Spring 2014

Redefining America’s Postwar Urban Renewal at the Northgate of Springfield, MA

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The Department of Landscape Architecture and Regional Planning, UMass Amherst, continues the successful collaboration with the Office of Planning and Economic Development of the City of Springfield in the spring of 2014. The studio is coordinated and sponsored through an agreement between the City of Springfield and the UMass Amherst Design Center. This Graduate Urban Design Studio developed tangible design scenarios for the revitalization of an underutilized district in between the downtown and the North End neighborhood. Because this area is the northern gateway for downtown we called it the NORTHGATE. Our studio developed design proposals over a full semester that investigated topics around green infrastructure and urban agriculture, recreation and healthy living, housing possibilities, urban retail, and local transportation. These proposals were discussed with planning officials and a Springfield expert panel of planners, economists, historians and other stakeholders to receive professional and local feedback and expand our knowledge. The process was most beneficial in conceptualizing six diverse and vibrant visions for the area. The design proposals were discussed at our UMass Department of Landscape Architecture and Regional Planning and exhibited for five months in the Springfield Museums and part of the "Steampunk Springfield - Reimagining an Industrial City" exhibition. The work was also submitted to the American Society of Landscape Architects 2014 Awards - national professional organization to get further recognition.

We want to thank all the individuals that made this studio a great success. We specially thank Scott Hanson from the Springfield Department of Planning & Economic Development for his untiring enthusiasm, professional feedback and great support on this project.

We thank Mayor Dominic Sarno for his passionate support of the UMass Amherst Design Center in Springfield. We further thank the contributors of the expert panel for their time and valuable input: Brian Connors, Phil Dromey, Alvin Allen from Springfield Planning & Economic Development, Wayne Phaeuf from The Republican, Bob Mc Carroll from the Springfield Historical Commission, Jay Minkarah from Develop Springfield, and all other stakeholders and people that attended our meetings, came to our presentations and gave feedback and support of any kind.

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Studio Goals
The goal of this studio project is to design and present visions for a district that makes Northgate a destination and capitalizes on its unique location and the specific assets of the City of Springfield. The possibilities for other job-creating industries, the need for retail opportunities in the downtown area, and the vicinity of the Connecticut River with a lacking sense of connectivity. Revitalizing this quarter will create new places to work, will attract and engage residents and visitors alike.

One task of this studio is to transform this goal into concrete design and policy objectives to shape the cultural, physical and economic environment of the project area.

Studio Process
• Study, analysis and assessment of the area through site trips, interviews, sketching, data collection and research, case studies.
• Establish consistent communication with an expert panel from Springfield.
• Present a variety of design concepts with new ideas.

Study Area & Context - Studio Goals
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Studio Project Area
The study area is the northern part of the Metro Center neighborhood in Springfield, MA. The boundaries are I-291 to the north, the railroad viaduct and Union Station to the south, the riverfront of the Connecticut River with the on-grade railroad train tracks and elevated I-91 to the west, and Franklin Street around the YMCA to the east. The area has been a fine-gridded residential area until the Second World War. Like many other cities in the US, postwar urban renewal largely transformed the area. The residential buildings were razed, I-291 and I-91 were built, and small blocks were combined into bigger blocks with large-scale auto-oriented thoroughfares to accommodate large scale light industry, transportation and distribution businesses.

We defined elements of the city after Lynch’s research on legibility in the city. Our area has a lack of nodes, is separated by physical edges from the rest of the city. The landmarks like the old Needle Factory or the Union Station need restoration.
Cultural Milieu - Cultural, Social and Economic Context

Northgate’s History:

The area has been a residential area from the late 1800’s until the demolitions in the 1950’s. Prior to WW2 nearly 1,600 families lived here. The majority were Jewish and Irish construction and factory workers. Access to the Connecticut River was limited through industrial activities and the railroad. Between Boston and Albany this early transportation connection existed since 1841. The railroad activities were at their height in 1925 - just before the current Union Station building opened in 1926.

The map on the other page shows the location of the former Hampden Park. This has been the first public park in Springfield and the only that utilized the riverfront. The park was a popular destination for residents and international bicycle enthusiasts. It was Regarded as "one of the finest such venues of its type in the country". Postcards from 1883 show the 1/2 Mile bicycle racing track, baseball diamond and "trotting-track". Famous Springfield resident and world champion George Hendee raced here.

During post-war Urban Renewal 200 acres were demolished, the Federal Highway Act implemented I-91 and I-291. The mixed-used district of residences, a school and businesses were displaced. The result was an urban grain characterized by large blocks, wide set-backs, and over dimensioned arteries; Main Street, Dwight Street, and Chestnut Street. The area represents a characteristic urban renewal projects of the period.

Source: Springfield Masterplan, 1950/Passenger Train Journal-Robert Boudreau

Images: Wood Museum/Archives-Springfield Museums, 1950 Urban Renewal Drafted Plan

Downtown

Area today. Aerial from google2014.

Hampden Bicycle Park

Northgate

Downtown

Trolleys on Main Street.

Historic rendering of Union Station.

Trolleys on Main Street. Historic rendering of Union Station.
Cultural Milieu - Cultural, Social and Economic Context

Springfield Economy:

In Springfield, a mainstay manufacturing remains since tradition, and service industry has growing in importance. A diverse industrial base, as Springfield is home to significant insurance, chemical, paper, government, and health care facilities.

The Major Industry Trends of Springfield are:

- Manufacturing
- Fastest growing service sectors are healthcare and education.
- Professional service industry has been growing in importance.
- Small businesses are showing significant growth in the region.

