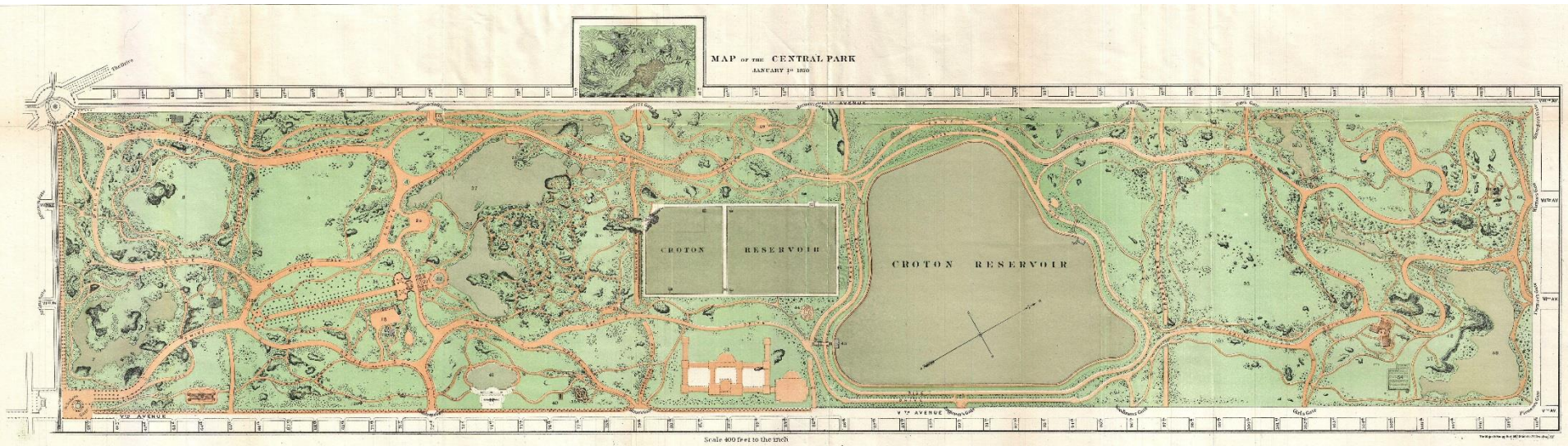


# How can landscape architects aide in transportation planning process?

John Dempsey, PLA  
Toole Design Group  
July 24, 2015



# What is Landscape Architecture?

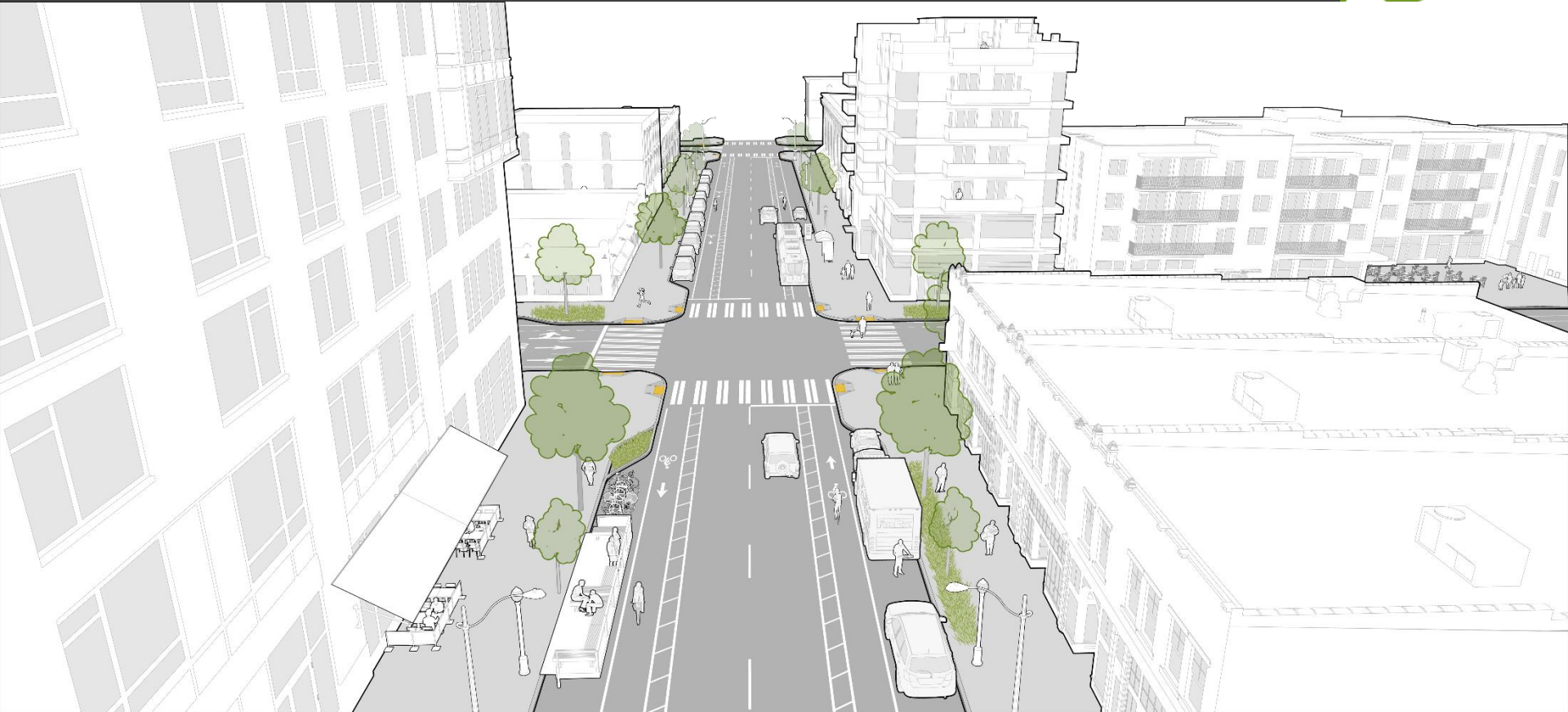


**Landscape Architecture 1863**



The Mall, Central Park, New York.

# What is Landscape Architecture?



**Landscape architecture** is the design of space to achieve environmental, social-behavioral and aesthetic balance.

# Common Misconceptions



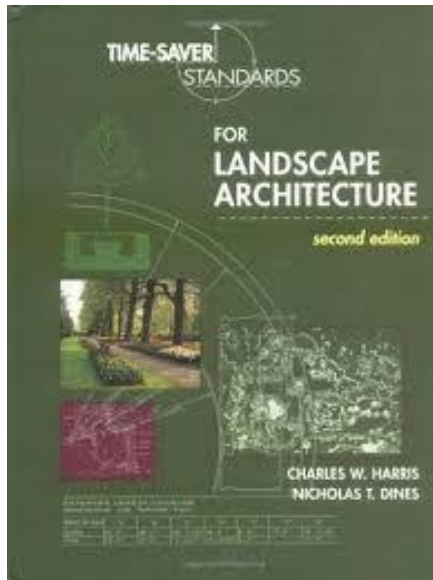
- Gardeners or landscapers
- Landscape design is for decoration
- It's only a summer job
- Tree huggers

# Landscape Architect Skill Set



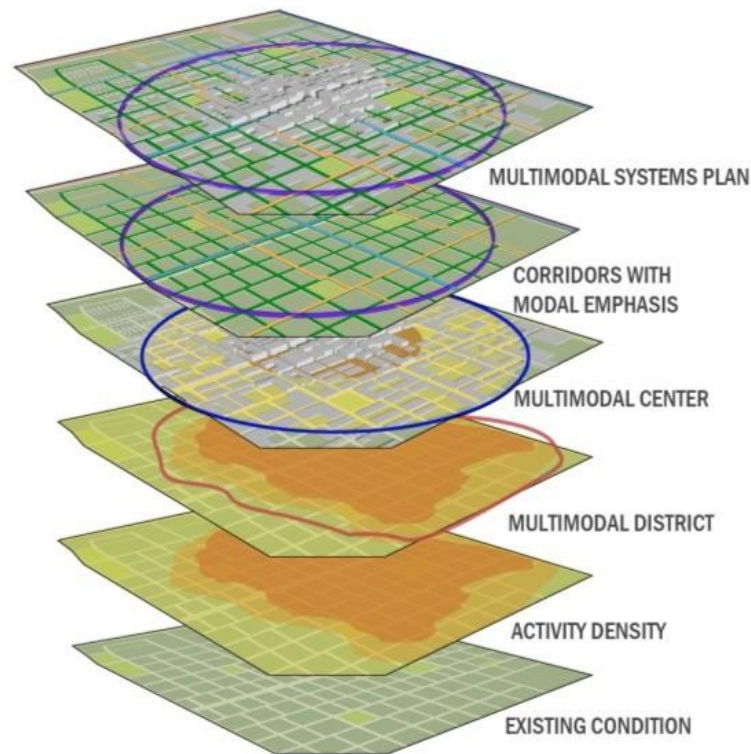
- Sensitivity to landscape quality
- Understanding of the arts and a humanistic approach to design
- Ability to analyze problems in terms of design and physical form
- Skills in all aspects of professional practice including management and professional ethics
- Keep the design process in mind- conceptualize, plan, develop, construct, and evolve

# Landscape Architecture Specialty Disciplines



- Urban design/planning
- Site planning
- Stormwater management
- Environmental restoration
- Parks and Recreation planning
- Visual resource management
- Green infrastructure
- Private estate/residence design
- Landscape master planning & design

# Transportation Planning



**Transportation planning** deals with the evaluation, assessment, design and siting of sidewalk, bicycle, roadway and public transit facilities.

# Transportation for All



- National Complete Streets Coalition
- Safe Routes to Schools National Partnership
- National Recreation and Parks Association
- Surface Transportation Policy Project
- Transportation for America
- Partnership for Active Transportation

# Landscape Architecture & Transportation



- Transportation infrastructure accounts for 20-40% urban land
- Approximately 19,000 miles of abandoned railway in US
- Countless underpasses and waterways



***Streets define the character of neighborhoods  
and are the common ground where people travel,  
meet and do business on a daily basis.***



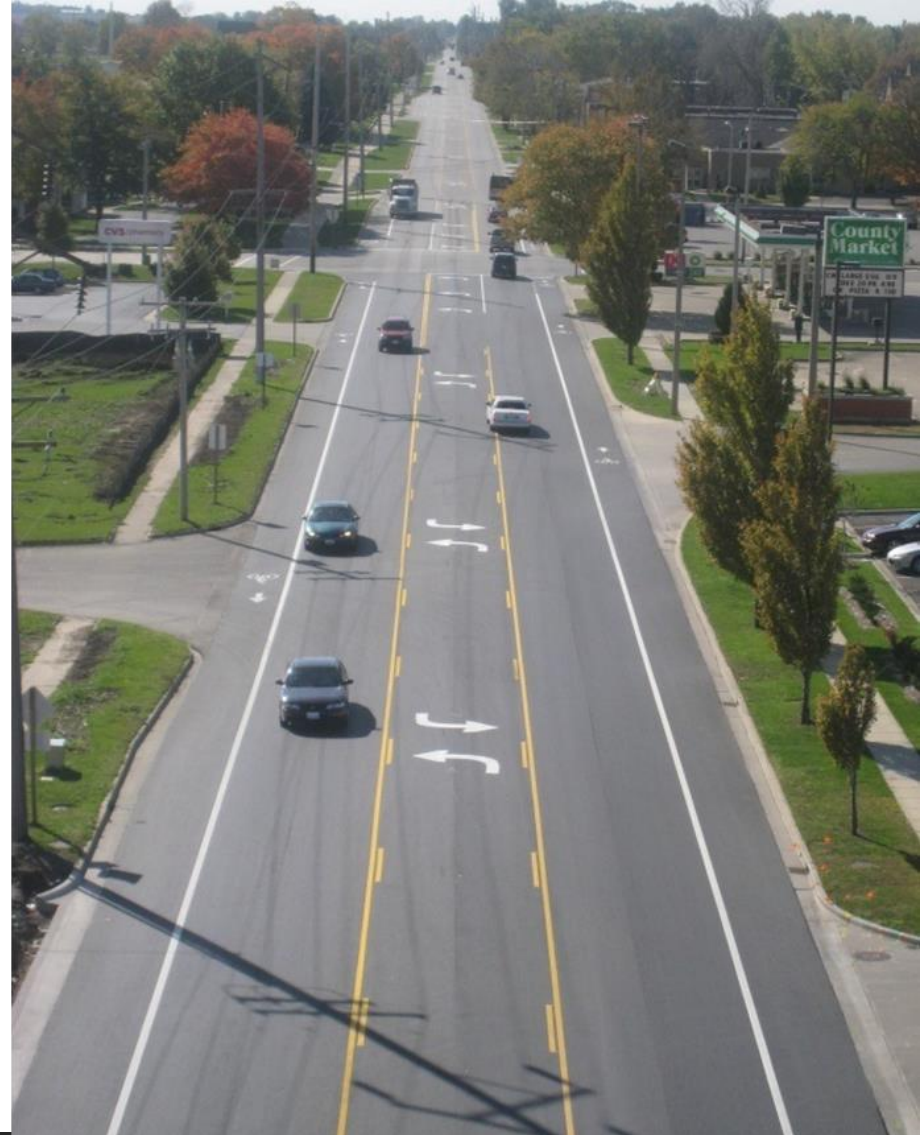


# Complete Streets

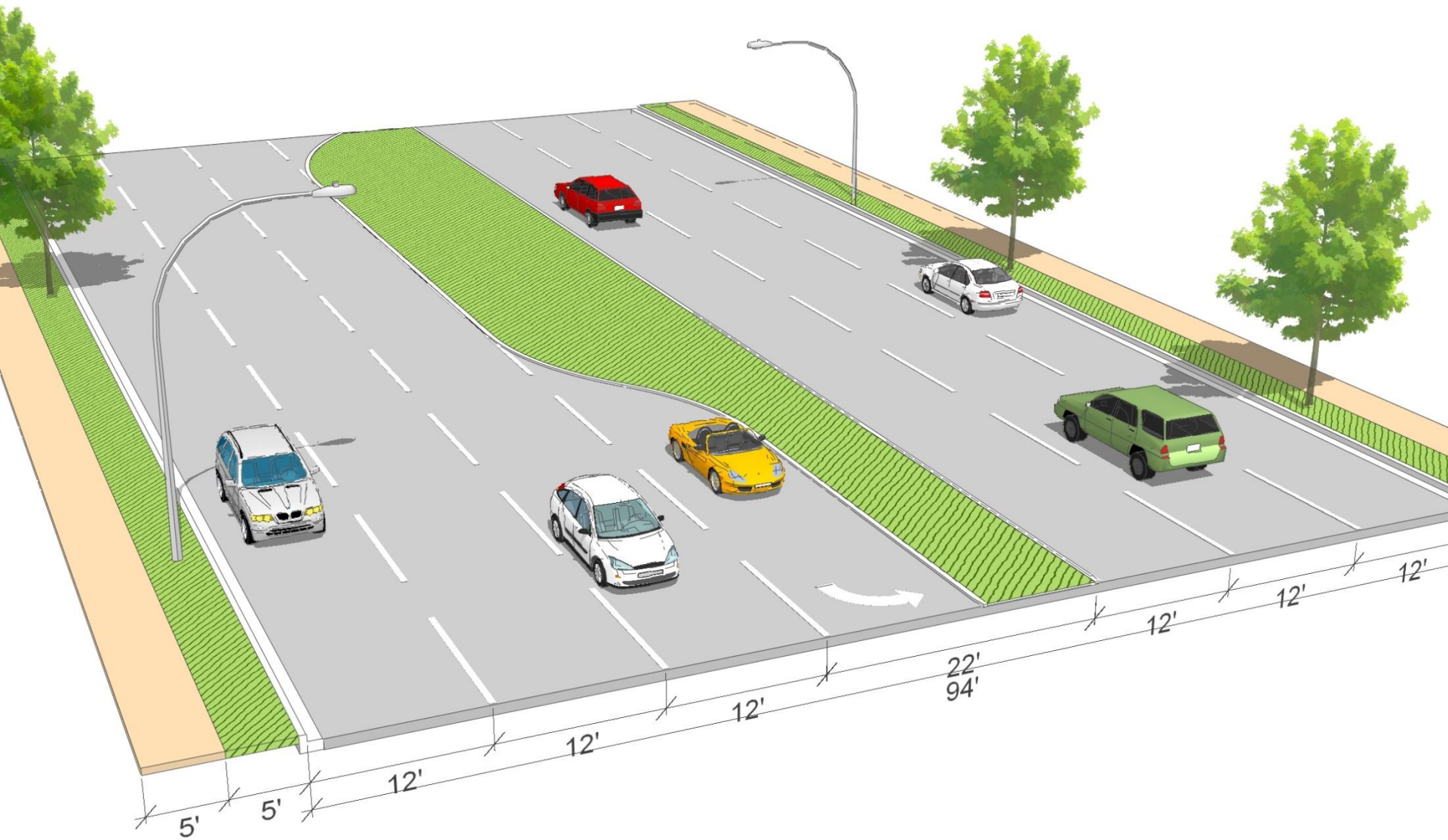


- Are designed for people of all ages and physical abilities whether they walk, bicycle, ride transit, or drive
- Integrate connectivity and traffic calming with pedestrian oriented site and building design to create safe and inviting places
- Spaces with engaging architecture, street furniture, landscaping, and public art that reflect the diversity and cultures of the neighborhood

