The Circular Economy, Health and Healthcare

David Cheshire & Sunand Prasad PPRIBA

European Healthcare Design Royal College of Physicians 17•06•19

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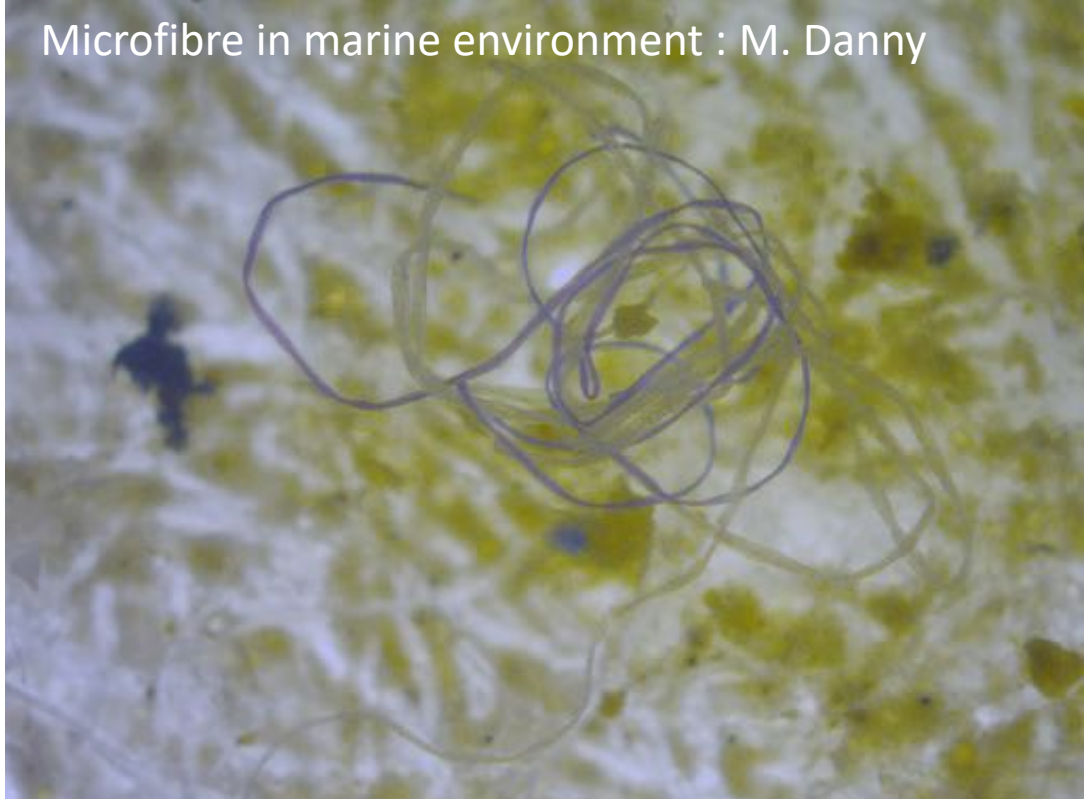
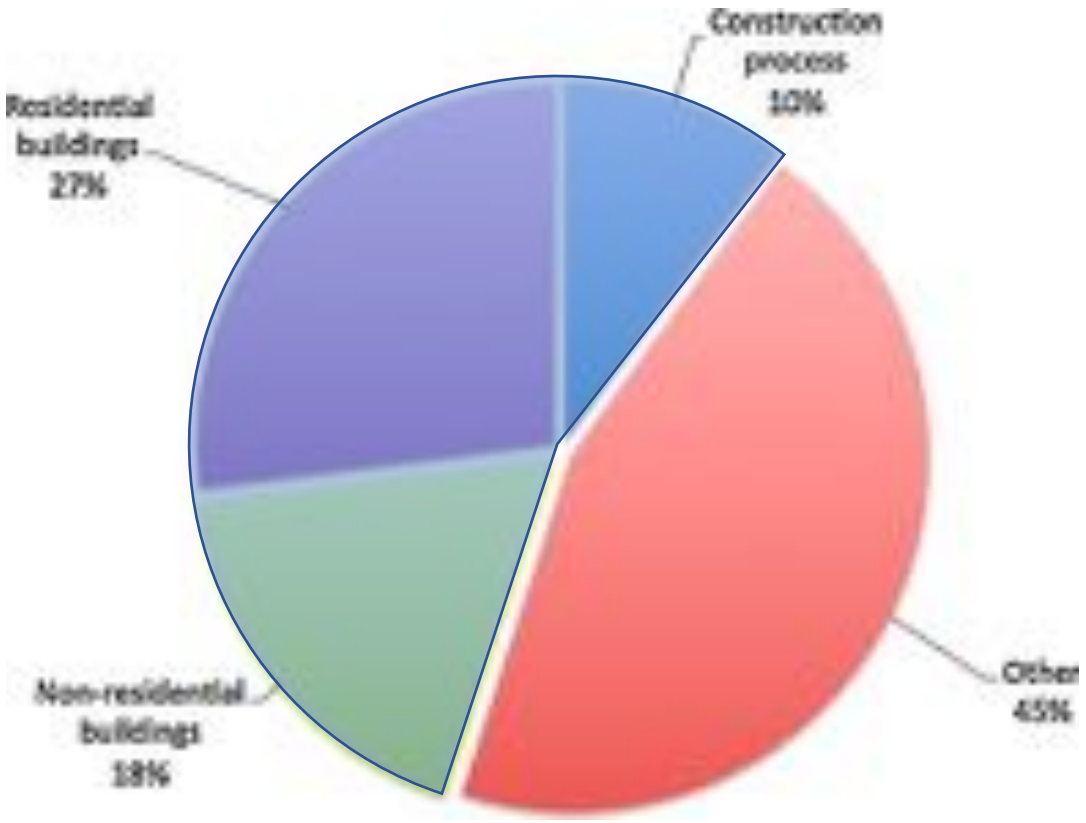
Penoyre & Prasad

