

Sustainable Storm Water Management

An Applied Learning Activity at Nassau Community College

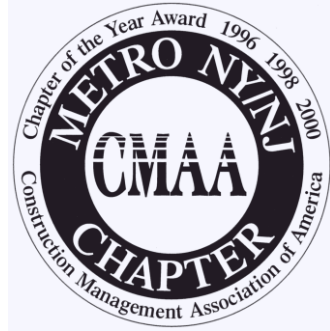




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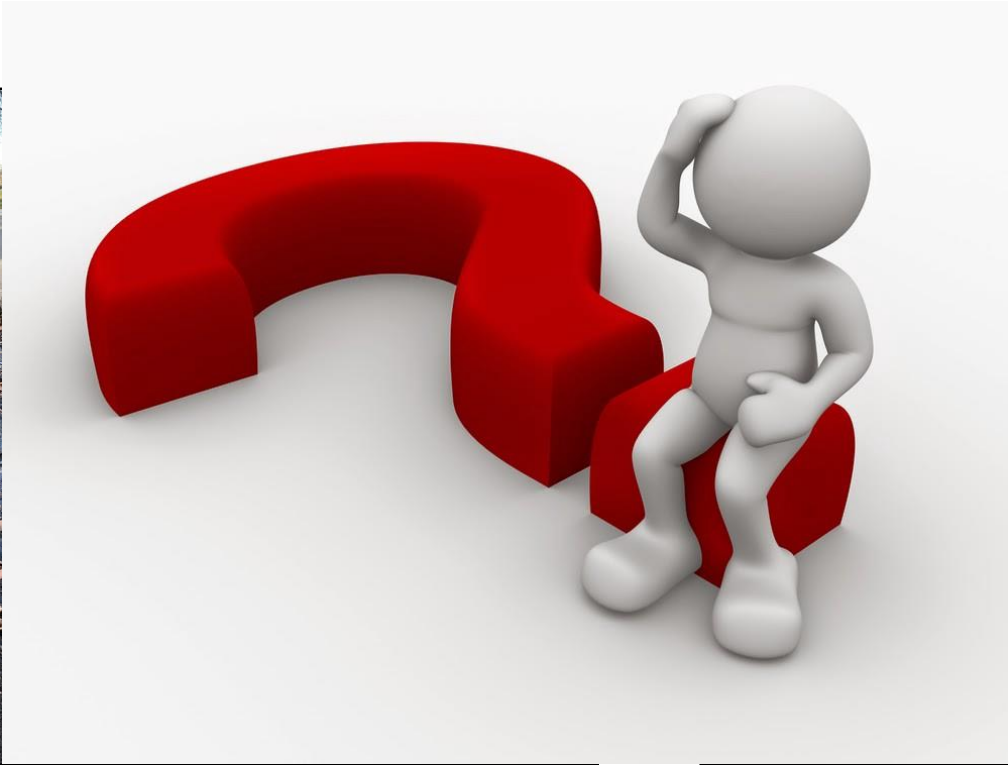
Associate Professor Engineering/Physics/Technology
Nassau Community College





CMAA (Construction Management Association of America)

