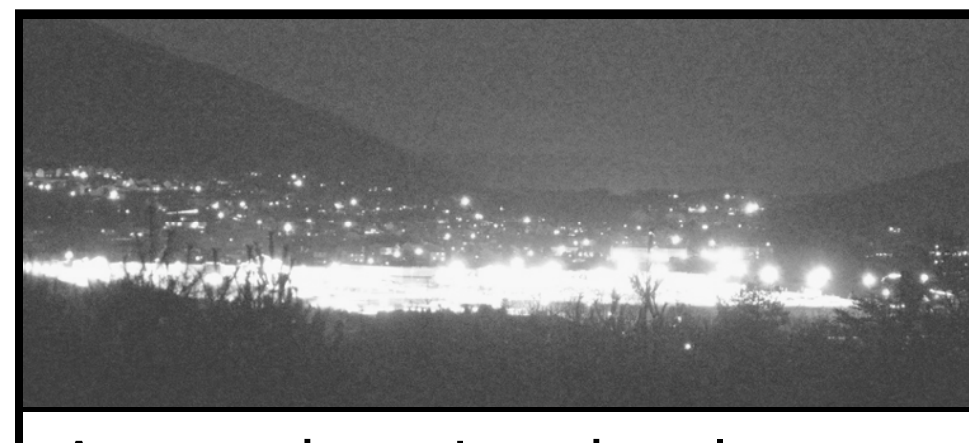


## “Quality of Light ... Quality of Life”



A new shopping development near National Park land.

Our night skies, enjoyed and appreciated by countless generations of people, are in jeopardy of disappearing due to the yellow pallor of light pollution. Each year, the night sky becomes slightly brighter and less stars are visible.

**1** But it does not need to be that way. There are sensible, economical ways to prevent the unnatural night from spreading. Proper outdoor lighting methods can greatly reduce sky glow while maintaining safety and providing economic benefits.



This shielded, down directed light happened because one person spoke up.

**2** When using “normal” standard light fixtures, too much light is directed upwards causing the sky to become brighter. Shielded fixtures direct their light downwards where it is needed, not wastefully into the sky. Since all of the desired area, lower wattage bulbs can be used, saving electricity — and money!



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Bright store lighting easily distracts drivers.

**3** Shielded fixtures also give the added benefit of reducing annoying, if not dangerous, glare. How many times have you been temporarily blinded while driving past an overly lit store or gas station? Shielded fixtures help prevent glare by blocking light from directly entering your eyes, making it easier to see when driving.

**4** Too often, homeowners ineffectually and wastefully use outdoor lighting as a means to prevent crime and increase safety. Why would someone use bright, harsh lights that create dark shadows easily concealing a

**“When talking about light pollution, people think of two things: Crime & Safety, and ‘Hey! Let me tell you about my neighbor’s light!’”**

proowler? Nobody knows the property better than the homeowner, so why illuminate the area for the intruder to see better? Properly shielded and correctly directed lights reduce glare revealing what lies in the shadows.



Can you see the man standing in the shadow?

**5** Only people affect change!

- Be part of the solution to bring back our night sky!
- install shielded fixtures with lower wattage bulbs,
  - use motion sensors where it’s appropriate,
  - turn off any lights when they’re not needed.

**“The Right Amount of Light, Directed at the Right Place, for the Right Amount of Time”**



Astronomical League  
www.astroleague.org

Where have all the stars gone?

## Our Unnatural Night



Courtesy of NOAA/NGDC/DMSP

Lighting wastefully directed upwards easily shows the population centers of the United States.

### How lighting and light pollution affect our quality of life ...

**1** What percentage of the population in the United States can not discern the Milky Way?

- a. 10%
- b. about 50%
- c. greater than 67%

**2** How many stars are typically seen from a dark country location? How many from a large city?

- a. 500, 100
- b. about 1 million, 1000
- c. 2000, less than 100

**3** About how many birds are killed annually in the United States due to the effects of bad outdoor lighting?

- a. 100 million
- b. 1 million
- c. 10,000

**4** About how much does a typical dusk to dawn fixture cost the power company? About how much does the power company charge to keep it lit every night all year?

- a. \$30, \$70
- b. \$1000, \$30
- c. \$10, \$10

**5** In general, when is the most crime committed?

- a. in daylight hours
- b. during the night
- c. all the time

**6** How much money is wasted each year in the US by misdirected lights?

- a. \$200 million
- b. \$2 billion
- c. \$20 billion

**7** Medical researchers have established a link between the likelihood of breast cancer and the exposure to artificial lighting during normal sleep hours.

True or False?

- a. astronomers
- b. people who work at night
- c. everyone

**8** Who does light pollution affect the most?

???