Major employers include:

- Mass Mutual
- Big Y Supermarkets
- Baystate Health
- Mercy Medical

Springfield College

Colleges and Universities: Western New England College, Springfield College, American International College, Springfield Community College, Cambridge College

Economic Development in Downtown:

The Market Rate Housing:

- Residential Market Potential:
  
  "... on average of 2,280 households represent the potential market for new and existing housing units within Downtown each year over the next five years..." - Zimmerman Volk Report 2013

- The target potential residents with median incomes of $50,000 or more are currently living within the Springfield city limits, Hampden County and the borderer Massachusetts.

- The ownership preferences shift to rental dwelling units, mixed-use neighborhoods, preferably in urban locations. Particularly among younger households, yielding a higher share of consumer preference for multi-family rentals.

- Approximately 22% of Springfield’s households do not own an automobile (compared to just over 9% nationally).

Union Station Refurbishment:

The $81 million project integrates multiple transit modes in one state-of-the-art transportation complex:

- Local and intercity bus;
- Amtrak intercity;
- Planned New Haven-Hartford-Springfield commuter rail;
- Taxi, bicycle and pedestrian travel

The Union Station will be reactivated as a regional landmark through the reuse of some 200,000 square feet of vacant historic building stock and the construction of a new downtown building on the adjoining development site.

The current plan does not utilize a strong connection to Main Street.

There will be better connection and a new proposed north-south street as a connection between Frank B Murray and Liberty Street for the new Union Station.

The New Bus Terminal will replace the current Peter Pan Station which is at the west of the Union Station across the Main St.

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The Hydrology & CSO: Our area is part of the Connecticut River watershed. Combined sewer systems are sewers that are designed to collect rainwater runoff, domestic sewage, and industrial wastewater in the same pipe. Our area has two CSO’s. Alternative stormwater management reduces the number of outfall events and enhances water quality.

Permeable & Impermeable Surfaces: 
Permeable surfaces include buffer areas around the highway and areas along the river. The impermeable surfaces cover the majority of the area. They include sidewalks, roads, parking areas.

Topography: 
Overall, the eastern part of the area is higher than the west, the slope going down from 110’ to Connecticut River (about 50’). The surface TRAIN TRACKS goes below the I-91 VIADUCT that connects with the I-291 VIADUCT on the north. I-291 goes east and crosses several NORTH-SOUTH ROADS (Main Street, Dwight Street, Chestnut Street).

Cultural Milieu - Cultural, Social and Economic Context
Proposed MGM Casino Project:
- $850 million multi-use plan envision an exciting and lively residential, retail, dining and entertainment district:
  - Sited between State & Union St Main St and Columbus Ave, 294 rooms Hotel,
  - 294 rooms Hotel,
  - 125,000 sq. ft Casino,
  - 4,800 parking spaces,
  - 54 units apartments,
  - Refurbished 85,000 sq ft office spaces, 43,000 sq. ft retail spaces(approximately 20 shops) with eight-screen theatre,
  - 18-lane bowling, shops, restaurants,
- Attract traffic increase up to 26,006~30,724 visit per day during weekends in 2022.
- Trolley or public transit link the casino to further extend point of interest.

UMass Center at Springfield:
- Newly opened location at Tower Square is in close proximity to Northgate.
- A student body of 900 is planned. The location encourages downtown housing and living.

Source: Springfield Redevelopment Authority, MGM Casino Proposal Documentation

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Natural Systems - Hydrology, CSO, Permeable/Impermeable Surfaces and Topography

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Source: Springfield Redevelopment Authority, MGM Casino Proposal Documentation

Plan of proposed casino area downtown south
Natural Systems • Street Trees and Vegetation Cover, Relationship to the Riverfront.

Street Trees and Vegetation Cover:
Dense vegetation cover can be seen along the highways and the riverfront. Street trees can improve the environment by providing canopy shade, filtering dust, enhancing humidity during hot days. They also increase the aesthetic value. Overall there is a lack of coherent street tree plantings in the area. The same street may have different street tree patterns along the district. Street tree plantings should be improved in the future and included in future plans.

Section from the riverfront to Boylston Street facing north:
The section displays the most important connection between the core area and the riverfront. It includes the Flood Wall, the Bike Way, the Waterfront area, the Highway, West and East Columbus Ave.

Natural Systems • Public Open Space System
Springfield has around 10% public open space. The only significant public open space in our area is the riverfront with the Connecticut Riverwalk and Bikeway. This path is accessible on Liberty Street where there is an on-grade railroad crossing and through an underpass close to Boylston Street. It is important to improve these connections and link to other assets of public open space in the City. This includes downtown Riverfront Park and Forest Park southwards and the smaller parks on the east of our project area: Emily Bill Playground, Gurdon Bill Park and the proposed Arc of Recreation.

There are other many potential under utilized green open spaces as well as existing open spaces such as forested and vacant lots that could be beneficial for wildlife and infiltrations such as Chapin Terrace and areas near high ways. Amtrak, rail roads, and wide corridors can be improved to create better connections to major open spaces such as the Connecticut River Walk & Bikeway and Van Horn Park.
Natural Systems - Connecticut River Walk and Bikeway

1. North Entrance with lack of signage and parking availability.
2. Elevated paved path offering flood buffer and peaceful walk.
3. River frontabove providing habitat support and beaver activity.
4. Cinched outflow pipe draining into restful spot by the River.
5. Double flood wall and fenced power station.
6. Large, vacant, river fronting building with open space.
7. Curved topographic foot path and elevated steel bridge.
8. Overwhelmingly tight/secluded caged bridge overpass.

Parking and Public Transportation System & Street Network and Hierarchy

Parking in Northgate of Springfield

Parking and Public Transportation System:

• Commuting Statistic:
  - 22% of households in Springfield do not own an automobile (national average number is 9%).
  - 53.7% of the residents work in Springfield, while the other 46.3% work outside of Springfield (Zimmerman-Volk).

• Parking in Northgate:
  - Numerous privately owned parking lots including the Baystate garage for employees only.
  - There is only one parking garage for public use, more should be proposed in the site.
  - On-street parking is on Liberty, Congress, and Boylston Streets.
  - Parking in all lot does not reflect usage, lots could be consolidated and more open to public use.