# Complete Streets



# Existing



# Proposed



# Complete Streets



# Complete Streets



# Tactical Urbanism



- Low cost
- Temporary modifications to the public right-of-way

# Tactical Urbanism





# Parklet





# Landscape Architecture & Transportation



- Transportation infrastructure accounts for 20-40% urban land
- Approximately 19,000 miles of abandoned railway in US
- Countless underpasses and waterways

# Rails to Trails



# Rails to Trails



# Rails to Trails





# Landscape Architecture & Transportation



- Transportation infrastructure accounts for 20-40% urban land
- Approximately 19,000 miles of abandoned railway in US
- Countless underpasses and waterways

# Underpasses







# Waterways



# Waterways



# Waterways



# Transportation for All





John Dempsey, PLA  
[jdempsey@tooledesign.com](mailto:jdempsey@tooledesign.com)

Twitter: [@tooledesign](https://twitter.com/tooledesign)

# THE CREATIVE CORRIDOR

A Main Street Revitalization



University of Arkansas Community Design Center + Marlon Blackwell Architect  
for  
The City of Little Rock



NATIONAL  
ENDOWMENT  
FOR THE ARTS

A great nation  
deserves great art.

In fulfillment of an NEA *Our Town* grant

Main Street became to America what  
the piazza was to Italy.

-Richard Longstreth, *The Buildings of Main Street*-



Little Rock Main Street 1910

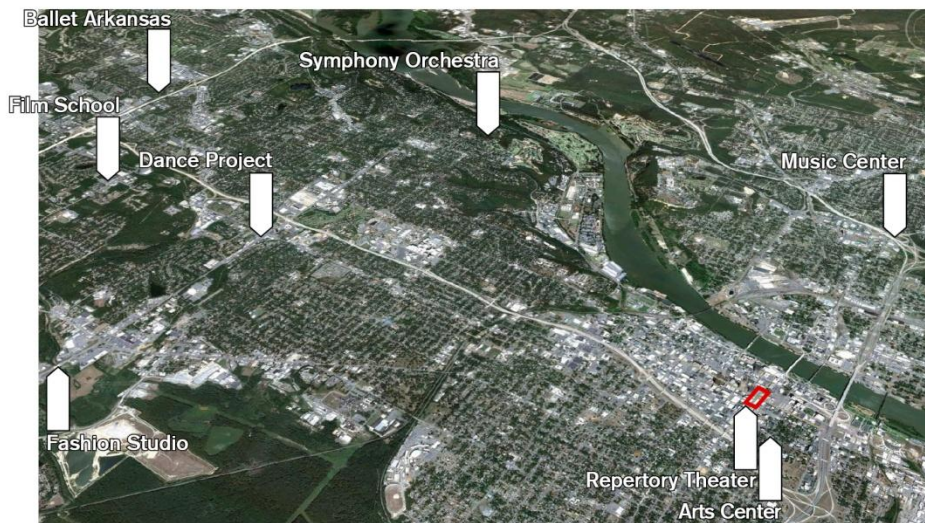


In 1918 Little Rock had a coherent urban fabric.

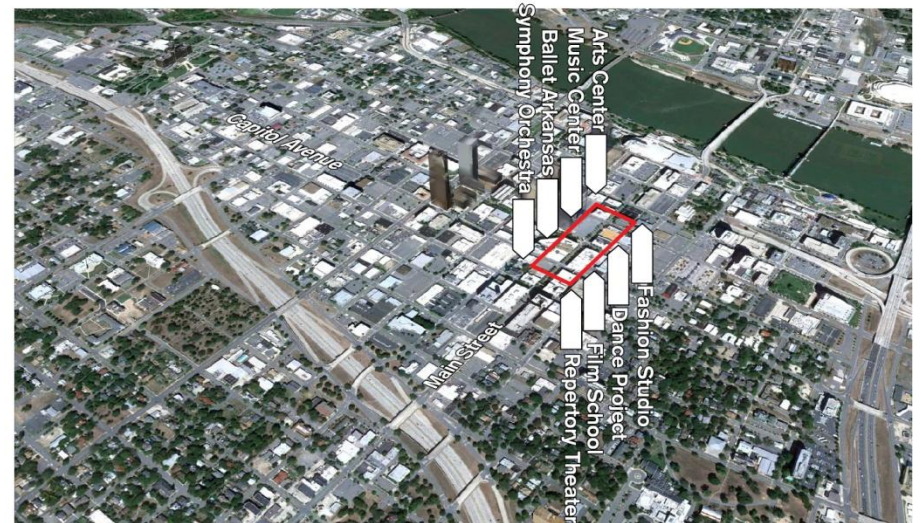


Now, surface parking accounts for the largest land use in downtown.

The Creative Corridor retrofits a four-block segment of an endangered historic downtown Main Street through economic development catalyzed by the cultural arts rather than Main Street's traditional retail base.

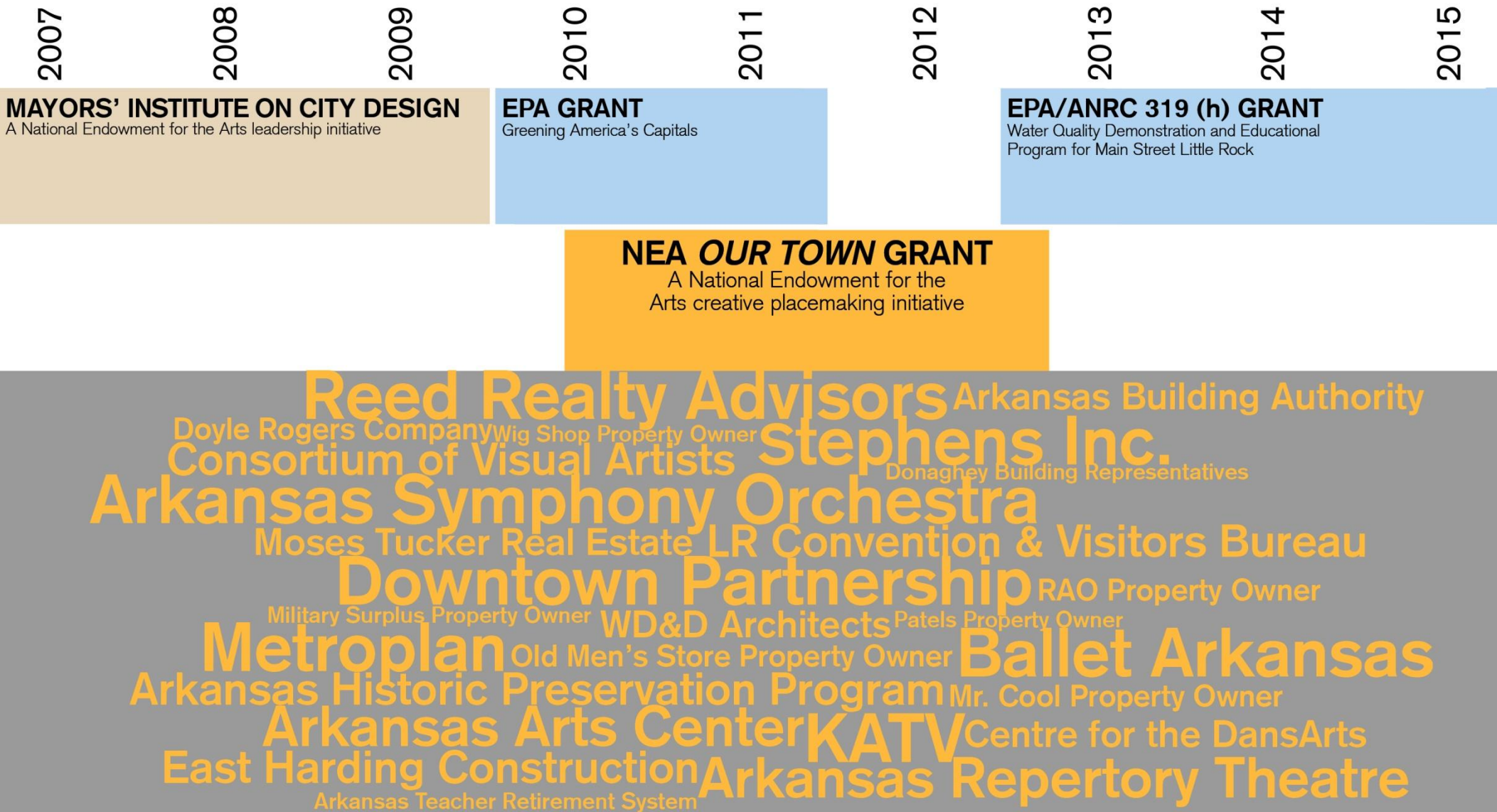


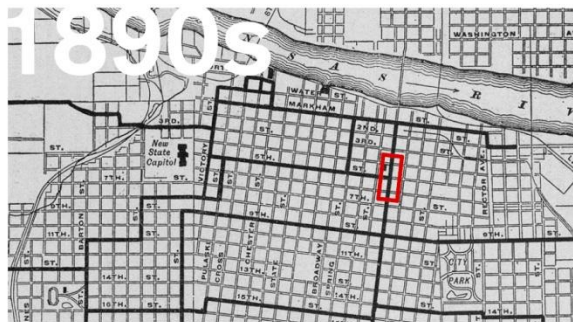
The Creative Corridor aggregates presently scattered cultural organizations...



...into a district of four blocks.

# CREATIVE CORRIDOR INITIATIVES Stakeholder Participation





Urban Renewal



Pedestrian Mall



Classic American Main Street



Main Street Today

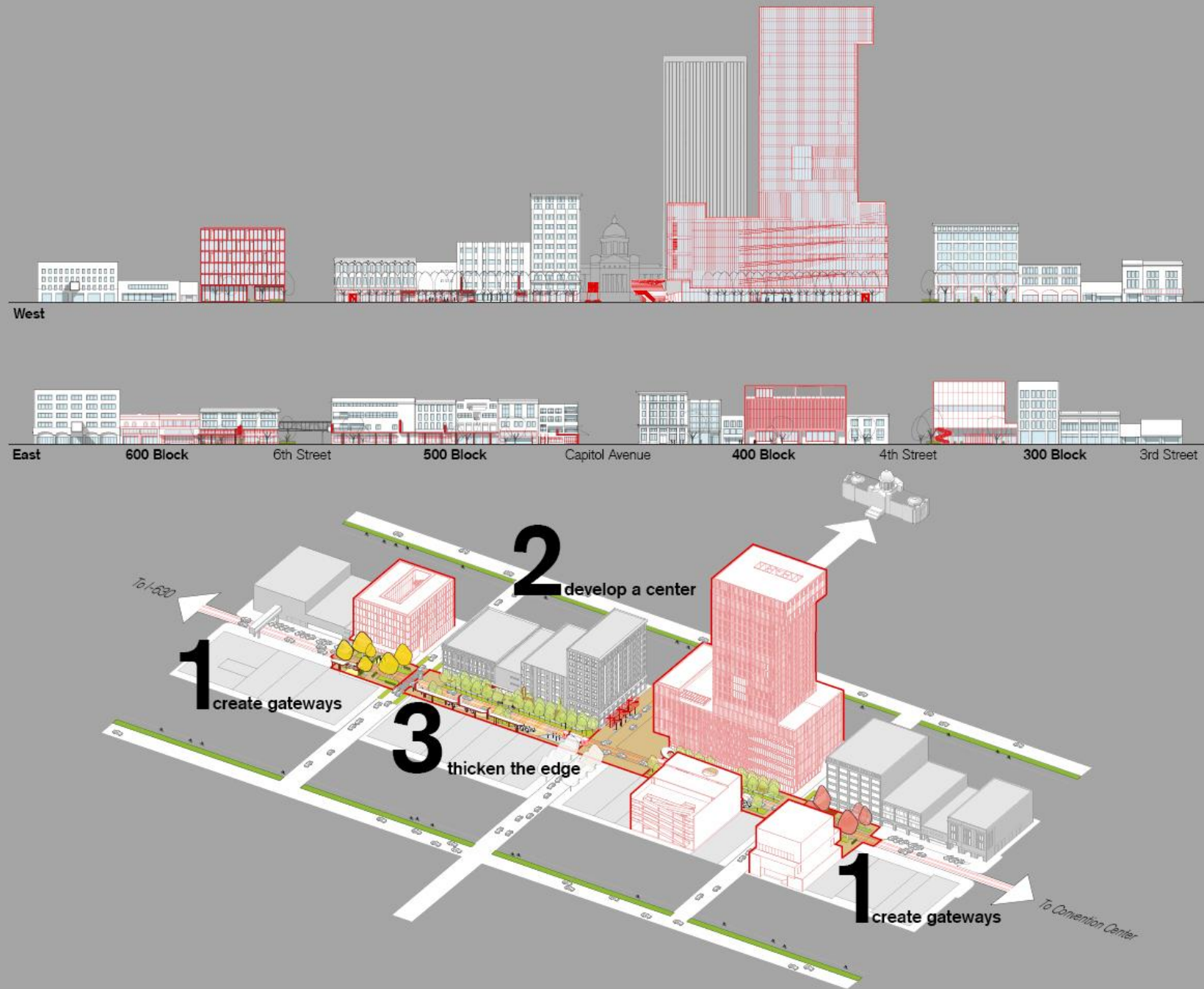
## The Evolution of Main Street Little Rock

# THE CREATIVE CORRIDOR

A Main Street Revitalization

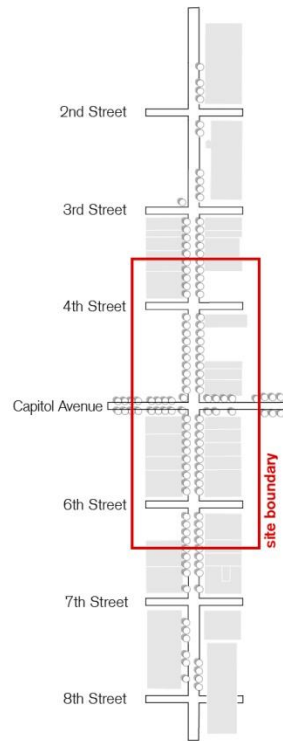
Unlike roads, which efficiently move traffic from one point to another, streets are platforms for capturing value. A well-designed street provides non-traffic social functions related to gathering, assembly, recreation, and aesthetics.



