



Parking and Site Circulation – Everything but the Kitchen Sink!

Dutchess County Planning Federation

Thursday May 25th 6-8pm
DC Farm and Home Center, Millbrook NY

 DELAWARE ENGINEERING, D.P.C. Dutchess County Planning Federation, May 25, 2023

Agenda

- Speaker Introductions
- Training Format – *Interjection Encouraged!*
 - Classroom-style instruction
 - Hands-on activity
- Classroom: Discussion of Best Practices in Parking Features
- Hands-On: Mini Site Plan Review Exercise
- Parking Philosophy – chicken/egg = cars/parking?
- Take-Aways from Today's Session



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Best Practices in Parking Features

- EV Charging
- Shade
- Non-Reflective Materials
- Porous Pavement
- Multi-Modal Accommodations
- Integrating Humans AND Vehicles
- Emergency Access



Best Practices in Parking Features: EV Charging



Above, an electric vehicle charging station installed at the Dutchess County Office Building in the City of Poughkeepsie. Other charging station locations include the Beacon Government Center in the City of Beacon and the Village Hall in Tivoli. A fourth station is slated to be operational near the Village Hall in Poughkeepsie later this summer.

Best Practices in Parking Features: Shade

- Solar Canopies
- Landscaping
 - Determine applicable requirements (e.g., zoning laws)
 - Planting plan/landscaping schedule (shading plan?)
 - Plant/tree selection (e.g., height, root structure, nutrient/water/salt tolerance needs, leaves/berries, native vs. nonnative vs. invasive, deer resistance)
 - Performance guarantee
 - Growing season issues
- Siting considerations/urban geometry
- Considerations: Cost, maintenance, snow/ice operations

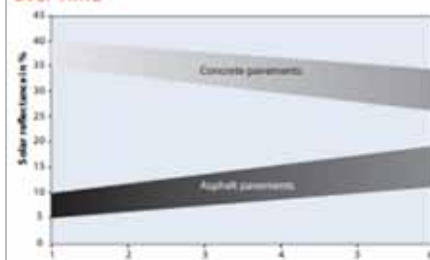


Best Practices in Parking Features: Reflective Pavements

- **Urban heat island effect:** low solar energy reflection + high thermal storage = increased temperature in urban environments
- **Solar reflectivity (Albedo)** and Thermal Emittance
- **“Cool Pavements”:** different asphalt/concrete recipes, coatings, grass pavers and other porous pavement types
- **Issues:** reflective properties diminish over time, snow & ice operations, maintenance requirements, urban geometry, air temperatures and human comfort effects

Source: USEPA, “Reducing Urban Heat Islands: Compendium of Strategies Cool Pavements,” https://www.epa.gov/sites/default/files/2017-05/documents/reducing_urban_heat_islands_ch_5.pdf

Figure 4: Typical Solar Reflectance of Conventional Asphalt and Concrete Pavements over Time



Due to weathering and the accumulation of dirt, the solar reflectances of conventional asphalt and concrete tend to change over time. Asphalt consists largely of petroleum derivatives as a binder mixed with sand or stone aggregate. Asphalt tends to lighten as the binder oxidizes and more aggregate is exposed through wear. Concrete also uses sand and stone aggregate, but in contrast to asphalt, typically uses Portland cement as a binder. Foot and vehicle traffic generally dirty the cement causing it to darken over time.

Best Practices in Parking Features: Porous Pavement

- Types
- Soils requirements
- Maintenance requirements



Best Practices in Parking Features: Integrating Humans *and* Vehicles

- Parking lot safety and mobility
 - Avoid points of conflict, including between modes
 - Signage, striping, countermeasures (e.g., speed tables)
 - Separate pedestrian ways
- Accessibility
 - ADA Standards for Accessible Design
- Site in context – space and time







Best Practices in Parking Features: Multi-Modal Accommodations+

- Pedestrians, bicyclists
- Freight and goods movement needs (trash hauling, truck parking...)
- Transit
 - Stops
 - Shelters
 - Routes
 - Service agreements
 - Coordinated reviews
 - (case study next slide)
- Parking need reduction: transit passes, staggered work schedules, shared parking, and banked parking