• Public Bus Service (PVTA):
  - The area is well serviced for local and regional travel:
    Most local buses run every 20–40 minutes. Most bus stops are just signs without cover, except for only one covered bus stop on Liberty St.
  - The hours of operation are not suitable to sustain night life
  - The Peter Pan Bus Terminal is major hub for regional and interstate bus travel.
Street Network and Hierarchy

Inventory of the Most Important Streets in the Area:

MAIN STREET:
- Over-dimensioned street width
- Wide sidewalk
- Street trees (Not consistent)
- Green island in the middle (Not consistent)

CHESTNUT STREET:
- Over-dimensioned street width
- Wide sidewalk
- Portions of very wide lateral planting strips
- Heavy traffic

LIBERTY STREET:
- Over-dimensioned street width
- Narrow sidewalk
- No street trees
- No legible pedestrian connection to the riverfront area

DWIGHT STREET:
- Over-dimensioned street width
- Wide sidewalk
- Portions of very wide lateral planting strips
- Heaviest traffic
Urban Grain, Land Use and Zoning

Existing Land Uses

The most common land use is parking followed by office space, commercial and institutional. Only two lots are used for industrial. The largest and only public open space is the river front.

The majority of commercial destinations of the site are located on Main Street, including Bank, Post Office and Peter Pan Bus Station, and La Quinta Hotel on north east. Land use of office in the area includes PVPC, several Medical Offices and a Dentist. The most important industrial destination of the site is the Springfield Republican Newspaper on the Main Street. Several Institution use destinations including RMV and YMCA are on Chestnut Street. Several buildings and blocks in the area are vacant, including part of the historic National Needle Building.

The concept of many design proposals is to reuse the vacant area and introduce new residential, commercial destinations that are compatible with the government proposal of new Union Station. Yet the introduced commercial use should not compete with the downtown commercial center on the south of the site.

Bicycles are used by some people yet limited by the lack of distinct lanes. Change of width of arteries for adding bike line system into the area and its connection with the existing riverfront bike line would benefit the site.

Zoning

The existing zoning patterns favor highway oriented services and heavy industrial industry. The vicinity to downtown should encourage different uses: Along Main Street pedestrian oriented shopping should be allowed to create a better link to downtown and encourage walkability. The existing zoning patterns would prohibit residential uses. In combination with the remodeled Union Station and the desire of market rate small apartments (Zimmerman Volk, 2013) this should be reconsidered.

The area along the riverfront is not zoned as open space. This area should be rezoned to protect the riverfront and the natural resources.
Urban Grain, Land Use and Zoning

Landmarks & Destinations:

1. Building Uses in the Area

1. Vacant Building for Lease
2. Publishing Company
3. Post Office
4. UPS
5. George of Baystate Health
6. Baystate Health
7. FYI
8. Shirlington Bagels Cheese
9. Massachusetts General Hospital

10. Liberty Medical Arts Building
11. Diagnostix Imaging & Dialysis Center
12. Public Parking
13. A. Joseph Jewelers
14. Felix Sandwich Shop
15. St. John’s Riverside
16. Rosemary’s Restaurant
17. Old Train Station
18. A. Space for Lease
19. Commercial Building
20. Commercial Building
21. Commercial Building
22. Office Building
23. Office Building
24. Office Building
25. Local Assessment Bureau
26. PVPC (Pioneer Valley Planning Commission)
27. Office Building
28. Vacant Building
29. Vacant Building
30. Vacant Building
31. Office Building For Lease
32. Commercial Building
33. New England Maintenance Depot
34. Vacant Building
35. Hampden County Physicians Association
36. Freedom Credit Union
37. Western Mass. Banking Center
38. A. Space for Lease
39. Uncle Bob’s Self Storage
40. PVPC (Pioneer Valley Planning Commission)
41. Quality Medical & Physical Therapy
42. Budget La Quinta Hotel Rent-A-Car
43. City Place Inn & Suites
44. Senior Residential
45. Residential
46. Residential
47. Vacant Building
48. Gas Station
49. Commercial Building
50. Commercial Building

Urban Grain, Land Use and Zoning

Building Uses in the Area

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Urban Grain, Land Use and Zoning

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46. Residential
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48. Gas Station
49. Commercial Building
50. Commercial Building
General Assessment and Opportunities - Strengths to Build On

The Connecticut River Walk and Bikeway is the strongest asset at the Northgate.

Recommendations:
• Provide more signage throughout area
• Improve feeling of safety by providing ample lighting
• Remove enclosing elements
• Remove unwanted invasives to increase habitat
• Increase connectivity from surrounding streets

There are traces of new art and culture that could enliven the district in the future.

Recommendations:
• Expand exposure and provide greater canvas
• Designate Art District in the area

Strengths to Build On
• Riverfront and open space
• Diversity of buildings and history of site
• Existing medical and industrial land uses
• Existing vacant buildings and ample parking
• Union Station redesign: increased accessibility to area
• Support for art community and increased residential use
• Proposed downtown MGM casino
• UMass Center at Springfield

Taking advantage of these opportunities will increase connection to place and build up local pride.

Design Proposals - Overview
Project Statement

The Northgate is the area in Springfield between downtown and the North End neighborhood. After the urban renewal movement, the big and low story blocks replaced original building and this area lost its identity and be recognized as no man’s land. The project rethinks the urban renewal movement and apply the idea of green infrastructure and urban agriculture to create a more sustainable, friendly and appealing environment.

The Vision - The project preserves the important characteristics of the Springfield urban environment and, at the same time explores the new sustainable and diverse strategies to redefine the city of Springfield such as new green infrastructure and productive landscape, urban agriculture. The objectives will result in a more appealing place for people to visit and live and will revitalise this area with a new booming local economy.
Background & Site Condition

As a quite challenging site, Northgate is separated from the Connecticut River waterfront and Northend residential by the I-91 highway which is very unfriendly to the pedestrians; also the railway forms another edge between the site and Springfield downtown.

