INTERSPACE

Diplomarbeit

zur Erlangung des akademischen Grades eines
Diplom-Ingenieurs
Studienrichtung: Architektur

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Introduction

This project is based on a competition held in spring 2006 by the Boston Society of Architects. The competition brief called for relieving the housing shortage, increasing the commercial tax revenue, promoting innovative and creative economy and much more.

In the course of this competition, we visited the site in Boston. Our main objective for the trip was a thorough analysis of the site. We focused on collecting data, taking pictures, sketching and talking to people. Especially the contact to various involved and concerned people helped us to understand the situation.

We decided to approach this project focusing on the process. This book presents the process of development for the Boston site rather than a finished product.

The title of this book, "Interspace", is the main theme of the project. This book deals with interspace on many different levels. The term "Interspace" emerged quite late in the process, but nevertheless serves as a "red line" throughout.

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THEORY

The first chapter seeks to clarify our stance concerning urbanist theory. A short introduction into the fields of nonlinearity and complexity will show the problems of working in such an environment.
Lastly, we propose a way of dealing with these problems in an urbanist project.

Nonlinearity

A lot has changed since Newton. We find ourselves in a world, which is no longer explicable in terms of Cartesian Space.
The clear, linear logics of Laplace has been replaced by irreversibility, unpredictability and chaos.

Laplace is said to have claimed that if he were told the position and momentum of every particle in the universe at a single instant in time, he could predict the entire future and reconstruct the whole of the past. This is of course an outrageous assumption, but it defines the project of his times very well: if only enough data of impeccable exactitude can be collected, there won't be a secret left.
In times of super-size information we are about to prove the opposite.

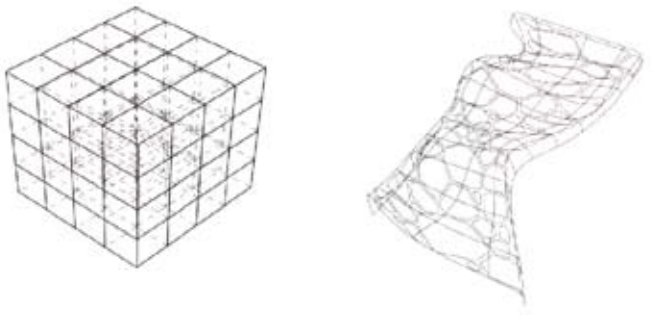

fig. 1
l.: Cartesian grid,
r.: unstructured grid

> *Architecture is supposed to be the locus of the metaphysics of presence.*[1]

In the nineteenth century a radically new concept was introduced: Thermodynamics. The "Second Law of Thermodynamics" provides the sciences with an "arrow of time". Using the Newtonian model, with the exact condition of origin, it is possible to calculate every condition of a given object anywhere in time, be it past or future. This is not possible in a thermodynamic process. In a simple exchange of heat, for example, the final equilibrium can be predicted, but it is not possible to make any assumptions about the previous states.

> *[The] digital models are different from any previous models because they rely on a non-stable, non-static condition of origin. Today there is no single condition of origin.*[2]

But still this classic thermodynamic was obsessed with a "final state equilibrium". All processes were expected to come to an end in the form of an equilibrium, at the lowest possible level of energy. This would imply a definite goal in every one of these processes, rendering the world, in a way, predetermined.

> *Ilya Prigogine revolutionized thermodynamics in the 1960s by showing that the classical results were valid only for closed systems, where the overall quantities of energy are always conserved. If one pushes it far from equilibrium the number and type of possible historical outcomes greatly increases. Instead of a unique and simple form of stability, we now have multiple coexisting forms of varying complexity.*[3]

Without doubt is the city a very complex environment. Much has been written and thought about the urban world we inhabit. Attempts to scientifically describe and thus explain it have failed so far. Even more so have all attempts to simulate urbanity as a whole. This is largely due to the fact that humans at least partially comprehend their environment; our simulations, however, are far from it.

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1 Eisenman, Peter; in: Michigan Debates on Urbanism III. UoM. 2005., p. 15

2 ibid.

3 De Landa, Manuel; A Thousand Years of Nonlinear History, Zone Books, NY, 1997, p. 14

It's futile to believe that we are just lacking the data or the processing capabilities to do so. No, as the above elaboration shows, this attempt might simply be impossible.

> *In mathematical terms, this is largely due to the fact that the mathematical space within which such models operate is so convoluted and infinitely divisible that it is impossible to guess the accurate starting position of the systems within this space. In fact, it is impossible to know the position of the system and therefore impossible to make any form of prediction in the kind of precise terms that Newtonian science demands and assumes.*[4]

If we look at our cities as urbanites, as inhabitants, we might ask ourselves how we have arrived at this point of complexity. It seems imposed on us from above, like a higher order we are not able to comprehend. But we should not look "up" for an explanation but rather down: This apparent chaos which makes up the city is actually an infinitely fine meshwork of processes. These processes, the everyday stuff of our everyday life, interact and influence each other and their environment, forming a multitude of feedback loops, interdependencies and attractors.

In this presentation we want to explore ways and possibilities of dealing with the nonlinearity, complexity and apparent chaos of our cities.

> *We traditionally assumed that most systems were linear, when they change, they change gradually, in proportion to what is there already, and thus their future behavior is predictable, knowable. In fact, many systems are not like this for they show discontinuities in their behavior, marked by catastrophes and bifurcations.*[5]

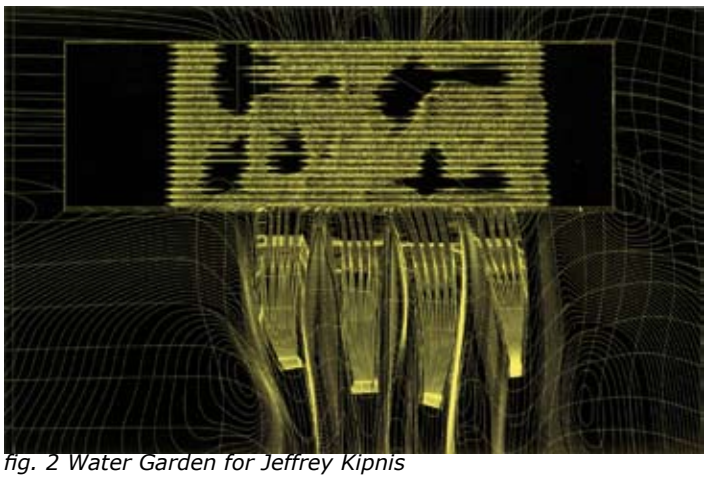

fig. 2 Water Garden for Jeffrey Kipnis

4 Batty, Michael; Longley, Paul; The Fractal City, in: Architectural Design, Vol 67, p. 75

5 ibid.

The Complex City

Although most of these developments have become common knowledge by now, many urban planners still work in the old, linear Cartesian space. A space where actions have foreseeable reactions, social conditions are planned and developments are completed.

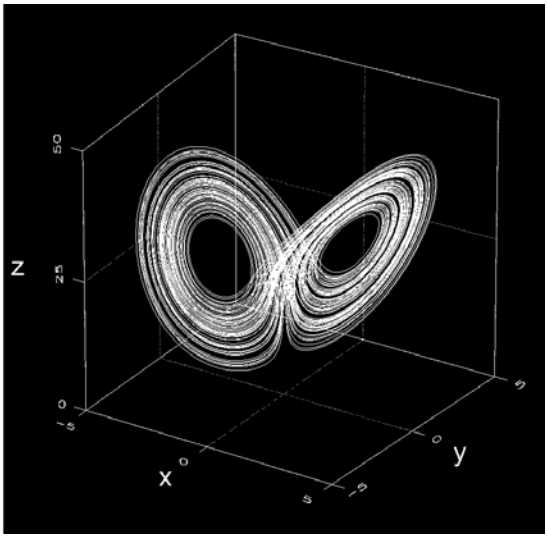

fig. 3 Lorenz Chaotic Attractor

This is how the modernists perceived the City. LeCorbusier plans, among others', foresaw a new society built on the foundation of the modernist beliefs. A top-down approach could impose a new order on the people of the city. It was a quite literal top-down approach, since modernist urbanism is most beautiful when viewed top-down, in the form of a plan. To live in such an environment would strike most people as inhumane.

Rhizomatic Structure

The contemporary urban condition, though, is much more complex. Modern cities tend to be large agglomerations of a very homogenous structure. Of course this urban fabric is in truth a complex meshwork of very heterogeneous elements; this meshwork consists of everything that makes up the city: different people, buildings, transport, infrastructure, identity, government, climate etc. That's what creates a city.

The interactions of all these elements give rise to the urban fabric. Of course, it is important to have a master plan, a guideline, when thinking about the development of the city, but we believe it is impossible to exactly plan an urban environment. Not only impossible, but also undesirable, since the really interesting things are the unplanned synergies happening „in between" the planned interventions.

We believe it's this „urban nonlinearity" a designer should focus on when planning a city.

> *Nonlinearity generally refers to a situation that has disproportionate cause and effect.*[6]

Scales

Generally, we can talk about three scales: the regional, the local and the middle scale. Up to now the physical switch of scale has been much harder: driving on or off the highway, the regional scale. A gated community provides a very distinct transition from one scale to another: doors, fences and guards. Real urban centrality is created by overlapping these scales. This is not just a question of accessibility.

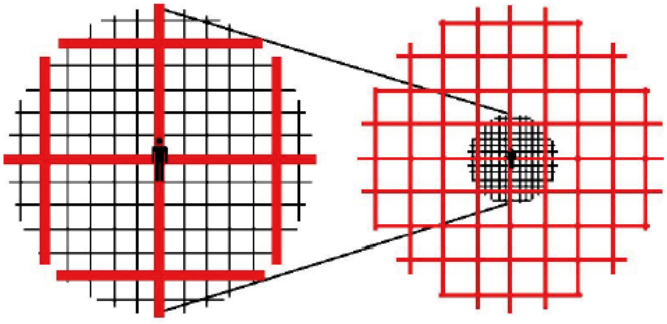
fig. 4 Simultaneous Scales

> *A structure of the city has been set up which involves the layering of the city into levels of movement and activity, organized into coherent networks which carry the movements and speeds appropriate to the respectively regional, middle or central city, and local scales.*[7]

6 http://www.esse.ou.edu/glossary_st.html#N

7 Read, Stephen; Akkelies van Nes, Local Machine, TUDelft, 2003 p. 23

The regional level is the network of highways throughout the country, trains, even airports are part of this scale. The local scale is the pedestrian scale, the sidewalks, shopping centers, the neighborhood. The middle scale is maybe the most interesting one. On this scale we move through the city, it's the scale on which we leave home, but are still not away. It's the scale of most everyday activities. And still this scale is the one which has recently been most neglected. The modernists built cities on a larger scale, almost neglecting humans. The New Urbanists are doing the opposite: building the city from a local scale.

To create a truly livable space, though, it is necessary to connect the scales and foster the middle scale because this is the scale on which the urbanite really lives.

Different Approaches

The complexity of the urban environment has of course been addressed by many different planners and designers. There are almost as many approaches to the subject as there are urbanists.

Simplification
Maybe the most obvious reaction to a world which is barely graspable due to its complexity would be to simplify it. Every simplification is basically an abstraction. But there are different directions to abstract: one would be to use a part to model the whole; this implies the concentration on a certain aspect of a problem, often leading to the neglect of others. Using the inverse approach would be to find a "unifying theory" explaining a multitude of effects and affects with a single solution.

Isolation
One example of the first, the isolation of a problem, could be the gated communities. A gated community addresses a specific problem, namely that of safe housing for the well-off, and solves it "locally", often without regard to the wider social or economical consequences. In this case, the solution is quite simple: big, expensive houses, a high fence around them and a guard at the door.

Unification
The opposite approach is that of unifying all urban problems into one theory. An example of an unifying theory could be „Space Syntax". The technique of space syntax focuses on the spatial aspect only. It analyses spatial configurations and tries to explain social or economical peculiarities by the results. In a space syntax analysis, the urban grid is simplified into a network of nodes and lines representing the street network.
The lines are analyzed in regard to the position of each line to each other. Statements about the „spatial integration" and the accessibilities can be made as well as relating those to results of other analyses; but no consideration is given to cultural or political differences, making space syntax a powerful tool if you ask the right questions.


fig. 5 Space Syntax map London

Prescriptive Proscriptive
Another way of dealing with the complexity of the modern urban would be the „prescriptive" and the „proscriptive" approach[8].
If a development is seen as a path through a multitude of virtual possibilities, there are two fundamental approaches to control it: you either set up a path to follow, a „prescription" a set of actions to be taken to reach the goal. On the other hand, it would be possible to define a set of rules which prevents development in certain directions. This is the proscriptive approach.

Prescriptive Approach
The prescriptive approach necessarily implies more of a linearity than the proscriptive. In reality this usually takes the form of design guidelines and a time line for development. In a way, it's a top-down process, since it imposes designed structures on an inanimate space.

Proscriptive Approach
Using a proscriptive approach you have to define what not to do. The idea is to set up measures to avoid a negative development. A table of unwanted conditions on different areas of the site leaves a multitude of possible developments. Everything else could happen. Of course a recommended path for this development should be set up, but it is a „fuzzy" path, with a lot of possible detours and alternative outcomes.

> *The limits imposed by theories of incompleteness, uncertainty, and complexity have destroyed any hope of a complete understanding [...]. Dreams of a final theory are a chimera.*[9]

On the following pages we want to present two very different projects, illustrating the range of concepts found in contemporary urbanism.

8 [...] constrains the growth of the meshwork but more in a proscriptive way (what not to do) than in a prescriptive one (what to do).", Manuel De Landa citing Francisco J. Varela in: The Geology of Morals, Manuel De Landa, available at: http://www.t0.or.at/delanda/

9 Saunders, Peter T.; Nonlinearity, in: Architectural Design, Vol 67, p. 52.

Case Study "Tübinger Südstadt"

fig. 6 Südstadt

When the French Army left the German town of Tübingen in 1990, the site of the barracks became available for development.
The city council chose the department for redevelopment and regional development to coordinate the planning and implementation processes. The council's goal was to start an urban renewal process based on the planning tool called "urban development measures" developed at the United Nations HABITAT II Conference.

The main objectives were reducing the need for commuting, increasing non-motorized modes of transport and large public areas. In other words to create a "traditional" urban area with a mix of dwelling, commercial, culture and a variety of buildings with high density.

To achieve these goals the department decided to establish a communication platform to coordinate the different interests and to allocate the parcels for private housing cooperatives. Furthermore they provided guidelines for mixed-use and high density developments (e.g. the first floor has to be used commercially)
The main reasons for the success of the project were the good general conditions in Tübingen, such as the lack of affordable housing in the 1990, and the process-oriented development plan. The transformation started with the reuse and the adaptation of the existing buildings and an opening of the site for the public by means of flea markets, open air cinemas, theaters, discos etc. This helped to reintegrate the former enclosed area into the social space of Tübingen.

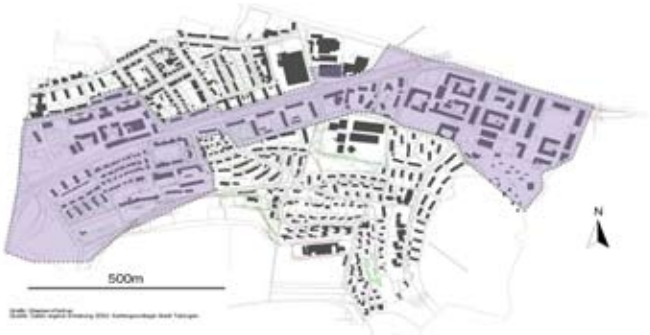

fig. 7 Site Plan

The project was designed to be car free, except for a few parking facilities for handicapped people, delivery and car sharing. All other parking spaces were planned to be located in a multi storey garage on the edge of the site. These would have to be rented separately. This utopian and educational approach was one of the main obstacles for some of the potential residents.

From a US American point of view, this concept has the disadvantage of being initialized and controlled by the government. To transfer the guidelines to the United States we have to find answers to the following questions:

How can we start an urban transformation process without or with only little help by the city council?

How can such a process be initiated from the bottom up?

These sites were abandoned by the military and were property of the city; how can the transformation process be started in a situation of complex property ownership?

Who should finance the necessary site preparation and how can the effort be minimized?

Case Study "North Point"

An interesting project in connection with Brickbottom is the Northpoint Development, Cambridge, MA. Located on a brownfield site of abandoned railway tracks it is planned as an extension to downtown Boston.

fig. 8 Northpoint

> *The layout of the new North Point neighborhood is driven in large part by the desire to structure continuous internal public realm, which is well integrated into the surrounding neighborhoods.*[1]

The 45 acres (18 ha) are intended to be pedestrian friendly and on a human scale. To achieve this, the proponents of the project have developed extensive guidelines based on the Eastern Cambridge Design Guidelines; these will shape the building form within each of the 20 parcels. The proposal includes recommendations for: street character and building design, residential uses, commercial and retail mixed-use buildings, building height, orientation and massing:

> *The envelope is a 4 - 6 story perimeter building comprising of Base and Middle with a tower of up to approximately 21 stories which is the Top. A line of expression at the third floor level defines the base and is intended to humanize the scale of the buildings and create an intimate pedestrian experience. This should be achieved by means of material articulation or architectural detailing.*[2]

fig. 9 Northpoint

The finished project will provide 2,700 residential units and 2.2 million square feet of commercial space.

For us it is difficult to link the actual plan to the underlying idea. Smart growth as well as New Urbanism promote a variety of interesting goals e.g. mixed use, walkable cities, etc; nevertheless, many of the projects we found ignore the wider context of the city. They are more or less self-sufficient, creating a new village within the city network. From our point of view these projects are more or less interchangeable. On the one hand this has to do with the plan layout, on the othe the design vocabulary.
The idea of the Transect by Andres Duany and DPZ is clearly visible in much center oriented developments. This model divides any urban development into zones, ranging from the densest commercial and public development to suburban residential areas and subsequently tapering of into nature.

An important lesson to be learned from these projects is certainly the way things are handled in a very cost efficient and fast manner. But when every further evolution is restricted, there is a high risk of creating generic, lifeless ghettos.

fig. 10 Transect

1 Eastern Cambridge Design Guidelines, 2003 p. 2

2 Eastern Cambridge Design Guidelines, 2003 p. 33

Differences between US and EU

For us it is difficult to see a fundamental difference between the United States and Europe, the two cultures are too closely related and strongly interdependent. But there are some tendencies/trends that can be read as differences. To clarify this we want to start with two citations,

> *The European Commission adopted the Communication Sustainable Urban Development in the European Union: A Framework for Action (Com(98)605), setting out objectives for urban areas, and a range of existing and proposed actions to address these.*
> *[...]*
> *The EPA's [...] brownfields Action Agenda is designed to assist states, communities, and other organizations or individuals in assisting, cleaning up, sustainable reuse and preventing future brownfield.*[1]

The content of these two papers is quite similar, the same problems are addressed and almost the same solutions are proposed. But most striking are the different styles of communication. On the one hand the US department tries to help, to assist. On the other hand the European Union Paper is written in a more abstract way, like a new imposed standard.
We believe that this difference is based on the completely different traditions of public participation.

A lot of US middle class citizens are part of action groups, ranging from helping children in Africa to improving the streetscape in their home district. Therefore it is more important for professionals to be understood by these non-professionals; catchwords are invented. These words, such as "smart growth", "New Urbanism", "Liveable Communities", "TOD's" etc. make public involvement easier and more attractive. From our European point of view this can lead to discussing the name of the problem instead of the problem itself. Catchphrases can obscure what they should describe.

The case studies we've found show another interesting difference. Most redevelopment projects in Europe are initiated and controlled by the city council; some of them then invite professionals and different interest groups to participate. The first moves are top down followed by a bottom up process.
This conforms with the current discussion by urban professionals in Europe and can lead to a sensitive approach taking current structures and atmospheres into account, transforming a region according to its potentials.
Maybe this is possible because of the widely criticized city council involvement, which is interested in finding the best project for the majority in a long term view.

In the United States, however, the discussion centers more around "-isms". New Urbanism tries to recreate the "quaint English village-atmosphere" and is strongly influenced by the City Beautification and the Garden City movements. Post Urbanism focuses on the architecture and impresses through grand gestures. Everyday Urbanism is interested in reading the city and understanding its day-to-day activities.
So these movements all compete with each other for public approval.

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1 CLARINET; Brownfields and Redevelopment of Urban Areas, Vienna, 2003 p. 14

From our point of view all these "-isms" are dogmatic and ignore the much more complex reality.
Most projects we found show a very bold approach, ignoring existing conditions and starting new projects by creating green field conditions.
The role given to the city council is that of a provider of infrastructure according to the plans of the developer.

Both the US-American and the European approach seems to be optimal. Perhaps a better solution would be somewhere in between; neither being too idealistic and ignoring market forces nor designing too profit-oriented without any space for real innovation.

Synopsis

Though without a doubt urbanism has to deal with the issues of nonlinearity and complexity, it is by no means the only discipline. During our research into these topics, we eventually sought a way of dealing with these issues in a more natural, intuitive way. We found Go, an old Chinese board game from which we derived the following rules:

1. Every new move should create more possibilities for further development.
2. Problems or conflicts have to be solved in the right context. This can be the right time, the right place or the right scale.
3. Every local move has consequences on a larger scale.

We see the future of any urban development as a pool of possibilities. As time goes by these possibilities are narrowed down and eventually become actualized. This development is guided by a multitude of different processes. They are market-driven, regulated by the state, influenced by nature, by social circumstance, even by chance. Is it the designer's job to foresee all these developments? Obviously, this is not possible. This is the question to be posed here: how to deal with this complexity, how to design an unforeseeable future. In our work we focused on the possibilities of illustrating and influencing the complex morphogenetic processes which give rise to our urban environment.

A city's development involves a multitude of different factors, influences and feedback loops. To illustrate these complex relationships and different interventions on many different scales, spatial as well as temporal ones, we have devised a model allowing us to clearly present an urban redevelopment project such as the „Edge as Center Competition" in Somerville, Massachussetts.

PERCEPTION

"**Perception**" describes anything that represents an image in the public consciousness. This image can range from handing out flyers to street beautification. On an urban scale, interventions can include marketing and signage.
Most of today's architects would agree that it is vitally important for successful architecture to be anchored in space; especially on an urban scale attention to the environment is essential. Our concept of „perception" includes yet another facet of this process of embedding. We believe it is equally important to give intervention its place in social space as well.
In this respect, architecture is more of a PR and marketing issue than one of actual space.

FLOWS

The "**Flows**" are the arteries of the city. It's what happens in between the buildings. For the flow, the built environment plays a minor role. Buildings are just the casing of destinations for the material that makes up the flow. Everything that moves makes up the dynamics and life of the city.
We can distinguish between two inherently different types of flows: the physical and the virtual ones:
The physical one is the more obvious of the flows, including pedestrians, cars and transit as opposed to the virtual, encompassing covert activities like money transfer or internet access.
Therefore the flows are the infrastructure in the most general sense.

SEDIMENTATION

"**Sediments**" are all physical manifestations in space. Anything that alters or defines space. These can be housing developments, traffic islands, commercial centers and many more.
The term „sedimentation" derives from geology: „The action or process of forming or depositing". We chose this term because we believe that architecture is the physical manifestation of the urbanity, of the „Perception" and the „Flow". The interaction between flow and space creates conditions for sedimentation. All materials, human or goods, that have „found a place" form sediments, which give rise to petrified structures forming the city as we know it.

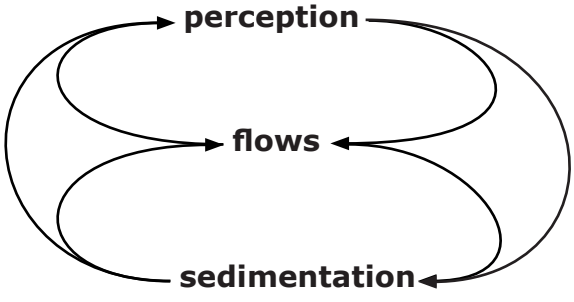
The Model

is based on the assumption that urban space is a conglomerate made of "perception", "flows" and the "sedimentation". Any intervention can, more or less definitely, be assigned to one of these three topics. But almost any intervention affects the other topics as well. We call these interactions - rather the mode of them - „syntax"

Example
An example of the application of this categorization and the interactions between them could be a well-running shopping mall on the outskirts of a city: The "Perception" defines the material that is brought by "Flows", which subsequently "sediments" into architecture. If a mall is seen as a very good commercial location it will attract customers.
These customers will, in turn, attract shops, forming an autocatalytic loop. This commercial activity will then sediment into new shops, new restaurants, perhaps better access, etc.

The model does not say anything about the goals for future development, it's just the framework in which the current situation or new development can be seen. It helps us to clarify the amount of data, to sort it and to find interrelations. This is making data into information.

> *"... we always deal with information which is of intermediate quality -- it is better than nothing and short of perfection. Models are then to be judged, not on an absolute scale that condemns them for failure to be perfect, but on a relative scale that approves them if they succeed in clarifying our knowledge and our insights into systems."*[1]



1 Forrester, Jay. W.; Principles of Systems; 2nd Preliminery Edition; Wright Allen Press, p. 3-4

HISTORY

This section will provide a small introduction into the history of Boston with special focus on Somerville. Hereby we utilize the model of splitting events and developments into the three categories of „Perception", „Flows" and „Sedimentation.

PERCEPTION

Early colonists believed that Boston was a community with a special covenant with God. This influenced every facet of Bostonian life, and made it imperative that colonists legislate morality as well as enforce marriage, church attendance, education in the Word of God, and the persecution of sinners. These values molded an extremely stable and well-structured society in Boston. Citizenship in Massachusetts was restricted to church members until 1664. Puritan values of hard work, moral uprightness, and education remain a part of Boston's culture.

FLOWS

The town of Boston was founded on September 17th, 1630. The first publicly operated ferryboat was reputedly taken into service in 1630.
Boston's deep harbor and advantageous geographic position helped it to become the busiest port in the Massachusetts Bay Colony, eventually surpassing Plymouth and Salem. Until the 1760s, Boston was America's largest, wealthiest, and most influential city.

SEDIMENTATION

1638 pop. 150

The first school in America, Boston Latin School (1635), and the first college in America, Harvard College (1636), were founded shortly after Boston's European settlement.
The first printing press in the colonies was built in Cambridge by Stephen Daye in 1639. Colonial Boston was a world leader in shipbuilding and the primary port of North America.

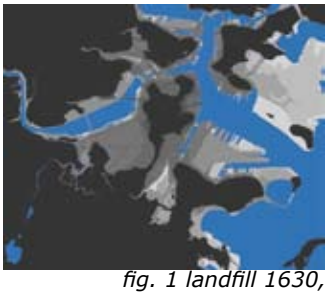


fig. 1 landfill 1630,

Separated by a great geographical distance, the American colonies were still loyal British subjects. This began to change in the 1730s when the Crown increased taxes on the colonists to help replenish the treasury. Boston became a leading center of colonial resistance as a great philosophical distance began to grow between the colonies and Britain. The seeds of the revolution were planted.