Plastic in Waste
Albatross stomach : Claire Fackler

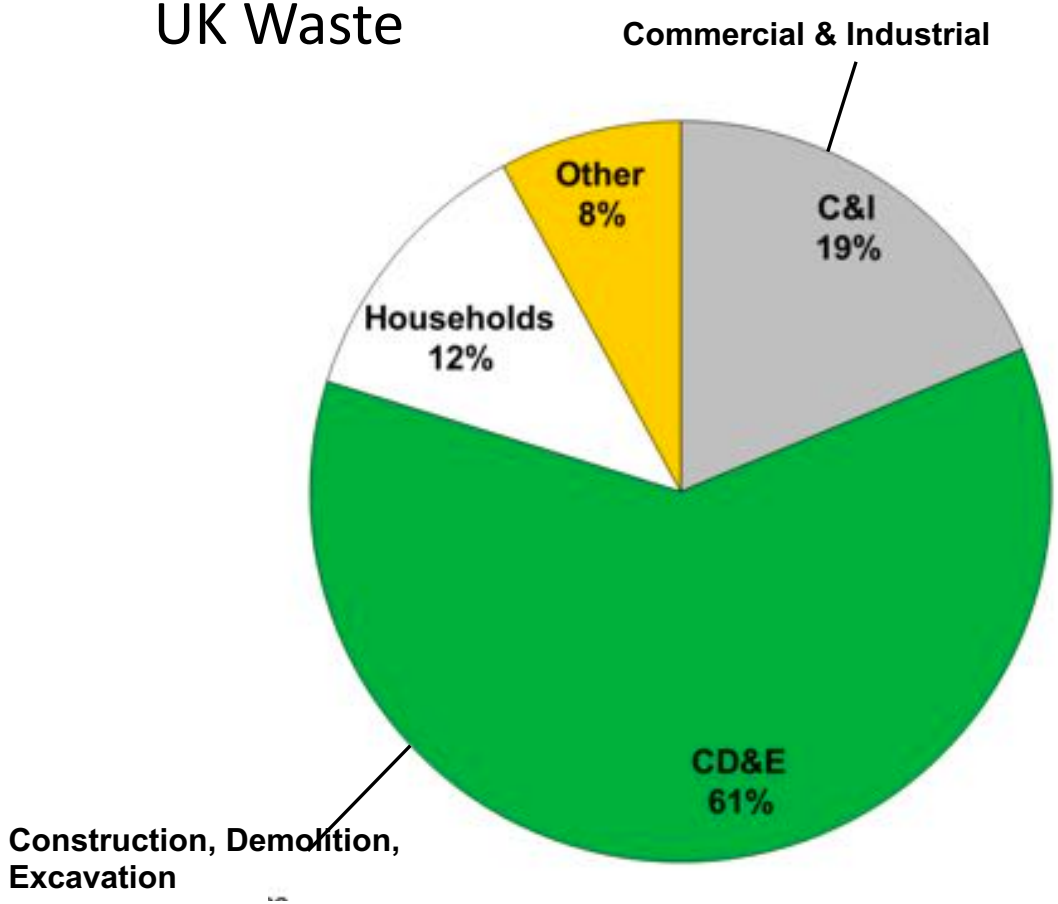

Microfibre in marine environment : M. Danny

Microfibre in Beer : Mary Kusuth

UK GHG Emissions



UK Waste



Use and construction of buildings produces 55% of total GHG Emissions