In this site, around 87% of the land is covered by impervious pavement, which is an important non-point pollution source and will greatly influence the quality of water flow into Connecticut River. Also the old city combined sewer overflow system keeps on dumping the untreated waste water into the river.

Without friendly walking environment and places to go, few pedestrians can be found during the day.

Because of the separation of I-91, the waterfront space is underutilized and the flood wall separates people and water. The space is not attractive.

Concept

The Peter Pan bus station moves to the new Union Station and leaves one big lot that can be used for urban agriculture. This parcel will be designed for the new proposed art district and also a new type of productive urban landscape for people to visit and to educate them about food and nutrition.

Goals and Objectives

1. Create an identity for each district in the Northgate.
2. Build new green connections within the existing green open space system.
3. Design legible places that people actively use and identify with.
4. Redesign new buildings that have a human scale and respond to the context.

Phasing

This concept for redevelopment is guided by economic feasibility and improvement of ecological services. The project will be realized in three stages. The first stage is introducing art as the anchor to attract more people to come to this place. Preferred are the valuable historical buildings that provide ample room and an affordable resource for artists to have studios and exhibition spaces. Another important target in the first phase is the creation of a more pedestrian-friendly corridor under the I-91 highway to ease the strong edge between the Connecticut River waterfront. This is reinforced through the use of green infrastructure systems to build connections and strengthen the connection between art district and the riverfront. The second phase is utilizing Transit Oriented Development (T.O.D.) strategies with the rehabilitated Union Station as a catalyst. This includes developing mixed-use buildings combining commercial and residential uses. They will have easy access to the Union Station. The third stage is to create more chances for the medical industry to settle in the area. This sector will provide more job opportunities for surrounding residents.
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Zhuoya Deng • Bin Liu


Urban Agriculture Plan

Green Infrastructure Spaces

Art, urban agriculture and green connections are catalysing the revitalization in the new district. - View of former Peter Pan Station from Main Street.
Northgate: History Informs the Future - Moving, Learning and Living in a Past Urban Renewal District
Ericka Duym • Wenjie Liu • Jason Yu

Project Statement
How can landscape architects learn from the history of their urban sites? How can the analysis of what “once was” play a role in framing the future? In many instances, a landscape has the ability to speak of its history to a larger audience through its character, ecology, human interaction, its magnificent tree specimens or its unique materials, all telling tales of a deeply routed history. With urban renewed sites of the 1950’s and 1960’s, cities were deprived of these tales and wide paths were paved for innovation, modern development, and the automobile. As the American city becomes increasingly popular for sustainable life, revisiting pre-renewal concepts in planning and design have become important precedents for study. This project seeks to revisit these precedents as building blocks for contemporary design, not just for the Northgate District and for the city of Springfield MA as a whole, but perhaps as a model for other post-industrial American cities.
Northgate: History Informs the Future- Moving, Learning and Living in a Post Urban Renewal District

I. Luis met his wife during his schooling at the Northgate Tech Institute, and they now are hoping to open up a small business on Liberty Street.

II. Paul and Kristen both have jobs that keep them traveling-living near Union Station is an advantage!

III. Tony owns and operates his small automotive business and is keen on hiring UMass Springfield grads to help in his shop.

IV. Janeka, professional artist seeking new studio space and adjacent outdoor display area at the National Needle Building.

VI. Rebekah, hired as a nurse at Baystate, takes full advantage of the Light Rail system for her commute from her home in the downtown.

VII. Slid and Vic, retired couple who enjoy biking from their home on Franklin street to the riverfront.

VIII. Students and Faculty at UMass Springfield Center are excited for new facilities on Congress Street.

Ret. Lt. Ed Dawes, recalls the day he stepped off of a train at Union Station upon returning home from WW2.
Major Goals and Objectives

Inspired by memories of a once energetic, vibrant and well-connected industrial hub, this design proposal invites historic land use, pedestrian systems, and street rail back to the Northgate through contemporary reinterpretation.

Key interventions include a proposed Street Car system, a re-designed public square and mixed-use residential blocks.

A core vision for this district is for the design, land use, and character to spark the rebirth of active urban life.

Site Potential

This site is capable of connecting the city by light rail, finishing the last portion of the Arc of Recreation, and revitalizing Union Station as a transportation hub for the greater region.

Early History Analysis

Residential, educational, and industrial land uses once dominated the landscape, and the Hampden Bicycle Park drew visitors to the site’s once accessible riverfront.

Renewal History Analysis

Residential, educational, and industrial land uses once dominated the landscape, and the Hampden Bicycle Park drew visitors to the site’s once accessible riverfront.

Current Analysis

Population growth of the city has held steady, however industry and accessibility to open green space and amenity in the Northgate district have declined.

A History

The Springfield resident at the turn of the 19th century witnessed a vibrant Northgate, brimming with industrial activity, from passenger trains entering the Union Station on their way to Boston and Albany, to families traveling to and from work along Main street by trolley car, and visitors arriving by the hundreds from all over the world to witness bicycle races at the nearby Hampden Bicycle Park. The Northgate district was a clear gateway to the city, and a key stopover for those traveling regionally. As time progressed, and the automobile took precedent, urban renewal efforts altered the life and fabric of the Northgate, disconnecting its residents from their riverfront, demolishing their homes for interstate systems, and restructuring its once active main street into a wide, cumbersome scale. As a current living proof of urban renewal efforts of the American Industrial city, the district stands as a clear urban cultural landscape telling the story of change, renewal and rebirth.
A Disconnect

The Northgate District of Springfield is commonly referred to as “no-man’s land”, and is generally thought of as a pass-through from the northern residential areas, to the metro center to the south. Although plagued by a lack of character, a wide urban grain unlike its surroundings, and a severed connection to its riverfront, the Northgate has the strong advantage of becoming the key gateway for travelers, commuters, and residents entering the city by bus, train, car, and bike. Users of the site are primarily employees (of about 1,000), and patrons of the rail and bus lines. Elements that support a disconnect are as follows:

• Severed connection to the Connecticut River. 1950’s construction of I-91 and 291 displaced 1200 homes, dozens of businesses, and activities that linked the city to its riverfront and the North End.

