEXT OF MORPHOLOGICAL RESEARCH

Chapter seven has the objective to introduce the topic, outlines the theoretical framework on which this work was conceived and establishes the conceptual bases relevant in addressing the present work. Prior to reviewing theories on city urban form and urban morphology it is necessary to clarify the object of analysis and its associated components. The chapter is structured as follows: section 7.1 is an introduction; section 7.2 explains some concepts that are relevant to the work while section 7.3 illustrates the theoretical background on which the present work is based.

7.1 Introduction

The study of urban form has covered a vast array of topics and attracted the interest of many disciplines and scholars around the world. Architects (Marzot, 2005, 2002; Cataldi, Maffei and Vacarro, 2002; Rossi 1983), urban geographers (M.R.G. Conzen, 1960; Slater, 1900; Vance, 1990; Whitehand, 1977a; M.R.G. Conzen, 2004), planning historians (Gallion and Eisener, 1980; Hall, 1999; Morris, 1994; Kostof, 1991), urban sociologists (Mumford, 1961; Jacobs, 1961) all have studied urban form applying diverse approaches and offering outstanding contributions.

Despite the vast amount of works produced on the physical form of cities worldwide, and the contemporary debate on transformations in the present American urban form (Zukin, 2010) it is still difficult to come across contributions that have analyzed American cities' urban form systematically. Until the 1990s, as argued by M.P. Conzen (1990, p.145), morphological analysis of American cities has been largely understudied by geographers; it has been left largely to architectural historians, landscape architects, art historians and planners to explore the visible form of the city; therefore much more is known about building styles, park systems and changing land uses than the spatial composition of building forms and the detailed texture of the urban fabric across urban districts (Reps, 1965; Mumford, 1961; Schuyler, 1987).

Geographers on the contrary have followed the functional approach to the study of the city (Mayer and Hayes, 1983; Berry and Kasarda, 1977) or have offered cultural and historical contributions to the study of urban form (Vance, 1977; Lewis, 1976; Relph, 1987; Ford, 1980) however without ever applying a systematic spatial analysis of the fundamental elements of the urban layout and its physical structure.

In geographical writing there has always been an interest in understanding how cities have expanded, how transportation has improved, how population has growth; less attention has been

paid to the evolution of the urban landscape and to the development of the ground plan (M.P. Conzen, 1990; Reps, 1965; Reps, 1979) limiting the research at the *institutive phase* of the urban plan development and overlooking the *transformative phase* of America town plan development.
During the last twenty years interesting contributions have been added to the literature of American urban morphology which apply physical analysis to the elements of the town plan (Ryan, 2005; Scheer and Ferdelman, 2001; Siksna, 1997) and some of them have looked also at the transformative processes of town plan development (Smith and Randall, 2008).
Hence, the present work provides an urban morphology analysis of an American context, by examining the physical character of the contemporary urban form, the historical phases of its development and the transformations that took place. Nevertheless the analysis's main focus is not on formative processes of town plan development but rather on later transformative processes that affected city's urban form. This permits the exploration of the relationship between an established urban society and the built environment, as well as the connection between persistence and change within the urban landscape of an ever changing city like New York.

7.2. Conceptual groundwork

This section concerns the elements that characterize the morphological system and its urban form. As explained by Remy Allain (2004) in his book *La Morphologie Urbaine*, the morphological system can be divided into three main components: the ground plan, the land uses and the building fabric (M.R.G. Conzen, 1960). The ground plan consists of a map, drawn to scale, showing the divisions of the land into blocks, street, allays and lots; the land use relates to the subdivision of the land into functional uses (e.g. industrial; residential); building fabric concerns the characteristics of buildings according to type, style, height and material.
In this analysis the elements of the urban form, necessary for the understanding of the townscape and its transformations, are summarized as follows:

- The grid
- The block
- The lot
- The building
- The façade

In order to identify how these elements have developed within the built environment and changed to reach the present conformation, two indicators were used: the "time indicator" and the "change indicator". An analysis seeking to investigate processes of transformation and sedimentation cannot be completed without making use of the history. When reading historical urban transformations it is possible to identify patterns that exhibit an ability to accommodate changes of the next generation enabling transformations to occur, and patterns that have survived, which demonstrate continuity with the past.

In order to delineate the degree to which the townscape's elements change through time other concepts beside the "change indicator" and "time indicator" are essential in determining the level of change. The concepts are:

- Adaptability: capacity of urban form to be suitable for a new use
- Flexibility: capacity of the urban form to adapt to new needs
- Persistence: capacity of the urban form to continue to exist as it is
- Resilience: capacity of urban form to assume a variety of functions and meanings

The identification of patterns that enabled change or adaptability, continuity or flexibility to occur is only possible if one utilizes historical evidence, suggesting an analysis of the behavior of the artifacts of the past (e.g. street layout, squares, blocks, buildings, façades, lots, streets) over time.

7.3. Theoretical framework

This section aims to illustrate theories that have encompassed the field of urban form analysis in order to detect concepts and methods that could be relevant for this work. Considering the amount of research produced on cities, which embraces diverse fields of analysis, in the present work only selected studies will be reviewed: contributions that used a historical geographical approach and studies that concern the physical analysis of cities.

7.3.1. The historical geographical approach to urban form

A historical geographical approach is essential if one wants to read changes within the built environment and track the evolution of urban form. As cited by Anne Vernez Moudon (1997), urban form can be only "*understood historically because the elements of which it is comprised undergo continuous transformation and replacement"* (Moudon, 1997, p.7).

In fact, a historical survey allows one to understand the forces that have been shaping urban form over time; as argued by Spiro Kostof (1991) "*the more we know about cultures, about structure of*

the society in various periods of history in different parts of the world, the better we are able to read their built environment" (Kostof, 1991, p.10). The study of the evolution of urban form is therefore important in the comprehension of the physical form of the city and it should be made "*from its formative years to its subsequent transformations, identifying and dissecting its various components*" (Moudon, 1997, p.3). History provides the means to analyze the symbiosis of the past and present, and of space and time, the harmony that has sustained growth and continuity in cities throughout different periods.

Hence, in this research history is not used to reproduce the past but rather to reveal the basis of persistence and change within the built environment, and explore the complicated relationship between the need of the society to both "built up the new" and "preserve the old". The analysis will not focus on the formative process of town plan development nut rather will focus on degrees and types of changes within the built environment.

Moreover, any historical analysis of urban form in addition to analysis of physical changes includes complementary analysis of socio-economic factors. Changes that occur in the physical forms of cities are very much related to the social and economic forces that have been taking place over time, consequently an historical approach on urban form analyzes both the physical form and the socio-economic context.

The importance of socio-economic changes in the development or control of urban form is addressed, as important aspects that should be analyzed in any historical analysis of urban form (Mendez, 2002). For the purpose of this research particularly significant are the contributions that have studied the relationship between society and the built environment. Studies that pointed out the importance of using history to read urban form, city growth and their inherent changes by exploring interactions of social and physical environments are not confined to the work of urban sociologists (Jacobs 1961; Mumford 1938; Lefebvre 1974) and historians, but come from a wider disciplinary engagement with urban form.

Aldo Rossi (1983) studied the processes that shape the urban environment (i.e., on the construction of the city over time); Helen Meller's work (1987) stresses the importance of the analysis of social and cultural changes in the discussion of urban planning; Anne Moudon's (1986) analyzed people's interactions within the built environment in residential San Francisco; Patrik Geddes (1915) argued that any urban settlement needs a survey before being planned and that this survey should not only examine the physical and infra structural environment, but also the social, cultural, and historical background; Alexander Papageorgiou (1971) recognized the significance of reading urban space through its multi-layered urban formations. He argues that the occurrence of such formations contributes to the morphological plurality of the urban

composition enabling change, adaptability and continuity of the urban fabric. Contributions to the analysis of physical form and its transformations, with focus on historical analysis have been made by the urban morphologists.

7.3.2. Studies on Urban Morphology

There are several approaches to the study of urban form that fall under the banner of "urban morphology" therefore urban form is described in a number of different ways and by the different methods. Literally, the term urban morphology refers to the study of the physical form of the city, nevertheless despite the connotation of the term "urban", which precisely relates to the city, the contributions of urban morphologists often refer to human settlements broadly (Kropf, 2009, p.107) and not only to a city's form exclusively.

Within the urban morphology discipline it is possible to identify two main schools of thought: the Process Typological Approach of Muratori, later followed by Maffei, Cannigia, Corsini and Cataldi, and the British School of Urban Morphology of M.R.G. Conzen, which is now being carried out by J. W. R. Whitehand and M.P. Conzen.

The Muratorian School of Typology approaches morphological analysis of town with special attention to building types as the elemental root of urban form, and where the main topic is the evolution of the building type. According to Kropf (2009) *the approach they developed seeks to inform their architectural and urban proposal with an understanding of the built environment by examining its detailed structure and the historical process of its formation. The structure of elements is an association of buildings or an urban tissue, in general referred to as an aggregate* (Kropf, 2009, p.112; Ravazzoli, 2010b, pp.545-546).

The Conzenian School of Urban Morphology focuses on the historical analysis of the town plan and its constitutive elements and bases its root in M.R.G. Conzen's study on Alnwick (England) with its recognition of the *lot* as the *sine qua non* of urban morphology research (Whitehand, 1981) and the processes that affect the interaction between the various urban elements. Conzen's aim of town plan analysis was to *explain the geographical structure and character of the town through a systematic analysis of their constituent elements and development through time* (Kropf, 2009, p.113).

Whereas the Italian school seems to prefer the analysis of building typologies and the block appeared to be the preferred urban element of analysis, Conzen and Whitehand prefer the analysis of lots in order to ascertain the various layers of change that have occurred in the urban fabric. Nevertheless there are communalities among the two approaches: they both uses an evolutionary approach, tracing existing forms back to the underlying formative processes and

interpreting them accordingly; they both see the town or city as having a live history whose development is written deeply into the fabric and the outlines of the town, forming the basis for a morphological reading; both approaches employ the concept of typological process which is one of the fundamental elements of typo-morphological studies and both recognize that each period leaves residues on the landscape which can be viewed as falling within broad morphological periods (Maffei, 2009).

Besides these two main schools other approaches were established that analyze urban form, such as the spatial-analytical approach and the space syntax. The former is best characterized by the work of Michael Batty: using different methods he seeks to understand the spatial structure and dynamics of cities as complex emergent phenomena in which global structure emerge from local phenomena (Kropf, 2009, p.111). The latter, the space syntax, seeks to understand the spatial structure of settlements through a range of analytical method, basing the approach on the relationship between spatial structure and the generic function of movement, between humans and physical form (Kropf, 2009, p. 111).

Other approaches base their analysis on the study of the evolution of the street and block layout, while scholar like Lynch are interested in people's image of city.

Despite the existence of a significant number of works on urban form analysis which all contributed to the context of which the present work was framed, there is a main contributor to the way that the present work has formulated the physical and historical analysis of urban form: M.R.G.Conzen (1960) and the British School of Urban Morphology. It was in his founding and in his method that this work found inspiration.

British school of urban morphology

Contributions to the analysis of urban form and its transformations with special focus on historical analysis of the built environment have been written by M.R.G. Conzen (1960), Whitehand (1981, 1987, 1990, 1997, 2000, 2001), Kropf (1993) and M.P. Conzen (2009) who largely contributed to the improvement of research within the historical geographical approach of urban morphology. The historical geographical approach of urban morphology is rooted in M.R.G Conzen's theories and summarized in his study of Alnwick. In his study, M.R.G. Conzen (1960) analyzed systematically in great detail the geographical structure of towns through an examination of its components: the site, the function, the townscape, the development, as well as the socio-economic context, and identified the processes that affect the interaction between the townscape's elements. Site concerns the spatial distribution of natural physical features, the socio-economic context is the combination and interaction of different activities and functions,

functions are a part of the socio-economic context, while the townscape consists in form complexes namely town plan with its street system, plot pattern, building pattern, building fabric and land utilization (Kropf, 2009, p. 112). Considered as a physiognomic record of cumulative social experience in a particular localized urban setting, the townscape represents the continuous visual self-identification of the community in its inherited habitat (M.R.G. Conzen, 2004, p. 260). According to M.R.G. Conzen "*it is a reflection of functioning life in urban society, and provides the physical base to answer needs of that society and its individuals. As these needs change in time –in terms of housing, working, transportation, education and recreation– so does the townscape and its elements"* (M.R.G. Conzen, 2004, p. 49). The townscape is characterized by three form complexes namely the town plan, the building fabric and the land utilization pattern. Among the elements, the *town plan* is however the fundamental one, a combination of three distinct but integral kinds of plan elements: the *streets* and their street system, the *lots*[19] and their lot patterns, the l*and* and building arrangement within these patterns. Among the elements of the townscape, the lot is recognized as a key unit (Whitehand, 1981), whose historical evolution is caused by two main factors: the filling in of the lots with new buildings and the amalgamation or subdivision of lots.

The peculiarity of Conzen's evolutionary approach and his most significant contribution to urban morphology –according to Whitehand- rests on the fact that the evolution of the urban fabric results from progressive physical processes, whose identification required a *detailed examination in generic terms of street and building lines, building block plans and the shape, size, orientation and grouping of plots* (Whitehand, 1981, p.17). The varying mixture of periods of origin among its existing stock of forms (M.R.G. Conzen, 2004, p.43) is the product of formative and transformative processes such as those of accumulation, adaptation, transformation and replacement[20]. The formative process of accumulation consists of a gradual filling up of the existing townscape with additional buildings, arising from specific economic, social and cultural human actions. The transformative processes instead consists of a replacement of old forms with

[19] The lot is a parcel of land representing a land-use unit defined by boundaries on the ground. This morphological feature in British English is called plot while in American English is called lot.

[20] During the history of a town or city, morphological processes may be broadly described as those of accumulation, adaption, transformation and replacement of forms. Accumulation of forms happens at the initial establishment of a town and when planned extensions are implemented: it consists mainly in the introduction of newly forms, accretionary growth and fringe belt development. Accumulation results from social growth and from transformations in social, economic and cultural needs. Addition refers to the accumulation of new houses and other buildings due to an increase in population. Adaptation and replacement of existing structures occurred to suit current and changing needs in society. The other transformative processes of internal change are building repletion which is a process of filling up the plots with further dwellings, building replacement which is the replacement of existing buildings by new ones in response to change in functional requirements, and the metamorphosis of the plot pattern which is an amalgamation of contiguous plots (M.R.G. Conzen, 2004, p. 42).

new ones which can affect buildings, lots, streets and land utilization; it results from changing needs in urban society.

The response of the landscape to this combination of formative and transformative processes is very variable so that the townscape's elements differ in the degree of resistance they offered to change. In fact, the townscape's elements express different degrees of persistence: the lot pattern and the town plan elements as well as property parcels tend to resist social changes (M.R.G. Conzen, 1960; Griffiths et all, 2010; Ersland, 2010). They seem almost eternal, essentially because the constraints of property ownership and building technology often have kept structures within existing property envelopes (Holdworth, 1992). On the other hand, land utilization is more flexible and changes more often. Within American cities the scale and speed of change, the frequent replacement of forms, and the commercial spirits of developers make townscapes less resistant than their European counterparts. "In contrast with European cities, American ones display dynamic morphologies that in gross volume of turnover and rapidity of change, make up for what they lack in the longevity of their historical development. However, no place remakes the city overnight. Even the most dynamic urban place in the US reveal the influence of antecedent conditions, investments, ownership and prior decisions (M.P. Conzen, 1990, p.144).

Closing, the townscape need to be conceived as a palimpsest, a document where successive historical periods have left their morphological records (M.R.G. Conzen, 2004, p. 42) and where new forms in the urban landscape coexist with old relicts.

7.3.3. Selected studies

Since this research is concerned with the analysis of American cities' urban form, of particular interest are those urban morphology studies that have analyzed the physical form of selected American cities. Notwithstanding that the method followed in the present work differs from that applied by the studies reviewed here, it is however important to recognize these works, as they are the ones most closely related to the area of the present analysis. Following are studies that applied the physical analysis of urban form to an American context, whether a neighborhood, a city, an urban unit or a road, and that have investigated change and transformative processes within the urban landscape.

Moudon's (1986) book *Built for Change* on the evolution of a residential neighborhood in San Francisco from its origin in the 19th century to the 1970s examines the interactions between different urban elements and the people. The understanding of the roles behind the processes of

change is significant to the author in the way that by exposing the need for a better comprehension of urban form and its relationship with a city, she underlines that such understanding is only possible through a systematic accumulation of knowledge that emerges from the observation and examination of what exists and persists. She examined the interaction between the physical elements that have been shaping cities over time such as the blocks, the lots, the buildings and facades, arguing that changes occur at the parcel level mainly.

Plots are the basic module in which change will take place and have a strong determining effect on development; lot size determines building form and façade design so lot size is an inescapable determinant of neighborhood form and architecture (Moudon, 1986). *"The rate of change in either the function or the form of the cells varies from city to city, but also generally fits into cycles related to the economy and culture. Building and transformation cycles are important processes to explore for city planning and real estate development purposes, yet are rarely studied in contemporary cities"* (Moudon, 1997, p.7). Moudon related residential building types in great depth, set within an evolutionary building typology, to the underlying and intertwined cadastral history of the district under study (M.P. Conzen, 2001, p.7).

Brent D. Ryan's (2005) contribution on *Morphological Change through Residential Development in Detroit* examined selected residential neighborhoods in Detroit. By comparing seven characteristics of the housing that existed in 1951 namely dwelling density, tenure mix, lot design, lot coverage, land use mix, dwelling type mix, street block design, the author examined and indicated the extensive morphological transformations that occurred when neighborhoods undergone urban renewal, most notably the decrease in area covered by buildings and the intrusion in the central city of suburban street and layout forms.

Cameron J. Smith and Todd A. Randall (2008), in their work *Measuring Residential lot and Neighborhood Changes in Hamilton, Ontario,* documented changes in several neighborhoods and lot-scaled variables for five residential neighborhoods in Ontario. A total of seventeen variables were measured for each neighborhood at two distinct scales: that of the neighborhood and that of the individual building lot. However only some were discussed in the paper, including: 1) street pattern; 2) normalized street length; 3) gross residential density; 4) lot frontage; and 5) front building setback. They presented three findings: individual building lot size and building setback variables demonstrate expected maximum value in the mid-century, coincident with the beginning of the automobile era; the period of construction for given neighborhoods was found to be an

important determinant of street pattern; observations of several variables suggest there are substantive differences between residential neighborhood forms founded in Canada and in the USA.

Brenda Scheer' and Daniel Ferdelman (2001) paper, entitled *Inner City Destruction and Survival: the case of Over-the-Rhine, Cincinnati* is concerned with the spatial distribution of building demolition and survival and examines how the original street and lot patterns of an inner city area have affected the incidence of development, demolition and development.

Similarly, Howard Davis (2009), in his article *The Commercial Residential Building and Local Urban Form,* analyzed commercial residential building characteristics in three different cities -New York, Amsterdam and Kyoto- with the aim of identifying communalities. In tracing the evolution of the building type and describing the architecture characteristic of the building type, the author discovers the strict connection between the commercial residential buildings and the urban fabric. He argued that *It is close the relationship that it become conceptually difficult to separate the building from the city, being the understanding of the organization of the city strictly link with the organization of the building within the block* (Davis, 2009).

Another significant contribution to the study of urban form in the USA is Arnis Siksna's work (1997), published in Urban Morphology under the title *The Effect of Block size and form in North America and Australian city Centers* (Siksna, 1997). In this article he conducted a comparative analysis on the effect of different initial block sizes and forms on the nature of subsequent urban development, and he concluded that *certain blocks forms and dimensions perform better than others; the intensification of development within large blocks and the creation of optimum blocks occurs by the intersection of street alleys and arcades; Small lots produce more predictable building forms and fine-grain block fabrics; large lots are subdivided into orderly patterns of fractional lots, but the subsequent amalgamation of lots occurs in less orderly patterns* (Sinksa, 1997).

Besides small case-study research, it is necessary to quote books that were essential to this work because they offer an understanding of how American urban landscapes and society have changed accordingly.
Involved in the examination of the relationship between society and the built environment was Lewis Mumford (1938), who believed in the necessity of looking beyond a mere cityscape of

buildings and streets to the vibrant network of human relationships that are cities' very *raison d'être*.

In his work *The city in History* (Mumford, 1961) he argued that *he did not analyze the physical elements of the city solely but considering the city as a social fact but he took into consideration socio-cultural processes relevant for the city foundation and transformation*. In the first page of the book he wrote "*the book opens with a city that was a world; it closes with a world that has become a city. In tracing the development I have attempted to deal with the forms and the functions of the city, and with the purposes that have emerged from it*" (Mumford, 1961, xi).

Vance's (1990) work *The continuing city: urban morphology in western civilization* can be considered as one of the most wide ranging and explicitly comparative treatments of urban morphology. According to M.P.Conzen (2001, p.2) he was the first geographer to integrate morphology in his big picture interpretation of American urbanism. In writing the book the author argues that *he has sought to provide nether a survey of western cities nor a single geography of their location; instead the purpose has been to search out two aspects of western urbanization: the evolution of the role and purpose of cities in western society, and the processes used by that society to create and transform the physical fabric of those cities.These two concerns are the elements in a study of urban morphogenesis wherein the actual process may explain the shaping of the city* (Vance, 1990, p. xiii).

Particularly significant for this research has been Claudia Cardia's (1997) work *Ils ont construit New York. Historie de la métropole au XIX siècle,* a significant study of an individual city that made the evolution of the built environment the key to understand its development. This work can be considered as a deep study of New York historical development where the author was not only able to describe in great detail the town plan development but also to clarify changes through the explanation of the demographics and of the socio-economic context, relevant for understanding the built environment itself.

Edward Relph's (1987) work on the modern urban landscape offers an important contribution to underestand *how modern cities and the new parts of towns have come to look as they do by tracing the changes which have occurred in architecture, planning, technology and social condition since about 1880.* The focus of the book is on the landscape of large cities because it is in the streets and buildings of these that the effects of the present age are most concentrated and most obvious.

Other important geographical writings on American city's urban form and its evolution are: M.P. Conzen's (1990) work on town plan analysis in Boston and Omaha; Knox's (1993) work on changes in the built environment of U.S Metropolitan Washington D.C; Mayer and Wade's (1969) work on Chicago urban development; Olson's (1980) historical works on Baltimore; Lewis's (1976) work on large scale processes that affect New Orleans and the way they are linked to what we can see in the everyday streets and buildings of the city and Ford's (1994) work on land uses and historical buildings types.

This review demonstrates that in the study of American urban morphology there is no vast body of theories and case studies on New York City specifically. Nevertheless, there are many contributions related to the study of formative and transformative processes in American cities that can be used as references. A quite good range of studies have been produced on the street layout, form and size of blocks (Moudon, Siksna, Krier, Ryan, Davis) and even though their findings differ somewhat from each other, they appear to contain some explanations on the way that urban form performs over time. Theories and concepts from the British School of Urban Morphology however offer an important theoretical basis for the analysis proposed in this work; studies that analyzed American cities' social context and cities' urban development are relevant too, as they enable this work to examine both the physical form of the city and the societal structure in which it is embedded.

CHAPTER EIGHT: MORPHOLOGICAL METHODS

Chapter eight aims to illustrate the study area, the research objectives and the method on which the present work was set.

8.1. The study area: Atlantic Avenue

Atlantic Avenue is an important street in the boroughs of Brooklyn and Queens: it stretches 9 miles from the Brooklyn waterfront along the East River all the way to Jamaica in Queens (Fig. 8.1).

Figure 8.1. – Map showing Atlantic Avenue in red
Source: GIS elaboration by the author, 2010

Atlantic Avenue starts in Downtown Brooklyn, a super-gentrified area rich with brownstones and amenities, and terminates in East New York, a suburban neighborhood known for its mix of immigrant communities, slicing through a diverse range of different uses, built forms, neighborhoods and socio-economic conditions.

8.2. The aims of the research

The central purpose of this research is to offer an innovative advance in the study of urban form in the United States by performing a morphological analysis of Atlantic Avenue, Brooklyn

Borough, New York (USA). In order to achieve that this analysis seeks to attain the following objectives:

- reconstruct the historical evolution of the study area broadly and identify the major changes in the social, cultural and economic context.
- perform a physical analysis of the contemporary urban form within the study area by examining the townscape's systematic elements.
- identify physical changes within the study area by using Conzenian concepts and looking at transformative processes.
- explore the relationship between the persistence of the urban form and societal changes in the study area.

8.3. The method

This analysis seeks to answer a number of questions. What is today's Atlantic Avenue physical character? How has Atlantic Avenue gained its actual form? What is the relationship between social changes and the built environment? What is the relation between persistence and transformation throughout the study area?

To answer these questions, this study examines the urban character of Atlantic Avenue in Brooklyn in general and the Western portion of Atlantic Avenue (from the East River to Flatbush Avenue) in detail.

The investigation of a street might be regarded as a fairly simple description of spatial structure. However, it illustrate that urban morphological concepts can be applied to understand the intricate relationship between the built environment and society, and how the urban ground plan has historically reflected resistance and change as the city evolved from one historical stage to the next. The selection of Atlantic Avenue as a long, linear feature permits it to serve as a cross-section through time, revealing along its length some, if not all some of the most important physical development in the history of the American city (Vance, 1990). Atlantic Avenue changes in character from urban to suburban, from being pedestrian-oriented to being pedestrian unfriendly, from being mainly commercial-residential to being predominantly residential, and from being gentrified to being mainly depressed. It enables one to discuss the Robert Moses' era of urban renewal projects, the suburban railroad developments, the evolution in transportation system, the creation of a car oriented society, and the process of gentrification all within the linear progression of one grand street.

Two levels of analysis were undertaken: a general study of Atlantic Avenue and a detailed analysis of the Western portion of Atlantic Avenue.

- The **first level of analysis** offers an overview of the nine-mile stretch of Atlantic Avenue (Fig. 8.1) and the urban blocks facing it, by looking at their actual physical form. This study examines the characteristics of the townscape's elements, with its street system, block patterns and buildings, giving a contemporary picture of the street's physical form. For this purpose a recent map was used, as well up-to-date pictures.
- The **second level of analysis** studies the Western portion of Atlantic Avenue from the East River to Flatbush Avenue (Fig. 8.2) and investigates both the transformative processes and the physical changes that took place. In order to identify the transformations that occurred at the ground level, historical and contemporary maps were overlaid by using the GIS geo-referencing tool and then compared with each other. At this level of analysis a detailed and isolated survey for each block and building has been performed in order to reconstruct the evolution of the plots and their pattern.

