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Imperfect Square: Reconsidering the Dialectical Condition between Fabric and Object in Urban Environments

Richelle Gewertz

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IMPERFECT SQUARE

Reconsidering the Dialectical Condition between Fabric and Object in Urban Environments



As a critique to Modernism's insistence upon the primary solid and isolation of building as an object within a void, a series of square blocks are placed into a cleared site in order to reintroduce urban fabric. The new field acts as a spatial matrix creating a new area of density to a blighted portion of the City of Syracuse. The subtraction of each square both emphasizes the object and defines space. Its uniformity as a solid massing differentiates the existing structures as exceptions and the voids each object-building becomes situated in creates a series of open spaces within the City. The concept of Imperfection is implied by the deformation of each square block that is conceived as a "perfect" cubic entity.

The thesis proposes to provide a new urban design approach to improve blighted areas in urban environments. It offers a strategy to patch together the fragmented physical landscape of the Shrinking City into a cohesive urban fabric.

The issue at hand is the need to recapture "lost" space, the underused, deteriorated areas in the City of Syracuse. To the east of Downtown, buildings are dispersed throughout a vast wasteland of parking lots and vacant land. This collection of objects lacks a cohesive, unifying framework. The blighted area is in need of infill, an insertion of urban fabric to stitch the City back together.

In understanding the new structure of the City as an interwoven pattern of variegated levels of density and pockets of open space, the thesis accepts the reality of a less extensively built environment by

reconsidering the traditional notion of urban fabric as a solid poche to something that is less dense and more open, but still adhesive. Through an interwoven pattern of solid and void, the thesis aims to show that a grouping of objects can merge into a stretch of fabric that can reunite fragmented portions of the City.

In consideration of the current realities of its post-industrial situation, the thesis asks how under-used land can become an asset, rather than an obstacle, for the future sustainability of the City. Rather than anticipate large-scale re-development to extend the size of the current Downtown core, the City should conceive a long-term strategy for repurposing the open space in its urban center.

The project that emerges is thus a master plan for a "rurban" development that acts as a new institutional campus for the research of urban agriculture. The private institution also supports a public commercial farming complex in an aim to revive the City's struggling economy through a shift towards the food production industry.

The proposed educational research facility is conveniently located within the City's aspiring innovation district, the so-called Connective Corridor, a collaboration between higher education institutions, the public sector and private enterprise to revitalize areas of the City as new knowledge-based industry clusters.

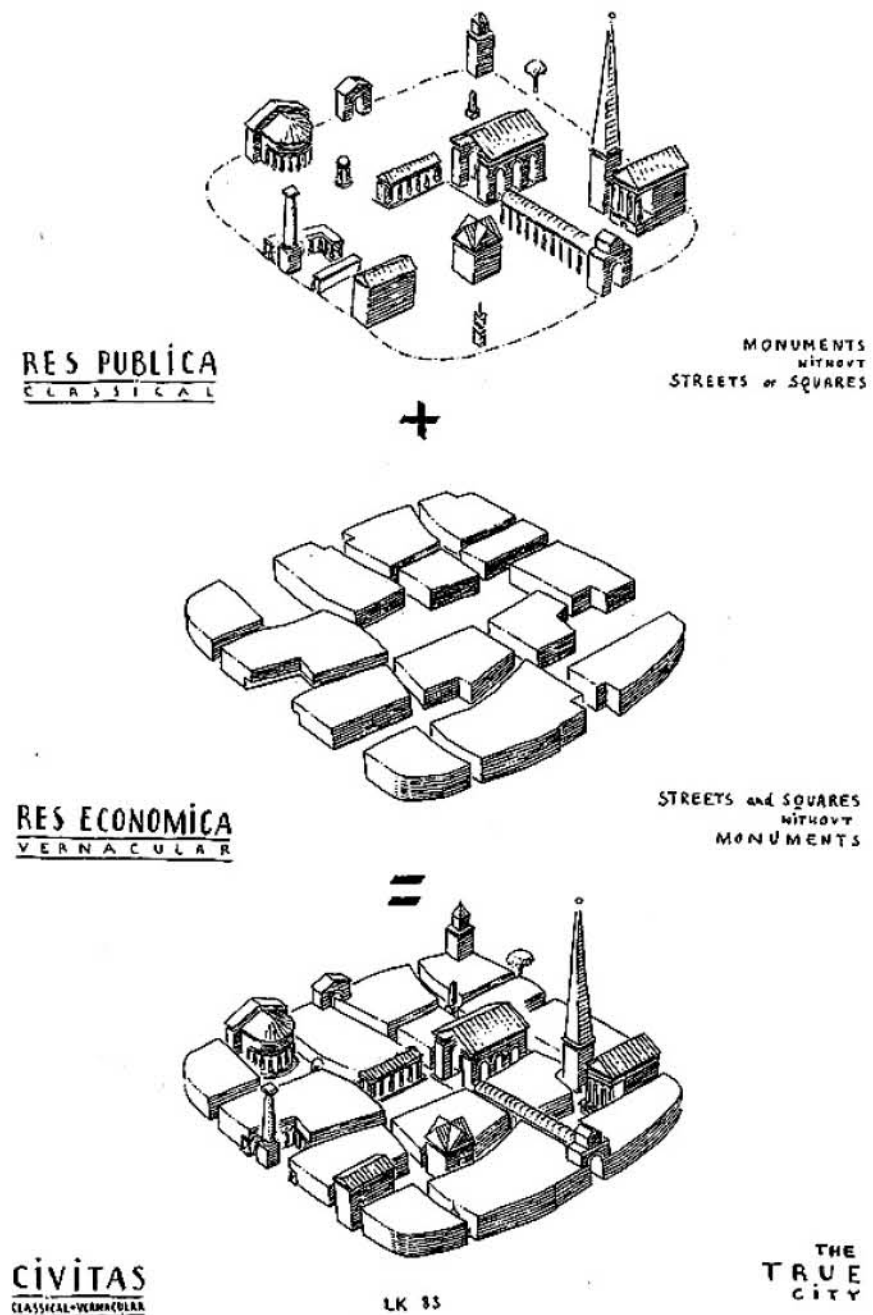
_Richelle Gewertz
_Advisor: Liz Kamell
_Thesis Preparation Fall 2015

The City is an Architectural Construct...

The Traditional city is dialectical reading between fabric and object, in which monuments or important buildings stand out against a repetition of relatively homogenous facades in the town. As an image of continuity, the urban fabric can be considered a solid mass from which space can be carved. The city is a field of texture composed of streets, squares, and blocks. The object is understood as its own unique entity, an exceptional element that stands out against a background.

Urban Architecture should define space, not occupy it. The traditional city is a series of voids within a dense *poché*. But in the past century, the matrix of the city has transformed from continuous solid to continuous void. The Modernist city is composed of isolated buildings in vast open space, where emphasis is placed on the building volumes rather than the spaces that the buildings define or imply.

The Modern Architect reduced the significance of the object by insisting all building types should assume the role as primary solid. They disregarded the traditional method of deforming an ideal model to fit a less than "perfect" site in favor of the pure shape whose perimeter is indestructible. The increased multiplication of buildings as objects has problematically resulted in the neglect of fabric in twentieth-century urbanization.



Leon Krier's Components of a True City

"The building fabric gives an image of continuity, of expansiveness stretching to 'infinity,' the object is a closed element, finite, comprehensible, as an entity. Objects concentrate visual attention: they stand out against a background. This concept can be transposed to the town where certain structures appear as objects (object-buildings) because they stand out from the urban fabric."

Pierre Von Meiss

Town & Monument Fabric & Object

"A Field is an area of the city which has distinct, defining characteristics, achieved through clear shaped edge and an inner fabric inscribed with pattern...

Texture is the basic matrix material of the city, characterized by the combined pattern of streets, squares, and blocks whose variations range from gridded to random. The variables of texture are degree of regularity, proportion of solid to void, and density. It has aspects of scale and repetitiveness, grain and directionality...

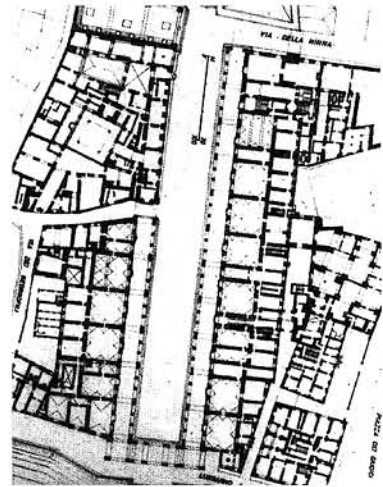
The **Street** is linear, axial, open and continuous. It is the ordering element, connecting through the city, beyond any local field, as well as the essential constant strand of local texture...

The **Square** is centralized, closed, and discontinuous. It acts as a spatial variable linked by the streets into the field...

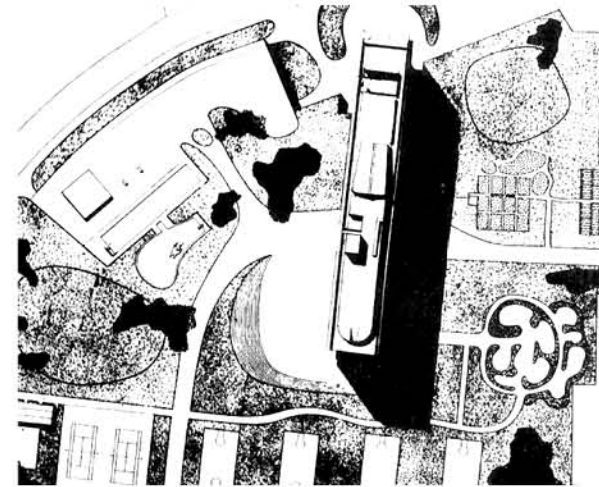
The **Block** is the principal element of the urban field and texture. It is not necessarily a constant, repetitive, modular element, but it is itself a variable requiring flexibility in size, proportion, and perimeter configuration."

Steven Peterson

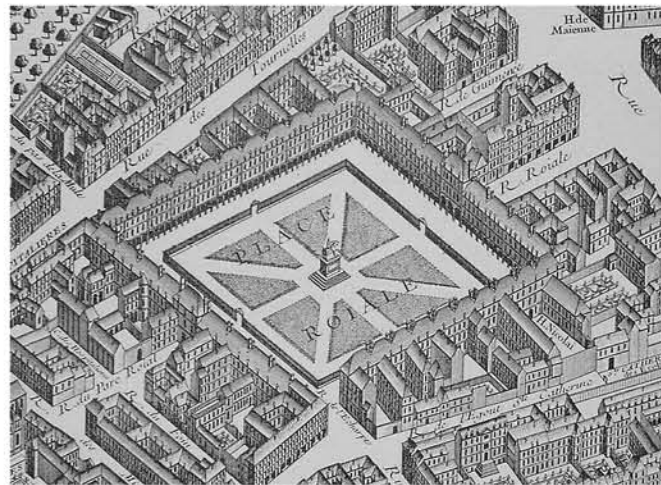
Urban Elements



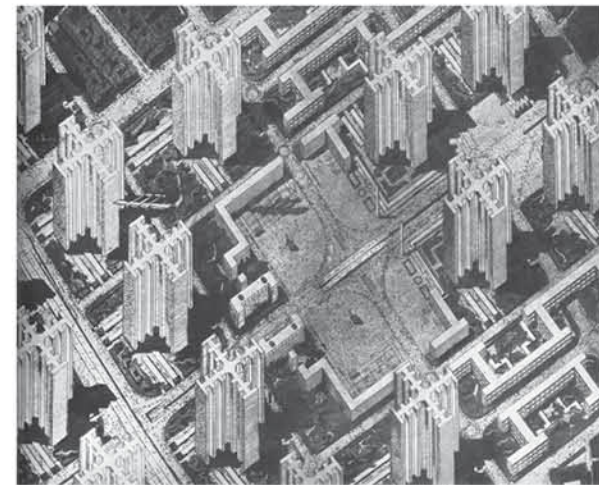
Uffizi in Florence



Le Corbusier, Unite d'Habitation in Marseilles, 1946



Place Royale in Paris
From the Plan Turgot, 1739



Le Corbusier, Plan Voisin in Paris
Aerial Axonometric, 1925

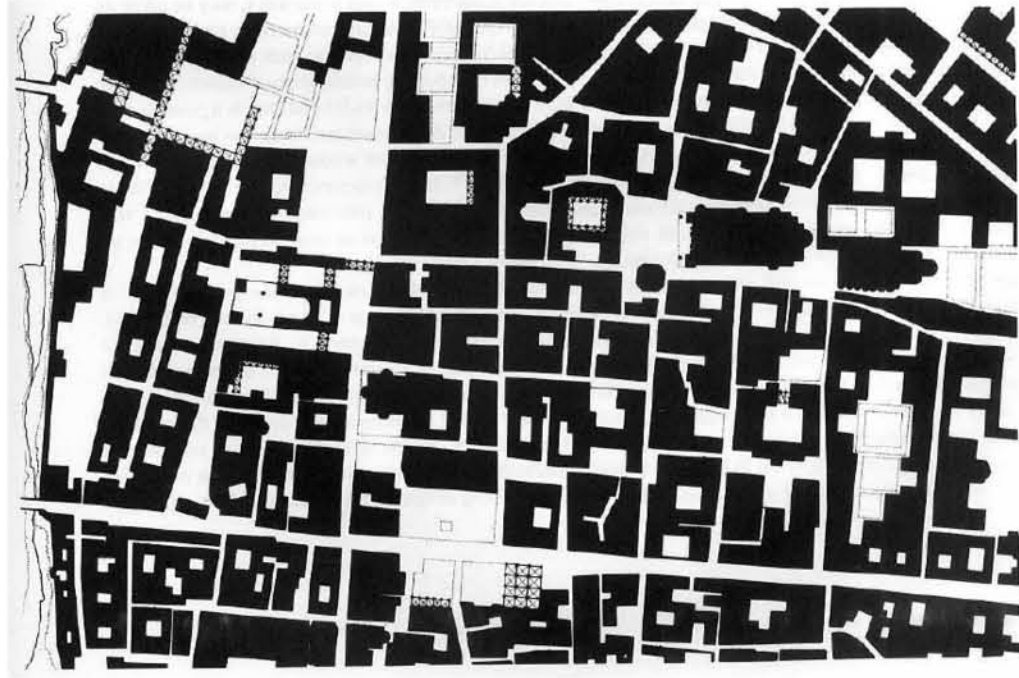
"The traditional city is primarily an experience of spaces defined by continuous walls of building which are arranged in a way that emphasizes the spaces and de-emphasizes the building volumes. It is an experience which can be thought of as resulting from a subtractive process in which spaces have been carved out of solid masses..."

