How can landscape architects aide in transportation planning process?

John Dempsey, PLA
Toole Design Group
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What is Landscape Architecture?

Landscape Architecture 1863
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 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
- 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
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

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Rails to Trails
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Landscape Architecture & Transportation

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Underpasses
Waterways
Waterways
Waterways
Transportation for All
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-
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.
The Evolution of Main Street Little Rock
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.
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.

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.
Create Gateways

The first thing we do is create gateways.
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.
Gateways are the first rooms in the plan’s incremental design approach and they’re easy to do immediately.
**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.
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

- Physical
- Costs / funding
- Bureaucratic
- Nimbys
- 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
Tohickon Aqueduct
Delaware Canal National Landmark
Delaware Canal State Park

Rehabilitate historic transportation resource

Point Pleasant, Bucks County

1992

2001
Obstacles:

- Physical
- Costs
- Bureaucratic
- Friends

Strategies:

- Modern timber structure
- Traditional bridge truss system
- Innovative materials, reuse stone
- Alternative funding partners
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**

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

Delaware Canal National Landmark
Delaware Canal State Park

Create new bridge over the canal

**Obstacles:**
- Physical
- Nimby
- 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
Canal Park Bridge

LA Services

- Master planning, historic research
- Funding strategy, grant applications

Simone Collins
Landscape Architecture

LANDSCAPE ARCHITECTS AND THE TRANSPORTATION PLANNING PROCESS

APA Webinar July 24, 2015
Canal Park Bridge

LA Services  Structure simulations, park and trail design
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

Rehabilitate historic transportation structure

Middlecreek Township, Somerset County

Obstacles:

X Physical
X Costs
X Bureaucratic

Eligible for the National Historic Register
Kings Covered Bridge

Before (stabilized)

LA Services

After – restored

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
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”

Build new pedestrian bridge over state highway

Towamencin Township
Montgomery County

Obstacles:

X Physical
X Costs
X Bureaucratic
X Nimbys

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

Economic studies informed highway design
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
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

Before

Concept

After
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
Minisink Greenway Trail

Create pedestrian walkway thru existing overpass

Link between Appalachian Trail – NPS McDade Trail
Obstacles:

- **X** Physical
- **X** Costs
- **X** Bureaucratic
- **X** “Friends”

Before

![Before image of Minisink Greenway Trail]

After

![After image of Minisink Greenway Trail]
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
Minisink Greenway Trail

1997 – 2008

$0.8 M – Rehabilitation

Funding Partners

• DRJTBC
• Commonwealth of PA

Client

Smithfield Township
“THROUGH” Solebury Route 32 Trail

Solebury Township
Bucks County

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

Obstacles:
X Physical
X Costs
X Bureaucratic
Solebury Gateway Trail

**Existing**

**Proposed**

**Strategies:** Road diet, stormwater bioswale, trail
Solebury Gateway 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
Big Savage Tunnel

Rehabilitate former railroad tunnel for interstate trail

Great Allegheny Passage (GAP)
Big Savage Tunnel

Obstacles:
- Physical
- Costs

Strategies:
- Analyze alternative routes
- Rehabilitate former RR structure
“THROUGH”

Big Savage Tunnel

Completed – new liner, drainage, lighting, doors, trail
1997 – 2003

$12 M - Rehabilitation

Funding Partners

• Commonwealth of PA
• National Park Service
• Allegheny Trail Alliance
• USDA Forest Service
• Somerset County
Thank you

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