Figure 8.2. – Map showing the western portion of Atlantic Avenue in red
Source: GIS elaboration of the author, 2010

The study method relaies on both Conzenian urban morphological concepts and selected analytical tools available in GIS sotware. Conzenian concepts on urban morphology will be used to here to interpret physical changes and depict the character of physical form along Atlantic Avenue; GIS tools are used to perform statistical analysis (calculate area, building height etc.)

and to reveal spatial patterns within the built environment. Precisely, two GIS tools are used: geo-referencing and geo-coding.

Geo-referencing is a process through which a particular image (raster or vector) is given spatial references, establishing its location in term of a coordinate system; geo-coding is a process that allows an object with a geographical reference to be converted into point on a map.

In this analysis, the geo-referencing of the Atlas of the City of Brooklyn (1911) established the geographical position of the historical map and made it possible to highlight changes at the plot level as well as study townscape's elements. The geo-coding of retail services allowed mapping of retail services and selected traits of contemporary society, showing patterns of gentrification.

The study involved not only historical city maps, but also extensive fieldwork, yielding many observations of the actual state of urban form, in *loco*, backed up with a photographic survey.

The historical maps used were:

- **Atlas of the Borough of Brooklyn, City of New York** (Hyde, 1911);
- **Brooklyn Farms** (Hayward 1766);
- **The new map of the city of Brooklyn** (Lain's & Co 1874);
- **Hooker's New Pocket Plan for the Village of Brooklyn** (1827);
- **MapPLUTO tax lot of New York City**[21] (New York City Department of City Planning, 2007);
- **Map of the County of Kings, (** Hidden Collections, 1869);
- **Plan for New York and Brooklyn** (David Rumsey Collection, 1867);
- **U.S. Geological Survey** (Powell, 1891).

Addition sources include:

- **Brooklyn City Business Directory** (1885 and1977):
- **Historical reports from different Institutions**;
- **Historical images from Brooklyn Public Library online database**;
- **Historical images from the New York Public Library online dataset**;
- **Newspaper articles** (Brooklyn Daily Eagle, New York Times);
- **Reference U.S.A**. (Online database on business activities, 2009);
- **The Atlantic Avenue Guide – easy to follow city directory** (1977);

[21] MapPLUTO is a polygon theme representing tax lots in New York City. This dataset represents a compilation of data from various government agencies throughout the City of New York. The underlying geography is derived from the Department of City Planning's Tax Block and Tax Lot Base Map project. The attribute data pertains to tax lot and primary building and lot characteristics, administrative and political district etc..

- **Other sources of information such as texts containing descriptions of the urban form**.

By applying concepts of urban morphology to the study area and GIS applications to the dataset, this chapter seeks to describe Atlantic Avenue's urban character, understand major physical and social changes from one end of the study area to the other, and, last but not least, explore the dialectic between persistence of the urban form and social changes in contemporary American society, as reflected in this case study.

CHAPTER NINE:
MORHOLOGICAL ANALYSIS — THE PHYSICAL FORM

Chapter nine aims to examine the physical structure of Atlantic Avenue by illustrating both the development of its townscape broadly and its present urban form in detail. Prior to the description of the present urban form with which the chapter is primarily concerned, Atlantic Avenue will be investigated historically. Section one describes the historical development of Atlantic Avenue, identifying the urban sedimentation, the mixture of historical layers that characterize the townscape from its origin up to the end of the twentieth century. Section two focuses on the morphological analysis of the townscape. It identifies the major physical and spatial characteristics of Atlantic Avenue's built environment, by looking at some of the townscape elements, namely, the grid, the street layout, the blocks, the lots and the buildings.

9.1. Atlantic Avenue historical development

9.1.1. Atlantic Avenue from the origin through the twentieth century

The history of Atlantic Avenue as we know it today began in the late seventeenth century, to which Brooklyn's history can be traced back.

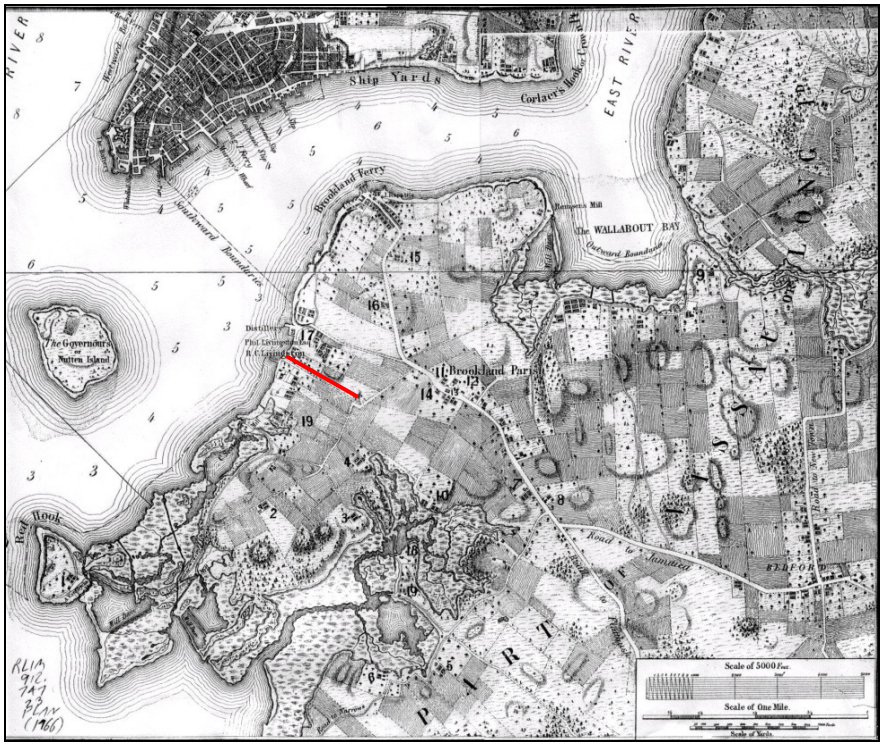


Figure 9.1. – The map shows Brooklyn's farms in 1766.
Source: J. Harward, 1766

The Avenue has not always been known by the name of Atlantic Avenue. Originally it was a private road terminating at Ralph Patchen's farm on the East River (Fig. 9.1).

In 1709 this country lane was swallowed up by District Street, which became the southernmost edge of the tiny Village of Brooklyn incorporated within the Town of Brooklyn in 1816. An 1827 map (Fig. 9.2) shows that it was still listed as District Street, connecting with Red Hock Lane, which then proceeded to Concord Street, not too far from the Navy Yard (Holt, 2006, p.4). Later on, in 1855, District Street was renamed Atlantic Street, but it was only in the late nineteenth century (1870), when the street was gaining a new identity as a viable commercial thoroughfare, that was designated as Atlantic Avenue.

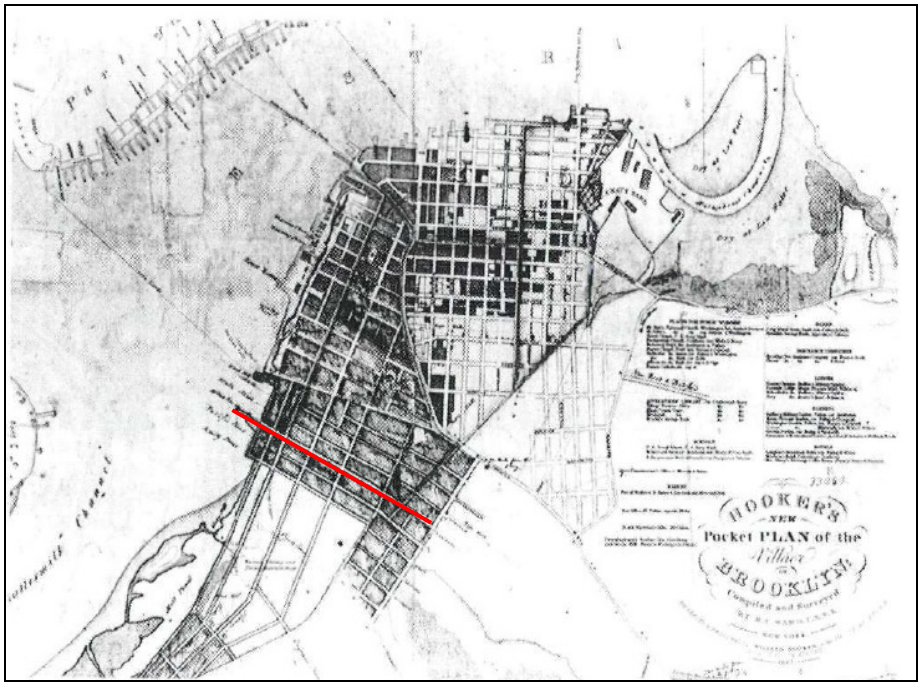


Figure 9.2. – The map shows Atlantic Street in 1827
Source: Hooker's New Pocket Plan for the Village of Brooklyn, 1827.

The development of Atlantic Avenue is intimately connected to the growth of Brooklyn as an industrial hub and residential borough. The history of Brooklyn goes back to 1636 when the Dutch, already settled in New York since 1600, began to buy land and started to create the five towns (Brooklyn, Flatlands, Flatbush, Bushwick) in what is today the borough of Brooklyn. Most of the early Brooklynites had made their living on farms inasmuch as nearly all of the King County remained largely rural until 1810. However, in the decades after 1790, with the increase in population and the development of manufacturing industry, the area near the Navy Yard bustled (Eisenstadt, Moss and Huxley, 2005). *In 1794 Brooklyn has almost one hundred houses, most of them only one story high and located along the shore* (Grenier, 1996, p.5).

The opening of the first steam-ferry service between Brooklyn and Manhattan (Fulton Ferry) in 1814, the completion of the Erie Canal in 1825, the establishment of the Long Island Railroad System (1834)[22], and the opening of the Brooklyn Bridge in 1883, all fostered the growth of Brooklyn as a manufacturing center and the development of Brooklyn Heights as an early suburb. When Manhattan's main residential areas reached father uptown (in the 1930s) and the area below Canal Street was converted to commercial use, Brooklyn started to become attractive as a place to live (Grenier, 1996**,** p.6). For its vicinity to Manhattan the population increased so extraordinarily since the 1840s, reaching 566.663 inhabitants (especially European foreign-born) in 1880s, becoming the third largest city in the United States. The industrial landscape expanded as manufacturing grew: in the 1880s the manufacturing census showed Brooklyn with five thousand factories, employing 49.000 people. When the New York market spread out further and Brooklyn started to grow as an industrial hub in the 19th century, manufacturing businesses remained localized along the shore - essentially sugar and chemical manufacturing production- and the Brooklyn economy reached its top. Consequently, in the area close to the shore the number of retail stores increased extraordinarily and the retail sector along Atlantic Avenue became progressively diversified. According to Holt's study (2006) *from the foot of this important street to the harbor in 1885 there were at least 536 structures of one kind or another, a minimum of 1060 households and 549 storefronts, outlets for commerce and services of a dizzying variety. There were establishments that sold liquors such as saloon, there were hairdressers, schools, utilities, organizations and societies. In some ways Atlantic Avenue was a mixture of people and business of all sorts in much the same way as it is today [..]* (Holt, 2006).

In 1834 Brooklyn was hardly one and a half square miles of closely built houses, but by 1883 about 34 square miles of density populated houses and factories, with numerous churches, school-houses, theatres halls and vast warehouses were visible. As a result, that part of Brooklyn facing the water started to grow as a residential neighborhood: while Brooklyn Heights emerged as the first suburb for well-to-do residents, Atlantic Avenue was mainly inhabited by immigrants "coming from everywhere" (Irish, Germans, Scandinavians, English, etc.) making the avenue one of the most diverse place within the New York metropolis. In order to satisfy the need to accommodate the newcomers and guarantee a good variety of services along Atlantic Avenue, many three to four story commercial residential buildings were built; in the surrounding neighborhoods single family houses and mansions accommodated the needs of the wealthy

[22] The history of the LIRR begins on April 25, 1832 when the Brooklyn and Jamaica RR Company was incorporated and started building its ten-mile long route from the East River in Brooklyn along Atlantic Ave. to Jamaica. Two years later in 1834 the Long Island Rail Road Company was formed.

residents commuting to New York daily, while superb ornamented brownstone, Federal and Greek Revival houses were built for the middle class. It was in these two centuries of morphological accumulation that most of the buildings along Atlantic Avenue were built. By the late nineteenth century the area adjacent to Flatbush and Atlantic Avenues had become a crossroads composed of working-class housing, an active industrial district along the rail yard on Atlantic Avenue, and a bustling commercial area resulting from the growth of two of the borough's oldest commercial thoroughfares such as Fulton Street and Atlantic Avenue. In 1892, the Long Island Railroad Company built a new brick station for its Flatbush Terminal, and the elevated subway lines along both Fulton Street and Flatbush Avenue brought commuters and workers to the area. Atlantic Avenue was thriving.

By the end of the nineteenth century Atlantic Avenue reached its modern shape: some neighborhoods evolved from early Dutch villages, some adopted their own plan, while part of the land was subjected to a unified plan. The 1834 Brooklyn city (grid) plan set the major characteristics for Brooklyn's future urbanization, establishing the two main axe around which the development would take place (major street): south of Gowanus Bay and eastwards to Jamaica, following the opening out of the transportation system and the new wave of immigration that Brooklyn was receiving in East New York. Moreover, it established the street layout, the lot pattern and building subdivision within parcels (Fig. 9.3).

Figure 9.3. - Map of the County of Kings showing the ward and town boundaries
Source: Hidden Collections, 1869

Completed in 1839, the survey mapped the city into a rectangular grid crossed by several major diagonal avenues and dotted with small parks, just as the commissioner's plan of 1811 had laid out the Manhattan's grid.

Consequent upon expansion of Brooklyn as a residential region and growing manufacturing center later in the 19th century, another commission was formed in 1869 to prepare a new plan to control the growth of the borough in the district known as Flatbush, New Utrecht, Gravesend and New Lots. By 1874 a new plan was ready. As with the previous one, it had the aim to sketch the expansion of the city by establishing new blocks, lots, and building patterns (Fig. 9.4).

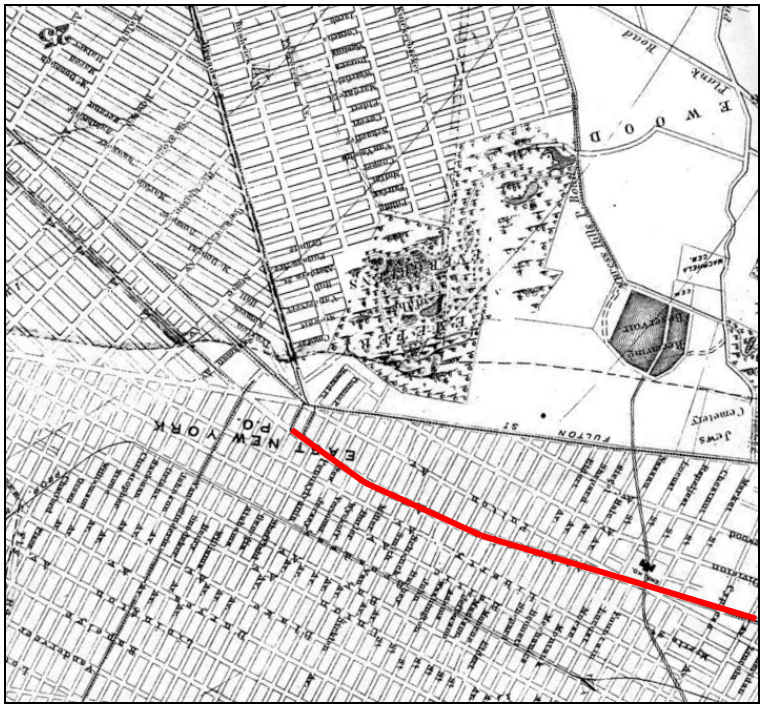


Figure 9.4. – Map showing the new street patterns. Atlantic Avenue in red
Source: Brooklyn City Directory by Lain's & Co, 1874.

With the spreading out of the street system, improvements in the transportation network were possible. The early form of urban transportation was the horse-car constructed by laying smooth rails along city streets and using horses or mules as the motive power. But in the case of Atlantic Avenue the Long Island Railroad (LIRR) ran steam trains along it making the street an important one. By the late 1880s electricity provided a viable solution to the horse, and electric trolleys, with their power station, started to appear. For many, this was a welcome advance and by the turn of the century the role of the horse was fading from memory. Nevertheless, its contribution to the development of the modern city is unquestioned.

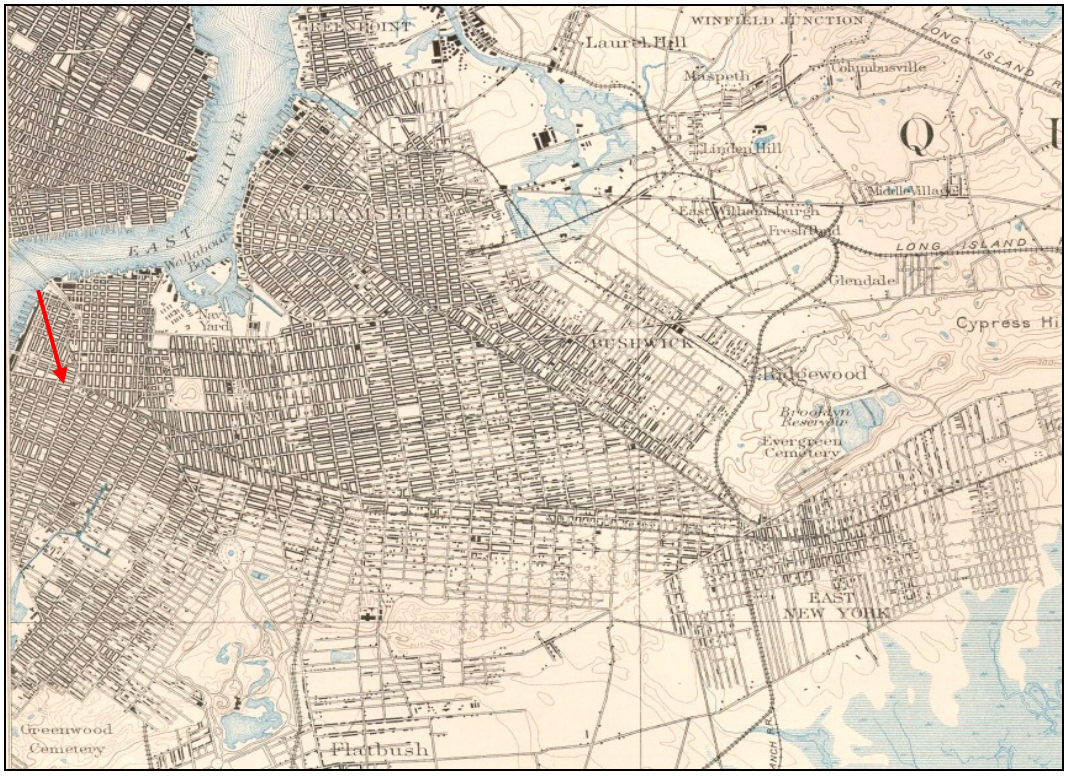


Figure 9.5. – The map shows the expansion of Atlantic Avenue eastwards
Source: US Geological Survey. J.W Powell, 1891

With the advent of the twentieth century Atlantic Avenue lengthened towards its end (Fig. 9.5), today the Van Wyck Expressway: the increase in population and European immigration (in Brooklyn population increased from 46.613 residents in 1840 to 2.738.175 in 1950 with 47% of foreign- born (Miller, Miller and Karp, 1979, p.16, p.26) as well as the improvements in transportation system pushed the growth of Atlantic Avenue further, swallowing up all the remaining farmland and allowing a far wider dispersion of people within the county.

Since its formation the street has always been a working class commercial residential strip, home of Dutch, Irish, Scandinavian, Italian and middle eastern immigrants. However, when Jews moved to Brooklyn and settled in available areas close to the bridge, the original settlers - mostly German and Irish- retreated before the wave, first into Bushwick, then into Ridgewood, eventually into Queens. During and after World War I, when the subway line was extended and opened up, even more areas to recent arrived immigrants, a second wave of immigration occurred, mostly Italian and eastern European- born Jews. It was not until 1930 and 1940, with the further expansion of the transportation system and the opening of the “A” subway line, that African Americans, Latinos and Asians started to move to the borough in large numbers (in 1940 4% of the population was non-white, in 1980 the percentage rose to 44% and by 2000 to 59%) shaping

communities in Bedford Stuyvesant, Brownsville, East New York and Cypress Hill, and replacing the Jewish community almost entirely (Stern, Gilmartin and Mellins,1987, p. 895).

These waves of immigrations, fostered by transportation's improvements, public housing projects, and the expansion of Brooklyn manufacturing, helped the out-migration of wealthy Brooklyn families, producing effects on the physical character of some of the richest neighborhoods in the Borough and fostering further social changes. Brooklyn Heights became a slum of rooming houses, while along Atlantic Avenue many single family houses were converted into tenements and low-income houses for minorities were built as well as slums for marginal people. As stated by Stern *Old Brooklyn was in decline* (Stern, Gilmartin and Mellins, 1987, p.896*)* and Atlantic Avenue too. Brooklyn's decline related not solely to transformations of large parts of Brooklyn's central area into large settlements of African Americans, even bigger that the one in Harlem, but also to the conditions of its principal streets, choked with trolleys and cars and overshadowed by the LIRR elevated railroads[23]. Atlantic Avenue in particular has been affected. With the advent of automobile culture in the 1940s (Vance, 1990) it was widened to accommodate the growing number of car-owning suburban commuters living in Queens, and it became a car conduit connecting two bridges and a highway, a way to Manhattan and into downtown Brooklyn. Because of its auto-centric character, the section of Atlantic Avenue east of Flatbush Avenue has never been conceived as a collection of independent residential neighborhoods but rather as dormitory communities.

After years of having a bad reputation, it was only in the 1970s that Brooklyn staged a comeback, reviving not only as a center of culture and commerce, but also as a collection of desirable residential neighborhoods, many remarkably intact as a result of their designation as historical districts (Stern, 2006). The influx of a wave of new in-migrants -young professionals, artists and gentry- who resuscitated neighborhoods one house at a time in Park Slope, Fort Green, GreenPoint, Kensington, Clinton Hill, have made the *Brooklyn renaissance* a reality, and the process of renovation spurred gentrification. A new social economic conjuncture appeared and in the stretch of Atlantic Avenue that goes from the East River to Flatbush Avenue, the gentrification process has appeared; influenced by the *new spirit of renovation* characterizing the brownstone neighborhoods and by the rise of a new class of investors, Atlantic Avenue underwent an urban

[23] In 1897 the bill for the improvement of Atlantic Avenue was signed by Governor Odell and the city approved a project consisting of the elimination of all the LIRR (Long Island Rail Road) grade crossing[23], by either sinking the track below the street level or elevated them. The project of partial depression of the railroad begin "between Flatbush Avenue and Nostrand Avenue, then from Bedford Avenue the railroad will rapidly in an open cut and will pass on to an elevated structure at Nostrand Avenue, which will attain such height that full head room will be provided for all street traffic without interface. At Nostrand Avenue the elevated structure continue through Ralph Avenue - Howard Avenue, then it descends underground once again. At East New York the line rises onto street level at Atkins Street, and descends once more to Jamaica" (The New York Times, April 9, 1901).

renewal. Between the 1970s and 1980s it was known as "*The Mecca for Middle Eastern food and for 19th century antique stores"* initiating a process of "up scaling" that still survives, although in different forms.

9.1.2. Atlantic Avenue: the present set in concrete landscape

The greater then nine-mile stretch of Atlantic Avenue between Hicks Street and the Van Wyck Expressway plows through a diverse range of different uses, built forms, neighborhoods and socio-economic conditions. Drivers speeding along Atlantic Avenue between Brooklyn and Queens pass current vintage stores, industrial uses, numerous auto shops, other auto-oriented businesses, and tracts of single family housing that were originally built as railroad suburbs served by the Long Island Railroad. Atlantic Avenue's make up is so varied that the street not only can be seen as a physical divider between several communities – namely Brooklyn Heights, Boerum Hill, Prospect Heights, Fort Greene, Bedford-Stuyvesant, Crown Heights and Richmond Hill – but also as a socio-cultural barrier. Observational and historical evidence presented throughout this section confirm the overall structure of Atlantic Avenue as a *divider* between neighborhoods for the vast majority of its length. Disparities among neighborhoods are clearly recognizable if we consider social variables such as median income, education and age. The areas of Brooklyn Heights, Prospect Park, Fort Green, with prevalently white residents, have the highest median household income and the highest level of bachelors and masters degrees, showing that the neighborhoods are inhabited by middle to high income well educated residents. On the contrary, east of 4th Street, in Bedford-Stuyvesant, with mainly black residents, the level of education is lower as well as the household income, as figures will show.

Differences are also reflected in the physical make-up of the street that goes from being pedestrian-oriented to be mostly auto-centric, from being residential friendly to be mainly a car conduit, from being urban to being suburban. These characteristics are seen in the use of the land as well, that differs significantly along its length. The western portion of the street, closed to the brownstone neighborhoods, is a mixed commercial-residential territory where storefronts are nice and commercial activities are diverse. On the contrary, the area east of Flatbush Avenue is characterized by industries, car services, gas stations, secondary retails, warehouses; drive-in shopping centers, and suburban one and two family houses. As a result, two Atlantic Avenues can be identified: the urban one (from the East River to Flatbush Avenue), that supports the brownstone' communities and has lately undergone a process of gentrification, and the suburban one (east of Flatbush Avenue) which is prevalently residential, with lower densities, and where life still depends on cars.

The actual physical conformation of Atlantic Avenue, as previously mentioned, is closely related to the way the public transportation system and infrastructure engineering have been historically conceived and constructed. Hence, a better understanding of Atlantic Avenue's physical layout is illustrated in the next section.

9.2. The analysis of Atlantic Avenue's physical form

The aim of this section is to study the elements that form Atlantic Avenue's urban form, namely the grid, the street layout, the block, the lot, the building and the façade. For this purpose MapPLUTO 2007 tax lot data are used, together with historical photographs and current photographs taken by the author.

9.2.1. The grid

One of the most important physical elements of the town plan is the grid. In the United States the grid system was widely used in many cities and in their suburbs until the 1960s, when planners started to focus on superblock arrangement. The origins of the grid plan lies in the Greek cities, in the Milesian Plan[24], whose principles were an essential part of the kit of tools a colonist, such as the Dutch in this case, brought with them for immediate use. Spatial geometrical order, equitable division of the land, equal distribution of building lots, division of the city into longitudinal and transverse arteries, and the subdivision of the city into neighborhoods became the major attributes of the early American city plan. With an emphasis on regularity and calculation, the grid made the individual building lot the essential unit, favoring the rectangular building block layout which again became the standard unit for expanding the city.