By the 1750s rapid growth in the mid-Atlantic colonies allowed Philadelphia and then New York to eclipse the Port of Boston in total volume. In response to these changes, Boston instead concentrated on developing a far flung foreign trading network that brought wealth, culture and influence to the „Athens of America." A portion of this wealth was created by the infamous „triangle route" in which sugar was brought to Boston to be made into rum which was then traded for slaves in Africa, who were then transported to West Indies sugar plantations to produce sugar for Boston's distilleries. The growth of the Boston area continued in the 18th century. As settlements grew into towns around the city, overseas trade increased, and mills were built along the rivers for logging, the forging of iron, and processing wool. Fishermen and farmers prospered as well.

> *[The United States] had taken off economically in the second half of the eighteenth century, by means of the same small-scale autocatalytic process that had allowed Europe many centuries earlier to emerge from the shadow of Islam: volatile trade among backward cities engaged in import substitution.*[1]

1752 pop. 15.731

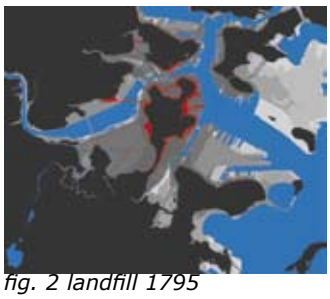


fig. 2 landfill 1795

1 De Landa, Manuel; A Thousand Years of Nonlinear History, Zone Books, New York, 1997, p. 81

PERCEPTION

The Boston Massacre on March 5, 1770, when five civlians were unlawfully killed by British troops, led to the Boston Tea Party on December 16, 1773; the British responded by closing the ports and bringing in more troops to contain the dissidents. On April the 19th 1775, after the arrest of Samuel Adams and John Hancock, the American Revolution began.
Several of the early battles of the Revolution (such as the Battle of Lexington and Concord, the Battle of Bunker Hill, and the Siege of Boston) occurred near or in the city. During this period, Paul Revere and William Dawes made their famous midnight rides:

... A hurry of hoofs in a village street,
A shape in the moonlight, a bulk in the dark,
And beneath, from the pebbles, in passing, a spark
Struck out by a steed flying fearless and fleet;
That was all! And yet, through the gloom and the light,
The fate of a nation was riding that night[1]

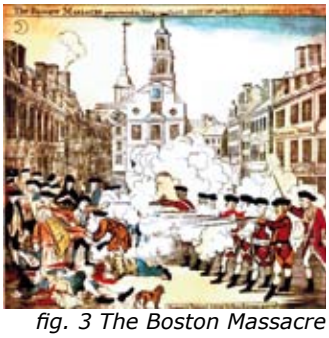


fig. 3 The Boston Massacre

fig. 4 The Boston Tea Party

FLOWS

Concerned about their utter dependence on British trading ships, they sought greater independence by starting a vigorous shipbuilding industry of their own, and began to establish independent trading links with other colonies and countries to the north and south.
„According to Jane Jacobs, the first two American cities to begin this process [of import substitution] were Boston and Philadelphia, one a British resource depot for timber and fish, the other supplying England with grain. While New York remained a captive market, Boston and Philadelphia were copying European products and replacing them with local ones, which they traded among themselves. [...] what mattered was the reservoir of interlocking skills and procedures generated by import-substitution dynamics."[2]

fig. 5 Triangle trade in the 1700's

SEDIMENTATION

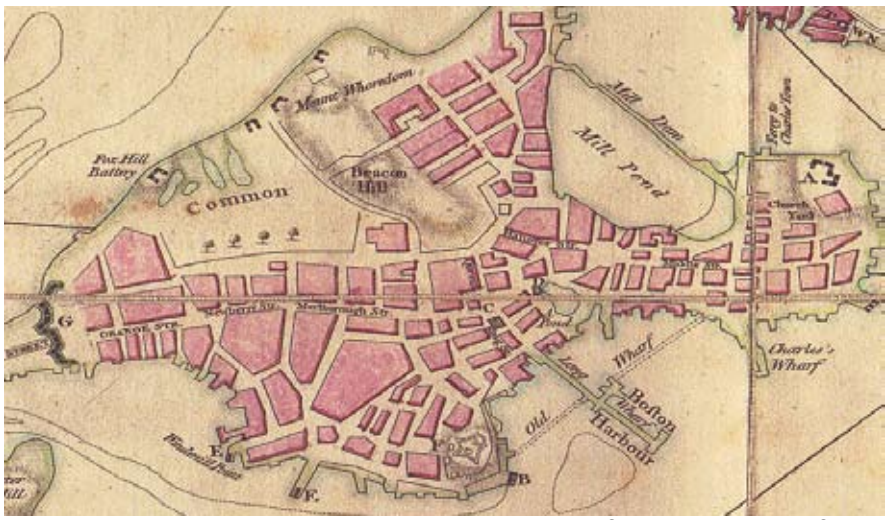


fig. 5 Boston map of 1776

1776 pop. 2.719

1 Wadsworth Longfellow, Henry; The Midnight Ride, 1863

2 De Landa, Manuel; A Thousand Years of Nonlinear History, Zone Books, NY, 1997, p. 82


fig. 7

Boston played a role as a leading voice of the abolitionist movement. Legally, slavery had been abolished in the northern states by 1804; in fact the transition was so gradual, that even in the 1860 census there were a dozen "permanent apprentices".

In 1822 the town of Boston was chartered as a city.

fig. 8 Railroad network 1846

After the revolutionary war, the city became one of the world's wealthiest international trading ports, exporting products like rum, fish, salt and tobacco. By the mid-1800s it was one of the largest manufacturing centers in the nation, noted for its garment production, leather goods, and machinery industries.
Massachusetts prospered in the early 19th century with improved roads, new canals, and the construction of railways, linking cities and towns. Laborers were recruited locally, but by the 1840s there were not enough locals to fill the work force. The answer came with the arrival of the first non-English immigrants, from Ireland.
They are the base of the city's large Roman Catholic population. It is currently the third largest Catholic community in the United States (after Chicago and Los Angeles).
While the American economy in 1850 „was one of small businesses with many unintegrated firms dependent upon many marketing middlemen [...] by 1900, contemporary observers were describing a quite different world, a world of vertically integrated big business. A few large firms whose interests spread out over the whole country dominated every major industry."[1]

1800 pop. 25.215

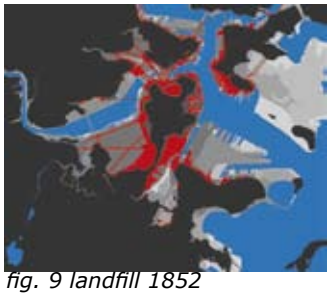


fig. 9 landfill 1852

Somerville: The area experienced little growth until the early nineteenth century when roads and railroads, paid for by Charlestown and Boston entrepreneurs, were established.

1 Krooss, Herman; Gilbert, E. and Charles; Cliffs, Englewood; American Business History, New Jersey, Prentice-Hall, 1972, p. 149

PERCEPTION

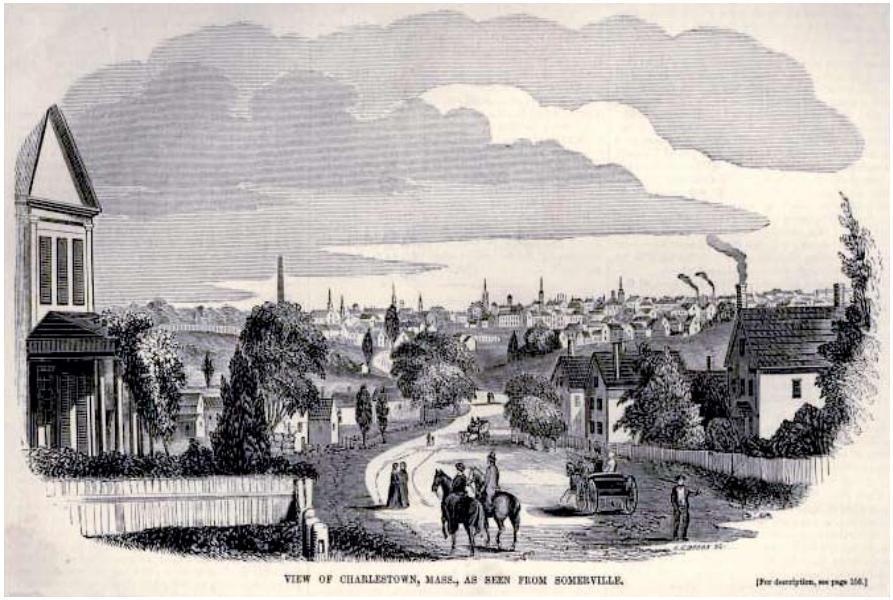


fig. 10 View of Charlestown from Somerville, 1855

FLOWS

1897 first electric underground street railway line in the US, the Tremont Street Subway, was introduced.

fig. 11Tremont Street Subway

SEDIMENTATION

1850 pop. 160.121
1900 pop. 677.308

One of the most dramatic reclamation projects took place in the mid to late 1800s, when the Back Bay was filled in. Almost 600 acres (2.4 km²) of brackish Charles River marshlands west of the Boston Common were filled in with soil brought in by rail from the hills of Needham Heights.

Somerville: The establishment of slaughterhouses in the 1850s marked the decade when Somerville transformed from a brick making and farming town to a manufacturing and food processing center.

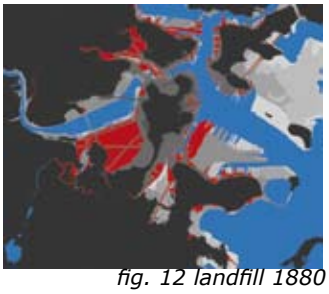


fig. 12 landfill 1880

fig. 13 Sacco and Vanzetti

On August 23, 1927, Italian anarchists Nicola Sacco and Bartolomeo Vanzetti were sent to the electric chair after a seven-year trial in Boston. Their execution sparked riots in London, Paris and Germany, and helped to reinforce the image of Boston as a hotbed of intolerance and discipline.

Boston suffered with the rest of the nation during the 1930s Great Depression. With the outbreak of World War II, factories were retooled for the war effort, and people went back to work on the production lines. Again Boston was a major arms manufacturer during wartime.

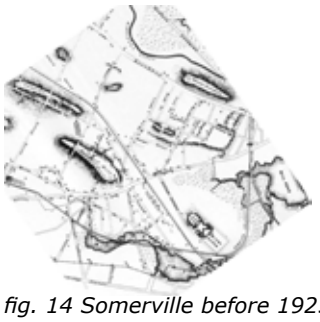


fig. 14 Somerville before 1925

Somerville: The final outcome of several proposals for a cross-town boulevard to connect Cambridge, Somerville and communities to the west and north was the construction of McGrath/O'Brien Elevated Highway, completed in 1925.

1925 pop. 910.957

Boston's manufacturing went into a state of decline during the first decade of the 20th century. The once thriving factories and mills had become old and obsolete. The tenements were aging and decaying. Many businesses closed and relocated to the south. Prosperity continued in Boston however with the development of service industries, banking and finance, and retailing and wholesaling.

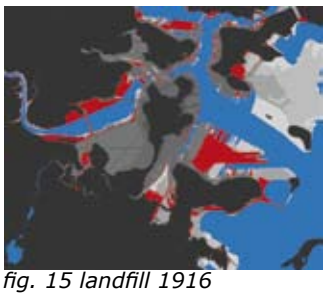


fig. 15 landfill 1916

Somerville: At the turn of the century, the area became a popular settlement for immigrants coming to work in nearby factories. An early wave of Portuguese and Italians were the first inhabitants. A next wave of Greek immigrants arrived in the early twentieth-century and established the Somerville Greek colony.

PERCEPTION

fig. 16 Proposed Inner Belt Highway

FLOWS

Inner Belt. In 1948, the Massachusetts Department of Public Works (MassDPW), led by commissioner William F. Callahan, proposed a controlled-access, multi-lane loop route to connect downtown Boston with other radial expressways. By serving crosstown traffic, the „Belt Route" was to relieve a large portion of the 15,000 throughways on Boston's antiquated street network.

Forming a 7.3-mile-loop around the southern, western and northern edges of downtown Boston, the route of the Inner Belt Expressway was described in the Master Highway Plan for the Boston Metropolitan Area, Massachusetts Department of Public Works (1948); but the proposal was stopped by citizen protests.

By the 1950s, fishing and farming were in decline in Massachusetts, but the Boston area emerged as a leader in the fledgling computer and high-tech industries. Many of these new business were created and staffed by graduates of MIT and the other colleges in the Boston area. The financial and service industries continued to expand.

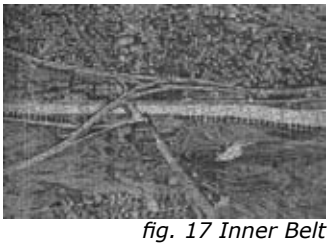


fig. 17 Inner Belt

SEDIMENTATION

1950 pop. 1.089.080

Somerville: In the 1950s, most of the historical houses in Brickbottom were demolished in anticipation of two related projects: the construction of the Inner Belt Expressway (I-695) and the redevelopment of the Inner Belt Industrial Park.

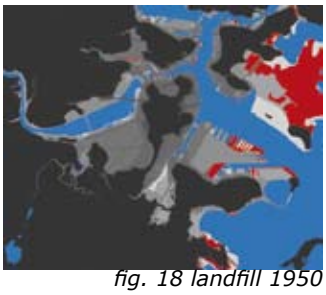


fig. 18 landfill 1950

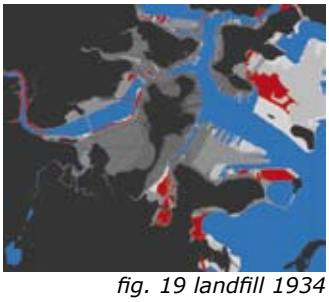


fig. 19 landfill 1934

fig. 20 Location of the Central Artery

Recently, Boston has experienced a loss of regional institutions and traditions, which once gave it a very distinct social character, as it has become part of the more homogenized BosWash megalopolis. Examples include: the acquisition of the Boston Globe by The New York Times; the loss of Boston-headquartered publishing houses; the acquisition of the century-old Jordan Marsh department store by Macy's; and the loss to mergers, failures, and acquisitions of once-prominent financial institutions such as Shawmut Bank, BayBank, Bank of New England, and Bank of Boston.

fig. 21 Building the Big Dig

Big Dig. Planned and approved in the 1980s under Massachusetts' governor Michael Dukakis, with construction beginning in 1991, the Big Dig moved the jumble of elevated highway that made up Route 93 underground.

Replacing the six-lane elevated highway with an eight-to-ten-lane underground expressway directly beneath the existing road, culminating at its northern limit in a 14-lane, two-bridge crossing of the Charles River. After the underground highway opened to traffic, the crumbling elevated structure was demolished and leaving in its place open space and modest development.

1980 pop. 743.717

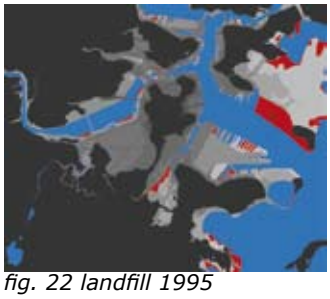


fig. 22 landfill 1995

In the 1970s, after years of economic downturn, Boston boomed again. Financial institutions were granted more latitude, more people began to play the market, and Boston became a leader in the mutual fund industry. Higher education also became more expensive, and universities such as Harvard, MIT, BU and Tufts attracted hordes of students to the Boston area; many stayed and became citizens. MIT graduates, in particular, founded many successful high-tech companies, which made Boston second only to Silicon Valley as a high-tech center.

Somerville: In 1988 a major residential use (the first since the 1940s) came to the Brickbottom District with the redevelopment of the A&P food-storage and bakery warehouse located at the corner of McGrath Highway and Fitchburg Street. A group of 85 artists purchased the warehouse and established the Brickbottom Artists Cooperative, providing affordable housing for artists.

fig. 23 Central Artery

Putting these highway improvements in the ground in a city like Boston proved to be one of the largest, most technically difficult and environmentally challenging infrastructure projects ever undertaken in the United States. The project spans 7.8 miles of highway, 161 lanes miles in all, about half in tunnels. All told, the CA/T placed 3.8 million cubic yards of concrete - the equivalent of 2,350 acres, one foot thick - and excavated more than 16 million cubic yards of soil. The larger of the two Charles River bridges, a ten-lane cable-stayed hybrid bridge, is the widest ever built and the first to use an asymmetrical design. It has been named the Leonard P. Zakim Bunker Hill Bridge.

fig. 24 Parks along the Big Dig

fig. 25

2000 pop. 773.254

Big Dig. The Central Artery/Tunnel Project created more than 300 acres of landscaped and restored open space, including over 45 parks and major public plazas. Major shoreline restoration is being completed in the Charles River Basin, Fort Point Channel, Rumney Marsh and Spectacle Island, as well as in significant stretches of the Boston Harborwalk. New sea walls are being constructed in the lower Charles River Basin, Fort Point Channel and Spectacle Island. In addition, the Project is making major contributions to the Boston Harbor water transportation infrastructure and services, including new ferry terminals at North Station and the Fort Point Channel; a new major pier and docking facility on Spectacle Island; improvements to the current docking facilities at the World Trade Center, Long Wharf and Charlestown Navy Yard; and Inner Harbor ferry service subsidies. Overall, the Project will spend well over $300 million in surface restoration.

In 2004, this trend of losing regional institutions continued as Charlotte-based Bank of America acquired FleetBoston Financial, and P&G has announced plans to acquire Gillette.
Despite these losses, Boston's ambiance remains unique among world cities and, in many ways, has improved in recent years—racial tensions have eased dramatically, city streets bustle with a vitality not seen since the 1920s, and once again Boston has become a hub of intellectual, technological, and political ideas. Nevertheless, the city had to tackle gentrification issues and rising living expenses. According to Money Magazine, Boston is one of the world's 100 most expensive cities.

fig. 26 Northpoint

The Central Artery/Tunnel Project will create a new tree-lined boulevard in Boston's downtown corridor, including several miles of new and refurbished sidewalks, 600 street lights, nearly 900 trees with irrigation, numerous plazas and 14 new parks with public art, water features and other amenities. Several ventilation structures along the corridor are nearing completion, and a number of ramp parcels have been advertised for development.

fig. 27 Parks along the Big Dig

NorthPoint: The ground was broken on NorthPoint development on March 23, 2005. The 45 acre development area, which will take 15 years and $2bn to complete will eventually have 2,500 housing units within 20 buildings and 2.2 million square feet of commercial space, according to the Boston Globe. 70% of the commercial use may become Life Science use, creating another scientific center in the vicinity of the MIT and downtown Boston.

ANALYSIS

The detailed analysis of this section will zoom in from a regional perspective to a local one.
After each scale there will be a short synopsis and interpretation of the results in the form of diagrams depicting the potentials for development.

PERCEPTION

Boston

The city of Boston is known as a hi-tech and life science center, famous for the knowledge industry of the many universities in the area. But also for the image of the "walking city", for being one of the most "European" ones in the new world.
Despite the tradition in innovation, from the Revolutionary War to the present "eastern silicon valley" it still is a very conservative town.
The religious foundation, from its founding fathers, the Calvinists to the Catholic immigrants, has always been strong.

fig. 1 View over Cambridge and Somerville

FLOWS

fig. 2 Regional traffic flows

The fact that the city of Boston grew radially around its historic center is quite obvious from its street network.
At the moment two factors are influencing the development fundamentally:
First the flow of traffic around the city, the so-called "urban ring", especially route 128, which became synonymous for the IT clusters at the periphery of the city.
Anther factor is the science and education centers of Cambridge. This flow of information therefore marks another hot spot for companies seeking an interesting location.

SEDIMENTATION

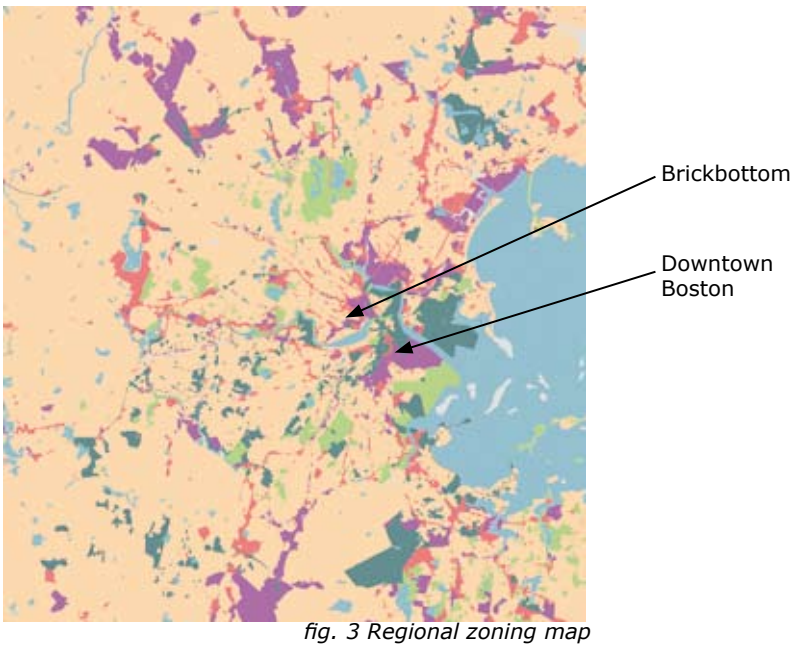


fig. 3 Regional zoning map

fig. 4 Cambridge

Cambridge
was founded as New Towne in 1630 and is known for the Universities. They influence the whole city. It is predominated by expensive residential areas with a view enclaves of emigrants and working class neighborhoods (especially to the border of Somerville)

Harvard and MIT Campus
Two of the most famous universities of the US are very close to the Brickbottom site. The universities are strong attractors for companies; for example next to the MIT campus, at Kendall Square, is a center for biotech companies.

fig. 5 Somerville

Somerville
is one of the densest neighborhoods in Massachusetts, known for its large population of Irish and Portuguese descent. They make Somerville a center for Boston's Catholics.

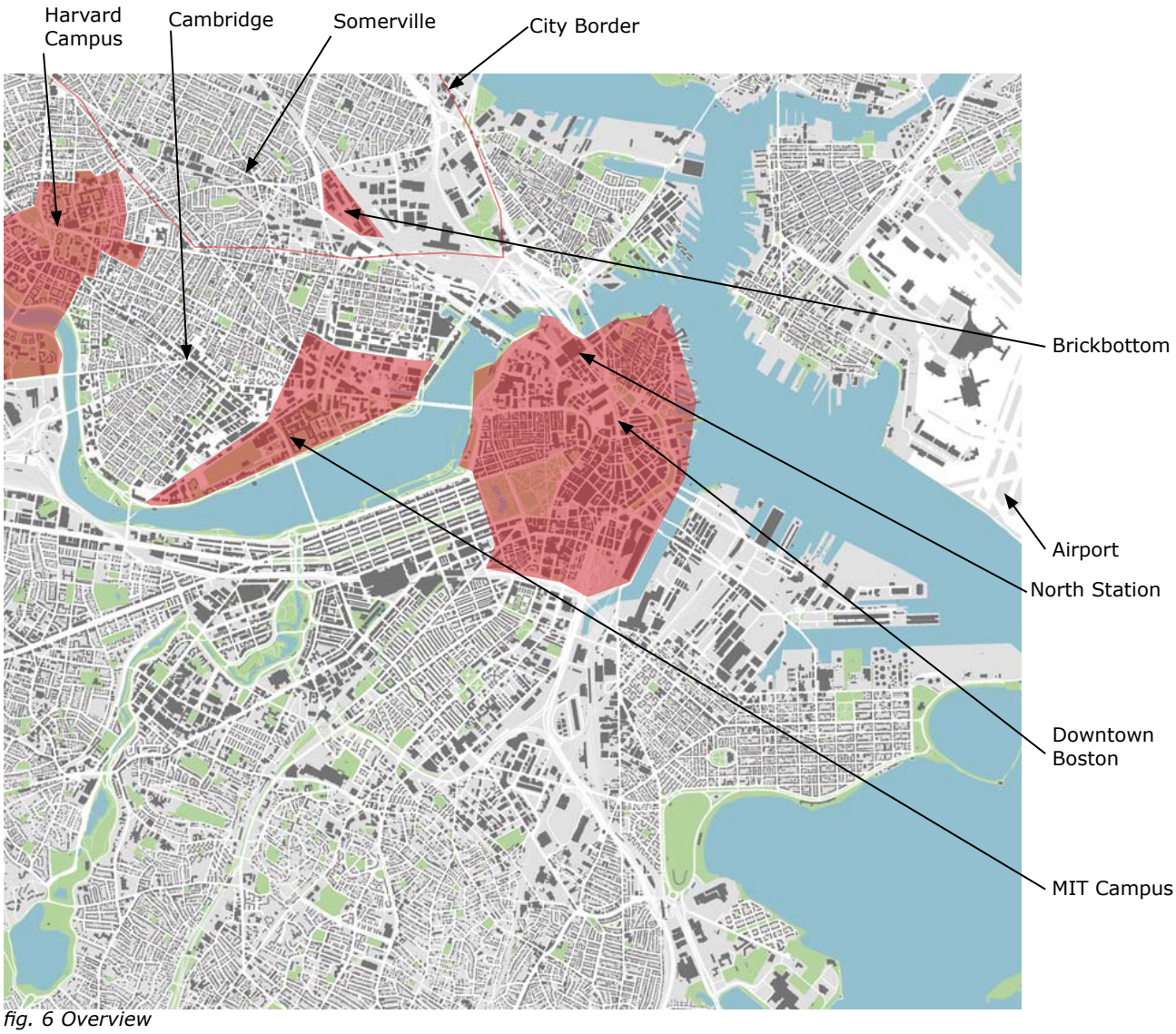


fig. 6 Overview

PERCEPTION

Somerville - Cambridge

This whole wedge of light industrial area located between the cities of Charleston to the east, Cambridge to the south and Somerville to the north is a typical "in-between" city. Located for a long time on the outskirts of the city, it now emerges as the center of three cities.
Naturally, adjacent communities would be interested in developing an area with such high potentials. The tip towards downtown Boston is currently being developed as Northpoint; another area of high potential is Brickbottom, the western tip, as a new link between Somerville and Cambridge. Belonging to Somerville, the city seeks to improve this link to its prestigious neighbor, profiting culturally as well as fiscally.

fig 7 Industrial area

FLOWS

fig. 8 Regional traffic flows

SEDIMENTATION

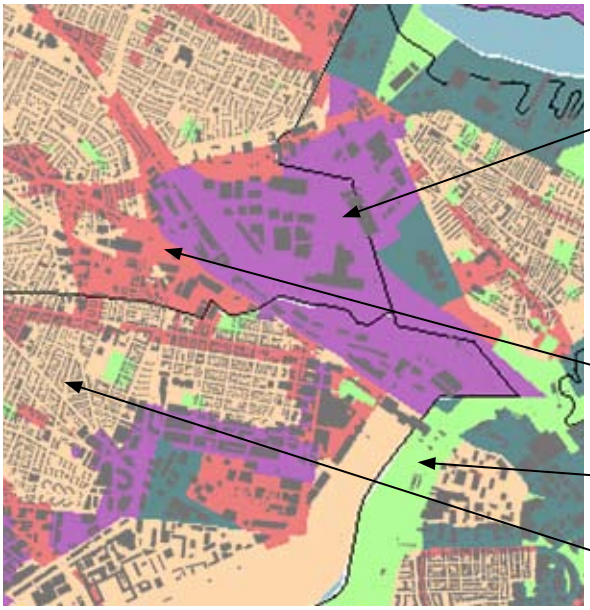


fig. 9 Zoning map Boston - Cambridge - Somerville

fig. 10 Union Square

Union Square
It is one of the local centers of Somerville, with a quite lively atmosphere. Brazilian and Korean immigrants influence the public perception of this area. The surroundings are best characterized by fast transitions in atmosphere and built environment.

