

EUNIC PRESENTS:

IN
PRAISE
OF
SHADOWS

NEW EUROPEAN
LIGHTING DESIGN

CURATED BY JANE WITHERS

LONDON DESIGN
FESTIVAL AT THE V&A

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IN PRAISE OF SHADOWS

Edison's incandescent light bulb (the classic filament design) is an extraordinary modern icon, but it is also extraordinary that a technology from the 1870s should remain largely unchanged and unchallenged for well over a century, and its energy inefficiency (around 95% of the energy used is emitted in heat with only 5% transformed into light) is indefensible. Yet the vociferous debate around the demise of the traditional incandescent bulb illustrates that light is a highly emotive subject.

As well as raising some of the critical issues around energy use, IN PRAISE OF SHADOWS is also about engaging with qualities of light that tend to get forgotten in the energy debate. Works were selected around three themes. The first is about the poetics of light and illustrates the freedom that low-energy light sources can bring to lighting design.

The second grouping is more literally concerned with lighting space, but also how we interact with light and its psychological and physiological effects. Since the invention of the light bulb, artificial illumination has been associated with dynamism and productivity and we talk about a 'switched-on society'. But as well as energy consumption, there is increasing concern around the social and health effects of excessive illumination. RCA Research Associate Claudia Dutson highlights a growing body of evidence to suggest that high levels of light, the wrong colours of light and the separation from natural rhythms of daylight in the office have a negative impact on workers' health. Dutson argues that the commercial attitude towards lighting and environmental ideology are in conflict.

The exhibition's third theme addresses powering and alternative energy sources, and here again experimental thinking is progressing rapidly with solar and wind power on the horizon. The French eco activist group Clan du Néon protests against the absurd energy waste of illuminated advertising signs by simply turning them off and then posting films of its actions on the Web. As much as new light technologies, it is thinking about how we use energy that is critical to sustainability and re-imagining our future.

IN PRAISE OF SHADOWS showcases works by European designers who explore the potential of low-energy lighting and alternative energy sources. The catalyst for the exhibition is the switch to low-energy lighting when the EU directive to phase out low-efficiency light bulbs comes into force starting September 2009. It is rare that a design issue has such immediate implications for us all. As well as stimulating experimental design, the changeover is provoking discussion around environmental issues. But this should be an opportunity to do more than just change a light bulb. IN PRAISE OF SHADOWS aims to spur debate, exploring new thinking not just about lighting and energy use but also how we want to illuminate our lives. The title of the exhibition is borrowed from an essay on aesthetics written in 1933 by the Japanese novelist Junichiro Tanizaki, in which he characterises the bright lights of westernization as driving away the depth and richness of Japanese culture. Aren't we still in thrall to the modern obsession with brightness and excessive illumination at the expense of a more human dimension and the poetic qualities of light and darkness?

There is no doubt that lighting is embarking on a period of massive change. In the last decade it has changed dramatically with the introduction of CFLs (Compact Fluorescent Lamps) LEDs (Light-Emitting Diodes) and now OLEDs (organic LEDs), and arguably this is only the beginning.

GLOSSARY:

INCANDESCENT OR GLS (GENERAL LIGHTING SERVICE) LAMP:

The conventional household light bulb invented by Thomas Edison in 1879. Incandescent lamps consist of a glass enclosure (the bulb) with a filament of tungsten wire inside, through which an electric current is passed. To be phased out by EU directive because of its environmental inefficiency (over 95% is wasted in heat).

CFL: COMPACT FLUORESCENT LAMP:

The modern CFL was invented by Edward E. Hammer in 1973. CFLs have an average lifespan of between 6000 and 15,000 hours, between 8 and 15 times that of an incandescent lamp. The use of mercury in most CFL lamps (between 1mg and 5mg of mercury per bulb) means that they require specialist recycling, which is not yet available through all local councils.

LED: LIGHT-EMITTING DIODE:

First invented in Soviet Union in the 1920s by Oleg Vladimirovich Losev, the LED has a lower energy consumption and a longer lifespan than CFL or GLS lamps. Typical lifetimes are from 25,000 to 100,000 hours, depending on heat and current settings. At present, the chief criticism of LEDs is over the colder light they produce.