Construction of buildings produces 60%+ of all UK waste to landfill

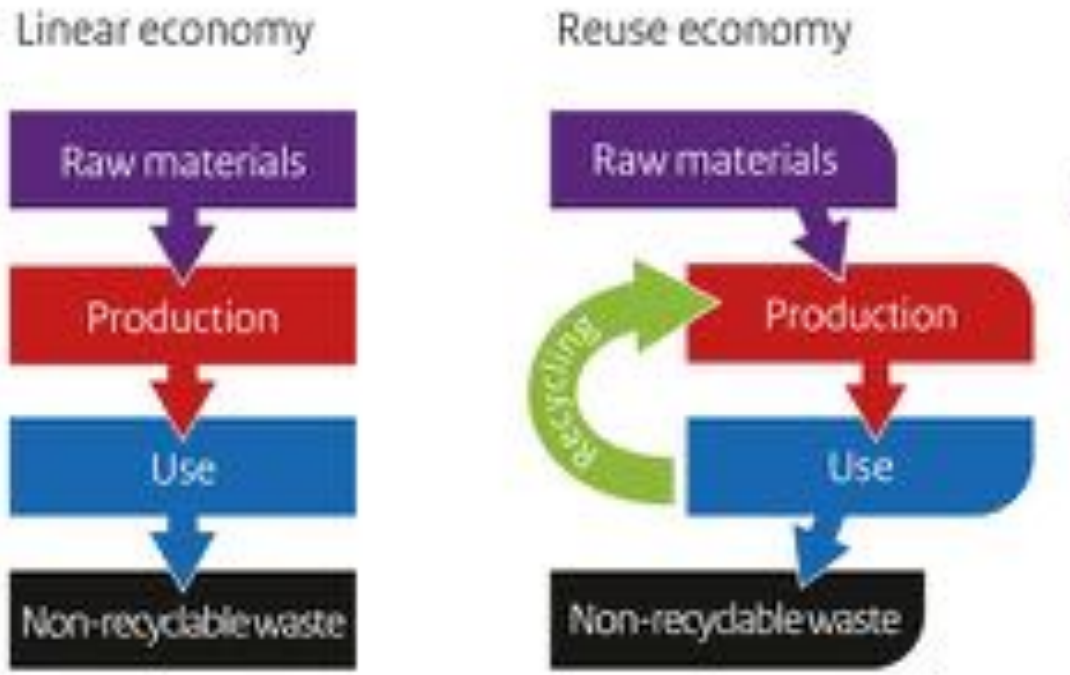
25,000,000

total floorspace NHS estate - m^2

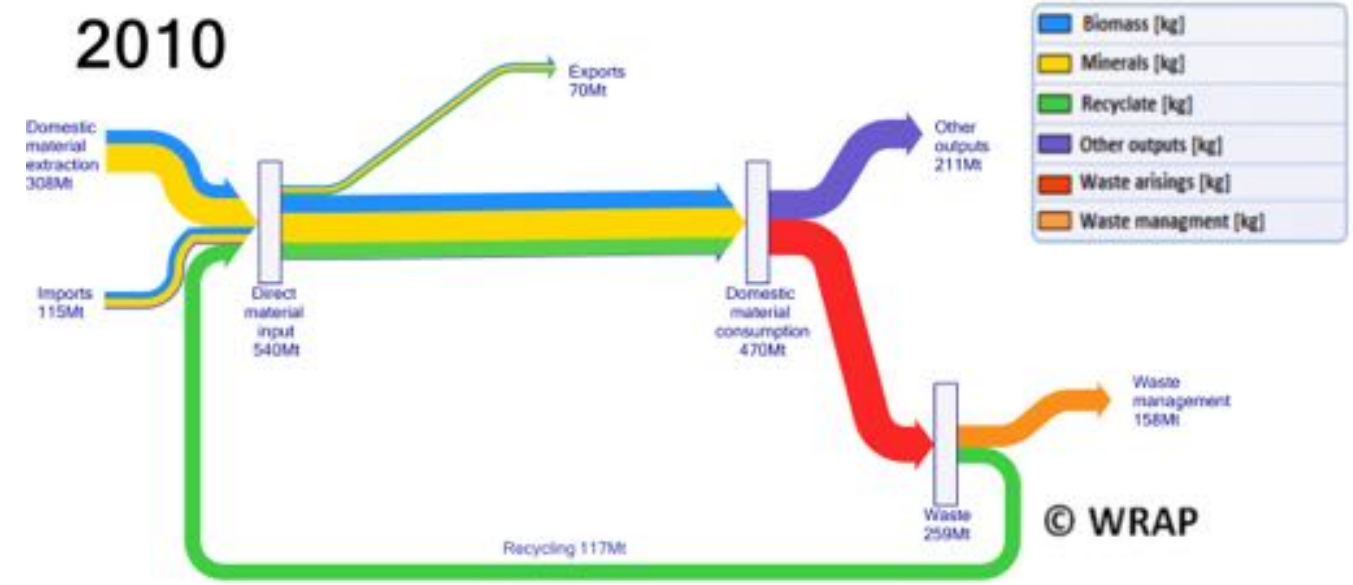
total office space in London - m^2

number of homes in the UK