Cambridge Street
This street connecting Lechmere station with Harvard campus is quite popular, containing small and medium businesses and restaurants.

Sullivan Square + Lechmere
are the local bus terminals for Somerville. The interchange is unattractive and difficult.

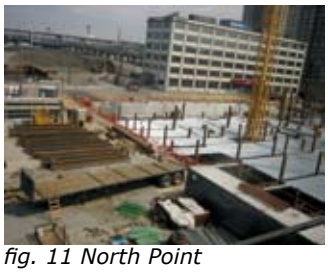


fig. 11 North Point

North Point
This new development is seen as an extension of downtown Boston. The city council has committed itself to the principles of "smart growth". They try to reactivate the old city center and encourage development with high density and pedestrian priority.

McGrath Highway
was build in 1925 and cuts through the urban fabric. Next to the Brickbottom area it is elevated and so the impact is most obvious.

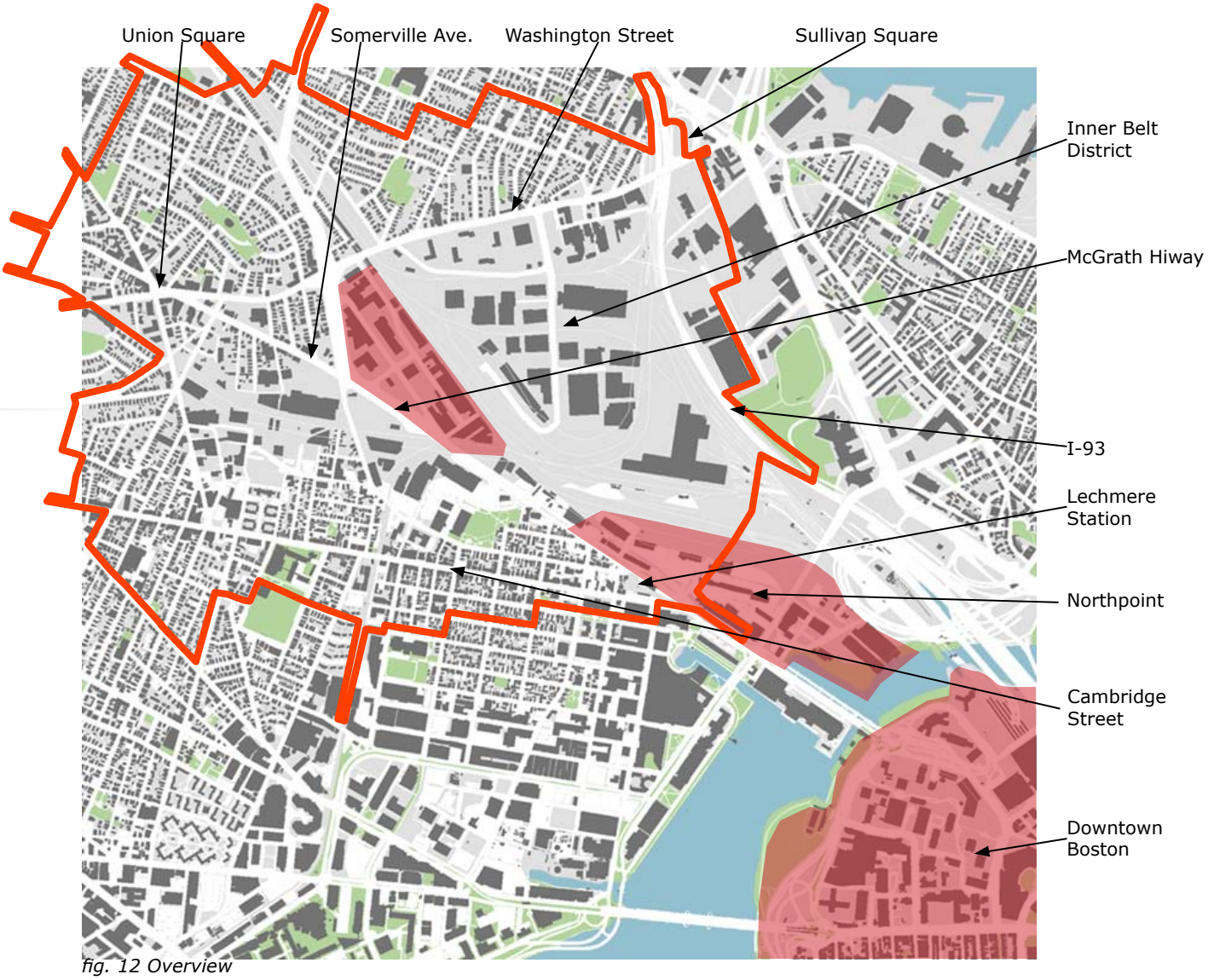


fig. 12 Overview

PERCEPTION

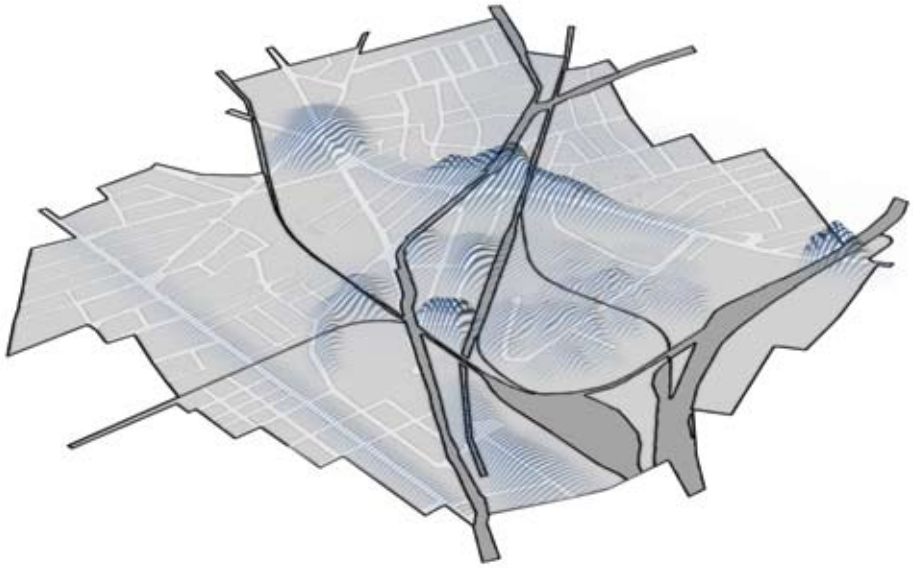


fig. 13 Peaks in potential for Perception

FLOWS

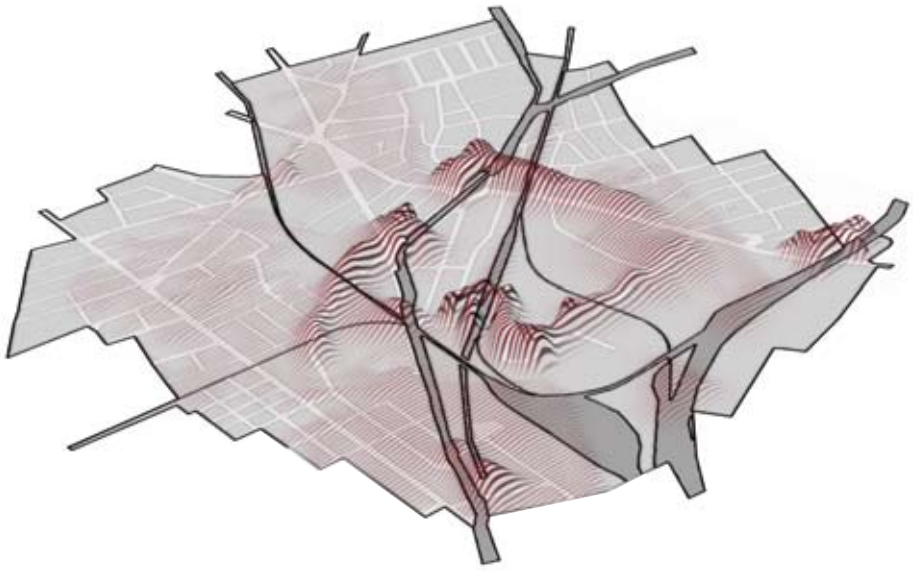


fig. 14 Peaks in potential for Flows

SEDIMENTATION

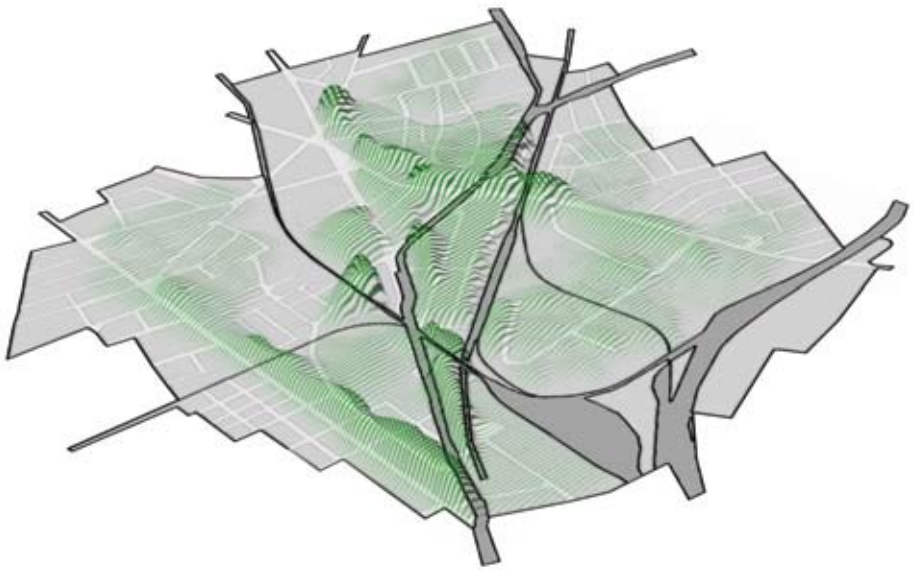


fig. 15 Peaks in potential for Sedimentation


fig. 16 Cobble Hill Monument

Connection to Residents
One possibility for high potentials in Perception would be the quality of the link between the area in question and the surrounding residential communities. The identification of the people with their neighborhood provides a fertile ground for creating a working image: the Brazilian and Portuguese communities around Union Square strongly influence the atmosphere of the square.

Landmark Places
The other places of high potential for Perception are places of special interest. These can range from a historic monument such as Cobble Hill next to Union Square to the Brickbottom Artist Association characterizing the Central Brickbottom area.

Nodes and Scales
The whole wider area features transport networks of all scales and, potentially, all modes. From the regional Highway in the east to neighborhood dead-end streets. The peaks of potential for developing a well functioning network occur at the nodes of these networks. The best possibilities can be found at points where several such nodes converge.
For example the intersection of Washington street and McGrath Highway lies in close proximity to bus stations and fallow rail lines, resulting in peak potentials since synergetic effects are expected.


fig. 17 Top-up

Intensification
Interesting areas of further development are marked by high Sedimentation values. These occur where an intensification of existing structures is desired or even necessary. This intensification usually refers to an increase in the FAR, the floor-area-ratio. It may be possible to either top up existing buildings where businesses need more space or to change single family residential areas to include apartment buildings or just fill in gaps of underused plots.

Creation
The other potentials for Sedimentation are empty plots. However, many of the structurally empty plots in the area are being used as storage or parking spaces. The chance for those areas is to convert from these extensive uses to rather intensive uses, again increasing the overall FAR.

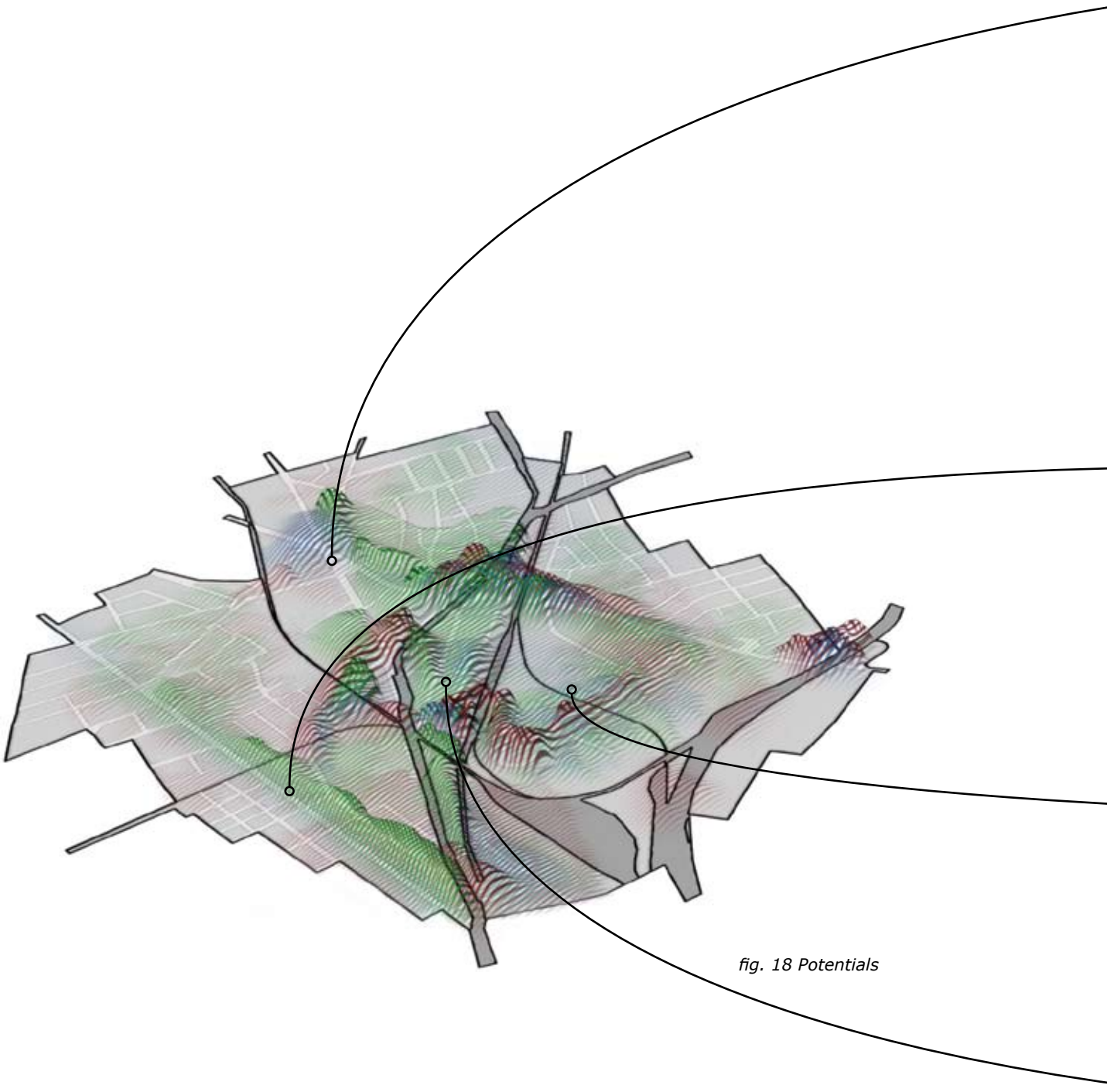


fig. 18 Potentials

Union Square Area

The area of Union Square is quite well developed concerning the small and middle scale networks. On these scales, the traffic routes as well as the commercial interests seem to be working well. For cars there is a satisfactory connection to the regional scale through the proximity of the McGrath Highway. However, regional transit is underdeveloped, making the square badly accessible for pedestrians.

Also, the image seems to be working quite well on a small, neighborhood supplying level. There are community efforts as to improve the appearance of the square. It also claims importance, somewhat marginally, on a regional level through its historic monument, Cobble Hill. But its potential as a tourist destination is very limited.

The spatial configuration of the square conveys quite a homey feel; the potential for more density seems to be limited mostly by accessibility and the acute lack of parking space.

Cambridge Street

This part of the city of Cambridge is certainly not the most prestigious, but nevertheless it seems to be working quite well. The image, as well as prosperity increases towards Harvard, but a big potential for this street lies in the development of North Point. The main traffic center is Lechmere station, currently the terminal stop of the Green Line, but buses frequently run towards Harvard. Therefore, enhancing the accessibility would not influence the area too much.

Nevertheless, it is a spatially well defined neighbourhood shopping street.

Inner Belt

Inner Belt road ends within the area and therefore doesn't allow passers-by. Unfortunately, since this is a light industrial area, simply improving flows might not be enough for sustainable improvement.

Another serious problem is the image. Enhancement potential is there, but it can prove to be difficult, since tapping this potential depends very much on outside factors like global economic developments.

Brickbottom

The most interesting aspect of this area is its location "in between". Spatially it lies between different transport networks; the nodes and connections provided by those are a major possibility. Concerning the Perception side, with its arts and crafts workshops it positions itself between light industry and high art. Refining this position could gain the involved people an interesting uniqueness in the cultural landscape of Boston.

Structurally, the buildings in Brickbottom range from cheap, almost temporary production halls to historic brick buildings. There is definitively a big potential of further spatial development and an increased FAR.

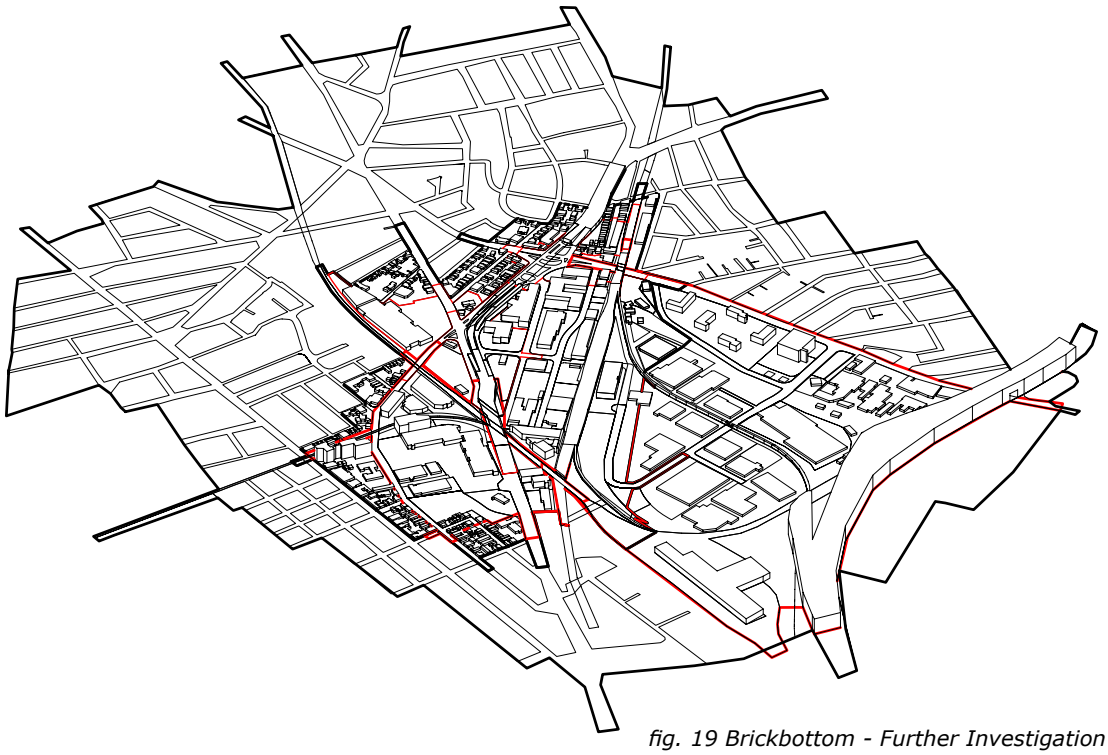
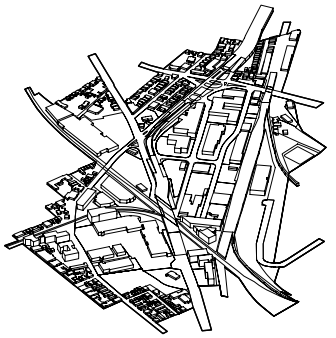
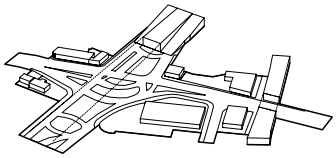


fig. 19 Brickbottom - Further Investigation



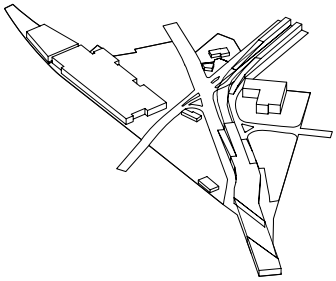
Brickbottom Area **p. 38**

The whole Brickbottom Area is highly isolated from its surroundings. The massive border of the elevated highway blocks the connection towards the west and south; the eastern perimeter, towards Inner Belt district, is dominated by a rail line.
At least two interesting establishments exist in Brickbottom: the Brickbottom Artists' Association, sheltering about 100 artists, and the arts and crafts workshops of Joy Street Studios.



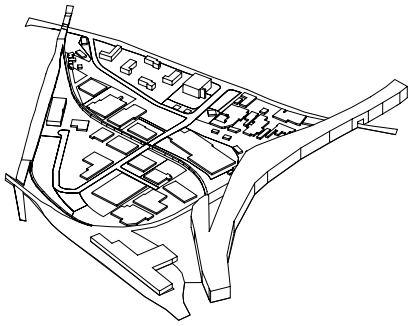
Washington Street Intersection **p. 42**

This intersection is the most frequented in the area. Thousands of cars navigate this difficult layout daily. Important on- and off ramps to the McGrath Highway intersect with Washington Street, the connection to the I-93.



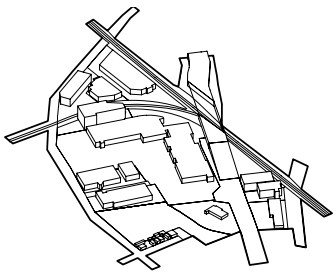
Somerville Avenue Intersection **p. 44**

The intersection of Somerville Avenue and the McGrath Highway creates a quite hostile environment. The direct access to Brickbottom is blocked, for cars as well as for pedestrians. Large spaces are designated for right-of-way; it is one of the most dangerous intersections in the state of Massachusetts.



Inner Belt District **p. 46**

Planned as a modern industrial district in the 1960s, the area was to be connected by the Inner Belt Highway to be a prosperous business location. But with the failure of the realization of this highway, the area was left isolated.
With the rise of the New Economy, a chance for the district was seen by marketing it for young IT businesses, but since the economic regression, some of the buildings have been abandoned.



Twin City Plaza **p. 48**

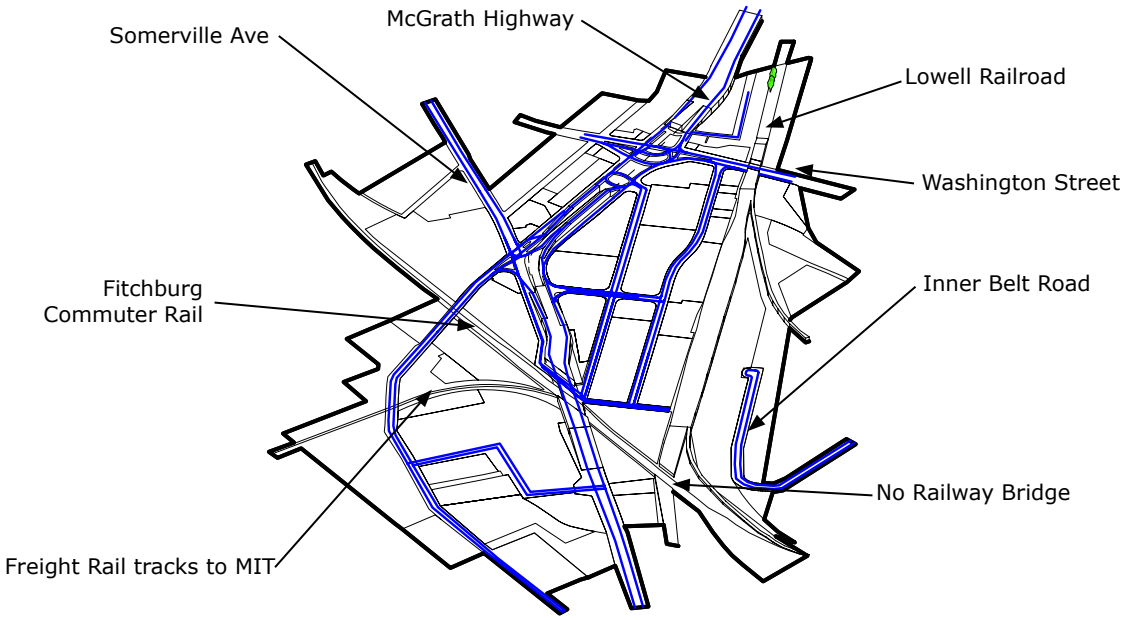
The Twin City Plaza comprises a small open shopping center. The L-shaped building is built around a skating rink, a small park and a McDonald's restaurant. The good location on the Highway secures quite good business.
Behind the shopping center is a small area of storage facilities and an old warehouse now used for offices.

PERCEPTION

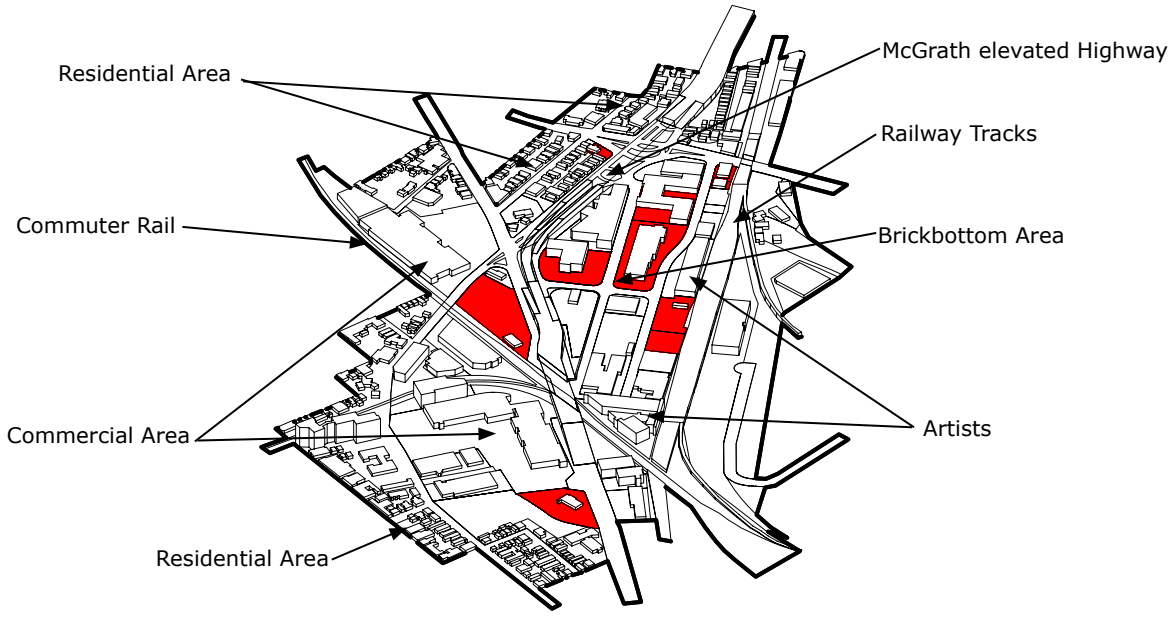
Brickbottom Area

fig. 20 Brickbottom from McGrath Highway

FLOWS



SEDIMENTATION



Location
The Brickbottom area and its surroundings are an old industrial area squeezed between the cities of Somerville and Cambridge. Functionally it is a typical "edge city". It was planned as a mono-functional light industry district; since the 1980s, however, different functional layers have emerged. The City of Somerville starts to see the potential for higher tax income in attracting new companies such as biotech, IT business etc.