• Unmatched urban grain. When traveling north from the Metro center, one passes through several stately granite tunnels, brimming with history, leaving a narrowed urban metro center behind, and arriving into the Northgate, where wide setbacks, low buildings, and pavement dominate the experience.

• Weakened regional connectivity. The Northgate has a rich history in providing Springfield with the reputation of being a key rail hub between Boston and Albany with the presence of Union Station. At the height of activity in 1925, nearly 1,400 traffic movements occurred at Union Station, compared to only approximately 200 currently. Developments for revitalizing the Station are underway, and may provide a catalyst for future urban activity.

• A First Look. This analysis, concept process, and design integration comes at a time when the City of Springfield has just begun to look at the wider context of the Northgate, and how its programming as a district may add to Union Station, and to the city as a whole. Officials from city planning and redevelopment offices have provided feedback and encouragement during the analysis and planning. Results from this work will aid in shaping the direction of current plans and development.
Northgate: History Informs the Future- Moving, Learning and Living in a Post Urban Renewal District

Development Statistics & Phasing:

Phase One: 2025
- Phase One: 2025

Phase Two: 2035
- Phase Two: 2035

Phase Three: 2045
- Phase Three: 2045

Phasing
The phasing scheme for this design centers heavily around the development of Union Station, and the growth of the health care industry. Phase one sees infrastructure upgrades, and the installation of the Light Rail system.
An Impaired Ecology
82% of the Northgate is covered by impervious surface, making it the dominant form of impairment of the Northgate’s ecology. In addition to this, two Combined Sewer Overflows are located along the rivers edge, discharging directly into the Connecticut from the Northgate. Intercepting runoff from the over-dimensionalized roads, parking lots and elevated highways becomes crucial towards this design. Collection occurs along Chestnut, Dwight, and Liberty Street, with infiltration occurring along the historic Clinton passageway to the river. Tree canopy is extremely weak within the Northgate District, and combined with an excessive amount of pavement, heat island effects are greater. A solution made for this is to reduce dimensions of both Chestnut and Dwight Street, and adding buffered vegetation strips. The district also suffers from over-use of the automobile. Sustainable forms of transportation such as biking and walking are obsolete from the current area. Only two percent of Springield’s workforce uses public transport as means for travel, and the walkability of the site is poor. Taking advantage of low-impact transport, such as electric street rail would greatly reduce the number of automobiles, and increase public transit ridership, as well as connect the district to key areas throughout the city.

A Design
The overall design for this project is centered with historically significant land uses, and transportation systems. An analysis of Northgate’s functions at the turn of the century lead to informed decisions that many of its previous elements can be reintroduced as contemporary program elements, of which will aid in propelling Springfield forward economically, culturally, and environmentally. The reintroduction of street rail to the Main, Liberty and Dwight streets reconnects the Northgate to both the metro downtown, as well as areas in the north end, such as Bay State Medical Center, and residential neighborhoods. This plan incorporates storm water management and gradual infiltration along the once Clinton Street passage to the river and Hampden Dog Park/Interpretive Loop. Utilizing historic patterns of circulation, while incorporating modern infrastructure practices not only allows the public the more connection to regional recreation, but also guides them through the history of Urban Renewal, and industrialization.

This site has the potential to become both an amenity district, and a gateway for the city as a whole, and a feasible area for multi-unit housing and mixed-use buildings.

An Afternoon at Union Station
Once seeing nearly 1500 traffic transactions daily, the Union Station in Northgate will once again serve the city and the greater region with rail and bus transit.

Life on Liberty Street
The street will incorporate bus, light rail, traditional vehicular, bike and pedestrian traffic. With mixed use residential and retail buildings, the area once again becomes a vibrant entry to Union Station.
Utilizing an Underpass

A creative alternative for a park on the Main street that uses the historic Clinton street as the primary route to the riverfront.

Connecting to the district’s riverfront becomes a challenge of navigating infrastructure, both rail and highway. Taking advantage of underutilized space beneath Interstate 91 creatively invites historic Clinton Street back into the program and allows for direction of storm water.
Reimagining Northgate - Overcoming the Mistakes of Urban Renewal

Project Statement:

The vision for the Northgate is to create a sustainable multi-use district to rehabilitate the area, introduce new business as well as green infrastructure to assist in water management and facilitate increased pedestrian use.

The vision includes connectivity to the river via a new park system, and the utilization of local public transit opportunities. It takes an under-utilized site and makes it an amenity for the whole city.
Context
The Northgate is located just north of Downtown Springfield Massachusetts. It is located between the Connecticut River Walk and Bikeway as well as the Arc of Recreation, an abandoned rail trail to the east.

The Site
- In the 1950’s and 60’s the Northgate area of Springfield was altered forever by the Urban Renewal Movement.
- Hundreds of residential buildings were demolished and streets removed to make way for super-blocks to accommodate large scale industrial and commercial development.
- Interstates 91 and 291 were built shortly thereafter effectively cutting the city off from the Connecticut River, and isolating the Northgate area from downtown and the north end.
- Parking lots and other impermeable structures dominate the landscape.

Introduction
In the 1950’s and 60’s the Northgate was altered forever by the Urban Renewal movement, at which time hundreds of residential buildings were demolished, and streets removed to make way for super-blocks to accommodate large scale industrial and commercial enterprises. Interstates 91 and 291 were built shortly thereafter effectively cutting the city off from the Connecticut River, and isolating the Northgate area from downtown and the north end.

