

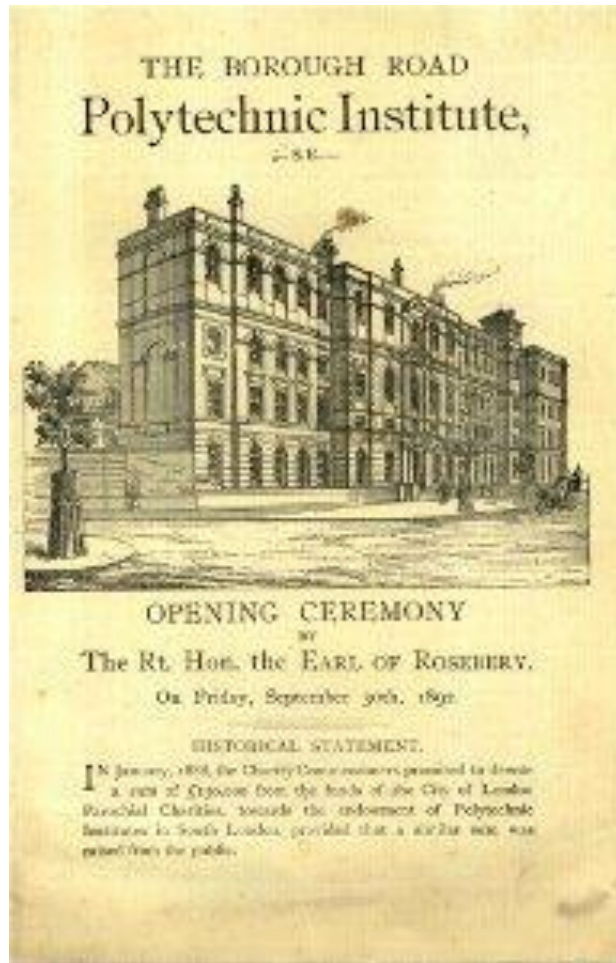
Being bad to do good: using reverse psychology to embed Life Cycle Thinking and knowledge of Sustainable Development Goals in design and engineering curricula

Deborah Andrews - Associate Professor of Design, School of Engineering

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LSBU
20,000+ students
6 Schools

1892 - original aim
'to promote the industrial skill,
general knowledge, health
and well-being of young men
and women'

1920 - first institution in UK
to admit women to an
engineering course





Ending the Depression Through Planned Obsolescence

Bernard London, 1932

Design should create *'the desire to own something a little newer and a little better, a little sooner than necessary'*

Brooks Stevens, 1954



GUARANTEED 1000 HOURS

Quality LAMPS

A Year-Round Seller!

With this line of incandescent lamps you can be sure of a steady, year-round source of profit. While startlingly low in price, the superior quality of this line makes for repeat business. Guaranteed for 1000 burning hours, and constructed according to specifications of the U. S. Bureau of Standards.

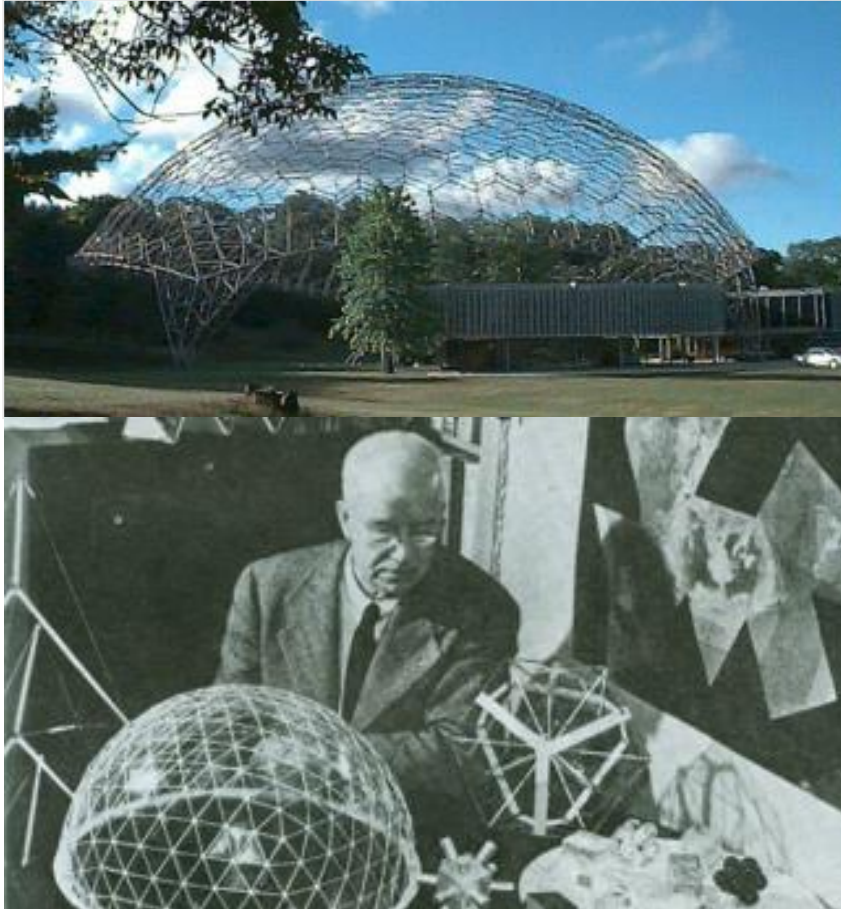
TYPE "A" Inside Frosted Lamps

All type A bulbs are for 110-125 volt current and have medium bases.

