

Assignment One: Inspired Biomimicry

Arch 410/510

Garrett Warnick

How can we make our illuminated
environment healthy, comfortable and
beautiful?

Poul Henningsen

“Putting the Electric Genie
Back in it’s Bottle”



“Poul Henningsen’s childhood was illuminated by the glow of gas lamps. When electricity arrived in his small Danish hometown and left his neighbor’s windows ablaze with the stark glare of electric light bulbs, Henningsen began to grapple with a design quandary that would come to define his entire career. He was determined to calm the harsh, but powerful light bulb, reshaping electric illumination to embody the soft beauty of gas lighting.” (Butkowski, 1)



What's so bad about artificial lighting?

In itself, artificial light is a wonder. It has allowed humans to extend their waking hours far beyond sunset. However, the glow of a lightbulb does come with certain physical and psychological tradeoffs.

“PH argued the very modern concept that glare from any bright light caused stress and fatigue. While many commentators equated good artificial lighting with replication of the light of the sun, PH believed that sunlight was for the outdoors, while artificial lighting must take into account the closeness and design of interiors.” (Palley & Palley, 2)

Over illumination can be responsible for:

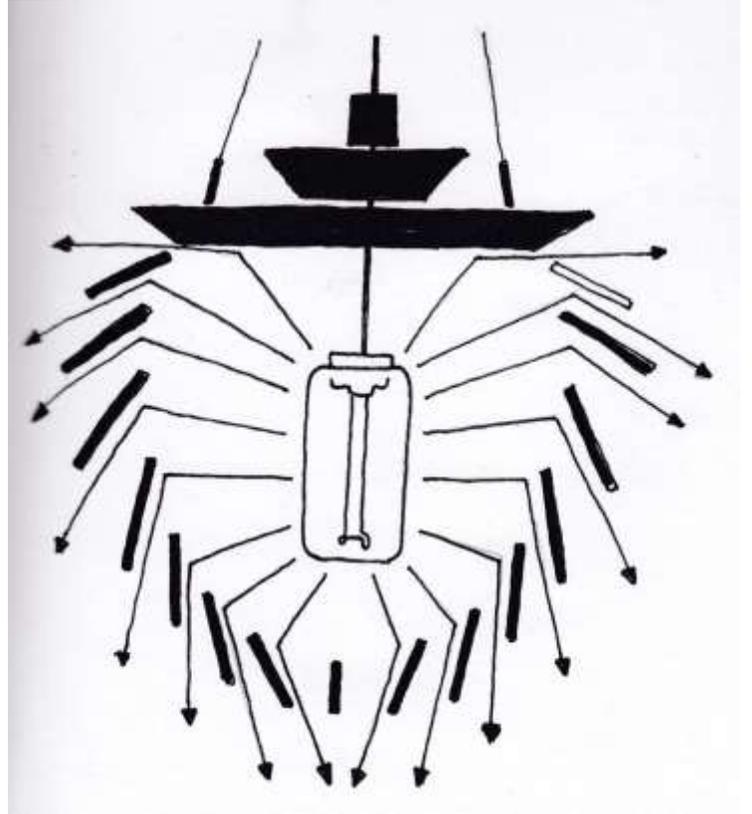
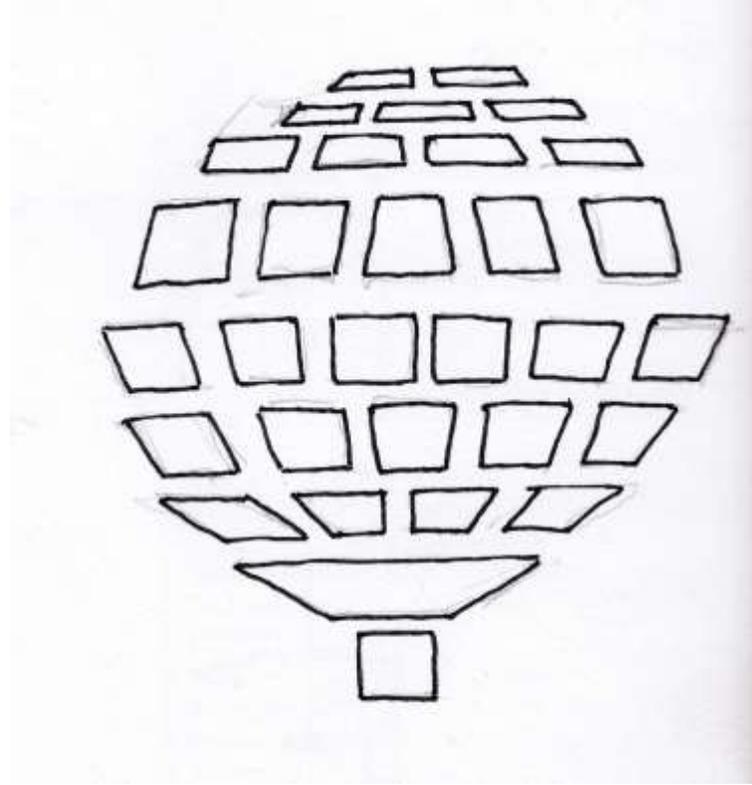
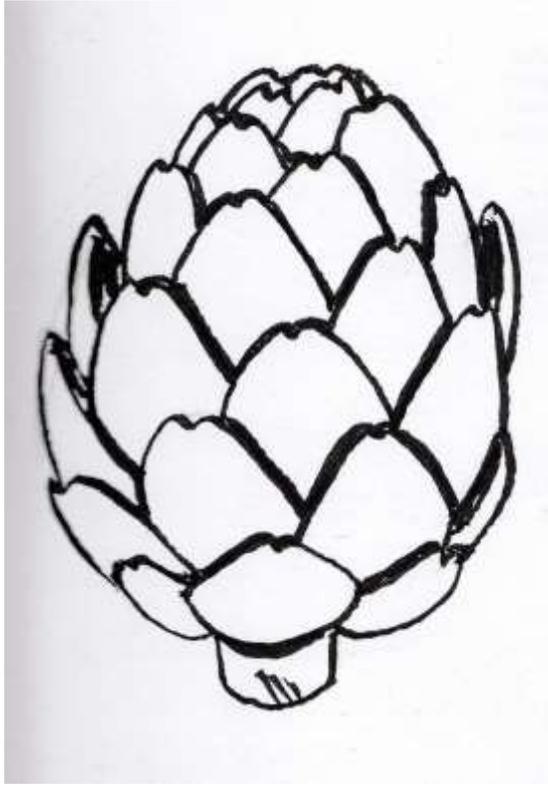
- Hypertension (Boyce & Boyce, 4)
- Migrane headaches
- Circadian rhythm disruption (Kohei, Scherude, 5)
- Anxiety