For an industrial-commercial city such as Brooklyn was in the nineteenth century, the gridiron plan answered the needs of accelerated economic growth, new increments in population, and expansion in public transportation system, facilitating the process of land subdivision.

An expanded economy demanded an expanded population, an expanded population demanded an expanded city [..]*This type of grid could sprawl in any direction, and with an absence of any functional differentiation between residential, industrial and commercial it could be repeated everywhere with its standard lots, its standard blocks, its standard street widths with its standardized comparable and replaceable parts*" (Mumford, 1961, pp. 422-424).

[24] The Milesian plan is a town plan consisting on a regular grid-iron plan, derived from the Greek colonial city of Miletus and promoted by Hippodamus. The Hippodamian or grid plan was the basis for subsequent Greek and Roman cities.

Following Atlantic Avenue from east towards west and looking at the surrounding neighborhoods, one can say that the Brooklyn's grid, based on a simple orthogonal gridiron of longitudinal and transverse streets, projects an image of order, however atypical where blocks' and plots' arrangement differ within the built environment, consequent to adaptations of the city grid extensions to the already existing grid pattern.

9.2.2. Street layout

Atlantic Avenue's layout resulted from decades of advancements in transportation practices and from new ideas in planning theory; however two periods were crucial for its development: the period prior the opening of the first subway line connecting Borough Hall to Atlantic Avenue (1907), when the LIRR set its station and the automobile era (1940s). The first period helped to consolidate the idea of Atlantic Avenue as a transportation hub and defined the main character of the street in the part which was elevated; the second period compromised the street layout, bringing physical alterations to the urban landscape.

Crossing Brooklyn from east to west all the way to Jamaica, Atlantic Avenue's layout fits into the street grid pattern[25] intersecting at right angles the transverse streets for all its length. As shown in Figure 9.6 Atlantic Avenue has a linear layout without showing any awkward intersections or peculiarities; Unlike the Manhattan street system, based on a rigid street grid defined by broad north-south avenues and multiple east-west streets, Brooklyn developed a unique pattern of streets and avenues that appears more irregular than that of New York. Both north-south and east-west oriented streets were designed and implemented according to different hierarchies, whether they were residential, industrial, and commercial streets; they were given different importance not solely on the basis of their width, but also according to the activities that were taking place. With the gridiron plan every street becomes a thoroughfare, and every thoroughfare is potentially a commercial street.

With the application of the gridiron plan, the street began to exist in its own right, not as before a devious passage grudgingly left over between a more or less disordered heap of buildings. Once the street assumed this degree, the notion of widening it to accommodate larger bodies of people would follow naturally [….] (Mumford, 1961, p.194). When it was first designed Atlantic Avenue was approximately 90 feet wide and it was one of the fine commercial streets in Brooklyn. Only later on, with Robert Moses (1940s), was the stretch east of Flatbush widened to 120 feet

[25] The gridiron of streets laid out by the state commission in 1811m establishing a physical pattern that was followed by cities across the country. The rectangular grid defined the broad north-south avenues and multiple east-west streets and by their standard units blocks of two hundred feet by six hundred to eight hundred feet.

and turned into a highway.*The broad street or avenue was valued as a symbol of progress: so that it was laid out with an amplitude that bore no functional relation to its present or its potential use, though the excessive cost of paving (Mumford, 1961, p.427).*

In Figure 9.6 it is possible to see the western portion of the Avenue (from the East River to Flatbush Avenue) which has preserved its original width, and the stretch east of Flatbush Avenue which has been enlarged.

Figure 9.6. – Atlantic Avenue width in red
Source: Google Earth, March, 6th 2011

Since that alteration, the width of Atlantic Avenue (between 90 and 120 feet approximately) has always been as it is today, more or less, broader than most surrounding residential streets (between 50 to 70 feet) and smaller than a highway.

The auto-centric character of Atlantic Avenue for the majority of its length relates to its width, which was intentionally designed to make the street a car conduit, an alternative route to the busy Flatbush Avenue and an easy way to connect New York Harbor and Manhattan with the interior of Brooklyn, Queens and Long Island. Numbered state highway systems were adopted just after World War I in response to the growing numbers of motor vehicles and to a need to articulate and rationalize what had been a fairly casual system of roads. The routes selected for upgrading were usually those that paralleled the main rail lines (Johnson, 2005, p.23), just as in the case of Atlantic Avenue.

Atlantic Avenue's built form has always been influenced by the LIRR, which has a terminal at the intersection of Flatbush and Atlantic Terminal, providing service to Jamaica in Queens and Long Island. The railroad greatly shaped the form and the character of the street, especially in the section where it is elevated, most notably east of Flatbush Avenue. Along this long stretch the

street has a peculiar structure where trains run over the two-lane street, as Figures 9.7 and 9.8 illustrate.

Figure 9.7. – Elevated railroad

Figure 9.8. – Franklyn subway train

Source: photograph of the author

The first portion of Atlantic Avenue instead has been shaped mainly by its status a fine commercial strip. Atlantic Avenue's importance was related to the establishment of many different and diverse retail activities that, from the time of industrialization up to the present have made the street one of the most attractive and culturally diverse thoroughfares within the Borough. In 1844 the street was already an extremely busy artery in Brooklyn. So much so, that there was actually a Long Island Railroad train running down it (Holt, 2006). Figure 9.11 shows the character of the street character in the northern portion of Atlantic Avenue.

Figure 9.9. and Figure 9.10 – Western portion of Atlantic Avenue, streetscape

Source: photograph from the author on the top

9.2.3. The Blocks

City blocks represent the basic unit of a city's urban fabric and the typological element through which the whole composition of the grid is regulated. Its size, location, and position within the grid plan determine the location size and distribution of the different buildings, lots, streets and squares. City blocks are usually built-up to varying degrees so they show different sizes and shapes. For example, pre-industrial European cities tended to have irregularly shaped street patterns and urban blocks; on the contrary cities based on grids, like New York, have much more regular blocks arrangements, yet rich in peculiarities.

Most of the oldest blocks along Atlantic Avenue originated from the old farms' boundaries that characterized Brooklyn in the seventeenth century; others acquired theirs shape after the 1834 when the first city plan was approved and land was divided into street, allays, blocks and plots. The disposition of the blocks within the grid relates to both 1834 city grid and to the 1874 extension city plan prepared for the new communities of Flatbush, New Utrecht, Flatlands, Gravesend and New Lots, which was based on an orthogonal arrangement of street blocks designed to adapt to the existing street layout (see section 9.1.1)

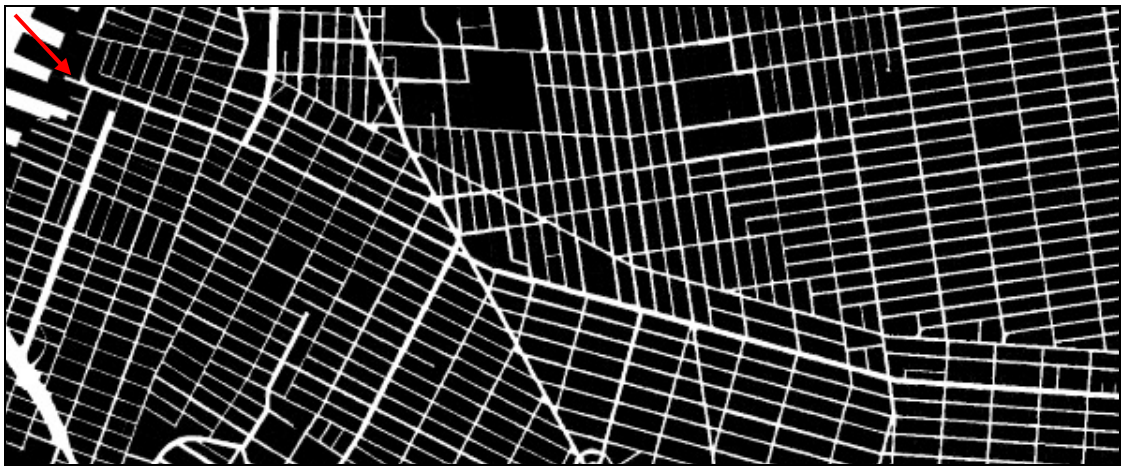


Figure 9.11. – Disposition of the block within the grid system
Source: MapPLUTO 2007

Along and nearby Atlantic Avenue both longitudinal blocks and transverse blocks were arranged (Figure 9.11): west of Court Street along Atlantic Avenue blocks have a north-south axis reflecting the first orientation that was given to the development; east of Court Street up to 4th Avenue blocks have an east-west orientation; east 4th Avenue up to the end of the corridor one can visualize an alternation of transverse and longitudinal blocks, coming out from later city planning ordinances.

The dimension of the blocks varies extensively within the Brooklyn landscape and along Atlantic Avenue as well: from the East River to Court Street blocks are 450 long and 200 feet width, from Court Street to 4th Avenue they are approximately 600 feet long and 200 feet width while from 4th Avenue to Broadway Junction they become bigger approximately 800 feet long and 200 feet width. From Broadway Junction until the end of the corridor blocks show a different pattern and gets very small, approximately 380 feet long and 200 width. Variation in blocks dimension is related to the evolution of city plans and to the introduction of the zoning in 1916 which created a horizontal city.

Within the block, it is possible to identify several divisions - the lots and buildings - which will be analyzed separately in the next sections.

9.2.4. The lots

The lot is a significant element of the city grid, and today's intricate lot patterns result from a long process that can be reconstructed by examining the functions of past societies (Noizet, 2009, p. 56). This section aims to explore the actual physical layout of lots patterns along Atlantic Avenue.

The subdivision of blocks into lots along Atlantic Avenue and within the Brooklyn landscape in general does not display a predefined and standardized lot division. However, lots vary considerably in size, and they disclose diverse patterns as a result of historical sedimentation.

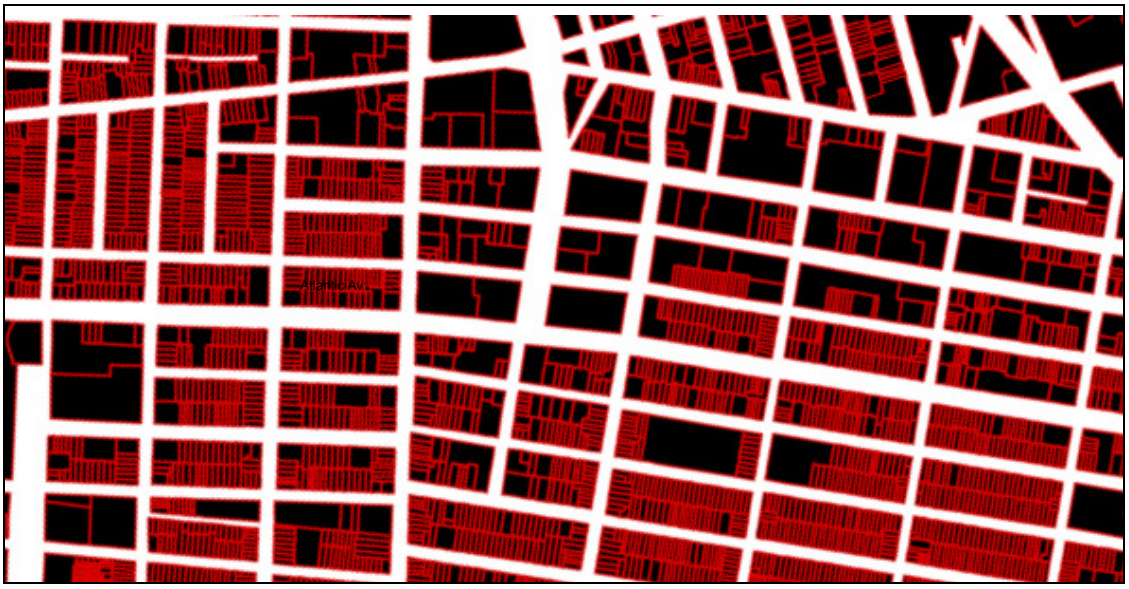


Figure 9.12. – Subdivision of blocks into lots
Source: MapPLUTO 2007

Figure 9.12 shows the disposition of the lot pattern within the blocks, and the variety of lot arrangement along Atlantic Avenue and Brooklyn. Broadly, similar lots' layout tends to cluster in the same areas or nearby, as an expression of one particular historical period and seems to differ substantially from their arrangement located in other portion of the Avenue.
Table 9.1 displays some information about lots size along Atlantic Avenue from the East River to Van Wyck Expressway, one block north and one block south of the street.

Table 9.1. – Lot information, Atlantic Avenue

	Total	Average
Lot area	25961897	3582,93
Lot front	226968,8	31,32
Lot Depth	714331	98,58
Number of Buildings	7501	1.04

The average lot area is 38581 square feet, with an average lot frontage of 31.32 feet and an average lot depth of 98 feet. On average, each lot contains one building, however there are also bigger lots containing 3 or 5 buildings (30 more or less along the avenue), and lots containing more than 50 buildings, such as the one located on Cypress Hills.
The disposition of the lot within the blocks is very assorted along Atlantic Avenue and in Brooklyn and many lot patterns can be identified. The most common example of block subdivision along the Avenue is into 50 lots, of which 25 lots face the two longest sides of the block. In a block oriented north-south we might find on the west side of the block 25 lots and on the east side of the block another 25 lots. Very often corners of the blocks demonstrate the presence of lots with more than one frontage, especially along commercial streets like Atlantic Avenue. Nevertheless this system of subdividing block into 50 lots was not universal as we can also find 300 x 400 foot blocks oriented north-south where on the west and east side there are 5 lots and on the north and south side there are 10 lots, each 25x100 foot. Moreover there is a large variety of block subdivisions into different-sized lots. It is possible to find 25x100 foot lots but lots can also be bigger than that, 75x100 foot. Through the first half of the nineteenth century, when most of the buildings were built along Atlantic Avenue, the system of block subdivision of gridiron blocks used to be 25x100 foot lots (ordinary size of a lot), showing pattern of row house development. Actually, this standard, a determinant of the Manhattan gridiron, affected the design of row and

single family houses[26] and was characteristic of the tenement houses: overbuilding on the 25x100 foot lot means poor light and ventilation, whether for a single family or for tenements houses (Plunz, 1990 p. 61). For both the rich and for the poor, the lot standard was fixed on a single 25x100 gridiron lot: large row houses, namely brownstones, as well as tenement "housing"[27] were to be built within that standard.

The variety in lot size and arrangement relates also to the progress in housing reform, which necessarily goes back to the Tenement Laws and Housing Act[28], as well as to the action of real estate speculators who were likely to make more and more lots narrower rather than wider. Most of the building stock along Atlantic Avenue is made up of row houses and brownstone single family houses for the well-to-do and middle-class families, as the following section will describe broadly. However, numerous "old law" tenement houses were present too, in neighborhoods such as Bedford Stuyvensant, Brooklyn Heights, Cobble Hill, Williamsburg and Bushwick. In some cases they were built from scratch specifically for the poor and the working classes, while in other cases row houses were converted into three-family tenements to accommodate waves of immigrants that arrived in Brooklyn in the early nineteenth century. Unlike Manhattan's tenement houses these ones respected basic living standards[29] such as light and ventilation. The

[26] The row house is a building type that originated in Europe in the late 17th century to exemplify a row of identical houses sharing the side walls. The first and last of these houses is called an *end terrace*, and is often larger than those houses in the middle. A distinct type of row house in New York is the brownstone.

[27] The tenement house was built by the necessity to maximize densities within the constraints of the 25x100 foot building lot system. The 25 foot width of the tenement was dictated by practical structural constraints such as the maximum spans of wooden floor and by the prevalent practice of building only in single lot increments. The height of the tenement was five to six stories. The long tenements were called railroad flats because the rooms were organized like cars on a train.

[28] There were three housing Act: the 1867, the 1879 Act, and the 1901 Act. The First Tenement House Act (1867) required fire escapes and a window for every room, the Second Tenement House Act (1879) required that windows face a source of fresh air and light, not an interior hallway. An amendment of 1887 required privies interior to the building. The failures of the Second Act - the air shafts proved to be unsanitary as they filled with garbage, bilge water and waste led to the 1901 "New Law" and its required courtyards designed for garbage removal (for more information see: Jacob Riis, *How the Other Half Lives: Studies Among the Tenements of New York*, New York, Scribners, 1890)

[29] Old Law Tenements are tenements built after the Tenement House Act of 1879 and before the New York State Tenement House Act of 1901.The Old Law Tenements are commonly called "dumbbell tenements" after the shape of the building footprint: the air shaft gives each tenement the narrow-waisted shape of a dumbbell, wide facing the street and backyard, narrowed in between to create the air corridor. The new tenement buildings were built to allow natural light and air in every room, the rooms were wider in the front and back and narrow centers to allow air shafts to be built in the center to let in necessary light and ventilation. Higher-end tenements typically had 4 units per floor, with indoor toilets in the center of each floor, along with the stairwell. Most higher-end units had three rooms, with a living room in the front or rear, and bedrooms open to the air shafts, each successive room being reached by passing through another room. The living room contained a tub and cold water, and a chimney or flue for a coal stove for heating and cooking. Many of these buildings had four residential floors rising above retail stores on the ground floor, and were often on mixed commercial blocks. In 1929, the Multiple Dwelling Law mandated that all tenements be upgraded to replace outdoor privies with one indoor water closet for every two families, and fire safety standards, such as sprinklers and better fire escapes were implemented.

improvements in housing design brought modifications in the lot layout and in the buildings' interior which were reflected in a different disposition of lot within the blocks.

During the Depression many of the deteriorating wood frame tenements were torn down and beginning in the 1950s modern housing projects removed many more tenement blocks, making changes at the level of the block pattern. However it is still possible to identify some former "tenement layouts", especially in Bedford Stuyvesant where most of them have been reconfigured as desirable coops, condos and rentals. Consequently the lot size has expanded and the lot pattern changed again showing different internal layouts. Once the land is divided into separate lots whose size had originally been determined by the traditional single family residence or row houses, the assemblage of such lots into parcels suitable for larger or smaller buildings offered a new field for money speculation. The subdivision of blocks into lots is in fact related to a complex system of property value, which was defined in order to facilitate the land subdivision, alongside compensations, exchange and transfer of rights between old and new property owners.

9.2.5. The building

Buildings together with lots constitute a fundamental element of the townscape: they express how society changes and accommodates social changes. By looking at the urban fabric it is possible to notice that the footprints of the buildings at ground level match exactly with the lot area. The blocks once divided into several lots sustain several buildings by occupying the entire lots. This means that there is no wastage of land and each block was divided into different lot sizes; thus these last ones corresponded to individual buildings, which corresponded as well to individual properties. Most of the buildings along Atlantic Avenue were built between 1800 and 1920. The majority of them were three and four story masonry buildings with vibrant Victorian storefronts on the ground floor and residential units on the upper floors. As shown in Table 9.2 the average number of floors per building is 2.14 with an average of 3.24 units per building. Building front is 22.45 feet and building depth is 43.43 feet typically.

Table 9.2. – Building information- Atlantic Avenue

	Total	Average
Building Area	32314206	4459,59
Building Front	162641,3	22,45
Building Depth	314719,9	43,43
Number of Floors	-	2,14
Total Unit	23513	3,24
Year Built	-	1923

Table 9.2 shows that the average year of construction is 1923: the oldest buildings are located at the beginning of the corridor in old neighborhoods such as Brooklyn Heights, Fort Green and Bedford Stuyvesant: 24% of the buildings stock, located in the first part of Atlantic Avenue, was built around 1890-1900; 36% of the building stock, located east of 4th Avenue were built between 1901 and 1910 and 24% of them between 1910 and 1920.

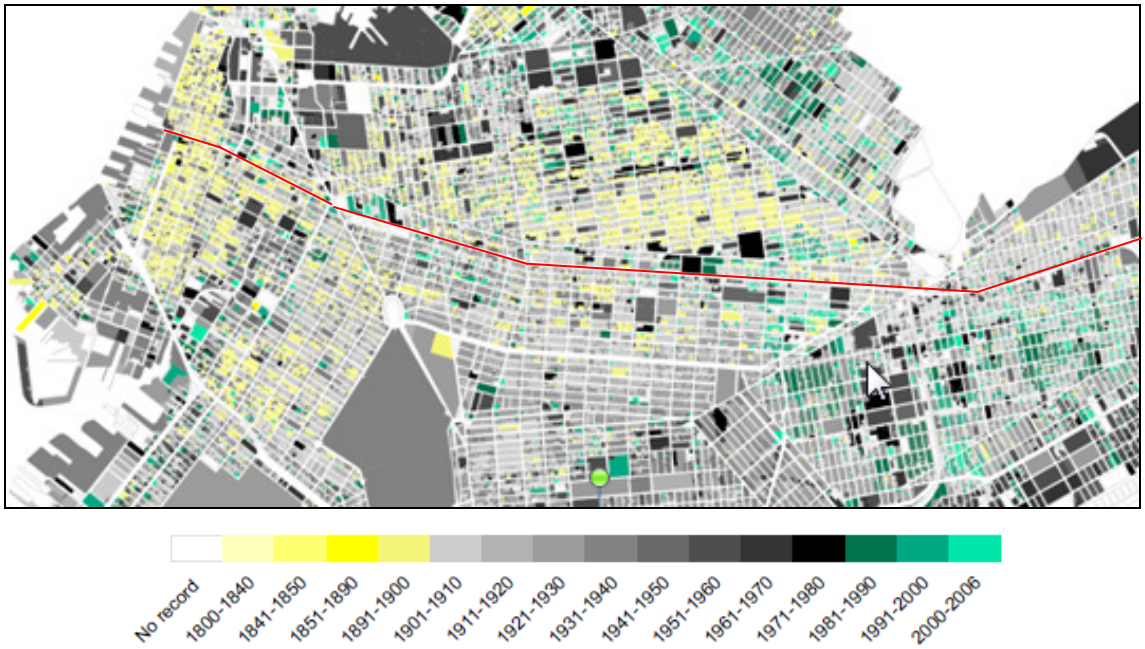


Figure 9.13. – Year buildings were built along Atlantic Avenue by average date per block
Source: MapPluto 2007

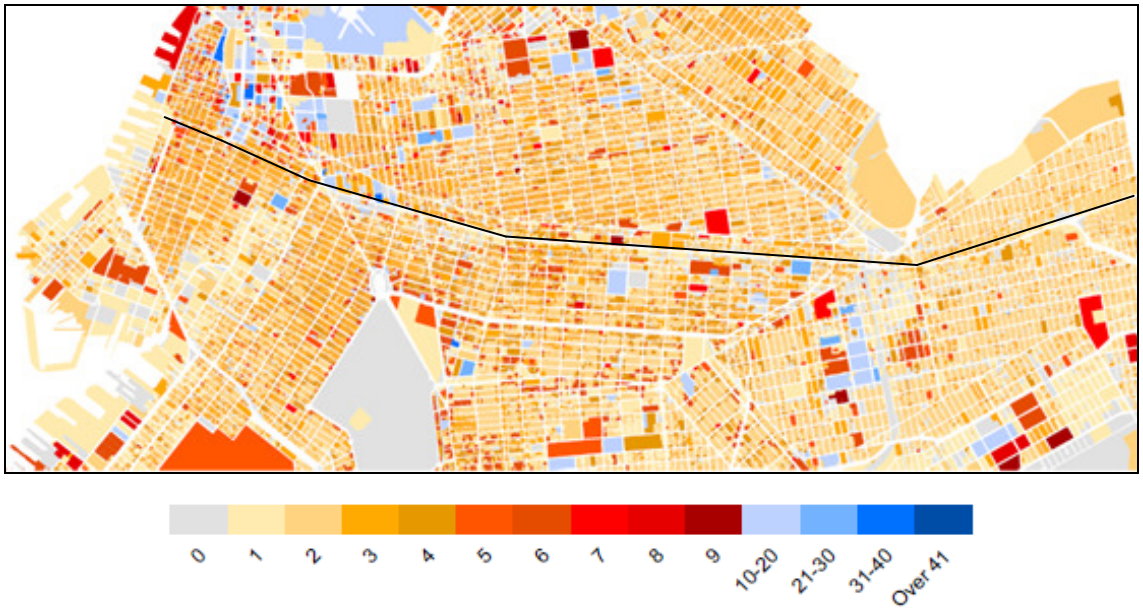


Figure 9.14. – Number of buildings' floors along Atlantic Avenue
Source: MapPluto 2007

According to the MapPLUTO dataset at a whole, more than 50% of the buildings were built around 1901-1910, which seems fairly late considering the historical information and the historical maps showed before which assigned the origin of the building stock to an earlier period, around 1820-1840 (Holt, 2006, Lockwood, 2003).

Most of the buildings in the first stretch of Atlantic Avenue, from Hicks Street to Washington Avenue, are three-to-four story brick buildings (there are 382 of them), while in the second part of Atlantic Avenue the majority of them are two-story (there are more than 3651 However three-story buildings (944) are frequent too (Fig. 9.14). The low scale of building stock relates to Brooklyn peculiar building type.

The development of Brooklyn's building stock began when regularly scheduled ferry service started between Brooklyn and Manhattan. The area began to growth in the 1820s when Henry Street was opened south of Atlantic and the first newcomers built suburban mansions on spacious grounds on the blocks west of Henry Street to enjoy the dramatic view of New York. In 1820 wooden and brick houses painted white with green latticed blinds on the outside dotted Brooklyn Heights. By 1830 the small estates were broken up into building lots for row-house and in 1830 and 1840 Greek revival row houses filled many blocks of Brooklyn Heights and in the surrounding neighborhoods. Although row houses construction appeared strongly in the 1830s and 1840s, it was not until the 1850s that the area gained a certain appearance; before that time, group of row houses stood in open fields as detached dwellings.