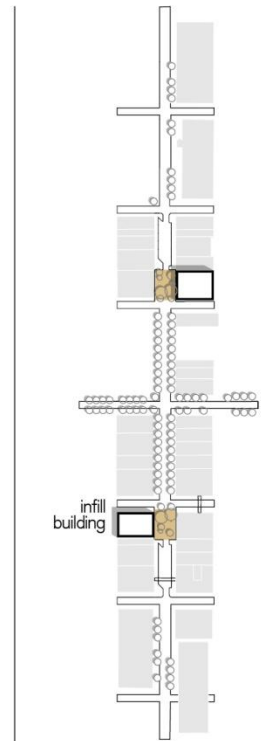


### The Creative Corridor phasing strategy.

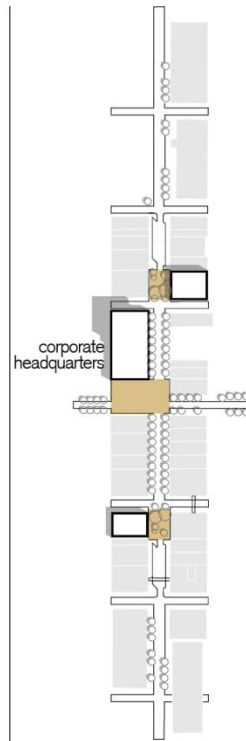
The Creative Corridor employs three phases of development that mediate between new and old structures, and big and small scales in the transformation to a downtown node.



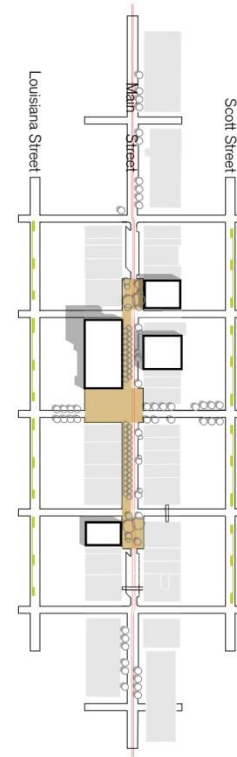
existing



**1** create gateways...



**2** develop a center...



**3** thicken the edge!



**Nodes provide a sense of centrality and opportunity for social life through urban rooms that counter the dominance of mobility in the corridor.**

“

We turned a corridor into  
a node through a series of  
urban rooms.

”

1

Create Gateways

2

Develop A Center

3

Thicken The Edge

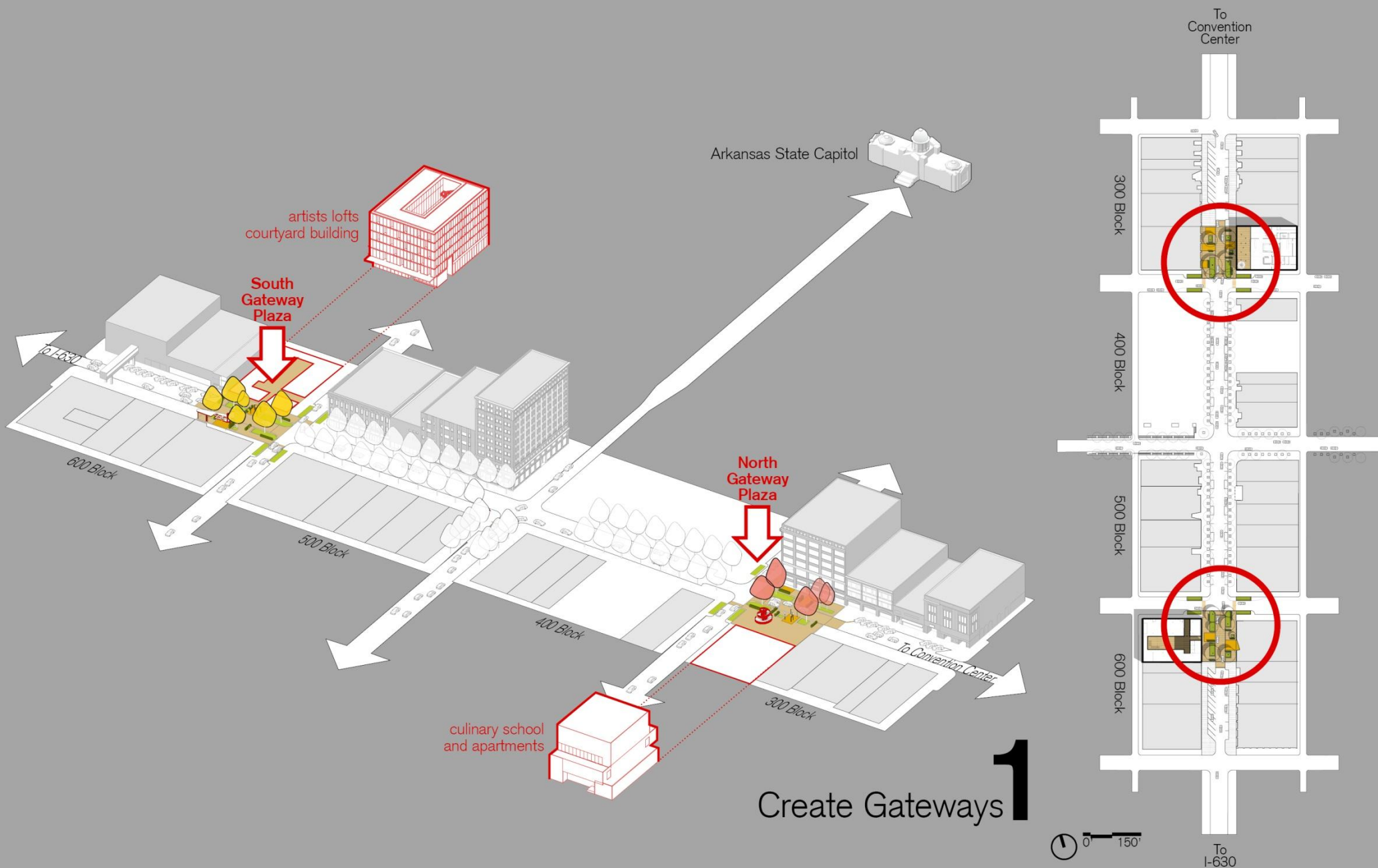
1

Create Gateways

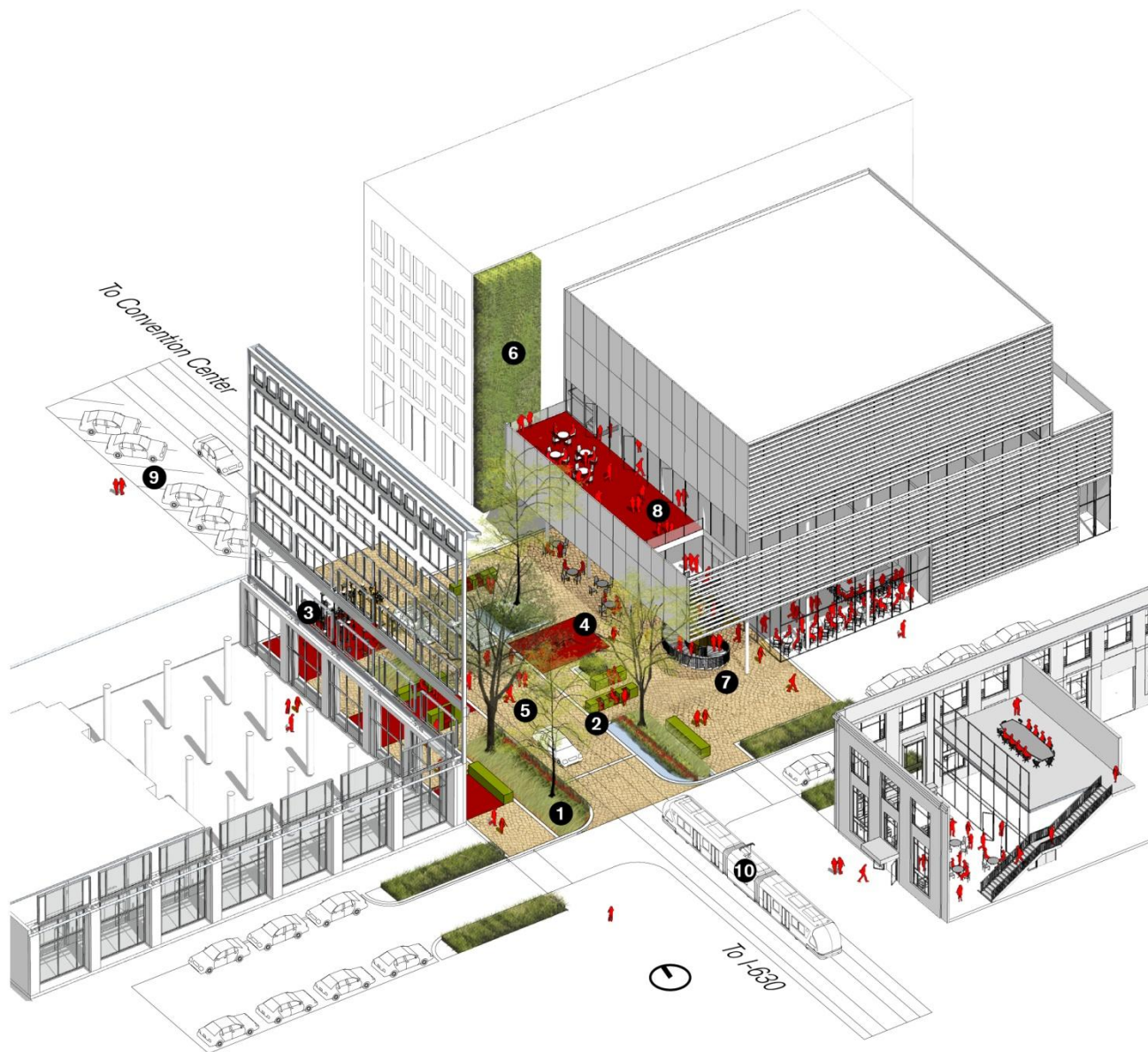


**Since architectural guidelines are not politically feasible, townscaping elements like arcades, marquees, and stormwater management landscapes bridge street and building interiors.**

Rather than simply rely on historically-inspired frontage guidelines, the plan negotiates conflicting building traditions and scales through the use of townscaping elements.

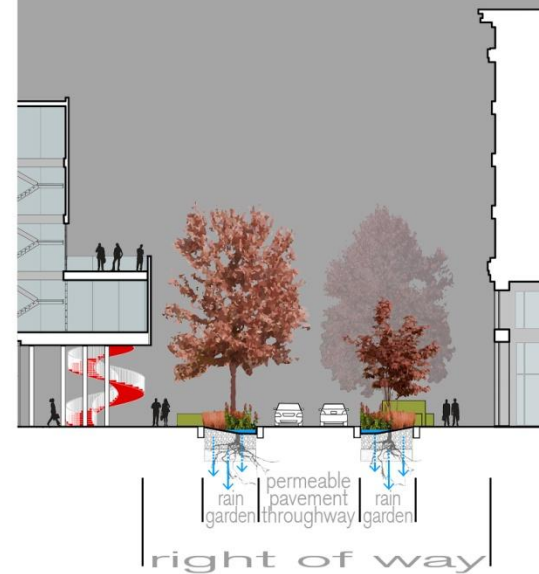
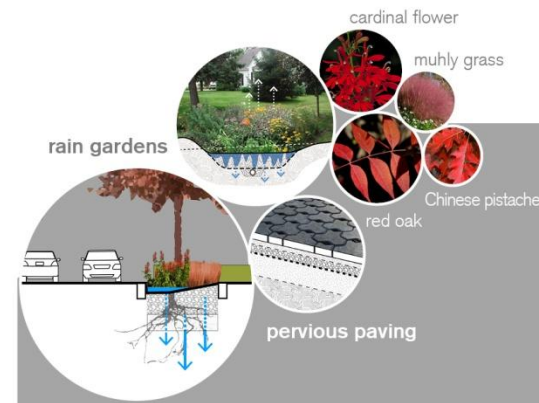


The first thing we do is create gateways.



## North Gateway Plaza

- |                                |                                |
|--------------------------------|--------------------------------|
| rain gardens 1                 | green wall 6                   |
| plaza seating 2                | urban staircase 7              |
| recycled street light garden 3 | urban patio 8                  |
| public art pad 4               | back-in parking 9              |
| continuous pedestrian table 5  | planned streetcar extension 10 |



**Gateway rooms privilege the pedestrian and offer non-traffic functions, including ecologically-based stormwater treatment while still accommodating traffic throughput.**



**Gateways are the first rooms in the plan's incremental design approach and they're easy to do immediately.**  
Gateway tables create urban rooms with street furniture, architectural pavement, and landscapes made of both rustic and manicured plant palettes akin to an urban pocket park.



Existing west side of 600 Block



Looking into the South Gateway Plaza from the artists lofts building



Looking north from the South Gateway Plaza

Gateways are the first rooms in the plan's incremental design approach and they're easy to do immediately.