Why an Artichoke?

The Artichoke Lamp was designed specifically for the Langelinie Pavillonen (Butkowski, 1) restaurant in Copenhagen. Earlier in his career, PH had developed simpler lamps that achieved the same task, however, Poul was a man of aesthetics.

“PH argued that the simplest consumer items can be just as beautiful as the most expensive work of art.” (Palley & Palley, 2)

Running with the culinary theme of the space, he went on to create a lamp that not only softened and dispersed light, but looked good while doing it.





A functional success:

72 leaves hide the lightbulb from every angle, and reflect light off of the metal leaves. The integrated suspension system allows the light source to be raised and lowered in order to adjust light distribution and accommodate the widest range of commercial bulbs.

How it's Made

- 72 leaves create 12 rows, consisting of 6 leaves each.
- Leaves can be made from punched copper or stainless steel.
- The frame is made from chrome plated precision milled stainless steel.
- Commercial price tag is \$10,000 - \$17,000 USD
- Originally and still produced by Louis Poulsen

Source: louis Poulsen.com (3)

Sources:

1. Butkowski,Chelsea <https://www.cooperhewitt.org/2014/12/24/what-lies-beneath-the-artichoke/> (2014)
2. Palley, Marilyn, and Reese Palley. "TAMING INCANDESCENCE." *Modernism Magazine*, Spring 2001, p. 53. *General OneFile*, go.galegroup.com/ps/i.do?p=ITOF&sw=w&u=s8492775&v=2.1&id=GALE%7CA75916818&it=r&asid=d7994abe4d13f07aec177a7804bcce93. Accessed 2 Oct. 2017.
4. Peter Boyce and Boyce R Boyce, *Human Factors in Lighting*, 2nd ed., Taylor & Francis, London (2003) [ISBN 0-7484-0950-5](#)
5. Narisada Kohei and Duco Schreude, *Light Pollution Handbook*, Springer, Netherlands (2004) [ISBN 1-4020-2665-X](#)