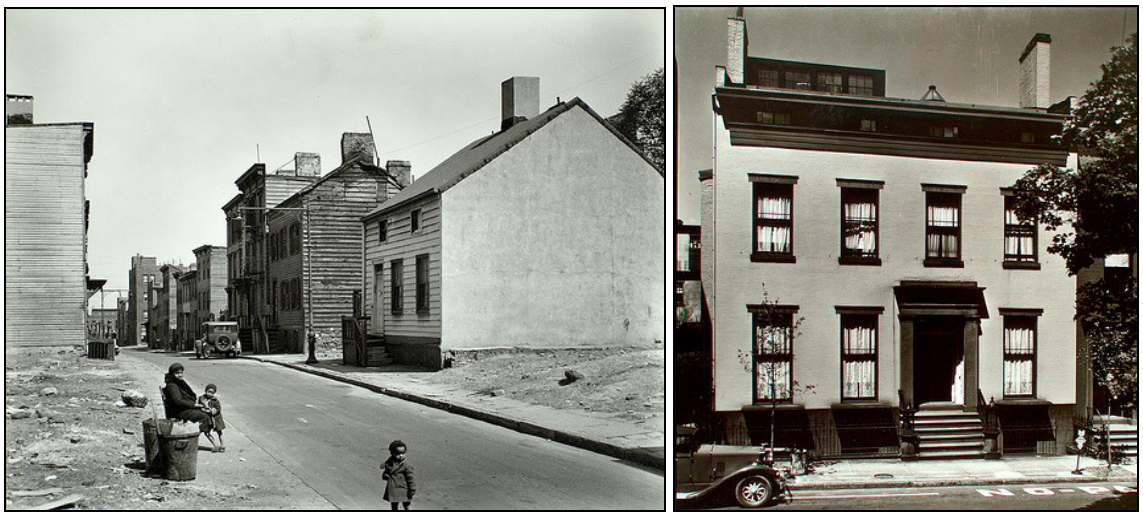


Figure 9.15. – Row houses in Brooklyn
Source: New York Public Library, date unknown

In 1834 when the grid street pattern was imposed from Atlantic Avenue south to Butter Street, now Kane Street, the construction of row houses extended beyond Atlantic Avenue in the

surrounding neighborhoods. By 1880s to 1890s the area rapidly expanded as a result of improvements in railroad transportation as well as the opening of the Brooklyn Bridge. During the late nineteenth century and beginning of the twentieth century Brooklyn was the home of thousands of middle-class families who lived in comfortable, architecturally undistinguished row houses and countrified mansion along ordinary streets. *Our architectural greatness, wrote Walt Wiltman in the early 1869 consists in the hundreds and thousands of superb private dwellings, for the comfort and luxury of the great body of middle class people*" (Lockwood, 2003). Row house construction in the traditional single-family mode and in the modest two-family patterns for working and middle-class families continued in Brooklyn on a large scale until the 1920s. The row house form was ideally suited to meet the needs of a quickly expanding middle-class population, the plotting of land and the method of speculative development. A simple form, it allowed efficient use of the standardized lot while still permitting individual ownership. The refined simplicity of the row house, with only slight modifications, could reflect the wealth of the owner. At the beginning of the twentieth century in order to satisfy the need of an increasing immigrant population tenements were constructed and many row houses were converted into this building type. Between 1906 and 1915 more than 10.468 tenements in Brooklyn were erected, 47% of the total tenements in New York. Between 1912 and 1915 tenements were erected in all parts of the borough: Park Slope, Flatbush, East New York, Brownville, and Brooklyn Heights. Although they were mostly "new law tenements" and respected basic standards, the density per acre and per lot was extremely high. The average density of tenements erected in Brooklyn in 1915 was 724 people acre; in 1912 tenements were housed at an average density of 643 people per acre; in 1913 tenement density was 650 people per acre, in 1914 it was 697 people per acre while in 1915 tenements density was 724 people per acre (Tenements House Committee, 1916).

Figure 9.16. - Brownstones built in the 1890s as one family residence and converted into multi-family buildings for the poor
Source: Reynolds, 1893

In order to accommodate as many people as possible the height of tenements increased considerably -the number of four story tenements increased from 58% in 1912 to 71% in 1915- from an average height of 3.5 in 1912 to an average height of 3.8 stories in 1915.

Table 9.3. – Height of the tenements erected in Brooklyn, Years 1912-1915

Year	2 stories	3 stories	4 stories	5 stories	6 stories	Total
1912	36	418	379	21	30	884
1913	83	227	425	22	23	780
1914	31	188	334	24	31	608
1915	10	205	375	10	41	641

The number of apartments per building has remained practically constant in the two- tenements and three-story tenements but it has increased in the four, five and six story tenements; the average four story tenements erected in 1915 contained 56% more apartments than that erected in 1912 and the average number of apartments per tenement was 9.4 in 1912, 11.2 in 1913, 14.2 in 1914 and 14.7 in 1915 (Tenements House Committee, 1916)..

Figure 9.17. – Tenements housing
Source: The progress of housing reform, 1916

Through the erection of higher and larger tenements, the construction of smaller apartments, and the use of a greater percentage of the lot areas, the vast majority of people living in six story apartment in Manhattan were not housed anymore densely than the people living in a four story tenements in Brooklyn: people were housed at as great densities in Brooklyn as in Manhattan. Of the 150,054 families housed in new buildings in Brooklyn from 1906 to 1915, 8.8% were accommodated in one family dwelling, 31.2% in two family dwellings and 60% in tenements.

Table 9.4. – Dwellings and tenements erected in Brooklyn. Years 1906-1915

Year	One-fam. Dwellings	Two-fam. dwellings	Tot. Dwellings	Tenements	Total	Tenement New York
1906	1035	2988	4023	1694	5717	3774
1907	817	3144	3961	1790	5771	3471
1908	724	2958	3682	631	4313	1430
1909	1421	3159	4580	603	5183	1676
1910	1874	2966	4840	1285	6125	2698
1911	1682	3005	4687	1612	6299	2934
1912	1204	2152	3356	884	4240	1885
1913	1814	1007	2821	780	3601	1794
1914	1230	966	2196	608	2804	1242
1915	1299	1020	2319	614	2960	1365
Total	13100	23365	36465	10501	47013	22269

Source: Tenements House Committee, 1916

Along Atlantic Avenue single-family houses and tenement buildings coexisted with mixed residential-commercial buildings, manufacturing buildings, walk-up apartments and vacant lots, showing a variety of different building types. This is visible from Figure 3.18.

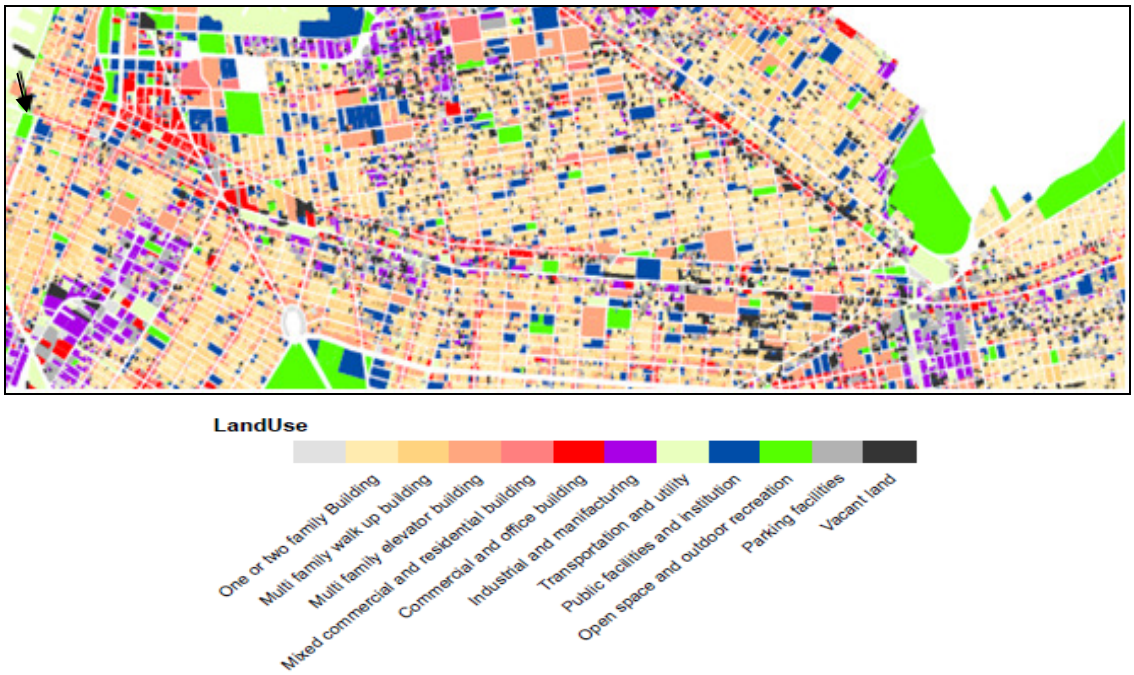


Figure 9.18. – Major Land uses along Atlantic Avenue
Source: MapPLUTO 2007

It is however possible to distinguish a predominance of mixed commercial-residential buildings in the first part of the Avenue (from the waterfront to 4th Avenue), a domination of manufacturing buildings and service stores from 4th Avenue to Broadway Junction and single-family houses in the final part of the corridor thus testifying both the urban and suburban character of the street.

The low scale of Brooklyn's building fabric is closely connected to the 1916 Zoning Plan of New York -better known as zoning ordinance[30]- and its attempt to create outside of Manhattan the horizontal city, a city characterized by neither the towers nor the tenements of Manhattan (Bressi, 1992, p.28). In fact, the 1916 zoning resolution provided a framework for Brooklyn expansion which functioned as a control mechanism regulating height, use, size and arrangement of buildings. One of the most pressing concerns of Brooklyn neighborhoods was to preserve the side street for residential use, protect single-family homes and housing height, and the sanctity of existing residential areas by imposing restrictions on uses and promoting low density

[30] Zoning is a regulatory device that attempts to control the manner in which land is developed. It determines both the types of uses that will be permitted in a certain area as well as the configuration of the allowable uses. The aim of the ordinance sets the design control for building height and land uses. Focusing here on aspects of the resolution for certain tall buildings, it is possible to argue that it produced what could be called a new horizontal city,

neighborhoods. The down-zoning activities were most intense during the boom years of the mid-1920s, when the boroughs of Brooklyn and Queens were expanding.

Nevertheless, in spite of the efforts of promoting low density development and single family houses, much of the 1916 city was filled with apartments. With the spread of the elevator large areas of the borough saw the emergence of middle-income elevator buildings, that were virtually no taller than the new law tenements, which coexist with single-two family houses especially in areas at the edge of the influence of transit, as with Atlantic Avenue.

9.2.6. The façade

In spite of the uniformity of the building patterns, building's façades vary according to details of design, materials used and style. Most of the row houses and tenement buildings along Atlantic Avenue were built in predominantly Federal, Greek Revival and Italianate styles. However, today it is often difficult to identify the original architecture style as historical stratification has made the façades of the buildings a collage of various styles which now coexist. The importance of studying building façades relates to the fact that they express building age and manifest people's desire to be fashionable, thus offering an important contribution to the understanding of different type of houses and the diverse character of neighborhoods on the whole. In the following lines a brief description of the main features of the architecture styles row houses are presented and current photographs are shown to display the present façades along Atlantic Avenue.

The federal style (1800-1835)

The basic form of the federal style has its roots in English Georgian architecture. In elevation and plan, Federal Period row houses are quite modest. Characterized by classic proportions and almost planar smoothness, they are ornamented with simple detailing of lintels, dormers, and doorways. Usually two to three stories high, three bays wide, with steeply pitched roofs, houses were of load bearing masonry construction. The modest scale and simple materials of the early row house were responses to the standardized lots, the influence of the English example, and the new fire codes regulating materials. Their relative uniformity in plan and elevation, and the simplicity of ornamentation produced neat and regular rows. The brick facades were laid in a Flemish bond which alternated a stretcher and a header in every row. On early examples of the style, the brick was sometimes painted, often in red or gray. The basic form was frequently modified to provide commercial use on the ground floor and residential above.

The interior of the row house was as modest as the exterior. The width of the house was dictated by the lot size and the depth was dictated by the need for proper light and ventilation. Twenty to

25 feet wide, row houses were usually only two rooms deep, which insured adequate lighting and ventilation. The extra portion of the rear lot could be put to use as a garden. The basement location of the kitchen was a practical measure. The main entrance, raised above the cellar by a low flight of stairs, led directly into a stair hall. The stair, usually placed to the rear of the hall, led to the second floor bedrooms, with the first floor containing the public rooms of the house. These public rooms, a rear and front parlor, could be made one room by opening wide folding doors which typically separated them. Flexible furniture arrangements were necessary to create the flow of space. Dining rooms were usually placed in the front room of the basement level. This arrangement not only allowed quick table service from kitchen to dining room, but also kept the parlors free from bulky tables and chairs (Lockwood, 2003).

As servants and the installation of dumbwaiters became more common, the dining room was often moved upstairs to the rear parlor. As reported in the report *RowHouse Style (2005)* from the New York City Landmarks and Preservation Commission, the main features of the federal style are:

- *Usually two-three story high with basement and attic; the third floor with dormer windows*
- *Modest in scale*
- *Simple architectural ornaments inspired by ancient Greek and Roman arch.*
- *Red brick laid in Flemish bond*
- *Brick or stone basement level foundation with windows*
- *front areaway with simple iron gate*
- *Doors had six or eight panels and usually had a top light and side-light window double hung six over six*
- *Wood windows*
- *Parlor floors separated by rectangular double doors*
- *Wood burning fireplaces*
- *Classical wood cornice with dentils, modillions and moldings.*
- *Metal peaked roof*
- *Low stoops with fence, handrails and newels*

The Greek Revival Style (1835 1855)

The Geek Revival style was the culmination of an interest in Classical antiques which emerged in the middle of the 18th century. Although Greek Revival row houses were similar to the Federal one, relying on proportion, handsome material, modest ornaments of the classical tradition, the revival style tried to evoke an association that stimulated emotions. In fact, it rejected the idea

that forms were beautiful only in themselves, accepted the Romantic Movement's concept that forms were beautiful for the emotions they evoked. The Greek revival was the style for nearly all New York houses from the early 1830s to the late 1840s, when the Romantic Movement emerged. *Greek Revival row houses "had red brick façade set off by brownstone of white marble trim and relies on the contrast with these materials and on the pleasing proportions of the street front and its parts for the architectural effects"* (Lockwood, 2003, p.60). It expressed simplicity of forms and ornaments; the most popular motifs were the Greek key, the acanthus leaf, the meander, floral forms and geometric cones.

In New York the Greek Revival style row house of the 1830s and 1840s, "*had the same floor plan that evolved in the 1820s- in the basement there was a dining room in the front and a kitchen in the back; on the first floor there was parlors, one used as a formal dining room and on the upper floors there were bedrooms and servants' rooms* (Lockwood, 2003, p.70). The ground floor that was occupied with shops had doors all along its facade. The first floor had long balcony windows (French windows) with precious cast iron railings while the second and third floors differed in their windows sizes and decoration. These ones were much smaller and ornamented with a small keystone on the summit of the curved lintel. Then, a simple stone cornice sustained the double Germanic roof supports. At the first level, there were windows with the exact treatment of the two floors underneath it, and on a second level, there were dormer windows with their respective pediments. Distinguishing the corner pilasters was masonry work, and decoration to all windows. As reported in the report *RowHouse Style (2005)* from the New York City Landmarks and Preservation Commission, Greek revival's main features are:

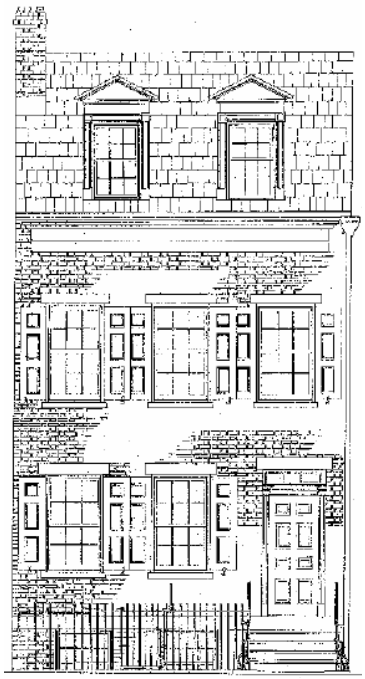
- *Simple and bold architectural elements, imitating Greek motifs*
- *Three to three one-half stories high with basement, sometimes with an attic*
- *Vertical paneled wood door- grand entrance pilasters*
- *Greek pillars surrounding the door or entranceway or both*
- *Smoothness of the facade and a repeat of the design*
- *Minimization of brick mortar joints*
- *Stoop of medium height with cast iron handrails, fence and newels*
- *Brownstone base with brick upper façade (laid in English bond)*
- *The half story had smaller attic windows just under the cornice*
- *Cornice usually had a tooth like pattern- wood detailed cornice*

The Italianate style (1840-1870)

The Italianate style was popularized in the United States in the 1840s as an alternative to Gothic or Greek revival styles. However it was between 1860 and 1870 that the Italianate style became the most popular design in the United States. Its popularity was due to the variety of construction materials which could be utilized for this style, which then was a good fit for a wider range of affordability. It is distinctive by its pronounced exaggeration of many Italian Renaissance characteristics such as the eaves supported by corbels, low-pitched roofs barely discernible from the ground, or even flat roofs with a wide projection. The most easily spotted feature of Italianate architecture is the deep set eaves with many brackets seeming to hold the eaves up. Other details include round-topped windows and doors. Some include a tower or cupola in the design and many sported porches topped by balustrade balconies (Lockwood, 2003).

Italianate house plans are usually two or three stories high with low pitched hip roofs. Despite the federal style it is characterized by elaborate, bold ornaments with an emphasis on repetitive forms. Over hanging eaves are generally wide (at least two feet) and are supported (in appearance) by decorative brackets or corbels usually grouped in pairs. Exterior finishes can be seen in brick, stucco, and siding, making Italianate house designs very flexible. As reported in the report *RowHouse Style (2005)* from the New York City Landmarks and Preservation Commission, the main features of the Italianate style are:

- *Elaborate bold, projecting ornament with an emphasis on repetitive forms*
- *Two to four stories high with brownstone basement*
- *Full brownstone façade*
- *High and wide stoop with elaborate cast-iron handrails, balusters, fence and newels*
- *Deeply recessed doorway with heavy protruding door hood and console brackets*
- *Round-headed double-leaf doors with heavily molded arched panels*
- *Large double-hung two-over-two or one-over-one wood windows, sometimes with casement windows*
- *Heavy, projecting stone window lintels and sills or full window enfacements;*
- *Heavy, imposing, projecting cornice embellished with moldings and supported by rectangular or scroll shaped brackets.*



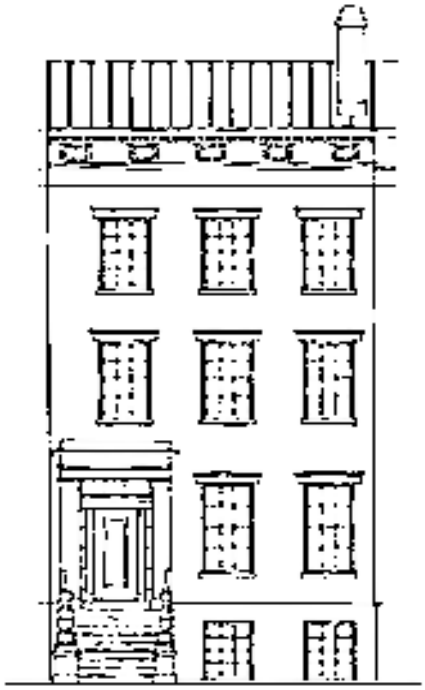
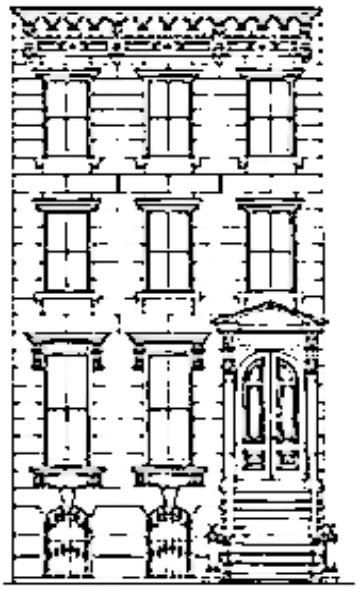


Figure 9.19. – Federal style row house **Figure 9.20. – Greek Revival row house**
Source: Row house Manual, New York City Landmarks Preservation Commission

Along Atlantic Avenue (from 4th Avenue until VanVyck Expressway) it is possible to identify also detached one-two family houses and-semi detached homes, suburban residences that were created to support the railroad suburbs. Considering the length of the street it is possible to identify more than one architecture style, but the predominant one seems to be the colonial revival style, which is the most popular housing style in United States.



9.21. – Italianate style row house **Figure 9.22. – Colonial Revival style**
Source: Row house Manual, New York City Landmarks Preservation Commission

The following section is a personal report explaining the present urban character of Atlantic Avenue, supported by photographs of the major building types as an evidence of the variety of the landscape and the historical stratification of the townscape.

9.2.7 Streetscape character

From the East River to Washington Avenue: gentrification

From the East River to Washington Avenue the street is characterized by a variety of uses. From the waterfront to Court Street the landscape is dominate by a concentration of restaurants and secondary retail stores as well as residential buildings with stores on the ground floor. The type of restaurants and stores, predominantly boutiques, vintage shops and biologic supermarkets, denotes an upscale area. Between Clinton Street and Court Street it is possible to see memories of the past when the street was known for Middle Eastern stores. One block west we can recognize some old stores that used to sell antiques or stores such as ”Make a Frame” or “Bicycle”. Most of the buildings are row houses with Victorian storefronts and all with renovated façades. Sidewalks are well maintained, there are garbage bin and many people walking on the street. As soon as we move east, the building stock changes and becomes dominated by huge new complex buildings, such as the House of Detention, the Nu Hotel that contrast significantly with the previous part of the street, mainly dominated by old residential houses. At the intersection of Atlantic Avenue with Navis Street the corridor breaks because of a parking garage on the south side of the street, but then red brick houses and new buildings can be seen again. There are a lot of people around, especially young couples, mothers with children and sometimes seniors, but the area is populated by young. The main activity is shopping and window-shopping: there are cars on the street but they do not disturb; it is very nice to have a walk. Sidewalks are large and at the edge they have trees that tend to separate and protect pedestrian’s activities from the traffic and cars. Stores are upscale and expensive. As soon as we get closer to 3rd Avenue, both the number and the quality of retail stores decreases; there are more service-oriented retail stores and fast-food-style retail as well as empty stores. At the Atlantic Terminal Station the street becomes busy with a lot of traffic. From this point up to the end of the corridor the atmosphere changes completely and there is a break with the cityscape seen before; it is hardly possible to see houses with storefronts and the landscape is much deteriorated. At the crossroad between Atlantic Avenue and 4th Street, where the Atlantic Terminal Station is located (mall) there is a lot of confusion, traffic is intense and the amount of people crossing the street, getting out of the subway station, grabbing food at the street vendors is immense. The street bustles with people, cars, and trucks making it hard to cross. From 5th Street up to the end the

side of the street is dominated by big blocks and storage buildings, as well as car repair shops. The southern part of the street is the site of the Atlantic Yards Project. This part of the corridor has secondary services and secondary retail stores, such as law offices or car repair as well as gas stations. There are no restaurants, nor row houses, but only a big building, perhaps a public housing complex. The condition of the street and sidewalk is very bad and the street starts to get pedestrian unfriendly.

Figure 9.23. – Buildings along Atlantic Avenue from the East River to Washington Av. Source: photograph of the author

From Washington Avenue to New York Avenue: auto oriented culture

From Washington Avenue to Franklin Avenue, Atlantic Avenue is dominated by auto and storage related uses, with many car repair shops as well as large storage warehouses dotting the landscape. Some of the buildings have second stories, and look like offices. There are gas stations scattered throughout this area. Atlantic Avenue in this section acts as a conduit for through traffic moving east and west. Between Franklin and Classon there is an elevated subway line. This is the Franklin Avenue Shuttle which connects the A,C, 2, 3, 4, 5, B and Q lines. It is noteworthy because it is only one track and has a short shuttle service, consisting of only two-car trains and one track. West of 4th Avenue, old factories and warehouses have been turned into chic condominiums and boutiques; in this poorer area, east of 4th Avenue there is a number of large warehouses and gas stations. Once the LIRR railroad becomes elevated in the middle of the avenue there are more vacant lots as well as structures that seem hostile to the street. Cars in this area appear to speed up as they arrive at the elevated section of the railroad. Nostrand Avenue is the next large intersection and had many different shops (food and clothing stores). The elevated Nostrand Ave LIRR stop is located at this intersection. It is worth pointing out that Nostrand is lined with shops all the way up and down the street, whereas Atlantic only has stores at the corners of Nostrand and Atlantic Avenue. At the corner of Brooklyn Avenue and Atlantic

Avenue, a rug and photo frame dealer showed his wares in what looks like a makeshift storefront. His store is across the street from several gas stations. Throughout the area, there are a number of what appear to be unofficial businesses selling a variety of goods. A number of these outdoor shops construction worker clothes, perhaps a sign of an occupation of a portion of the residents. A small historic district consisting of Alice Court and Agave Court are among the few places on this stretch of Atlantic Avenue that feel warm and inviting. Past this area, Atlantic is a mix of open lots, parkland, car related uses, storage warehouses, and a stray apartment building or row house. Near the corner of Buffalo Avenue stands the only large apartment house on this stretch of Atlantic Avenue with its elevated train. It is a new 150-unit affordable housing complex, completed in 2009. The elevated median section of Atlantic Avenue ends at Dewey Place. From here eastwards Atlantic Avenue has more housing than does the elevated section. It also has suburban-style shopping interspersed. At the intersection of Thomas Street and Boyland Street, there is a Jamaican beef patty factory. This sits kitty-corner to the Mitchell-Lama housing complex. This section appears to have a lower density than areas to the west. There is also some new constructions in this neighborhood. This type of architecture has been criticized because the curb cuts create an uninviting pedestrian environment. This type of development is also known as “Fedders” buildings because of the ugly Fedders air-conditioner signs that are emblazoned on the air conditioning units in buildings like this. At Eastern Parkway, the LIRR elevated structure re-emerges. This corner has an interesting juxtaposition of uses on each of the four corners. The NE corner has newly built affordable housing, the NW corner has a tenement with a deli on the bottom, the SW corner has a new apartment house, and the SE corner has a large church. Past this area, Atlantic becomes forbidding. Here, there are many empty lots and there is a lot of garbage on the street. Also, the LIRR viaduct is built in a way that makes crossing the street possible at only a few intersections. A large stone wall prevents crossing from the north to south side of the Avenue. Throughout this section of Atlantic Avenue, there is a lot of hostility towards pedestrians: the sidewalk is narrow, multiple signs on properties warning of guard dogs, the elevated subway makes the area seem dark; there is much trash strewn in the street and no garbage cans; few people are to be found on this walk.