Artists
The artists are interested in change; they especially want to see their own position in Somerville and Brickbottom enhanced but their position is dominated by the fear of gentrification. The property manager of the Brickbottom Artists' Association told us that the artists are quite influential in local politics; he even encourages the artists to take part in elections.
The art market in Boston is highly competitive and there are a lot of well-established museums and galleries. So we see the artists' field of action more on a local than a regional scale.


fig. 21

Accessibility - Connectivity
When the area was connected to the highway network, the accessibility of the area increased, but the impact on the local scale was enormous: these local connections were cut off and the residential area in Brickbottom was abandoned. The regional access was a motor for most of the local car-related and storage businesses.
On the other hand, the local isolation protected the area from big developments and allowed the existing, highly-specialized workshops to become established.


fig. 22

Plot Size
Most of the sites are between 1.000 m² (10.700 sqft) and 10.000 m² (107.000 sqft), this allows big rentable developments, but increases the danger of gentrification due to commercial developments.

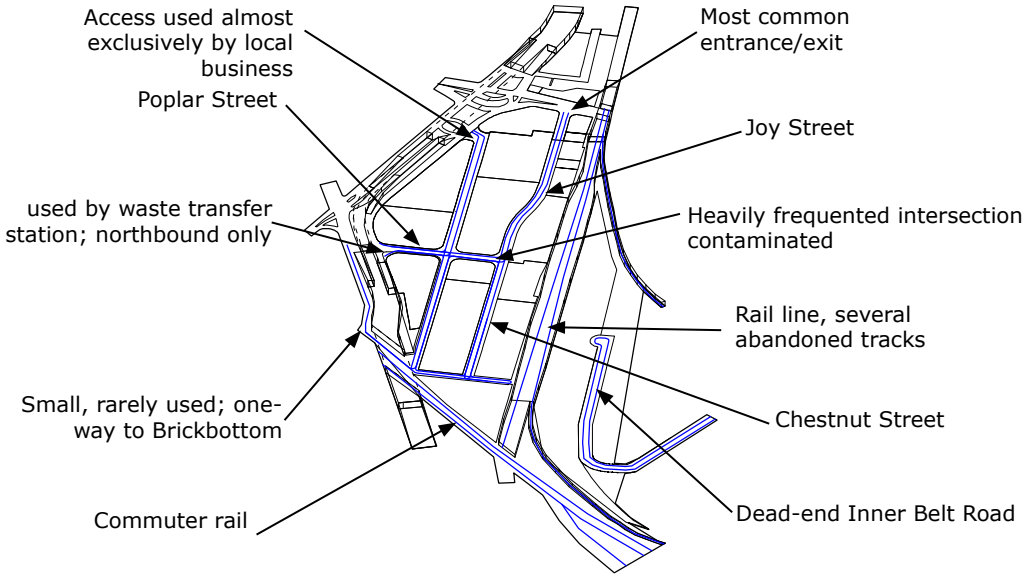
Existing companies, functional layers
The local companies are doing passably good business and can be categorized in
-very specialized companies such as the "arts and crafts workshop"
-space intensive businesses (the storage companies)
-artist studios with living possibilities

PERCEPTION

Central Brickbottom

fig. 23 Chestnut Street from Brickbottom Artists

FLOWS



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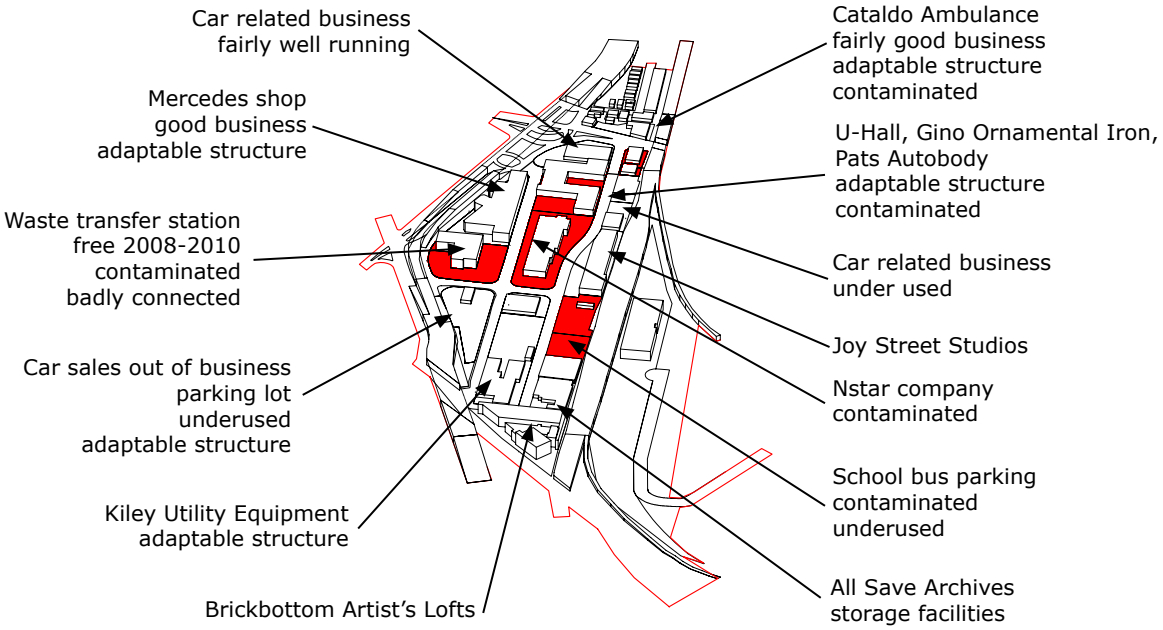


fig. 24

Blocked and Squeezed

The Brickbottom area is squeezed between McGrath Highway and railway tracks. The consequences for the perception is that the good location can't be turned to account on a regional scale.
We think the area is not present in the minds of the people, it's something like a blind spot in the city. Brickbottom is relatively small, at the maximum the area is ~270 m (~900 ft) east to west and ~780 m (~2500 ft) north to south. But because of the interesting location in the regional context (Northpoint, downtown, MIT...) the city of Somerville is interested in a development.

fig. 25

Streets

The street network in central Brickbottom works well, roads are designed for trucks and surface quality is standard. Because of the high frequency of waste trucks, Poplar Street - Joy Street crossing is contaminated.
The access points are the biggest problem and we see the potential to optimize.
Customer flow is regionally oriented, in accordance with the good regional connection.

fig. 26

Structures

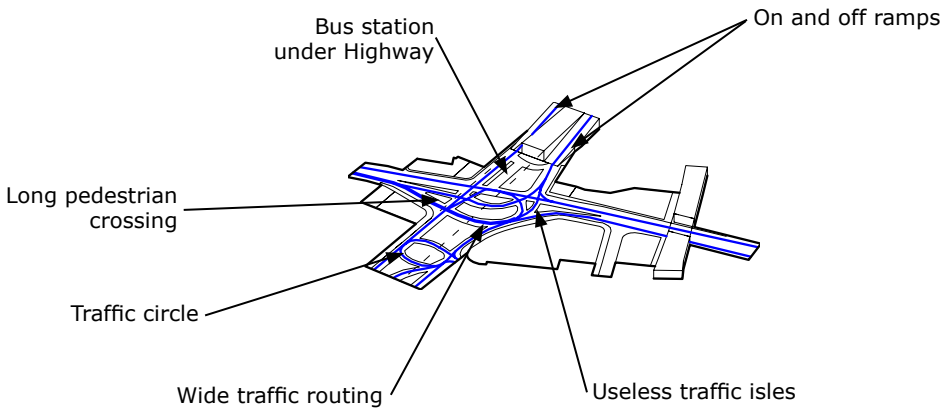
Apart from the older buildings of the Brickbottom artists and Joy Street Studios, which survived the 1950s urban renewal projects, the majority of structures is relatively new. Some of those have a too temporary character or are too dilapidated to be considered for re-use; others, however, might provide a solid basis for an adaptation of use, should it become necessary.

PERCEPTION

Washington Street Intersection

fig. 27 Washington Street

FLOWS



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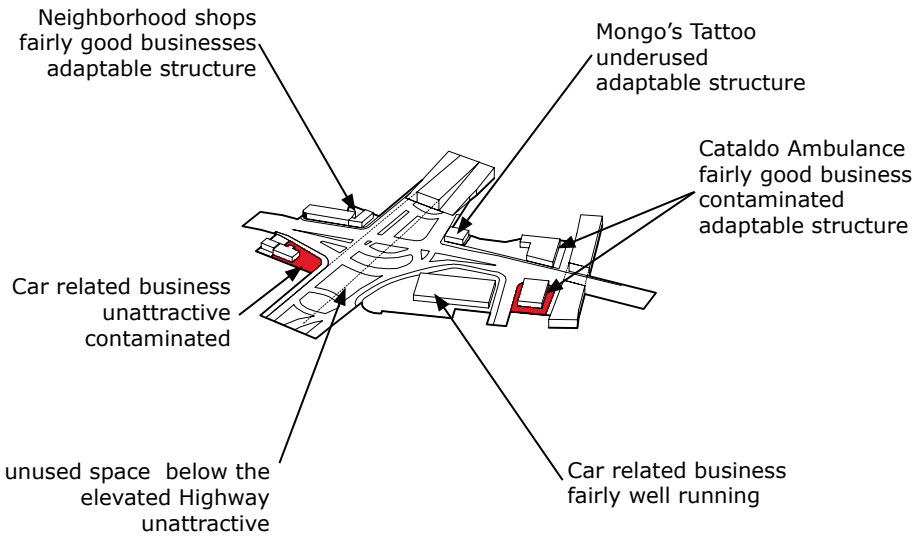


Public Perception
Due to the high frequency of cars the Washington Intersection is a very prominent location, the clerk of "Mongo's Tattoo" told us that most of his clients are walk-in customers, but because of the complicated street layout this intersection is very difficult to comprehend. For cars it's hard to navigate and for pedestrians it's difficult to cross; the poor quality of the area discourages passers-by to spend more time than necessary.


fig. 28

Difficult Connections
The Washington Intersection was designed in the 1920s and so the car priority is obvious, the street layout is not up to date anymore. A lot of different flows meet here, but the interchange is neither attractive nor simple. For cars the risk of going wrong is quite big and the possibilities to turn are limited.
Fortunately, the right-of-way is large enough to allow a re-design with a new focus.


fig. 29

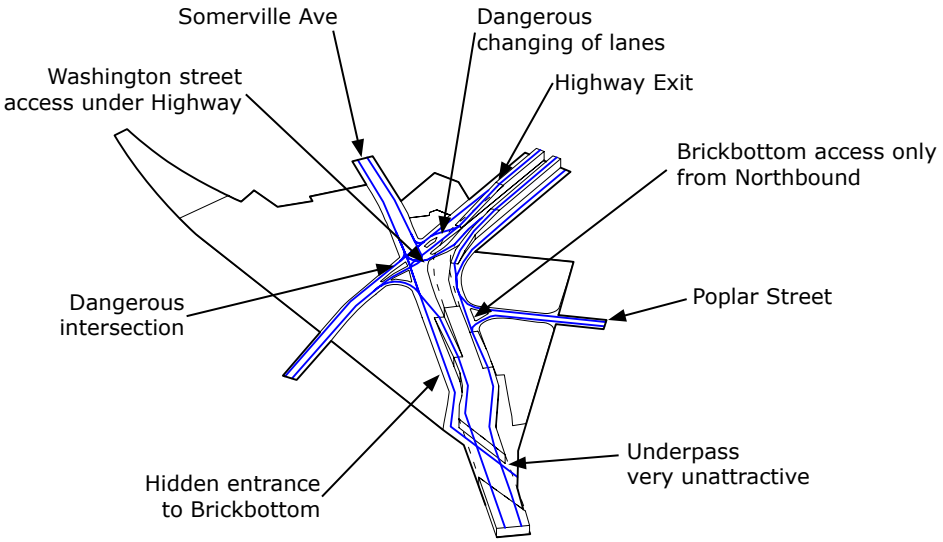
East - West Disparity
The two sides of the highway are quite different. In the west, towards Union Square, are more shops e.g. hairdresser, Brazilian food...
The east looks rather run down and most of the plots are underdeveloped. The buildings were constructed cheaply, mostly single story but re-use or extension is advisable.

PERCEPTION

Somerville Avenue Intersection

fig. 30 McGrath Highway at Somerville Avenue Intersection

FLOWS



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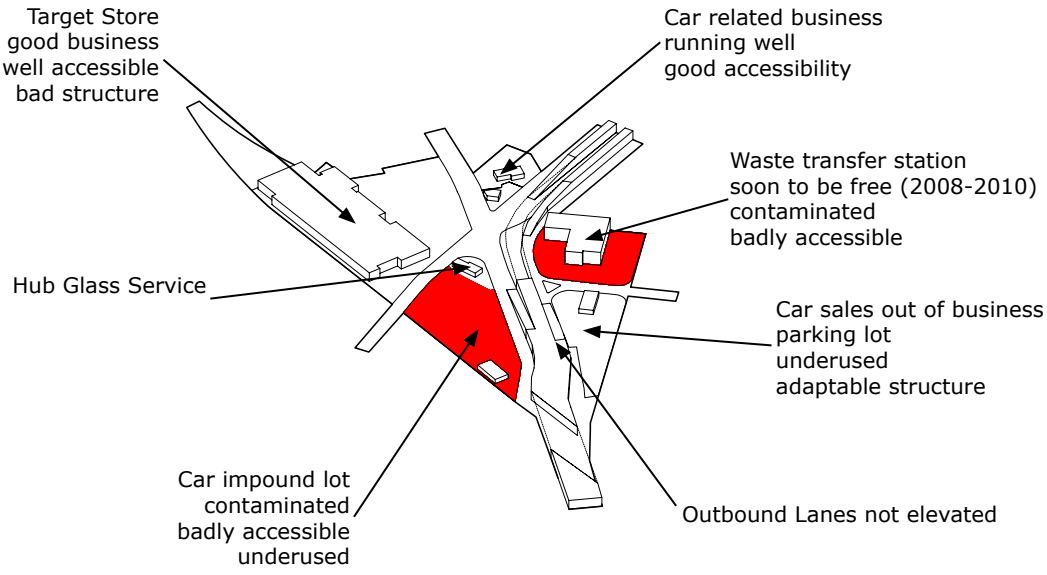


Representation
The curve in the highway acts as a kind of landmark in this area. Due to this fact the "Waste Transfer Station" site is one of the most representative sites in Brickbottom; nevertheless, it doesn't live up to its potential. For pedestrians it is illegal to cross the highway there and moreover it's very unpleasant because of the bad smell and birds excrement. The visual distance from Somerville Avenue to Brickbottom is a big problem. The whole south area of Brickbottom is blocked and does not exist in the public mind.


fig. 31


fig. 32

Difficult Connections
From Somerville Avenue there is no direct connection to Poplar Street. To enter the Brickbottom area, you have to use an unattractive road parallel to the highway, without any visual connection to your goal. In front of the "Waste Transfer Station" is a bus stop for an outbound line. To reach this stop, people cross three lanes of highway, pass under the elevated lanes and negotiate a highway exit.

Dangerous Intersection
It is one of the most dangerous intersections in the state of Massachusetts due to the confusing street layout.


fig. 33

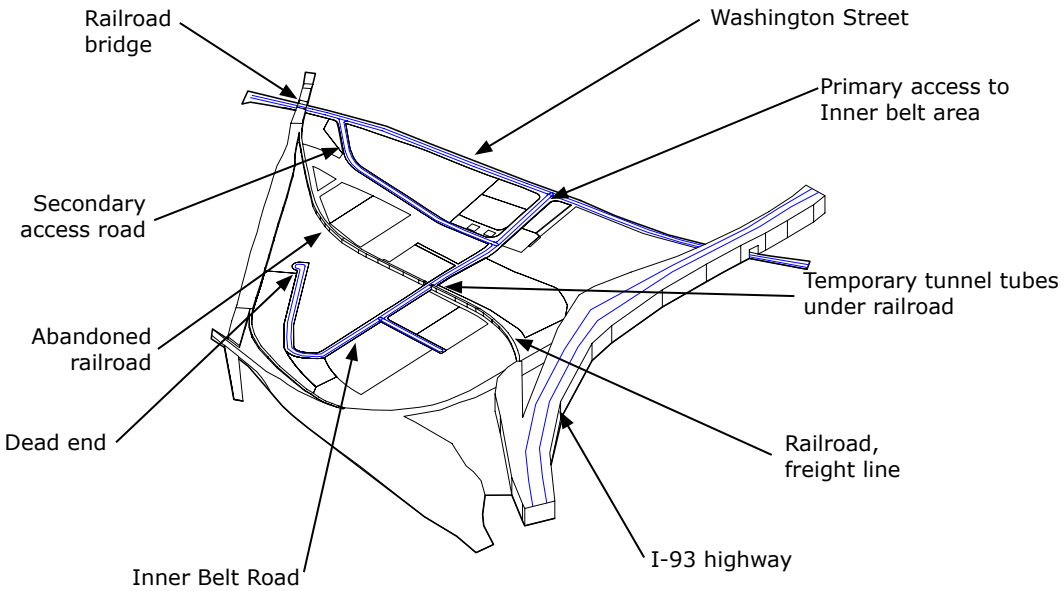
Underdeveloped
For businesses this theoretically representative area is unattractive. All sites that are out of sight from Somerville Avenue are underdeveloped. "Hub Glass Service" is blocking the big plot of the car impound lot and the ramp of the highway is blocking the view to the north of Brickbottom. The sites that are easily accessible from the intersection work quite well, but look run down.

PERCEPTION

Inner Belt District

fig. 34 Inner Belt Industrial Area

FLOWS



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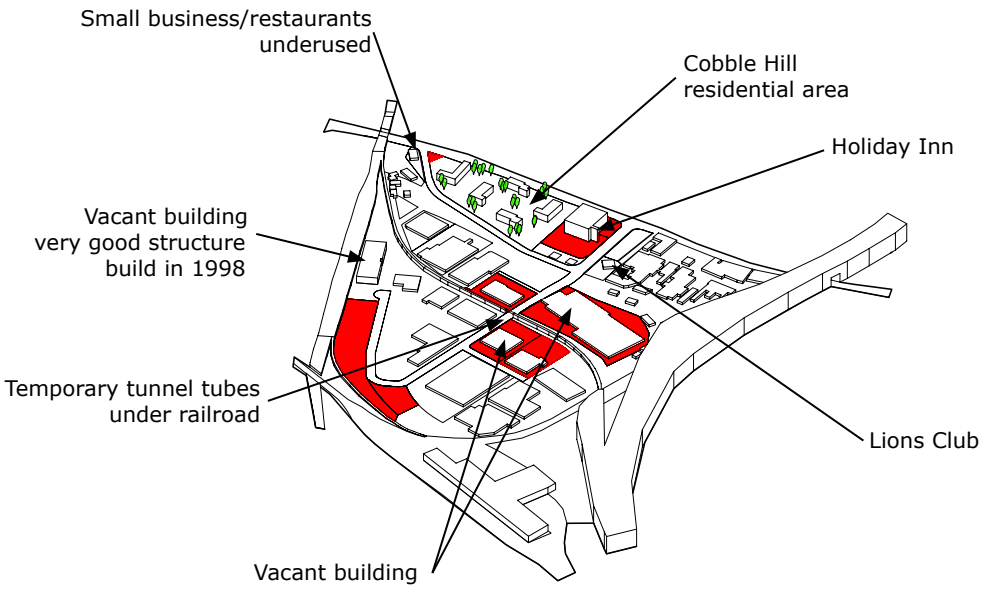


Industrial Failure
The historic district of Cobble Hill had a very good image as a serene and beautiful place. There used to be a hospital surrounded by a big park. The small residential area as well as the Holiday Inn and the Lions Club seem to try to revive this image.
From 1900 onwards some industrial uses emerged. In the 1960s the area was converted to a modern industrial district in anticipation of the Inner Belt Highway. Unfortunately, since this highway has never been built, the Inner Belt Area was never able to take advantage of the good accessibility the road would have allowed. Therefore it never took off commercially. In the 1990s, the city of Somerville tried to make the area a center of IT business; but since the economic downturn many of the buildings are empty.
Due to the "monoculture" of companies this area is vulnerable to change from outside factors; it will have problems adjusting its image to changing circumstances.


fig. 35

Quiet Isolation
In 2001, fiber optic infrastructure was installed to help attract IT businesses. Apart from the internet, the area is not very accessible; the only road leading to the core area passes underneath a rail road line through a temporary tunnel. This makes the area difficult to negotiate with large trucks.
The isolation and relative size of the area also mean that there is hardly any public frequency on the street, allowing for a very quiet environment. On the other hand, an individual walking the street will no doubt attract attention and might be suspected of criminal intent. Indeed, several cars have been stolen from the premises of at least one company.


fig. 36

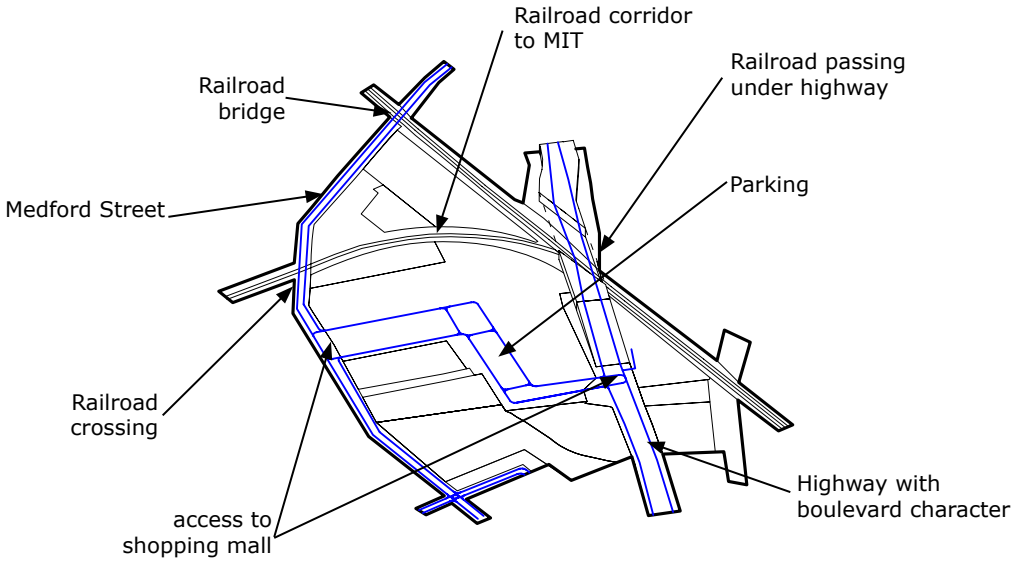
Underdeveloped
Most buildings on the site were built between 1950 and 1975. These have quite a good structure and are adaptable for other uses.
The resulting large spaces between the buildings require access by car, making it difficult for pedestrians. The temporary tunnel under the rail tracks seems to be a permanent installation.