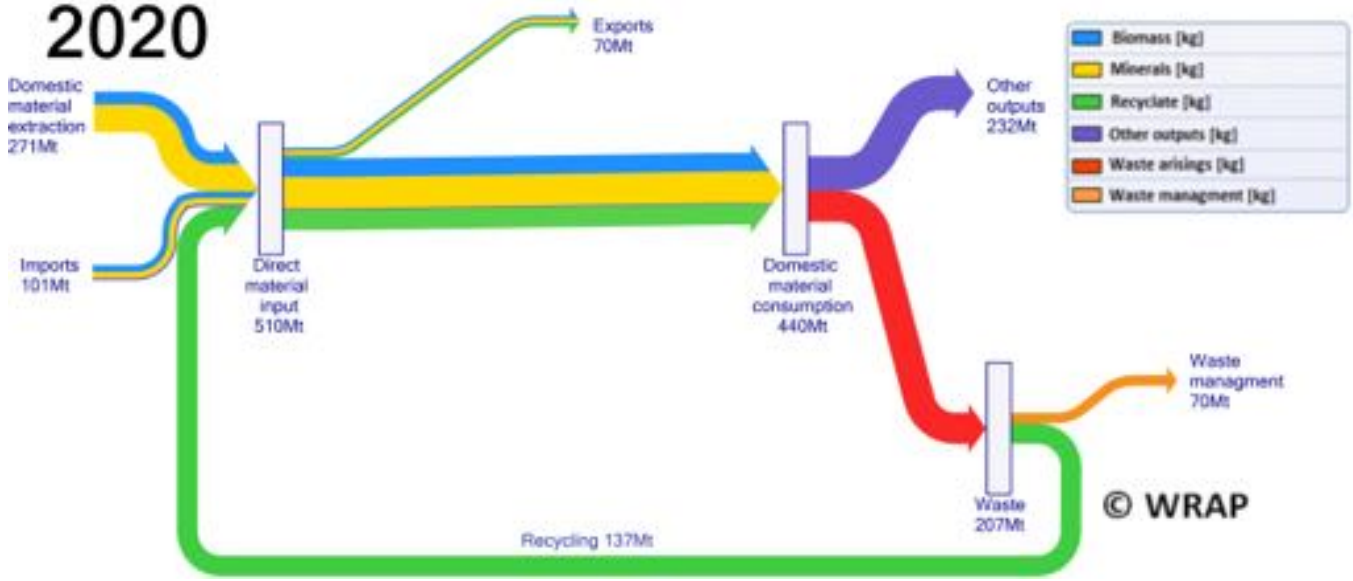
From Linear to Reuse



Recycling

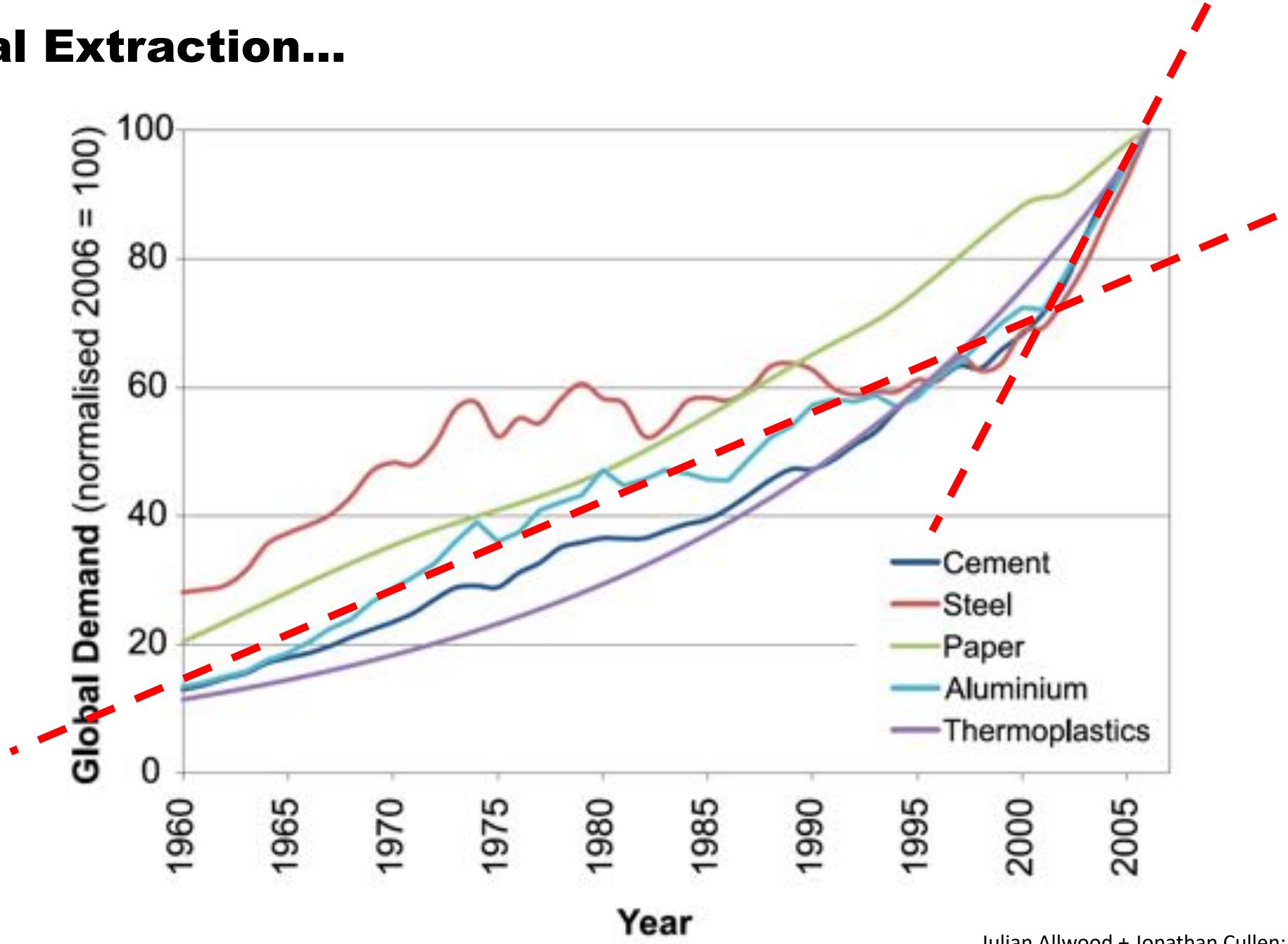


22% recycled



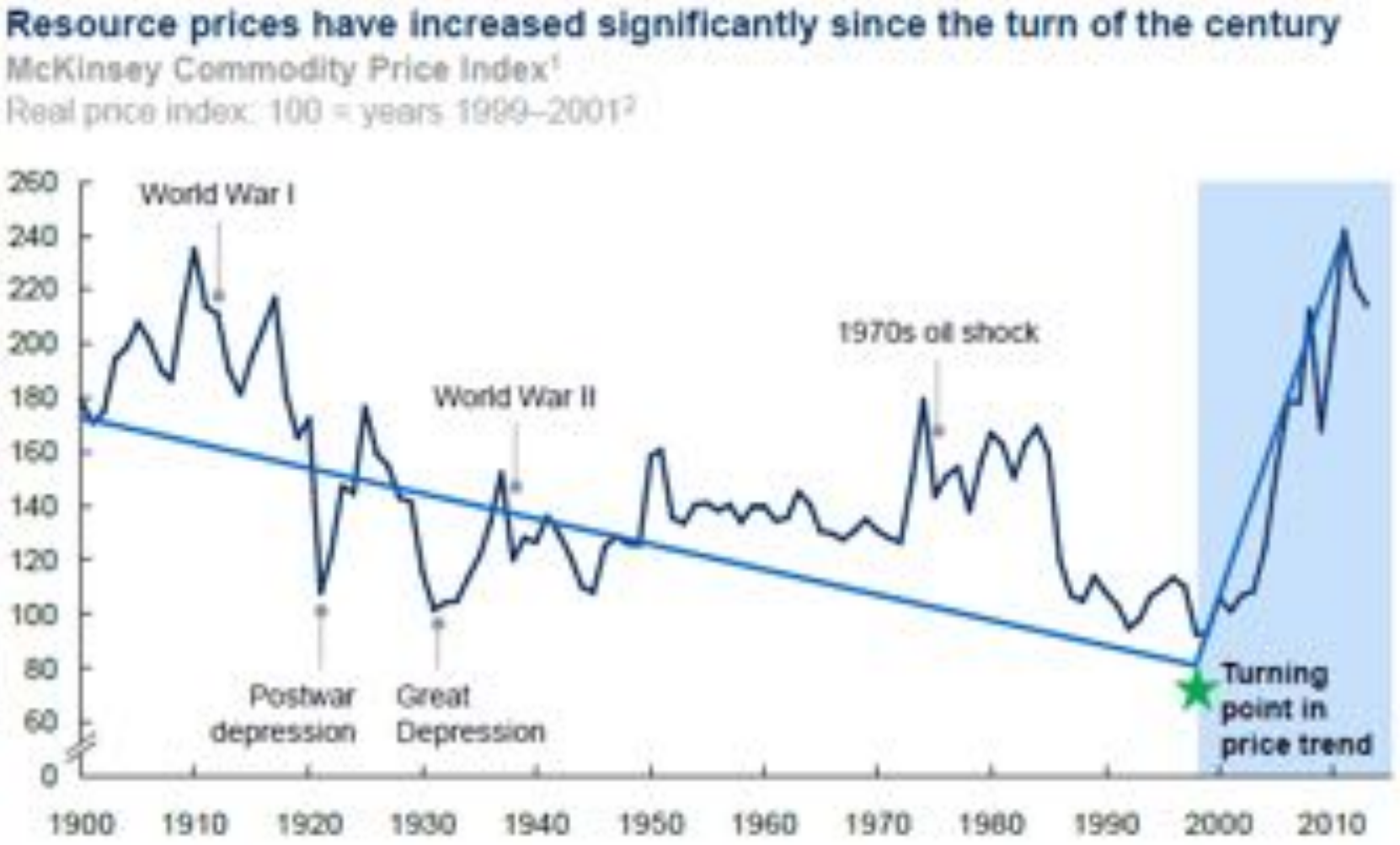
27% recycled

Global Extraction…



Julian Allwood + Jonathan Cullen; University of Cambridge

