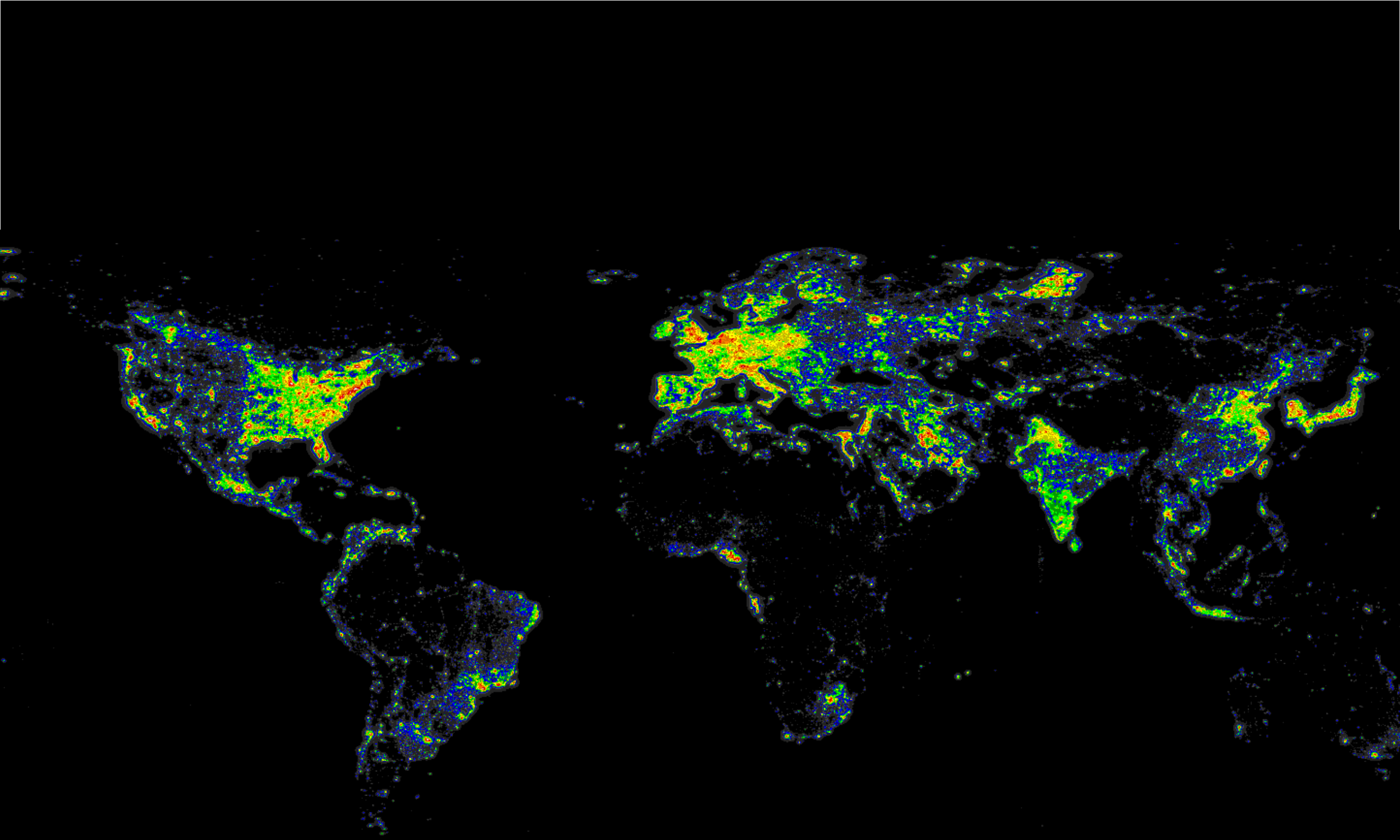
ILLUMINATION
smart light

Almost a quarter of global land area is now under light polluted skies.
And 80% of the world's population now lives under such light polluted skies,
meaning a third of humanity can no longer see the Milky Way.



#facts

Why?

There’s increasing evidence that lighting has negative effects on human health. Melatonin is the hormone that regulates human sleep patterns and is expressed under light. Changes in light regimes away from day-night cycles caused by light pollution means that it can disrupt this vital hormone’s natural expression. This has been linked to obesity, reduced sleep quality and impaired memory.

Because melatonin is an anti-oxidant that can remove free radicals, the disruption of its expression by artificial light may increase cancer risk. Disruption of natural light cycles is particularly acute with newer LED (Light Emitting Diode) lights, which are increasingly being adopted globally for their energy efficiency benefits. Yet, there’s little consideration of their negative health consequences.

source:
https://www.weforum.org/agenda/2019/04/light-pollution-the-dark-side-of-keeping-the-lights-on/

#solutions

How?

A recent review in Science has outlined five key strategies to reduce lighting globally, which will not necessarily compromise its benefits.
They are:

The introduction of light to previously dark areas should be avoided.