Case Study: Bus Shelters In Practice



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Case Study: Bus Shelters In Practice

Opportunities

- ✓ Developer interested/willing to fund
- ✓ Bus authority, NYSDOT support
- ✓ NYSDOT capital project synergy
- ✓ Town interested in transit/multi-modal enhancements
- ✓ Major intersection with destinations, 275 new apartments, relatively high ridership

Challenges

- Evolution from a Developer to a NYSDOT Capital Project
- Different actors involved, scarce resources
- Different perceptions of safety (substantive vs. nominal)
- Relationships among levels of government/agencies
- Infrastructure path dependency



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Best Practices in Parking Features: Emergency Access

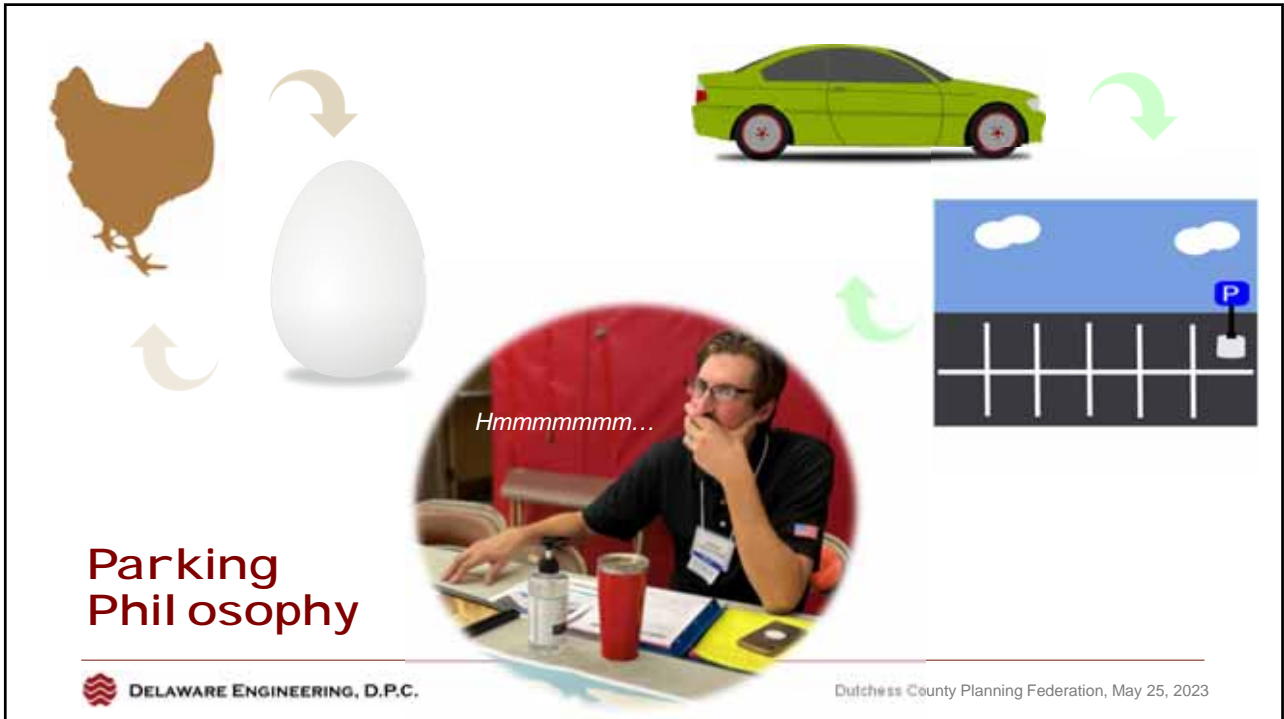
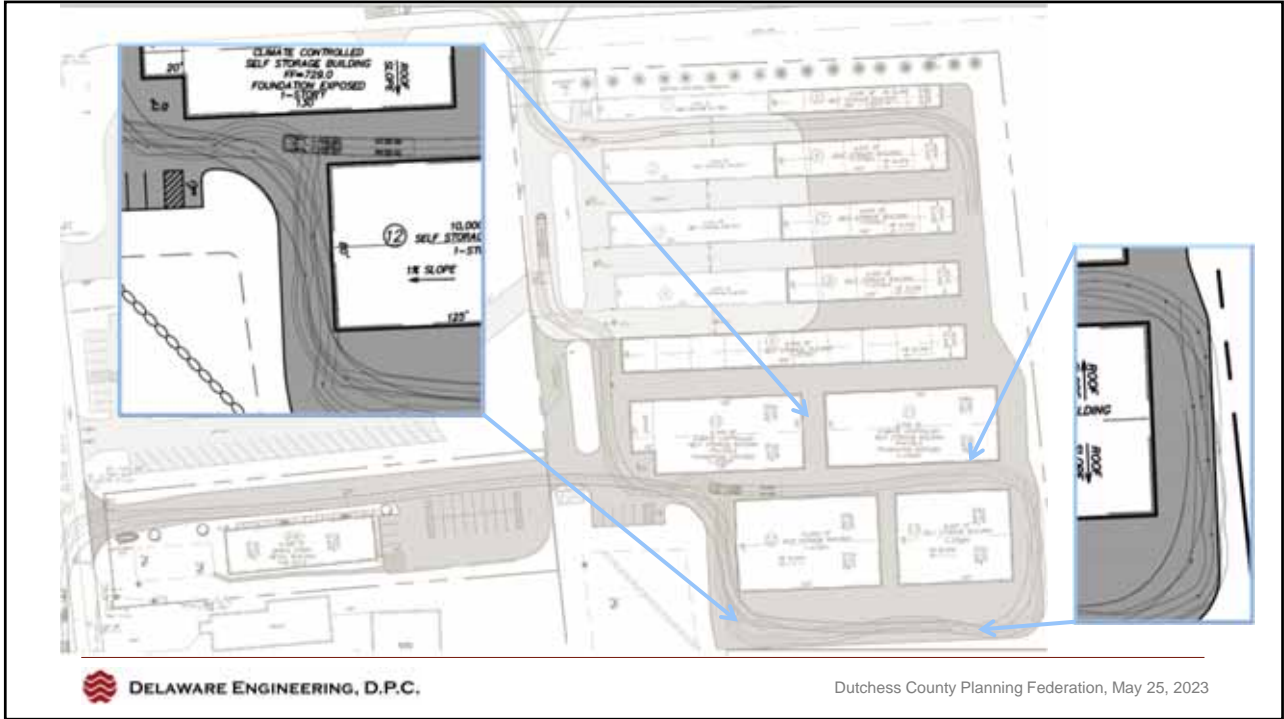
The complex block contains three photographs and a technical diagram. The top-left photograph shows a parking lot with a blue circle highlighting a specific area. The bottom-left photograph shows a parking lot with a blue arrow pointing to a specific area. The right side of the block features a technical diagram of a parking lot layout with a fire truck overlaid. The diagram includes a table of dimensions for the fire truck.

Amsterdam Fire Truck	
Overall Length	31.700'
Overall Width	8.330'
Overall Body Height	10.480'
Min. Body Ground Clearance	0.915'
Track Width	8.900'
Lock-to-lock time	4.03'
Curb-to-Curb Turning Radius	58.83'

Outer Limits of Wheel Path
Outer Limits of Vehicle Body

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Take-Aways

- Intersections among best practices – e.g., cool pavements and stormwater management
- Maintenance trade-offs
- A few common site plan components included with the plans can greatly aid evaluation of circulation and how other objectives are met
- Coordination with involved officials and agencies
- Site in context, both space and time
- Site- and plan-specific application of principles
- “Culture of parking” ↔ site-by-site decision-making