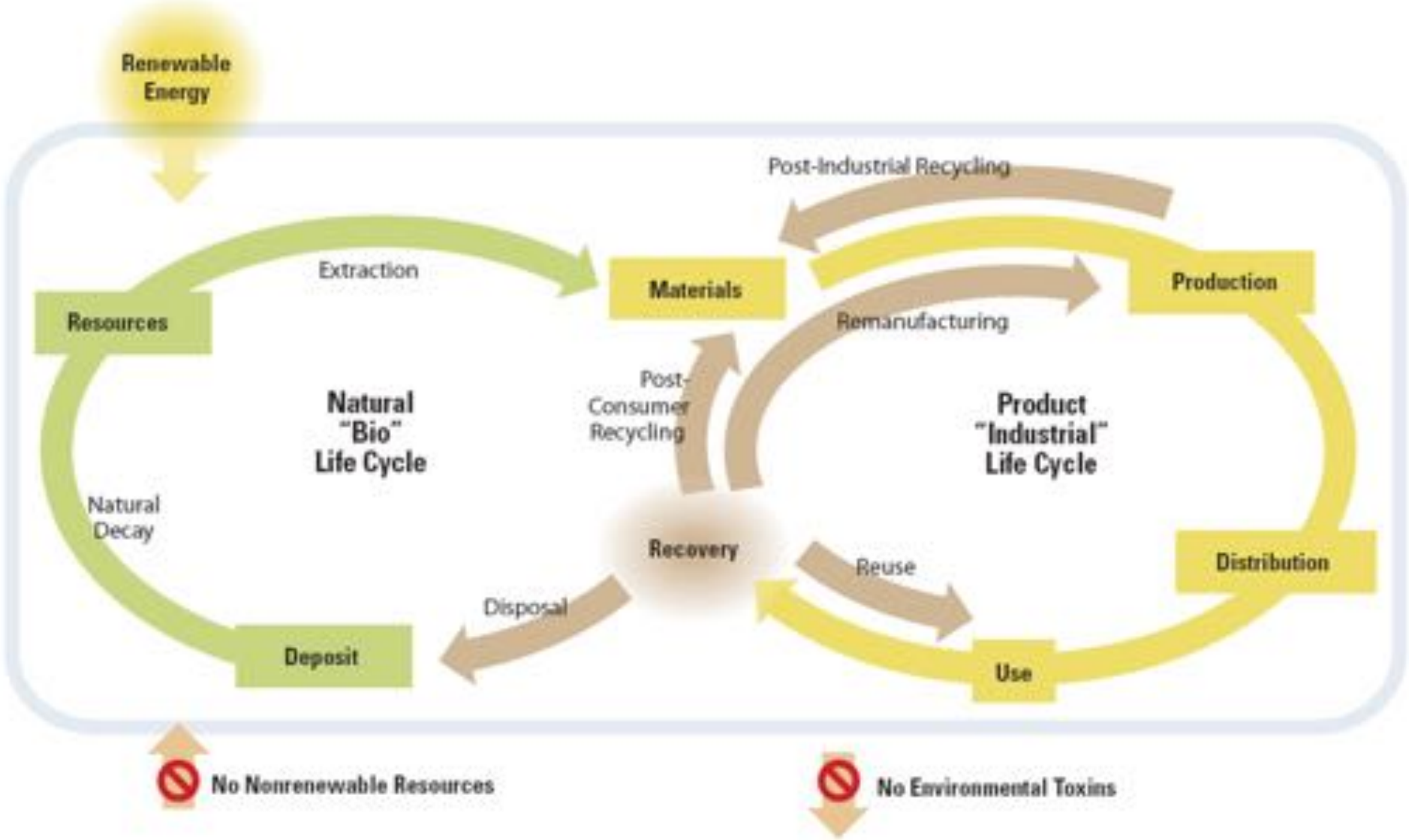
.....Resource Scarcity



The linear economy is running out of gas

From Reuse to Circular

The Circular Economy



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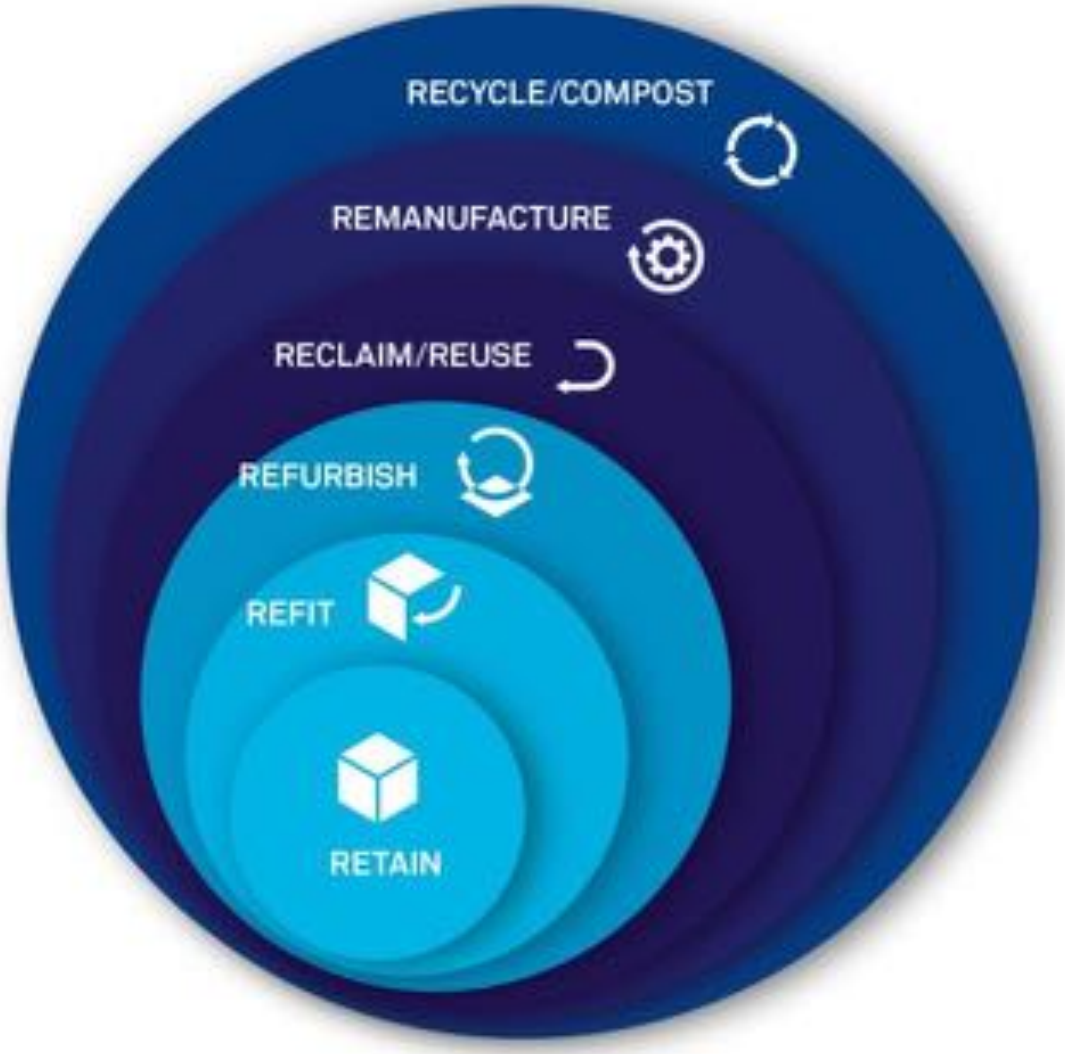