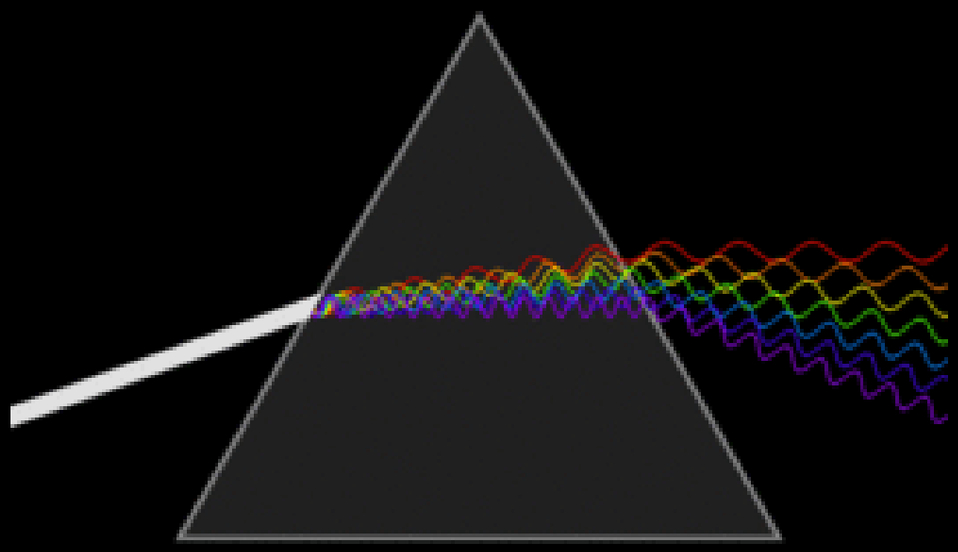
Lighting should be at the lowest usable intensity.

Lighting should only be used where it's directly needed and shielded where possible.

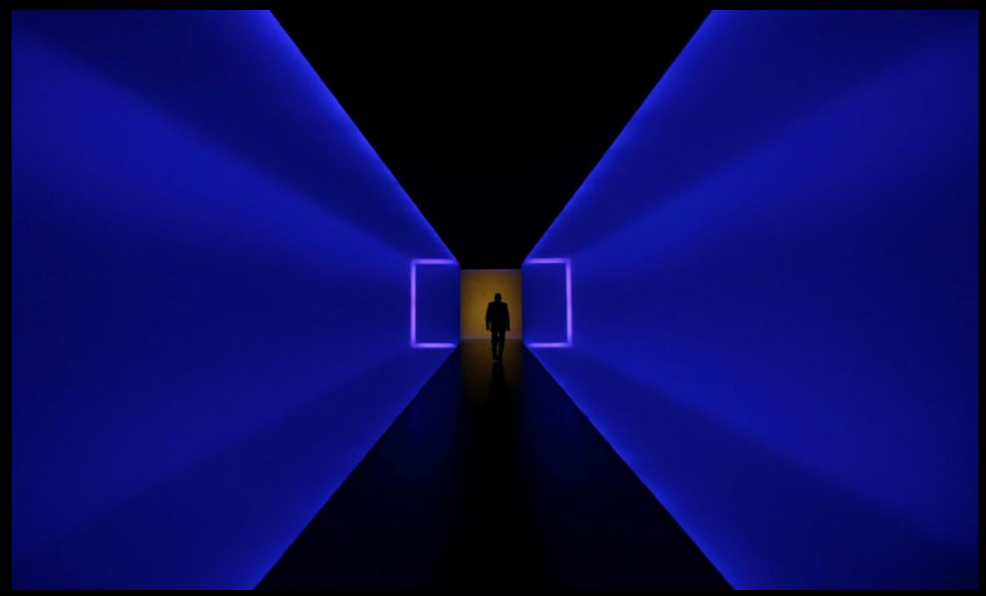
Lighting should only be used when required.

Lighting should be "warmer", meaning more orange colours should be used rather than in the harsh white spectrum.