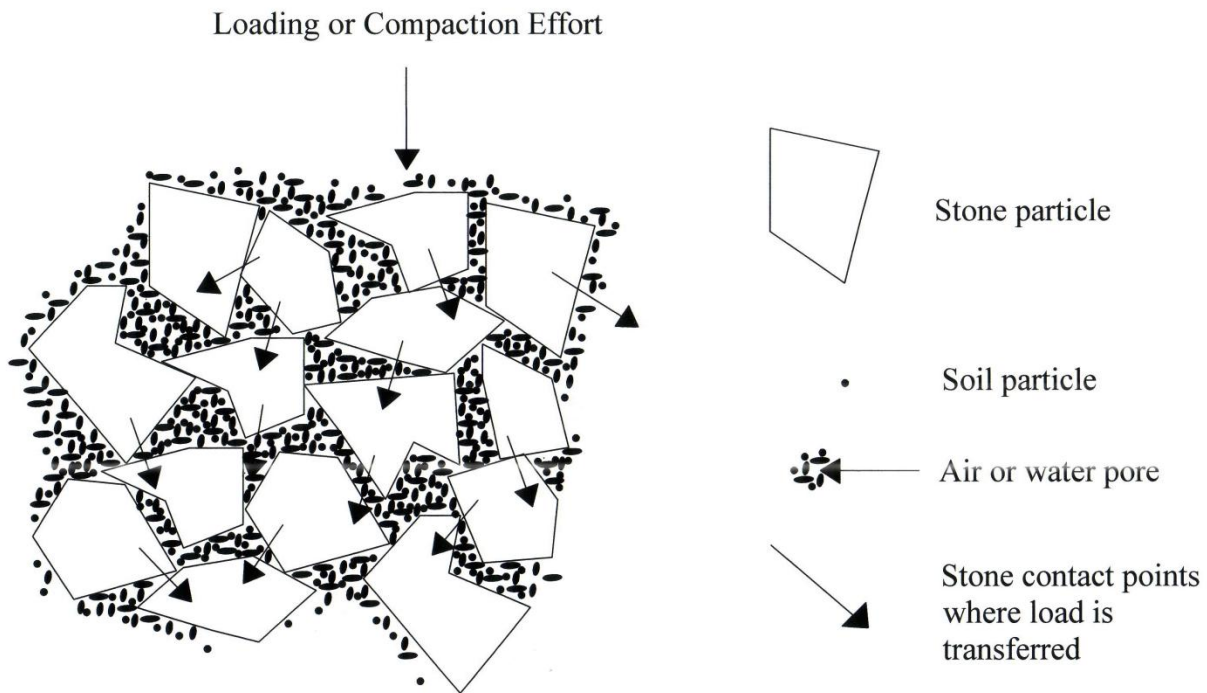
After



Before

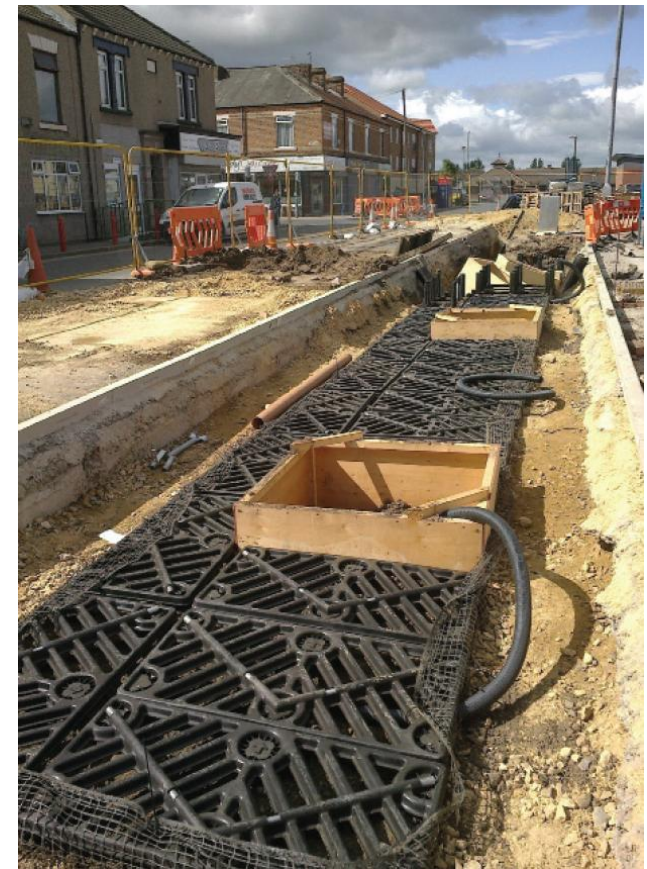






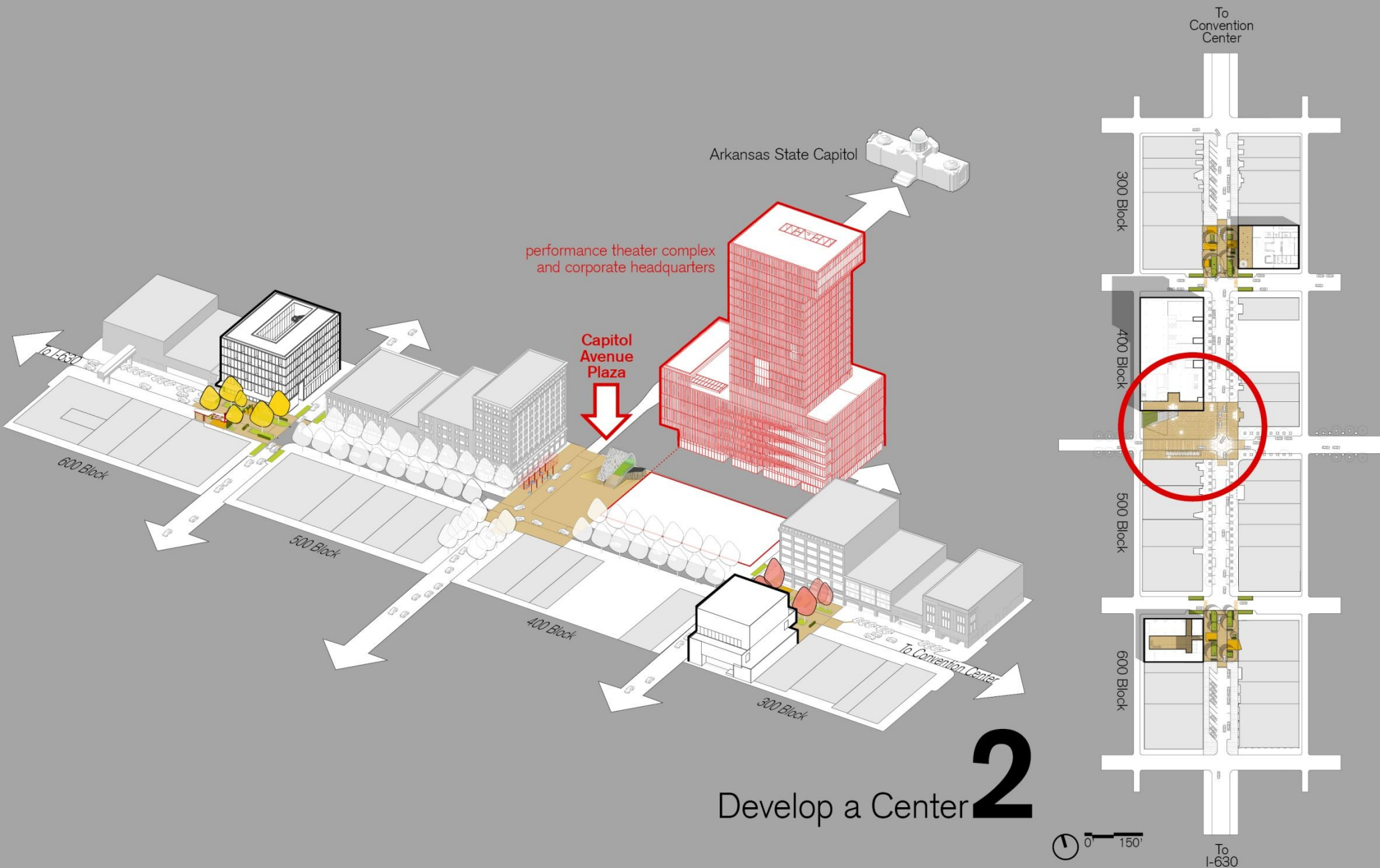
## Structural Soil—CU Specification

Provide minimum 40% porosity beneath hard surfaces with light or stationary loading.

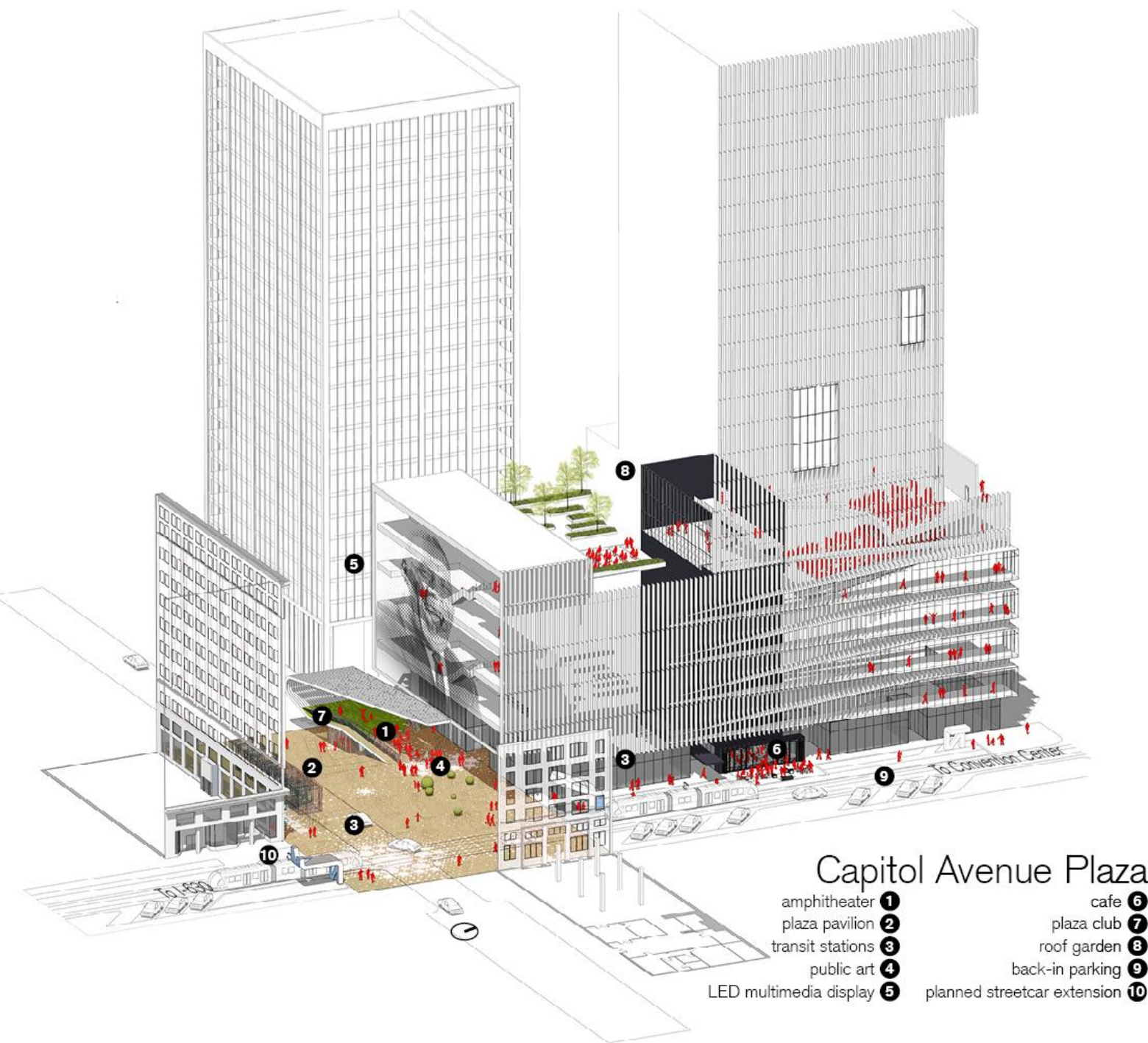


## Structural Cells

For applications beneath hard surfaces with heavy and moving traffic.



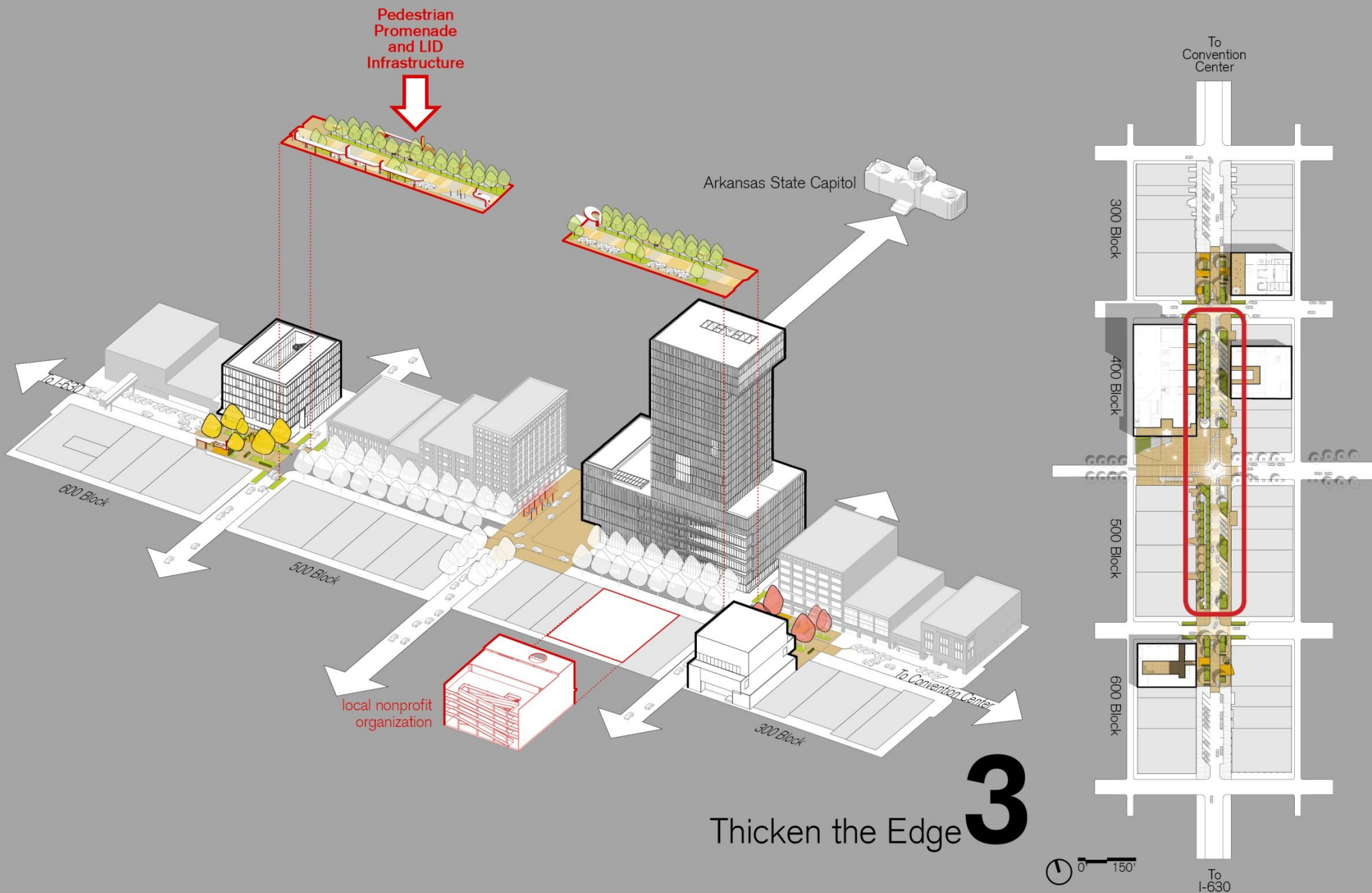
Second, we demarcate the most important intersection in the state with a plaza.