Figure 9.24. – Buildings from Washington Avenue to New York Avenue
Source: photographed by the author

From East New York Avenue to Van wick Expressway

From New York Avenue up to the end of the corridor the space is characterized by the public transport and railroad overpass crosses. The major businesses are car service and warehouses which project a typical industrial pattern. East New York is an intersection of several routes and the transit infrastructure makes the area a heavily industrial one. Pedestrian access is very difficult, sidewalks are dirty and harsh for pedestrians, there is no sign of public spaces but most of the space is occupied by car services and warehouses, so this area may be characterized as an industrial one. If one moves farther west can see some fast food and drive in shops, although car services and warehouse are still present. A characteristic of this part is the brown-brick public housing projects, perhaps going back to the post war era and abandoned factories, which are quite visible. Some look interesting in terms of architecture and preservation. Although access is still not friendly, but for the first time one sees a lined crossing access at Schenck Avenue intersection. For the first time we see a children's playground which is a sign of community life. A cash machine on the side walk is also an indicator of the change in the harsh industrial trend of the avenue. At the intersection with the Rockaway Boulevard, it is possible to see nice housing for middle class workers and for the first time we see a house with a front yard facing Atlantic Avenue. In this section of the corridor, sidewalks are nice and clean. Pedestrian access becomes better and for the first time we can see a playground for teenagers. We arrive at the Pathmark shopping center, big enough to serve the size of a larger suburb town around. From 110th Street up to the end the street the street looks more suburban and car oriented as well as desolate. The road bends and narrows around 137th Street, transitioning into an area with a many businesses catering to the large Hispanic, Latino, and South Asian immigrant population in Richmond Hill. Also present in this stretch leading up to the Van Wyck Expressway are, again, a number of car-

related businesses such as auto repair shops and a car auction warehouse. The Van Wyck Expressway itself is a formidable barrier that separates industrial Richmond Hill from the residential neighborhoods visible across the highway.

Figure 9.25. – Buildings along Atlantic Avenue from New York Avenue to Van wick Expressway. Source: photographed by the author

CHAPTER TEN:
MORHOLOGICAL ANALYSIS — PHYSICAL TRANSFORMATIONS

The present chapter aims to identify physical changes that occurred in the built form of Atlantic Avenue which have taken place over time. The analysis refers precisely to the period between the beginning of the twentieth century and today and relies on the use of two sources: the Atlas of the City of Brooklyn (1911) and MapPLUTO 2007. Considering the length of the street, this part of the research takes into consideration transformations that happened within the western portion of Atlantic Avenue exclusively and that concern the physical character of its townscape elements as well as the patterns of land and building utilization. The chapter builds on the review of Atlantic Avenue's formative processes, such as those of accumulation conducted in the previous chapter, and will focus in depth on the transformative processes which enable these changes to occur.

Considering the townscape as a collection of physical structures reflecting social and cultural conditions, and, as the continuous visual self-identification of the community in its inherited habitat (M.G.R. Conzen, 2004, p. 260), an investigation was undertaken which aims to recognize transformations that occurred both in the physical structure and in the socio-economic context.

In order to analyze physical changes various surveys were undertaken that classify the distinct dimensions of physical change:

- Two maps of different periods (Atlas of the city of Brooklyn 1911, MapPLUTO 2007) were geo-referenced and overlaid; this procedure provides information about how the original urban form and its elements have changed;
- Old photographs of buildings along Atlantic Avenue were compared to recent photographs taken by the author. Such comparisons reveal alterations in building height, façades, materials and architectural style;
- Zoning regulations, special zoning allowances and historical records were consulted. This allows understanding how the land has been controlled and which measures of preservation were applied within the study area;
- Field observations were included.

To complement the physical analysis of Atlantic Avenue, a second examination was undertaken with the aim of identifying changes in the cultural structure of society:

- Retail activities by type were mapped for two selected periods (1977 and 2009) and then compared. For this purpose the Brooklyn City business Directory 1977 and Reference USA 2009 were consulted, stored into a dataset and geo-coded. This

procedure allows changes in the functional requirements of society to be identified, investigating also the cultural patterns.

In order to detect changes, this research follows an isolated survey for each building and block within the section under consideration; nevertheless only selected blocks and buildings will be presented here where interesting transformative processes have been discovered.

Chapter ten is structured as follow: section one concerns the study of the physical changes and looks at the transformative processes, while section two investigates social and cultural changes within society by focusing on the examination of the retail businesses while section 10.3 explores the dialectic between persistence and change along Atlantic Avenue.

10.1. The Analysis of Atlantic Avenues' physical transformation

This section aims to analyze changes in the physical form of the western portion of Atlantic Avenue (East River to Flatbush Avenue) through the examination of town plan elements, namely, streets and street patterns, lots and lot patterns, blocks and the buildings arrangement within these patterns, and by discovering the morphological processes behind them.

Building fabric and land and building utilization, which are the other townscape's components (M.R.G. Conzen, 1961), are also investigated as important indicators of the degree of changes. Detecting changes within the townscape means reviewing the history of urban development and identifying which historical phases played a key role in shaping the urban form, demonstrating among other things town plan persistence in the face of various social transformations.

The twentieth century was crucial for the comprehension of Atlantic Avenue's urban form. In the late nineteenth century and again in the 1940s programs of land redevelopment (especially plans for rebuilding residential neighborhoods) experienced an intense phase in the United States and New York in particular. By 1940 the nascent city planning commission (La Guardia Administration) had laid out ambitious plans for rebuilding residential neighborhoods and the city's transportation infrastructure. All around the United States and especially in big cities, urban renewal involved the tearing down of buildings, the demolition of historical structures and the relocation of people. Consequent to Robert Moses' interventions, between the 1930s and 1970s, many neighborhoods were destroyed and replaced by freeways, expressways and public housing projects; new bridges were built and public parks were provided for dwellers, knocking down and renovating entire areas of the city. Only in the years following Robert Moses's mandate did urban renewal no longer involve massive clearance and instead facilitate neighborhood preservation and rehabilitation. In addition, small-scale efforts would be launched in many neighborhoods through community renewal programs. The impact of these interventions is conspicuous along

Atlantic Avenue, where elements of the town plan have changed to a certain extent, mainly due to transportation system improvements and projects of urban renewal.

10.1.1. The Street layout

Atlantic Avenue's street layout has maintained its original arrangement roughly; however two significant changes occurred since its formation: the avenue was enlarged and shaped as a car conduit for the majority of its length; the construction of the Brooklyn Queens Expressway caused modifications in Atlantic Avenue's urban morphology.

The construction of the LIRR in 1832, its improvements in 1897, with its subsequent extension and the opening of the subway station (1902) at the intersection of Atlantic Avenue and Fulton Street conferred on Atlantic Avenue the character of a transportation hub. It was only later on, in the 1920s, when the State of New York pushed its efforts at road building, and the Federal Government commenced the active financing of arterial roads that Atlantic Avenue was enlarged and developed into a real corridor avenue, a linear thoroughfare designed mainly for the circulation of goods and people. With the advent of the automobile the pressure for expanding pavements, first felt in 1880 with the rise of the use of safety bicycles, increased considerably as well as the need to enlarge the street. The shift from trolley to private automobile in the 1920s led to a rapid extension of hard surface roads and the increase in the use of car called for enlarging the road. As a result, a highway system developed to handle a greater and faster flow of traffic, and buildings were demolished to make room for the automobile era (Vance, 1990, p. 371).

In the western portion of Atlantic Avenue the construction of the Brooklyn Queens Expressway began in 1930 and ended in the 1950s, initiated by Robert Moses. After several revisions of the original plan, in 1943 a new definitive proposal was presented: it consisted of two-three line highways, one on top of the other, with a cover on the upper level to shield residents from some of the noise and fumes of the roadway. On the top of the street a public promenade was built, as Figures 10.1 and 10.2 show.

This project caused immense transformations in the urban form: many three-four story masonry buildings were lost, selected streets namely Columbia Street and Emmett Street, which ran perpendicular to Atlantic Avenue, were removed; the blocks were merged into superblocks, producing transformations at the level of the street footprint and modifications in the traffic flow.

Besides this intervention in the western portion of Atlantic Avenue, which affected the street layout, the Avenue's layout is otherwise not much changed.

Figure 10.1. – Brooklyn Queens Expressway
Source: Google Earth, March 7th, 2011

Figure 10.2. – Tripartite structure
Source: Long Island Exchange.com

10.1.2. The blocks

The city block constitutes the most obvious unit of a city's urban fabric and it is the non-public space for buildings within the street lines of a city.

Along the nine-mile Atlantic of Avenue, blocks have undergone some changes in their form, showing very different size and plot patterns. Nevertheless within the western portion of Atlantic Avenue they appear similar in size and the footprint of the block within the grid has not seen major changes since its development. The analysis, based on the overlaying of two maps (Atlas of the city of Brooklyn 1911 and MapPLUTO 2007), shows that blocks have broadly maintained their original size and the external footprint although a tendency towards superblocks has emerged since the 1940s. However, lot arrangement within the blocks has changed considerably.

10.1.3. The lots

Among the town-plan elements, the lot can be considered as the fundamental element of urban morphology, a *sine qua non* of geographical town-plan analysis (Whitehand, 1981, p.16). M.R.G Conzen was the first to observe in his study of Alnwick the persistence of town plan and the incredible resistance of its elements especially the plot patterns, arguing that only large capital expenditure such as railway constructions, modern developments or the creation of break-through streets could bring to the complete removal of the morphological frame (M.R.G. Conzen, 1960).

- **Brooklyn Queen Expressway**: The building of this expressway was described by Lewis Mumford as "*among the most satisfactory accomplishments in contemporary urban design*" (Stern, Fishman and Tilove, 2006, p.898). Prior to its construction the western

session of Atlantic Avenue was chopped into small blocks and lots full of residential commercial three-four story masonry buildings, as recorded in the Atlas of the City of Brooklyn. The construction of the expressway destroyed the morphological frame, caused a transformation of the *street configuration*, a *metamorphosis of the lot patterns* and a loss of *building stock,* and favored *superblocks development*. The metamorphosis of lots is a process by which lot patterns changed usually involving lot amalgamation[31] or division or truncation[32]. In this specific case both amalgamation of lots and lot truncation can be described (Fig. 10.3), and a new morphological pattern has appeared. Figure 10.3 resulted from the geo-referencing of the Atlas of the city of Brooklyn (1911) and overlaying it on the MapPLUTO 2007 map: the red lines identify modern plot boundaries (MapPLUTO 2007), while the underlying image describes old lot configuration (Atlas of the City of Brooklyn, 1911), showing how the lot pattern were merged in some cases and created new in others.

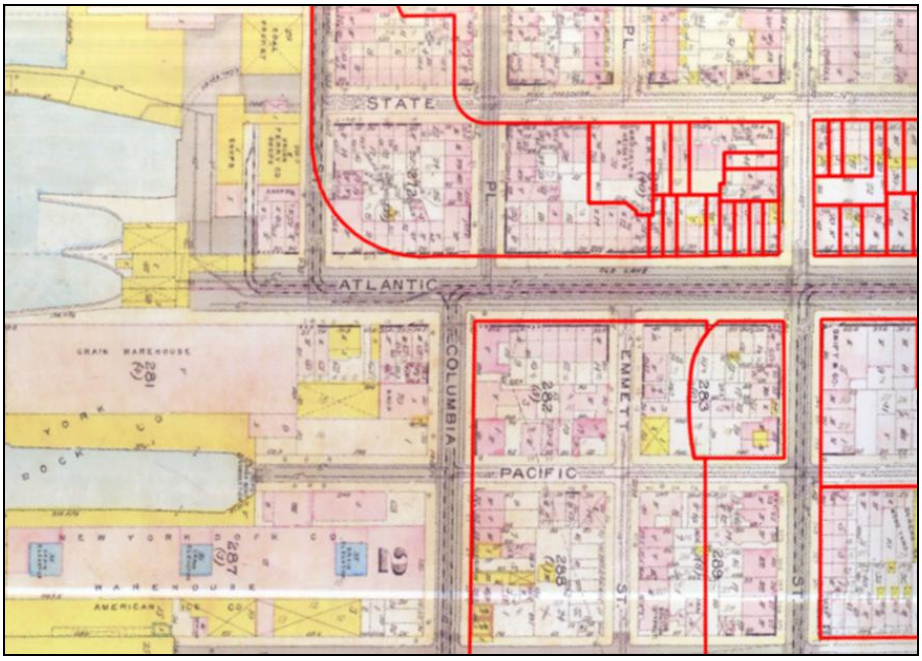


Figure 10.3. – Process of plot amalgamation
Source: Atlas of the city of Brooklyn (1911) and MapPLUTO 2007

Processes of lots amalgamation and lots truncation resulted also from building repletion and urban renewal projects. Land and building replacement is a transformative process consisting in the substitution of existing forms, mostly buildings, usually lot dominants, by new ones in

[31] The amalgamation of a lot is a process where two or more adjacent lots are subsumed under unitary ownership and their former mutual boundary is erased.
[32] The process of lot truncation consists in a diminution of lots, usually through tail-end alienation and the formation of a separate tail-end lot.

response to the pressure of changed social needs. Although they produce effects on the built environment, they have affected the physical form in a less material way, if compared to urban transportation projects.

Along Atlantic Avenue building replacement has occurred both in small and large scale projects. Following is an example of a small scale project of building replacement:

- **Brooklyn House of Detention** (Fig. 10.4): is located at the intersection of Atlantic Avenue and Smith Street, just in front of the Nu Hotel in Block number 175.

Figure 10.4. – House of Detention
Source: picture of the author, 2010; Image from Google Earth, March 7th, 2011

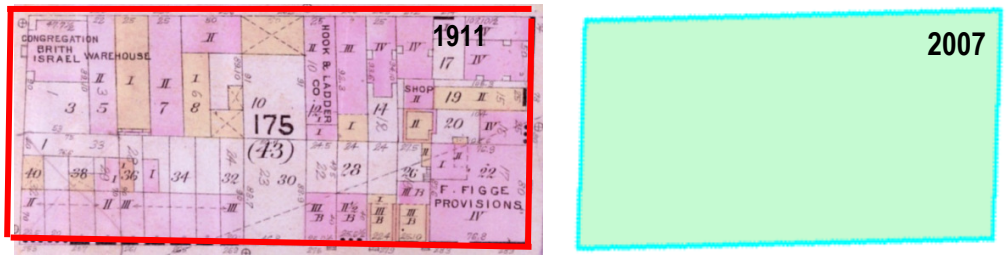


Figure 10.5. – Lot truncation
Source: Atlas of the City of Brooklyn, 1911 and MapPLUTO, 2007

The block is now 332x180 feet and it is a supersize block, where no lots subdivision can be detected within it. The Atlas of the Borough of Brooklyn shows that this block was once occupied at 34 lots each containing predominantly two-to-three story buildings (Fig. 10.5). There were also mixed commercial and residential buildings as well as warehouses, such as Hook and Ladder & Co, F.Figge Provision, and the British Israel

Congregation. All the buildings were torn down and a new block created to host the fourteen floors massive retail-store jail construction[33].

The process of amalgamation of lots is related to history of urban planning in the United States and to the approval of zoning ordinances[34]. The increase and concentration in lot size appeared in the New York planning history in mid nineteenth century, after the World War I, when compact buildings and superblock constructions become the major planning instrument (Vance, 1990, p. 481). This change in building configuration is related to the approval of the 1961 zoning resolution, through which the government and developers encouraged the consolidation of several blocks into superblocks, which would allow buildings to reduce their ground coverage and increase the amount of open space. As a result the volume of buildings, both residential and commercial, has risen considerably. In large scale projects lot amalgamation is a main characteristic. Following are two examples of large scale urban replacement where large portions of land have been modified according to a unified plan:

- **Schermerhorn-Pacific Urban Renewal Area (SPURA):** The Schermerhorn-Pacific Urban Renewal Area (SPURA) is located within the Boerum Hill area, along Schermerhorn Street, which is parallel to Atlantic Avenue, two blocks north, and roughly between Smith Street and Bond Streets. SPURA was formed when the state purchased three parcels of vacant land in 1974, with the intention of using the area to expand the Civic Center. Both changes in the availability of housing subsidies and community opposition to the original project modified the focus of land use policy in this urban renewal area. In 1998, a Hoyt-Schermerhorn Task Force, formed to plan for the reuse of the area, recommended residentially oriented development, with an affordable housing component, community facilities, and street-level retail. The density of this development would create a transition from higher densities in Downtown Brooklyn and the neighborhood scale of Boerum Hill. Currently, all lots have been sold to designated

[33] The purpose of this planning project was to create additional housing for 720 inmates, improve the existing structure's deteriorating façade and create continuous ground floor retail space within the existing jail space along Atlantic Avenue.

[34] Two important zoning resolutions were approved. The 1916 zoning resolution encouraged the consolidation of building parcels to enable more light and air to reach the street (setback for tall buildings); the 1961 zoning resolution encouraged the consolidation of several blocks into superblocks, allowing buildings to reduced ground coverage and providing more open space. In order to provide more open spaces in the city, it was set the basic density limit to only 15 Floor Area Ratio, however allowing developers to build an extra 20%, up to a FAR of 18, if they provided a plaza or an arcade. This mechanism allowed property owners to construct a building larger or higher or different from that given by ordinary legislation and the city to have privately owned public spaces.

developers, and construction is either complete or underway in the urban renewal area. Along Atlantic Avenue two blocks were involved into the plan: part of block 176 and block 181.

Block 176 (Fig. 10.6) located close to the House of Detention in Smith Street, is 607x138 feet wide, and it is subdivided into 56 lots 100x25 feet wide each containing primarily three-four story buildings. At the east corner of the block is the Nu Hotel, the part of the block interested in the SPURA urban renewal project.

Figure 10.6. – Amalgamation of lot
Source: Atlas of the city of Brooklyn, 1911 and MapPLUTO 2007

As visible from the Figure 10.6 the construction of the *Nu Hotel* (Fig. 10.7), 14 floors high, caused the amalgamation of eight lots and the turning down of the existing buildings.

Figure 10.7. – Nu Hotel
Source: http://travel.usnews.com/Hotels/New_York_NY/Nu_Hotel_23103
Source (image on the right): Image from Google Earth, March 7th 2011

Block 181 (Fig. 10.8), located south of the House of Detention, is 409x180 feet wide approximately, and it is subdivided into three big lots used as parking lots (Fig. 10.9), and fourteen lots of different size containing old three-to-four story buildings. As visible from Figure 10.8 there has been a process of amalgamation of lots.

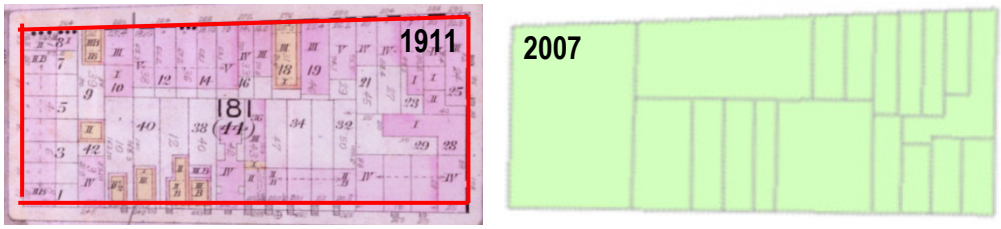


Figure 10.8. – Amalgamation of lot
Source: Atlas of the City of Brooklyn, 1911; MapPLUTO 2007

Figure 10.9. – *Bicycles* building in block 181
Source: photographed by the author; image from Google Earth, March 7th 2011

- **Atlantic Terminal Urban Renewal Area (ATURA):** In response to deteriorating conditions, the New York City Department of Housing Preservation and Development (HPD) and the New York City Planning Commission (CPC) deemed a 20-block area of Fort Greene, and the area south of Atlantic Avenue, as appropriate for urban renewal under the City's urban renewal law. In 1963, the designated urban renewal area was named the Fort Greene Market Urban Renewal Area after the Fort Greene meat market (Fig. 10.11). Five years later, in 1968, it was renamed the Atlantic Terminal Urban Renewal Area (ATURA) with the goal of revitalizing this 104-acre area bounded, by Vanderbilt and Green Avenue, Hanson Place, Lafayette, Flatbush, Third Avenue and Pacific Street (Fig. 10.10). The plan of the ATURA, including blocks 927, 1118, 1119, 1120, and 1121, brought the removal of the Fort Greene Meat Market, an antiquated wholesale market behind the Flatbush Avenue Terminal (Fig. 10.12), and the clearance of slums for the construction of Atlantic Terminal Houses - low-income and middle income apartment houses under the direction of the New York City Housing Authority (NYCHA) and the New York City Housing Development Corporation (HDC)- , the Atlantic Center Mall and the Atlantic Terminal Mall.

The plan proposed to cover the open cut with buildings and plazas and ingeniously slip through the welter of underground rail and subway lines to create a connected network of new business and industrial functions concentrated at the intersection of Atlantic and Flatbush Avenues. To replace the market, 2400 units of low middle income housing were proposed on a vast superblock. At the heart of the 104 acres project were the Atlantic Terminal, Brooklyn's busiest transportation hub, which combines the LIRR terminal with a confluence of subway stations, and the Atlantic Center, an ambitious housing, office, and retail complex. Atlantic Center, providing 417 units in three-story multifamily row houses opened in 1996; two years after the Atlantic Center Mall opened, plans were announced for the Atlantic Terminal Mall, opened in 2004 (Fig. 10.13).

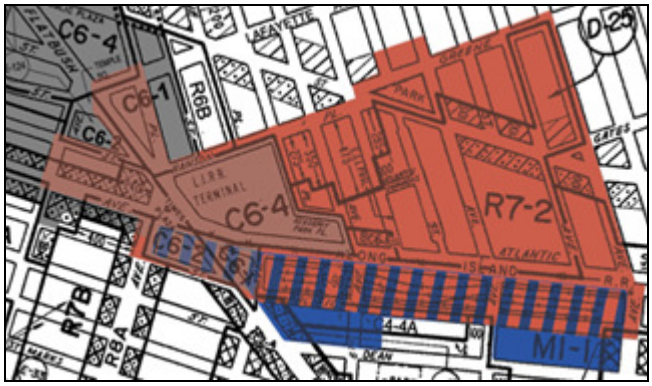


Figure 10.10. – Urban renewal project area
Source: http://atlanticyardsreport.blogspot.com

Figure 10.11. – ATURA site in 1960s
Source: Brooklyn Public Library

Figure 10.12. – Old Flatbush Avenue Terminal
Source (10.12): http://gowanuslounge.blogspot.com

Figure 10.13. – Atlantic Terminal Mall
Source (10.13): http://www.flickr.com/photos/jag9889/4346710101/lightbox/

The effects of this project on the urban form of the street were immense: not only did it provoke a re-configuration of the traffic flow, and a radical metamorphosis of lots and superblock development, but this huge project compromised people's sense of place.

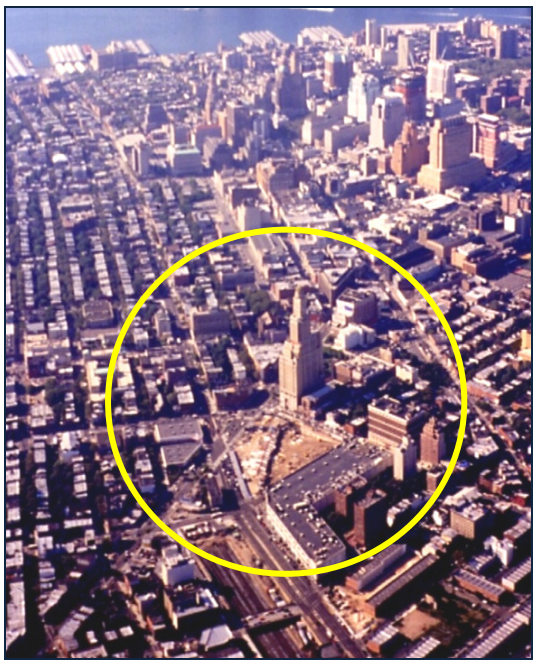


Figure 10.14. – ATURA project in 1990 **Figure 10.15. – ATURA as it looks in 2005**
Source: Atlantic Avenue Local Development Corporation

- **Atlantic Yard:** Atlantic Yards (Fig. 10.16 and Fig. 10.17) is a large and controversial development project located across the street from the Atlantic Terminal and Atlantic Center malls that falls within the ATURA, which has been a target for large scale redevelopment since the mid 20th Century. Developer Forest City Ratner is proposing a basketball arena to bring the New Jersey Nets to New York City, and the construction of several high rise residential buildings. Criticisms rose around the project both for the bad design of the space and the buildings, and for the consequences the project will have on the street's livability and on traffic. Back in the 1995, in a meeting with Dodgers owner Walker O'Malley, Robert Moses rejected the Atlantic Terminal area for a domed replacement to Ebbetts Field because, "the streets will never handle all the cars. Your stadium would create a China Wall of traffic". Traffic concerns have been a divisive issue since the 1950s. Atlantic Avenue serves as an important east-west conduit for motorists traveling from areas of Brooklyn to Kennedy Airport and Long Island. The development of the stadium may cause increased traffic. There is also a fear that the stadium will be built and the rest of the project site will lay fallow for many years.

Funding has not been allocated for the residential section of the development and it is unclear when this section will be built.

Figure 10.16. – Current project site
Source: photographed by the author

Figure 10.17. – Stalled project rendering
Source: Municipal Art Society

Also, another criticism of the Atlantic Yards development has been the design of the space and buildings. Most existing adjacent buildings are low-rise commercial and residential developments. The closing of Pacific Street between Carlton Avenue and Vanderbilt Avenue will create a superblock, a planning intervention that was discredited in the 1970s and 1980s. The stadium will also close another section of Pacific Street to create a superblock. The residential buildings appear in form to be quite similar to housing projects of the 1950s and 1960s. The entrances of these buildings will face inward towards the closed Pacific Street area. There is no provision for entrances on Atlantic Avenue. It is unusual that a developer would select this type of form, considering that many planners have discredited plans like this as sterile and uninviting. Similar planning can be seen at Metrotech, where none of the buildings face Flatbush Avenue Extension. If history is any indicator, Atlantic Avenue will become even less inviting after Atlantic Yards is built. No retail is planned for the Atlantic Avenue side of the stadium. All in all, Atlantic Yards will most likely reinforce Atlantic Avenue's current character as a traffic-choked conduit for motorists and a hostile environment for pedestrians.

10.1.4. The buildings

The building arrangement within the blocks has not undergone substantial changes in the western part of the Avenue. The analysis, performed by considering the buildings individually, shows that most of the buildings along Atlantic have maintained their original arrangement. In

order to accommodate the new functional requirements of society, some buildings were turned down and replaced with new condominium or mixed commercial-residential buildings, but it is however possible to recognize most of the three-story masonry buildings that were built in the 1820s and recognize the original building fabric.

The building fabric, most visible most visible constituent of the townscape, is made of three elements namely building type, material and style. It is recognizable basically in two fundamental dimensions: a set of functional building types (such as residence, office, shops), and as a set of structures built in different architectural style (Queen Anne style, Italian Palazzo Style). In the following lines the analysis seeks to describe changes at the level of three elements:

- Building type
- Material
- Architectural style

10.1.4.1. Building type

Most of the buildings along the western portion of Atlantic Avenue are commercial residential buildings, with storefronts at the ground level and private residences on the upper floors. From the foot of Atlantic Avenue at the harbor to Flatbush Avenue, in 1885, there were at least 536 structures of one kind or another, a minimum of 1060 households and 549 storefronts (Holt, 2006). Atlantic Street was one of the finest commercial streets within the borough, able to host this building type in great numbers. Most of the buildings were three-to-four story masonry buildings with vibrant Victorian storefronts on the ground floors.