**9** Is there a bothersome light near where you live?

Answer Flap

**1** c, greater than 67%

**2** c, 2000, less than 100

**3** a, 100 million!

**4** a, the Electric Utility recoups its money quickly through the monthly rate you pay.

**5** a, in daylight hours

**6** b, upwards of \$2 billion.

**7** True

**8** c, everyone!

**9** You are not alone. Nearly everyone has a bad light near where they live.

Answer Flap



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Design by John Jardine Goss

## Lighting: The Good and the Bad

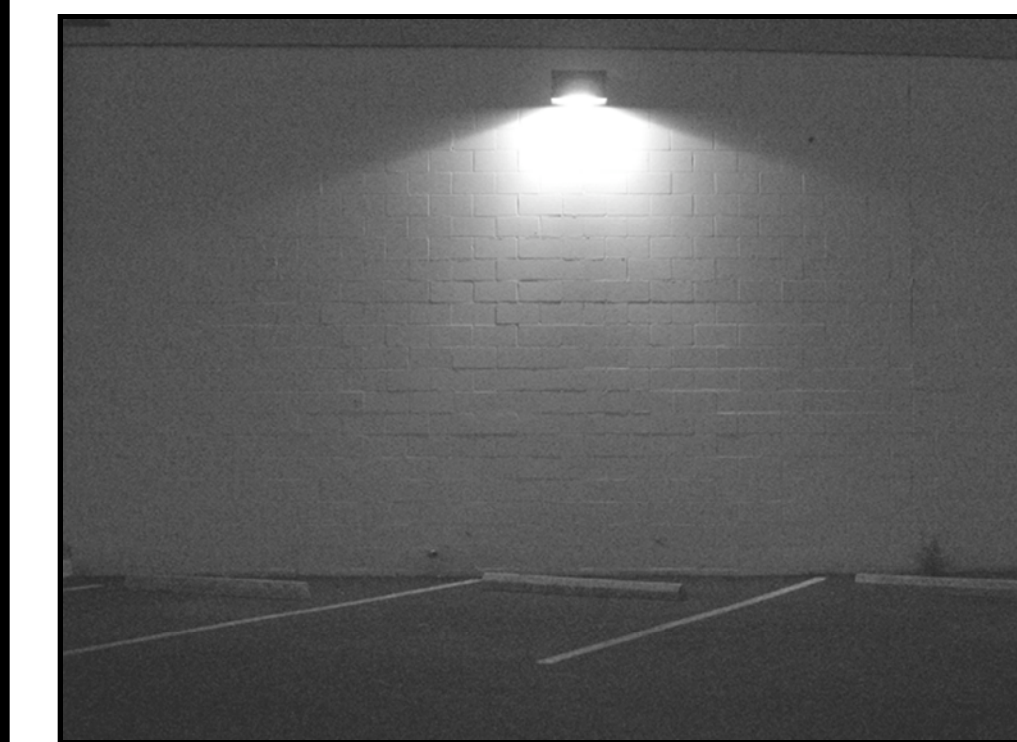
Take a look at these lighting situations —

What is wrong about these lights?

- They don’t illuminate the ground.
- A substantial amount of light escapes upwards.
- They are not shielded.



Architectural lights, such as these, are often very appealing in the daytime, but do a poor job illuminating the desired area in an effective manner. More of their light is directed upward than downward.

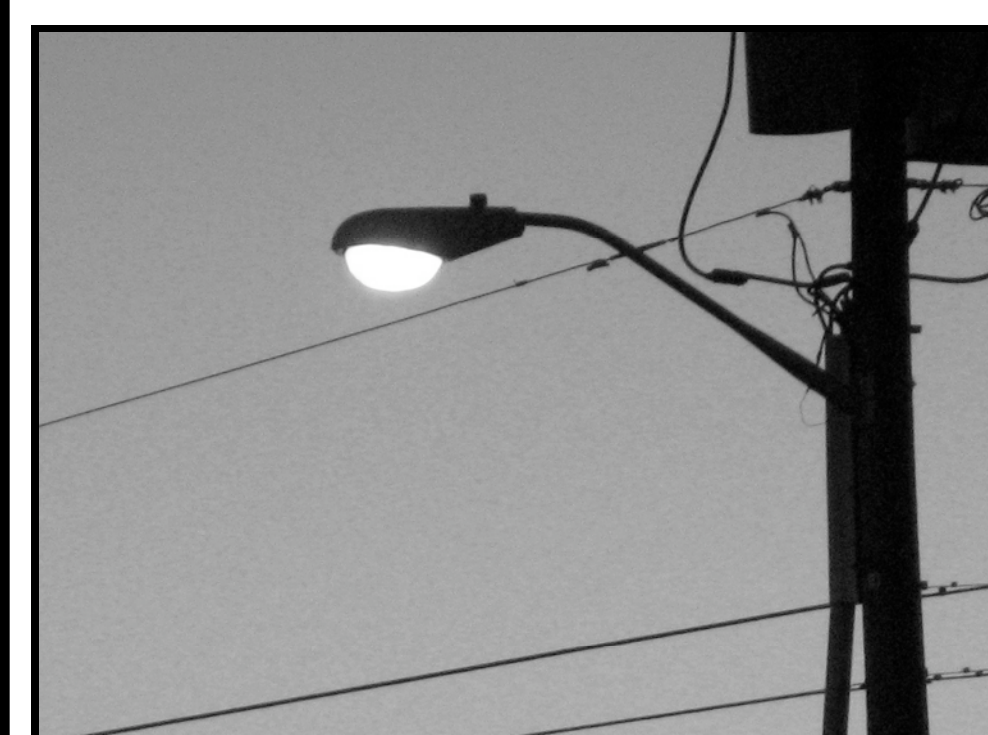


What is right about this light fixture?

- It is shielded, reducing glare.
- The light is directed downward where it is needed.

What is right about this light fixture?

- It is a full-cutoff, shielded fixture.
- The light is directed downward where it is needed.



What is wrong with this street light?

- It is not shielded.

Unfortunately, this type of fixture is too common along our roads.

What is wrong with this lighting scenario?

- The light is not shielded.
- The light does not illuminate the area near the door.

(This has been corrected.)



What is wrong with this lighting scenario?

- Neither light is shielded.

All too often, when a bad fixture fails to give proper illumination, a second bad fixture is installed.



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