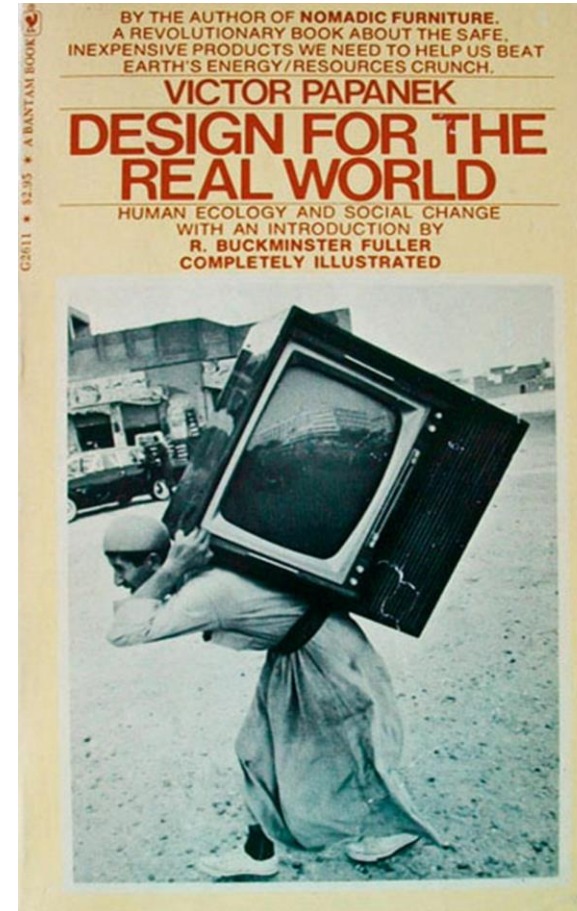
No.	Watts	Type	Std. Pkg.	List	Each	Lot of 12, ea.
1120	15	A-17	120			
1121	25	A-19	120		.07 1/2	.07
1122	40	A-19	120			
1123	60	A-21	120		.08 1/2	.08
1124	60	A-21	120			
1125	75	A-21	120			
1126	100	A-23	120	.15	.09 1/2	.08 1/2
1150	150	A-25	60	.20	.12 1/2	.12
1151	200	A-30	24	.27	.17	.16
1155	300	A-35	24	.45	.32	.31

TYPE "A" LAMPS
As Low As
7c
Ea. in 12 Lamps





Ephemeratisation - doing more with less
Richard Buckminster Fuller - 1896-1983



*There are professions more harmful
than industrial design, but only a few*
Victor Papanek - 1923-1998



Sustainable engineering and design at LSBU – early examples



Yr1 inclusive sustainable garden



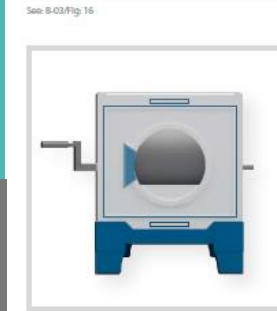
Yr 2 reducing waste from hospitality industry



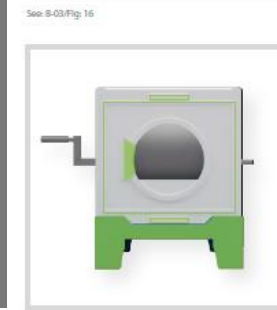
Yr 4 Major Design Projects – sustainable technology & human centred design




BritishRedCross
 A rather simplistic colour scheme which echoes the styling of the 'British Red Cross'. White is still the predominant colour due to the need to print the instructions of use (section: 7.5) on the back of the device. Plus, it also leaves space for the companies backers & own branding to be printed directly onto the outer casing.




UNHCR
 The UN Refugee Agency
 Very much like (above) the 'British Red Cross' design, the UNHCR- Wash_Box offers ample room for further information or colour alteration. Despite this blue colour being printed directly onto the design, that's not to say it cannot be changed during manufacturing to take more of a holistic approach to a disaster.




Oxfam
 A personal favourite of all the available colour schemes, the 'Oxfam' Wash_box offers the same colour layout as the previous two designs, but the green generally suits the eco-friendly sustainable approach this project is taking towards providing human-aid to disaster relief victims.