The commercial-residential building has emerged in cities as a balance between three needs: the need to concentrate retail where population density is high; the need to maximize rent on a particular piece of land; and the need of the shopkeepers to reduce their own expenses (Davis, 2009, p.90). The typological roots of the commercial residential building in New York are found in the English row or terrace house, which appeared in Europe around the sixteenth century and has been imported by the English and the Dutch when they first settled in Brooklyn. This building type started to appear in New York in the nineteenth century in places where attributes that favor retail location were combined with those that favor residential location (Davis, 2009, p. 97). On the street with high pedestrian activity, high density, close to administrative districts or residential neighborhoods, the ground floor of multiple dwellings started to be used for selling goods, and rudimentary commercial residential building appeared. When they appeared for the first time, they represented the buildings where the same family worked in the shop and lived upstairs, making the land as profitable as possible (Davis, 2009, p. 89).

Today along Atlantic Avenue the commercial-residential buildings represent the predominant building type: more than half of the buildings have storefronts on the ground level, private residences on the upper floors and are three-to-four stories tall. The majority of the buildings have been preserved, although they often have renovated facades. However, their interiors have been altered, essentially due to the fact that today most of the sellers do not live in the building where they work anymore but in surrounding neighborhoods instead or in other parts of the city. Moreover, the upper floors were made independent from the stores allowing more privacy. This building type has been preserved almost entirely as a result of preservation laws and special regulations. Along Atlantic Avenue the preservation of the commercial residential building type has been achieved by the approval of zoning laws and special zoning resolutions, which are discussed in the following lines.

The **Special Mixed Use District (MX)** was established in 1997 in the area between Atlantic Avenue and Howard Avenues (Fig. 10.18). As reported by the New York City Department of Planning the Special Mixed Use District aims to "*encourage investment in, and enhance the vitality of, existing mixed residential and industrial neighborhoods and to create opportunities for new mixed-use communities. The Special Mixed Use District permits new residential and non-residential uses (commercial, community facility and light industrial) to be developed as-of right within the same district and, under certain conditions, to be located side-by-side or within the same building. It does so by pairing an **M1** district with an **R3** through **R10** district*[35]*, allowing for maximum flexibility in matching zoning districts to neighborhood planning goals. Residential uses are generally subject to the bulk controls of the governing residence district"* (New York City Planning Commission).

The **Special Downtown Brooklyn District (SDBD)** was approved in 2001 in the area bounded by Tillary Street, Flatbush Avenue and Atlantic Center, Atlantic Avenue and Clinton and Court Streets (Fig. 10.18). As reported by the New York City Department of City Planning "*it established height limits and other bulk controls designed to permit large commercial buildings appropriate for a downtown business district to be developed as-of-right. The re-zoning establishes a transitional contextual buffer at the peripheries of Downtown Brooklyn to protect adjacent historic residential*

[35] According to the zoning reference, "M district" identifies manufacturing districts; "R district" identifies residential districts, while "C district" identifies commercial districts. The number and/or letters that follows an R, M, or C district designation indicates use, bulk and other controls, as described in the text of the Zoning Resolution. On the basis of that each district is classified differently and could be M1, M2, M3 or R1, R2, R3, R5 or C1, C2-4, C3, etc. (see New York City Zoning Reference for details).

neighborhoods. […] *Flexible height and setback regulations for a range of moderate -to high-density residential and commercial zoning districts facilitate development on the small, irregularly shaped lots typical of Downtown Brooklyn.* […] *The special district includes two sub-districts which are Atlantic Avenue and Fulton Mall, each with its own bulk and use regulations intended to preserve the scale and character of Atlantic Avenue, including certain architectural features, and to create an attractive shopping environment within the Fulton Mall".* For the scope of the present research it is necessary to specify that *"five block frontages along the north side of Atlantic Avenue between Smith Street and Flatbush Avenue and two frontages along Third Avenue between Atlantic Avenue and Pacific Street are rezoned from C6-1 to* ***R7A*** *with* ***a C2-4*** *overlay. The R7A/C2-4 District reflects the current bulk provisions of the existing Atlantic Avenue Special District, which modifies the floor area ratios (FAR)*[36] *of the underlying C6-1 District. The rezoning permits a maximum FAR of 4.0 for residential (as compared to 3.44 currently permitted); 4.0 for community facility uses (as compared to 4.8 currently permitted) and retains the 2.0 for commercial uses. The rezoning requires buildings with a contextual envelope built to the street line, which better reflects the existing built form and the objectives of the underlying Special Atlantic Avenue District"* (New York City Department of City Planning).

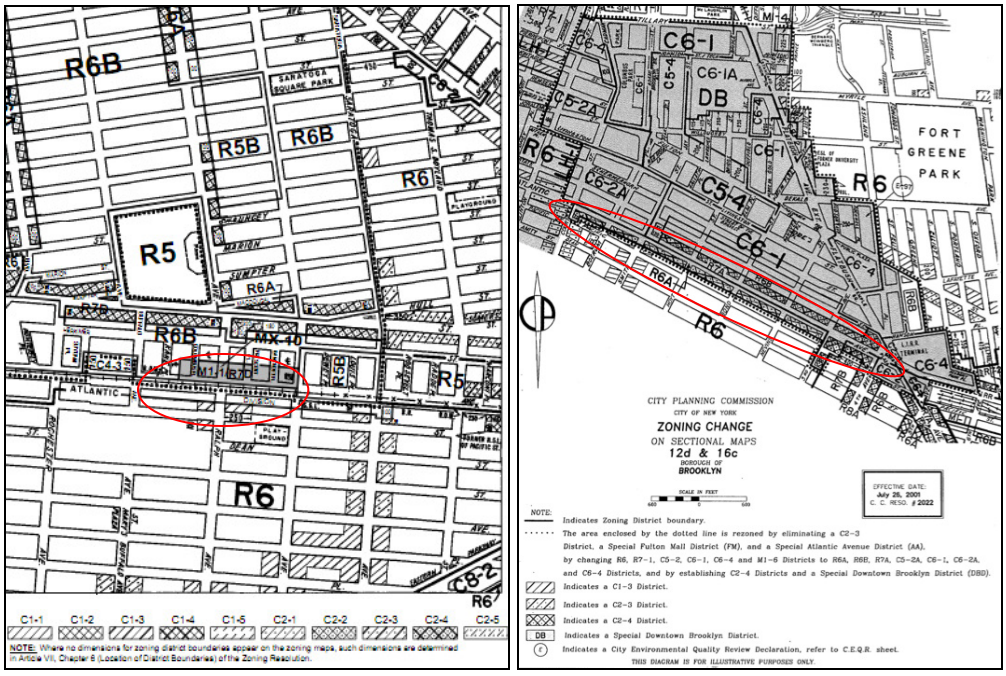


Figure 10.18. – Maps representing MX and SDBD along Atlantic Avenue, respectively
Source (figure on the left): http://www.nyc.gov/html/dcp/pdf/zone/map17a.pdf
Source (figure on the right): http://www.nyc.gov/html/dcp/html/zone/bkrezone.shtml

[36] The floor area ratio (FAR) is the bulk regulation controlling the size of buildings. FAR is the ratio of total building floor area to the area of its zoning lot. Each zoning district has an FAR control which, when multiplied by the lot area of the zoning lot, produces the maximum amount of floor area allowable in a building on the zoning lot.

Summing up, Atlantic Avenue is subject to three main zoning designations: M1, R7D and R7A with C2-4. The first one permits all industrial uses in M1 areas only if they meet the more stringent M1 performance standards; R7D sets up lot coverage and building regulations for the residential buildings; R7D districts allow greater residential density than R7A districts and promote new contextual development along transit corridors through commercial overlay (C2-4). Atlantic Avenue is also subject to special preservation laws[37]. These regulations all together have allowed the continuity of the commercial residential building type from its origin until today.

10.1.4.2. Materials and architecture styles

The architecture style as well as the original materials has been conserved for the vast majority of Atlantic Avenue: buildings were three-to-four story Federal, Greek Revival, Italianate and Queen Anne style and they were built in wood and stone. Buildings that preserved their original character were under the Special Atlantic Avenue District therefore only small changes were allowed; buildings outside of the special zoning ordinance were more likely to display contemporary architectural styles and new materials.

The **Special Atlantic Avenue District** (Fig. 10.19) was created in 1974 to protect and cultivate the special character of the area bounded by Court Street from Pacific Street and the south side of Atlantic Avenue. In this portion of Atlantic there were 109 nineteenth century buildings, 36 of which had historic storefronts giving Atlantic Avenue its special character. It was determined that in order to protect the nineteenth century scale and character of the street, certain additional requirements for building bulk, height, façade design, and sidewalk amenities should be instituted. The regulations helped prevent further changes to Atlantic Avenue in this stretch and control demolition of buildings unless they were unsafe or have approved building plans. New development therefore is restricted to low rise building to be compatible with existing buildings and it must have commercial use at the ground floor. Many buildings are covered by renovation

[37] Two important preservation laws were approved to make recycling economically attractive: a provision of the 1976 Tax Reform Act permitting faster tax write-offs for restoration of properties of historical value; a section of the 1981 Economic Recovery Tax Act permitting tax deductions of up to 25%of the value of such work (Diamonstein, 1986, p.14). Additional incentives include changes in zoning ordinances and building codes that may remove some of the risk and cost of renovating older buildings. The 1981 economic recovery tax act allows newly renovated buildings at least thirty years old to qualify for a 15 percent tax investment credit, those at least forty years old to qualify for 20%. To qualify for 25 %, buildings must meet two requirements: the money spent on rehabilitation must exceed the adjusted basis of the buildings of $5000 in a two-year period; 75% of the external wall must remain intact after the renovation. The Unites States in 1981 began offer three different types of tax credits: 25% for work to restore designated historical landmarks, 20% for buildings of any kind that were 40 years old, 15% for 30 years old. Look at the urban development action grant, that has been reduce today. The majority of reuse housing are market rate, yet there have also been affordable housing reuse developments.

guidelines, which are intended to preserve the original architectural features; therefore a cornice cannot be removed without replacement by one of similar size, repairs will be with original materials (wood and metal, brick) or with materials that reproduce the original architectural appearance and storefronts must maintain original proportions and be restored under regulations.

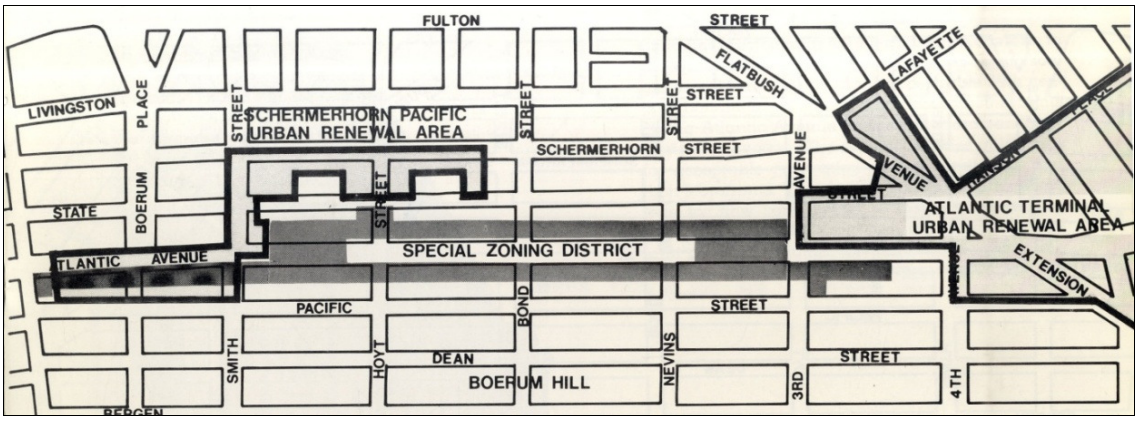
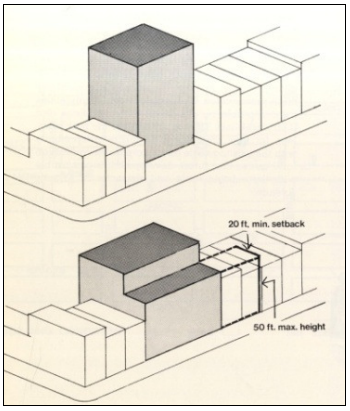


Figure 10.19. – Area under the Atlantic Special Zoning District
Source: Office of Downtown Brooklyn Development, 1974

The zoning provides guidelines for renovation of these buildings and their storefronts. It is possible to build up new buildings but they need to be compatible with the existing scale and incorporate controls on land use. The Atlantic Avenue Special Ordinance (1974) suggests the following guidelines:

1. *Scale bulk (floor area): low building with greater lot coverage. Open space in residential development must be landscaped and trees planted on sidewalk. The special district limits future commercial and community facility bulk to that permitted by R6/C2-3 zoning.*
2. *Renovation: renovation for existing nineteenth century buildings intended to preserve the original architecture features; cornices must be preserved or replaced; replacement should be the same size and similar design. Front walls must be repaired with the original material or with material that reproduce the original appearance; rebuilt original height and setback. Specific paint colors are required.*
3. *New construction: the guidelines for new construction are intended to encourage the existing scale and character. New building must be built to the street line and the street walls must raise a minimum of 16 feet without a setback. At least 45 percent of each upper story wall and 35 percent of each upper story wall must be glazed in order to minimize blank facades and to encourage window displays.*

4. *New storefront must be built with large window areas covering a minimum of 60 percent of the storefront area. All signs must be located within a sign band, an area extending the full width of the building and form height of 8 to 16 feet.*
5. *Demolition: in order to preserve the nineteenth century buildings, no building may be demolished, unless unsafe until a building permit for new construction is issued by the Department of Buildings.*



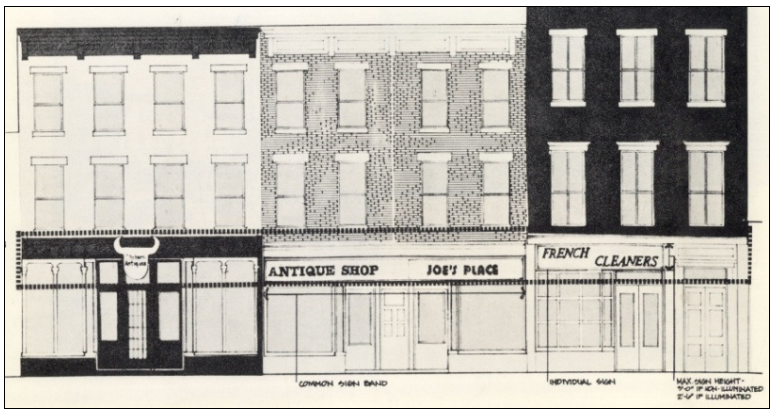


Figure 10.20. – Scale Bulk **Figure 10.21. – Guidelines for storefront's size**
Source: Office of Downtown Brooklyn Development, 1974

As a result of this special zoning ordinance most of the original character of the building stock (style, color and material) and of the street in general has remained intact.

10.1.5. The façade

The façades of most of the buildings along the western portion of Atlantic Avenue were subjected to several regulations like other elements of the building fabric, whose aim was to control building alterations and preserve the original architectural character.

The analysis of the building stock shows that buildings' façade along Atlantic underwent some changes in their design. More precisely, buildings' façades within the Atlantic Special Zoning Ordinance have maintained their original design mostly, the use of the original materials and color however showing some small alteration in the façade's elements such as windows , door frames and doors. Buildings that were not within the Atlantic Special Ordinance were more susceptible to changes and despite the fact that they respected the general zoning guidelines, their façades follow the contemporary architectural style. Below are some pictures of Atlantic Avenue's façades, as Figure 10.22 and Figure 10.23 show.

Figure 10.22. – Nineteenth century commercial-residential building type
Source: photographs of the author

Figure 10.23. – Twentieth and twenty-first century commercial residential building type
Source: photographs of the author

10.1.6. Land and building utilization

In comparison with the town plan and building fabric, building and land utilization generally have had a great capacity for adaptation to changing needs, reacting promptly to new functional impulses, such as the diversification of retail activities, the separation of business from residential functions to other functions, and the conversion of building types etc. Along Atlantic Avenue two processes can explain the flexibility of the land use, explicitly the process of adaptation and the process of replacement.

Adaptation: Adaptation of city forms from one stage to another and from one form and functional relationship to another is a very common structural process in our cities today. Adaptive reuse is a process by which a structure constructed for one purpose, whose original use is no longer economically valuable, is converted into a different one, through physical renovations or

adaptations. Recycling buildings has been seen not only as a way to rate the market value of the land, but also as a means to avoid throwing away valuable and useful physical resources. In fact, one of the advantages of adaptive reuse is related to the preservation of cultural heritage and the rejuvenation of neglected parts of a city.

First examples of adaptation appeared along Atlantic Avenue in the period of industrialization when population density climbed and residential ownership patterns changed from being mostly family-owned to being multi-family owned. As a result, the existing residential structures were converted into rooming houses and a new building type - the tenements - emerged. More incisive interventions of adaptive reuse appeared in the United States in the 1960s and 1970s when it emerged as a logical solution for buildings' construction. Several factors have facilitated the appearance of this practice:

6. The appearance of a "back to the city trend", that brought nuclear families and professionals to choose the city as a place to live, shop and work;
7. The increase in urban amenities;
8. The shift in the economic conjuncture: economy shifted from being industrial and manufacturing- based to being essentially based on services;
9. Changes in demographic and family patterns due to globalization and transformations in employment's structure.

As the city became commonly used and reused as a place to live, the problem of space became more critical; to accommodate the new urbanities, neighborhoods that were formerly considered marginal or less appealing were renovated to make space for larger or newer housing complexes; moreover, obsolete structures, relics of the industrial society, needed to be converted, replaced or recycled by interventions of urban design. The approval of legislations and the emergent interest in preserving cultural heritage made the process of adaptive reuse a significant feature of American daily life after the World War II.

Along the western portion of Atlantic Avenue the process of adaptation relates mainly to the conversion of manufacturing buildings and dry goods stores into residential buildings (condominium, co-ops, rental apartments) or into mixed-use developments; nevertheless, there are also cases in which banks have been converted into retail stores and multiple dwellings into single-family houses. Following are some examples:

Conversion of manufacturing building into residential co-op

The building located on 124-128 Atlantic Avenue was built in the late nineteenth century (Fig. 10. 24). It was once occupied by Journeay & Burnham Dry and Fancy Goods since the 1851, and

sold it in 1922 to the Atlantic-Pacific Chandlery Manufacturing Company (a chandler stocks ships for ocean voyages) and to Schoen Brothers in the following years. The building was then sold to retail companies which renovated it (Fig. 10.25).

Two transformative processes took place: first, a renovation of the façade consisting of the removal of the main sign between the 2nd and 3th floors; second, the building has been converted into residential co-ops and preserved with the old name Atlantic-Pacific Building.

Figure 10.24. – Atlantic Pacific Building
Source: Brooklyn Public Library, 1950s

Figure 10.25. – Atlantic Pacific Building
Source: Picture of the author, 2010

Conversion from a bank to grocery store.

The building was erected in 1922 by McKenzie, Voorhees and Gmelin. It was first occupied by the South Brooklyn Saving Bank, which was first located in the building next to it. Since 2007 it has been used by the grocery chain Trader Joe's (Fig. 10.26).

Figure 10.26. – Trader's Joe grocery store
Source: photographed by the author, 2010

Conversion of manifacturing building into national chainstore

The building was built in 1859 as a manifacturing building and has been converted into a commercial residential building.

Figure 10.27. – Sail Makers mix commercial residential building
Source: picture of the author, 2010

Physical evidence of the nautical trade appears in the façade of the building, where the original name can still be seen. When the building was bought by Two Trees Realty, the façade was restored and the building converted into a mixed commerical-residential building with luxury apartments on the upper floors and a national chain store –Urban Outfitters- at the ground floor (Fig. 10.27).

Conversion of Ex-Lax manufacturing building into residential buildings

The Ex-Lax building was built in 1908 by a Lithuanian immigrant Israel Matz who established the Ex-Lax, the "chocolate laxative", 85.000 square feet factory building (Fig.10.28). In 1925 part of the immense building, 435-443, was operated by August Busch Bottling Company that has been established there from 1893 to 1903. In 1981 423-443 was converted to 57 co-operative apartments, making it something of an Atlantic Avenue pioneer. The building underwent some changes: the façade has maintained its original design but the sign "the home of EX-LAX- the chocolate laxative" was removed and replaced by "Better Carpet Warehouse"; part of the building was converted into rentable space.

Figure 10.28. – Ex Lax building
Source: Brooklyn Public Library, 1949

Figure 10.29. – Today's building
Source: picture of the author, 2010

Conversion of a carpet house into mix commercial residential building

The building at 475 Atlantic Avenue was built in 1875 by Kalfain & Son who purchased the building and used it as a carpet warehouse since 1907, when it moved to Sherman Street. In 1927 it was in used by a hardware house, abandoned (Figure 10.30), and later on it was converted into mixed commercial-residential building. The ground floor of the building is now in used by a furniture store, while in the upper floors there are apartments and offices.

Figure 10.30. – 475 Atlantic Avenue
Source: Brooklyn Public Library, 1950s

Figure 10.31. – The building today
Source: picture of the author, 2010

Conversion of a bank into residential-commercial building

This Greek Revival style building was built in 1870 by architect E.L Roberts and the bank was established in 1950 as the South Brooklyn Savings Institution (Fig. 10.32). When the bank moved

to the other corner along Atlantic Avenue (130 Court street), in 1922, the building was converted to commercial-residential uses (Fig. 10.33). Today the façade looks fairly different from the original one: the stately entrance with columns was removed; the steps were removed; fire escapes were added and new architectural works were made to make the building usable as a renting space. The building is now a mixed commercial-residential with stores (pharmacy and cleaner) on the ground floor and rental apartments on the upper floors.

Figure 10.32. – 160 Atlantic Avenue
Source; Brooklyn Public Library, 1910s

Figure 10.33. – The building today
Source: photographed by the author, 2010

Land and building replacement: Together with the process of adaptation, replacement is another transformative process consisting in the substitution of existing forms, mostly buildings, usually plot dominants, by new ones in response to the pressure of changing social needs. The process of replacement of existing forms with new ones could represent an adaptation to the growth of businesses activities, to changes in residential needs, or to transformations in the economic base of society. Replacement can be manifested in two ways, different according to their relative extent. In the case of small scale replacements, individual buildings or small group of buildings can be replaced by new building types, as in the case of the building located on 349 Atlantic Avenue (Fig. 10.34 and Fig. 10.35) often accompanied by the amalgamation of adjacent plots or enlargement of plots. In the case of large replacements, larger tracts of land could be modified according to a unified plan, causing a metamorphosis of plots.

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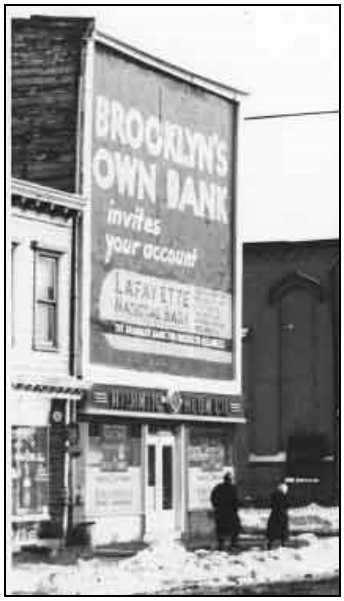

Figure 10.34. – 349 Atlantic Avenue
Source: Brooklyn Public Library, 1950s

Figure 10.35. – The building today
Source: photographed by the author

Concluding, if it is true that the degree of a townscape's persistence changes according to society, it is true as well that city form tends to change less rapidly than many other human institutions because it is non-generational, lacking the definite life span of the human organism (Vance, 1990, p.7). Political, economic and social institutions change rapidly in the course of time, but such transformations do not re-make the city completely. They prompt transformations to appear but they not always take place: in some case the elements of the townscape persist, in others they lose their meanings while in others again they are replaced by new forms in accord with new functions.

10.2. Socio and cultural changes along Atlantic Avenue

Most of the changes that occurred along Atlantic Avenue, observable both in property uses and in the building stock, are strictly connected to transformations in society's cultural structure and in population dynamics. Section 9.1 have explained how Atlantic Avenue developed historically and acquired its present character, becoming one of the most important and populated streets within the Brooklyn borough; in this section we analyze the retail sector to understand more of how the cultural factors spurred transformations in Atlantic Avenue's built form.

Atlantic Avenue has always served as an important conduit to bring goods from Long Island to the East River or vice versa and many of the small nineteenth century buildings that survived today west of Flatbush Avenue own their birth to the commerce generated by the railroad in the

nineteenth century and to the port activity. In the early nineteenth century together with dry and goods manufacturing buildings there were many saloons, ship repairing manufacturing buildings and activities related to the port. Soon after, the number of retail stores grows immensely due to the expanding market and to the growth of Brooklyn as an industrial hub (Holt, 2006). As a consequence, the retail sector became more diversified, offering mostly every type of services. According to Holt (2006) along the first part of Atlantic Avenue in 1985 there were at least 549 storefronts, and more than 125 different types of products or services available, schools, churches, organizations which all testify the existence of a community (Holt, 2006). Despite its commercial character, Atlantic Avenue has always been a residential street chiefly, and especially a working class strip, home of Dutch, Irish, Scandinavian, Italian and Middle Eastern immigrants. From the beginning of the nineteenth century through the period of industrial expansion, the street was dominated by all types of services, retail stores as well as manufacturing buildings and the concentration of immigrants was high.

The situation started to change in the years of the Great Depression and worsened noticeably after War World II: the projects of urban renewal, the crime, the improvements in transportation system, and the moving in of poor immigrants into the area made the street very dangerous for pedestrians and not appealing for newcomers. As a result many houses were abandoned and residents moved to better places, in Manhattan, in the growing garden suburbs or elsewhere. It was not until the 1960s, when the revitalization of the surrounding brownstone neighborhoods brought into the area new capital, that Atlantic Avenue started to live again.

The renovation of the 19th century residential buildings and especially their storefronts has led artists and younger families to move into lofts and apartments upstairs, encouraging a tremendous amount of self-renewal and rejuvenation. In the early 1970s new merchants, often residents of the surrounding communities began operating antique and furniture shops, craft store and even restaurants. Low rent and availability of space made the street an ideal testing ground for new businesses of all kind. A growing number of Middle Eastern stores and restaurants, displaced from lower Manhattan and attracted by the Arabic-American population in Cobble Hill, moved to the area in the 1970s in a great number, transforming the area into the *Mecca for the Middle Eastern food and specialty*. At the same time Atlantic Avenue started to become famous for its antique stores that turned the Avenue into a major Center for the nineteenth century antique furniture. "*The eleven block area on Atlantic between Fulton Avenue and the BQE has established a firm reputation for its long established Middle Eastern restaurants and antique stores, drawing a good crowd of folks […]"* (J.Ciner, Phoenix Magazine, 1979).