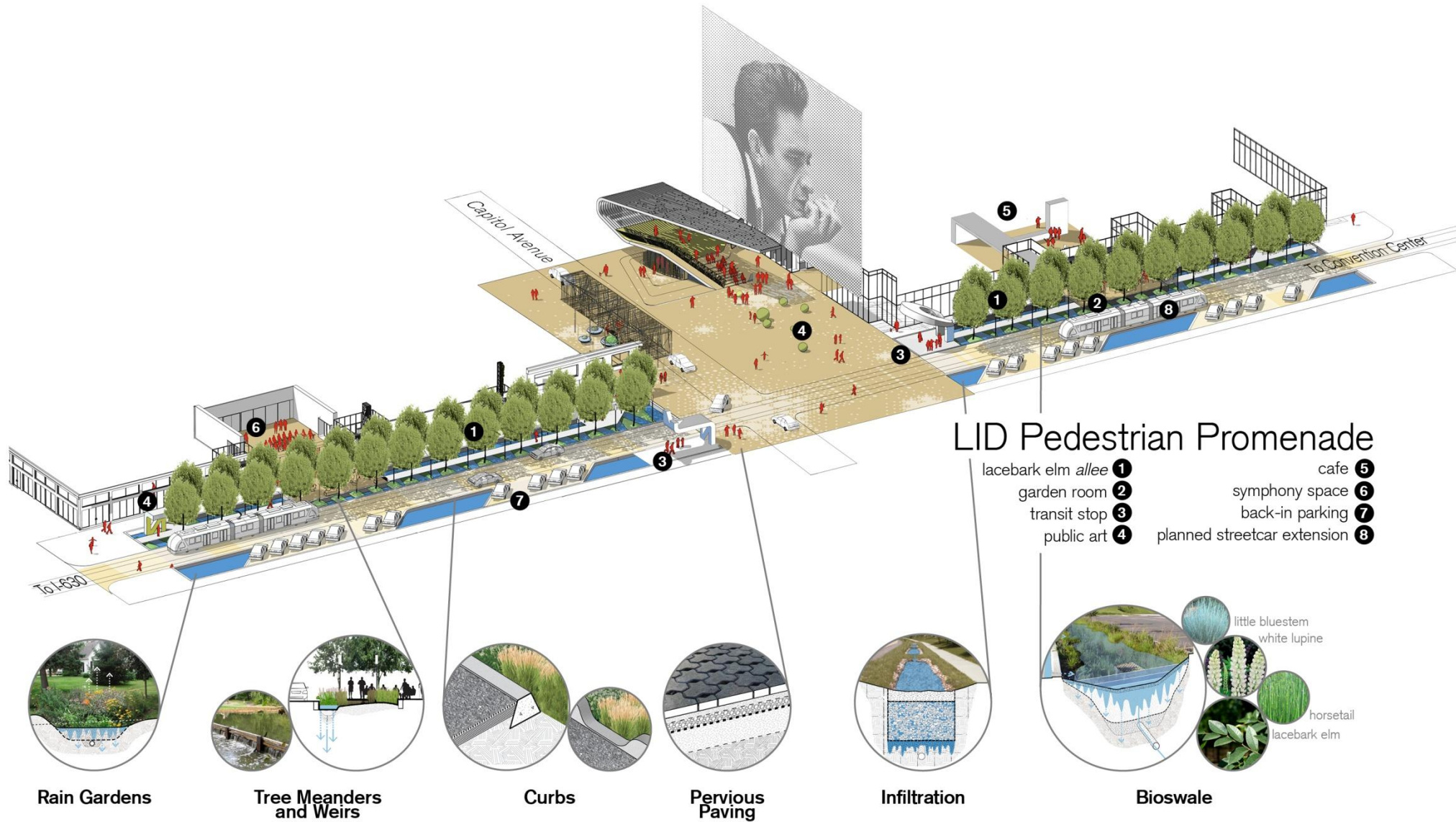
**The energy of the street is pulled up through the architecture.**  
 The plaza as a room mediates between new and old structures, as well as big and small scales.



The Capitol Avenue Plaza celebrates this important intersection through a layer of pedestrian-scaled amenities that mediate an intimate plaza space and large-scale building masses.



Third, we thicken the western right-of-way edge with an *allee* for ecologically-based stormwater management.



The US Environmental Protection Agency has given us money to build the Low Impact Development (LID) facilities that manage urban stormwater runoff using an ecosystem services approach.

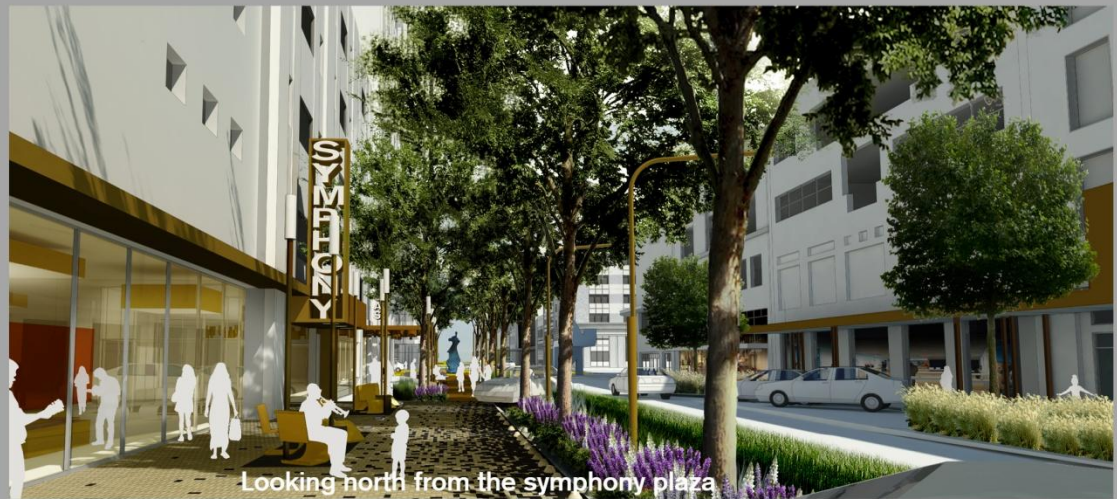


The LID Pedestrian Promenade is a fitting extension of the indoor spaces along the westside of the 400 and 500 blocks.





Existing 500 Block



Looking north from the symphony plaza



Looking south toward the symphony plaza

Indeed, a distinctive and legible  
environment not only offers security  
but also heightens the potential depth  
and intensity of human experience.

-Kevin Lynch, *The Image of the City*-



Over

Under

Through

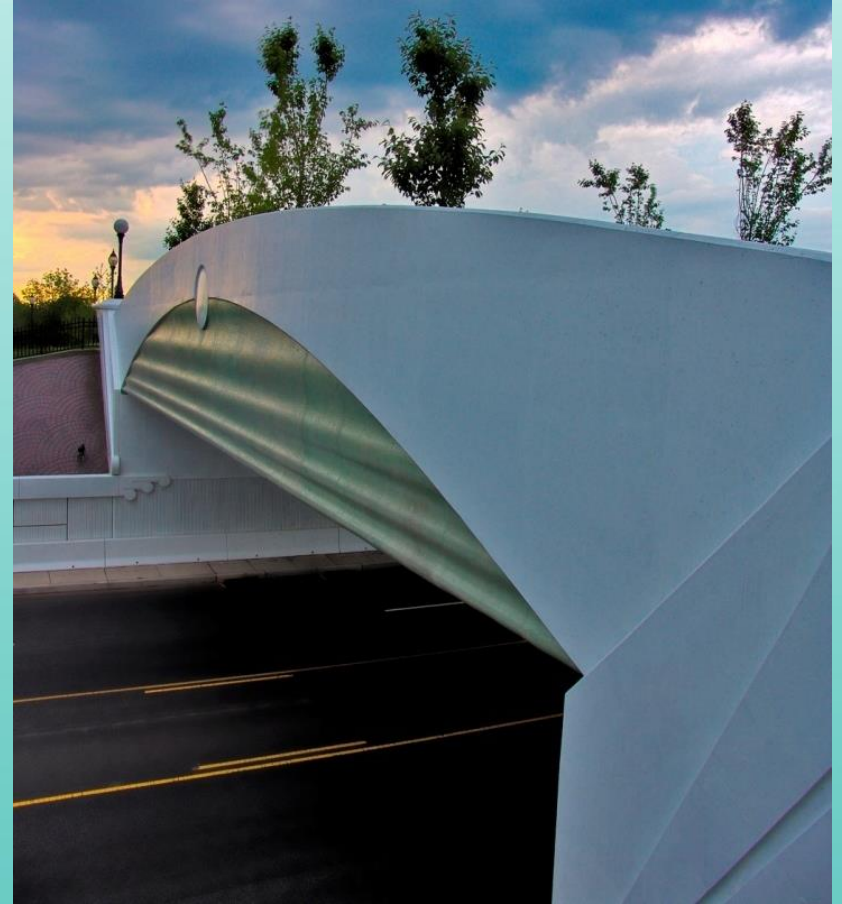
obstacles to multi-modal  
transportation facilities

William Collins, RLA, VP



# Types of obstacles

- X Physical
- X Costs / funding
- X Bureaucratic
- X Nimbys
- X Friends



# Types of structural solutions

*for trail / pedestrian / non-motor vehicle facilities*

- Bridges
- Underpasses
- At-grade crossings
- Tunnels
- Road diets



# Landscape Architecture services

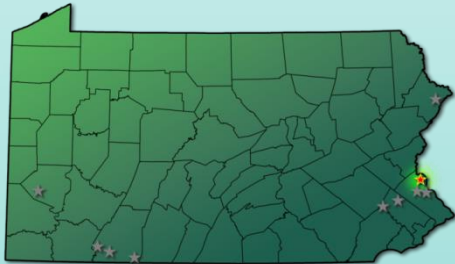
- Master planning
- Defining the program
- Funding development
- Partnership negotiation
- Site design
- Structure / bridge architecture