ASCE (American Society of Civil Engineers) Student Clubs



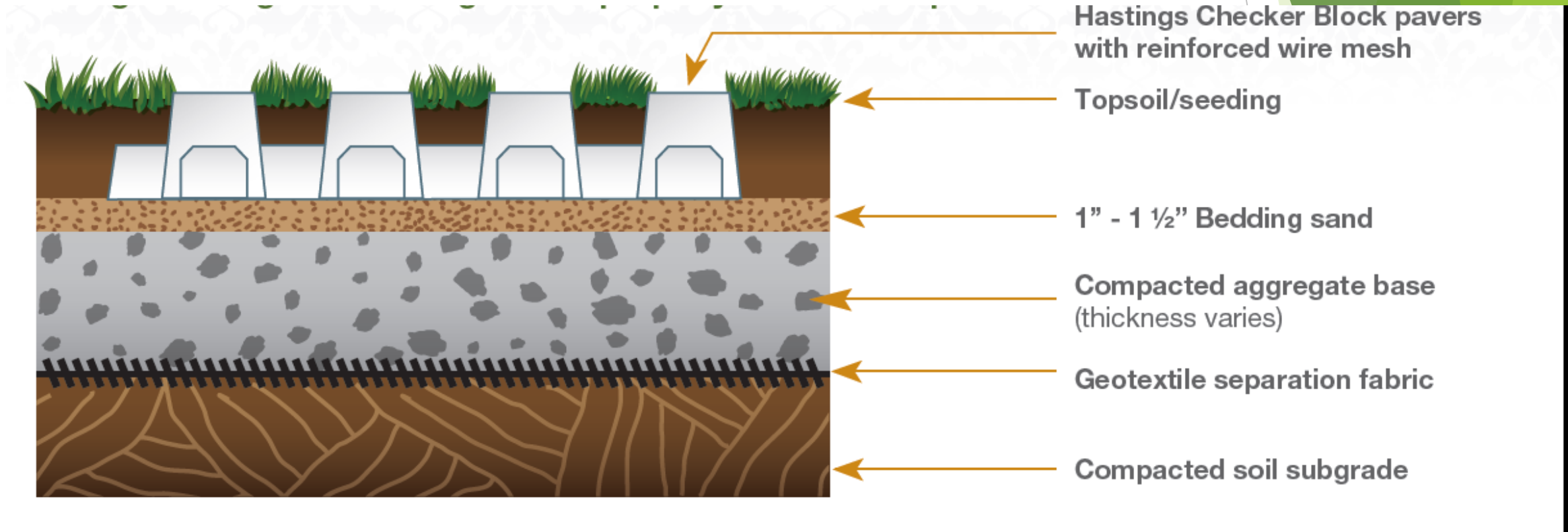
Premature Asphalt Deterioration

SOLUTION:

Applied Learning Activity - Checkerblock Pavers



Checkerblock Pavers - Structural Support and Sustainable Storm Water Management





Service to the College Community
Joe Muscarella, VP of Design and Construction



FSA - The Faculty Student Association -
\$2000 for the materials.

Luckily we had Contractors on campus working on a parking lot project.

Labor - Students and Contractor

Guidance - Construction manager, faculty, and project manager

How do you complete an Applied Learning Activity with 40 students in 2 ½ hours ?

Coordination is the key of Success

Fall 2017 Semester - 10 hours

Faculty and Project Manager

Faculty and Students

Spring 2018 Semester - 20 hours

Project Manager, Faculty, and Construction Manager (CM)

One Week Prior - Area Prepped - Heavy Labor

CM, Faculty, and Contractor (2 Machine Operators and 1 Laborer) -
(3 Hours on site)

Day of Applied Learning Activity

Civil Engineering and Construction Management Students, CM, and Faculty

(2 ½ Hours on site)

Process began during Fall 2017 Semester



Planning
Took the
Longest!

Construction
was quick!

Two weeks prior to construction materials were ordered by faculty and delivered to the site



One week prior to applied learning activity
Construction begins with the Contractors.



Marked 32' long x 4' wide adjacent to asphalt pathway.



Excavation





Sprinkler Line in the way



Cut metal edging with a saw.





Recycled crushed aggregate from NCC parking lot project.





Compact RCA



End of Day 1 -
Sprinklers
needed to be
rerouted.



2 days later -
Sprinkler
rerouted by NCC
landscapers.



1 week later -
Day of Applied Learning
Activity -
Procedure explained to
40 students.



Prepped Area
measured before
paver placement.



Students worked in teams to place pavers adjacent to prepped area



Excavated area
prepped for
placement of
pavers



Sand placed for leveling



Toughest part
getting the
first paver
correct



Process of trial and error.



Placing more sand and smoothing out to make sure first paver is level.



Placing first paver again



More Sand
smooth out
again



Finally first 2 pavers are in.



Remainder of project goes quicker.



Topsoil









Seed



Well
deserved
lunch and
reflection



SAMPLE STUDENT REFLECTIONS

“Today was great. I love learning in and outside of the classroom. Bringing the work into real life is awesome!”

“This project was important as it taught us how to work better with other people and how to properly lay down concrete pavers.”

“Today I learned how to level the dirt to lay pavers. I love learning in and outside the classroom to get a real life experience. This gives me a feel for what is involved in this field of work.”

“Today’s community service project helped me to learn how to level out grass when the pavers are put in. We put pavers to help water flow into the ground easier to prevent flooding.”

Completion of Applied Learning Activity





Six weeks
later...



Three & a
half months
later...



Project Success

Today
Five months later...

Grass fully grown in.
No flooding. No mud.