PERCEPTION

Twin City Plaza

fig. 37 Behind Twin City Plaza

FLOWS



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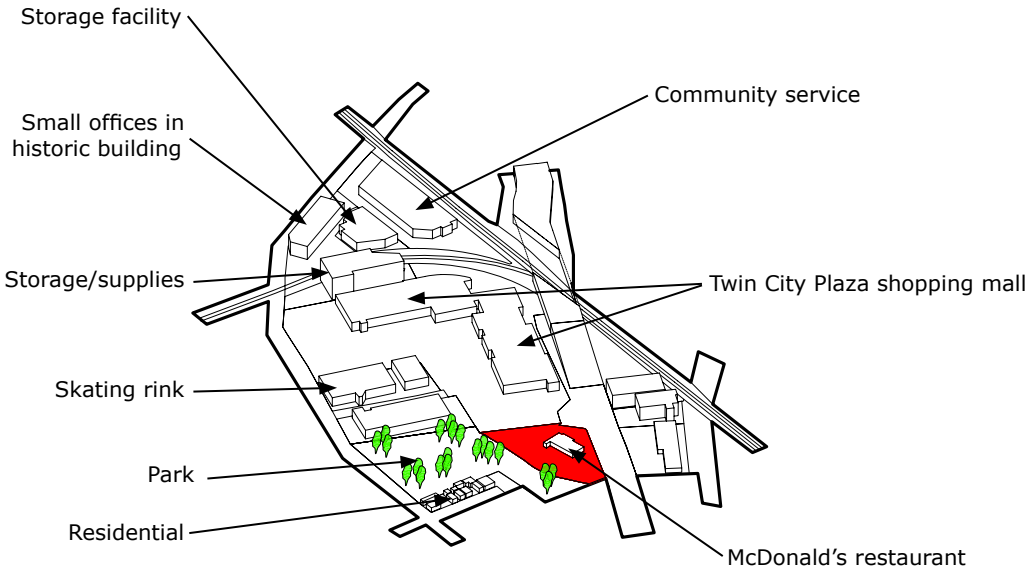


Local Leisure
The border between Somerville and Cambridge runs between the Twin City Plaza and the Skating Rink. So the much nicer and attractive side of Twin City Plaza is orientated towards Cambridge. The area is a local leisure center with a park, skating rink and other sporting possibilities. The view to Somerville is blocked by the L-shaped building, it's "Hinterland" is dominated by the railway tracks, the highway bridge and storage facilities.

fig. 38

Local and Regional
Most of the area profits from the very good connectivity. The shopping mall is situated between the regional network of the highway and a rather small-scale residential network. This makes the shops accessible for passing traffic as well as for the daily shopping of the nearby residents. The triangle behind the mall has an interesting position concerning flows of traffic; a lot of different networks converge: the highway, the commuter rail, the freight line, the very busy road. Unfortunately, these networks simply pass each other without intersecting.


fig. 39

Front vs. Back
The buildings of Twin City Plaza are of quite good quality, but predominantly single story commercial buildings, resulting in rather low density. The L-shaped mall is oriented solely to its center, neglecting the back sides. This gives the triangular area in the back a rather low status.
Most high-profile uses gather along the street, such as the beautiful old brick factory building, now used by small creative firms.
The park on the northern edge of the area seems well maintained and is frequently used by the adjacent residential communities.


fig. 40

PERCEPTION

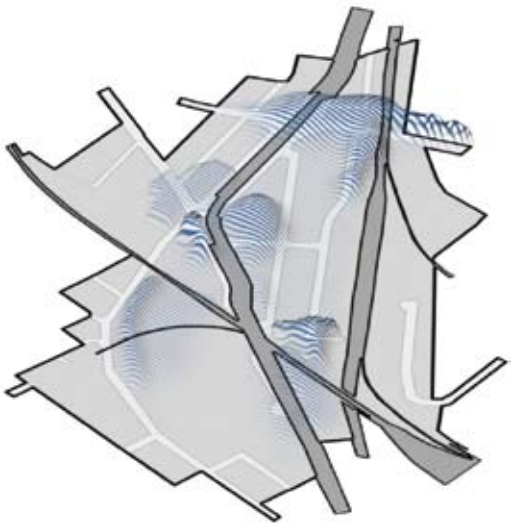


fig. 41 Peaks in potential for Perception

FLOWS

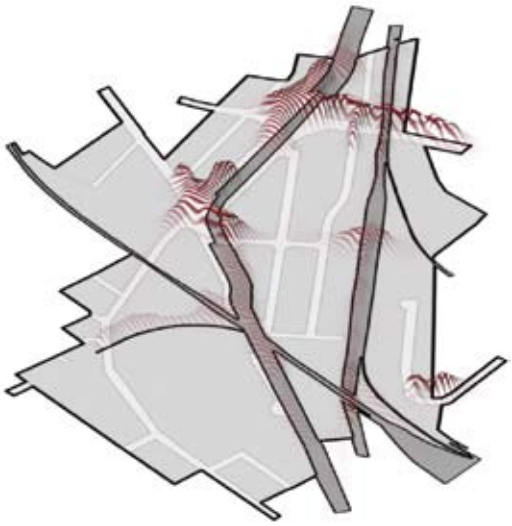


fig. 42 Peaks in potential for Flows

SEDIMENTATION

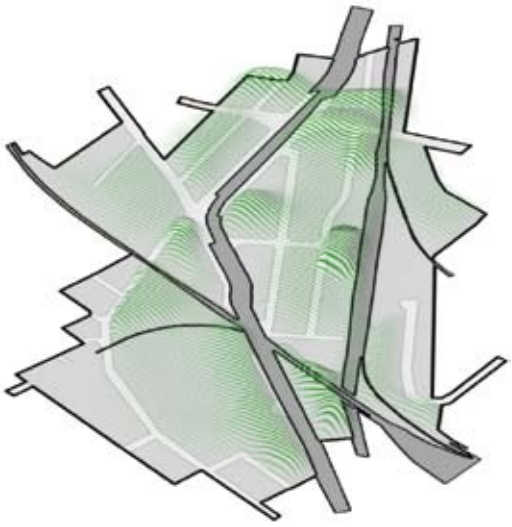


fig. 43 Peaks in potential for Sedimentation

Arts and Crafts
The artists' colonies already give the area of Brickbottom an identity. But there is an even greater potential for creating a brand based on this "Arts and Crafts" cluster. We believe that it could be worthwhile to use this existing creative potential. The Brickbottom Artists Association especially has some very engaged people, who are actively participating in local politics.

Visibility
The high visibility of the structure of the elevated highway makes it almost predestined to be used as a sign. With very little effort, a big impact could be achieved, since the high frequency of passing cars makes the available space under the highway interesting for marketing purposes, for example the artists.

Frequency
The intersections along the highway are highly frequented. This is a big source of potential customers for the adjacent businesses.

Permeability
Enhancing the permeability of the intersections would optimize the flow of traffic for pedestrians as well as cars. We believe there is a great potential in interlocking these different scales.

Access
Access to central Brickbottom is often difficult and possible only from one direction. A better connection to the surroundings would enhance this location's presence.

Regional Transit
To connect the area to the regional transit system on the existing rail tracks would greatly improve the accessibility and traffic around Brickbottom and give the possibility of connecting Brickbottom to Inner Belt Area.
A station at Washington Street would be an important improvement of the transit facilities of the whole region. It would serve the adjacent residential communities as well as commercial interests. It also would make possible an interesting connection of different scales and speeds to foster synergies.

Highway
The potential of the elevated highway is the size of the structure. Either using the space underneath or the freed space when it eventually will be torn down are huge possibilities.

Waste Transfer Station
The potential of the Waste Transfer Station lies in its good location and the fact that it will soon be free. It could be a focal point of several converging directions.

Parking Lots
A number of plots are quite underused. In connection with green space and the regional transit, a big potential ranging from residential units to light industry to parks could be unlocked.

Rail Tracks
The green space of a community path for bikers and pedestrians would enhance the relevance of Brickbottom as a residential site.

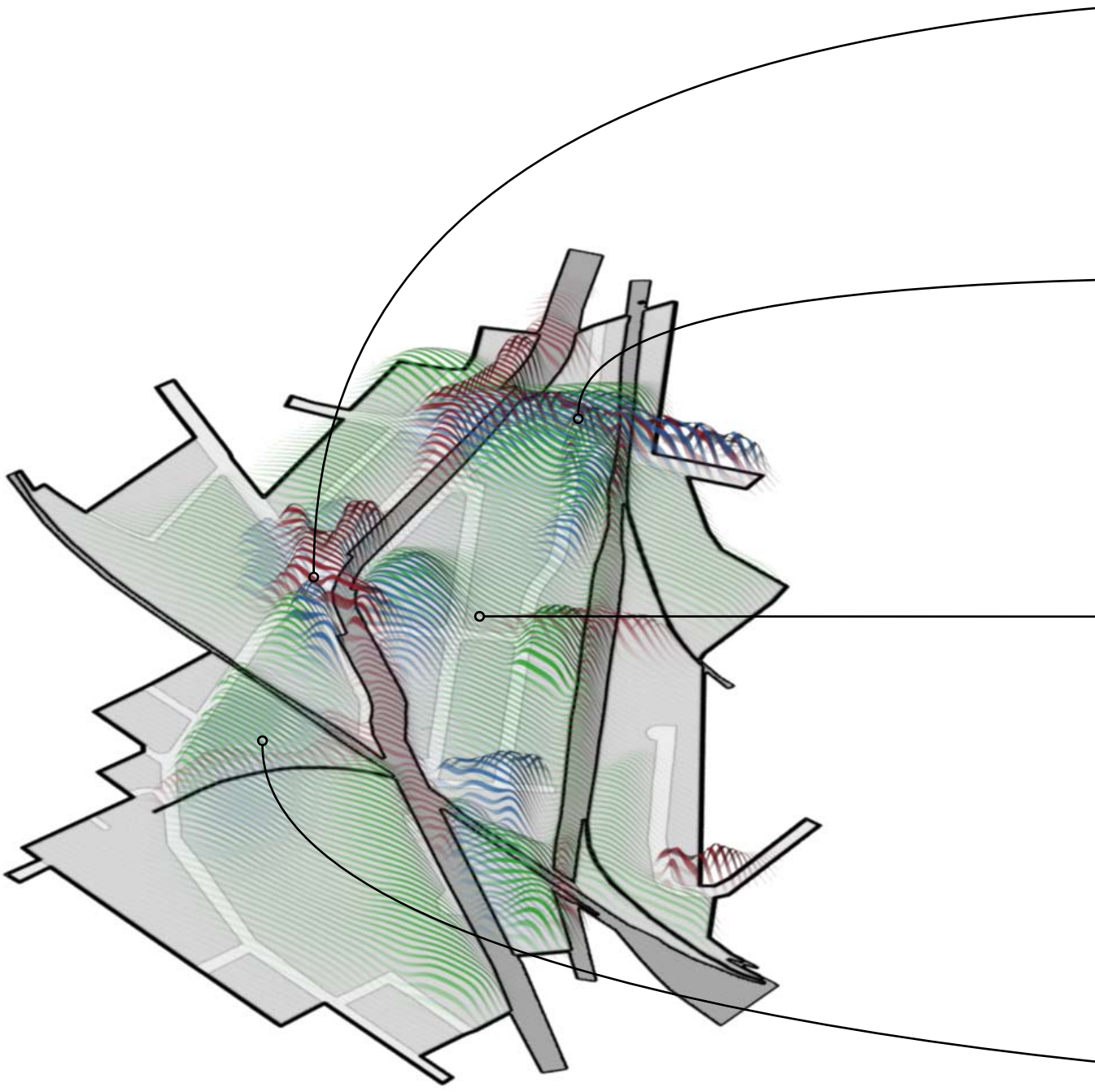


fig. 44 Potentials

Somerville Avenue
This spatially very prominent location has very good possibilities for marketing because of its typical structure and intense traffic flows which can be optimized for the future.
There is a strong potential for spatial development, but primarily top-down large scale interventions. The potential for a short term could be the cleaning of contaminated plots, which would create temporary green space and enhance the image and visibility of certain areas.

Washington Street
A connection to the regional transit system would have an immediate impact on all aspects of the area. The individual traffic rerouting could bring strong effects, optimizing the flow and subsequently supporting local business.
The large traffic volume, the free space under the Highway and adjoining residential communities make a good potential for the development of a better image.
The existing buildings along this street lack spatial coherence, they do not form a good living environment. Densification, higher and less "temporary" buildings would help define space.

Central Brickbottom
To increase the FAR of the area seems not only possible, but necessary. There is little potential for immediate construction activity; however, the well developed existing commercial structure holds the potential of developing into a real urbanity: adding some residential units to the mix could result in a very interesting, urban community. The relative isolation of the area impedes this enhancement; but because of the proximity of the highway, the possibilities of Central Brickbottom itself to become part of the large scale is quite remote and intervention into the existing, local network is therefore futile. On the other hand, a big potential could be unlocked by connecting the area to the regional public transport network.
The main potential lies in the enhancement of the image, positioning the "Brand Brickbottom" intelligently within light industry, arts and crafts.

Twin City Plaza
The shopping center "Twin City Plaza" is running quite well, thanks to its location just off the Highway and with a hinterland of a quite large residential community. There is, of course, a potential to increase the FAR of the one-story outdoor complex, but currently it doesn't seem feasible.
The area right behind is dominated by an old red brick factory building. This beautiful structure houses architectural offices and other small, young firms. To use these as an anchor for further marketing could boost other businesses in the area.

PROJECT

On the following pages we provide an overview in the form of a chart of all possible interventions. Out of this pool of possibilities we will show one actualized.

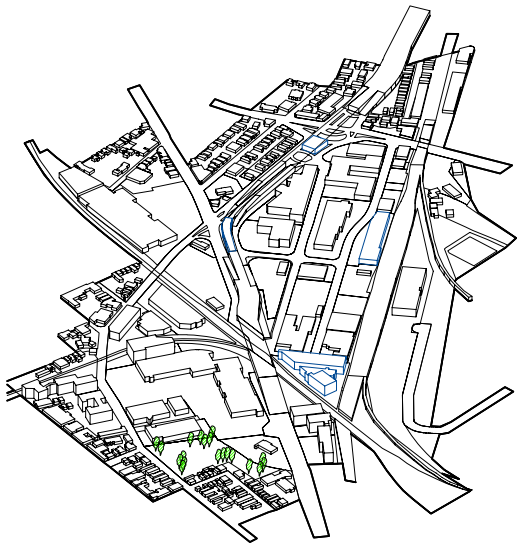
This will be presented in the form of a walk through space and time. We will explore the site beginning with the most likely development in the near future and end with one of the most distant interventions with the lowest probability.

HIGH PROBABILITY

PERCEPTION

Branding

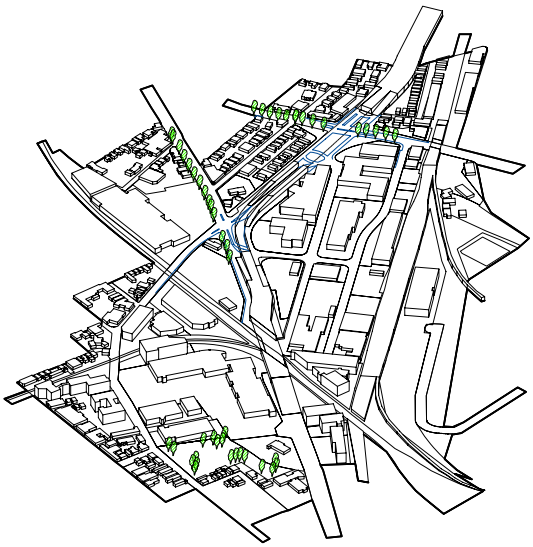
Brickbottom Street Festival
Citizen Participation
Streetscape + Street furniture



FLOWS

Access Point Redesign

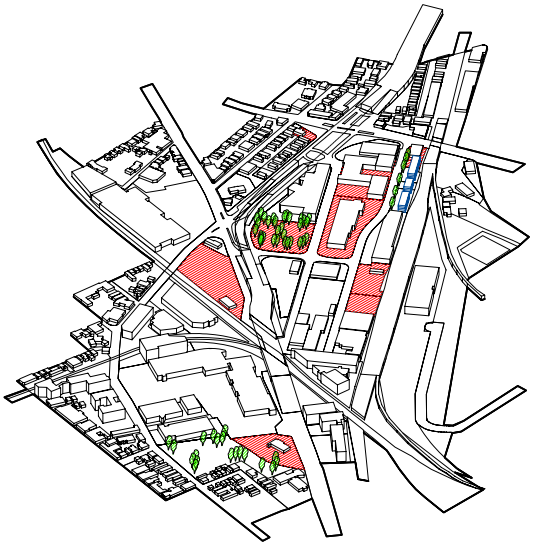
Washington Intersection
Somerville Intersection



SEDIMENTATION

Preliminary Development

Decontamination
Affordable Housing



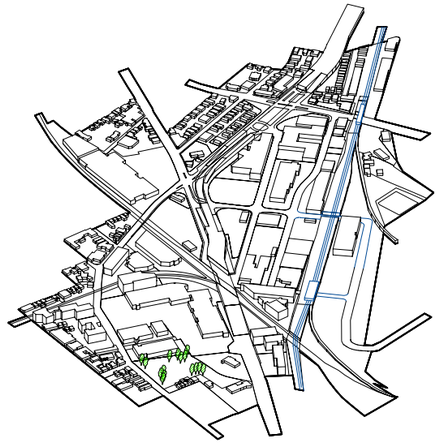
MEDIUM PROBABILITY

Green Space

Decontaminating Parks
Community Path
MIT Path

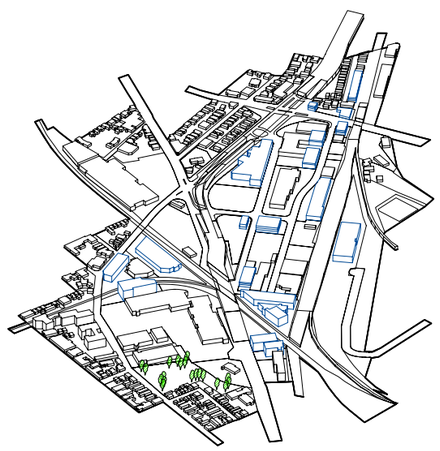
T-Line Extension

Washington Station
Brickbottom Station
Fitchburg Street Extension
Poplar Street Extension



Existing Structures

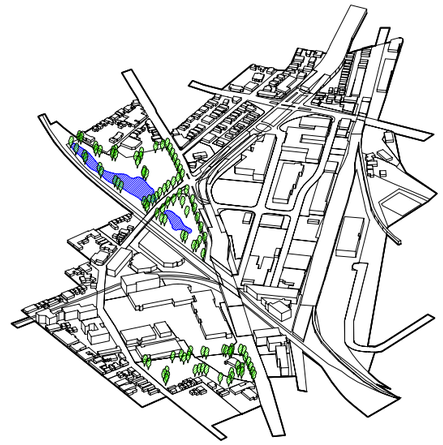
Top Up
Re-Use
Intermediary Use



LOW PROBABILITY

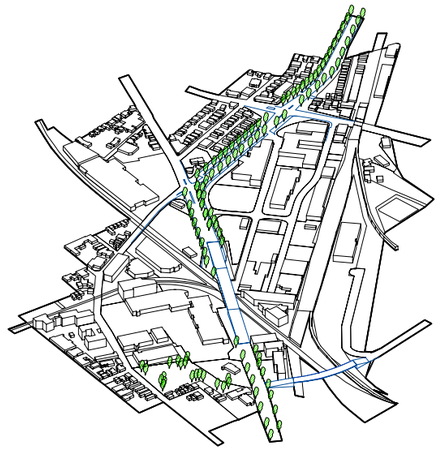
Miller's River

Daylight Miller's River



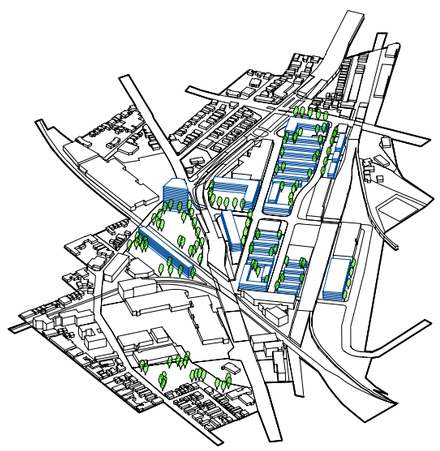
Highway to Boulevard

McGrath Boulevard
Inner Belt Road Extension



New Developments

Door to Brickbottom
Residential
Offices



PERCEPTION

We believe that it is of vital importance for any urban transformation to be aware of its foundation in social space. Our goal is to integrate the Brickbottom area into the surrounding "social space" and not to develop an, as Michael Sorkin[1] would say autonomous "urban simulation". That means we are not looking for "urban pictures and symbols" but for interventions that enable the development of a new positive perception through a better identification with the area.
What we hope to achieve with the interventions within perception is an increased awareness of the population, an intensification of the flows and subsequently a creation of real urbanity.

FLOWS

Our main objective in this domain is a better interconnection of the scales and different flows of the city. We believe that a feeling of real urban centrality can only be achieved by interlocking all scales into a network. The possibility to choose different means of transportation and change easily are of crucial importance. The flows should act as a reinforcement of the perception by mostly not being a barrier, and encourage a sedimentation by providing good accessibility and connectivity through a reliable infrastructure.

SEDIMENTATION

The primary goals of our interventions of sediments are to stimulate the economic development by intensifying existing structures, through re-use and top up. We believe in a development in "bits and pieces", using existing structures as long as possible and encourage small scale projects. The goal is that the buildings develop from social processes e.g. through housing cooperatives. The architectural form itself is less important than the social process that shapes the buildings. We see the urban realm as an architectural palimpsest.

1 Sorkin, Michael; Variations on a Theme Park, 1992

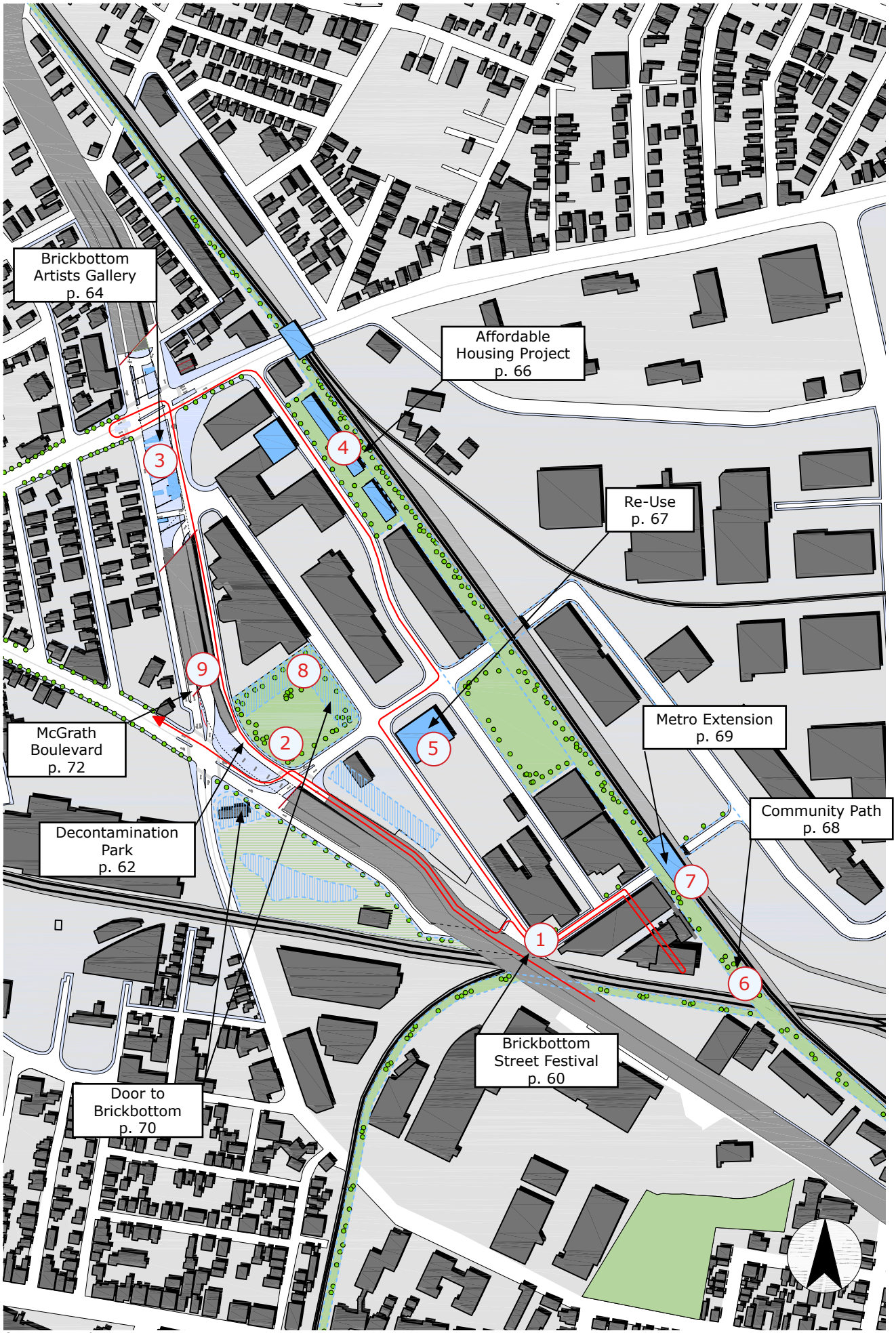


fig. 1 Site Plan

1/5000

PERCEPTION

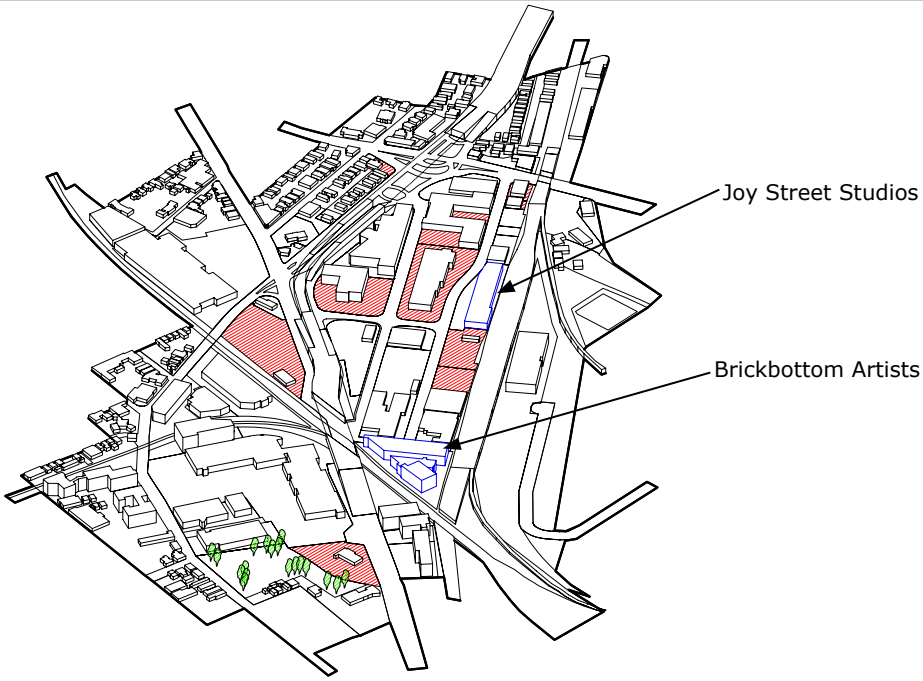
Brickbottom Street Festival

fig. 2

FLOWS

The name "Brickbottom" should be registered as a trademark, along with a logo. An interesting way to help spread the word about the new development in Brickbottom would be to leave the design of the logo to a public competition among the schools of the neighborhood. This could generate interest with the children as well as their parents and subsequently with the rest of the population.

SEDIMENTATION



Branding in Urban Design

> *There's a big difference between branding a region and a company or a product. Product brands only have to please one audience, consumers. You don't have to ask the beans in the can how they feel about the label. Corporate brands have more audiences to please, such as owners, managers, workers and customers. Branding a geographical entity is still more complex, especially when it involves national characteristics and loyalties. Brands that involve whole populations need popular permission.*[1]

Our goal as designers is to start the branding process and to create possibilities for public participation. True citizen participation can be a difficult task, public hearings are often dominated by opponents of the development proposal. The experience of the National Charrette Institute[2] indicates that the best results are achieved through organizing public workshops that take place on at least four consecutive days with all interested parties and different disciplines. These workshops should be object orientated, with the goal to produce a buildable plan.
In the specific case of Brickbottom, we see big potential in a focus on the already existing arts and crafts scene and the image of a slowly growing post industrial area. In practice the Access Point Redesign can be a good starting point for a cooperation of the existing Artist Association and a "Business Improvement Group" dedicated to improve the business situation of Brickbottom. Together with other interested local action groups they can organize a festival to get a better public perception and to gather local resources, like interested people, political influence, donations... This association, with the goal of developing Brickbottom, can be a main motor for the whole area.

Gentrification

The branding process is strongly connected to the topic of gentrification. Maureen Kennedy, ex-president Clinton's Deputy Assistant Secretary for Housing and Urban Development defines gentrification as

> *...the process by which higher income households displace lower income residents of a neighborhood, changing the essential character and flavor of that neighborhood.*[3]

This follows the tradition of Ruth Glass, who created the word from "gentry", the land-owning aristocracy. In the case of Brickbottom, this definition is not etymologically true, but it's a popular term widely used and feared by Brickbottom's inhabitants (especially by the artists). They fear to be victim of the typical routine: A cutting edge community establishes itself in an abandoned area, the area is being yuppiefied and the once diverse community radically alters its character, or in Jane Jacob's words is "losing its organized complexity."[4]

We don't believe that the process of gentrification itself is bad, the only problem is just the displacement of people and resources.

