POROUS PAVEMENT

“A GREEN STEP FORWARD”

OTEC 2009
Owner:
Transit Authority of Northern Kentucky
Andrew Aiello - Deputy General Manager

Contractor:
Eaton Asphalt Paving Company, Inc.
Anthony Ridgeway – Construction Manager

Engineer:
KZF Design Inc.
Henry L. (Hank) Fedders – Project Manager

Storm Water Permitting & Monitoring:
SD#1
Craig Frye – Assistant Project Manager
project
October 2005 - TANK issues RFP for a design/build project for two Park & Rides.

Mt. Zion Road in Boone County – 75-150 parking spaces and Ft. Wright adjacent to TANK facility – 150-250 parking spaces.

KZF and Eaton Asphalt Paving Co. partnered to submit bids for both projects and the team was selected for both projects.
design
Green= Porous Pavement
Blue= Non-porous Pavement
Porous Pavement Design

6” Open-Graded HMA with PG 76-22

Aggregate Interlayer 6” Thick (#8 stone)

24-36” of #2 Stone

Non-Woven Geotextile Fabric

Uncompacted Soil Subgrade

Recharge Bed
Design Challenge

- 36” CMP storm pipe from KY 17 outlet extended under the entire lot.
• Monitoring device on outlet pipe from control structure.
• Flow baffle.
construction
• Future site of Park & Ride was gravel and vegetated terrain.
6” Open-Graded HMA with PG 76-22

Aggregate Interlayer 6” Thick (#8 stone)

24-36” of #2 Stone

Non-Woven Geotextile Fabric

Uncompacted Soil Subgrade

Recharge Bed
• Trucks kept off of subgrade to avoid further compaction.
• Soil composition affects design of pavement system.
- TOPCON GPS system used to establish level grade.
• Park & Ride had to be tied in with KyTC Highland Ave extension being constructed at the same time.

• Design/Build made it easy to make design changes on the fly for the tie in.
completion
• Pervious pavement.
• Pervious pavement vs Standard Pavement.
Before & After
Before

Point of Reference
• Completed facility.
• Newly designed shelters, decorative lighting and landscaping.
storm monitoring
Monitoring Efforts
• Quantity
### Volume Reduction

<table>
<thead>
<tr>
<th>Rainfall (in)</th>
<th>Rainfall (gal)</th>
<th>Measured Runoff (gal)</th>
<th>Infiltration/Evaporation (gal)</th>
<th>Percent Volume Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.70</td>
<td>24,000</td>
<td>6,000</td>
<td>18,000</td>
<td>75%</td>
</tr>
</tbody>
</table>
- Peak Flow Reduction
Contact Information

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