# Over



# “OVER”



Point Pleasant,  
Bucks County

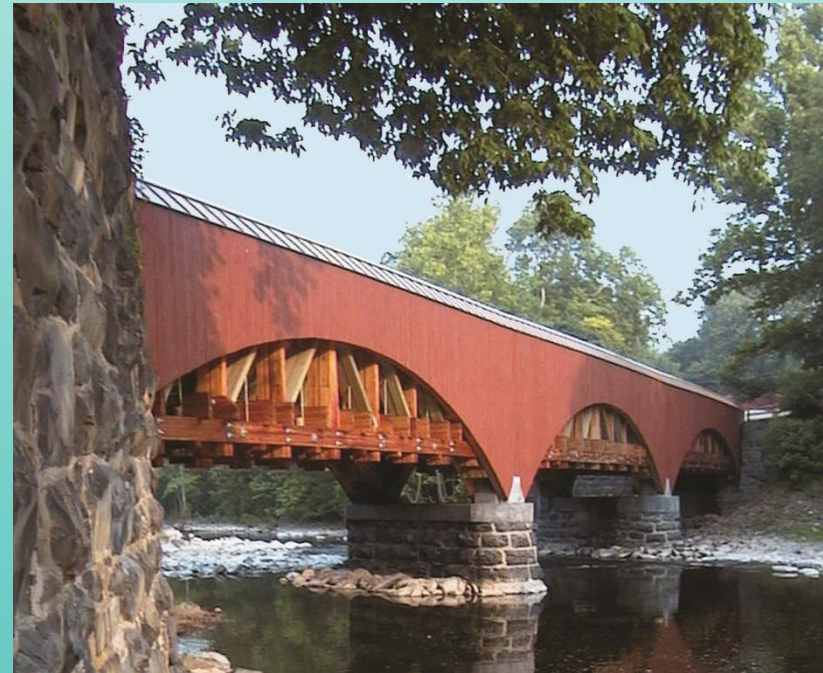
## Tohickon Aqueduct

Delaware Canal National Landmark  
Delaware Canal State Park

Rehabilitate historic transportation resource



1992



2001

LANDSCAPE ARCHITECTS AND THE TRANSPORTATION PLANNING PROCESS

Simone Collins  
Landscape Architecture

APA Webinar July 24, 2015

## Obstacles:

- X Physical
- X Costs
- X Bureaucratic
- X Friends

## Strategies:

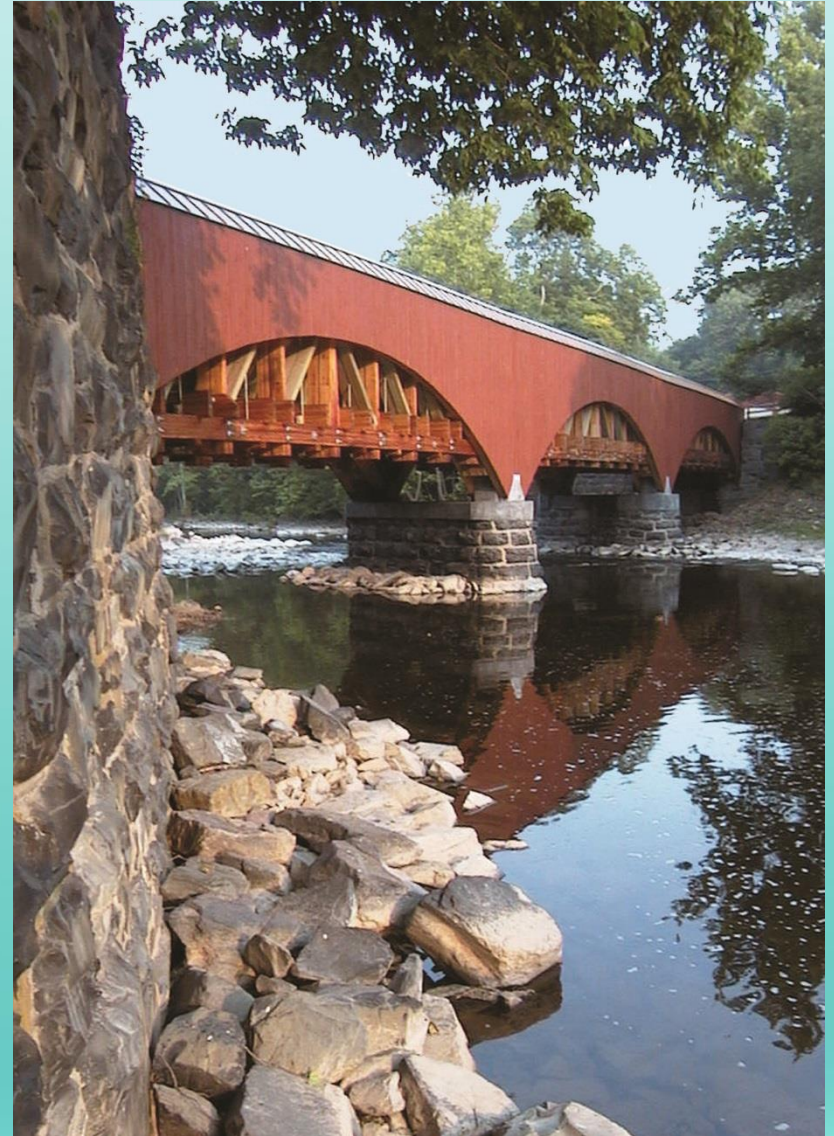
*Modern timber structure*

*Traditional bridge truss system*

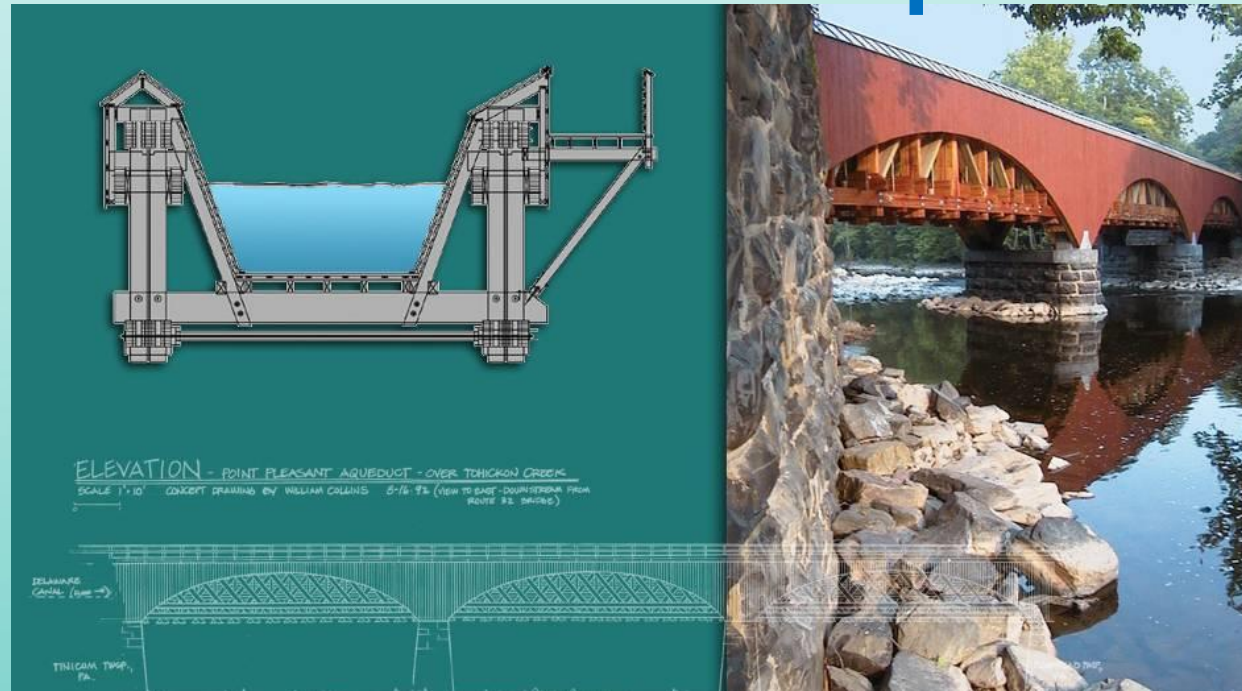
*Innovative materials, reuse stone*

*Alternative funding partners*

## Tohickon Aqueduct



# Tohickon Aqueduct



## LA Services

*Historic research, concept design*

*Substructure schematics, materials specs*

*Bridge architecture, documentation*

*Funding strategy, grant applications*

*Community consultant*

1992 – 2001

# Tohickon Aqueduct

Budget: \$2.1 M (Construction)

## Funding Partners

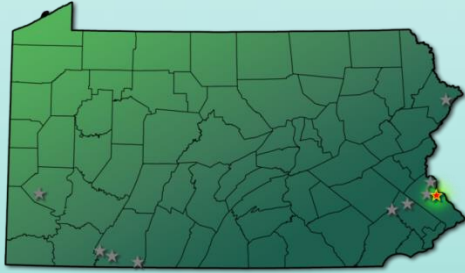
- PennDOT Enhancements
- USDA Forest Service
- Commonwealth of Pennsylvania

## Awards

- 1<sup>st</sup> Place - National Timber Bridge, 2002
- Honor - ASLA PA/DE Chapter, 2003
- Honorable Mention - National Rail-Trail, 2003
- Design Excellence - Central Bucks AIA, 2002



# “OVER”



Solebury Township,  
Bucks County

## Canal Park Bridge

Delaware Canal National Landmark  
Delaware Canal State Park

Create new bridge over the canal

### Obstacles:

- X Physical
- X Nimbys
- X Bureaucratic



### Strategies:

*Modern steel structure – customize “pre-fab”*

*Mimic iconic traditional “Camelback” truss*

*Justify “impacts” to the Landmark*

# Canal Park Bridge

Traditional  
1831  
design



New  
2009  
design

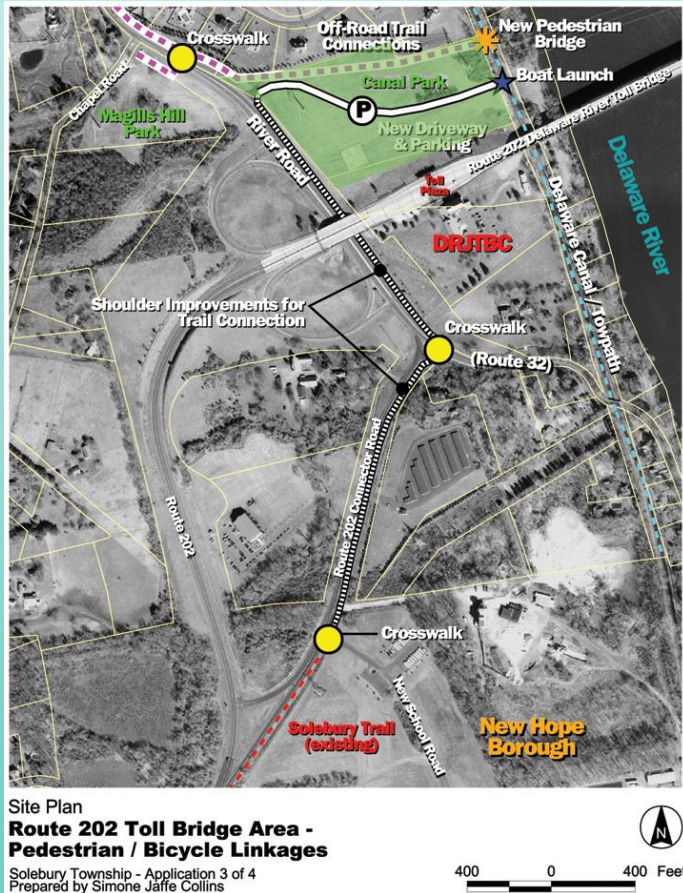


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# Canal Park Bridge



## LA Services

*Master planning, historic research*

*Funding strategy, grant applications*

# Canal Park Bridge



**LA Services**

*Structure simulations, park and trail design*

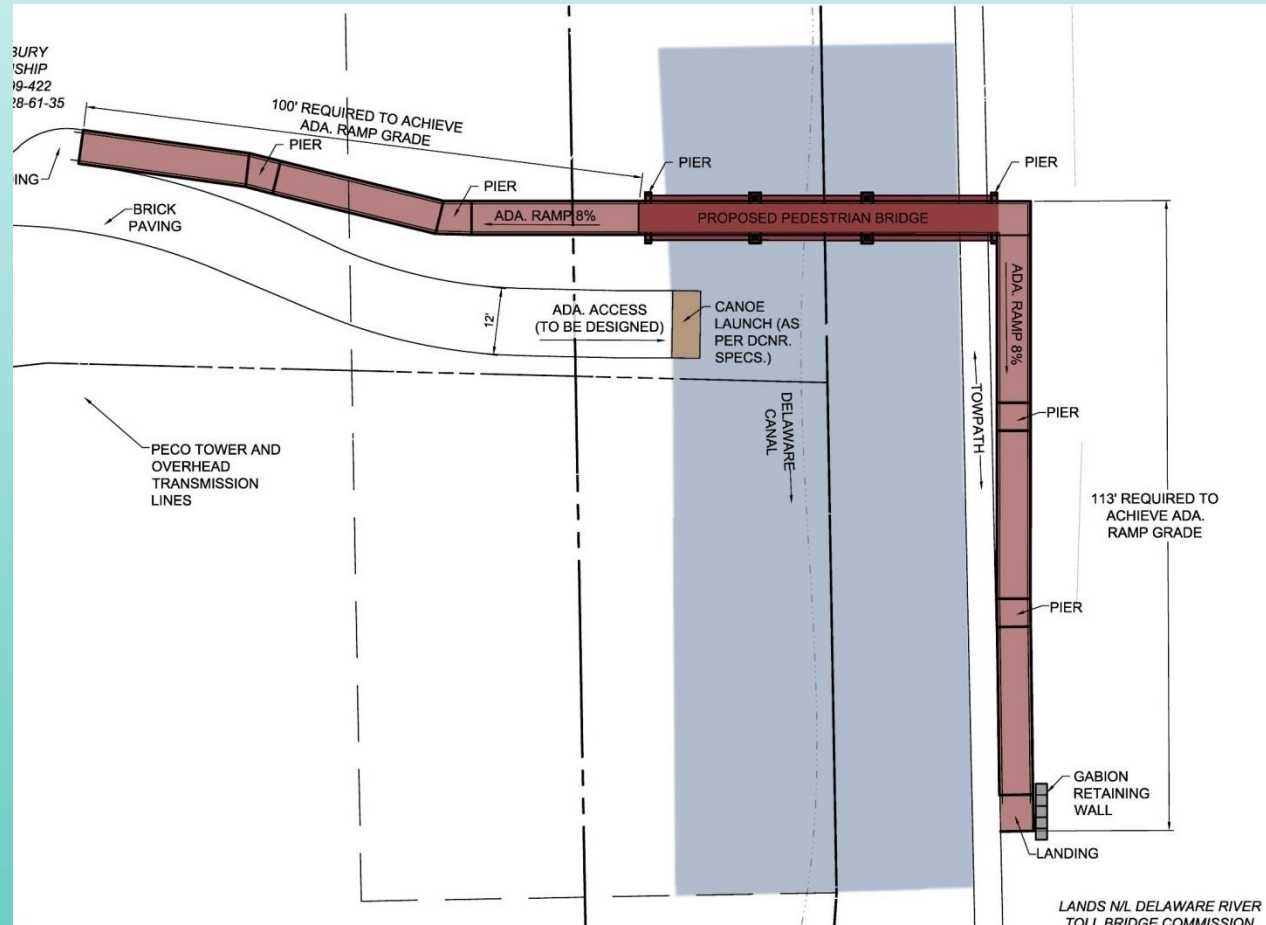
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# Canal Park Bridge

*Ramps would total 4 times the bridge length*

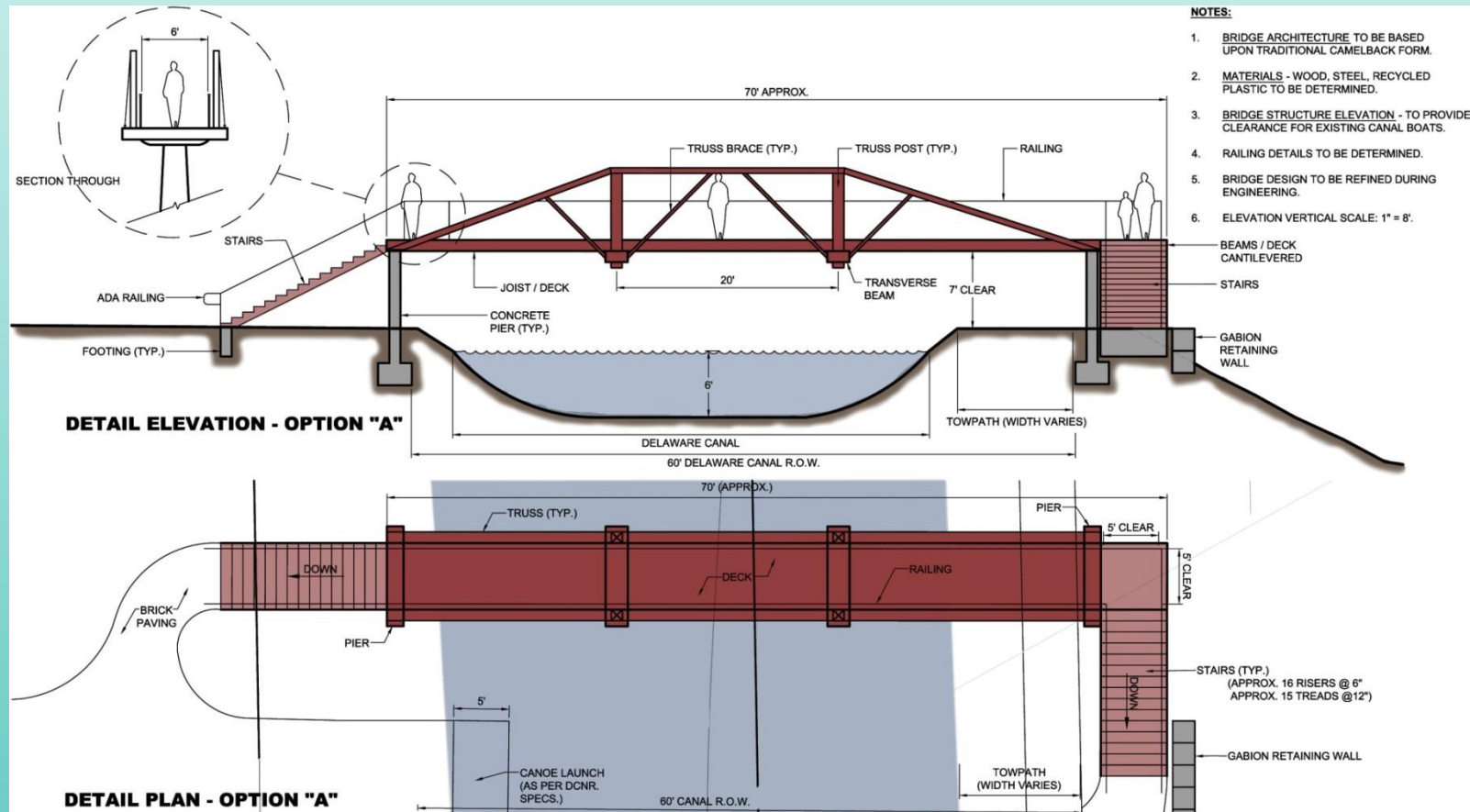


**LA Services**

*ADA alternatives analyses*

*Compliance justification to SHPO*

# Canal Park Bridge



**LA Services**

*Bridge architecture, specifications*

*Design collaboration with engineer*

# Canal Park Bridge

2006-2009

\$150,000  
Construction

## Funding

- DRJTBC
- Township

## Partner

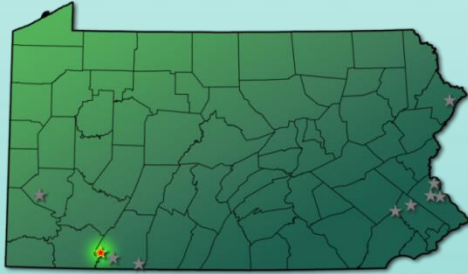
- DCNR



*NIMBYs now use the bridge*

# “OVER”

## Kings Covered Bridge



Middlecreek Township,  
Somerset County

### Obstacles:

X Physical

X Costs

X Bureaucratic

Rehabilitate historic transportation structure



*Eligible for the National Historic Register*

# Kings Covered Bridge



Before (*stabilized*)



After – *restored*

**LA Services**

*Funding strategy*

*Prime consultant to PennDOT*

*Bridge architecture, site design*

# Kings Covered Bridge

Before (*Stabilized*)



After – *Rehabilitated*



Acquired by non-profit from private owners for rehabilitation

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1997 – 2008

# Kings Covered Bridge

**\$90,000** Stabilization  
**\$0.865 M** Rehabilitation

## Funding Partners

- PennDOT – Enhancements \$
- FHWA – National Covered Bridge
- Commonwealth of PA
- Somerset County
- US Forest Service