...By contrast, the city-in-the-park is compositionally the reverse of the traditional city. Composed of isolated buildings set in a park-like landscape, the city-in-the-park presents an experience which emphasizes the building volumes and not the spaces which the buildings define or imply."

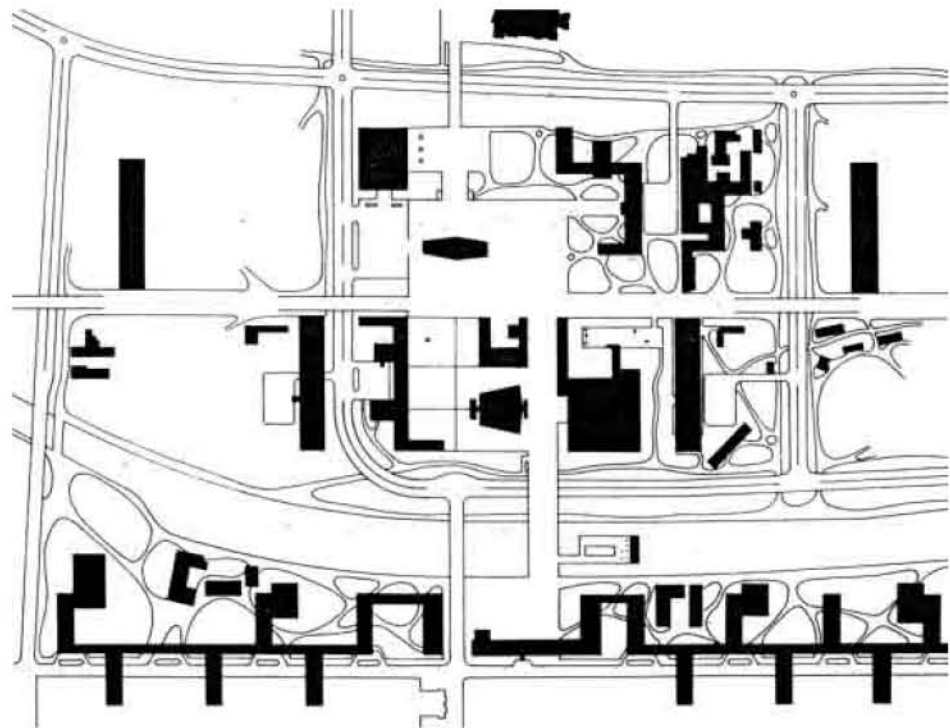
Thomas Schumacher

Space Definer vs.

Space Occupier

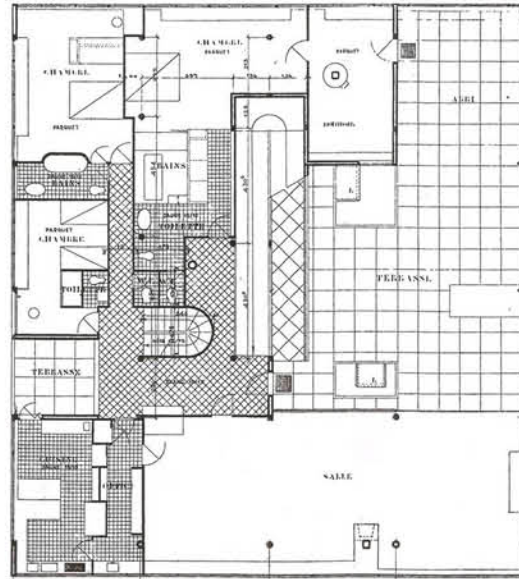


Parma
Figure-ground from Colin Rowe, *Crisis of the Object*

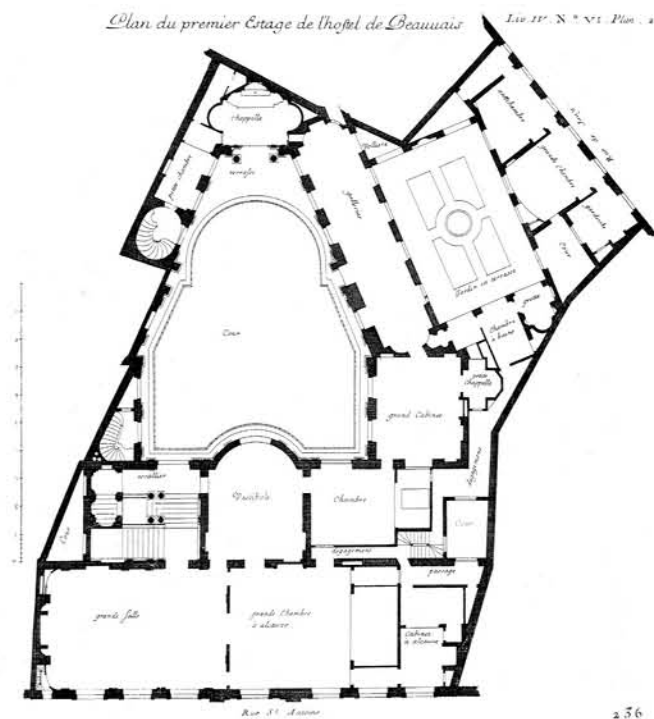


Le Corbusier, Project for Saint-Die
Figure-ground from Colin Rowe, *Crisis of the Object*

**Voids in Solid vs.
Solids in Void**



Le Corbusier, Villa Savoye in Poissy, France, 1928



Hotel de Beauvais, Paris

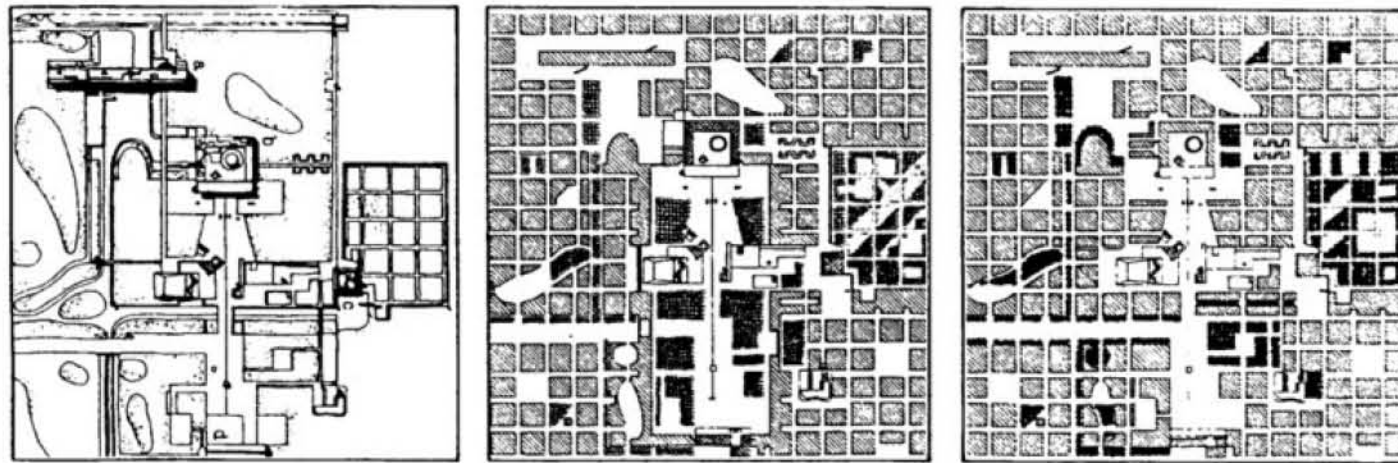
"The concept that a building should exist as an object in the round, isolated from its neighbors, multi-sided and without preferential faces, is of course not new. What was new for modern architecture was the insistence that this type of configuration be typical for all building types rather than special to particularly important building uses."

Thomas Schumacher

**Ideal vs.
Deformed**

"A fundamental problem of twentieth-century urbanization is that it has led to the manipulation of objects and the neglect of fabrics. There are too many buildings which present themselves as "objects," indifferent to the public or hierarchical role they play in the values of our society... As building objects have multiplied they have thus lost their value as exceptions."

Pierre Von Meiss



Rodrigo Perez de Arce, Scheme for the Transformation of Chandigarh
Urban Transformations and the Architecture of Additions." Architectural Design, 1978

De Arce's drawings for the additive transformation of Chandigarh demonstrate the possibility of "re-urbanizing" an environment of vast emptiness through the infill of urban poche as a superimposed matrix of square blocks. In this way, fabric and figure are once again able to mutually reinforce one another. In this new city of street and square, the object buildings become exceptional set pieces that emerge from a uniform surface.

A Strategy for Urban Infill

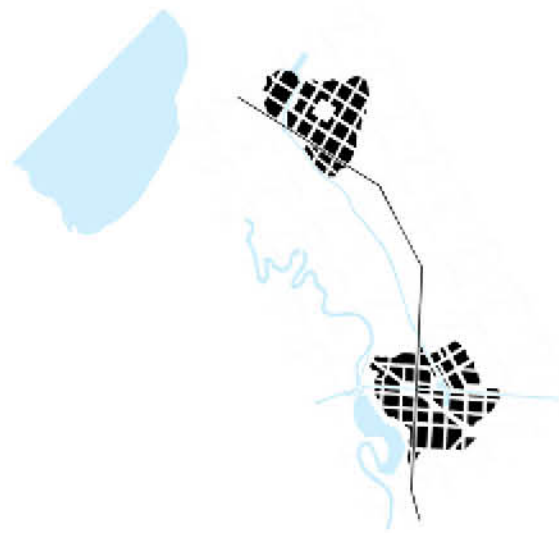
To Recapture our "Lost" Space...

Syracuse, We have a problem. There is a proliferation of underused, deteriorated areas in the center of the City. To the east of Downtown, in the former 15th Ward Neighborhood, buildings are dispersed throughout a vast wasteland of parking lots and vacant land. This collection of objects lacks a cohesive, unifying framework. The blighted area is in need of infill, an insertion of urban fabric to stitch Syracuse back together. The importance of creating a master plan lies in the desire to avoid the continuation of disperse and piecemeal planning that will not produce connective, well-defined space. We should take hold of the opportunity to recapture our "lost" space to make it valuable urban land.

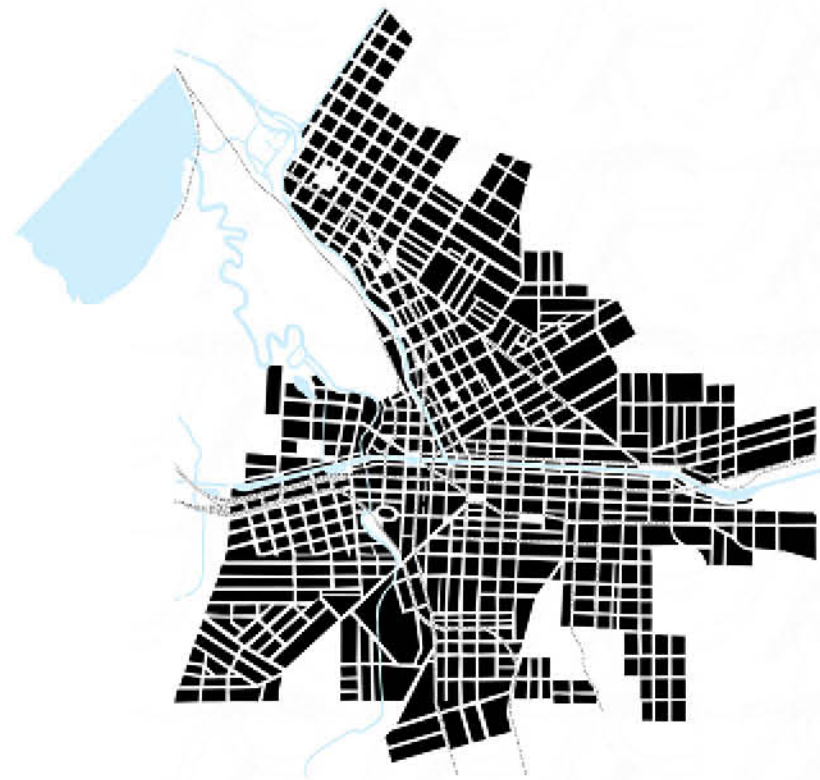


"Shrinking cities have in their decline shifted toward a differentiated, if unorganized, pattern of lower and higher building densities."