21stC behaviours and challenges to education *about* and *for* sustainability



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Education – modularisation / tick box culture



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Eco fatigue – too much and confusing information



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Eco fatigue – too much and confusing information

Eco anxiety – fear of climatic and environmental catastrophe



21stC behaviours and challenges to education *about* and *for* sustainability

Education – modularisation / tick box culture

Eco fatigue – too much and confusing information

Eco anxiety – fear of climatic and environmental catastrophe

Eco apathy / learned helplessness

Compounded by internet – e.g. youtube algorithms – recommend more of the same / unbalanced information





GUIDANCE ON SUSTAINABILITY
for the Engineering Profession

www.engc.org.uk/sustainability

A handy wallet card listing the six sustainability principles on one side with those for risk on the other, is available from: info@engc.org.uk



CHARTERED
SOCIETY OF
DESIGNERS

**Design
Council**



Need alternative strategy - education *about* and *for* sustainability

engaging, memorable, makes impact, is enjoyable, empowering



Need alternative strategy - education about and for sustainability

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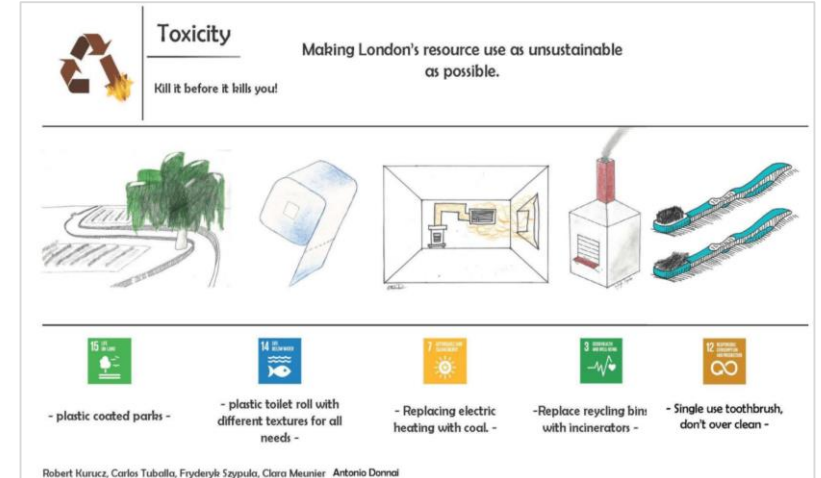
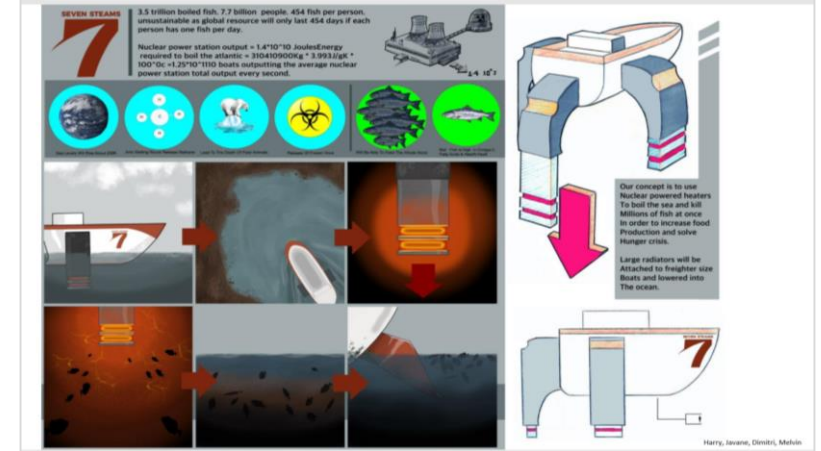
Assignment: inter-disciplinary (EPD / PD) groups of 4 / 3 day project

Design your future – your city, your choice.....

Develop an UNSUSTAINABLE design concept in response to a specific theme -

food, water, transport, travel, energy production, buildings, resource use, health, leisure





Reverse psychology – effect and effectiveness

Module results / year	Sample size	Mean in bold + Std Deviation
17/18	41	55.6 12.3
18/19	35	59.4 11.5
19/20	41	58.0 12.0

Not significant – need to further analyse results to account for individual differences in ability across year groups –
but results suggest a trend

Why? students had to consider what is good in order to achieve opposite

can't paraphrase - need to process information more deeply –

produces longer lasting memory and better understanding of topic

IQ is often cited as major predictor of learning success

Motivation is also predictor of learning success and fun increases motivation

Anecdotal – students said 'assignment was really good fun'

Recommendations and future work – it works for students – lets try it in industry!



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Columbia Journalism Review "Green Fatigue" and "Eco Anxiety" The press switches from environmental exigency to exhaustion
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Thank you for listening

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