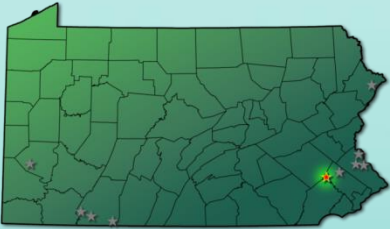
## Awards

Modjeski - Preservation PA, 2008



# Forty Foot Road Pedestrian Bridge

“OVER”



Towamencin Township  
Montgomery County

## Obstacles:

- X Physical
- X Costs
- X Bureaucratic
- X Nimbys

Build new pedestrian bridge over state highway



*State Route 63 (Forty Foot Road) at interchange  
of PA Turnpike NE Extension*

# Forty Foot Road Pedestrian Bridge

*called the “bridge to nowhere” by opponents*

## Strategies:

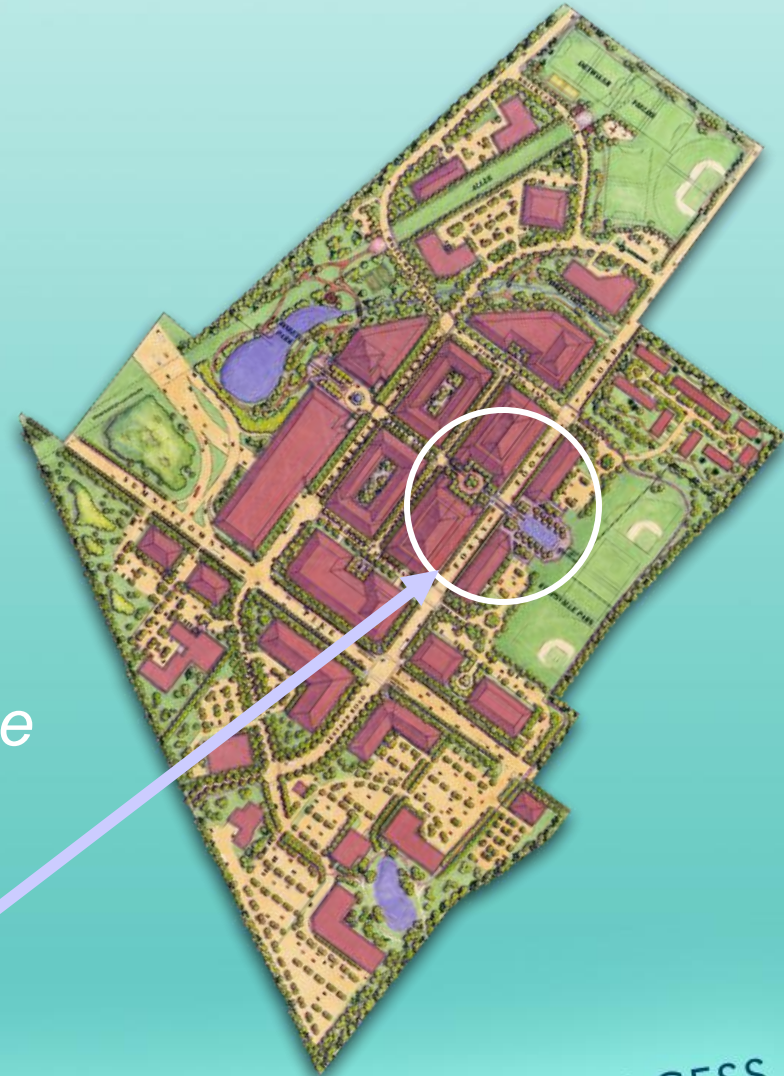
*Create walkable community*

*Depress highway horizontally*

*Create mid-block, non-motorized bridge*

*Design “context sensitive” civic icon*

**Bridge location**



# Forty Foot Road Pedestrian Bridge



Initial

Ultimate

*Economic studies informed  
highway design*

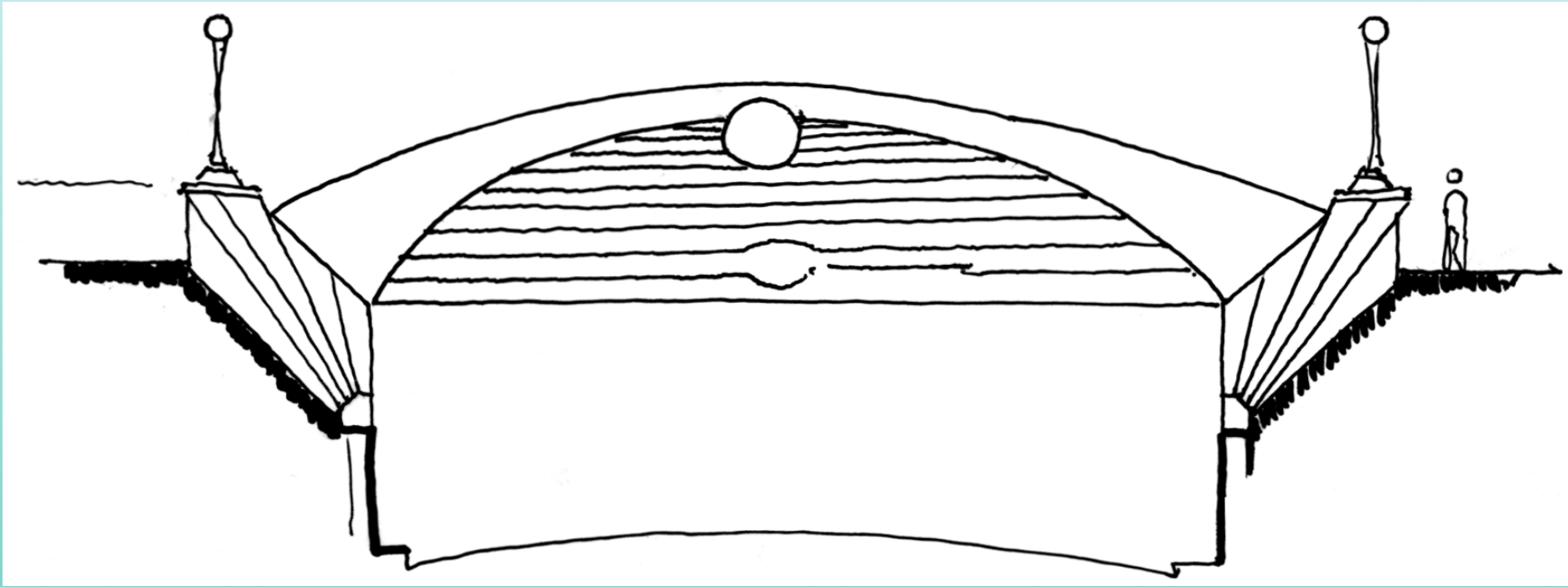


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# Forty Foot Road Pedestrian Bridge



## LA Services

*Town Center Recreation Plan*

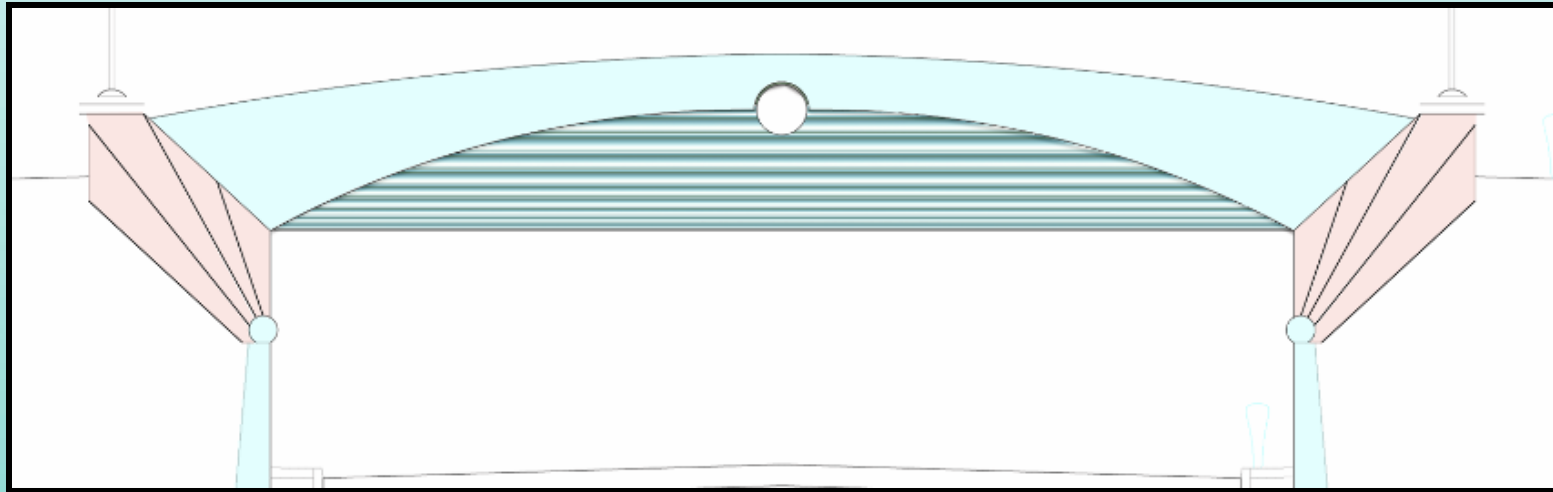
*Concept – depress and span highway*

*Bridge design, TC zoning overlay*

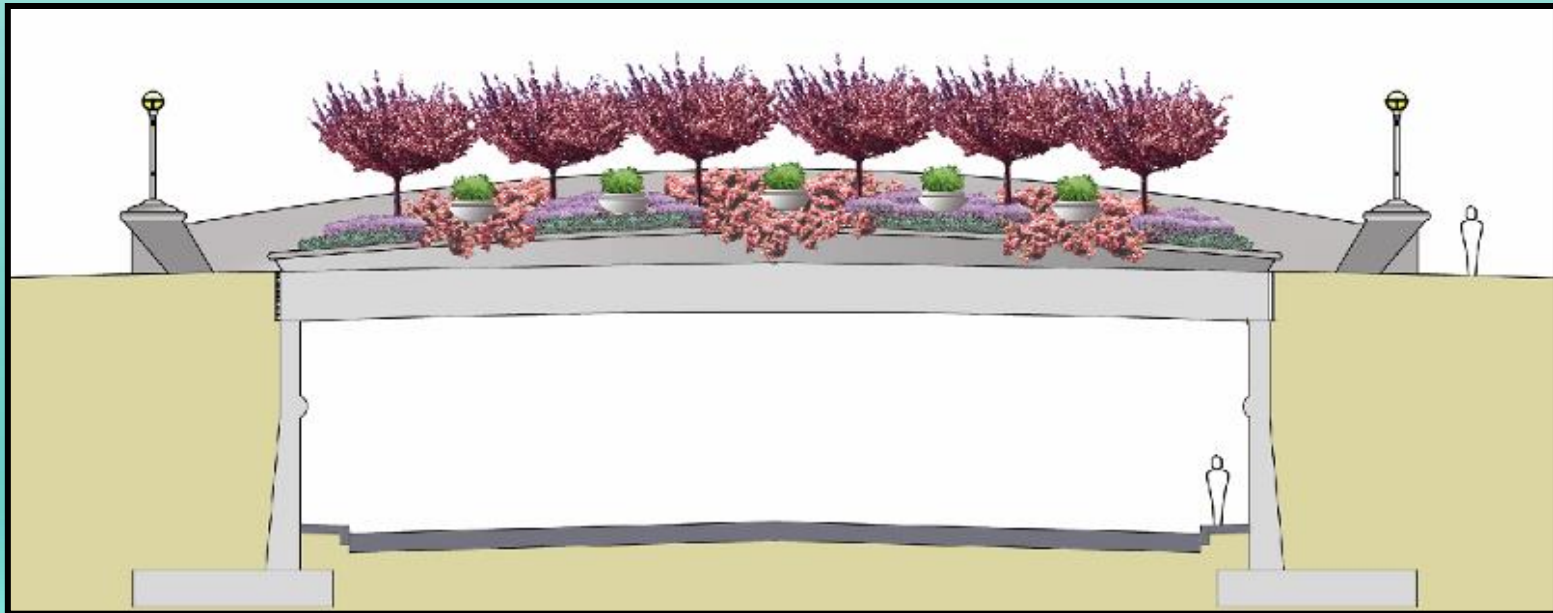
*Alternative alignment analyses*

# Forty Foot Road Pedestrian Bridge

*Art Deco  
motif  
integrated  
into  
structure*



*Cloistered  
pedestrian  
environment  
on deck*



LANDSCAPE ARCHITECTS AND THE TRANSPORTATION PLANNING PROCESS

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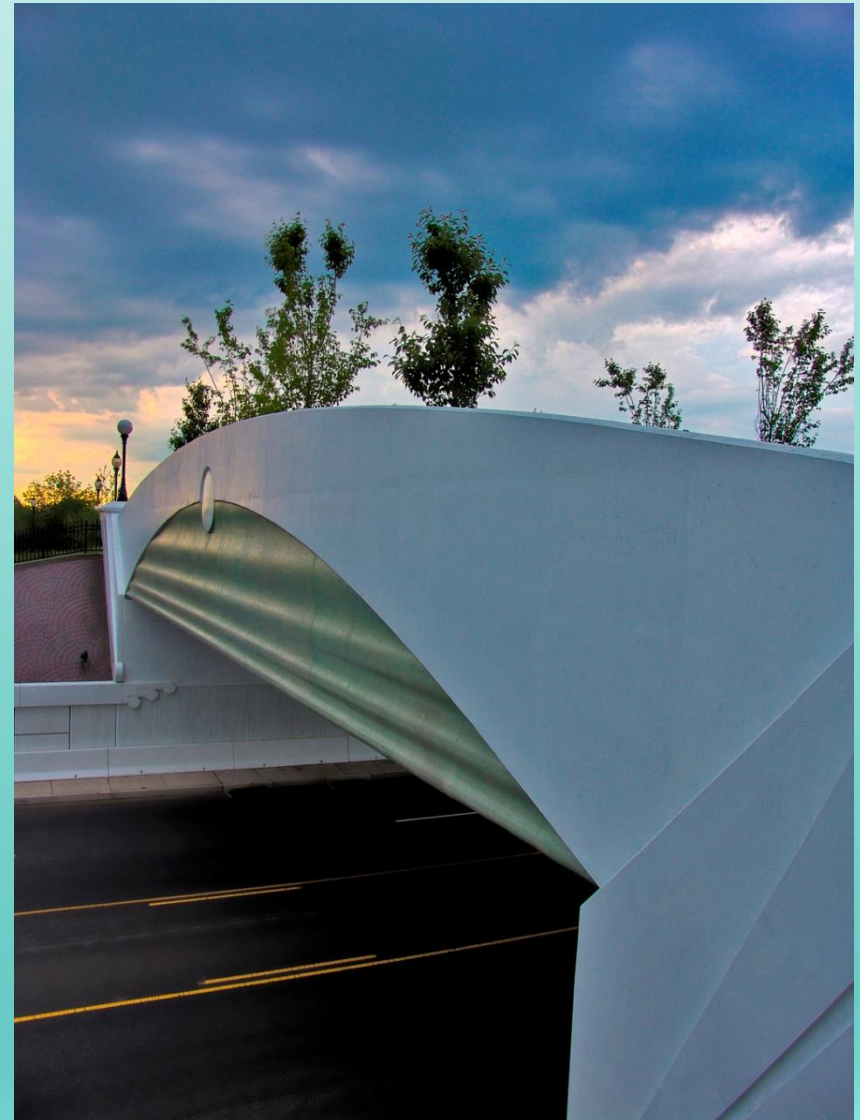
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# Forty Foot Road Pedestrian Bridge