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1 Wolff Olins; http://www.wolff-olins.com/oresund.htm; July 15th

2 http://www.charretteinstitute.org/

3 Planning Forum 9, Urban Gentrification; http://www.ar.utexas.edu/planning/forum/vol9PDFs/counterpoint.pdf; June 25th, 2003

4 Jacobs, Jane; The death and life of great American cities <dt.> Tod und Leben großer amerikanischer Städte - gekürzte Ausg. - Berlin; Ullstein; 1969

PERCEPTION

Decontamination Park

fig. 3

FLOWS

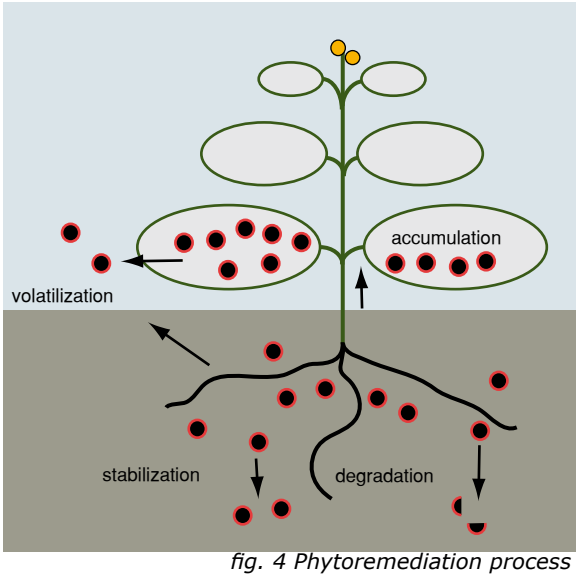
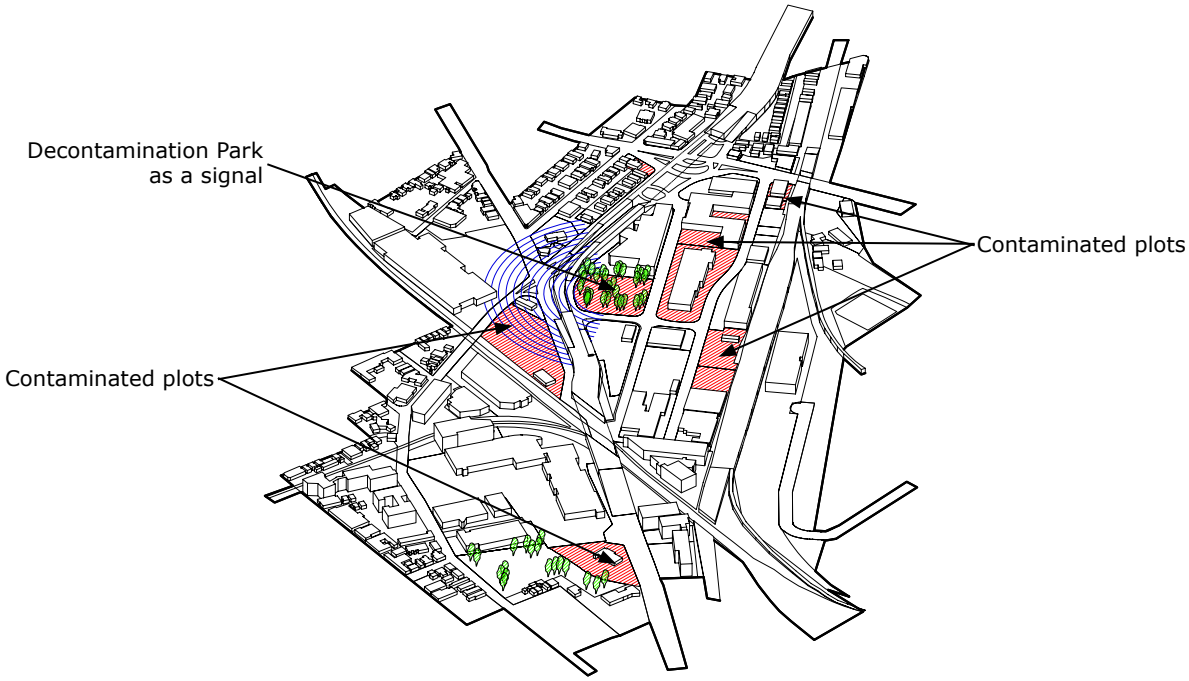


fig. 4 Phytoremediation process

SEDIMENTATION



Decontamination

Decontamination along with site preparation is one of the main issues in the development of brownfield sites. It is feared by developers because of the hidden costs for the decontamination process. Therefore we propose for the Brickbottom area a careful assessment of existing conditions. To reduce cost we propose to direct the environmental investigation efforts rather than starting out with a widespread sampling program. This approach uses existing information like current site conditions, past maintenance practices, interviews with senior facility staff, historical aerial photographs and as-built drawings, etc. to assess the situation.[1]

Phytoremediation

is a very cost-effective but slow method of cleaning sites. Plants like poplar trees or buffalo grass transfer the harmful chemicals from the ground and either store them, transform them or transpire them (see opposite image). Phytoremediation has the advantage of greatly enhancing the image of the whole area with a new layer of green.

> *"Given that individuals are spending increasing amounts of time in automobiles, the addition of natural elements such as trees and prairie plants to roadsides could have an important impact on their ability to function optimally, particularly while driving. Residents of the rural–urban fringe could be greatly affected by such efforts, since they are likely to spend a significant amount of time commuting to and from work."*[2]

These parks are a positive sign in public space that is predominantly designed for passing by and not staying. Especially the site of the Waste Transfer Station can serve as a landmark, suggesting tranquility which can have a positive impact on both residents and passing commuters.

Characteristics	Phytoremediation	Natural Attenuation	Engineering	Bioremediation
1. *In Situ* or *Ex Situ*	*in situ*	*in situ*	*ex situ* or *in situ*	*ex situ* or *in situ*
2. General Description	Use plants and microbes to degrade, contain, or transfer[1] contaminants	Use plants and microbes to degrade, contain, or transfer[1] contaminants	*Ex situ* = excavation, landfilling, incineration. *In situ* = soil vapour extraction; chemical or thermal treatment, solidification; pump-and-treat; vacuum extraction; sparging	Use microbes to degrade or contain contaminants; *ex situ* involves excavation coupled with solid-phase or slurry-phase treatment
3. Human Intervention	Yes; agronomic – tillage, fertilizer, inoculation, planting	No	Yes; extensive	Yes; extensive – provide proper temperature, oxygen, and nutrients to optimize microbial activity
4. Direct Benefits	*In situ*; solar driven; well-suited to large areas of surface contamination; good esthetics; favorable public perception; plants as indicators of contamination; microbes degrade a variety of contaminants; plants transfer oxygen to rhizosphere; plants help contain contaminants; relatively easy to apply	*In situ*; no disturbance	Dependable; leaves clean site; has definite starting and end points; *ex situ* especially faster than other remediation methods; proven to be effective; vacuum extraction is not limited by depth to groundwater	Limited disturbance with *in situ*; proven to be effective
5. Indirect Benefits	Improves soil quality; prevents erosion; plants help eliminate secondary air- and water-borne wastes, including greenhouse gases; trees can reduce noise from industrial sites; hardy plants can help other less hardy plants grow on contaminated sites	Hardy plants can help other less hardy plants grow on contaminated sites; once established plants help prevent erosion and help eliminate secondary air- and water-borne wastes		
6. Limitations	Contamination must typically be shallow; plants may not grow if contamination high; slower than *ex situ* methods; contaminants may not be bioavailable; environmental conditions have to be right; leaching or volatilization may occur before phytoremediation	Slower than any other remediation method, therefore longer period of higher risks to human and ecosystem health; plants, microbes, or environmental conditions most beneficial to remediation may not be naturally present	Highly disruptive, especially excavation; landfill only transfers contaminants to a second site; disposal issues of fly ash with incineration; pump-and-treat does not treat soils directly and is very slow	Highly disruptive with *ex situ* excavation; *in situ* requires extensive collection systems; treatment longer than engineering but not as long as attenuation; may not work if contaminant toxic to microbes; requires intensive monitoring
7. Cost	\$17 to \$100/m^3; \$3US/m^3 each year; cropping system = \$0.02 – 1.00US/m^3 per year	No operational costs; may have costs associated with monitoring	Generally, from \$10 to over \$1,000/m^3; \$10-100US/m^3 for volatile or water-soluble contaminants *in situ*; \$60-300US/m^3 for landfilling or low-temp. thermal; \$200-700US/m^3 for special landfill or high-temp. thermal; incineration or secured landfill costs of \$260-1064 per m^3; *in situ* typically cheaper than *ex situ*	\$50 to \$133/m^3 for *in situ*; \$133 to \$400/m^3 for *ex situ*

[1] Refers to the transfer of contaminants from soil to the atmosphere by transpiration associated with plants.
Sources: Boeve, 1989; Cunningham *et al.*, 1996; Cunningham *et al.*, 1995; Cunningham and Berti, 1993; Cunningham and Ow, 1996; Hrudey and Pollard, 1993; Malot, 1989; McIntyre and Lewis, 1997; Otten *et al.*, 1997; Pierzynski *et al.*, 1994; Schnoor *et al.*, 1995; Shimp *et al.*, 1993; Tsao, 1999b; USEPA, 1996a; USEPA, 1996b.

1 "Facility Decommissioning and Adaptive Reuse"; NDIA 27th Environmental Symposium; http://www.westonsolutions.com/about/news_pubs/Tech_Papers/ScaddenNDIA01.pdf; August 9th, 2006

2 Improving the visual quality of commercial development at the rural–urban fringe, William C. Sullivan , Sarah Taylor Lovell, p 165

PERCEPTION

Brickbottom Artists Gallery

fig. 5

FLOWS

SEDIMENTATION

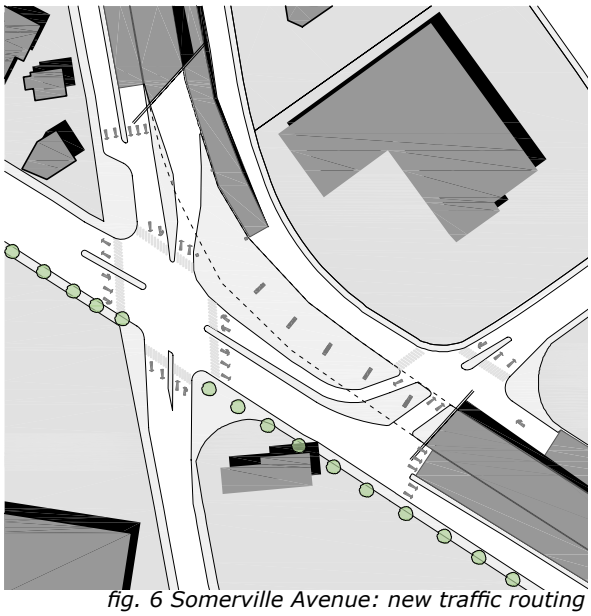


fig. 6 Somerville Avenue: new traffic routing

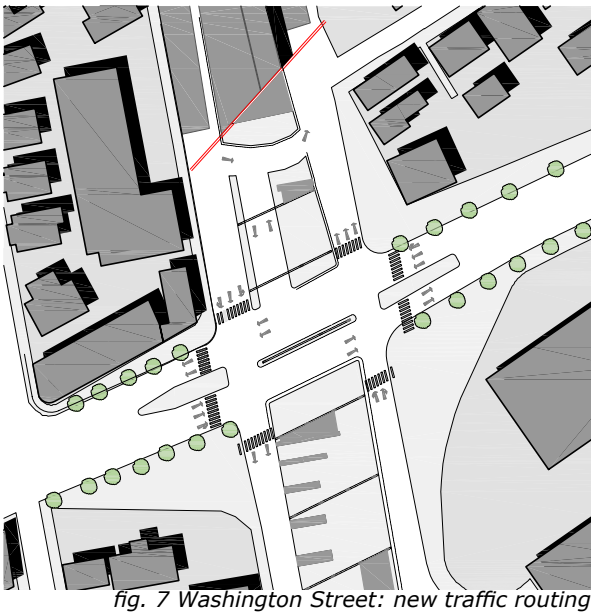


fig. 7 Washington Street: new traffic routing

Streetscape

The goal of redesigning the streetscape is to create an accessible, safe and legible streetscape for all users. Restructuring Washington and Somerville intersections along the McGrath Highway seems inevitable. New and direct routing could provide better access to the bus station on Washington St./McGrath; new signage and up-to-date traffic guidance could help to defuse these dangerous intersections. Through reducing the curb radius, pedestrians would have less walking distance and it would be easier for them to cross the street. Moreover this would lead to reduced car speed and increased safety.

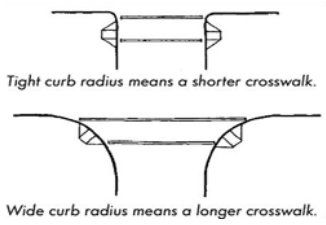


fig. 8

It's interesting to see that the Brickbottom artists started the occupancy process of the area by planting new trees. This, together with adequate street furnishings, is very effective in creating a welcoming atmosphere to sojourn and build up a new, positive brand.
We propose not to apply the streetscape improvements to the whole area at once, but start the process at strategic points (such as the access points) and always incorporate the context of possible future developments. Otherwise it could happen that newly improved areas are vandalized, which would have a bad impact on the perception, and the increase in maintenance costs would be out of proportion. Moreover, every investment in the public realm may lead to more gentrification pressure on locals, here a grass-roots approach could help as well.

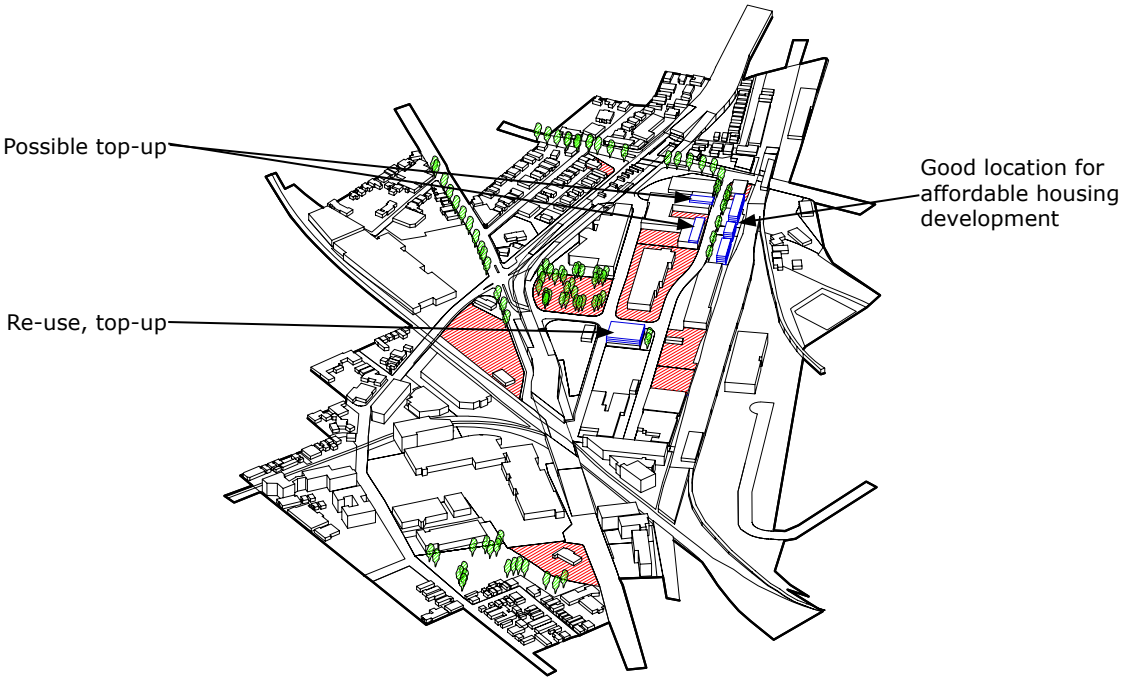
PERCEPTION

Affordable Housing Project

fig. 9

FLOWS

SEDIMENTATION



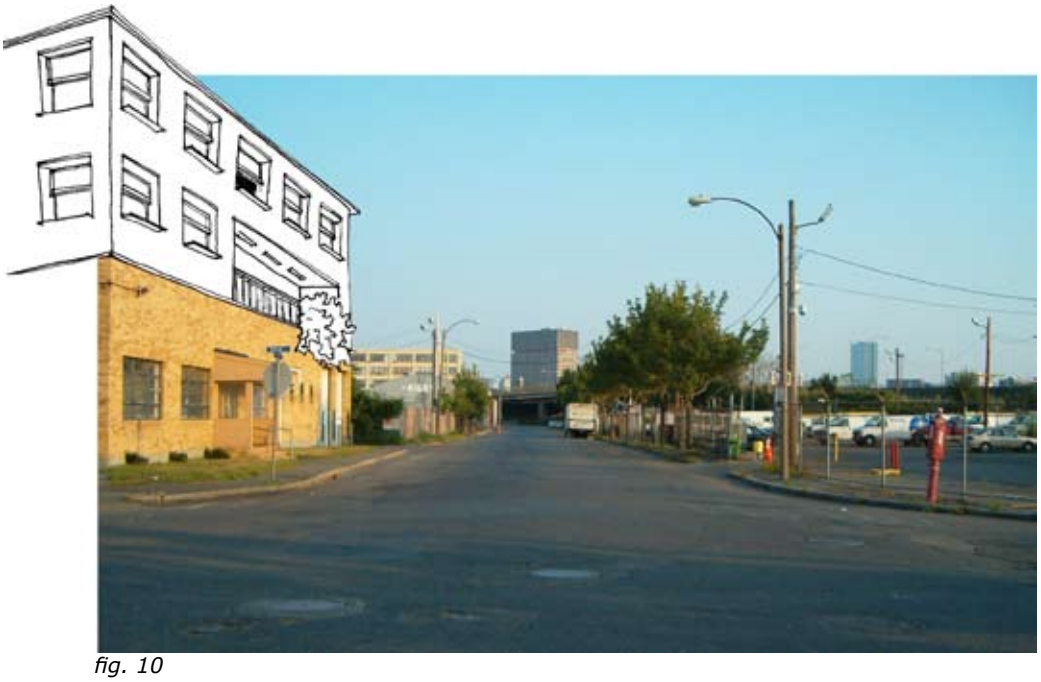


fig. 10

Residential

For future sustainable development of Brickbottom it is vital to bring together a critical mass of people to gain enough influence in political and economical matters.
This can be made possible through the so-called anti-snob zoning law[1] (Chapter 40B). Under this law, developers may circumvent local zoning boards in municipalities with less than 10% affordable housing (as in Somerville). The law was enacted in 1969 to address the affordable housing shortage. But we see the main advantages in two other points. First the city of Somerville does not have to rezone the area that would attract profit-oriented developers and would increase the land value dramatically. And second, most laws and planning strategies derive from greenfield developments and are not suitable for brownfield redevelopments or urban infill projects. But the 40B affordable housing law allows circumvention of some of these laws and leads to more flexibility, which is necessary to cope with the complex situation of a brownfield site.

Adaptive reuse of buildings

In the past reuse was considered because of the buildings' cultural value. For the future, we see the need to save buildings for their material values and as an opportunity to create a mix of desirable building characteristics.
In Brickbottom we see the chance to create an architectural palimpsest[2] in layering different building phases and types. This offers the possibility of creating a vital community as opposed to a development from scratch that has no roots in social space.

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1 Chapter 40B; http://www.mass.gov/legis/laws/mgl/gl-40b-toc.htm; July 25th, 2006

2 "Summary of Adaptive Building reuse Benefits over Building Demolition", MIT East Campus; http://www.archinode.com/lcaadapt.html; August 14th, 2006

PERCEPTION

Community Path and Metro Extension

fig. 11

FLOWS

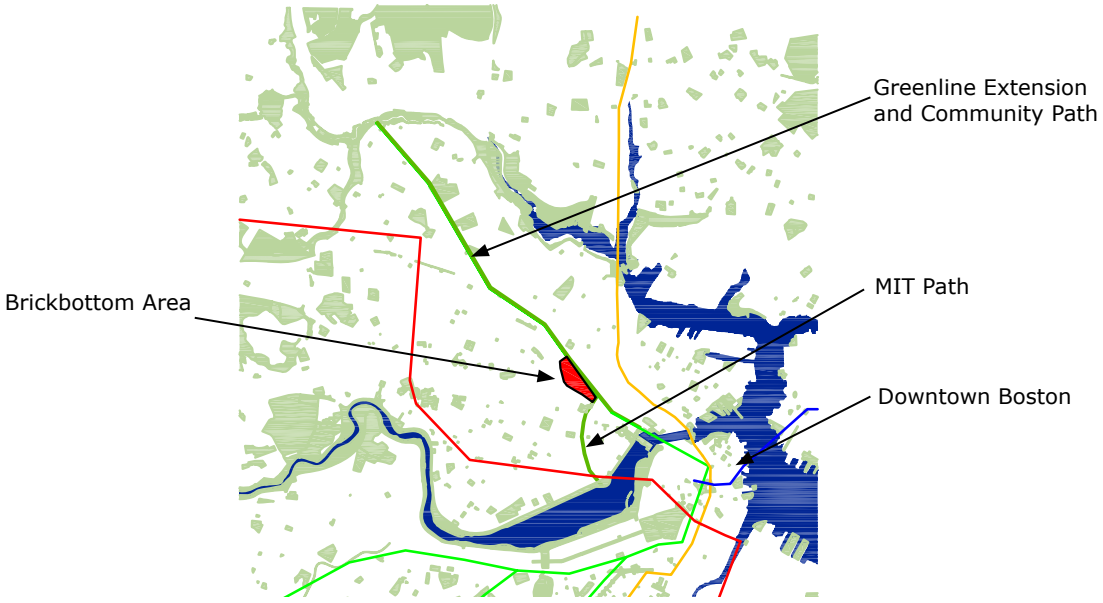


fig. 12

SEDIMENTATION

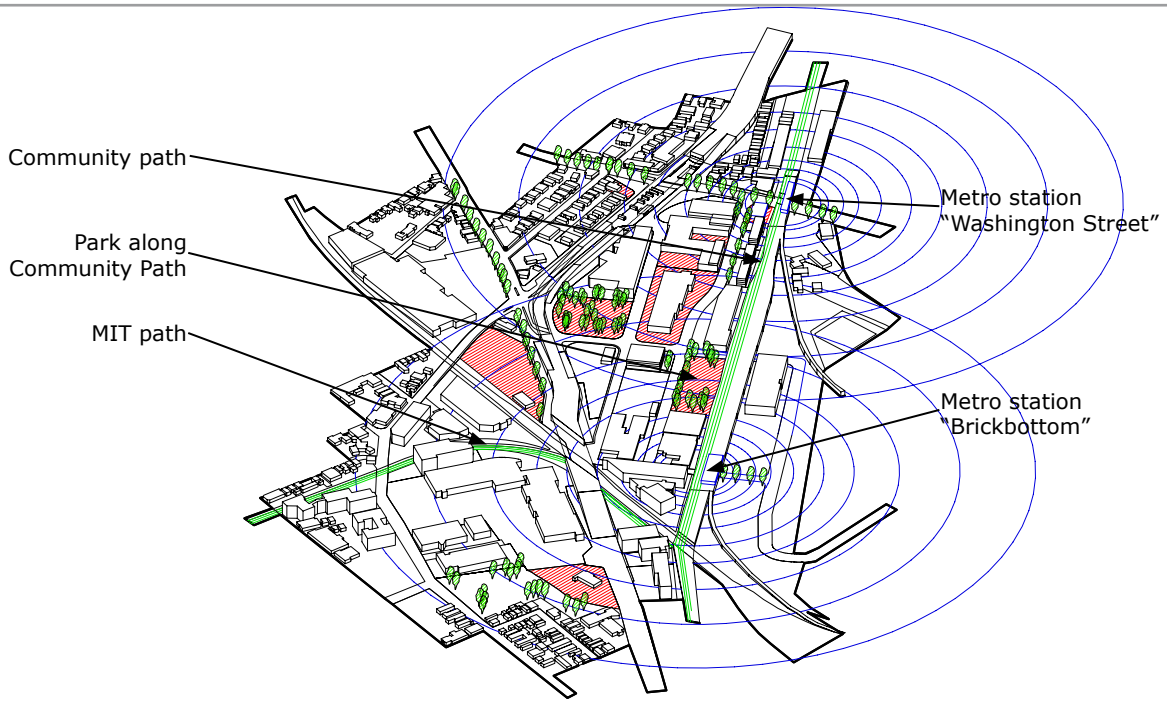


fig. 13

Regional connections

The connection to resources and opportunities throughout the metropolitan area can be a main motor for the gentrification process. From Brickbottom's point of view it has to be considered very carefully when it is advisable to establish better regional connections.

Car Transportation
Considering short term development, car transportation in combination with the existing public transport network should be sufficient. Compared to nearby Union Square, where car parking is considered as one of the main obstacles for development and increased density, the situation in Brickbottom is simpler. Space is not the problem, streets are wide enough to provide street parking for small scale infill or top up projects. For bigger projects, space on the project site should be used, or in case the Mercedes company were moving out, we propose to re-use the existing building as a multi-story car park.

Public transport
Another other advantage compared to Union Square is the possibility to connect the area to the metro network through the existing under used rail corridor.
Undoubtedly, this connection would boost local economy and improve the surrounding residential communities. But for the Brickbottom area this development is not only positive: If the connection came too abruptly, the land value might soar and increase the danger of a gentrification with all subsequent developments like displacement, torn down buildings and greenfield development.
Therefore we believe that the process of development and organization of local forces should be well under way before considering this transit connection.

Leisure time network
The connection to the regional recreational network, through the Community path and MIT path is a big opportunity to improve the image in public consciousness and to create higher quality of life for residents of adjacent areas.

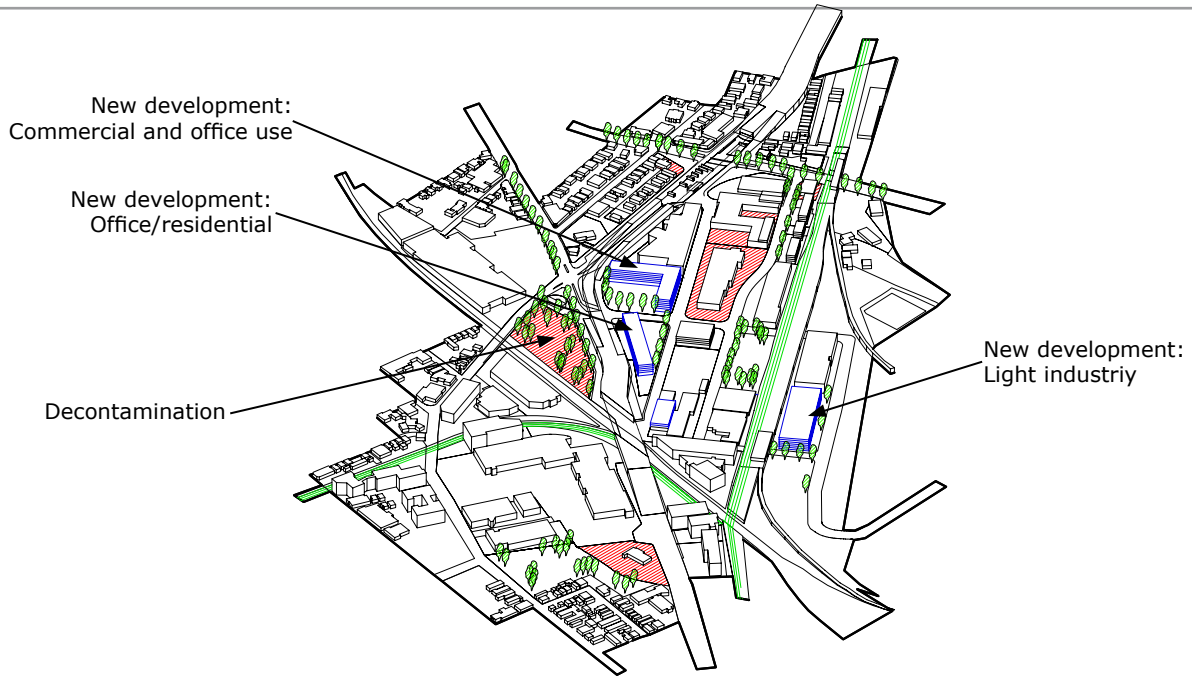
PERCEPTION

Door to Brickbottom

fig. 14

FLOWS

SEDIMENTATION



New Developments

For Brickbottom we see a high potential in financing new developments through housing cooperatives[1]. For them it is much easier and attractive to do small scale urban in-fill or top-up projects than for large developers whose calculations are always profit-oriented. Moreover for Brickbottom it's important to bring enough people together who are interested in forming a community. Better identification with one's own building can be turned into account for the whole area.