Today the Northgate is not the industrial center it was intended and the highway continues to be a barrier to the river. Parking lots and other impermeable structures dominate the landscape. Be it poor planning, or a lack of economic stability in the years following, initial concepts for the site were never realized. Instead of a flourishing industrial and commercial center for the city of Springfield, the result has largely been a hodge-podge of building uses from medical offices, to a post office, The Republican newspaper.

The entire site is largely paved, and no pervasive style dominates the area. In addition to an overabundance of parking lots, there are large irregular setbacks of the buildings from the road, as well as a serious lack of street trees, creating an open, exposed feeling for pedestrians. There are also a number of abandoned, largely empty, or soon to be vacated buildings on the site.

Overall the site lacks character and amenity that might identify the area as unique to Springfield. We consider the current state of the site to be the result of mistakes from the past that we wish to rectify in our design. The Northgate area of Springfield is located between the downtown city center and the North End. It is a site with strongly defined edges. The Northgate is largely overlooked by much of the city’s residents, and in need of revitalization.

Some of the advantages of the site are the location of the Peter Pan Bus terminal as well as Union Station which will be undergoing a $75 + million restoration in the coming year consolidating the two into a large multi-modal center for the city. When combined with regular commuter travel, hundreds of people pass through the site each day. There are possible connections to the Arc of Recreation (an abandoned rail trail) to the east of the site and an on grade train crossing located at the west end of Liberty St. that leads to an existing trail system along the Connecticut River.

The Northgate is also centrally located to many of the larger employers in Springfield. To reestablish a residential component to the site we referred to the per-urban renewal street grid. The smaller blocks makes for a more pedestrian friendly experience for the new mixed use neighborhood. Commuting options make Northgate attractive for residential development.

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Land Use/Figure-Ground Diagrams:

**The Vision**

- To establish a new park system that makes connections between Northgate and Union Station, to the river and current recreation networks.

- To reestablish a mixed-use residential area based on the pre-urban renewal street grid.

- To overcome the mistakes of the past, the vision for the Northgate area of Springfield is to rehabilitate the area and introduce new business, but green infrastructure as well, to assist in water management and facilitate increased pedestrian use.

- The vision includes added connectivity to the river, as well as reinforcing the “gateway” as a threshold and entrance between districts. Attractions must be created to take advantage of the volume of passers through.

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**Main Uses and Typologies**

- **Research/Lab Facilities**
- **Proposed Commercial Space**
- **Attached Single Family Housing with Private Parking**
- **Housing: Condominium Units**
- **Mixed-Use Development Incl. Market-Rate Rental Units with Underground Parking**

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**Existing Figure Ground**

**Proposed Figure Ground**

**Existing Land-Use**

**Proposed Land-Use**
Reimagining Northgate - Overcoming the Mistakes of Urban Renewal

Mohammed Abdelaal • Joe Larico • Tharyn Nein-Large
A proposed new type of housing/neighborhood that captures history, contemporary, dense, pedestrian friendly, sustainable in terms of design/economy, and with sufficient green infrastructure.

Section Perspective of Northgate Common including the gray-water collection system with storage under the park.
One of the overriding concepts of this design was to establish a connection from Northgate to the river. The new greenway culminates in an immersive river experience leading to a large dock and connecting to the existing walk and bikeway.

The creation of the river park reclaims the Connecticut River for Springfield. A large deck is intended to represent a city dock, bringing visitors right over the river. Adaptive reuse of the existing, vacant warehouse makes for an industrial style pavilion.

The Design of the Northgate Common references to a meandering river. Landform on the right eludes to a cool, shaded embankment with an urban forest where one can stop and relax. Across the stream is meadow for recreation and sun worship.
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One of the overriding concepts of this design is to establish a connection from Northgate to the Connecticut River. The new greenway culminates in an immersive river experience leading to a large dock and connecting to the existing walk and bikeway.

The Resilient City - Reclaiming the Legacy of Springfield, MA

Project Statement

Springfield, like many former manufacturing cities across the country, is affected by economic instabilities and uncertainties such as stable or declining population rate; high percentage of building vacancies; low growth; limited funding; and high unemployment.

The Resilient City connects a wide variety of city residents, provides activity and enjoyment; business opportunities; outdoor recreation; and habitat restoration.

Considering these realities and when thinking about true sustainability, it seems illogical and contradictory to tear down to aesthetically rebuild better.
The Resilient City - Reclaiming the Legacy of Springfield, MA

- Bike share, cafe/ice cream, live music, gallery
- Riverfront Walk: Blazing access and land art installation
- Combined Columbus Ave
- Historic National Needle building as Art installation

The master plan shows proposed features. Building energy is enhanced by roof gardens or solar panels which are installed on all buildings in the district.

- Bioretention pond
- Community commercial kitchen, greenhouse farm, duck pond
- Art of the Republic covered artist marketplace
- Trader Joe’s, salon, used clothing shop, coffee shop
- Flavored restaurant overlooking city

Open Space

- 10% Existing
- 35% Ft Proposed
- Enhance riverfront experience
- Create open space for neighborhood

Green Infrastructure

- Treat stormwater
- Improve urban climate
- Increase biodiversity
- Improve human health
- Reduce energy expense

Bike Lane

- 19,300 Ft Existing
- 27,970 Ft Proposed
- Improve the quality of existing pedestrian paths
- Add pedestrian paths to increase accessibility to the riverfront

Building

- 25,000 sqft demolished
- 66,000 sqft building infill
- 97,000 sqft greenhouse space
- 340,000 sqft repurposed

- Elevate restaurant overlooking city
- Union Station Intermodal transportation center

Traffic

- Keep the current condition of the highway and on-grade train crossing
- Change Chestnut st to two way
- Combine E. Columbus Ave with W. Columbus Ave. to eliminate vehicular and pedestrian conflicts between National Needle building and underpass sculpture park
- Reduce energy expense