*Bridge as a landscape structure*

*Feature concrete as a sculptural material*



# Forty Foot Road Pedestrian Bridge

1997 – 2008

**\$1M** – Bridge

**\$13M** – Roadway

## Funding Partners

- PennDOT / FHWA
- Towamencin Twp

## Awards

- National Concrete Bridge - PCA, 2008
- Project of the Year - ASHE, 2008
- Merit - ASLA PA/DE, 2009



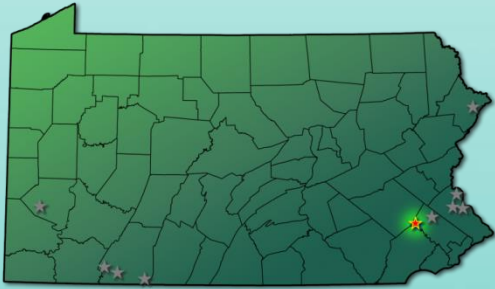


Under

# Pottstown Pedestrian Underpass

“UNDER”

Create pedestrian thoroughfare under active railroad



Pottstown,  
Montgomery County



# Pottstown Pedestrian Underpass

## Obstacles:

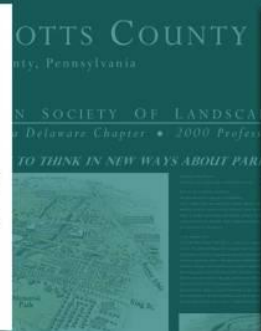
- X Physical
- X Costs
- X Bureaucratic

## Strategies:

*Adaptively reuse former millrace under active railroad*

*Create safe pedestrian link from town center to regional trail*

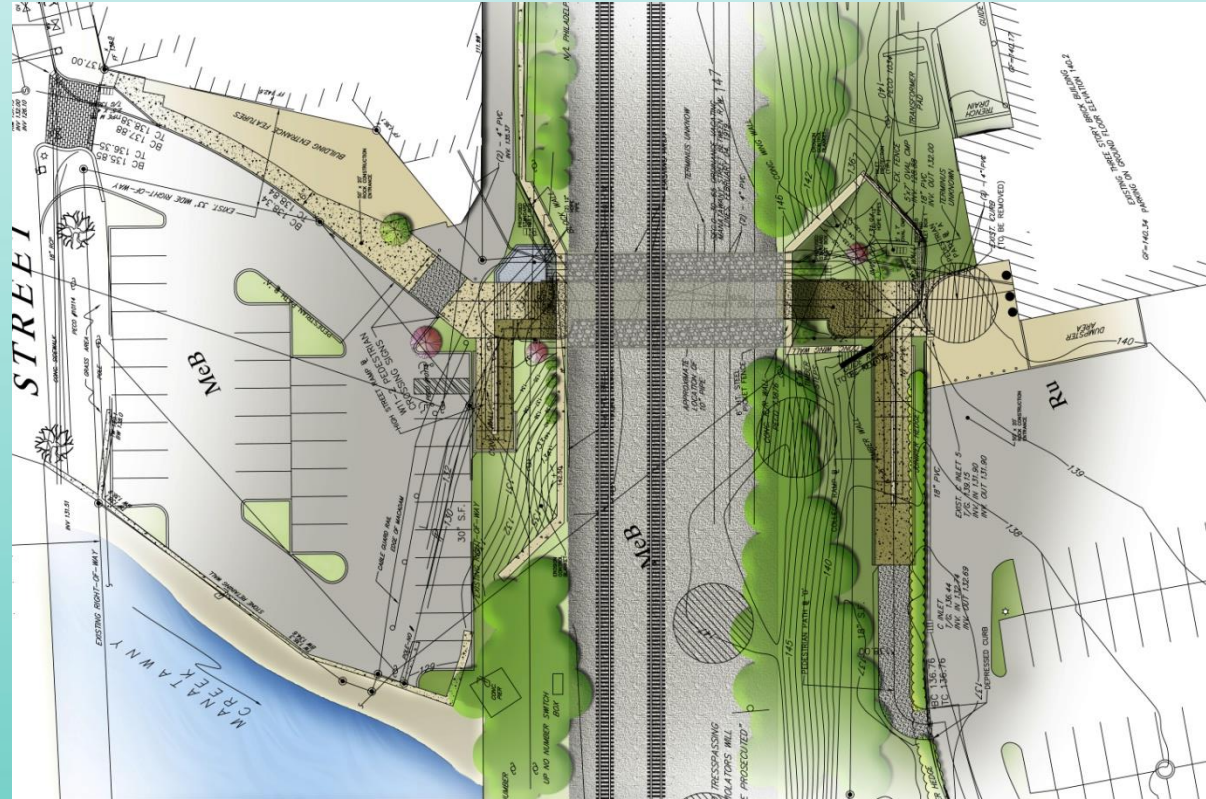
*Connect two halves of college campus*



# Pottstown Pedestrian Underpass



# Pottstown Pedestrian Underpass



**LA Services**

*Park master plans, funding strategy*

*Underpass architecture, site design*

*Compliance justification to SHPO*

# Pottstown Pedestrian Underpass

2000 – 2008

**\$1.08 M** – Rehabilitation

## Funding Partners

- PennDOT – TE \$
- PA DCNR
- Montgomery County

## Awards

- Revitalization - MCPC, 2008
- Project of the Year - ASHE, 2008

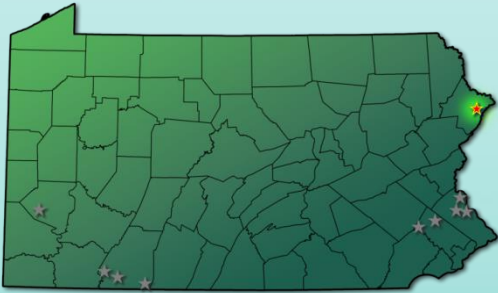




# Through

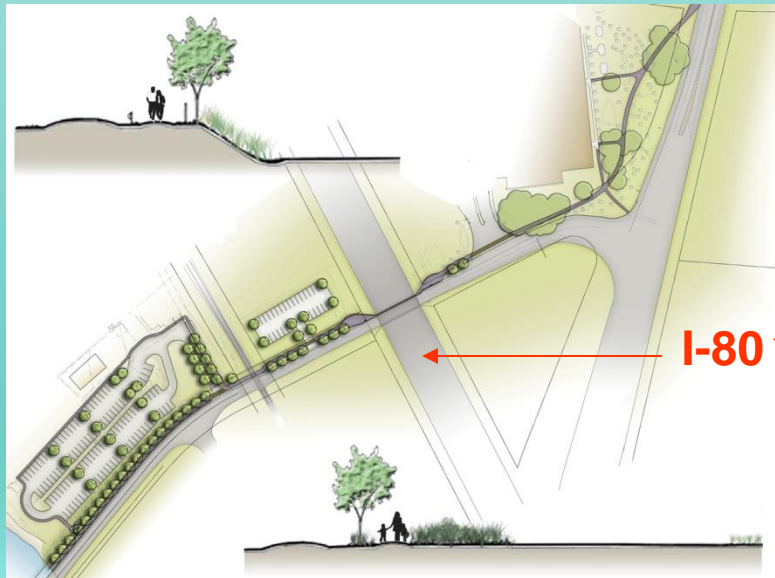
# “THROUGH”

# Minisink Greenway Trail



Smithfield Township  
Monroe County

Create pedestrian walkway thru existing overpass



*Link between Appalachian Trail – NPS McDade Trail*

# Minisink Greenway Trail

## Obstacles:

**X Physical**

**X Costs**

**X Bureaucratic**

**X “Friends”**

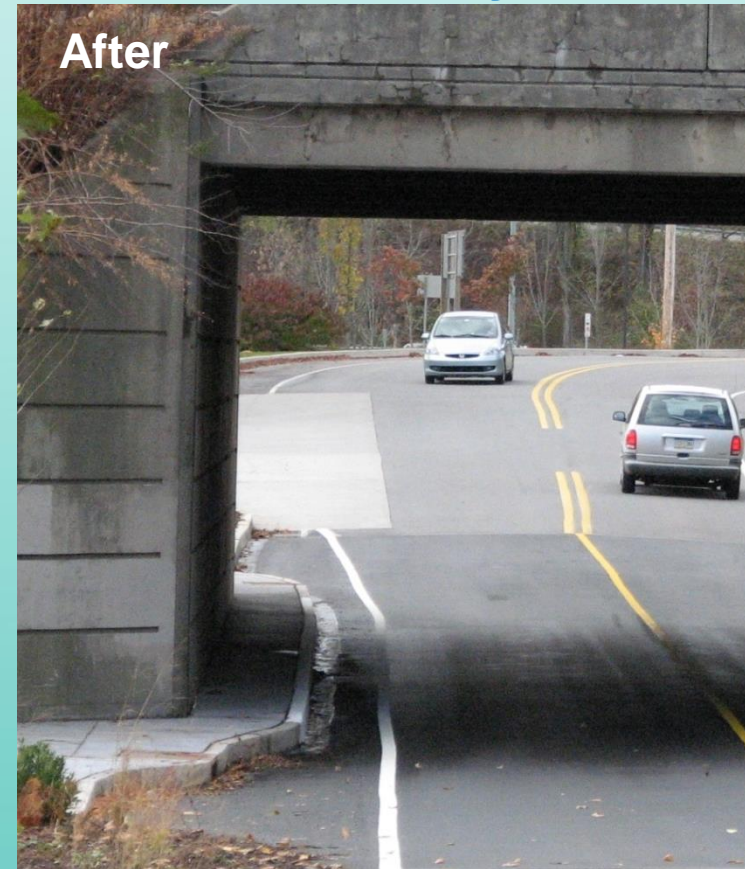
Before



After



# Minisink Greenway Trail



## LA Services

*Trail plan, funding strategy, grant application*

*Thoroughfare / trail design / documentation*

*PennDOT negotiation*

# Minisink Greenway Trail



Concept



Built

# Minisink Greenway Trail



*3-foot sidewalk = 11 years*



1997 – 2008

**\$0.8 M** – Rehabilitation

### Funding Partners

- DRJTBC
- Commonwealth of PA

### Client

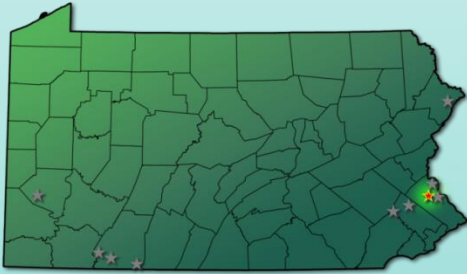
Smithfield Township

# Minisink Greenway Trail



# “THROUGH”

## Solebury Route 32 Trail



Solebury Township  
Bucks County

Obstacles:

**X Physical**

**X Costs**

**X Bureaucratic**

Retire a lane of the state scenic highway for a new bike trail



# Solebury Gateway Trail



**Strategies:** Road diet, stormwater bioswale, trail

2005 – 2008

**\$1.9 M – Total Project**

### Funding Partners

- DRJTBC
- Solebury Township
- PennDOT
- PA DCNR
- PA DCED

## LA Services

*Concept strategy / funding strategy*

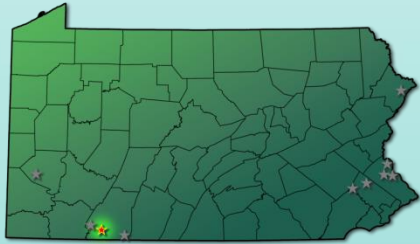
*Grant applications, site design*

# Solebury Gateway Trail



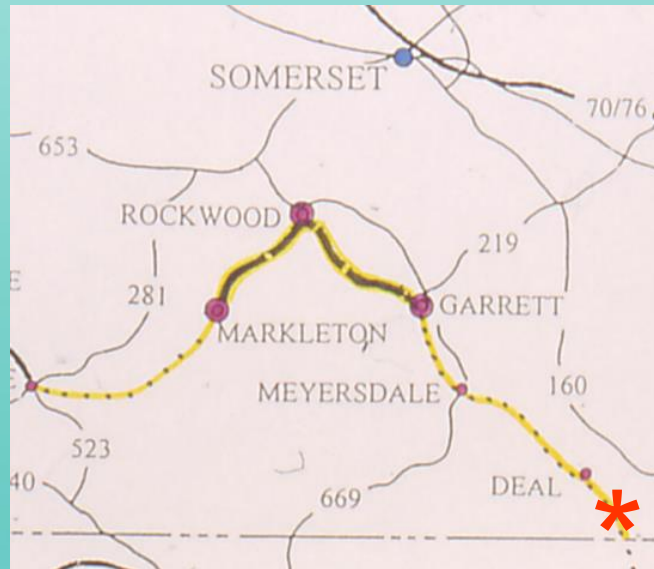
# “THROUGH”

## Big Savage Tunnel



Mason Dixon Line  
Somerset County

Rehabilitate former railroad tunnel for interstate trail



Great Allegheny Passage (GAP)

# Big Savage Tunnel

## Obstacles:

X Physical

X Costs



## Strategies:

Analyze alternative routes

Rehabilitate former RR structure

# “THROUGH”

## Big Savage Tunnel



Completed – *new liner, drainage, lighting, doors, trail*

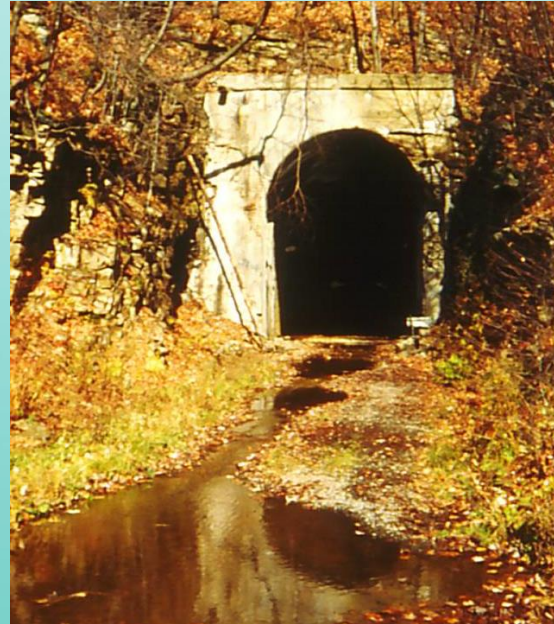
1997 – 2003

# Big Savage Tunnel

**\$12 M** - Rehabilitation

## Funding Partners

- Commonwealth of PA
- National Park Service
- Allegheny Trail Alliance
- USDA Forest Service
- Somerset County



# Thank you

## Contact

Brian J. Lavery

[blavery@sabra-wang.com](mailto:blavery@sabra-wang.com)

John Dempsey

[dempsey@tooledesign.com](mailto:dempsey@tooledesign.com)

Stephen Luoni

[sluoni@uark.edu](mailto:sluoni@uark.edu)

William Collins

[wcollins@simonecollins.com](mailto:wcollins@simonecollins.com)

# LANDSCAPE ARCHITECTS AND THE TRANSPORTATION PLANNING PROCESS

Simone Collins  
Landscape Architecture

APA Webinar July 24, 2015