

PROFESSIONAL DEVELOPMENT



ASIA

In response to reader demand, ASLA is offering professional development hours based on a *Landscape Architecture* article. Please send comments or suggestions for improvement to Ron Leighton at rleighton@asla.org.

INSTRUCTIONS: Read the article "Cooling the Blacktop" on page 54. Answer the questions below on the form on the next page. Submit your answers along with the reporting form and payment to ASLA Continuing Education.



1. Which of the following does not contribute to the urban heat island effect?

- A** asphalt highway
- B** shingle roof
- C** tree
- D** gray concrete sidewalk

2. How does the EPA Heat Island Reduction Initiative define the urban heat island effect?

- A** a measurable increase in ambient air temperatures resulting from smog formation from industrial air emissions
- B** a measurable increase in ambient air temperatures resulting from increased use of energy
- C** a measurable increase in ambient air temperatures resulting from the replacement of vegetation with buildings, roads, and other heat-absorbing infrastructure

3. Which of the following are some potential benefits to porous asphalt?

1. lower albedo than nonporous asphalt
 2. reducing thermal pollution of runoff
 3. lower costs
 4. reduced tire noise
 5. higher design speeds
 6. increased traction
- A** 2, 5, 6
 - B** 1, 2, 3, 4, 5
 - C** 1, 2, 4, 6
 - D** all of the above

4. The "urban canyon" effect reduces nighttime radiational cooling since release of long-wave radiation requires access to the sky.

- A** false
- B** true

5. The urban heat island effect can elevate temperatures as much as _____ percent higher than surrounding rural areas.

- A** 3%
- B** 5%
- C** 12%
- D** 8%

6. Which of the following affect(s) a pavement's contribution to the urban heat island effect?

1. albedo
 2. surface reflectance
 3. pavement composition
 4. relationship to a building
 5. relationship to trees
- A** 1, 2
 - B** 1, 3, 5
 - C** 3, 4, 5
 - D** all of the above

7. Other heat island mitigation strategies such as cool roofs, green roofs, and increased vegetation have more regulatory support because:

- A** there is more research documenting their benefits
- B** they are more effective than cool paving

- C** they provide more direct building HVAC benefits
- D** a and c
- E** b and c
- F** all of the above

8. According to the USGBC's LEED Reference Guide, which material has the highest albedo?

- A** new asphalt
- B** old asphalt
- C** gray Portland cement concrete
- D** white Portland cement concrete

9. Which is a drawback to using white Portland cement concrete for a plaza pavement?

- A** higher cost
- B** increased glare
- C** can show dirt and oil
- D** all of the above

10. Pavements can comprise between 29 and 45 percent of land cover in urban areas.

- A** false
- B** true

11. The solar reflectance index (SRI) combines which into a single value?

- A** albedo and pavement thickness
- B** pavement thickness and emittance
- C** albedo and emittance
- D** pavement shading and albedo

12. Which standard defines calculation methods for SRI?

- A** ASTM E560
- B** ANSI C2100
- C** ISO E440
- D** ASTM E1980

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Program title: "Cooling the Blacktop," (2/07, page 54)

This article is worth one professional development hour of health, safety, and welfare credit. (Valid for credit through February 2009.)

DIRECTIONS: Select one answer for each question in the exam and completely circle the appropriate letter. A minimum score of 70% is required to earn credit.

Circle Answers Here

1. A B C D	7. A B C D E F
2. A B C	8. A B C D
3. A B C D	9. A B C D
4. A B	10. A B
5. A B C D	11. A B C D
6. A B C D	12. A B C D

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