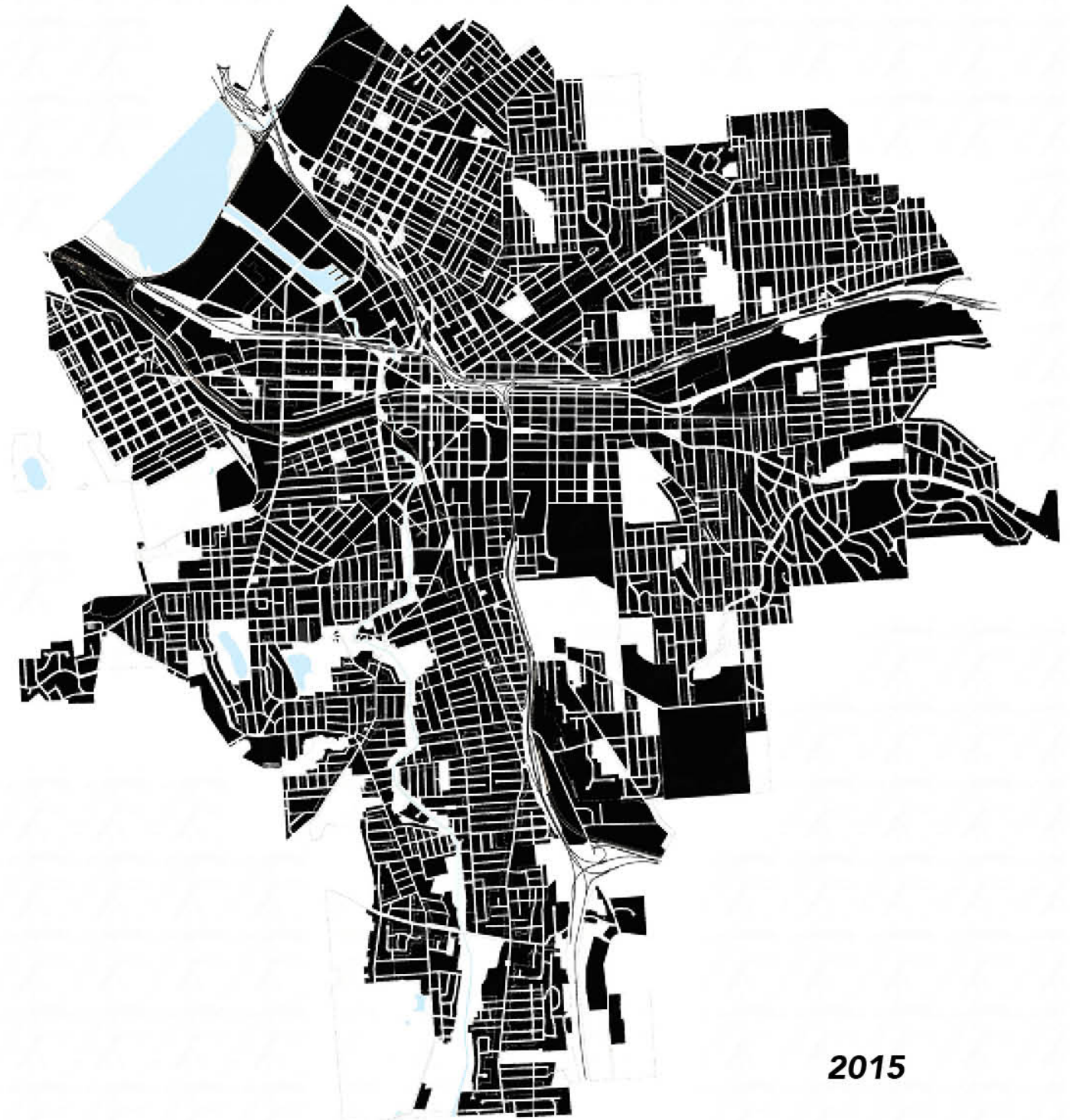
Brent D. Ryan, Rightsizing Shrinking Cities



1825



1873



2015



2015



pre-1950

The formerly homogenous pattern has become a frayed and tattered urban fabric.

"...Generally speaking, **lost spaces** are the undesirable urban areas that are in need of re-design—anti-spaces, making no positive contribution to the surroundings or users. They are ill defined, without measurable boundaries and fail to connect elements in a coherent way.."

Roger Trancik

Hypothesis

1

The project aims to elicit new meaning and form from, and establish new connections between the urban fragments at Syracuse.



2

Theories of fabric and object are to be applied to a highly, undeveloped portion of the City as a strategy for infill.



3

I propose an additive modular system that can be applied anywhere, but have chosen to use downtown Syracuse as an urban laboratory to test my claims.



4

The architecture that is produced will act as a critique on the current condition of the American City and present a possible solution for blighted areas that were devastated by Urban Renewal.

Let's Put this into Context...

Facing the Reality of a Shrinking City

While there is a global trend of urbanization, the city of Syracuse, like many rust-belt cities of the Northeast, is classified as a "shrinking," third-tier city. Massive new development is highly unlikely in this neglected and disinvested post-industrial landscape. The traditional "build it and they will come" approach is not going to work if there is no market to support it.

NEW YORK

Global City

the spine of the international economy, with a huge multicultural population, housing the international headquarters of corporations and diverse modes of production and consumption

BOSTON

Second Tier City

smaller in size, nationally important, has both economic and social potential

SYRACUSE

Third Tier City

signified by depopulation, disinvestment, economic decline and a reduction in public services

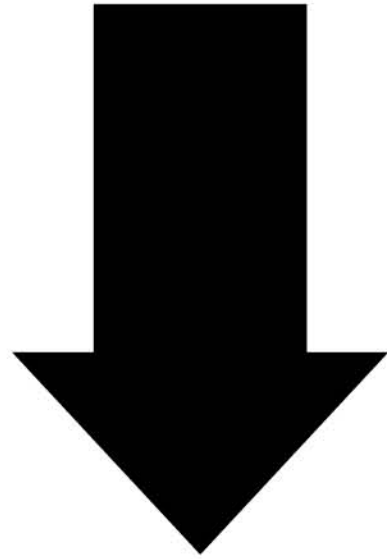
*Syracuse
is Insignificant*



Shrinking City: a phenomenon

***the decline of the urban
population & economic acitivity***

◦
-34%



*population drop
since 1950*

*Syracuse
shrank...*

"Jobs vacate these small cities, along with population. Downtowns struggle. The tax base reduces. The difficulty in retaining young people and attracting new residents is profound. Facilities and infrastructure follow the population."

Tara Brabazon, Rethinking Third-Tier Cities

Dissolving City...

Understanding Today's Urban Environment

The post-industrial city has become a scrambled mixture, a de-concentrated cityscape spreading indefinitely into the periphery. This new urban structure lacks a traditional urban core, instead existing as a polycentric and weblike sprawl. The city's boundaries are no longer perceivable as it dissolves into one whole metropolitan region.

10%

of the world's population lived in cities in 1900

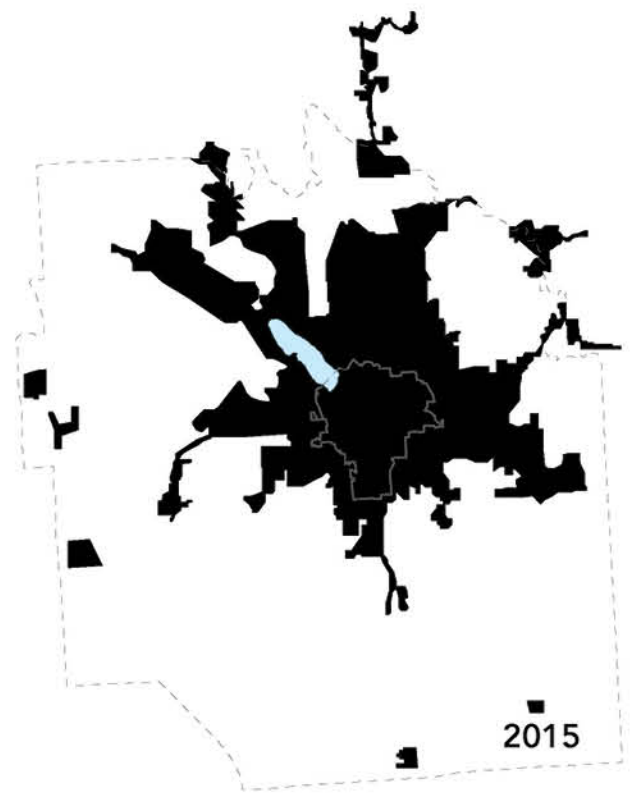
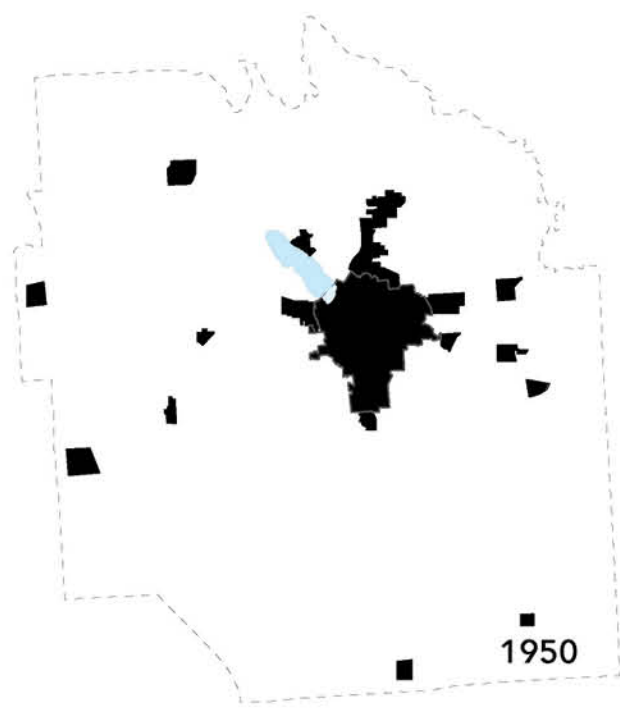
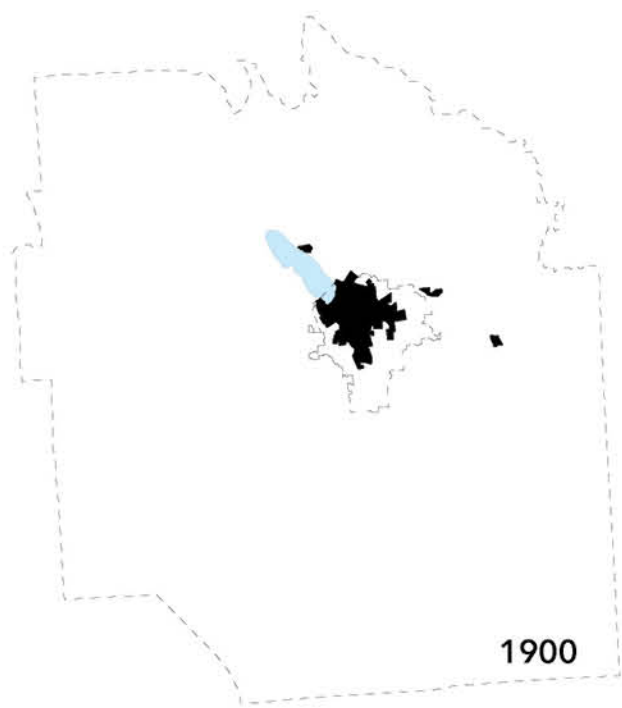
50%