OLED: ORGANIC LIGHT-EMITTING DIODE:

OLED technology was first developed in the 1950s and '60s, though the first useable device was invented in the 1980s. OLEDs are a flat light source, emitting diffused light from a potentially large active area. They emit white light that is brighter, more uniform and more energy-efficient than that emitted by fluorescent lights.

TOTAL WATTAGE:

Total electrical power in watts, which measure the rate of energy conversion. One watt is equivalent to 1 joule of energy per second.

COLOUR TEMPERATURE:

Colour temperature can be quantified using a scale marked in °Kelvin. Lighting can vary in colour temperature between 2000°Kelvin (warm) and 9500°Kelvin (cold); the scale is derived from the fact that the light emitted by heated objects produces a spectrum, which changes as the temperature rises. Low-temperature lighting is progressively warmer (more red/yellow), while high-temperature lighting grows progressively colder (more blue).

LUMENS PER WATT:

The efficacy rating for electrical light sources to determine how much light they produce for each watt of energy they use.

LIGHT SOURCE LIFESPAN:

The length of time a light source will last.

\\ In our industry it's easy to talk about technology but the aesthetic or emotional side is hardly taken into account. //

MAGNUS WÄSTBERG, LIGHTING MANUFACTURER

\\ There are two kinds of light – the glow that illuminates and the glare that obscures. //

JAMES THURBER (1894–1961)

\\ The office may be the most demanding environment on a person's physiology. Is a uniform, brightly lit room the best place to be productive and healthy? //

CLAUDIA DUTSON, ROYAL COLLEGE OF ART

\\ It's not the quantity of light, but the quality that makes a project into a good light project. //

MARIO NANNI, DESIGNER

\\ Electric light will make people work themselves to death. //

AUGUST STRINDBERG (1849–1912)

EXHIBITS

1: ICE AGE CHAIR, 2008 RADU COMSA (ROMANIA)

The Ice Age Chair is not a proper chair, but a super-soft hideout for any common chair. Light diffuses through the fibre around the chair's shape and the chair itself disappears, reading as a negative image like a chair frozen in layers of old ice.

MATERIALS: POLYESTER FIBRE LAYERS, WOODEN THONET CHAIR
LIGHT SOURCE: COMPACT FLUORESCENT LAMPS
COLOUR TEMPERATURE: 4200k
TOTAL WATTAGE: 24w
LUMENS PER WATT: 62.5
LIGHT SOURCE LIFESPAN: 6000 hours

2: LIGHT BALANCE, 2009 TOM FOULSHAM (UK)

Light Balance aims to demonstrate the energy wasted by a single General Lighting Service (GLS) lamp - approximately 95% of the energy is emitted as heat. The seated rider pivots on one end, counterbalancing a 10m cantilever with a light bulb and sail. The heat given off by the single 400-watt incandescent bulb is enough to turn the slow merry-go-round.

LIGHT SOURCE: GENERAL LIGHTING SERVICE LAMP
TOTAL WATTAGE: 400w

3: LIGHT BLUB, 2008 PIEKE BERGMANS (NETHERLANDS)

Light Blub is a giant light bulb that appears to be morphing into new forms, perhaps playfully symbolizing the end of the bulb as we know it.

MATERIALS: GLASS, METAL LAMP BASE, TABLE
LIGHT SOURCE: 24 LEDs
COLOUR TEMPERATURE: 2700k
TOTAL WATTAGE: 15w
LUMENS PER WATT: 65
LIGHT SOURCE LIFESPAN: 50,000 hours

4: W08, 2008 STUDIOILSE (UK)

A modern take on the classic Anglepoise lamp, using what the designer describes as 'simple honest materials': 'Iron for its feelings of stability, reliability, trust; wood with its warmth and life'.

MANUFACTURER: WÄSTBERG (SWEDEN)
MATERIALS: IRON, ALUMINIUM, BEECH, MINERAL PLASTIC
LIGHT SOURCE: 12v HALOGEN LAMP
COLOUR TEMPERATURE: 3000k
TOTAL WATTAGE: 38w
LUMENS PER WATT: 26
LIGHT SOURCE LIFESPAN: 4000 hours

5: GOLD F LIGHT, 2009 MICHAEL ANASTASSIADES (CYPRUS)

A standard low-energy fluorescent lamp is transformed into an object of refinement and beauty.