As a result further middle-income residents were attracted into the area and new retail such as restaurants, boutiques, book stores, paint suppliers and other types of stores started to locate along the Avenue. Between the late 1960s and 1980s the stretch that goes from the East River to 4th Avenue consolidated as the city most cosmopolitan spot, both in ethnic diversity and in blocks dominated by one type of business or another.

Whether for its antiques at Nevis Street or Arab markets west of Court Street, Atlantic Avenue was a major draw for tourists who ventured outside Manhattan, especially in the occasion of the Atlantic Antique Fair. Even though Atlantic Avenue has been criticized for its bad planning and has always been conceived more as a car conduit than a boulevard, it began to acquire a certain "appeal". The shift in economic conjuncture during the 1970s and the appearance of a new "middle class" brought more changes within Atlantic: manufacturing buildings were converted into residential or commercial buildings, building alteration improved building conditions, developers started to invest in the rehabilitation of the old low rise buildings and a process of building renovation appeared along and around the street. The process of renovation favored the street's "up-scaling" and the process of gentrification, already present in the surrounding neighborhoods, spurred immense transformations in the use of the land as well as in the façade design.

Looking at the type of retail services in two different periods (1977 and 2009) it is possible to affirm that the retail sector and the character of Atlantic Avenue has changed appreciably, consequent to the appearance of new types of stores: the Middle Eastern community that characterized the street in the late 1970s has almost disappeared, and now only few blocks over the eleven ones are occupied by Middle Easter stores and restaurants; also antique furniture stores have almost disappeared and today only of this can be seen. The "exotic" sense of place has given way to a heterogeneous and mixed environment, rich in different kind of shops: vintage boutiques, international restaurants, chain stores, bakeries, green stores and more.

Figures 10.36 and 10.37 show how retail activities have changed from 1977 to 2009.

Figure 10.36. – Retail activities along Atlantic Avenue in 1977
Source: GIS elaboration on 1977City Business Directory Data

Figure 10.37. – Retail activities along Atlantic Avenue in 2009
Source: GIS elaboration of the author on Reference USA (2009)

Figure 10.36 displays the high concentration of antiques stores in the stretch of Atlantic Avenue that goes from Bond Street to Hoyt Street, while Figure 10.37 displays that within the same area retail activities are very diversified now.

In 1977 there were more than 36 antique stores, 6 barbers, 38 restaurants, five clothing stores, five art galleries and more than 100 secondary stores and services; today the number of retail stores is about the same, but the street has more leisure amenities and is more expensive. There are 15 antiques stores, 26 bakery and grocery, 47 restaurants, 23 clothing stores, five art galleries and 90 secondary stores and services. Even though the number of "modern" stores has increased, it is still possible to buy Middle Eastern food at *Shahadi*, have a drink at the old saloon *Montero*, buy antique furniture at *Horse House*, buy a picture frame at *Make a Frame* or go to *Bicycle* if the bike needs to be repaired. The remaining old stores coexist with the new ones such as *Trader Joe's*, *Urban Outfitter and Botanic* creating a contrast between contemporary lifestyle and historical building fabric and exploring the resistance of the urban form to changes in the new functional requirements of society.

Despite the changed character of Atlantic Avenue since 1977 and the more upscale and varied stores now, the distribution of retail store by type has not changed very much: the first part of the avenue is characterized by specialty food stores, the second part by furniture's store, arts and vintage stores, while the last part is characterized by second service stores, as Figure 10.38 shows. As previously said, what distinguishes this stretch of the avenue is gentrification.

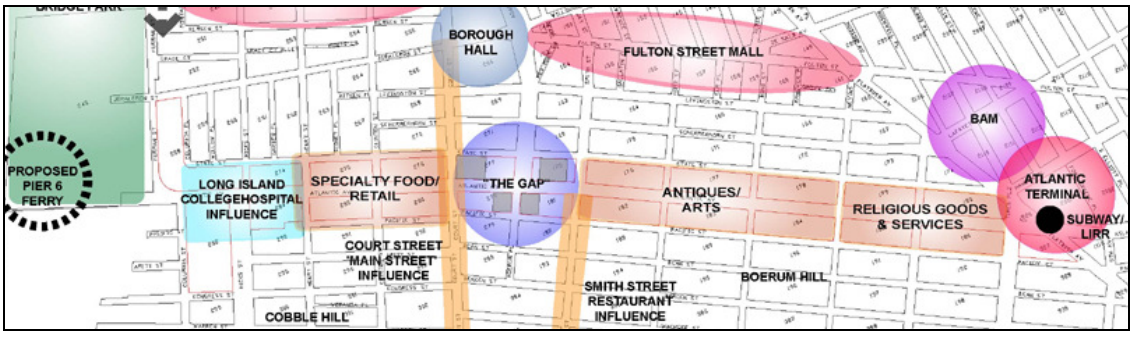

Figure 10.38. – Retail division along Atlantic
Source: Atlantic Avenue Development Corporation

Concluding, the historical character of the building fabric has not completely vanished. Changes in the functional requirements of society went hand in hand with changes in the land uses even if this did not always bring changes in the buildings' form. Despite changes in the building utilization caused by new social, economic and political forces, many buildings stand as they were build, although perhaps substantial altered inside. Other buildings now have newly renovated façades,

others have been converted from manufacturing to residential condos and others again have been replaced by new constructions or by super-block developments. This analysis has revealed the connection between a certain building form and the city's social dynamics, and the important role of the immigrant communities as well as of middle-class residents in shaping and transforming Atlantic Avenue's character.

10.3. Persistence versus change along Atlantic Avenue

Urban form and especially town plan do not change often, however American cites have shown a tendency to transform more frequently than European ones (Holdworth, 1992) due to specific cultural values (M.P. Conzen 2001, Vance 1990). Along Atlantic Avenue urban form has not changed radically. By overlapping the Atlas of the city of Brooklyn (1911) with *2007* MapPLUTO (2007) and examining the character of the building fabric through old and current photographs and historical documents, this section has shown how "areas of persistence" coexist with "areas of transformation", and how different historical layers sit one upon the other, showing a mixture of old plot patterns and large areas totally redeveloped.

As noticeable from Figure 10.39, three "areas of changes" and two long "areas of persistence" can be identified along the study area:

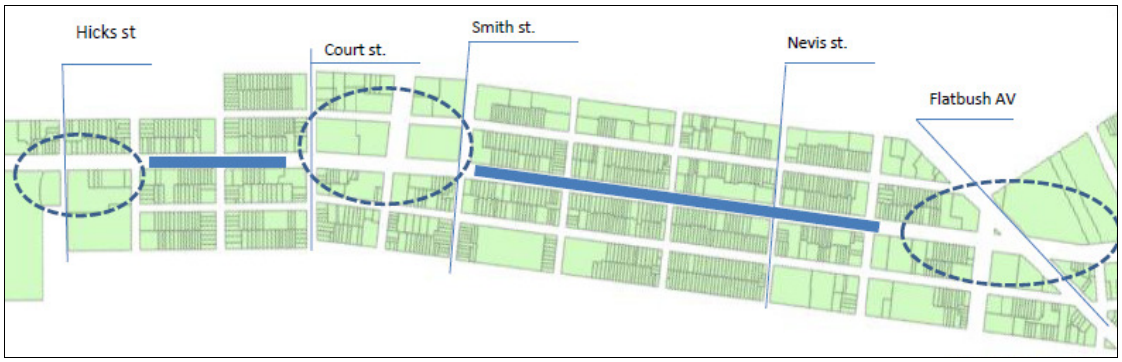

Figure 10.39. – Areas of persistence (blue line) and areas of change (circles)
Source: MapPLUTO 2009

Areas of change (the blue circle) are the following:

a- Blocks either eastwards and westwards of Hicks Street;

b- Blocks between Court Street and Smith Street;

c- Blocks between Flatbush Av. and 5th Avenue.

Areas of persistence (blue line) are the following:

d- From Henry St. to Court Street;
e- From Smith St. to 3rd Street.

Transformations in the townscape, as explained in the theoretical introduction, occurred mainly due to transportation system improvements, urban renewal projects, and general changes in economic, cultural and social factors. As explained by Conzen (1961) in his study on Alnwick, the three systematic form complexes differ in their specific social utility and as a result in the degree of form persistence they oppose morphological change, induced by new functional requirements on the part of the local urban society. More specifically, town plan and building fabric show considerable persistence of forms: town plan is the most conservative form complex, the building fabric shows a notable amount of form persistence although not as the medieval town plan; houses show a tendency towards persistence, but unlike the town plan they were more exposed to changes of ownership and following the fortune of the neighborhoods; land utilization is the more flexible among the form complexes thus reflecting patterns of past landownership and fixed capital investments (M.R.G. Conzen, 2004, p.118).

In the subsequent lines an explanation is given of how areas of changes and areas of persistence appeared within the western portion of Atlantic Avenue:

a- The first area of change resulted from the construction of the Brooklyn Queen Expressway, which modified the streets pattern and destroyed the building fabric;
b- The second area of change, between Court Street and Smith Street resulted from block amalgamation mainly. These alterations related to the fact that in this part of the street buildings was not protected by the Atlantic Zoning Special District and thus free of specific restrictions on building alteration;
c- The third area of change, around Flatbush Avenue is a result of the urban renewal project ATURA which completely destroyed the morphological frame of the townscape as well as street pattern.

The explanation of why transformations happened in specific parts of the city and not two blocks away relates to the pressure of the real estate market, to cycles of investment and disinvestment and to special regulations. In this particular case transformations happen in areas where buildings were not protected by any regulations, and where an easy connection with downtown Brooklyn and Manhattan could be established. As evident in Figure 10.40, transformations along the western portion of Atlantic Avenue correspond with the major Atlantic Avenue gateways,

explaining that the areas surrounding the transportation nodes are those where land is more valuable and thus susceptible to transformations.

1. **Brooklyn Queen Expressway**: Atlantic Avenue to East River
2. **Boerum Place**: Brooklyn's Bridge to Atlantic Avenue
3. **Flatbush Avenue:** Brooklyn Neighborhoods to Atlantic Avenue

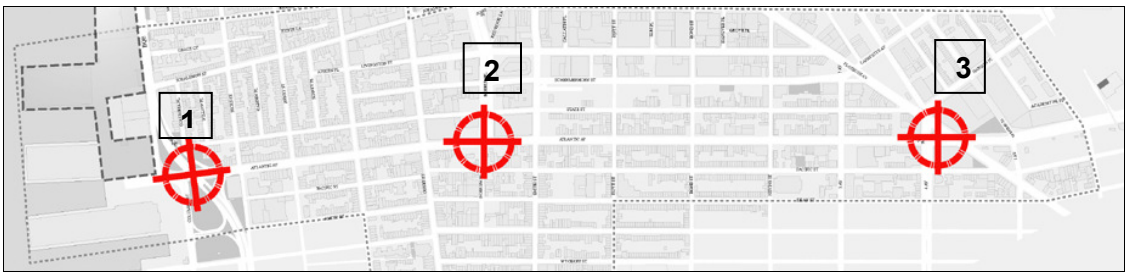

Figure 10.40. – Principal gateways along Atlantic Avenue
Source: MapPLUTO 2007

Together with areas of change along the study area, some areas of persistence have been detected. Persistence on the urban form and conservation of the architectural character within the building stock have been achieved through preservation laws, zoning designations, and the Atlantic Avenue Special Zoning District, which aimed to protect the nineteenth century historic resources in the part of that street that goes from Court Street to 4th Avenue and facilitate renovations. All these important regulations stimulated processes of restoring, adaptive reuse, allowing the building stock to be recycled for new functions.

Figure 10.41. – Atlantic Avnue streetscape in the 1960s
Source: Brooklyn Public Library

Figure 10.42. – Persistence and change along Atlantic Avenue
Source: photos of the author, 2010

Figure 10.41 illustrates Atlantic Avenue as it was in the 1960s, while Figure 10.42 exemplifies the conservative and transformative processes that have taken place.

Concluding, along the western portion of Atlantic Avenue, from a town plan perspective what can be seen is a change in the number of parcels per block towards an amalgamation; an increase in mixed-use developments in building utilization; an augmentation in floor space area and a preservation of height. Accordingly to the main theory in urban morphology (Conzen 1961; Whitehand, 1981) what has changed the most are the land and building utilization patterns; whereas blocks, street layout and plot patterns showed a tendency of the built environment to persist and adapt to socio economic changes.

CHAPTER ELEVEN: DISCUSSION OF CHANGING PHYSICAL FORM

Chapter eleven is the closing one. It is structured into two parts: section 11.1 concerns the improvements the present work has brought into the research field while section 11.2 presents the conclusive remarks.

11.1. Implication and improvement of the research

This research has analyzed Atlantic Avenue's urban morphology and studied the transformative processes that occurred in the western portion of the Avenue. This enables one to understand the historical facts that have influenced the present physical conformation and also the degree of resilience, adaptability, persistence and flexibility of the ground plan and its elements. By performing a spatial analysis of the urban layout and its physical structure, the present research has offered a significant contribution to the urban morphology of American cities for the following reasons:

1- First, contrary to the existing work, mostly based on the analysis of an individual element of the ground plan, such as the lot or the block (Smith and Randall, 2008; Siksna, 1997; Ryan, 2005), this research has undertaken an analysis of all elements of the townscape and examined them by looking at their spatial transformations, rather than their historical evolution.

2- Second, it has applied in real terms Conzenian concepts and theories to an American context and examined the spatial composition of its physical elements. In doing this, the present works has shown the validity of the Conzen's method and concepts for the understanding of the American built environment and its physical transformations.

3- Third, being this research based on New York, where no similar investigations can be seen, the present work has offered an original contribution to the study of New York's urban morphology.

4- Fourth, at a broader scale, it adds to the existing literature on the urban morphology of American cities.

Concluding, the present work has offered a study on transformations on the urban form of a portion of New York but also explored the dynamic relationship between built environment and society.

11.2. Closing remarks

Based on field observations and on historical material gathered from different sources this work has shown how the solidly-built landscape along Atlantic Avenue has been altered, but not completely destroyed by changes in society's functional requirements. The current phenomena such as gentrification have not modified the form of the city utterly; rather, they have stimulated the use of new architectural schemes and ownership, making the existing building fabric diverse and adaptable to recent needs.

Urban society transforms its settlement according to diverse needs, not once but continuously in the course of history. However, methods to preserve and maintain the old structures have been provided in the course of time through preservation laws and zoning resolutions, as shown in the last section of chapter ten. Actually, the "value" of the authenticity of the built form, and the preservation spirits as well as the creation of historical districts are today pursued and used as marketing tools to make neighborhoods interesting and attractive for the new professional class and the gentrifiers. This is true especially since the '70s when there was an interest in protecting buildings instead of turning them down, enabling the preservation of the historical patrimony and the continuity of the urban form.Although American cities are more morphologically dynamic than European ones and demolition has always been preferred to conservation, this research based on a gentrified portion of Atlantic Avenue has demonstrated a tendency to preserve historical forms and an interest in building recycling. The society forces the urban landscape to change, but the townscape does not respond easily to these pressures; it rather adapts.

By applying Conzen's concepts and GIS tools (mainly geo-coding and geo-referencing) to the study area it was possible not only to interpret the built form and deepen understanding of the recent transformations, but also to comprehend morphological processes, specifically, by overlaying the Atlas of the Borough of Brooklyn (1911) with MapPLUTO (2007) and comparing old photographs with new ones we were able to reconstruct an image of how the urban landscape has changed due to socio-economic pressures, identifying areas of change and areas of transformations within the study area, and showing the relationship between persistence and adaptation in the townscape.

Concluding, the townscape of Atlantic Avenue has resulted from long historical transformations in social, economic and cultural needs and it is mow widely diversified. Some buildings and functions are still in use, others have lost their functions but persist through material inertia, while other again have been replaced by new forms in accord with new functions, exemplifying the complex nature of the urban form and its embedding within socio-cultural processes.

PART IV — REVIEW OF FINDINGS

CHAPTER 12: GENERAL CONCLUSION

The present work's principal subject has been the "city" conceived as a social and physical entity that transforms continuously in the course of time. The present work has examined the relationship between society and the built environment investigating how New York's urban structure and built form have changed since the great shift to a post-industrial society. Specifically, by using New York and Atlantic Avenue (Brooklyn) as study areas the present work has investigated the rise of amenity zones (AZs) and analyzed several key transformations in the physical form of the city. New York was specifically chosen as a prime example of a complex global city. It expresses a city in continuous transformation where physical and social changes create new urban dynamics and where the spatial patterns offer a compelling field of analysis. Considering that the city is made up of physical components and has a social structure, the study of critical urban transformations consists in analyzing how economic and socio-cultural forces have modified both the city's spatial functional and its complex physical form.

Broadly, the purpose of this contribution has been to bring new knowledge to the analysis of New York's urban landscape, applying innovative methods, theories and datasets in the investigation. It has also discussed the extensive question of urban change seen from the perspective of new dynamic social requirements and an equally dynamic built environment. Specifically, the present work has introduced an original approach for measuring how urban structure (and the land use) changes as a reaction to socio-economic transformations and has offered a study of complex physical form in an American context, which is not very common.

The conceptual foundations and background theories, especially those related to urban morphology and urban amenities, were extremely useful in achieving the research objectives. Theories on urban morphology offered a good framework for examining the physical form and transformative processes along Atlantic Avenue; theories on urban amenities and creative class were fundamental to recognize the amenity zones (AZs) as genuine geographical phenomena. Finding appropriate date for these aims has been successful. By combining 2000 and 1990 US Census data with commercial sources such as *Zagat Guide* and *Reference USA* the study has found a substantive means to examine the city's social component and physical form. In particular, the use of *Zagat Guide* was crucial for gauging urban amenities and for precisely identifying amenity zones, while *Reference USA 2009* was essential to grasp the character of the present business activities along Atlantic Avenue and disclose patterns of residential

gentrification. Moreover, historical maps and Atlas were also key source to understand the formative and transformative processes along Atlantic Avenue, thus investigating the spatial transformations of the urban layout and its physical structure.

By analyzing these two major components (urban structure and physical form) the present work has offered an original contribution to the study of New York's character, and has advanced theory in certain aspects of urban geography, namely, urban amenities and geographical urban morphology.

Concerning the study of the physical form of the city, the present research has applied for the first time Conzenian concepts in urban morphology to the city of New York, offering a deep study of selected aspects of the city and its constitutive elements. The study has demonstrated New York's town plan persistence in the faces of various transformations. Although scholars have claimed the lost of the physical form of New York, this study has proved that in the portion of the city under analysis (Atlantic Avenue), a street undergoing gentrification, the urban layout and its physical structure have not been modified significantly. By focusing on transformative processes rather than formative ones, it has analyzed the pressure of socio-economic processes in changing urban form and has shown that the town plan and its elements are difficult to change. They rather adapt to socio-economic pressures. The changes in the functional requirements of society not always bring changes in the building forms. On the contrary, the urban structure of the city, building and land utilization have a great capacity of adaptation to changing needs, reacting promptly to new functional requirements, such as the diversification of retail activities, the conversion of building type and the separation of businesses from residential functions to other functions. These findings demonstrate that the theories of the British School of Urban Morphology were applied successfully to the city of New York, and they are able to explain the complex transformations in the spatial composition of the physical form. This conclusions suggest that the application of the Conzen's analysis to the city of New York broadly will produce similar results.

In relation to the study of New York's urban structure and its transformations, the study has successfully applied the concept of high amenity zones (Greene, 2006) to the city of New York and investigate the way to which functional requirements of society has brought modifications in city' spatial functional structure. The study has identified the HAZs in the city of New York and implemented the method to identify them. Greene's method for defining HAZs was incomplete to detect high amenity zones in complex cities like New York, essentially because it identify all

commercial-residential strip, thus making New York a big HAZ. The preset work by combining quantitative and qualitative measures and new datasets has presented a new approach to study high amenity zones and offered a refinement and augmentation of Greene's criteria to produce more plausible demarcations. By applying spatial tools (Getis Ord G*IZ, Nearest Neighbor Index, Density Karnel for Point Features) to new data, the present study goes beyond Greene's concept by postulating not one class (HAZs) but hierarchical classes of amenity zones (AZs), namely, Super Amenity Zones (SAZs), Nodal Amenity Zones (NAZs) and Peripheral Amenity Zones (PAZs). It also mapped out the green areas within the city, which make up the Green Amenity Zones (GAZs). One of the peculiarities of this new method relates to the study of the urban amenities, which have been examined spatially and qualitatively. Most of the research in the urban amenities field (Clarck, 2004; Gleaser et all, 2001) limits their investigation to the spatial distribution of amenities at the regional of national sale, omitting investigation on precise urban areas. The present study has examined urban amenities in the context of New York by measuring their spatial clustering and their quality. By identifying a method to study the quality of urban amenities and not simply their elementary spatial distribution this research has made a leap forward in this disciplinary field. The study of urban amenities has also shown that urban amenities tend to cluster in the "event cultural locations" (Currid and Williams, 2009) therefore being very connected to the main cultural and creative production system. Moreover, the more recent research on urban amenities suggests that places attract people by providing a range of lifestyle amenities (Gottlieb, 2005) and that amenities attract the creative class (Florida , 2002b). In this study a tangible relationship has been shown between urban amenities and the spatial behavior of the creative class, thus showing through spatial visualization Florida's theorization. Therefore, the present work has improved the technical method used to identify amenity zones in the following respects: has applied new data and spatial tools (Getis Ord G*IZ, Nearest Neighbor Index, Density Karnel for Point Features); it has taken into account the character of the built environment; it has used theories on urban amenities and on the creative class to explain the concept.

The application of these two approaches to study of both the urban structure and the urban form of New York represents an original contribution to the research literature on New York where methods of this kind have never been applied before. By using these two methods together it has been possible to offer a more integrated understanding of the city's main character, and reveal important spatial patterns. Moreover, the study has exploited the potential of the GIS tools

employed in it and the special data for the analysis of the city's transformations and the spatial dimension of the city and its components.

The results of this study enable one to identify some feature scenarios for the city of New York and inform the experts about the appearance of new spatial phenomena and urban changes. First, considering the high correlation between the distribution of the urban amenities and the creative class, one can expect that in the next years, with the further expansion of the creative sectors as a leading economy, the functional requirements related to urban amenities will increase even more. As a result, the amenity zones will spread out to neighborhoods that have not been gentrified yet; second, considering that the physical form of the city is difficult to change and that the adaptive reuse has been a diffuse practice since the 1970s, in the next years the process of building recycling will gain more importance in the parts of the city that are already build, preserving the architectural character of the building fabric, despite immense changes in the urban functions.

Summing up, the thrust of this contribution rests on the methods and the special datasets it has applied which have made possible investigation of the city as a complex social and physical organism. Nevertheless, future developments could extend the application of the methods to other global cities and to other part of the same city, and could single out new elements for investigation. Specifically, the method used to identify amenity zones can be improved by taking into consideration other variables beyond the creative class and urban amenities such as the environmental nature of neighborhoods. The approach could be extended to other American cities and be applied to selected European cities. On the other side, the methods used to study urban form with the analytical tools of urban morphology and to identify the city's transformative processes can be applied to the city territory as a whole, and not to Atlantic Avenue only, which would offer a more complete study. Moreover additional historical materials could be utilized in order to analyze formative processes in addition to the later transformative ones, for a clear perspective over time. Concerning the tools of analysis, more GIS techniques, such as geographical wide regression, should be exploited to find statistical significance of visible spatial phenomena.

BIBLIOGRAPHY

Allain, R. (2004), *La Morphologie Urbaine. Géograpie, aménagemet et architecture de la Ville*, Armand Colin, Paris.

An historical preservation study of Atlantic Avenue and its environs, spring 1992.

Atlantic Avenue Betterment Association (2000), *Brooklyn's historic Atlantic Avenue: walking guide*, Atlantic Avenue Betterment Association, New York.

Beatriz-Corredor- Sierra, 12th International Architecture Exhibition, 2010

Beauregard, R.A. (1986) The Chaos and complexity of Gentrification in Smith, N. and Williams, P., *Gentrification of the City*, Allen and Unwin, London.

Bell, D. (1973) *The Coming of Postindustrial Society: a Venture in Social Forecasting*, Basic Books, New York.

Bell, D. and Jayne, M. (2004) *City of Quarters. Urban village in the Contemporary City*, Ashgate, Burlington.

Berry, B.J.L. and Kasarda, J.D. (1977) *Contemporary Urban Ecology*, New York.

Beveridge, A. (2004) New York's Creative Class, *Gotham Gazette,* October, 14th, 2010.

Bourne, L. (1993) The Myth and Reality of Gentrification. A Commentary on Emerging Urban Form, *Urban Studies*, 30(1), pp. 183-189.

Bowley, G. (2007) Letter from America: New York shows way for Urban Renaissance, *New York Times*, August, 24th, America Section.

Bressi, T.W. (1993) *Planning and zoning New York City. Yesterday, Today and Tomorrow*, Center for Urban Policy Research Press, New Jersey.

Bridge, G. and Dowling, R. (2001) Microgeographies of Retail and Gentrification, *Australian geographer*, 32(1), pp. 93-107.

Brooks, D. (2000) *Bobos in Paradise: the New Upper Class and How they Got There*, Simon & Schuster, New York.

Brydson, N. (2008) Brooklyn the Borough: A case of Gentrification, *The New York Observer*, May, 23rd, 2008.

Cardia, C. (1987) *Ils ont Construit New York: histoire de la Métropole aux fin de XIX Siècle*, Georg Editeur, Genève.

Castells, M. (1977) *The Urban Question: A Marxist Approach*, Edward Arnold, London.

Cataldi, G., Maffei, G. Vacarro, P. (2002), Saverio Muratori and the Italian school of planning typology, *Urban Morphology. Journal of the International Seminar on Urban Form (ISUF),* 6 (1), pp. 3-14.

Caves, R.E. (2002) *Creative Industries: Contracts between Art and Commerce*, Harvard University Press, Cambridge MA.

Center for an Urban Future (2008) *Five Borough Growth: A neighborhood-by neighborhood examination of where the jobs were created during the past 10 years*, New York by the numbers, 1(2), New York, Center for Urban Future.

Center for an Urban Future (2009) *Return of the Chains: This year's borough-by-borough analysis of New York City's largest retailers*, New York by the numbers, 2(4), New York, Center for Urban Future.