live in cities today

75%

is an estimate for the year 2050

***The World is
Rapidly Urbanizing...***



65%

of Onondaga County's population lived in the City of Syracuse in 1950

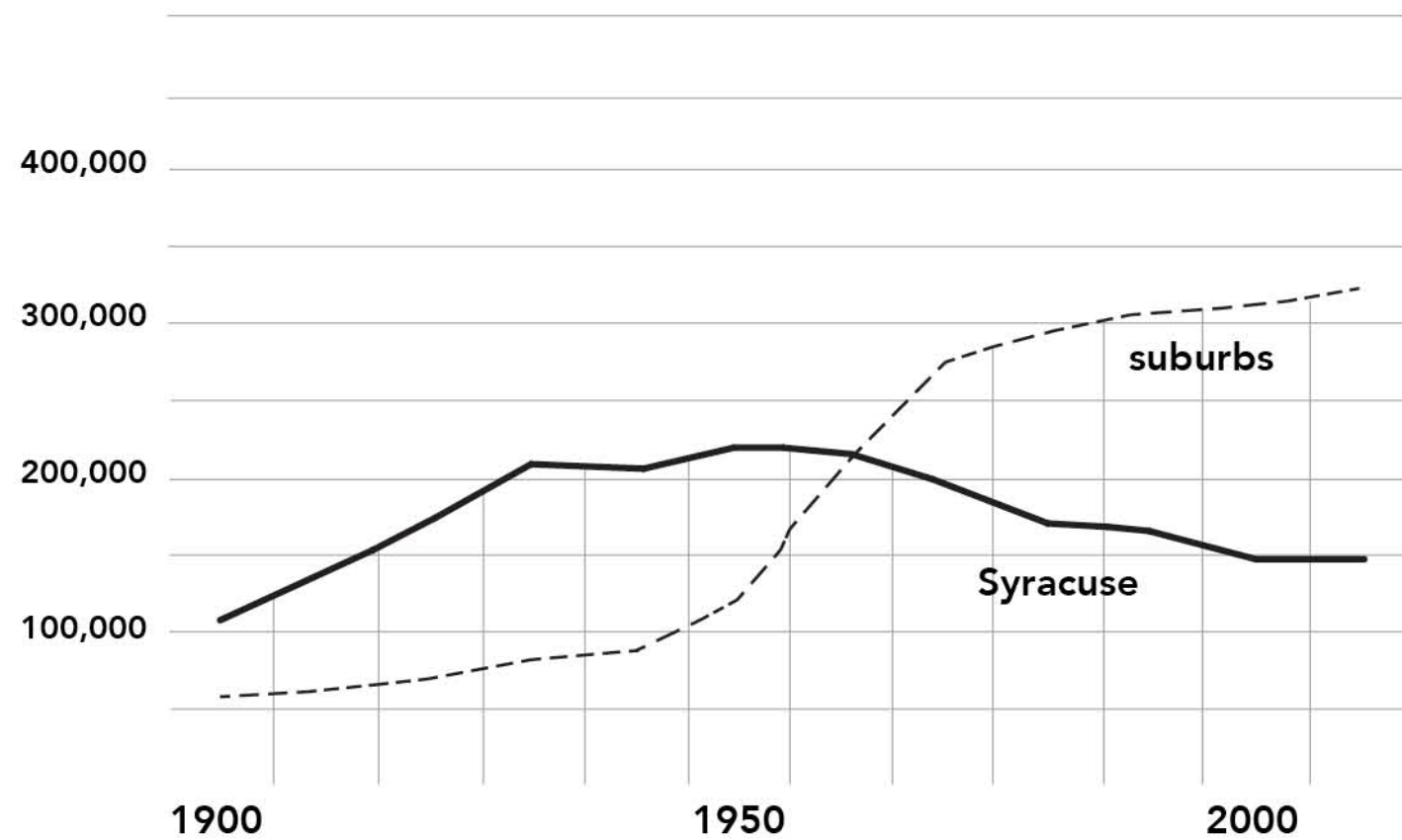
3%

live in the City today

**Deconcentration
in an Urban Age**

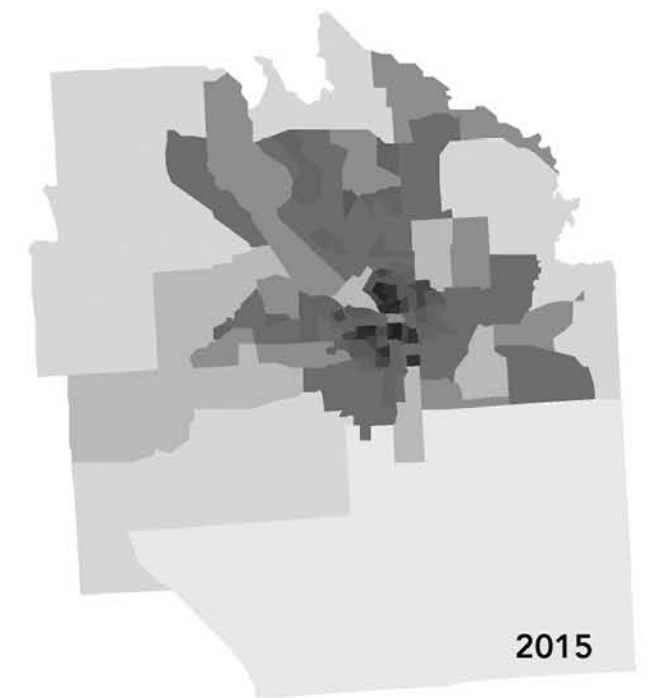
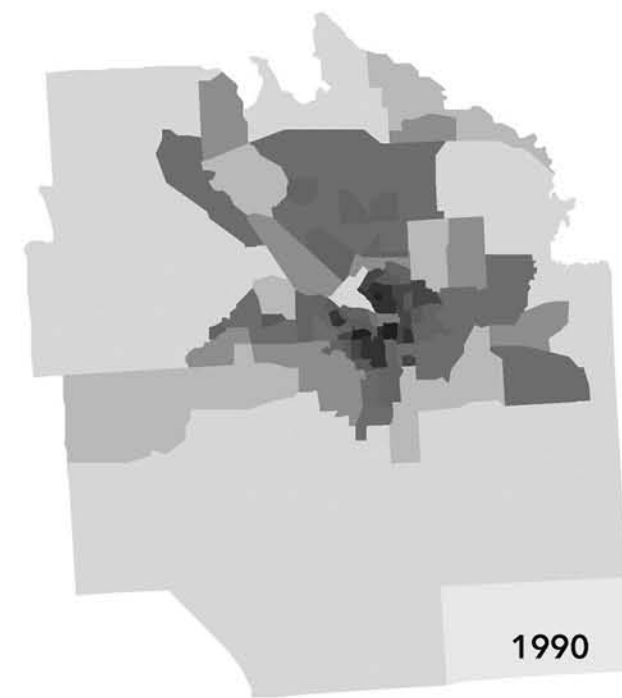
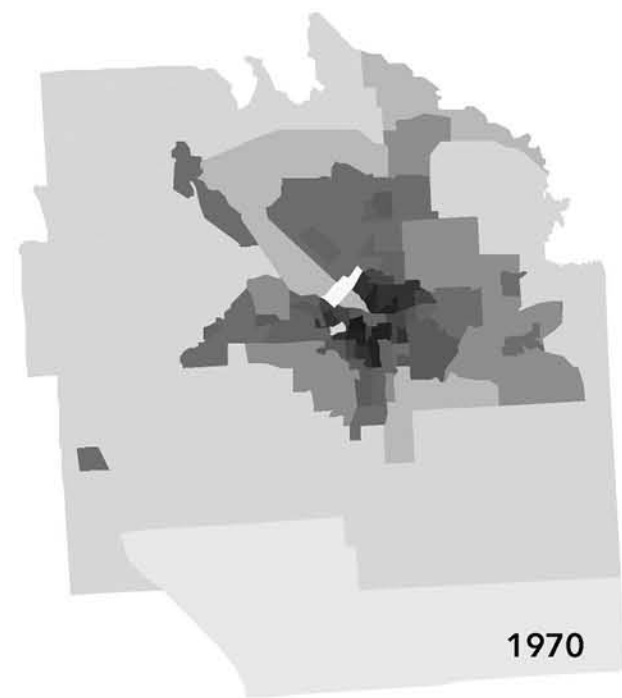
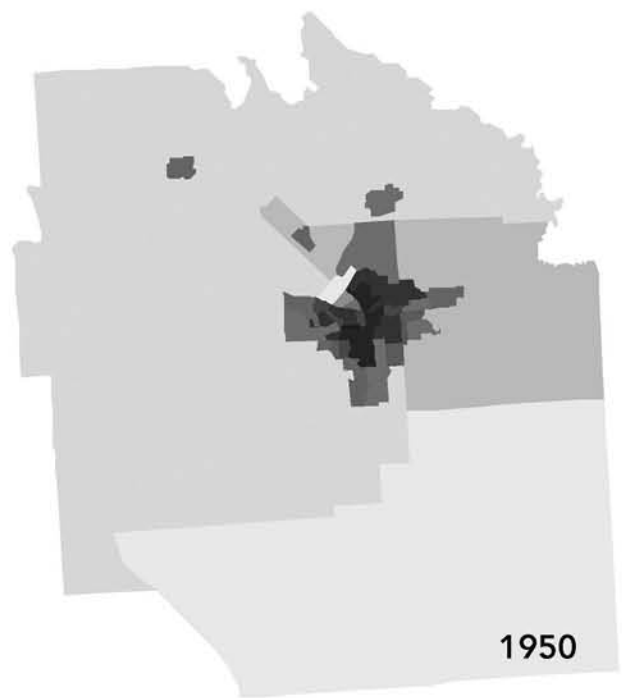
*"Shrinkage in one place feeds
growth in another"*

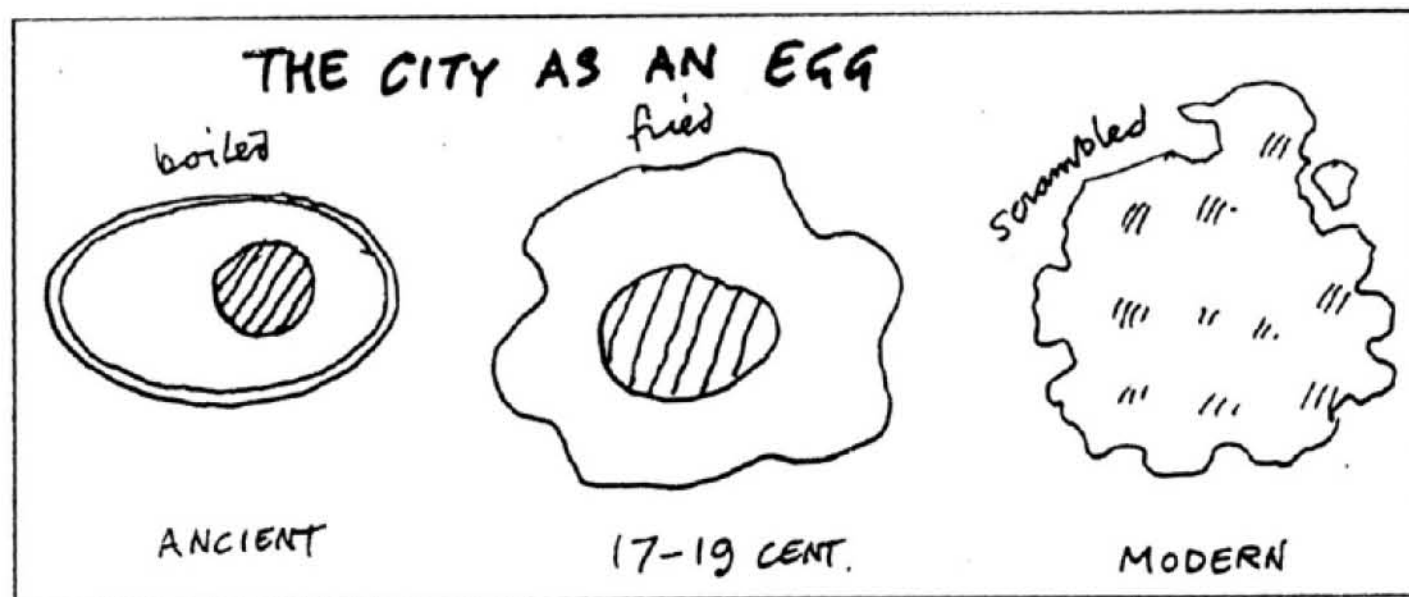
Philip Oswalt



"The Doughnut Effect"

the downtown or city center of a city being abandoned as people and activities shift out to the suburbs thereby leaving a hole in the middle like that of a doughnut

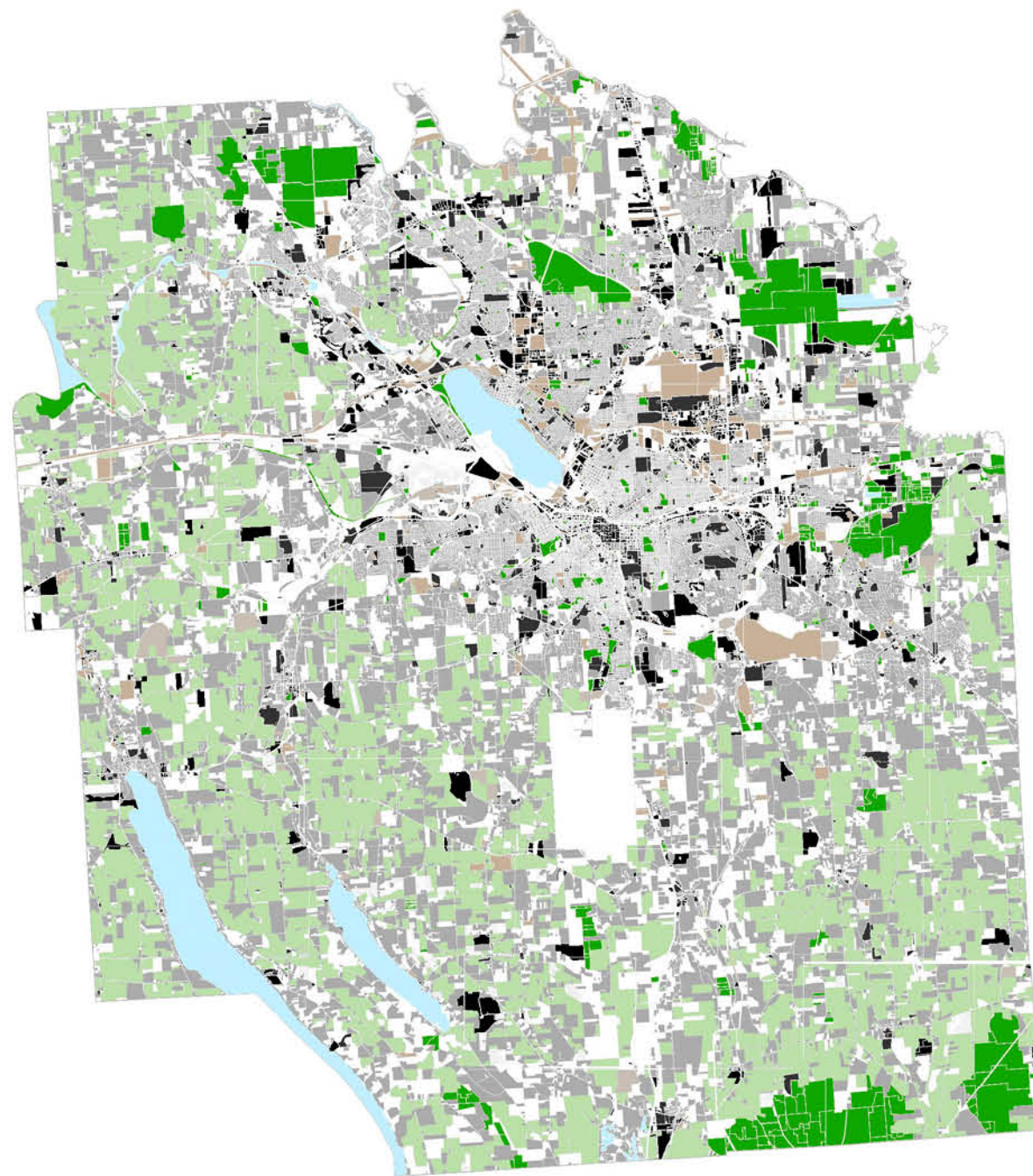




Cedric Price, City as an Egg

A "traditional, dense, 'hard-boiled egg' city fixed in concentric rings of development... the 'fried egg' city, where railways stretched the city's perimeter in accelerated linear space-time corridors out into the landscape, resulting in a star shape... and the postmodern 'scrambled egg city,' where everything is distributed evenly in small granules or pavilions across the landscape in a continuous network."

The Modern City as a Scrambled Egg



"The traditional notion of the city as a historical and institutional core surrounded by postwar suburbs and then open countryside: has been largely replaced by a more polycentric and weblike sprawl: the regional metropolis."

Alex Wall

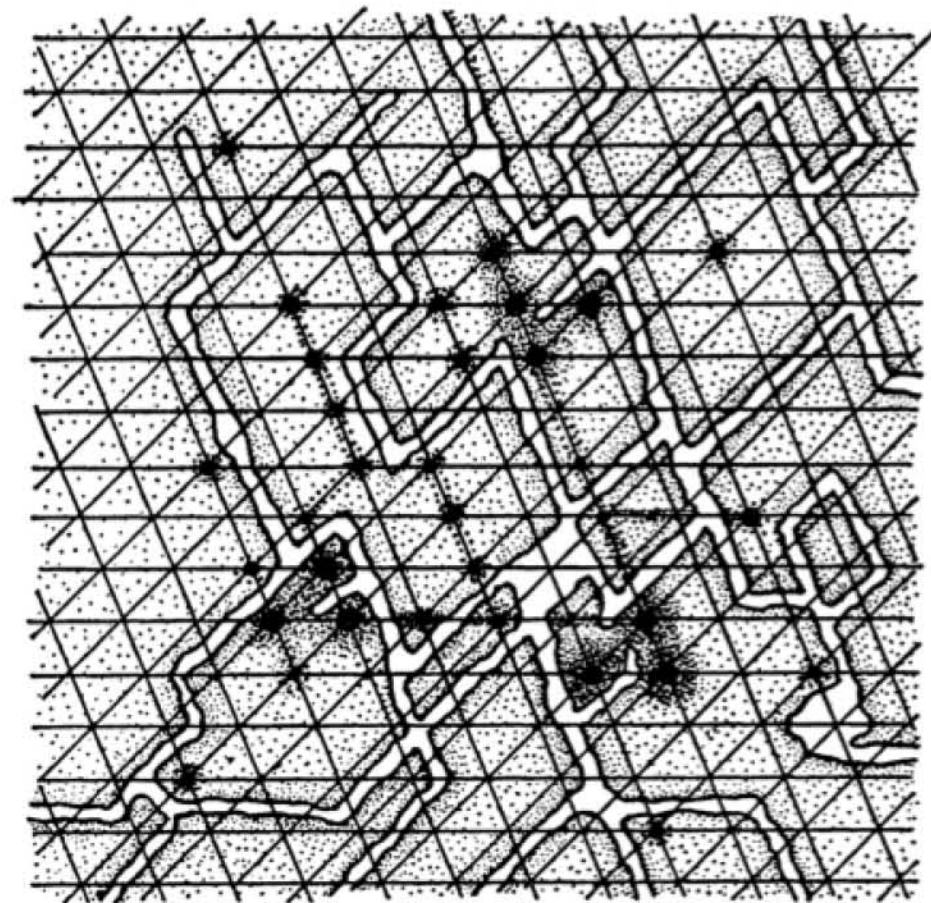
***What if Syracuse
is NOT a City?***

It's a Metro-Area!