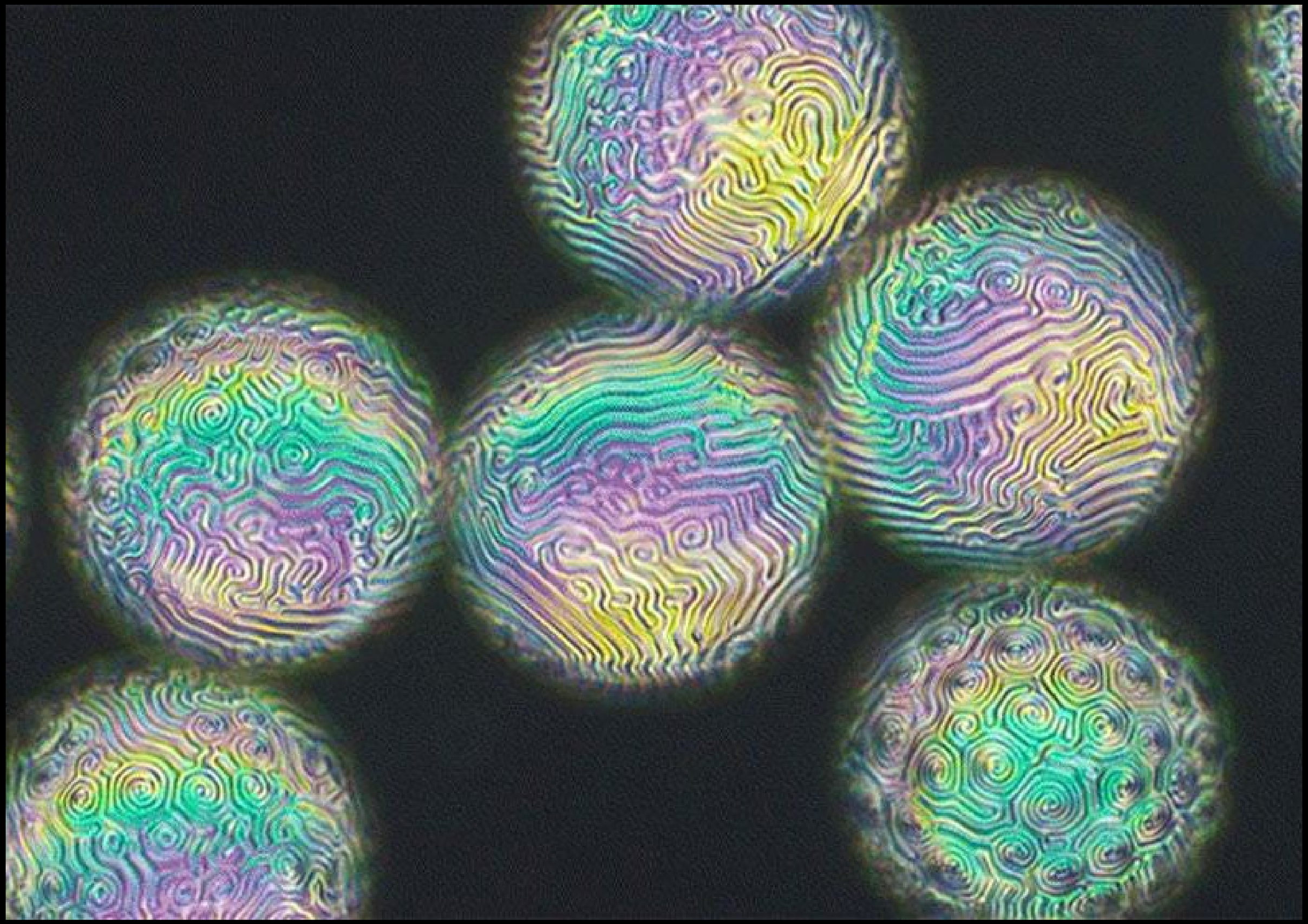
source:
https://www.weforum.org/agenda/2019/04/light-pollution-the-dark-side-of-keeping-the-lights-on/



Light is a fascinating medium.
It illuminates rooms and objects, and offers unique ways to provide powerful, out-of-the-ordinary effects.
Light makes the unremarkable remarkable; it creates emotion; it can be therapeutic.
And in interior design, light plays a central role.



single element >>> field of elements



So why interactive lighting?

What modalities of interaction will actually enrich an architectural space?

There are few possibilities:

Deliver function:
The correct type of light, at the correct place, at the correct moment in time.

Deliver delight:
Enriching human interactions and creating distinct, memorable moments.

Deliver content:
Architecture can act as a portal to the digital world, providing either ambient or detailed layers of information

These 3 interactions can then be mapped across applications, such as hospitality, retail, office, healthcare, education, public spaces, etc. Within each application, multiple physical interactions can be explored to deliver the 3 primary modalities, including:

Touch (poking, grabbing, touching, etc.)
Occupancy (passive)
Proximity (zonal, near/far)
Identity (beacons, RFID, near field communication, etc.)

data input

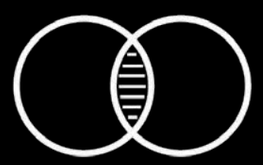
cloud data

local sensing

data tables

processing

logic



media content

abstraction

output

digital light

color change

data driven geometry

in <-> out

inside <-> outside

data input

cloud data

data tables

processing

logic

abstraction

output

digital light

data driven geometry

The aim is to create a powerful design concept that incorporates social media streams, live data and interactive visuals into the infra-structure that surrounds us.

To come up with an ambient communication system that presents creative visual abstractions of real-time data, integrated into archi-tectural spaces via lighting and media displays.

Now — enjoy the darkness!

List of references:

Es Devlin - Stage design for Kanye West concert

Es Devlin - Gallery NYC - Mirrored Manhattan

James Turrell as a main inspiration for Drakes video Hotline Bling

Laser cutted lamp of Zaha Hadid

George Nelson Bubble Lamps

Neri Oxman 3D printed Glass/MIT