Center for an Urban Future (2010), *A Chain Reaction: This year's borough-by-borough analysis of New York City's Largest Retailers*, December 3(1), New York, Center for an Urban Future.

Ciner, J. (1976) Atlantic Avenue in transition: not just a Truck route, but a lined shopping street, too, *Phoenix Magazine,* May, 20th 1976, pp. 30-31.

City of New York, Atlantic Avenue Improvement (1943) *Conduit Boulevard, post war project connecting Atlantic Avenue and Belt parkway*.

Clark, T.N. (2004) *The city as an entertainment machine*, Elsevier, Oxford.

Conzen, M.P. (1978) Analytical Approaches to the Urban Landscape, in Butzer K.W. (ed.), *Dimension of human geography: essays on some familiar and neglected themes*, University of Chicago Department of Geography Research Paper 186 (Chicago), pp. 128-65.

Conzen, M.P. (1980) The Morphology of Nineteenth Century city in the United States, in Borah, W., Hardoy, J. and Stelter, G.A (eds.), *Urbanization In the Americas: the background in comparative prospective*, National Museum of Ottawa, pp. 119-41.

Conzen, M.P. (1990) Town plan analysis in an American setting, in Slater, T.R. (ed.), *The built form of western cities*, Leicester University Press, Leicester.

Conzen, M.P. (2001) The study of Urban Form in the United States, *Urban Morphology. Journal of the International Seminar on Urban Form (ISUF)*, 5(1), pp. 3-14.

Conzen, M.R.G. (1960) *Alnwick, Northumber: a study in town plan analysis*, Institute of British Geographers publication 27, George Philip, London.

Conzen, M.R.G. (2004) *Thinking about Urban Form. Papers on Urban Morphology 1932-1998*, Peter Lang, Bern, Switzerland.

Conzen, P.M. (2009) How cities internalize their former urban fringes: a cross cultural comparison, *Urban Morphology. Journal of the International Seminar on Urban Form (ISUF),* 13(1), pp.29-54.

Cooke, P. and Lazzaretti, L. (2008), *Creative Cities, Cultural Clusters And Local Economic Development*, Edward Elgar Publishing, Northampton.

Curran, W. (2007) From the Frying pan to the Owen: Gentrification and the experience of Industrial Displacement in Williamsburg, Brooklyn, *Urban Studies*, 44(8), pp.1427-1440.

Currid, E. (2006) New York as a Global creative Hub: A Competitive Analysis of four Theories on World Cities, *Economic Development Quarterly*, 20(4), pp. 330-350.

Currid, E. (2007a) *The Warhol economy: How fashion, art and Music Drive New York City*, Princeton University Press, Princeton.

Currid, E. (2007b) How Art and Culture happen in New York: Implications for Urban Economic Development, *Journal of the American Planning Association*, 73(4), pp. 369-484.

Currid, E. and Williams, S. (2008) Two Cities, Five Industries: Similarities and Differences Within and Between Cultural Industries in New York and Los Angeles, University of Southern California/Columbia University, Working Paper.

Currid, E. and Williams, S. (March, 2009) The Geography of Buzz: Art Culture and the Social Milieu in Los Angeles and New York, working paper presented at the Annual Meeting at the Association of American Geographers, Las Vegas, US.

Davis, H. (2009) The commercial-residential building and local urban form, *Urban Morphology. Journal of the International Seminar on Urban Form (ISUF)*, 13(2), pp. 89-104.

Deutsche, R. and Ryan, C.G. (1984) Fine Art of gentrification, *October*, 31(1), pp. 91-111.

Diamonstein, B. (1986) *Remaking America: new uses, old places*, Crown, New York.

Dolfman, L.D., Holden, R. J., Wasser, S.F. (2007) The Economic Impact of the Creative Art Industries: New York and Los Angeles, *Monthly Labor Review*, pp. 21-34.

Domosh, M. (1996) *Inventing cities: the creation of landscape in nineteen century New York and Boston*, Yale University Press, New Haven.

Druker, P. F. (1992) *The Age of Discontinuity: Guidelines to Our Changing Society*, Heinemann, London.

Eisenstadt, P., Moss, L.E. and Huxley, C.F. (2005) *The encyclopedia of New York State*, Syracuse University Press, pp. 218-223.

Ersland, G.A. (2010) Plot longevity and urban land tenure: a Norwegian case study, *Urban Morphology. Journal of the International Seminar on Urban Form (ISUF)*, 14(1), pp. 21-9.

Florida, R. (2000) *Competing in the Age of Talent: Quality of Place and the New Economy*, report prepared for the R.K. Mellon Foundation, Heinz Endowments and sustainable Pittsburgh.

Florida, R. (2002a) *The Rise of the Creative Class*, Basic Book /Perseu, New York.

Florida, R. (2002b) The Economic Geography of talent, *Annals of the Association of American Geographers*, 92(4), pp. 743-755.

Florida, R. (2003), Cities and the Creative Class, *City & Community*, 2(1), pp. 3-19.

Florida, R. (2005) *Cities and the Creative Class*, Routledge, New York.

Ford, L.R. (1980) Historic District and urban design, *Environmental Review*, 4(1), pp. 20-6

Ford, L.R. (1994) *Cities and buildings: skyscrapers, skid rows, and suburbs,* John Hopkins University Press, Baltimore.

Forstall, R.L., and Greene, R.P. (1997) "Defining Job Concentrations: The Los Angeles case." *Urban Geography,* 18(1), pp. 705 -739.

Gallion, A. and Eisener, S. (1980) *The Urban Pattern. City Planning and Design*, D. Van Nostrand Company, London.

Geddes, P. (1915) *Cities in Evolution*, Williams & Norgate, London.

Gerson, A. (2004) *Campuses and Corridors: a Strategy for a Multi-campus Cultural District in Lower Manhattan,* NYC Council Member, First District, May.

Giuliano, G. and Small, K.A. (1991) Subcenters in the Los Angeles Region, *Regional Science and Urban economics*, 12(1), pp. 163-182.

Glaeser, E., Kolko, J., Saiz, A. (2001) Consumer City*, Journal of Economic Geography* 1(1), pp. 27-50.

Goodchild, M.F, Anselin, L. Appelbaum, R.P., Harthorn, B.H. (2000) Toward Spatially Integrated Social Science, *International Regional Science Review*, 23(2), pp. 139-159.

Gottlieb, P.D. (1995) Residential amenities, Firm Location and Economic Development, *Urban Studies,* 32(1), pp. 1413-1436.

Governa, F. (2001) La dimensione territoriale dello sviluppo socio-economico locale: dalle economie esterne distrettuali alle componenti del milieu, in A. Magnaghi (editor), *Rappresentare i luoghi. Metodi e tecniche*, Alinea, Firenze.

Grass, R. (1964) *London: Aspects of Change,* Centre for Urban Studies, MacGibbon & Kee, London.

Greene, R.P. (2006) Strong Downtowns and High Amenity Zones as Defining Features of the 21st Century Metropolis: The case of Chicago. In Greene R.P., Bouman M. J., and Grammenos D., editors, *Chicago's Geographies: Metropolis for the 21st Century*. Washington D.C., Association of American Geographers, pp. 40-74.

Greene, R.P. (2007) *Amenities as Drivers of Growth in the Global Economy: Creative Industries and High Amenity Zones*, paper presented at the conference IGU City of Tomorrow Conference, August 2007, Guangzhou, China.

Greene, R.P. (2008) Urban Peripheries as Organizers of What Remains of the Center: Examining the Evidence from Los Angeles and Chicago, *Urban Geography*, 29(2), pp. 1-16.

Grenier, E.S. (1996) *Brooklyn An illustrate History*, Temple University Press, Philadelphia.

Griffiths, S. and Jones, C. E. and Vaughan, L. and Haklay, M. (2009) A morphological approach to the persistence of socio-economic activity in three suburbs of Greater London, in *Proceedings of the Sixteenth International Seminar on Urban Form. Guangzhou, China*, ISUF (International Seminar on Urban Form).

Griffits, S., Jones, C.E., Vaughan, L., Haklay, M. (2010) The persistence of suburban centers in Greater London: combining Conzenian and space syntax approaches, *Urban morphology. Journal of the International Seminar on Urban Form (ISUF)*, 14(2), pp. 85-99.

Hackworth, J. and Smith, N. (2001) "The changing state of gentrification", *Tijdschrift voor Economische en Sociale Geografie*, 92(4), pp. 464-477.

Hall, P. (1999) *Cities in civilization: culture, innovation and urban order*, Phoenix Giant, London.

Halla, F.A. (July, 20th, 2001) *Atlantic Boulevard*, Brooklyn Daily Eagle

Hammett, E. and Hammett K. (2007), *The suburbanization of New York: is the World's Greatest City Becoming just Another Town?*, Princeton Architectural Press, Princeton.

Hartley, J. (2005), *Creative Industries*, Blackwell, Malden (MA).

Harvey, D. (1973) *Social Justice and the City*, Edward Arnold, London.

Holdworth, D. (1992) Morphological change in Lower Manhattan, New York, 1893-1920, in Holt, D. (2006) Atlantic Avenue: Portrait of a Brooklyn Street in 1885, *Brooklyn Daily Eagle*, November, 18, 2006.

Hoover, E.M., and Vernon, R. (1962) *Anatomy of a Metropolis: The changing distribution of people and jobs within the New York metropolitan region*. Anchor Books, Doubleday, New York.

Howard, E. (1902) *Garden Cities of Tomorrow*, Sonnenschein & Co., London.

Hutton, T. (2008) *The new economy of the inner city: Restructuring, Regeneration and Dislocation in the Twenty-first century Metropolis*, Routledge, New York.

Hyde, E.B. (1911), *Atlas of the Borough of Brooklyn, City of New York*, E. Belcher Hyde, Brooklyn.

Ignacio Pedrosa and Garcia De Paredes, 12th International Architecture Exhibition, 2010.

Indergaard, M. (2009) What to Make of New York's New Economy? The Politics of the Creative Field, *Urban Studies*, 46(5&6), pp. 1063-1093.

Jacobs, J. (1961) *The Death and Life of Great American Cities*, Vintage Books, New York.

Johnson, D.A. (1995) The making of the New York metropolitan Region in *Planning the Great Metropolis. The 1929 regional Plan of New York and its environs,* Routledge, 1st edition, New York.

Karni, A. (2010) Lower East Side is Losing it, *New York Post*, December, 12th, 2010.

Keegan, R., Kleiman, N., Seigel, B., Kane, M. (2005) *Creative New York*, Center for an Urban Future, New York.

Knox, P.L. (1987) The social production of the built environment: architects, architecture and the

Knox, P.L. (1993) *The restless urban landscape*, Prentice-Hall, Englewood Cliffs, N.J.

Kostof, S. (1991), *The city shaped. Urban patterns and meanings through history,* Thames and Hudson, London.

Kotkin, J. (2006) Urban legend. The Craze Over Coffee Shops and Condos won't revive American cities. Improving urban life for the middle class will, *Democracy Journal.org*.

Krier, R. (1979) Typological & Morphological elements of the concept of urban space", *Architectural Design,* 49(1), pp. 1-17.

Kropf, K.S. (1993) *An enquiry into the definition of built form in urban morphology*, Ph.D. thesis, University of Birmingham.

Kropf, K.S. (2009) Aspect of urban form, *Urban Morphology. Journal of the International Seminar on Urban Form (ISUF)*, 13(2), pp.105-20.

Kugel, S. (2007) An exotic oasis in Brooklyn, *New York Times,* November 18, 2007.

La gates, R.T. and Stout, F. (2007) *The city reader,* Routledege, 4thedition, New York.

Le Corbusier (1929) *The city of tomorrow and its planning*, Dover Publications.

Lees, L. (2003) Super Gentrification. The case of Brooklyn Heights, New York City, *Urban Studies*, 40(12), pp. 2487-2509.

Lees, L. (2003) Super Gentrification: the case of Brooklyn Heights, New York City, *Urban Studies,* 40 (12), pp. 2487–2509.

Lees, L., Slater, T., Wyly, E. (2010) *The Gentrification Reader*, Routledge, New York.

Lefebvre, H. (1974) *La Production de l'Espace*, Anthropo, Paris.

Lefebvre, H. (1996) *Writing on cities*, Blackwell, Malden, USA.

LeGates, R.T., Stout, Y.F., (1996) *The City Reader*, Routledge, London.

Lewis, P. F. (1976) *New Orleans: the making of an urban landscape*, Ballinger Publishing & Co, Cambridge.

Ley, D. (1994) Gentrification and the Politics of the New Middle Class, *Society and Space*, 12(1), pp-53-74

Liff, B. (1999) Atlantic Ave. Key artery has diverse charms, *Daily News*, August 24, 1999.

Lockwood, C., Goldberger, P. (2003) Bricks and Brownstones: The New York Town House, Rizzoli.

Lynch, K. (1996) *The image of the city,* The MIT Press, Cambridge.

Maffeim G.L. (2009) The historical geographical approach to urban form, *Urban Morphology. Journal of the International Seminar on Urban Form (ISUF),* 13(2), p.133.

Marat Mendes, T. (2002) *The sustainable Urban form. A comparative study in Lisbon, Edinburgh and Barcelona*, Ph.D Thesis, University of Nottingham.

Marcuse, P. (1985) Gentrification, Abandonment, and Displacement: Connections, Causes, and Policy Responses in New York City, *Journal of Urban and Contemporary Law* 28.

Marcuse, P. (1989) Dual city: a Muddy Metaphor for a Quartered City, *International Journal of Urban and Regional Research,* 13(4), pp.697-708.

Markusen, A. (2006) Urban Development and the Politics of a Creative Class: Evidence from a Study of Artists, *Environment and Planning A*, 38(10), pp.1921-1940.

Marxs, E. (2007) Upscale Bloom on Atlantic Avenue, *The real deal online,* March 1st, 2007.

Marzot, N. (2002), The study of urban form in Italy, *Urban Morphology. Journal of the International Seminar on Urban Form (ISUF)*, 6(2), pp. 59-73.

Marzot, N. (2005), Typological analysis and hermeneutics in the Conzenian and Caniggian schools: overlaps and differences, *Urban Morphology. Journal of the International Seminar on Urban Form (ISUF),* 9(1). pp. 48-50.

Massey, D.B., Allen, J. Pile,S. (2000) *City worlds*, Routledge, London.

Mayer, H.M. and Wade R.C. (1969) *Chicago: growth of a metropolis*, University of Chicago press, Chicago.

Mayer, M. H. and Hayes, C.R. (1983) *Land use in American Cities*, Champaign.

Meller, H. (1987) *Towns, plans and society in modern Britain*, Cambridge University Press, Cambridge.

Miller, R. and Karp, S. J. and Miller, R. S. (1979) The fourth largest city in America: A sociological history of Brooklyn in Golden, H. and Miller, R.S. (eds.), *Welcome to Brooklyn the fourth largest city in America*, Brooklyn College Press, New York.

Milligan, M.J. (2003) The Individual and City life: a Commentary on Richard Florida's city and the creative class, *City & Commuting*, 2(1), pp.21-26.

Mills, C.A. (2010) Life on the Upslope: the postmodern Landscape of Gentrification, in Lees, L., Slater, T., and Wyly, E., *The Gentrification Reader*, Routledge, New York.

Molotch, H. (2002) Place in Product, *International Journal of Urban and Regional Research,* 26(4), pp. 665-88.

Morris, A.E.J. (1994) *History of Urban Form before the Industrial Revolution*, Longman, Essex.

Moss, M.L. (1997) *Reinventing the Central City as Place to Live and Work*, Housing Policy Debate Fannie Mae Foundation, 8(2), pp. 471-490.

Moudon, A. V. (1986), *Built for change: neighborhood architecture in San Francisco*, MIT Press, Cambridge.

Moudon, A.V. (1997), Urban morphology as an emerging interdisciplinary field, *Urban Morphology*. *Journal of the International Seminar on Urban Form (ISUF),* 1(1), pp.3-10.

Mumford, L. (1937) What is a city?, *Architectural record*.

Mumford, L. (1938) *The culture of cities*, Harcourt, Brace&Co, New York.

Mumford, L. (1961) *The city in history: Its origins, its transformations, and its prospects,* Brace & World, New York.

Muratori, S. (1959) *Studi per una operante storia urbana di Venezia,* Instituto Poligraphico dello Stato, Roma.

New York City landmarks Preservation Commission (2005) *Rowhouse Styles*, New York.

New York City landmarks Preservation Commission, *Row House Manual*, New York.

Newman, K. and Wyly, E. (2006) The Right to Stay Put, revisited: Gentrification and Resistance to Displacement in New York City, *Urban Studies,* 43(1), pp. 22-57.

Noizet, H. (2009) Fabrique urbaine: a new concept in urban history and morphology, *Urban Morphology, Journal of the International Seminar on Urban Form (ISUF)*, 13(1), pp. 55-66.

Olson, S. H. (1980) *Baltimore the building of an American City*, Johns Hopkins University Press, Baltimore.

Papageorgiou, A. (1971) *Continuity and Change, Preservation in City Planning,* Pall Mass Press, London. Relph, J. W. (1987) *The modern Urban Landscape*, Johns Hopkins University Press, Baltimore.

Plunz, R. (1990) *A history of housing in New York City*, Columbia University Press, New York.

post-modern city, *Progress in Human Geography*, 11(1), pp. 354-377.

Ravazzoli, E. (2010a) Public Space Management: remarks on the American Context, in Silvia Gaddoni (editor), *Public Spaces and Urban Parks in the Contemporary City*, Patron Editore, Bologna, pp.131-138.

Ravazzoli, E. (2010b) The Study of Urban form in Italy: the Contribution of Geography, *Rivista Geografica Italiana*, 117(3), pp. 539-559.

Reich, R.B. (1992) *The Work of Nations: Preparing Ourselves for 21st Century Capitalism*, Vintage Books, New York.

Reichl, A. J. (2007) Rethinking the Dual City, *Urban affairs Review*, 42(5), pp. 659-687.

Ren, X. (2004) Amenity and Urban Growth: an Explanatory Analysis, Report for the *University of Chicago*, Chicago, pp. 1-19.

Reps, J.W. (1965) *The making of urban America. A history of city planning in the United States*, Princeton University Press, Princeton.

Reps, J.W. (1979) *City of the American West. A history of frontier urban planning*, Princeton University Press, Princeton.

Reynolds, M.T. (1893) *The housing of the poor in American cities: the prize essay of the American Economic Association for 1892*, American Economic Association, Baltimore.

Rossi A. (1983) *The Architecture of the City,* The MIT Press, New York.

Rueb, E. (2009) A street where old is new again, *New York Times*, November 12nd , 2009**.**

Rush, A. (2010) Study: Brooklyn leads the chain gang, *The Brooklyn Paper,* 22nd December, 2010.

Ryan, B.D. (2006) Morphological change through residential redevelopment: Detroit, 1951-2000, *Urban Morphology. Journal of the International Seminar on Urban Form (ISUF),* 10(1), pp. 5-22.

Sassen, S. (1991) *The Global City*, Princeton University Press, Princeton.

Sassen, S. (1993) Rebuilding the Global city: Economy, Ethnicity and Space, *Social Justice*, 22 September.

Sassen, S. (2010) *City are the center of our environmental future*, S.a.p.i.e.n.s., Institute Veolia Environment, 2 (3), pp. 1-8.

Satler, G. (2001) A Taste of the Global Economy: New York City Restaurants, *Journal for the study of food and society*, 5(1), pp. 1-7.

Savitch, H.V (1991) *Post-Industrial Cities: Politics and Planning in New York, Paris, and London*, Princeton University Press, Princeton.

Scheer B. C. and Ferdelman, D. (2001) Inner city destruction and survival: the case of Over-the-Rhine, Cincinnati, *Urban morphology. Journal of the International Seminar on Urban Form (ISUF),* 5(1), pp. 15-27.

Schuyler, D. (1987) *The new urban landscape. The redefinition of city form in nineteenth century America*, The John Hopkins University Press, Baltimore.

Schwartz, A. Associates (January 1988) *A commercial revitalization study of Atlantic Avenue, Brooklyn*, prepared for the New York City Office of Business development and the Atlantic Avenue Association, Brooklyn.

Scott, A. (2000) *The Cultural Economy of Cities*, Sage Publication, London.

Scott, A. (2006) Creative Cities: Conceptual Issues and Policy Questions, *Journal of Urban Affairs*, 28(1), pp. 1-17.

Sheftel, J. (2010) Long Island City makes BID for New York's Next Hot Spot, *Daily News*, October, 22nd, 2010.

Siksna, A. (1997) The effect of block size and form in North American and Australian City Center, *Urban Morphology. Journal of the International Seminar on Urban Form (ISUF)*, 1(1), pp. 19-33.

Silver, N. (2010) The Most livable Neighborhoods to Live in New York. A quantitave index of the 50 most satisfying places to live, *New York* April, 11th, 2010.

Sisario, B. (2008) All hail Brooklyn: Alt-rock Thrives in Alt-Borough, *New York Times*, March, 9th, Art Section.

Slater, T.R. (1990) *The Built form of Western Cities. Essays for M.G. Conzen on the occasion of his eightieth birthday,* Leicester University Press, London.

Smith, C.J., Randall, T.A. (2008), Measuring Residential Lot and Neighbourhood Changes in Hamilton, Ontario, *Canadian Journal of Urban Research,* 17(1), pp. 155-164.

Smith, N. (1986) Gentrification, the Frontier, and the Restructuring of Urban Space, in Smith, N. and Williams, P., *Gentrification of the city*, Allen and Unwin, London.

Smith, N. (1987) Gentrification and the Rent Gap, *Annals of the Association of American Geographers,* 77(3), pp. 462-465.

Smith, N. (1996) *The new urban frontier*, Routledge, London.

Stern, R. A. M., Gilmartin, G. and Mellins, T. (1987) *New York 1930: Architecture and Urbanism between the Two World Wars*, Rizzoli, New York.

Stern, R. M., Fishman, D. and Tilove, J. (2006) New York 2000: Architecture and Urbanism from the Bicentennial to the Millennium, Monacelli, New York.

Stern, R.A.M, Mellind, T. and Fishman, D. (1995), *New York 1960. Architecture and urbanism between the second world war and the bicentennial*, Monacelli Press, New York.

Tenements house committee & study of land Overcrowding in Brooklyn (1916) *The progress of housing reform in Brooklyn*, Brooklyn.

The office of Downtown Brooklyn Development (1974) *Atlantic Avenue Special Zoning District*, New York.

U.S. Department of Commerce, Bureau of the Census (1990, 2000) *County Business Pattern*, Government Printing Office, Washington D.C..

U.S. Department of Commerce, Bureau of the Census (2000, 2007) *Social and economic characteristics: New York state,* Government Printing, Office Washington D.C..

U.S. Department of Transportation, Bureau of the Census (1990, 2000) *Census Transportation Planning Package,* Government Printing Office, Washington D.C..

Vance, J.E. (1977) *The scene of man: the role and structure of the city in the geography of Western Civilization*, New York.

Vance, J.E. (1990) *The Continuing City*, John Hopkins University Press, Baltimore.

Vandam, J. (2010) Long Island City's Changing Skyline as seen from Midtown Manhattan, *New York Times*, May, 6th, 2010.

Veblen, T. (1988) *The theory of the Leisure Class*, Penguin Classic, New York.

Ward, D. and Zunz, O. (1992) *The landscape of Modernity: essay on New York City 1900-1940,* Russell Stage, New York.

Waters, W. (2009) Do live-Work Space Works? www.creativeclass.co.

Webber, R. (2010), The New Gentrification, *GothamGazette.com*, December, 10th, 2010.

Whitehand J.W.R. and Larkan P.J. (eds.) *Urban Landscapes. International Prospective*, Routledge, New York.

Whitehand, J.W.R. (1977) The basis for an historic-geographical theory of urban form, *Transactions. Institute of British Geographers,* 1(1), pp. 400-16.

Whitehand, J.W.R. (1981) *The urban landscape: historical development and management. Papers by M. R. G. Conzen*, Institute of British Geographers Special Publications, 13, Academic Press, London.

Whitehand, J.W.R. (1987) Urban Morphology, *Historical geography: progress and prospects,* (ed.) M. Pacione, pp. 250-76.

Whitehand, J.W.R. (1990), Townscape management: ideal and reality, *The Built form of WesternCities. Essays for M.G. Conzen on the occasion of his eightieth birthday (ed. T. R. Slater),* London, Leicester University Press, 1990, pp. 370-393.

Whitehand, J.W.R. (1997) Why Urban Morphology?, *Urban Morphology. Journal of the International Seminar on Urban Form,* 1(1), p.1-2.

Whitehand, J.W.R. (2000) From explanation to prescription, *Urban Morphology. Journal of theInternational Seminar on Urban Form,* 4(2), p. 1-2.

Whitehand, J.W.R. (2001) "British urban morphology: the Conzenian tradition", *Urban Morphology. Journal of the International Seminar on Urban Form,* 5(2), pp. 103-9.

Wirth, L. (1938) Urbanism as a way of life, The American Journal of Sociology, 44(1), pp. 1-24.

Wolf-Powers, L. (2005) Up-Zoning New York City's Mixed-Use Neighborhoods: Property-Led Economic Development and the Anatomy of a Planning Dilemma, *Journal of Planning Education and Research*, 24(1), pp. 379-393.

Wright, E.O. (1979) *Class Structure and Income Determination,* Academic Press, Madison, Wisconsin.

Yi Fu Tuan (1978) The city: its distance from nature, *Geographical Review*, 68(1), pp.1-12.

Younger, W. L. (1978) *Old Brooklyn in Early Photographs, 1865-1929*, Dover Pubblication, New York.

Zeidler, E.H. (1983) *Multi-use Architecture in the Urban Context*, Van Nostrand Reinhold, New York.

Zukin, S. (1987) Gentrification: Cultural and Capital in the Urban Core, *Annual Review of Sociology*, 13(1), pp. 129-147.

Zukin, S. (1989) *Loft living: Culture and Capital in Urban Change*, Johns Hopkins University Press, Baltimore.

Zukin, S. (1995) *The Culture of Cities*, Blackwell, Cambridge, Massachusetts.

Zukin, S. (1998) Urban Lifestyle. Diversity and Standardization in Spaces of Consumption, *Urban Studies*, 35(5-6), pp. 825-939.

Zukin, S. (2009) New Retail Capital and Neighborhood Change: Boutiques and Gentrification in New York City, *City & Community*, 8(1), pp. 47-64.

Zukin, S. (2010) *Naked City. The Death and Life of Authentic Urban Places*, Oxford University Press, New York.

Online Database in old records:

Brooklyn Historical Society: http://brooklynhistory.org/blog/

Brooklyn Public Library: http://www.brooklynpubliclibrary.org/

New York Public Library- map division: http://maps.nypl.org/warper/

David Rumsey Map Collection: http://www.davidrumsey.com/