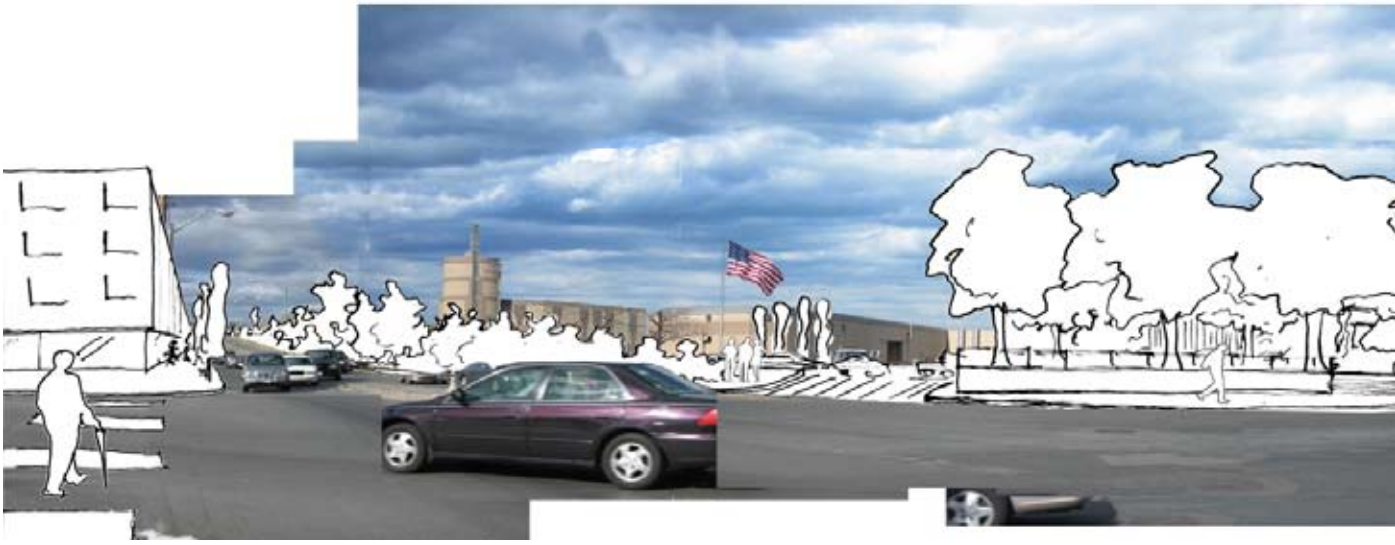
We believe it is neither necessary nor advisable to prescribe the appearance of buildings. It would indeed be counterproductive for creating an urban environment if, say, the shape of the windows was given. It is more important to set up some basic principles:
- before tearing down and erecting something new, a possible reuse of the existing structure should be considered.
- also any intermediary use should be preferred to instantly tearing a building down and, for example, using the plot as a parking lot.
- when designing a new building, the possibility of changing its use should be kept in mind. E.g. apartments should be adaptable to be use as offices; or the ground floor flat be converted to a shop.

For future development the site of the "Waste Transfer Station" is important. It has the potential for becoming a new landmark, a "Door to Brickbottom" and the Inner Belt District. It can be a new center for social and commercial activities in Brickbottom, e.g. if the artists are able to establish their presence, the artists space/gallery can move to one of the new buildings and a regional orientation can be considered.
Together with a block along the Highway these developments could create a situation facilitating an intensification of use in Brickbottom. As a long term development we propose to juxtapose a representative tower. Thus a well defined and interesting space will be created as an entrance into Somerville.

1 http://www.coophousing.org/; August 15th, 2006

PERCEPTION

McGrath Boulevard



FLOWS

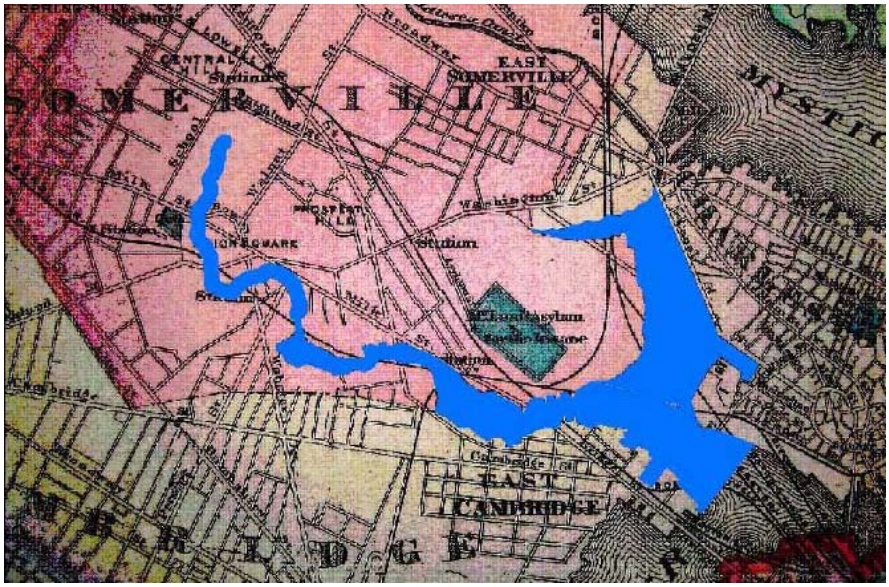
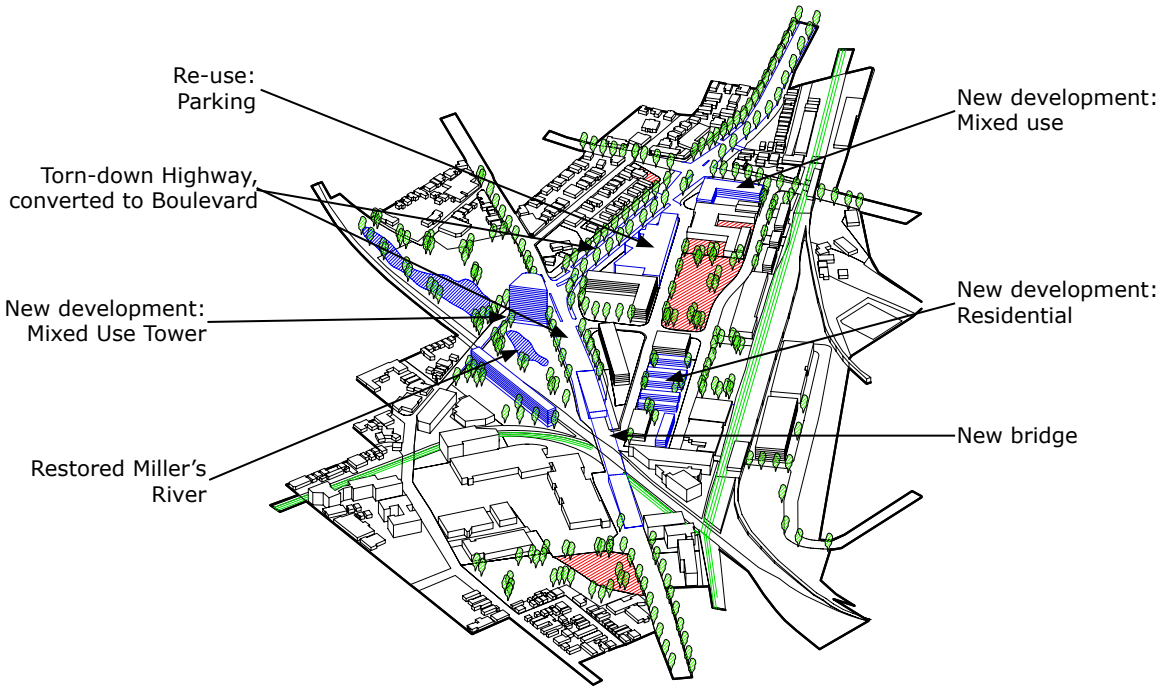


fig. 16 Historic Miller's River

SEDIMENTATION



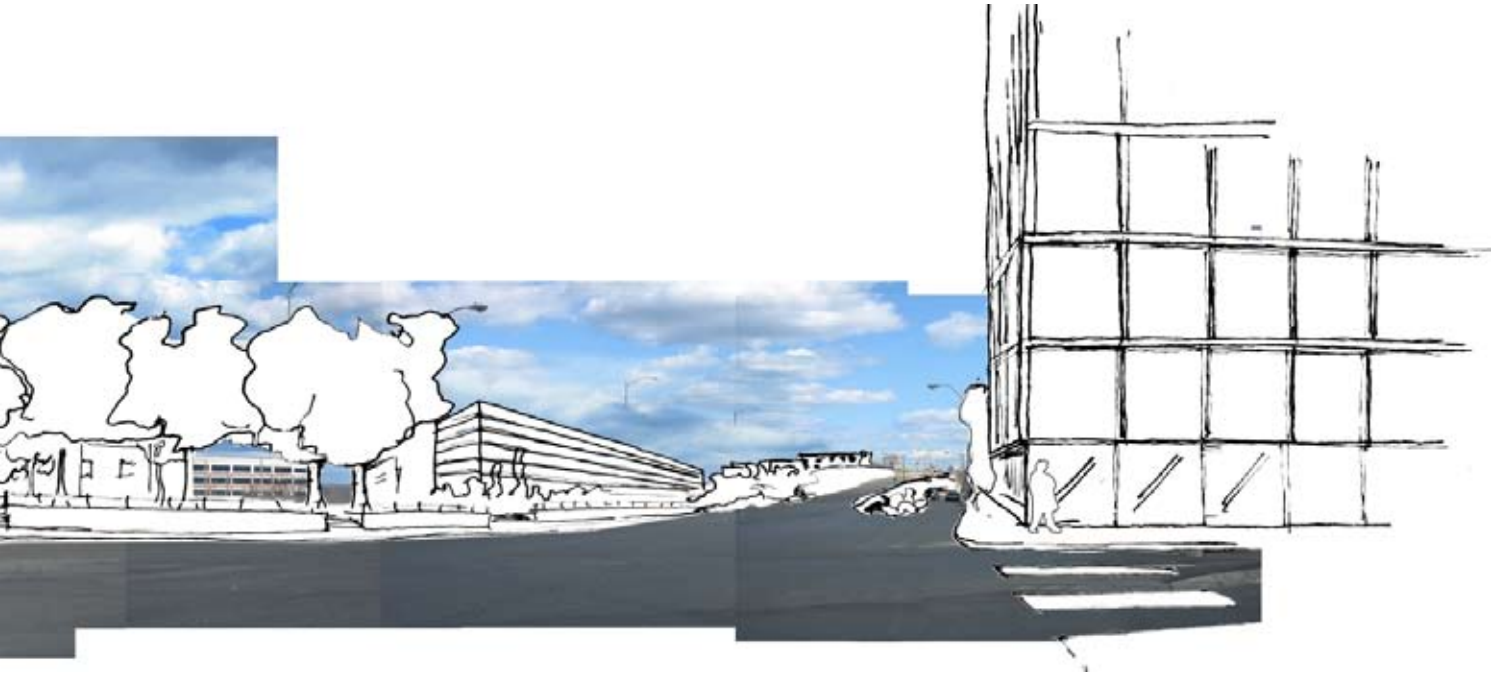


fig. 15

Highway to Boulevard

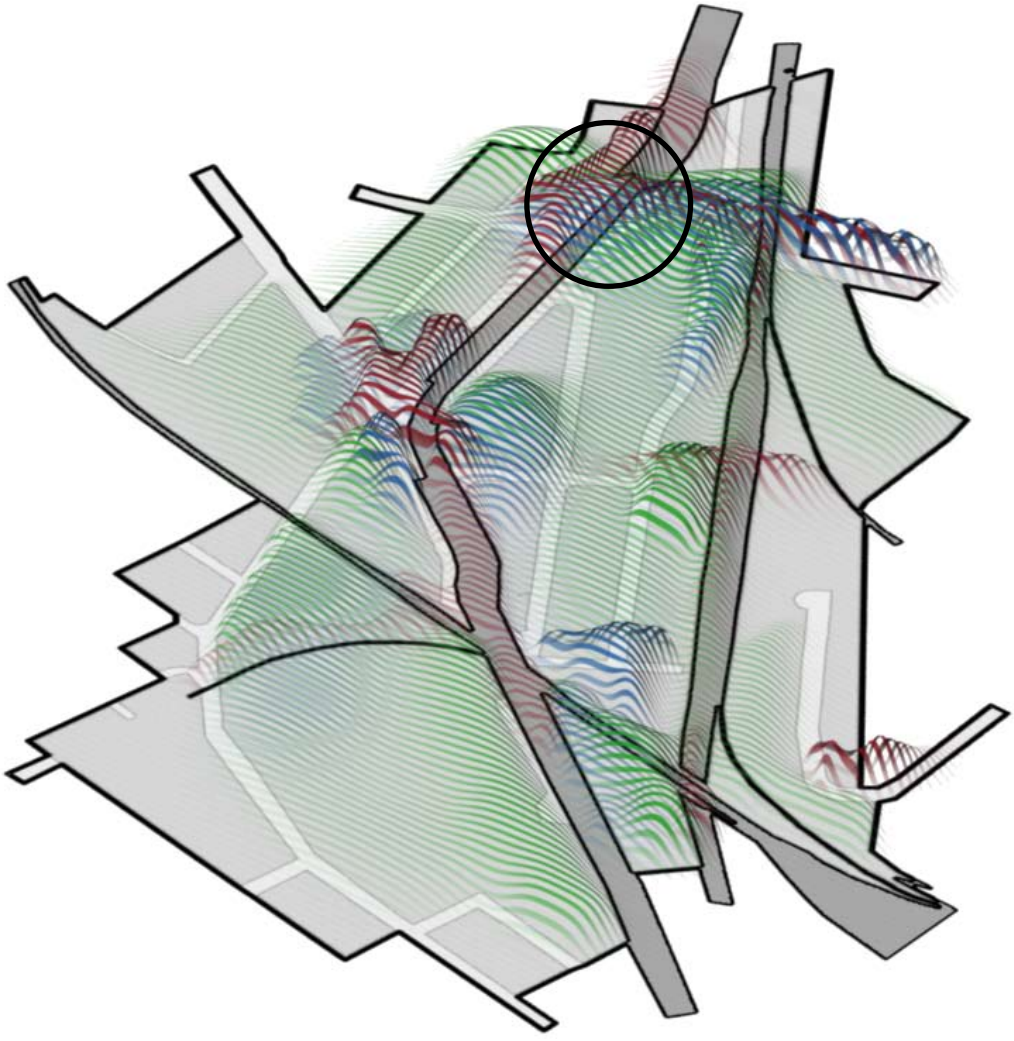
One of Somerville's action groups is interested in turning the Highway into a Boulevard. From our point of view, this would greatly enhance the whole area, but it is not very likely to happen soon. It would be a very big investment, which is only useful in the context of the Green Line extension and a future policy direction towards transit oriented development.
If the highway were demolished, we propose a design that carefully considers the impact of such a development on the adjacent buildings and the whole neighborhood. It should aim at creating a pedestrian-friendly environment, maybe structuring the rather wide street into different sections for pedestrians and bicycles, local and regional traffic.
One of the most important points would be the connection of Brickbottom to the "outside".

Restoring Miller's River

In the course of a land reclamation project the Miller's River running through Somerville was put underground. To restore this river would increase the attractiveness of the whole area. Together with a new park this can become an important recreational area for all of Somerville.

INTERSPACE

To verify our ideas and concepts
we present a small design project. Following a short introduction into
the reasons for choosing the site and the theme,
we present the basic ideas as well as the details of the project.



Design

We chose the Washington Intersection site for further investigation because we believe this area to have the potential for development. This area at the border of Brickbottom seems most representative in terms of situation and the image it conveys.
Several major and minor roads converge in this point, but interchange is still difficult. The intersection is squeezed between areas of residential and industrial/commercial use, which it interesting from both points of view.
We sought to illustrate our view of future development of the Brickbottom site in general and specifically the potentials and problems of this intersection by a design utilizing the highway and its adjacent infrastructure. The design primarily focuses on the requirements we discussed before: it will act as a perceptive element by increasing the public's awareness of Brickbottom in general and the artists' work in particular. The design will promote the "trademark Brickbottom" and additionally create the image to go with the name.
It will also be a regulatory element for the flows of the area; the idea of the converging of different flows and speeds is reflected in the design. Supporting the brand idea, the design should have a distinct perimeter of the area as well as promoting permeability; this dualism is one of the recurring themes of the design.
As a sediment, the intervention is based on the elements and materials found on-site. Obviously, the brick is important, but we also used the highway support system as a design element and the highway's traffic influences the rhythm of the design.
This project reflects our ideas regarding urbanism and projects them onto a small stage where they are tested for their validity.

Interspace: Transition design

Interspace

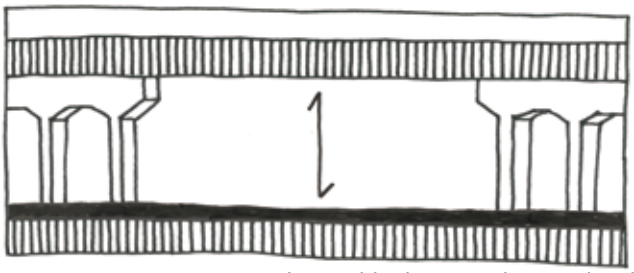
def: a space between two things; an interval

As this definition suggests, it is usually seen as an irrelevant space between two relevant objects.
However, we believe that an interspace has the potential to connect or to separate, it can make use of the best of two worlds, or to exist on its own.

In the design for this object we wanted to formulate our stance towards urbanism on a micro scale. The theme of the intervention is, as the title suggests, "interspace".

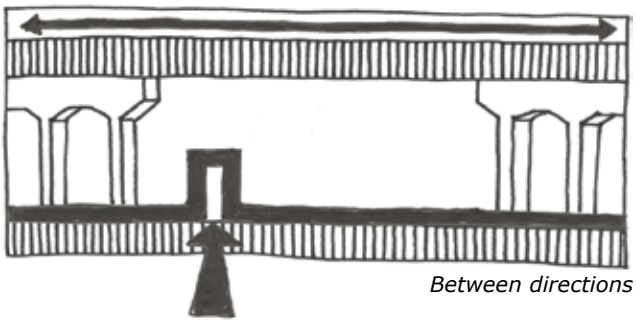
The site of this architectural intervention is an "in-between" in several respects: in between Union Square and Brickbottom, in between elevated highway and street level, in between the regional and the local, in between residential and industrial, in between art and infrastructure.
In the design we reflect on these "in-betweens".
We show the man-made interspace between the elevated structure of the highway and the street level by inserting a red brick carpet, showing the "interior" after lifting the highway off the ground. This carpet gives the space identity, it grounds the new place in social and historic fabric.
The walls, folds in the fabric of the carpet, lift it into the third dimension while also meditating on the themes of permeability perpendicular to the direction of the highway and projecting the speed of the highway onto the slower scales of street level.

The space in between the elevated highway and street level is being accentuated by the red brick carpet.



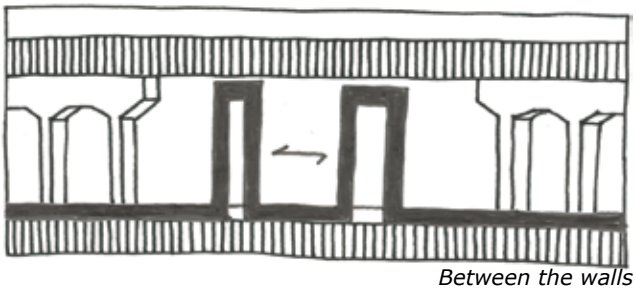
Between elevated highway and street level

The folds in this carpet call attention to the intersection of different directions and speeds.



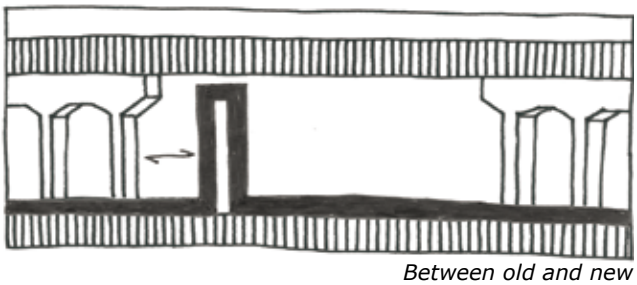
Between directions

The folds interact with each other, creating space.



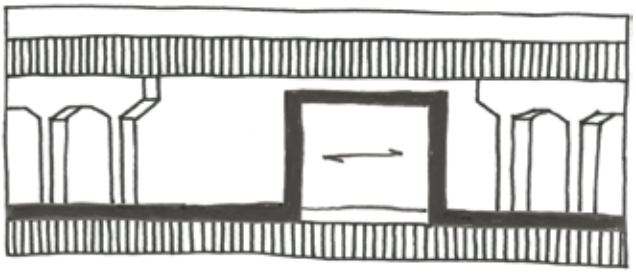
Between the walls

The space between the folds interacts with the old structure, creating space with very distinct properties.



Between old and new

Thewallsthemselves create the most enclosed spaces in the project.



Within the wall

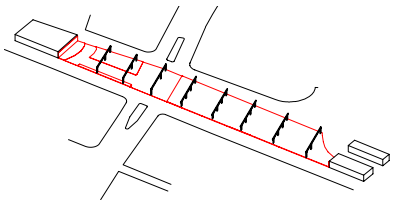
Function

We understand the vast space of the highway as a chance of self-expression for the adjacent communities. The interspace between the communities acts as an interchange of micro-cultures. These different forms of expression can all be made known to a broader public. We want to encourage an urban development by giving the heterogeneous elements of the area a chance to interact.

> *In other words, encounter, and the reaction to it, is a formative element in the urban world.*[1]

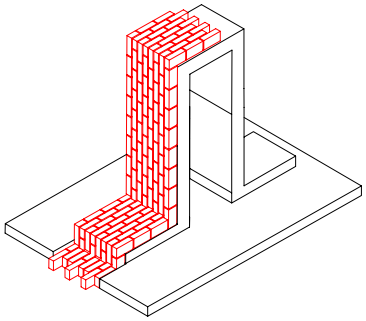
Functionally, the intention of the project is to allow the community to have a space for expression: the artists can have workspace, a chance to exhibit to the public, a space for events, for a party.
This should also provide a rallying point for the support for the local population, in order to present the ideas of a "Brickbottom Action Group"

The Carpet



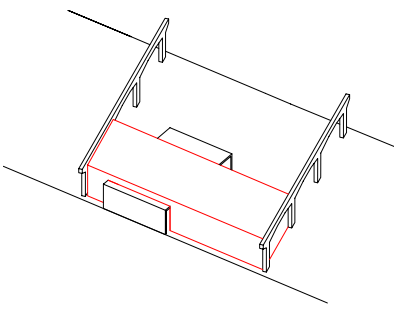
The brick "carpet" covering the area under the highway makes the non-place into a place. Before, this space was barely existent in the public consciousness, due to its enormous size, its lack of function, its character as "junk space". By introducing the brick carpet, we want to give the area an identity, make it a place, not just a transitory area, but a place where it is enjoyable to spend some time.
The choice of material was relatively obvious, considering the name "Brickbottom". We decided, however, to use the clinker as facing only; the load bearing structure underneath is a layer of concrete.

The Folds



The walls formed by folding "The Carpet" in a transverse direction to the highway reflects on the two-sided nature of an interspace: We show this by employing these dividing folds to create connecting space between them.
The folds separate the artists' workspaces, but the larger these workspaces become, the larger the space within the folds becomes. As the space between the folds becomes undefined, the folds themselves become spaces.
To emphasize the "folds in the carpet" idea we decided to let the joint of the bricks run through north-south, adding to the directional effect of the highway.

The Armadillo



This structure at the heart of the Interspace project comprises an event space of 85m²/890sqft, an entrance area, a back room (30m²/323sqft) and a bar as well as facilities such as lavatories and a storage room.
The name derives from the brick-faced clasp containing the facilities and entrance spaces. The north and south faces are made of glass, the side walls a simple timber framing construction. The inside facing should allow for a neutral white exhibition space; the outside material is hardly exposed to weather, it just has to be relatively cheap, vandal-proof and have a paintable surface, so it can be used by the artists.