MATERIALS: GOLD-PLATED STAINLESS STEEL
LIGHT SOURCE: COMPACT FLUORESCENT LAMP
COLOUR TEMPERATURE: 3000k
TOTAL WATTAGE: 36w
LUMENS PER WATT: 80
LIGHT SOURCE LIFESPAN: 10,000 hours

6: DOODLE, PLUMEN SERIES 2009 PROTOTYPE HULGER (UK)

Designed as a reaction against the aesthetic of existing CFL products, Doodle is one of a series of proposals to give a more sculptural form to low-energy light bulbs.

LIGHT SOURCE: PROTOTYPE IN NEON, INTENDED FOR CFL PRODUCTION

7: BULB, 2009 BÁLINT BOLYGÓ (HUNGARY)

Bulb is an opto-kinetic sculpture that plays on the iconic image of the incandescent light bulb, while using an LED as the light source. The LED light passes through a large rotating incandescent bulb that has a photographic image of the world printed on its interior surface. The image is projected onto the surrounding space.

MATERIALS: ALUMINIUM, STEEL, ACRYLIC, GLASS, MOTORS, ELECTRONICS
LIGHT SOURCE: 1 LED
COLOUR TEMPERATURE: 5000k
TOTAL WATTAGE: 3w
LUMENS PER WATT: 27
LIGHT SOURCE LIFESPAN: 25,000 hours

8: SCATOLA DELLA LUCE, 2009 MARIO NANNI (ITALY)

A portable reading lamp and illuminated plaything consisting of a sheath and inner drawer containing the LED. The drawer slides between the open and the closed position, varying the light intensity. The beam is cast onto the supporting surface through small windows.

MANUFACTURER: VIABIZZUNO (ITALY)
MATERIALS: PASTEBOARD
LIGHT SOURCE: 1 LED
COLOUR TEMPERATURE: 3200k
TOTAL WATTAGE: 1w
LUMENS PER WATT: 60
LIGHT SOURCE LIFESPAN: 100,000 hours

9: SOLAR LAMPION, 2004 PROTOTYPE DAMIAN O'SULLIVAN (NETHERLANDS)

A concept for a modern take on a Chinese lantern powered by sunlight. While most solar lamps are left outdoors, Solar Lampion is designed to be brought indoors at night. The lighting fixture incorporates 30 miniature solar panels arranged in concentric circles and inclined at 30° to capture the maximum amount of sunlight to charge the lantern's battery. Each solar cell is connected to an LED.

MATERIALS: VACUUM-CAST PLASTIC, SOLAR CELLS
LIGHT SOURCE: 30 LEDs
COLOUR TEMPERATURE: 8000k
TOTAL WATTAGE: 30W
LUMENS PER WATT: 18-22
LIGHT SOURCE LIFESPAN: 25,000 hours

10: CYCLO, 2006 PROTOTYPE MARIE-VIRGINIE BERBET (FRANCE)

Cyclo is part of Berbet's Analeptic project, exploring the physiological and psychological effects of light. Berbet trained as a biologist before studying design and uses light to promote wellbeing. Cyclo consists of a desk blotter with activity sensors and a rotating light with interdependent strips that switch on and off in sequence. The sensors detect the user's activity levels and vary the intensity of the light and the speed of rotation accordingly. If the user is hyperactive, the light starts turning fast and then progressively slows, using hypnotic stimulus to induce relaxation. If the user is overcome by sleepiness, light centred on the blue wavelengths is used to block melatonin secretion and increase wakefulness.

MATERIALS: RAPID-PROTOTYPED POLYAMIDE
LIGHT SOURCE: LEDs

11: LIGHT WIND, 2009. PROTOTYPE DEMAKERSVAN (NETHERLANDS)

Inspired by the windmill, Light Wind is an outdoor light powered by wind. This free-standing wood, stainless steel, and sail fabric structure has a propeller 2m in diameter and stores energy from every passing breeze to convert to light by night.

MATERIALS: RAPID-PROTOTYPED POLYESTER, STAINLESS STEEL, COTTON POLYESTER, SAND
LIGHT SOURCE: 4 LEDs

12: LIFE 01, 2009 PAUL COCKSEGE (UK)

Life 01 plays on the juxtaposition of light and water. A modern interpretation of a vanitas or still-life painting, when a flower is placed in the water the vase lights up from within. The stem acts as a conductor of electricity activating a small light source at the base of the vase. As the flower withers, the light slowly expires.