Rethinking Urban Structure for the Post-Industrial City...

What should the city become after Decline?

This notion of the contemporary metropolitan region as a polycentered network is a helpful spatial concept to apply to the Shrinking City. In their decline, these cities have shifted from an undifferentiated urban pattern to a patchwork of lower and higher densities. Rather than attempting to reconstruct the condition of a traditional urban core, we should accept the new structure of city as a large-scale pattern of interwoven levels of variegated density and open space.

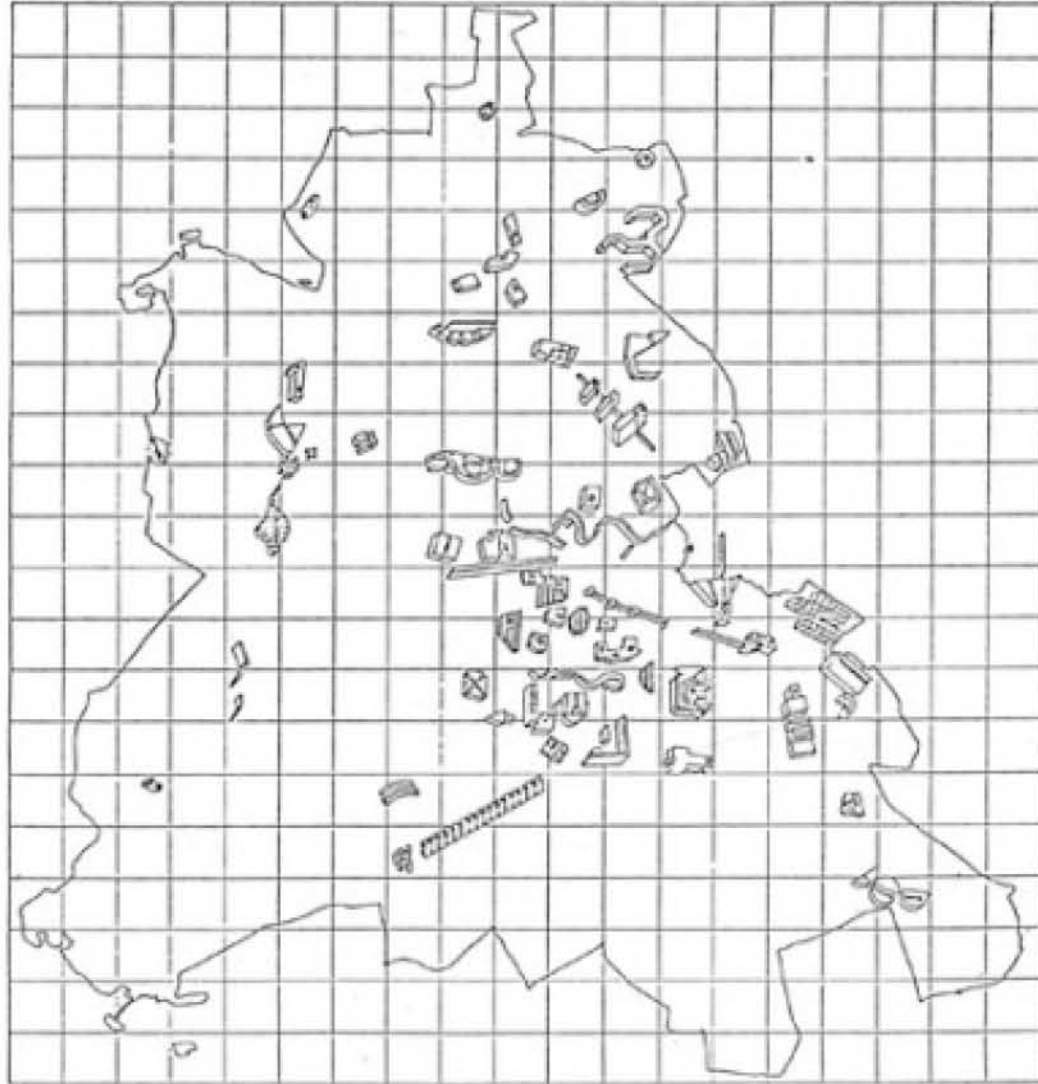


Kevin Lynch, the Polycentered Net
"The Pattern of the Metropolis," *Daedalus*, 1960

the Polycentered Net ***patterns of density and openness***

He describes the modern metropolis as a net that possesses both "intensive peaks" of density and "extensive regions of low density" within a "dispersed urban sheet" or urban grid.

Städte in der Stadt



OM Ungers and Rem Koolhaas, Berlin as a Green Archipelago, 1977

an Archipelago ***a city as a group of islands***

Instead of reconstructing the traditional European city, they argued for creating a polycentric urban landscape. By simply subtracting, rather than rebuilding, blighted areas from the urban fabric, they reduced the city's size to a series of concentrated points, or isolated islands, situated within the vast open, green field of the metropolis.

"The future shrinking city should be a patchwork of differentiated areas containing settlements of multiple densities and form, interspersed with open areas of various sizes, programs, and levels of use."

Brent D. Ryan, Rightsizing Shrinking Cities

Patchwork Urbanism

Design after Decline...

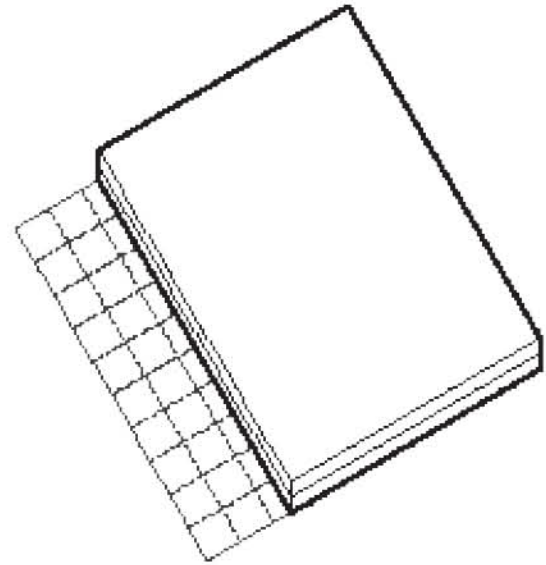
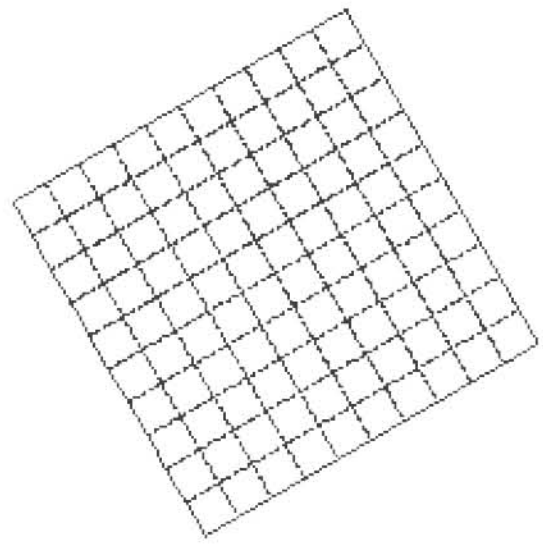
How can we rebuild a situation of urban abandonment?

The thesis proposes to provide a new urban design approach to improve blighted areas in urban environments. It offers a strategy to patch together the fragmented physical landscape of the Shrinking City into a cohesive urban fabric.

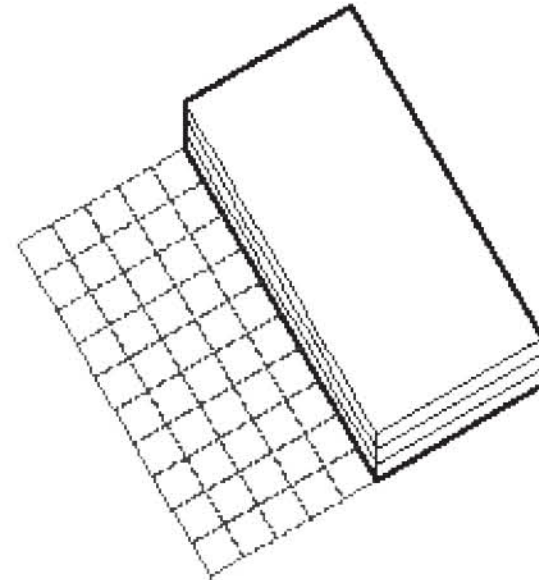
In understanding the new structure of the City as an interwoven pattern of variegated levels of density and pockets of open space, I reconsider the traditional notion of urban fabric as a solid poche to something that is less dense and more open, but still adhesive. Can fabric be porous?

In adjusting to the reality of the Shrinking City as a less extensively built environment, I seek a low-density urbanism, where there is a proportionate ratio between built space and open space. I reconsider the original strategy of urban infill with a new aim to preserve the void.

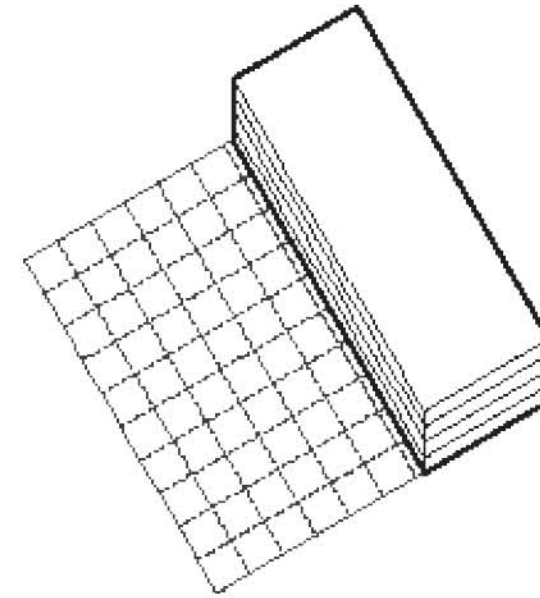
Is this concept of porosity the answer to achieving a middle ground between the two models of the City: the voids in the solid and the solids in the void? Through an interwoven pattern of solid and void, I aim to show that a grouping of objects can merge into a stretch of fabric that can reunite fragmented portions of the City.