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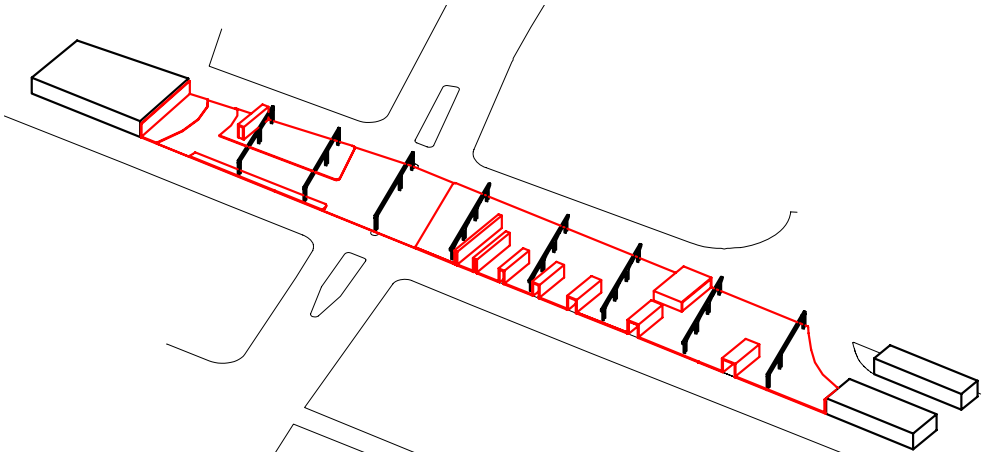
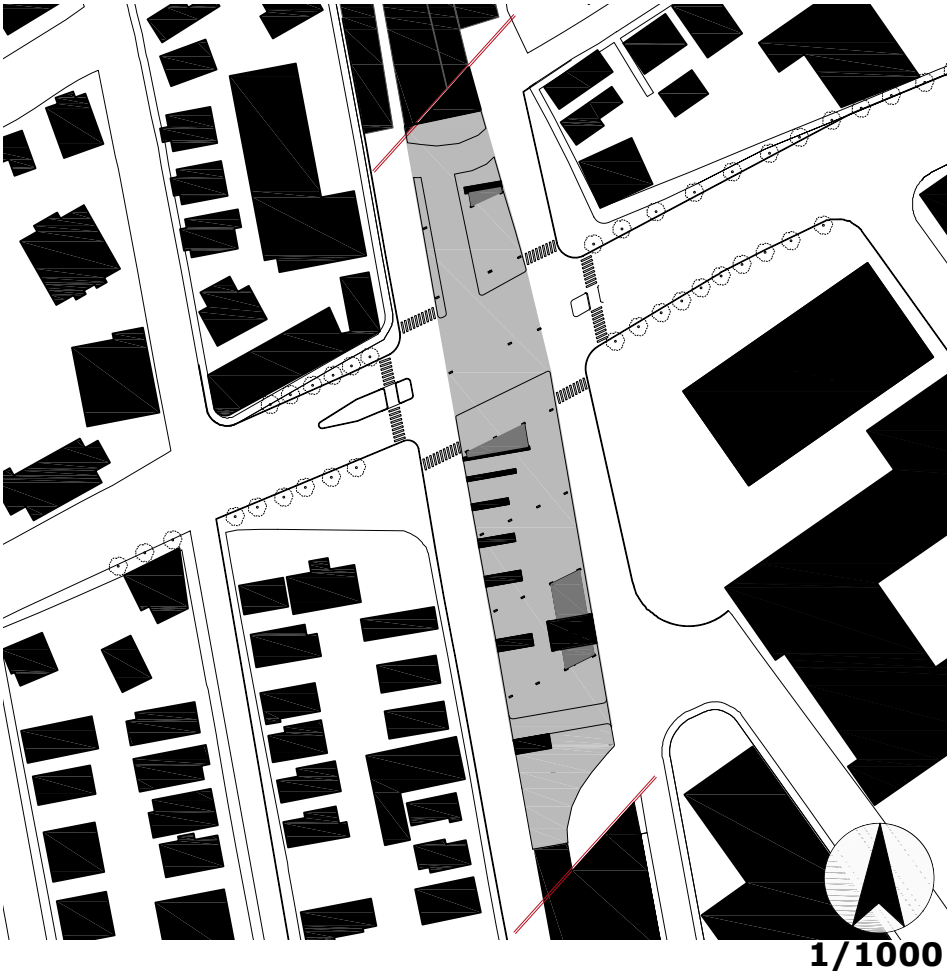
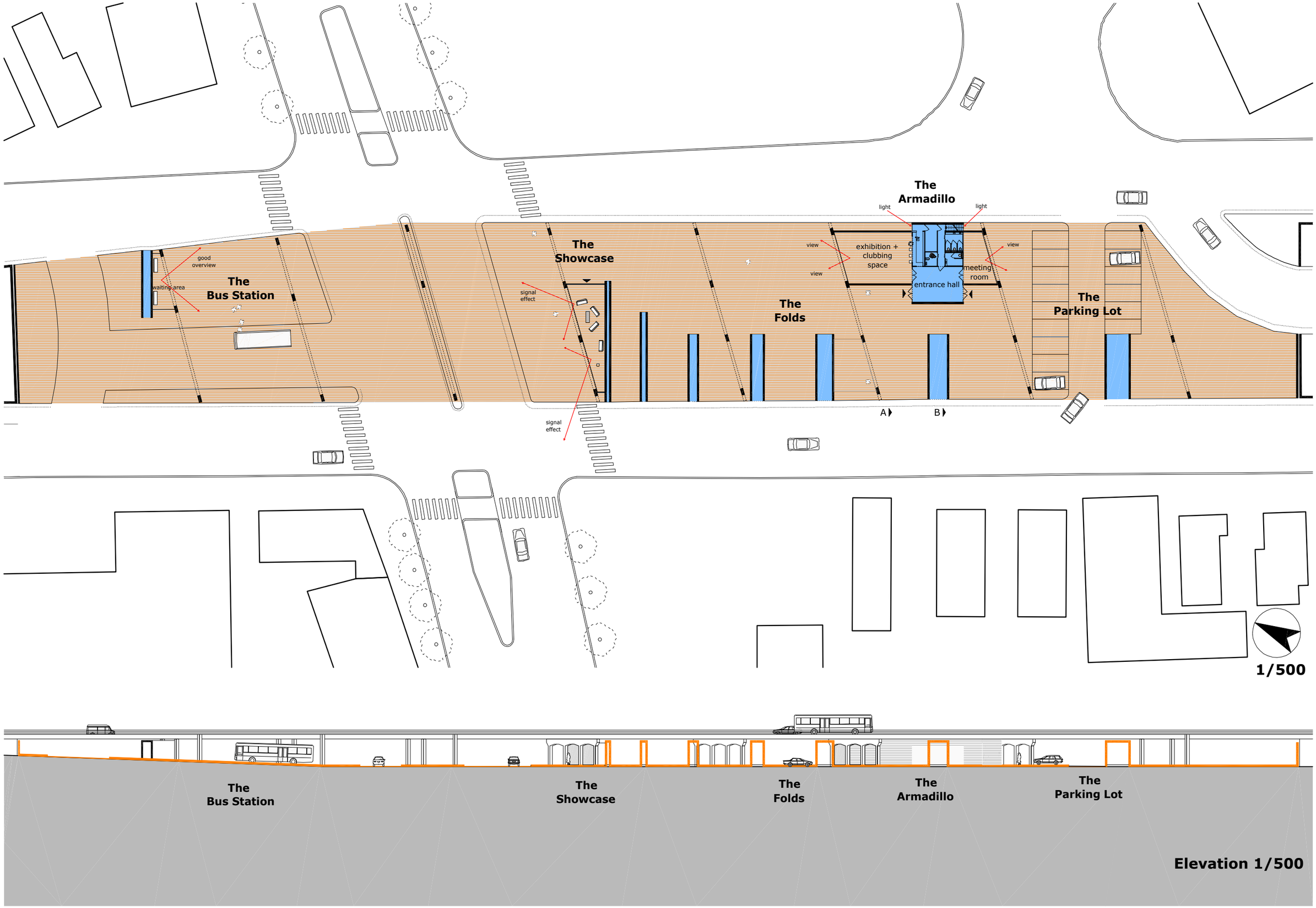
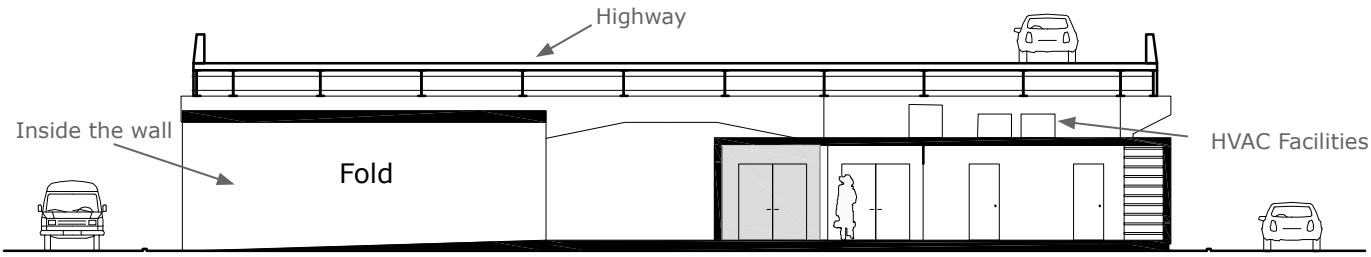
1 Cities. Reimagining the Urban; Ash Amin, Nigel Thrift, Polity Press, 2002 p30

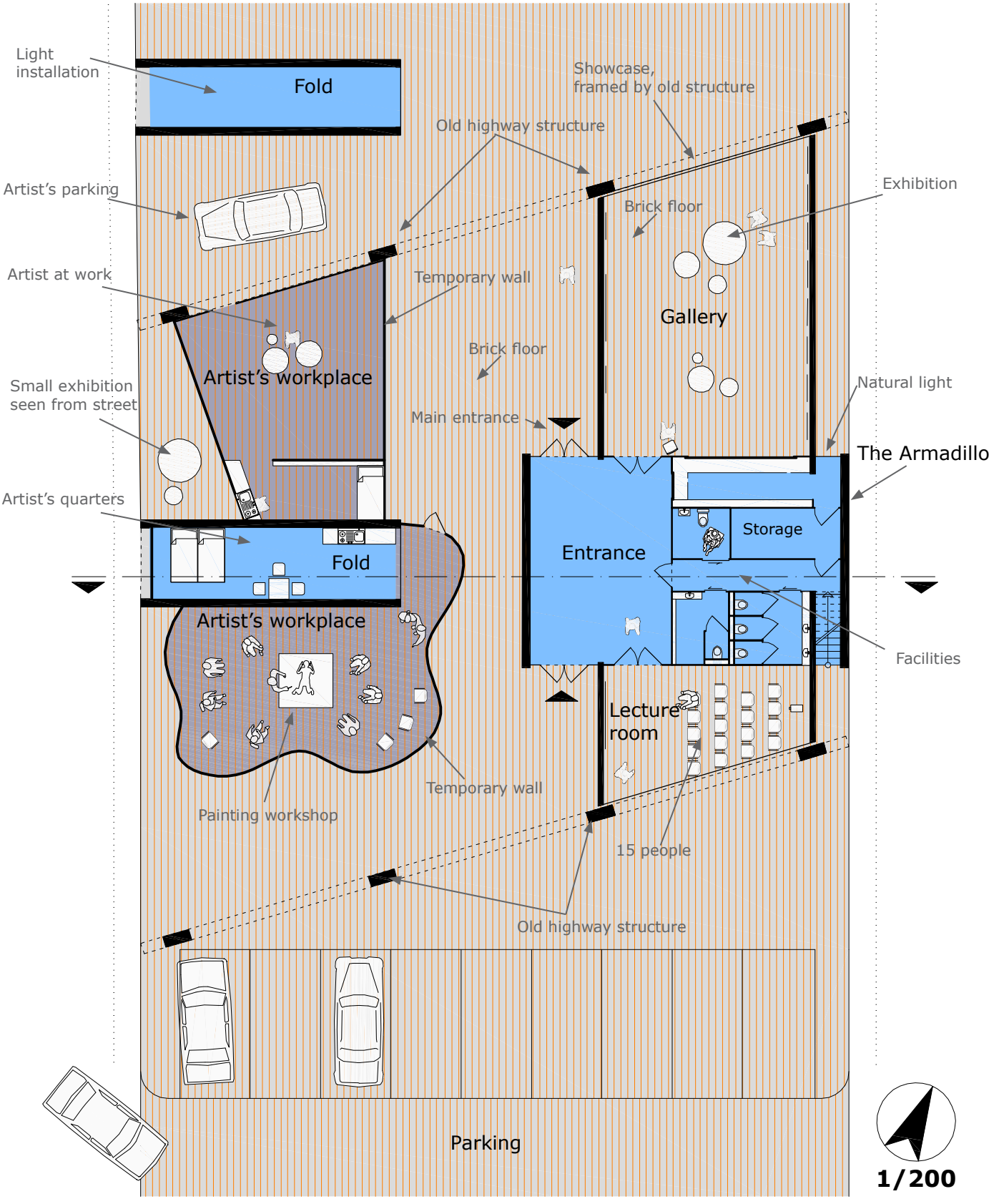


Axonometric illustration




The Armadillo
light
light
The Showcase
view
view
exhibition + clubbing space
view
meeting room
entrance hall
good overview
The Bus Station
waiting area
signal effect
The Folds
The Parking Lot
signal effect
A
B
1/500
The Bus Station
The Showcase
The Folds
The Armadillo
The Parking Lot
Elevation 1/500


Highway
Inside the wall
Fold
HVAC Facilities

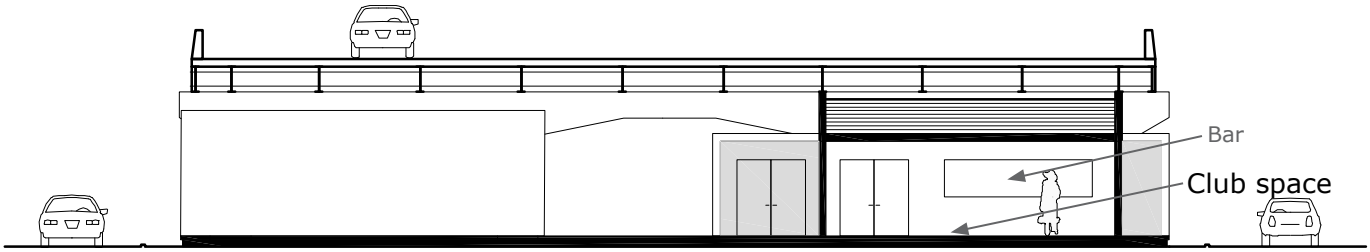

Light installation
Fold
Showcase, framed by old structure
Old highway structure
Artist's parking
Exhibition
Brick floor
Artist at work
Temporary wall
Gallery
Brick floor
Artist's workplace
Small exhibition seen from street
Natural light
Main entrance
The Armadillo
Artist's quarters
Storage
Entrance
Fold
Artist's workplace
Facilities
Lecture room
Temporary wall
Painting workshop
15 people
Old highway structure
Parking
1/200

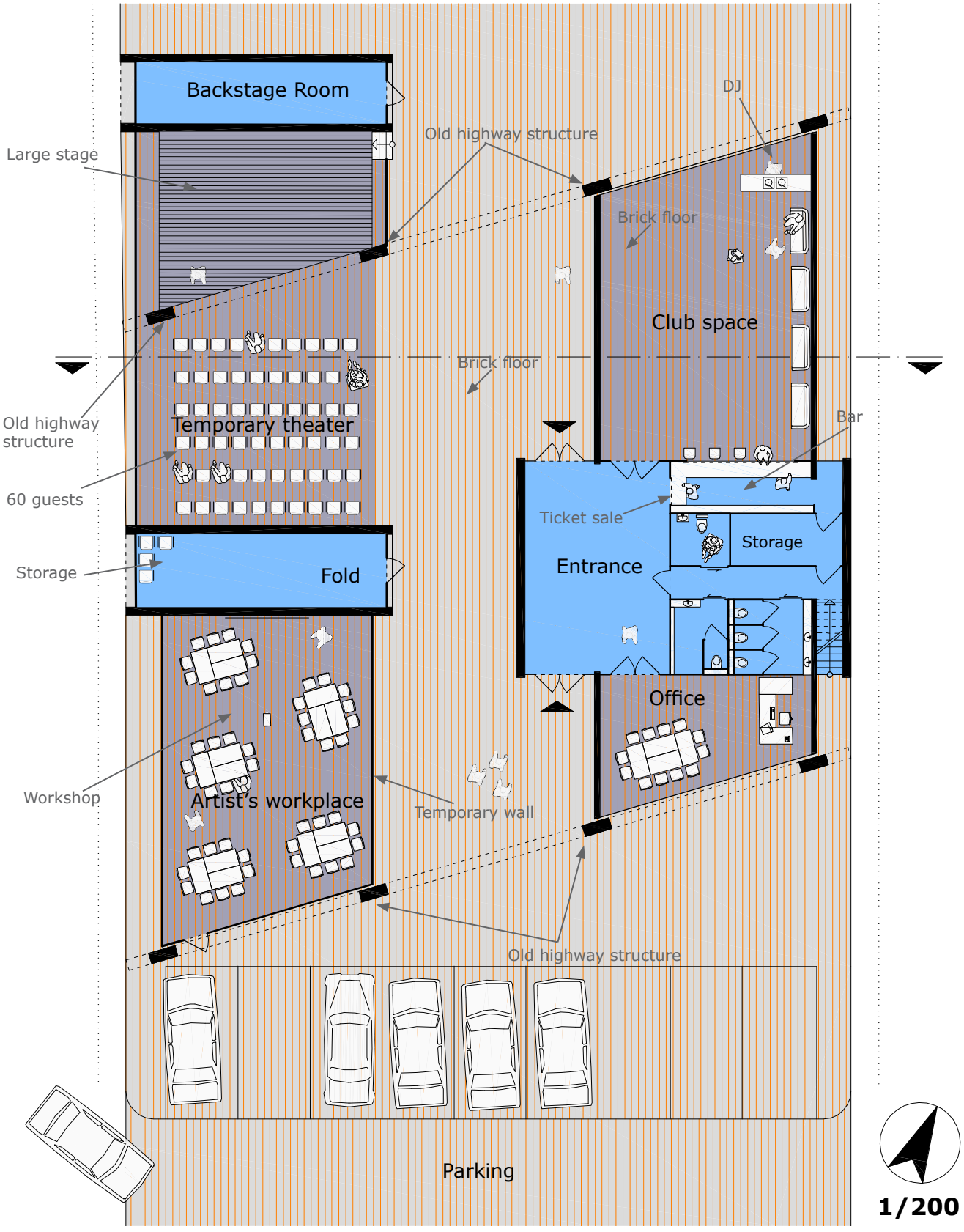
Usage

The actual usage of the spaces is entirely up to the artists. Our proposal includes only suggestions for simple configuration of different rooms and spaces.
The infrastructure such as electricity, water and HVAC will be kept overhead, using the existing structure of the elevated highway. This keeps installation efforts to a minimum and ensures that this infrastructure is accessible from almost any point in the structure. The maintenance facilities of the Armadillo are situated on the roof as well. Concerning the walls, the bigger they get the more space they can provide, thus giving an artist shelter and security even though the rest of his space may be of a rather temporary character.

Scenario 1

In this scenario, a sculptor is using one space. He/she combines a rather large space for working with small living quarters. His/her structure also includes parking and a small private gallery clearly visible to passing cars from the street.
The official gallery is right across from his/her studio, providing easy access and surveillance for the artist in residence.
The 30m² (323 sqft) room in the back is used as a lecture room, providing space for about 15 people.
The wall itself is occupied by a painter, organizing painting workshops in his blob-shaped work space.


Bar
Club space


Backstage Room
Large stage
Old highway structure
DJ
Brick floor
Club space
Brick floor
Old highway structure
Temporary theater
60 guests
Bar
Ticket sale
Storage
Storage
Fold
Entrance
Office
Workshop
Artist's workplace
Temporary wall
Old highway structure
Parking
1/200

View of the Armadillo from Washington Street

Scenario 2

Scenario 2 shows a setup for performing artists. The large space between the walls is being used as a temporary theater with a big stage and seating for up to 60 people. The stage is elegantly framed by the old concrete structure of the highway, thus incorporating the situation into the scene. To avoid disturbances by noise the western side towards the street is closed off, with the structure on the east providing natural shielding. The northern wall is used as a backstage area, where the artists can get ready and change for their performance. Within the southern wall props and additional chairs are kept.

The 85 m² (890 sqft) clubbing space is used for an after-show party, lighting the Interspace till late at night.

In the back room the Brickbottom Action Group has set up camp, where people of the surrounding communities frequently meet to discuss matters of further development and other projects

OUTRO

Media coverage of the original competition,
competition entry, special thanks and bibliography

SOMERVILLE

Bringing fresh eyes to the Brickbottom

Drawn by wide-open design contest

By Ethan Gilsdorf
GLOBE CORRESPONDENT

They have come from afar. They have piercing blue eyes. They have studied this city and have enormous plans to change it.

Fear not. They may be aliens, but they mean us no harm. They also hold Austrian passports.

This month, Florian Fanta and Simon Gassner, two architecture students from Graz University of Technology in Austria, spent 3½ weeks here studying Somerville's Brickbottom District. Their proposal to redevelop the 45-acre site will not only become their joint master's thesis, it will be their entry for a design competition sponsored by Somerville and the Boston Society of Architects called "EDGE as CENTER: envisioning the postindustrial landscape."

Young designers like Fanta and Gassner make this competition particularly exciting, said Alexandra Lee, the BSA's director of special projects. Lee said the contest attracted more than 200 entrants, urban planners and students alike, from 20 states, eight universities, and 20 countries, including Mexico, Taiwan, Australia, Ireland, Bulgaria, and Ukraine.

The Brickbottom District site's complexity and potential have proved to be enticing. Setting no budgetary limits, the competition brief asks entrants to consider a multitude of redevelopment issues: the site's present and historical uses and environmental problems; the city's relative lack of housing and open space; its loss of commercial tax base; its strained public transportation system and infrastructure; the new focus on smart growth; and Somerville's identity as an artistic hub.

"It's a pretty compelling topic," Lee said.

The $35,000 in prize money didn't discourage entries, either. (Registration for the contest closed on March 31.)

Fanta, 26, and Gassner, 25, learned of the competition through an Internet search. Brickbottom intrigued them, they said, because it dovetailed with their own interests in urban-scale redevelopment.

There was "the possibility to develop our own design philosophy," Fanta said.

Unlike most juried architectural competitions, "EDGE as CENTER" was intended to generate broad, pie-in-the-sky design concepts, rather than practical, concrete plans, according to its organizers.

"In these ideas competitions, you often get radical ideas," Lee said. "The purpose is to push, to enable a dialogue to take place, to capture some really big ideas and figure how to work them into the final design."

At their school in Graz, Fanta and Gassner studied plans and photographs of Brickbottom, but resisted coming up with their proposal until after touring the site firsthand. Once in Somerville, they spent several days wandering the district, making notes, taking pictures, and trying to "map the atmosphere, how you feel, trying to capture the different moods," Fanta said.

Because the entries aren't due till May 26, the Austrians were reluctant to reveal their ideas to a reporter. But the general focus of their concept for the new Brickbottom, Gassner said, is "how to reconnect this [area] to the rest of the city." Barrier number one — the McGrath Highway, which cleaves the site in two both physically and psychologically.

"People think, 'I don't want to go under that highway,' " he said. One of their ideas is to redesign the McGrath into a boulevard, with adjacent housing that would alter the neighborhood character from "simply being destinations" to a place of residence.

Fanta lived in Oregon as a high school exchange student, but Somerville was Gassner's first encounter with the United States. His initial impressions? Austrian cities like Graz have a different approach to space and land use.

"Industrial areas get recycled faster; land is more valuable," he said. "For many Americans, space is something quite inexhaustible."

"Everything here is just a little bit more," Fanta added. "It would be next to impossible to build something like a Target store in Austria."

If they win, they will be given the opportunity to consult with the mayor's office on the site's development, even though the details of their victorious plan would probably never see the light of day.

But to Florian Fanta and Simon Gassner, who returned home on Tuesday, being declared runner-up is probably due to the fact the judges might be a bit afraid of innovation and grand gestures.

"Therefore, the real goal is to be second."

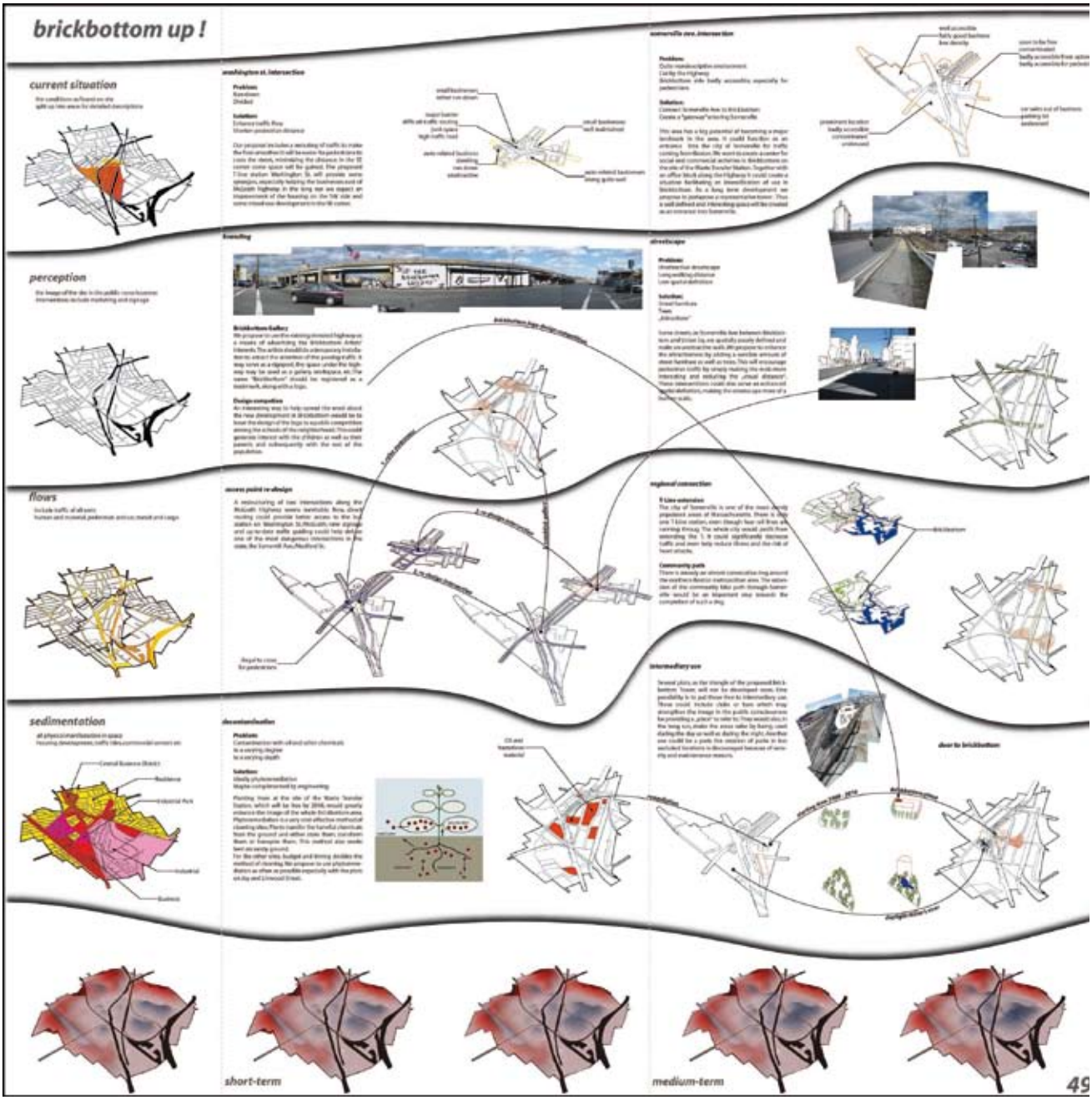
Ethan Gilsdorf, who lives in Somerville, can be reached at ethan@ethangilsdorf.com.

PAT GREENHOUSE/GLOBE STAFF

Austrian architecture students Florian Fanta (left) and Simon Gassner seek inspiration at Somerville's Brickbottom District.

Boston Sunday Globe, April 23, 2006

A COMPETITION OVERVIEW
A.0 INTRODUCTION
The City of Somerville, Massachusetts and the Boston Society of Architects (BSA) invite submissions to an international urban design ideas competition entitled: "EDGE as CENTER: envisioning the post-industrial landscape". This one-stage competition seeks redevelopment strategies and design visions for the Brickbottom area of Somerville, inviting entrants to project the future of a pivotal post-industrial site in close proximity to downtown Boston.[1]



1 Competition Brief, Edge as Center, 2006; p. 5

Original Competition Poster, 05.2006

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