MANUFACTURER: FLOS (ITALY)
MATERIALS: CRYSTAL GLASS, FRESH FLOWER
LIGHT SOURCE: 1 LED
COLOUR TEMPERATURE: 2700k
TOTAL WATTAGE: 3w
LUMENS PER WATT: 65
LIGHT SOURCE LIFESPAN: 50,000 hours

13: CLAN DU NÉON (FRANCE)

Le Clan du Néon, a French network of eco activists, protests against the senseless waste of electricity and nocturnal light pollution by the millions of shop signs left on overnight. In France, every illuminated sign has to have an external switch for emergency use and the Clan uses this to turn off advertising and shop signs; it then posts films of its activities on the Internet. Since it started in 2007, groups have sprung up across France and in the Netherlands.

14: FRAGILE FUTURE, 2006-9 DRIFT (LONNEKE GORDIJN AND RALPH NAUTA) (NETHERLANDS)

Exploring the amalgamation of nature and technology, Fragile Future combines an electrical system with real dandelion seed heads in a light sculpture that grows over the wall surface.

COURTESY OF CARPENTERS WORKSHOP GALLERY, LONDON
MATERIALS: DANDELION SEEDS, WIRE FRAMEWORK, ELECTRONICS, PHOSPHORUS BRONZE
LIGHT SOURCE: 156 LEDs
COLOUR TEMPERATURE: 6000k
TOTAL WATTAGE: 12w
LUMENS PER WATT: LESS THAN 1
LIGHT SOURCE LIFESPAN: 20,000 hours

15: LUCID DREAM, 2006 ERIC KLARENBECK (NETHERLANDS)

Inspired by the magic of the soap bubble, Lucid Dream plays on the ability of glass to transmit light by internal reflection. Thus the light source disappears and the light from the LEDs is spread through the entire surface of the bubble.

MATERIALS: HAND-BLOWN CRYSTAL GLASS
LIGHT SOURCE: 6 LEDs
COLOUR TEMPERATURE: 4500k
TOTAL WATTAGE: 6w
LUMENS PER WATT: 100
LIGHT SOURCE LIFESPAN: 50,000 hours

16: QUEEN'S CHANDELIER,
2008
PUFF-BUFF DESIGN
(POLAND)

Challenging the traditional idea of a chandelier as a stately and weighty appendage, Queen's Chandelier is made of inflatable PVC pockets that each contain an LED. Despite its size, it is extremely lightweight.

MATERIALS: HIGH-GLOSS PVC, PLASTIC, STAINLESS STEEL
LIGHT SOURCE: 145 LEDS
COLOUR TEMPERATURE: 3200k
TOTAL WATTAGE: LESS THAN 1w
LUMENS PER WATT: LESS THAN 1
LIGHT SOURCE LIFESPAN: 50,000 hours

17: SHINE, 2009
VYTAUTAS PUZERAS
(LITHUANIA)

Inspired by electric sea creatures, Shine uses electroluminescent technology. The glowing elements on the pad can be charged from natural sunlight during the day and then gleam until dawn.

MATERIALS: PVC
LIGHT SOURCE: ELECTROLUMINESCENT POLYMER COMPOUND

18: ČEZ LIGHT, 2009
PROTOTYPE
OLGOJ CHORCHOJ
(CZECH REPUBLIC)

The ČEZ light is a portable battery lamp charged by a photovoltaic panel. Exposing the panel for four hours to sunlight should generate enough energy to provide four hours of illumination.

MATERIALS: HEAT-RESISTANT BOROSILICATE GLASS, SOLAR PANEL
LIGHT SOURCE: 3 LEDS
COLOUR TEMPERATURE: 6000k
TOTAL WATTAGE: 3-5w
LUMENS PER WATT: 12
LIGHT SOURCE LIFESPAN: 50,000 hours

19: MEDUSA, 2008
MIKKO PAAKKANEN
(FINLAND)

Inspired by the movement of a jellyfish, Medusa is made of fibre optic rods lit by high-intensity LEDs. A microprocessor-controlled motor moves the rods, so the light fixture expands and contracts in a hypnotic motion. The movement can be stopped at any stage, so the light can be frozen in different shapes.