Reduction in the intensity of automobile use is expected to reduce energy expense. Furthermore, the Resilient City project will expand open space by 35%, natural habitat drainage swales are added along all streets, and the streets themselves become more walkable and appealing with bike lanes, improved sidewalks and street trees.
Introduction
A rethinking of what it means to be sustainable in the current economic and environmental climate is recognizing existing potential, reclaiming as many buildings as possible, re-purposing uses and forms, rehabilitating natural features and habitats and reestablishing new ones. Obesity rates among city children are also high and when providing for the future, a recultivation in the health of the population and guaranteed system of food security should be implemented. These are all characteristics of a resilient city. This resiliency in combination with the addition of market rate artist live/work/studio space; a changing outdoor sculpture park; a year round indoor local food marketplace and extensive greenhouse; a commercial kitchen designed to inspire cottage industries; new retail and institutional uses and green infrastructure and open space remediation will revitalize the city and make it once again a notable destination. The resilient city—reclaiming the legacy of Springfield for residents, visitors and the future.

The Context
• Springfield
Springfield is the 3rd largest city in the state, and the 4th largest in New England. Population is diverse with the largest percentages being of Hispanic, White and African American nationalities respectively. It lies in the Connecticut River floodplain.
• Northgate
Northgate, was once a flourishing residential neighborhood district. Urban renewal of the 1950’s, set to incorporate the automobile, demolished this character. Now, conditions show the economic decline as largely underutilized and vacant spaces, excessive impervious surface, and little open space.
• Connection with Northend Neighborhood & Downtown
The Northgate district’s adjacency to downtown Springfield makes it a prime area for a new revitalization designed to support and increase economic stability and tourism to the city at large. The site is also adja- cent to Northend Neighborhood on the north.
According to many, the great floods were the catalyst for economic decline of the city. Northgate was heavily impacted, and to enable the success of urban renewal, I-91 construction seemed practical. This essentially cut the city off from its river.

The Resilient City, through a phased 9 year plan, demolishes 3 buildings, constructs 8 and re-purposes 17. The starting point is focused around increasing access to the river, and attracting new markets to the area.

**Phase One: 2014-2017**

**Phase Two: 2017-2020**

**Phase Three: 2020-2023**

Considering the current economic instability and uncertainty of the city, and when thinking in line with true sustainability, it seems illogical and unpractical to tear down sound buildings to aesthetically rebuild better. Instead, recognizing existing potential becomes the feasible approach.
Starting along the riverfront, pedestrian access is enhanced, habitats are restored and outdoor activities are encouraged.

A former bus maintenance terminal is repurposed as an indoor small business marketplace offering the best local, made to order food from the area. This and adjacent space will be covered by a greenhouse farm helping to provide food security.

Former Peter Pan Bus Station along Liberty St

Former Parking/Empty Space under I-91

An adjoining community kitchen provides a platform for area residents to start new cottage food businesses. A duck pond and chickens are outside to provide eggs for the complex.

The resilient city is designed to help Springfield reclaim its legacy.

Vacant space under the I-91 is re-imagined as a seasonally changing outdoor sculpture park holding competitions and displaying the work of area and notable artists.

Water is collected off the overpasses and runs to a large retention basin.
The Resilient City - Reclaiming the Legacy of Springfield, MA

Meilan Chen • Laura Keskula • Shu Liu

Section 1

Section 2

Section 3

A historic building is repurposed as artist live/ work/ studio/ gallery lofts. The former street running directly along the front has been removed to increase outdoor space and eliminate traffic conflicts.

An underutilized indoor/ outdoor arcade along Main Street is reclaimed as art and community fair space. This space will both attract visitors and provide an outlet for residents to sell their work.

The National Needle Building

The Republic Building

The site is situated north of downtown Springfield with four major urban features: the vibrant Union Station and Downtown Springfield to the South, the Connecticut River to the west, Interstate Highways to the west and north, and an residential area and parks to the East. Northgate Springfield presents several immediate challenges in the area as well as Springfield as a whole.

Project Statement

The Revitalized Northgate of Springfield by Design - Creating Room for People and Water

Junbo Zhang • Zhangkan Zhou

Bird View

Building Typology

The Resilient City - Reclaiming the Legacy of Springfield, MA

Meilan Chen • Laura Keskula • Shu Liu

Section 1

Section 2

Section 3

A historic building is repurposed as artist live/ work/ studio/ gallery lofts. The former street running directly along the front has been removed to increase outdoor space and eliminate traffic conflicts.

An underutilized indoor/ outdoor arcade along Main Street is reclaimed as art and community fair space. This space will both attract visitors and provide an outlet for residents to sell their work.

The National Needle Building

The Republic Building

The site is situated north of downtown Springfield with four major urban features: the vibrant Union Station and Downtown Springfield to the South, the Connecticut River to the west, Interstate Highways to the west and north, and an residential area and parks to the East. Northgate Springfield presents several immediate challenges in the area as well as Springfield as a whole.

Project Statement

The Revitalized Northgate of Springfield by Design - Creating Room for People and Water

Junbo Zhang • Zhangkan Zhou

Bird View

Building Typology
Visions

The Northgate envisions a district that effectively connects the components that make Springfield a successful city with comfortable gathering spaces, bicycling routes, pedestrian friendly walkways, and a culturally vibrant city. Tree planted streets with serve as the arteries for this connections, linking pedestrians to local and riverfront destinations via pedestrian-oriented pathways and sidewalks, bikeways, and the city bus system.
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Site Assessment

- Connection and Accessibility Limits:
  - Surrounded by I-91, I-291 and railway. Weak connections between downtown and North Gate.
  - Not easy for people to go to riverfront.
- Open-Space Limits:
  - Large areas of impermeable parking lots
  - Missing Ecological System
  - Flooding issue
  - Missing Street Canopy
  - Large number of abandoned buildings
- Hard surfaces create problem of CSO (Combined Sewer Overflow), and containment runoff discharge into Connecticut River.
- The Connecticut riverfront is currently dominated by an eight feet high flood wall and an unpleasing riverfront landscape which makes it inaccessible to people.
- The Riverbank is also full of effluvial landfill with polluted soil and water.
- Poor urban public facilities and lack of urban diversity come together with low economy and high unemployment rate.