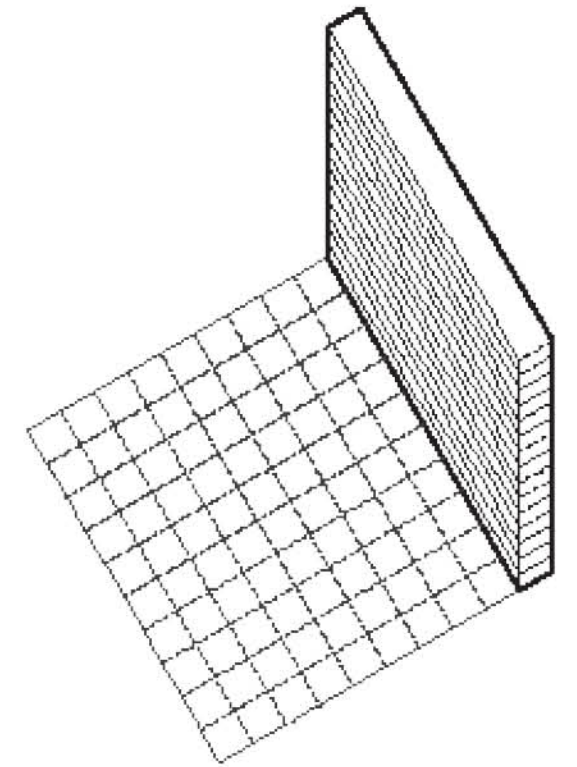
**2 stories
75% coverage**



**3 stories
50% coverage**



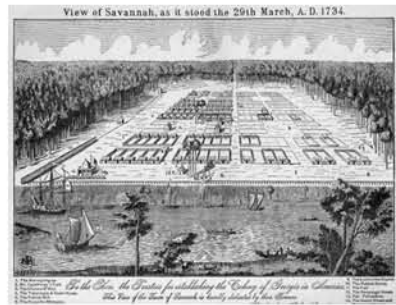
**4 stories
37.5% coverage**



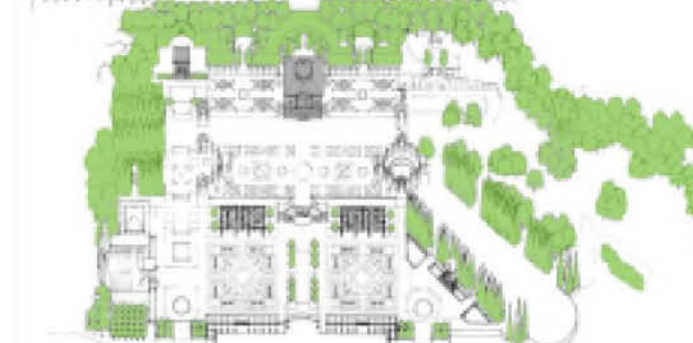
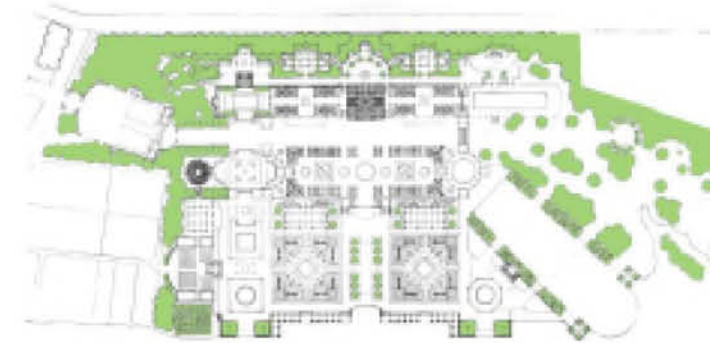
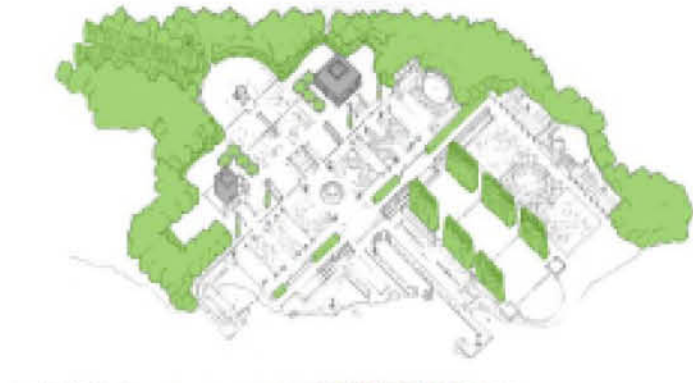
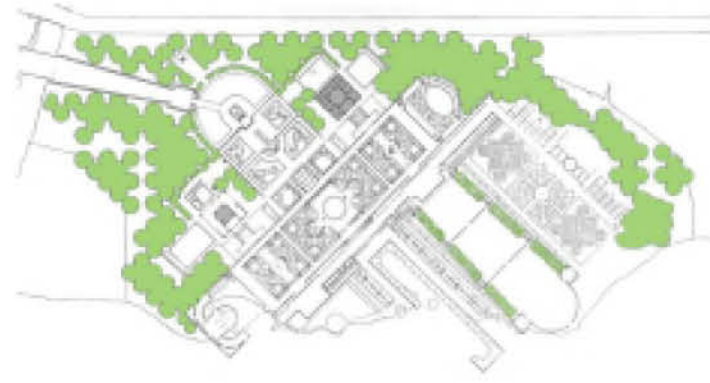
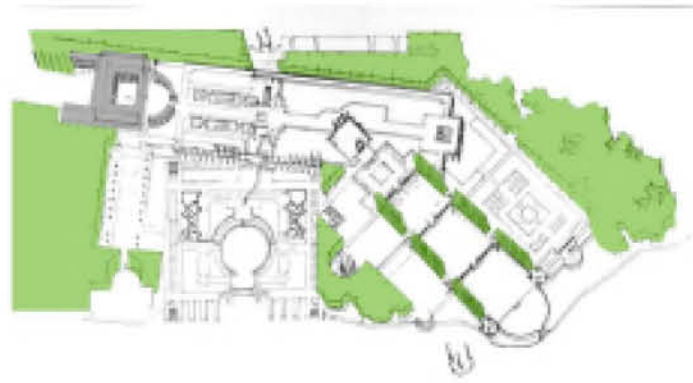
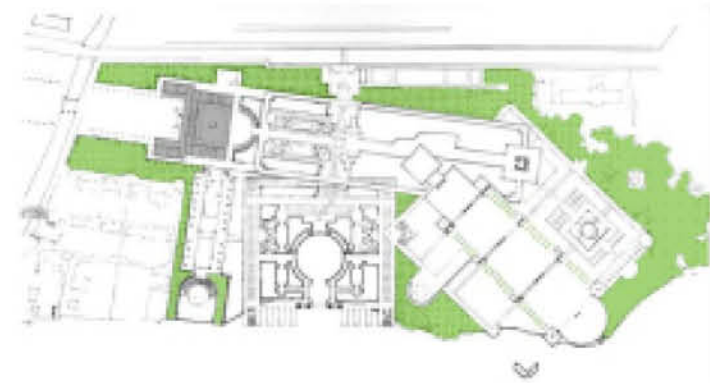
**15 stories
10% coverage**

Low Density Urbanism

f.a.r. 1.5



Can Fabric be Porous?



***"If one cannot afford to
create space by built elements..."***

***-Lee Hodgen, Formal Garden,
Cornell Journal of Architecture***



Mies van der Rohe, IIT Campus

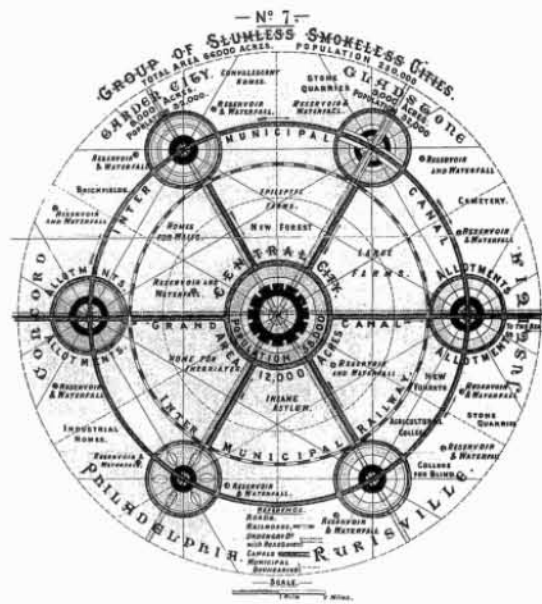
*"To create the most density
with the least mass."*

***The Urban Campus
a city within the city***

Toward a "Rurban" City...

In consideration of the current realities, the City of Syracuse should accept that it will remain a smaller urban environment rather than envision a future where it could be bigger and better. We need to stop thinking of the reuse of vacant land as the equivalent to the construction of new buildings. Rather than anticipate large-scale re-development to extend the size of the current Downtown core, the City should conceive a long-term strategy for repurposing the open space in its urban center. How can the under-used land become an asset, rather than an obstacle, for the future sustainability of the City?

Perhaps Syracuse "grows" through the transformation of its open space into a productive landscape, by introducing bucolic farmlands into the city's urban fabric. It is a reinterpretation of Ebenezer Howard's merger of town and country by appropriating his polycentric web of garden cities at a smaller scale as a series of concentrated areas of density separated by tracts of open farmland within the City itself.



Ebenezer Howard, Garden City
Garden Cities of To-morrow, 1898



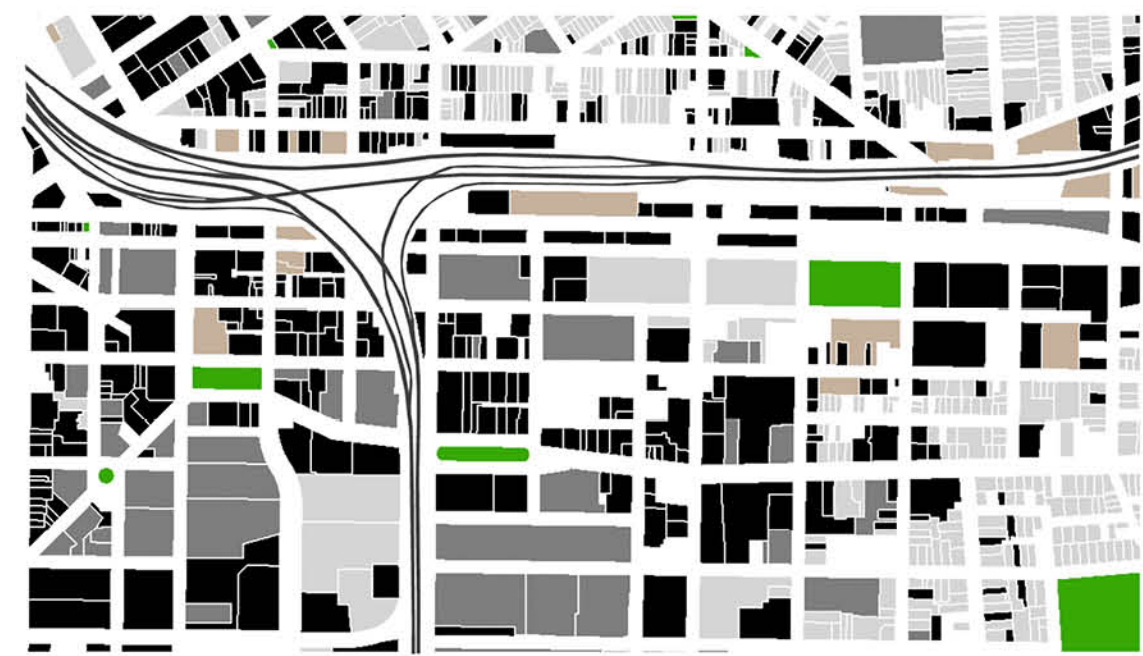
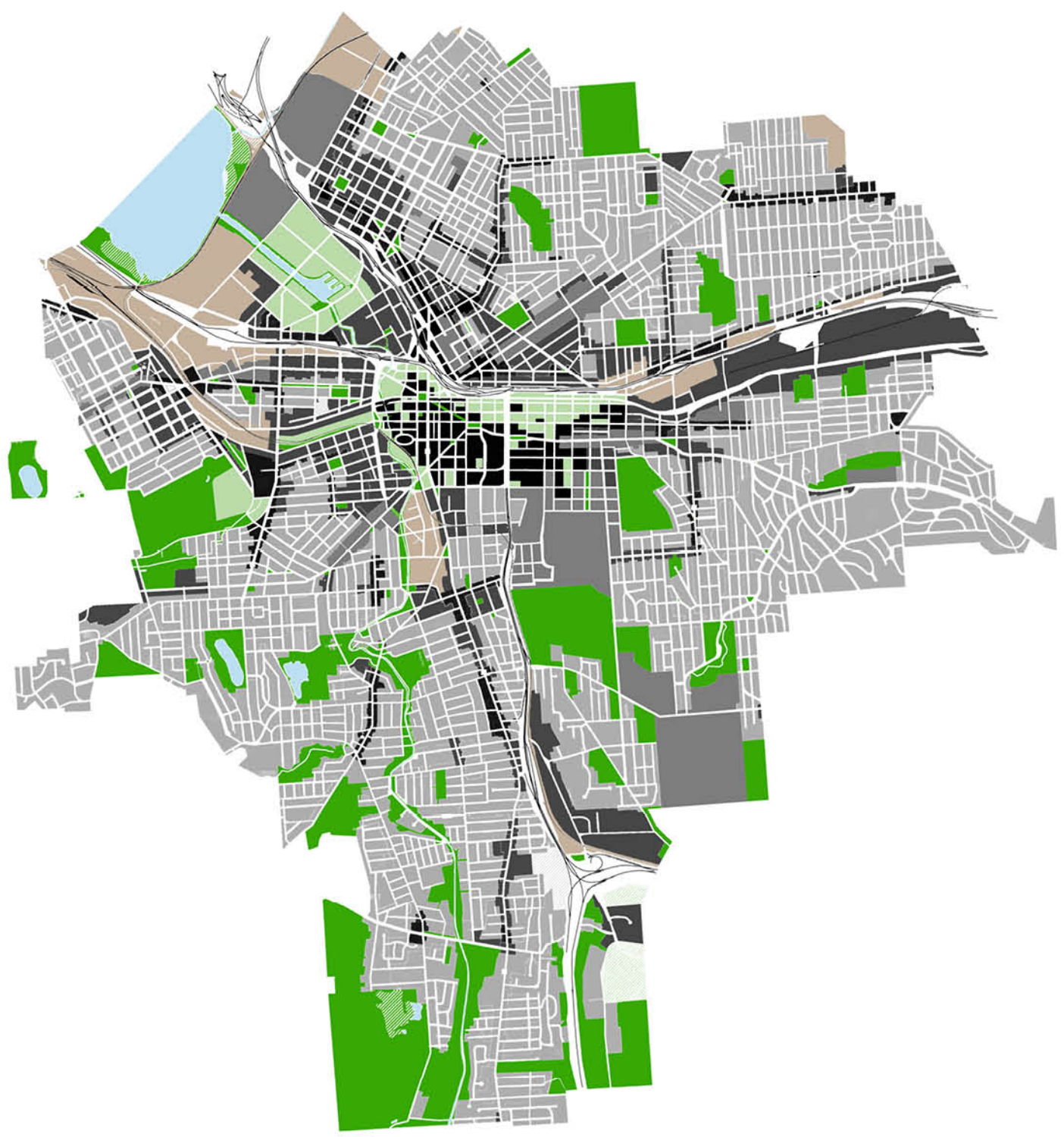
Broadacre City, 1932
Frank Lloyd Wright



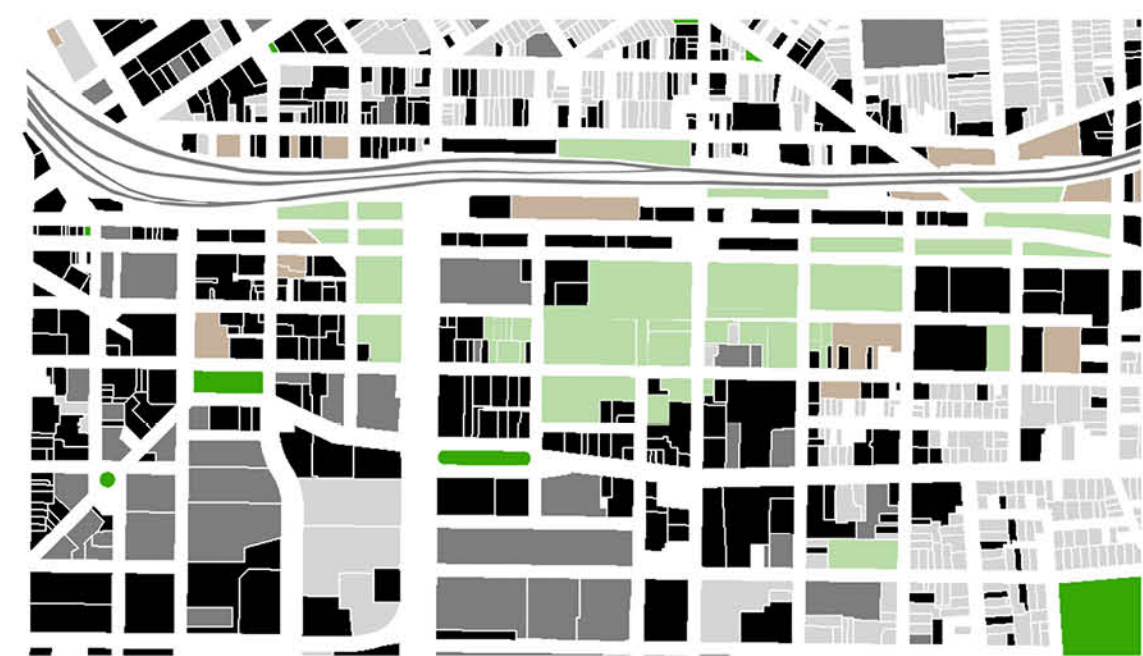
Farmadelphia, 2006
a competition entry by Front Studio Architects