MANUFACTURER: SAAS INSTRUMENTS (FINLAND)
MATERIALS: SIDE-EMITTING FIBRE-OPTIC RODS, MICROPROCESSOR-CONTROLLED MOTOR
LIGHT SOURCE: 16 LEDS
COLOUR TEMPERATURE: 5000k
TOTAL WATTAGE: 20w
LUMENS PER WATT: 30
LIGHT SOURCE LIFESPAN: 50,000 hours

20: SONUMBRA 2008
LOOP.PH (RACHEL WINGFIELD / MATHIAS GMACHL)
(UK/AUSTRIA)

Developed as part of the World Bank project Lighting Africa, Sonumbra is a proposal for low-cost, low-maintenance lighting for regions without access to the electricity grid. An outside parasol, by day it provides shelter from the sun. By night it lights up, using the energy collected in solar cells embedded in its canopy.

MATERIALS: ELECTRONICS, SOFTWARE, COMPOSITE ROD SUPPORT STRUCTURE
LIGHT SOURCE: SOLAR-POWERED ELECTROLUMINESCENT WIRE (MAINS-POWERED FOR EXHIBITION PURPOSES).

INSTALLED IN THE SACKLER CENTRE
21: BLOW LIGHT, 2009
TOM DIXON (UK)

Blow Light is specifically designed to accommodate a low-energy Compact Fluorescent Lamp, allowing the lamp to give a strong directional light through the clear base. Originally designed for the big Trafalgar Square Giveaway in 2007, Dixon gave away 1000 free lamps to raise awareness of CFLs and promote sustainable design.

MATERIALS: POLYCARBONATE
LIGHT SOURCE: COMPACT FLUORESCENT LAMP
COLOUR TEMPERATURE: 3000k
TOTAL WATTAGE: 11w
LUMENS PER WATT: 52
LIGHT SOURCE LIFESPAN: 15,000 hours

FURTHER INFORMATION

THE LAW:

EU DIRECTIVE: The EU measure, under the Eco-design for Energy-using Products Framework Directive, restricts the manufacture and import into the EU of 100W and frosted incandescent lamps from 1 September 2009, with a phase out of lamps of lower wattage by 2012.

www.e-lumen.eu

The EU's outline of the phase-out, advice on the available lamp alternatives and some background on the legislative process.

www.eup4light.net

EU website on findings from EC projects related to the Eco-design Directive on energy use for domestic lighting, office lighting and street lighting.

BATTLE OF THE BULB, FOR AND AGAINST:

ban-the-bulb.blogspot.com

Project promoting the withdrawal of the incandescent lamp.

www.savethebulb.org

Set up to campaign against the withdrawal of the incandescent lamp, the group puts forward arguments for preserving Edison's lamp on grounds of light quality and environmental impact.

www.greenerlights.blogspot.com

Blog commenting on sustainable lighting products and issues. Links to press debate on CFLs, mercury, energy use, etc.

SAVING ENERGY:

www.energysavingtrust.org.uk

A non-profit organization that provides advice on energy-saving issues and products.

www.megamanuk.com/energysavingtips/index.php

Lamp manufacturers' website gives tips on energy usage and features an energy-saving calculator.

ENVIRONMENTAL ORGANIZATIONS:

www.foe.co.uk/living/articles/energy_efficient_light_bulbs.html

www.foe.co.uk/resource/faqs/energy_lightbulbs.html

Friends of the Earth - information and debate on lighting and energy-saving. Also guidance on recycling CFLs.

www.greenpeace.org.uk/climate/light-bulbs

Worldwide environmental organization that challenges environmental abuse - looks into climate change issues surrounding lighting.

MEGAMAN TALK: IN PRAISE OF SHADOWS

23 SEPTEMBER, 1-2PM,
HOCHHAUSER AUDITORIUM,
SACKLER CENTRE, V&A

An event to accompany the exhibition, specially staged as part of the London Design Festival at the V&A programme. Sponsored by energy-saving lamp manufacturer Megaman, the talk provides a platform for discussion around new European lighting design, with practitioners and experts exploring the impact of regulation change.

Free entry. To reserve your place email eunic@londondesignfestival.com

MEGAMAN®
Energy Saving Lamps

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