David Cheshire,
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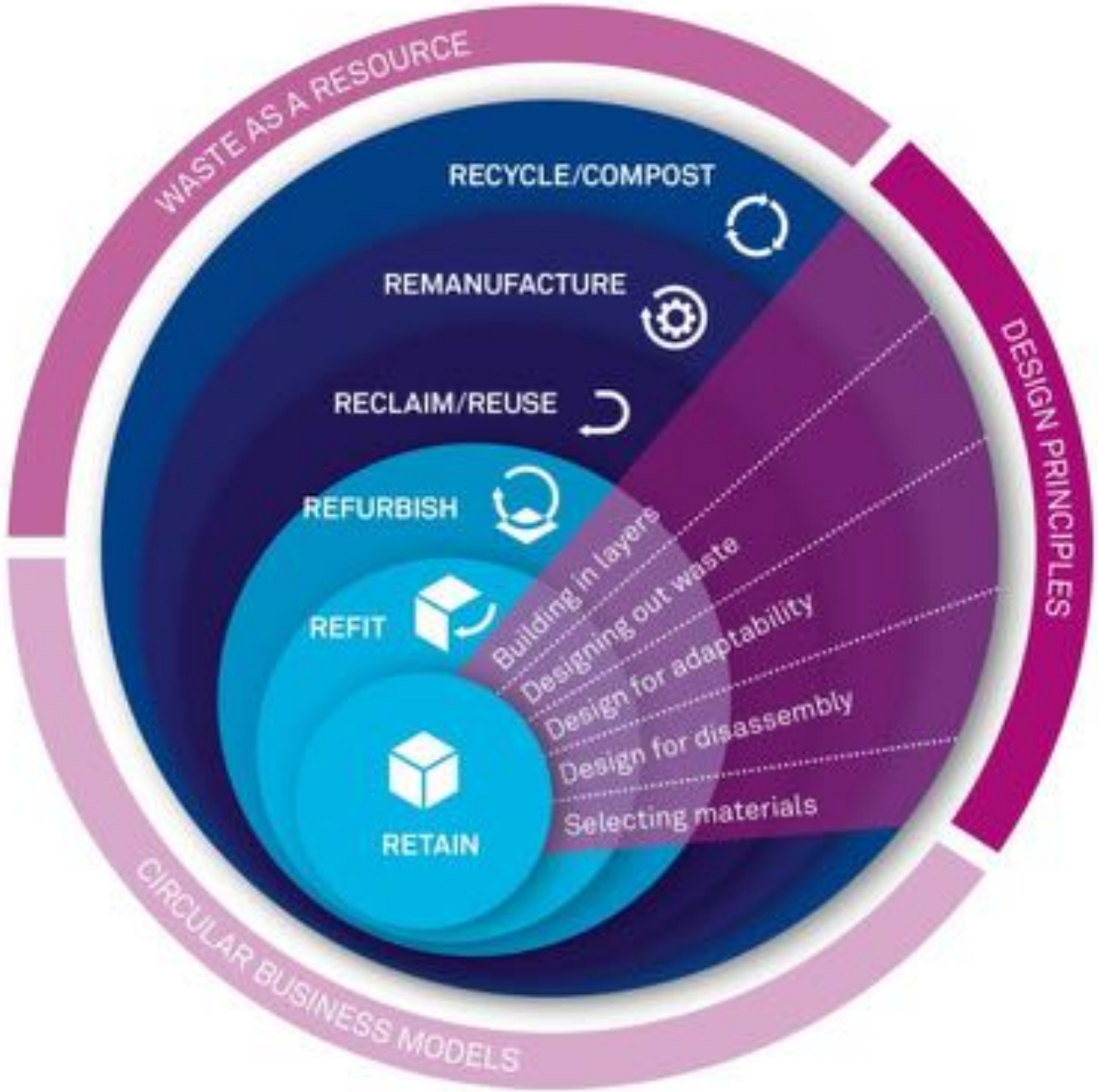
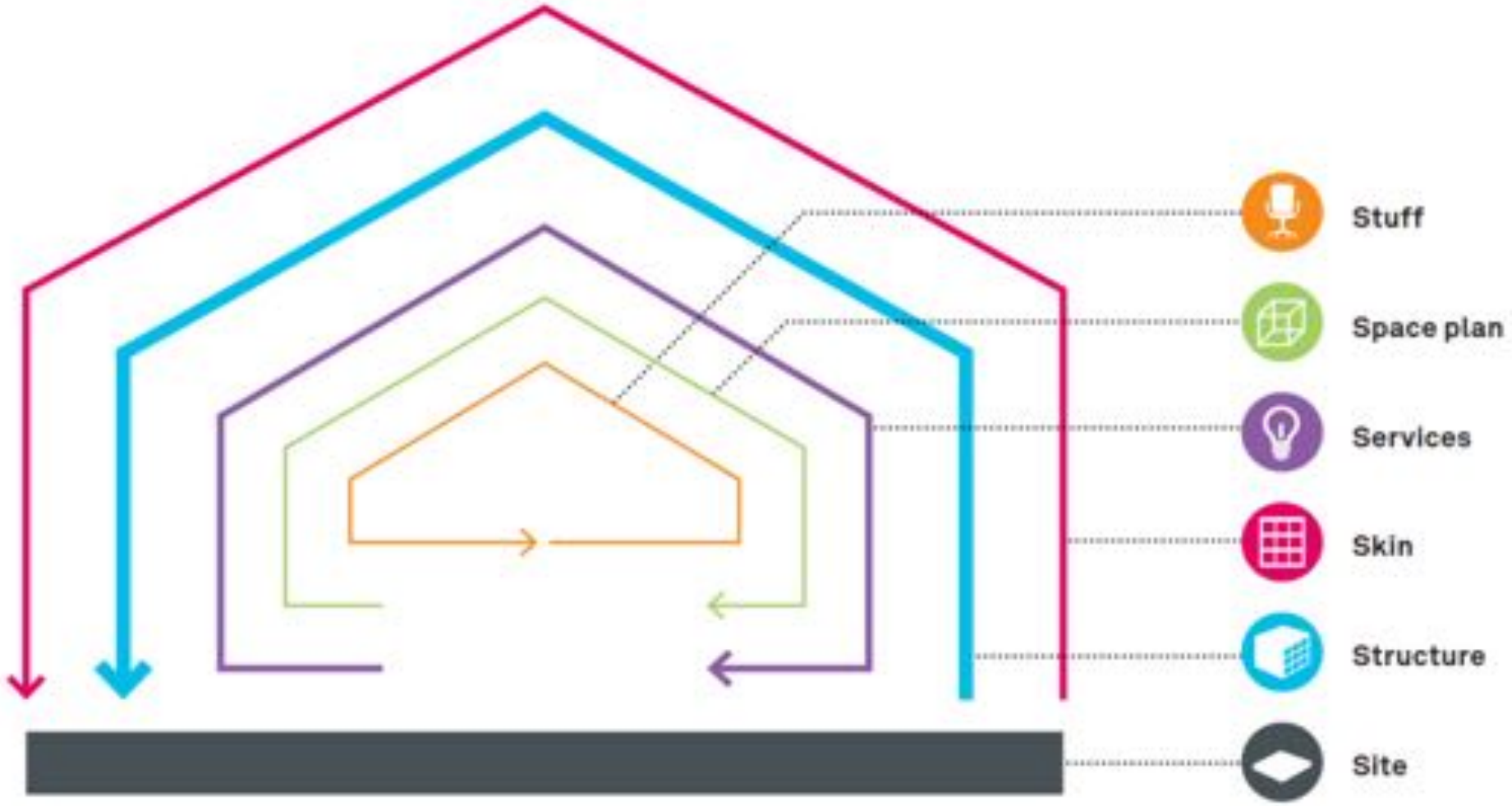


David Cheshire,

AECOM

Building in layers



(Stewart Brand after Frank Duffy)