Rurbanity

“when the countryside enters the city”



- Parcel Land Use
- AGRICULTURAL
 - COMMERCIAL
 - INDUSTRIAL/UTILITY
 - PARKS/OPEN SPACE
 - PUBLIC SERVICE
 - RESIDENTIAL



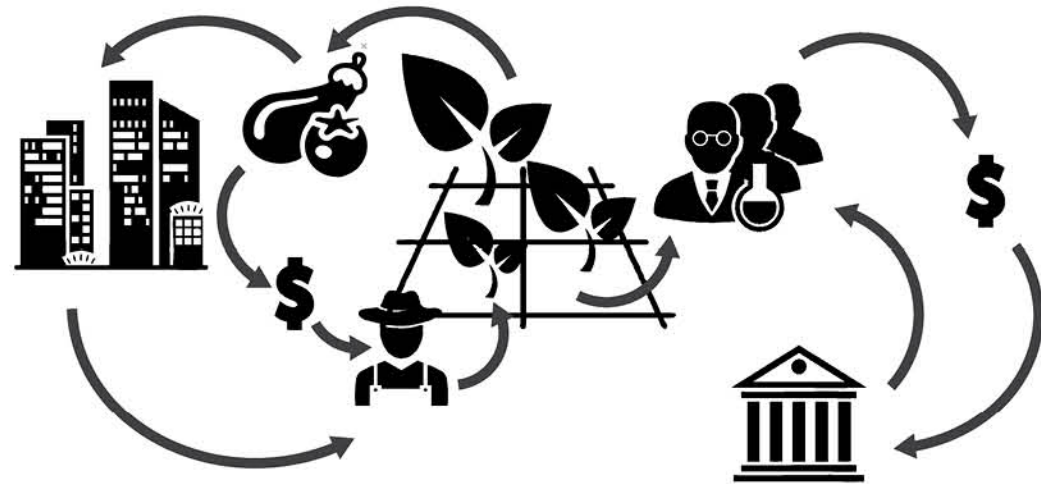
- Parcel Land Use
- AGRICULTURAL
 - COMMERCIAL
 - INDUSTRIAL/UTILITY
 - PARKS/OPEN SPACE
 - PUBLIC SERVICE
 - RESIDENTIAL

CityFarm Syracuse:

A Research Institute for Urban Agriculture

The project that emerges is a master plan for a "rurban" development that acts as a new institutional campus for the research of urban agriculture and food sciences. The private institution also supports a public commercial farming complex in an aim to revive the City's struggling economy through a shift towards the food production industry.

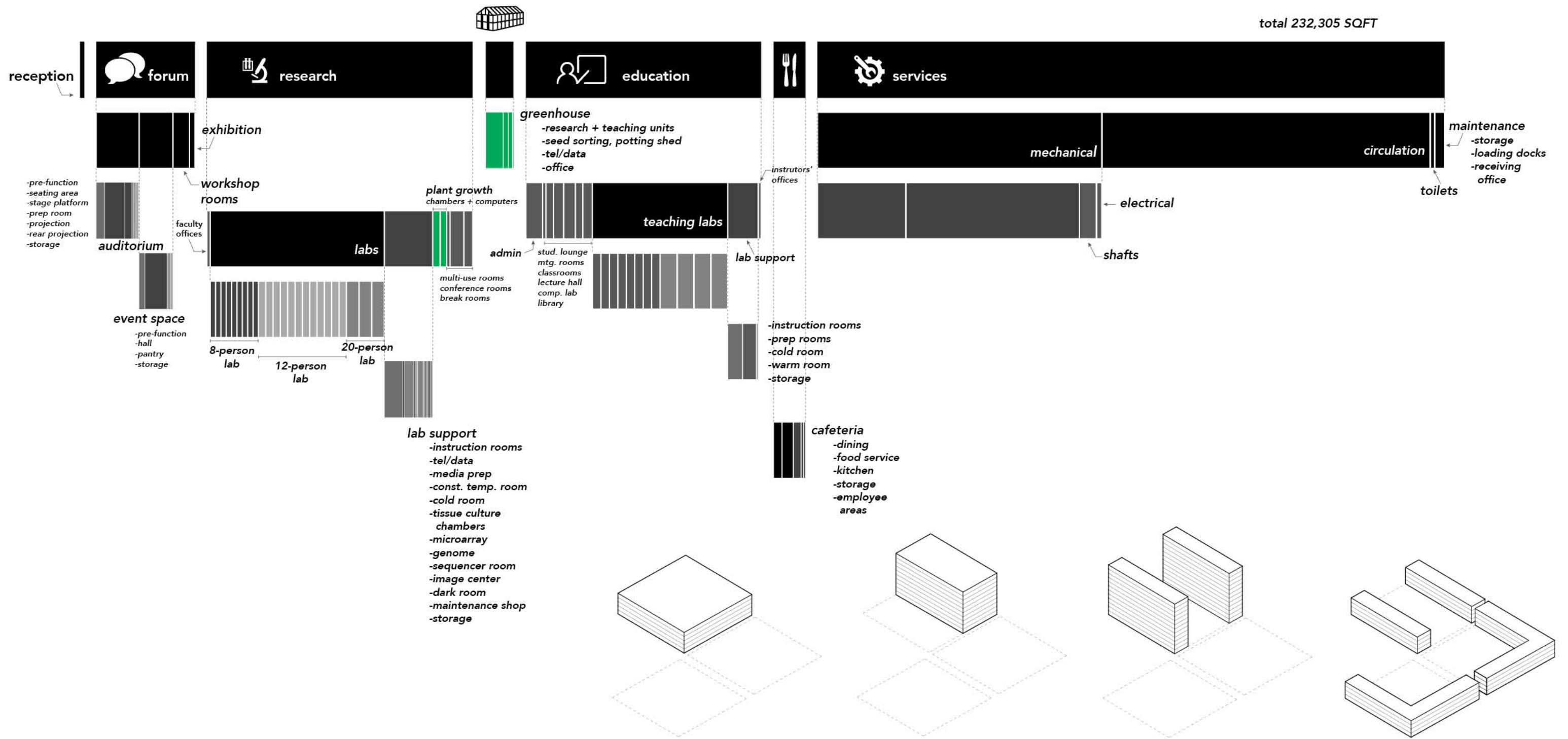
The proposed educational research facility is conveniently located within the City's aspiring innovation district, the so-called Connective Corridor, a collaboration between higher education institutions, the public sector and private enterprise to revitalize areas of the City as new knowledge-based industry clusters.



"Without an intervention from public or private investment or higher education, institutions, third-tier cities stagnate and decompose."

Tara Brabazon

**Town &
Gown**



CityFarm Syracuse:
A Research Institute for Urban Agriculture

Total 232,305 SQFT

Reception.....800 SQFT
Entry 500
Coat Room 300

Public Forum.....17,550 SQFT
Auditorium (total) 7,625
seating area 3,600
stage platform 1,200
prep room 300
projection/control room 500
rear projection 400
equipment storage 125
pre-function 1500
Event Space (total) 6000
hall 4000
pre-function 1000
pantry 500
storage 500
Public Workshop Rooms (total) 2,925
room @ 750 each x 3 (2,250)
pre-function @ 225 each x 3 (675)
Exhibition Space 1,000

Research.....50,390 SQFT
Faculty Offices (total) 600
office @150 each x 44
24 Labs (total) 30,900
8 person labs x 9 (total = 8,550)
700 each
service area @ 250 each
12 person labs x 12 (total = 15,600)
1050 each
service area @ 250 each
20 person labs x 3 (total = 6,750)
2000 each
service area @ 250 each
Lab Support (total) 8,575
instruction rooms (total 3,225)
large 575 x 3 (1725)
medium 375 x 4 (1500)
tel/data (total 375)
125 each x 3
media prep (total 1575)
525 each x 3
constant temperature room (total 400)
100 each x 4
cold room (total 300)
100 each x 3
tissue culture chambers (total 1000)
250 each x 4
microarray (225)
genome (125)
sequencer room (225)
image center (225)
dark room (125)

dark room (125)
 maintenance shop (325)
 storage (total 450)
 225 each x 2
 Plant Growth (total) 2,465
 small chamber 550
 large chamber 775
 standard food computer (total 1140)
 380 each x 3
 Multi-Use Rooms (total) 600
 150 each x 4
 Conference Rooms (total) 2450
 large rooms 450 each x 4 (1800)
 small rooms 325 each x 2 (650)
 Break Room (total) 1575
 525 each x 3

Green House.....4,925 SQFT

Research Units (total) 3,100
 large units (1800)
 600 each x 3
 small units (1300)
 325 each x 4
 Teaching Units (total) 925
 large unit 600
 small unit 325
 Support (total) 715
 seed sorting 140
 potting shed 450
 tel/data 125
 Office 175

Education.....41,745 SQFT

Administration (total) 2,975
 Reception 250
 Clerical Support 450
 Marketing 150
 Event Planning 175
 Administrator 175
 Department Head 250
 Assistant 150
 Associate Chair 200
 Assistant 150
 Conference Room 250
 Filing 375
 Copy Room 225
 Kitchen/Staff Room 175
 Student Lounge 600
 Meetings Rooms (total) 1,350
 Large seminar room 525
 Small meeting room 275 each x 3 (825)
 Classrooms (total) 1,800
 450 each x 4
 Lecture Hall (total) 2,050
 seating 950
 stage platform 300
 prep room 300
 projection/control room 500
 Computer Clusters (total) 1,325
 Large lab 625
 Small cluster 350 each x 2 (700)

Library (total) 1720
reading and book stack area 1200
office 120
photocopying/printing 150
storage 250

16 teaching labs (total) 24000
8 small labs
1500 each x 8 (12000)
4 large labs
3000 each x 4 (12000)

Teaching Lab Support (total) 5400
instruction rooms (2650)
large 575 x 2 (1150)
small 375 x 4 (1500)
prep rooms (2400)
large 700 x 2 (1400)
small 250 x 4 (1000)
cold room 100
warm room 100
storage 150

Instructor's Offices (total) 525
175 each x 3

Cafeteria.....5,675 SQFT

Customer Area (total) 3,500
dining (seating for 75) 1,500
food service 2,000

Kitchen 1,000
Storage (total) 450
receiving 50
dry 250
cold 150

Cleaning Area 375
Employee Areas (total) 350
manager office 125
lockers 100
break room 125

Services.....111,300 SQFT

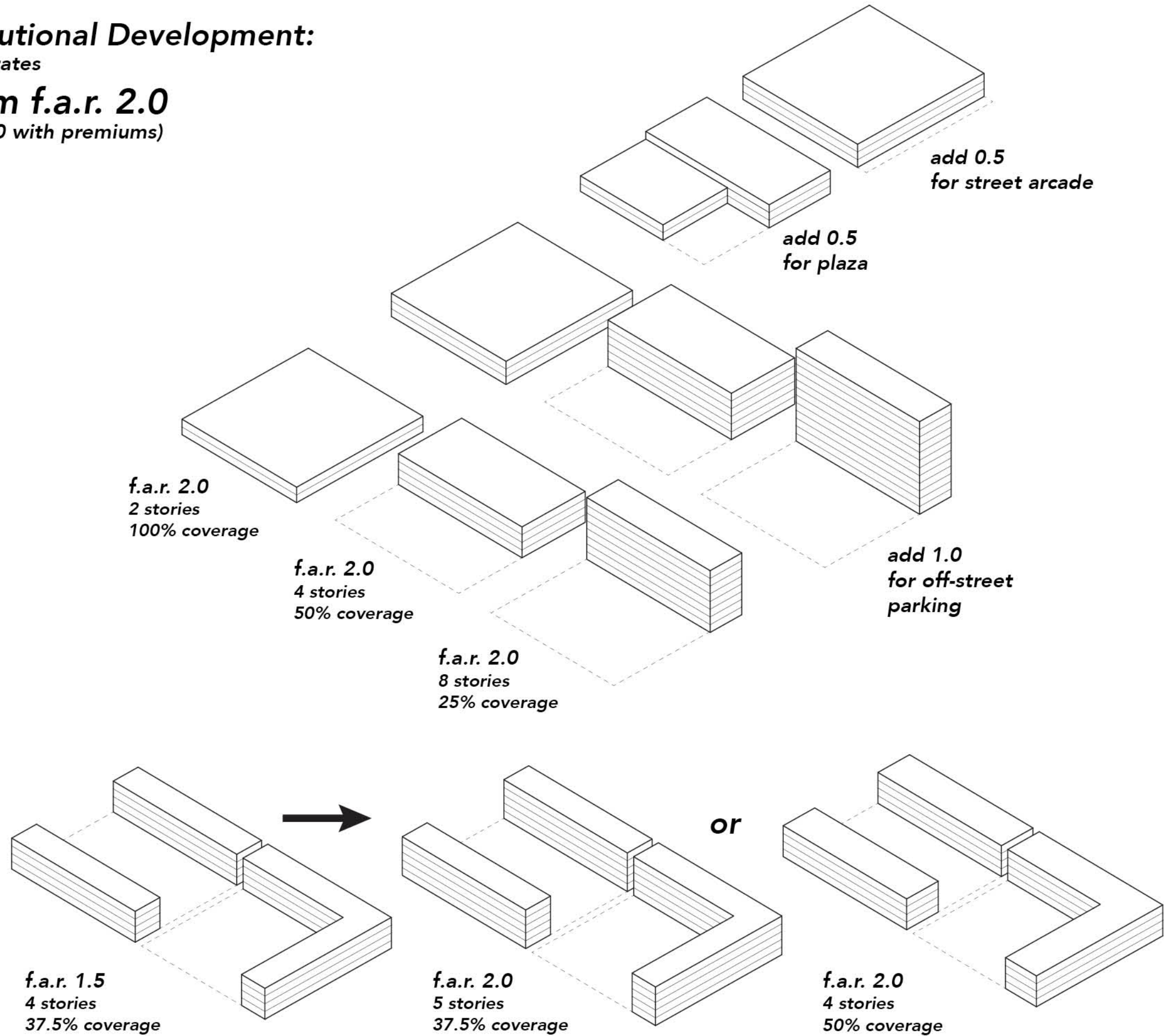
Mechanical (total) 50,500
electrical cabinets 1,000
basement mechanical 15,700
mech penthouse 30,800
large shafts 3,000