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Site Model

- The Northgate lacks usable and accessible open spaces that do not connect to the larger open space network.
- Railway and highway "box" the site, it is hard for people to come in and out the site.
- Northgate is currently featured by a large amount of surface parking and vacant land, which result in an isolated district and extreme lack of place identity.
- The proposed solution: landscape as a framework for urban design and planning. The missing gaps of the regional open space network will be reconnected as green corridors link the existing open spaces to the riverfront. Starting from Emily's Playground, a pedestrian greenway covers four blocks and directs people to the Connecticut River. A linear wetland park in the north is part of site and provides multiple functions in terms of highway buffer, linkage, stormwater management, and bio habitats for wildlife.

Regenerative Open Space
- Courtyard
- Green Corridor
- Green Open-Space System
- Circulation System
- Commercial Mixed Use
- High-Tech Industrial
- Medium Density Residential
- Manufacture-related activities

New Circulation-New Moving Experience
- Block Sidewalk
- Motor Vehicle
- Riverfront Pedestrian + Bike Lane
- Green Open-Space System
- Circulation System

Site Process

Health Community by Design

Responding to the big challenges and to build an adaptive, flexible, and resilient built environment in the Northgate, the proposal envisions landscape as a framework for urban design and planning. The missing gaps of the regional open space network will be reconnected as green corridors link the existing open spaces to the riverfront.
The connected green open space increases infiltration and thus water quality.

Creating Room for Flooding

Room for People

Room for Wildlife

Creating Room for People

Creating Room for Wildlife

Creating Room for Flooding

Green infrastructure strategies are highly recommended in the design. Green roofs, stormwater gardens, bio-swales and constructed wetlands create a green infrastructure system in the area to create a sustainable and vibrant community. The idea of implementing landscape as a framework is represented as layered approaches of ecology, connectivity, and recreation. Five green fingers of open space involve possibilities for a diverse and adaptive urban fabric that will grow, evolve, and adapt over time. Riverfront Park consists as a series of playgrounds and wetlands that provide functions for recreation, infiltration, bio-habitat protection, and flood control. The existing Post Office on Liberty Street will be renovated and re-purposed as a dynamic meeting space and an indoor market. By reinforcing the indoor and outdoor connections, an all-new dynamic focal point is going to be achieved. Union Green serves as a center area for the district. Residents, visitors and commuter come to the Northgate to meet, shop and relax in the district’s iconic urban open space.
Northgate as a Prototype for Urban Renewal

Northgate is a healthy community that catalyzes the revitalization of the city of Springfield by design. Landscape plays a significant role in site planning and place-making. It is a medium the city is built from. Landscape performs as infrastructure cleaning the water, increasing infiltration, and providing habitat for wildlife. Collecting stormwater locally and infiltrating runoff into the soil on-site are the key strategies of stormwater management. Instead of utilizing a flood wall to protect the city, the river will be given more space and to provide a more flexible and dynamic way to deal with flooding issues. The open spaces of the riverfront could be flooded during the flooding season. After flooding, the riverbank is easy to recover and maintain its function as a riparian edge. Northgate provides a prototype of urban renewal practice that could be manifested in other cities like Springfield.
Appendix: Presentation Boards

Zhuoya Deng and Bin Liu

Ericka Duym, Wenjie Liu and Jason Yu
“Northgate: History Informs the Future - Moving, Learning and Living in a Post Urban Renewal District”

Mohammed Abdelaal, Joe Larico and Tharyn Nein-Large
“Reimagining Northgate - Overcoming the Mistakes of Urban Renewal”

Meilan Chen, Laura Keskula and Shu Liu
“The Resilient City - Reclaiming the Legacy of Springfield, MA”
Relevant Previous Studio Work:

- "Springfield’s “X” - From Crossroads to Center.” UMASS Amherst Design Center, Undergraduate Urban Design Studio, LA 497 A, Fall 2012/2013. LA 497 A
- "Reconnecting People to Springfield’s Riverfront: from the South End to Forest Park", UMass Amherst Design Center, Urban Design Studio Fall 2011, LA 497 A
- "Creating Livable Neighborhoods in Old Hill and Six Corners”, Spring 2011, Graduate Urban Design Studio, LA 604
- "Reconnecting People to Springfield's Riverfront: from the South End to Forest Park”, UMass Amherst Design Center, Urban Design Studio Fall 2011, LA 497 A
- "Creating Livable Neighborhoods in Old Hill and Six Corners”, Spring 2011, Graduate Urban Design Studio, LA 604
- "Springfield’s Upper Lyman Warehouse District Visions for Revitalization”, UMass Amherst Design Center, Fall 2010, Senior Urban Design Studio, LA 497 A
- "From the Quadrangle to the River”, Spring 2010, Graduate Urban Design Studio, LA 604A
- "Making Connections – Envisioning Springfield's North End”, Fall 2009, Senior Urban Design Studio, LA 497 A
- "Reconnecting the South End – The Gateway for Downtown Springfield”, UMass, Spring 2009, Graduate Urban Design Studio, LA 604
- "Designing The ARC OF RECREATION - The Railroad Corridor from Armory Street to State Street”, UMass, Fall 2008, Senior Urban Design Studio, LA 497 A
- "Designing the Crossroads of Mason Square – Railroad Corridor meets State Street Corridor”. UMass, Spring 2008, Graduate Urban Design Studio, LA 604

References

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