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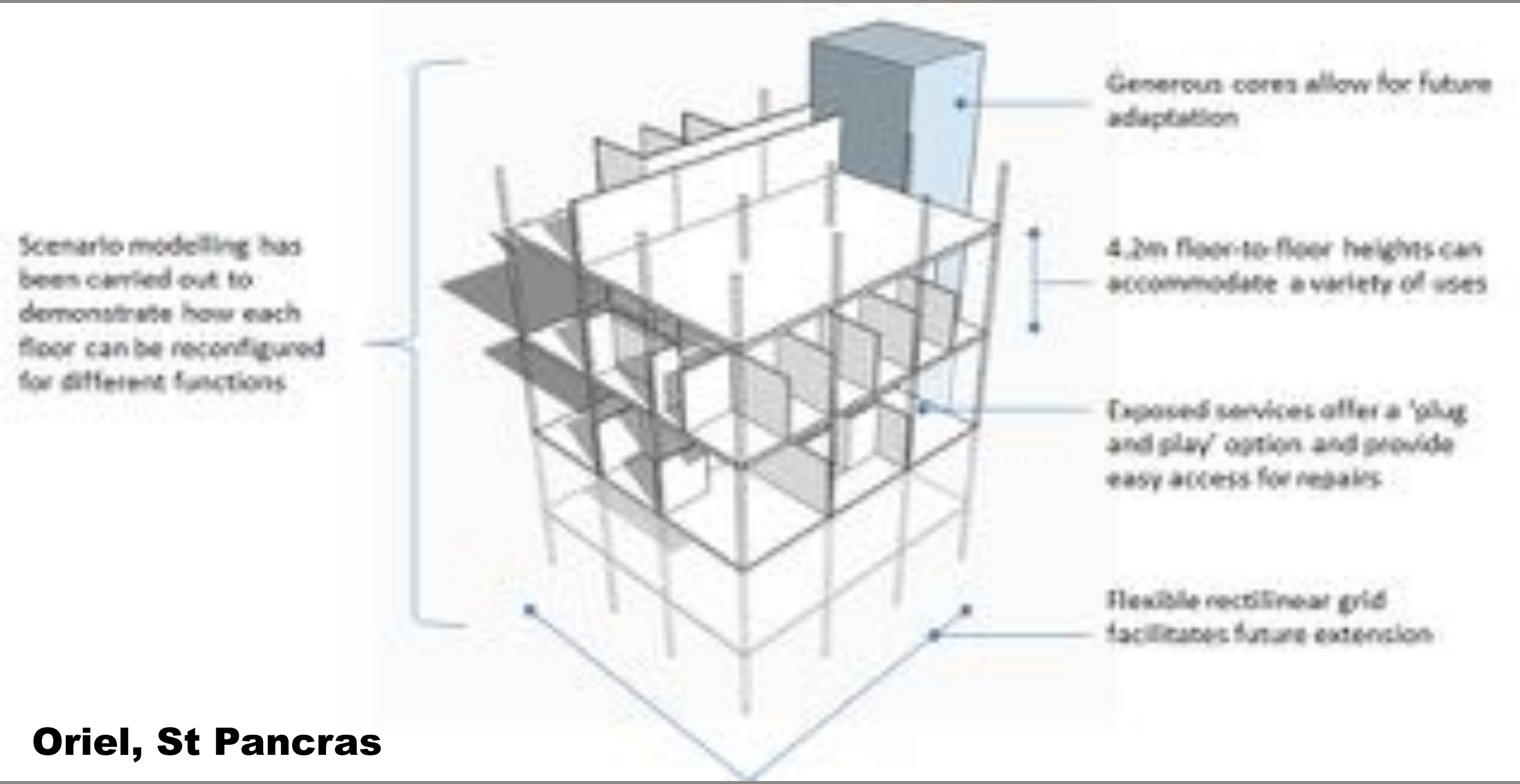
The Enterprise Centre

Architype

Martini Hospital

SEED Architects



Oriel, St Pancras

Modular, demountable interiors

DIRTT

Remanufactured Paint

In one case study (Debenhams) the estimated cost savings were around 22-24% which includes the purchase of paint and removal of unused paint.

Paint360

Building Revolutions:

Applying the circular economy to the built environment

Circular economy guidance for construction clients:

How to practically apply circular economy principles at the project brief stage

APRIL 2019

Partner:

Sponsors:

Adopting a circular economy represents a €1.8 trillion opportunity for the EU by 2030[8]

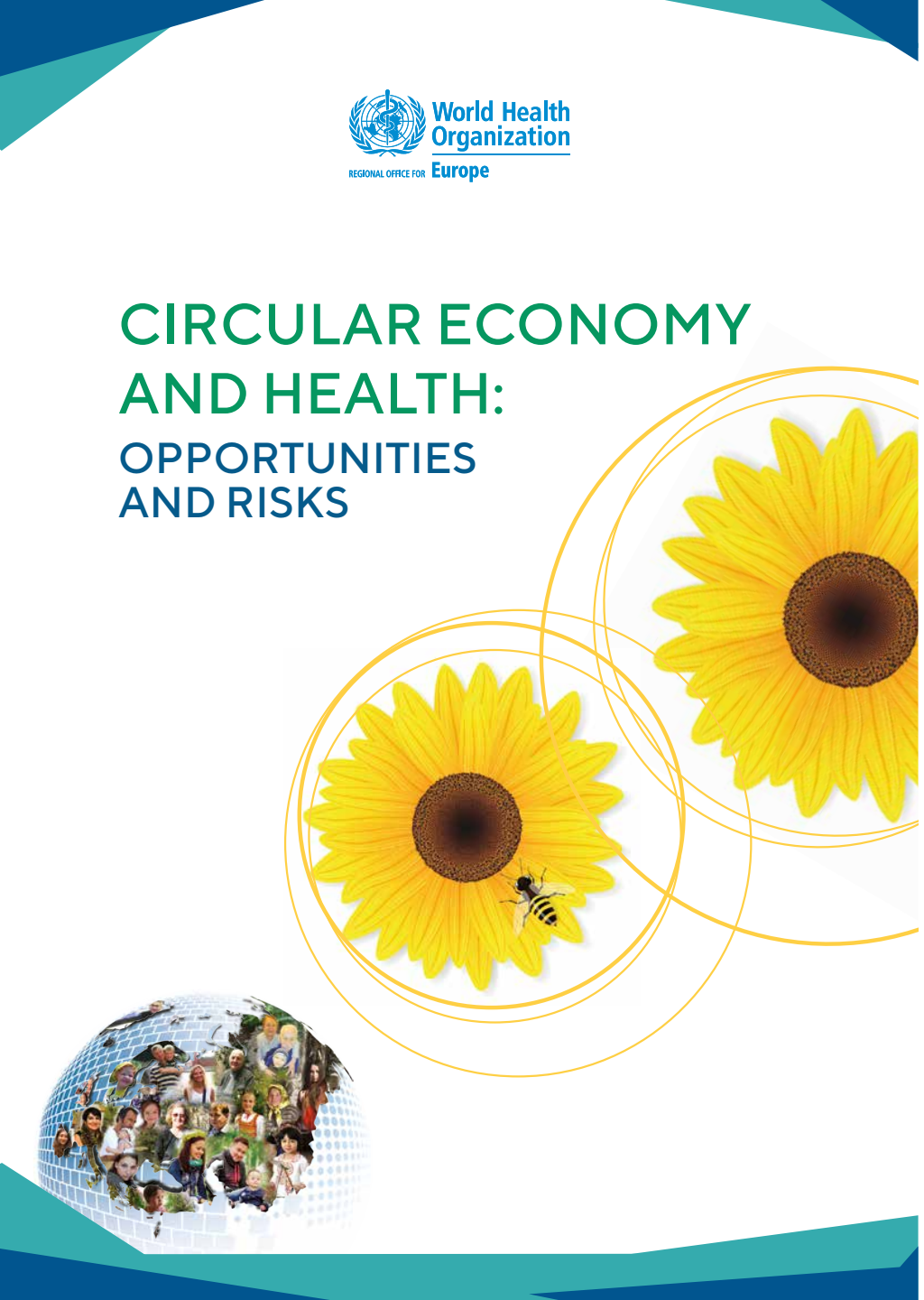
McKinsey Center for Business and Environment (2015)