Circulation 55,000
Toilets 4,000
Maintenance (total) 1,800
storage room 500 each x 3
loading dock 120 each x 2
loading receiving office 100

additional programming possibility:
Parking at 290,000 SQFT
(500 car capacity)

For Planned Institutional Development:
SYR Zoning Ordinance dictates

maximum f.a.r. 2.0
(up to 4.0 with premiums)



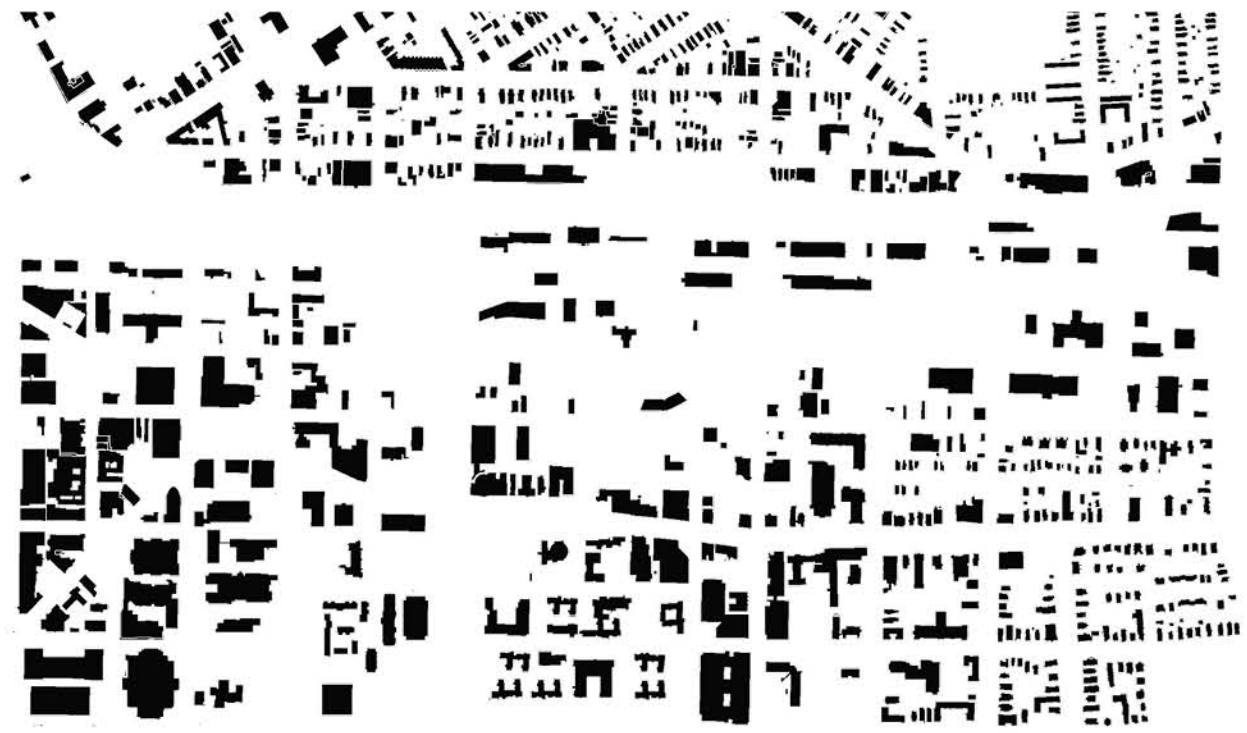
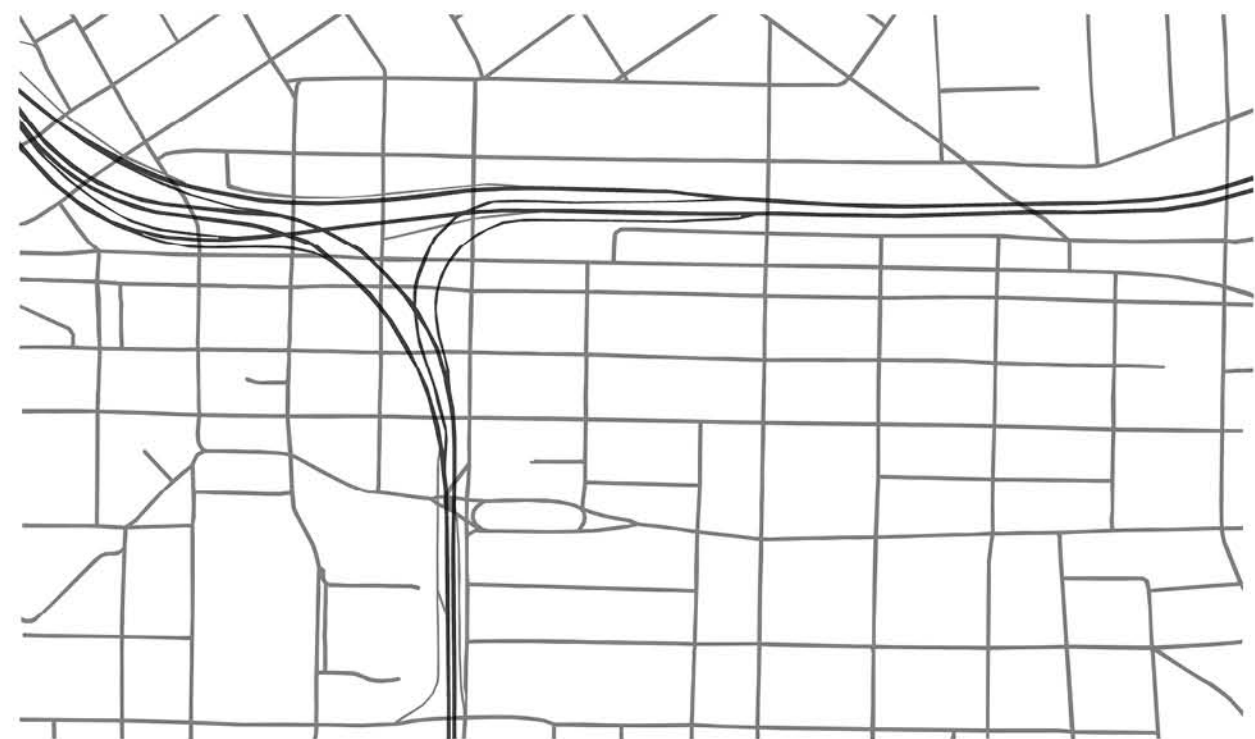
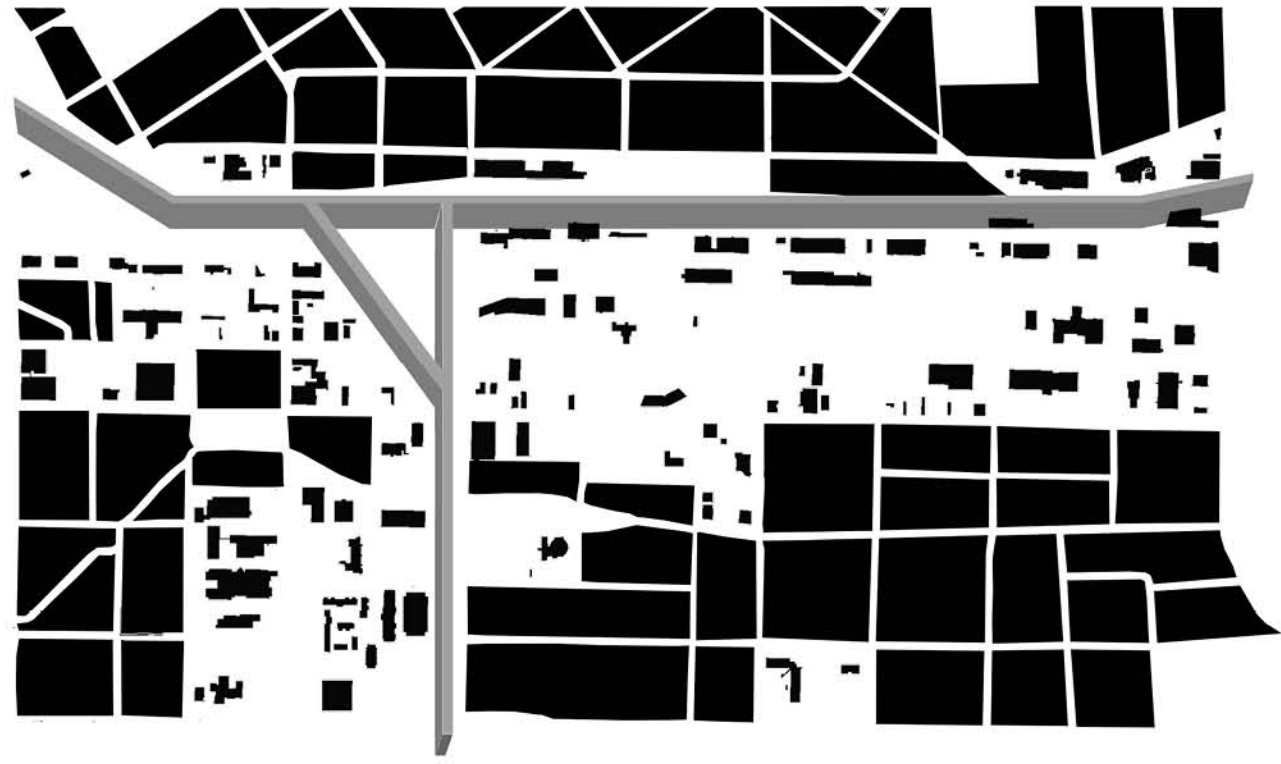


figure-ground



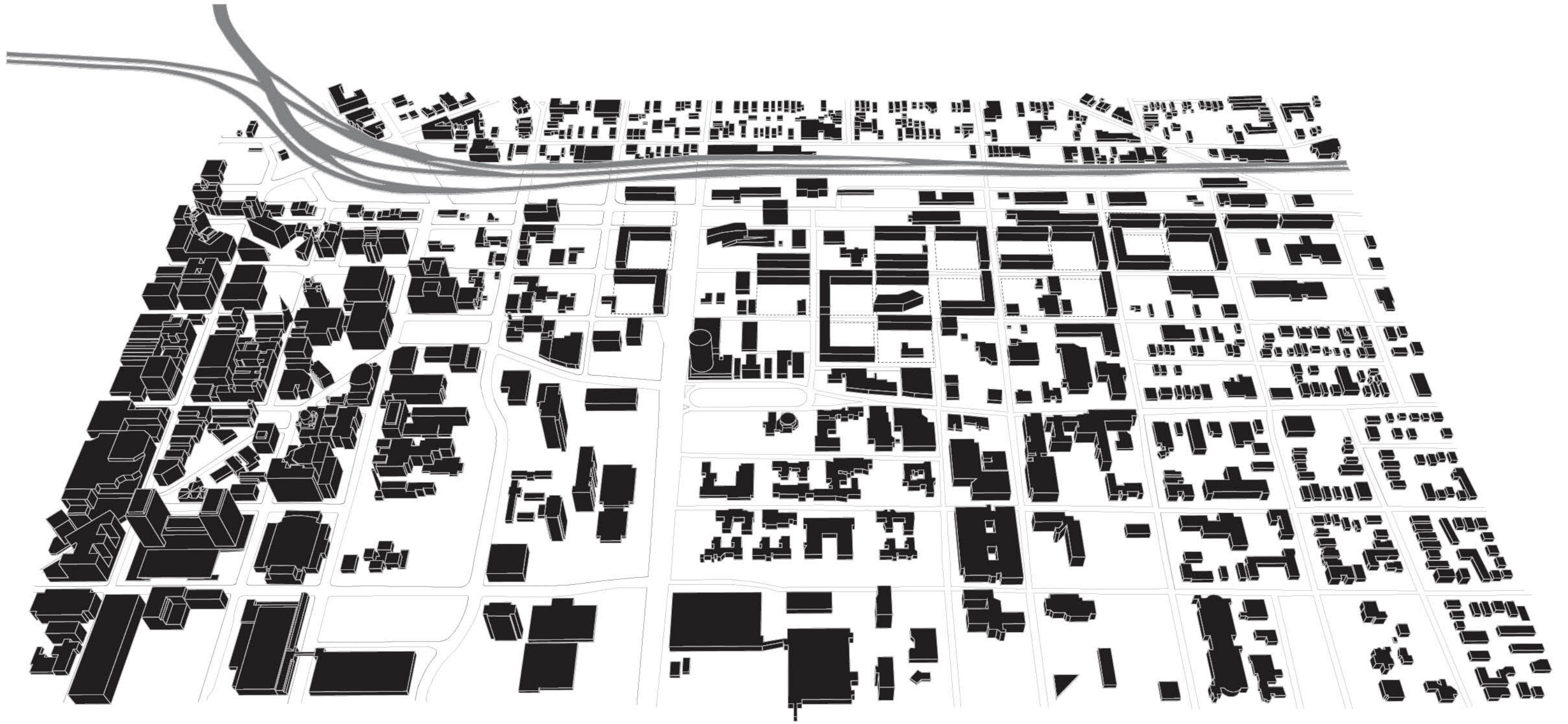
road network



*an issue of
fragmentation*



a master plan...



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