Oriel, St Pancras

AECOM

white

Penoyre & Prasad



Energy

- Benefits to occupational health & safety, respiratory & mental health.
- Improvements in cardiovascular/respiratory heat-related conditions, heat-related impacts & lower risks from extreme climate events

Waste

- Reduced cancer, negative birth outcomes, & respiratory risks
- Reduced costs allow improved health services across all endpoints.

Food

- Reduced malnutrition & other poor diet related endpoints
- Reduction in poor-diet-related conditions, obesity, various cancers

Source*: Circular Economy & Health: Opportunities & Risks;* WHO Regional Office for Europe

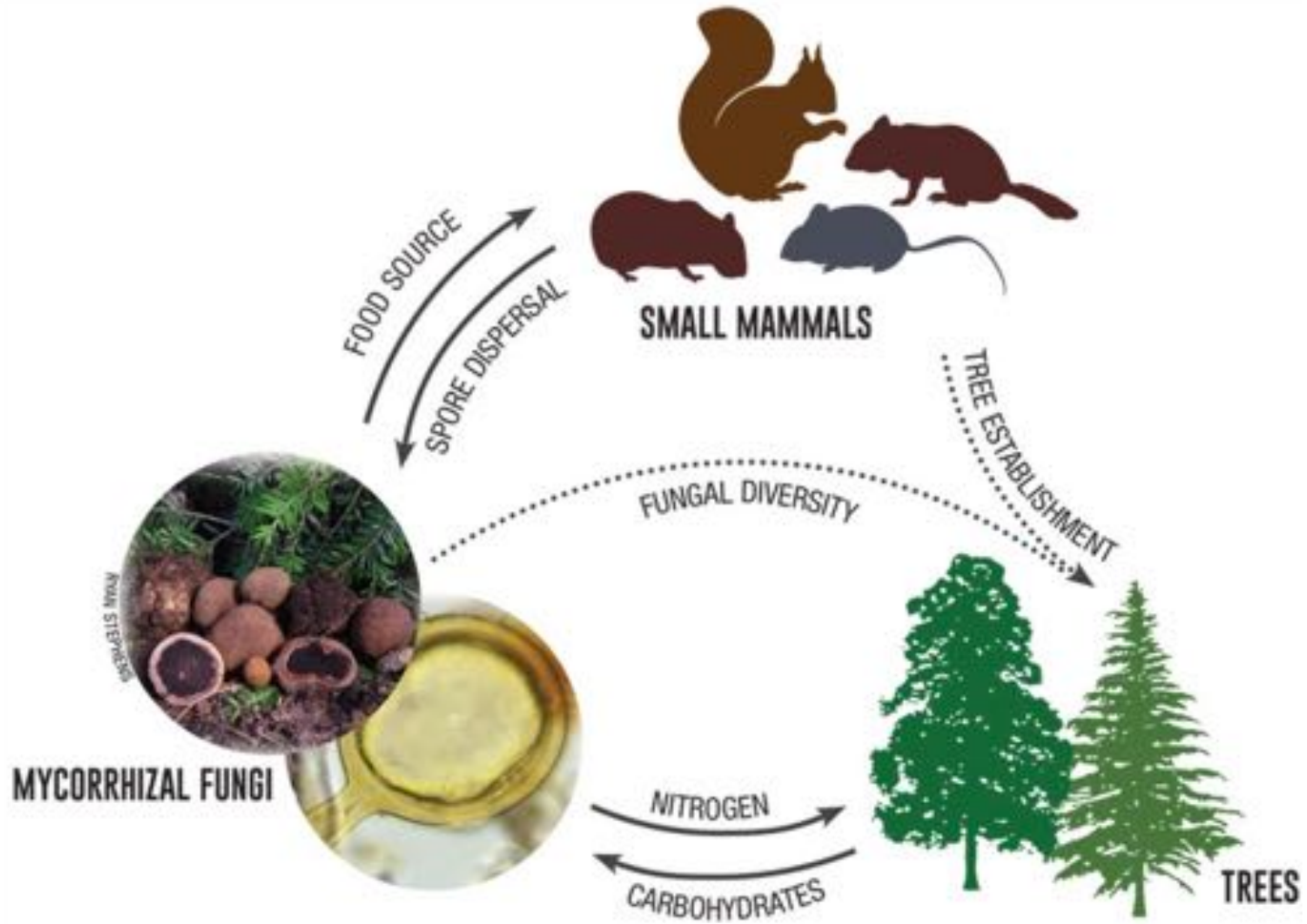
Philips – Pay Per Lux

“I’m not interested in the product, just the performance. I want to buy light, and nothing else.”

Thomas Rau, Architect

Schipol Airport

“The light as a service means that, Schiphol pays for the light it uses, while Philips remains the owner of all fixtures and installations.


FOOD SOURCE
SPORE DISPERSAL
SMALL MAMMALS
TREE ESTABLISHMENT
FUNGAL DIVERSITY
MYCORRHIZAL FUNGI
NITROGEN
CARBOHYDRATES
TREES

Eliot Moore

Avik Maitra Inhabitots

Bacara

Pixabay

Penoyre &Prasad

we throw things away

but where is ‘away’ ?