

Colouring ICT Green

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Where did it start?



Background

Sustainability brief was attached to support directorate

Energy efficiency drive coincided with the start of the rebuild project and the availability of public funding

Need to relocate all ICT into 20% less space without increasing the power loadings?



Eco-friendly

Future-proof

Challenging

Flexible

Welcoming

Painful

Exemplar

Accessible



Inspirational

Affordable

Innovative

High Quality

Dynamic

welcoming

friendly

inclusive

accessible

Risky

Integrated



SOUTH
CHESHIRE
COLLEGE

Environmental Management

- Rain water re-cycling (200000 litres reserve)
- Air source heating driving under floor heating systems in large open spaces
- Solar water heating
- Mechanical heat reclamation
- Natural ventilation and natural light
- Electric vehicle charging points

Environmental Management

- Photo Voltaic panels on the nursery entrance canopy (30m)
- Brown Roof and Green Roof for additional insulation
- Sun trays to reflect light into rooms
- Light sensing and dimming
- Eco feedback system on digital signs

Developing the Story

ICT
Equipment
accounts for
10% of the
UK's
electrical
energy
consumption

Green ICT Handbook

30% of this is
through being
left on when
not in use

Globally ICT is
responsible
for 2% of
emissions,
equal to the
aviation
industry

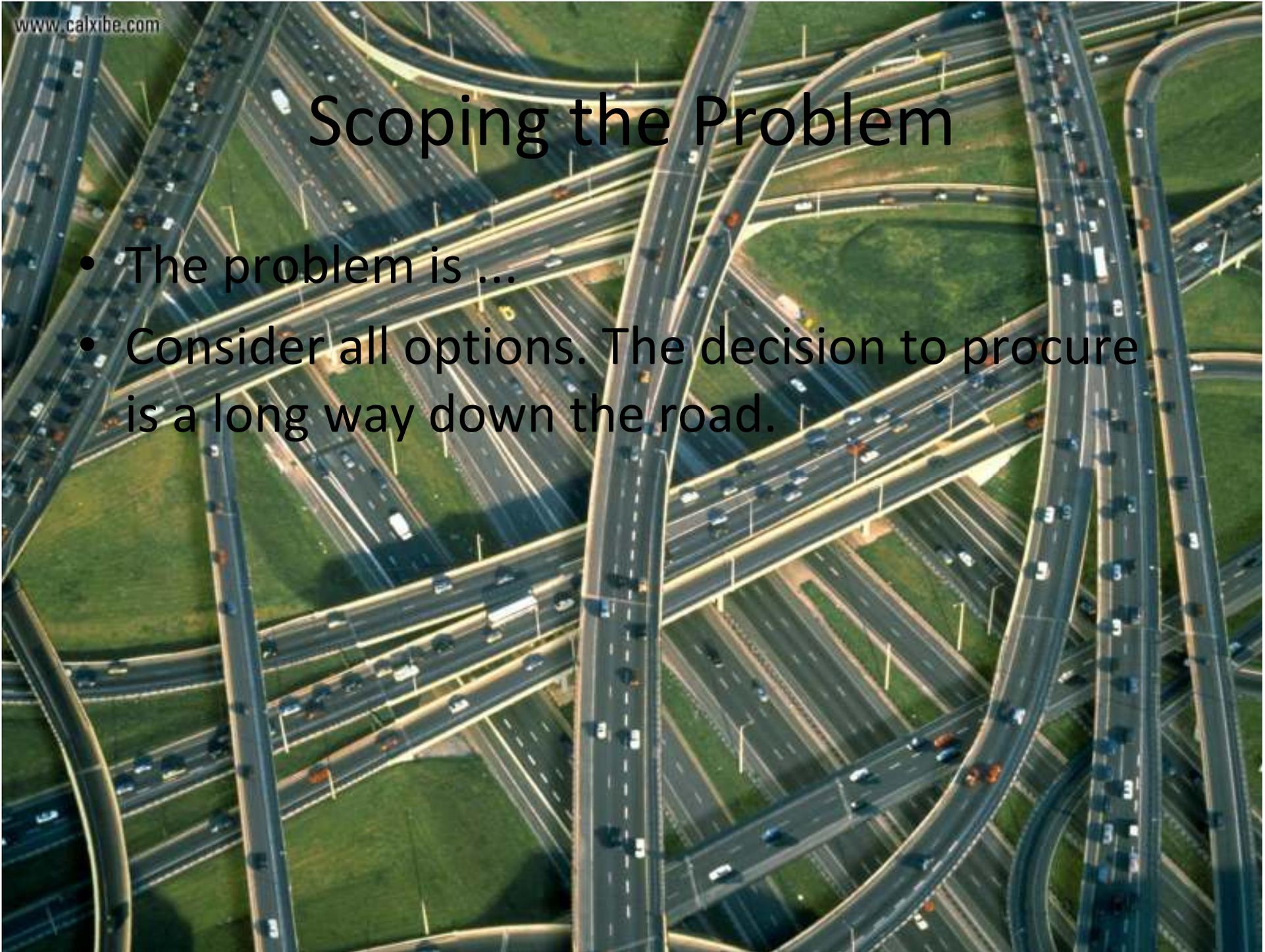
Gartner 2007

Developing the Story

75% of the total environmental impact is a result of production

Scoping the Problem

- The problem is ...
- Consider all options. The decision to procure is a long way down the road.



Options

Deploy less
hardware

Use existing
assets more
efficiently by
changing user
behaviour

Reduce
loadings by
procuring
new hardware

Deploy Less Hardware

Reduce
server
hardware to
20% of 2006
levels

Virtualisation
and thin client
to extend the
life of existing
hardware

Implement
Enterprise VM
Ware and SAN
giving an
actual
reduction of
83%

Change Behaviour

Print less
and, when
you must,
print on both
sides of the
paper

Switch off
what isn't
used,
especially
overnight
(does anyone
use
Hibernate?)

Provide
information
or feedback
on behaviour
impact

Procure New

Already a
£250K annual
rolling lease

Government
energy
efficiency fund
(Administered
by Salix)

Maximum
amount
obtained
enabling the
replacement
of all CRTs
and old PCs,
over 2 years

Replaced with What?

- Examined 3 brands claiming green credentials
- Not all “green” definitions are equal
- Bench tested:
 - Idle state
 - Running office applications
 - Playing a variety of media
- Moderated with lifetime and recycling costs
 - Auto shutdown/sleep functions

Strategy for a New Campus

All PCs to meet energy efficiency specification allowing reduced parameters for thermal modelling

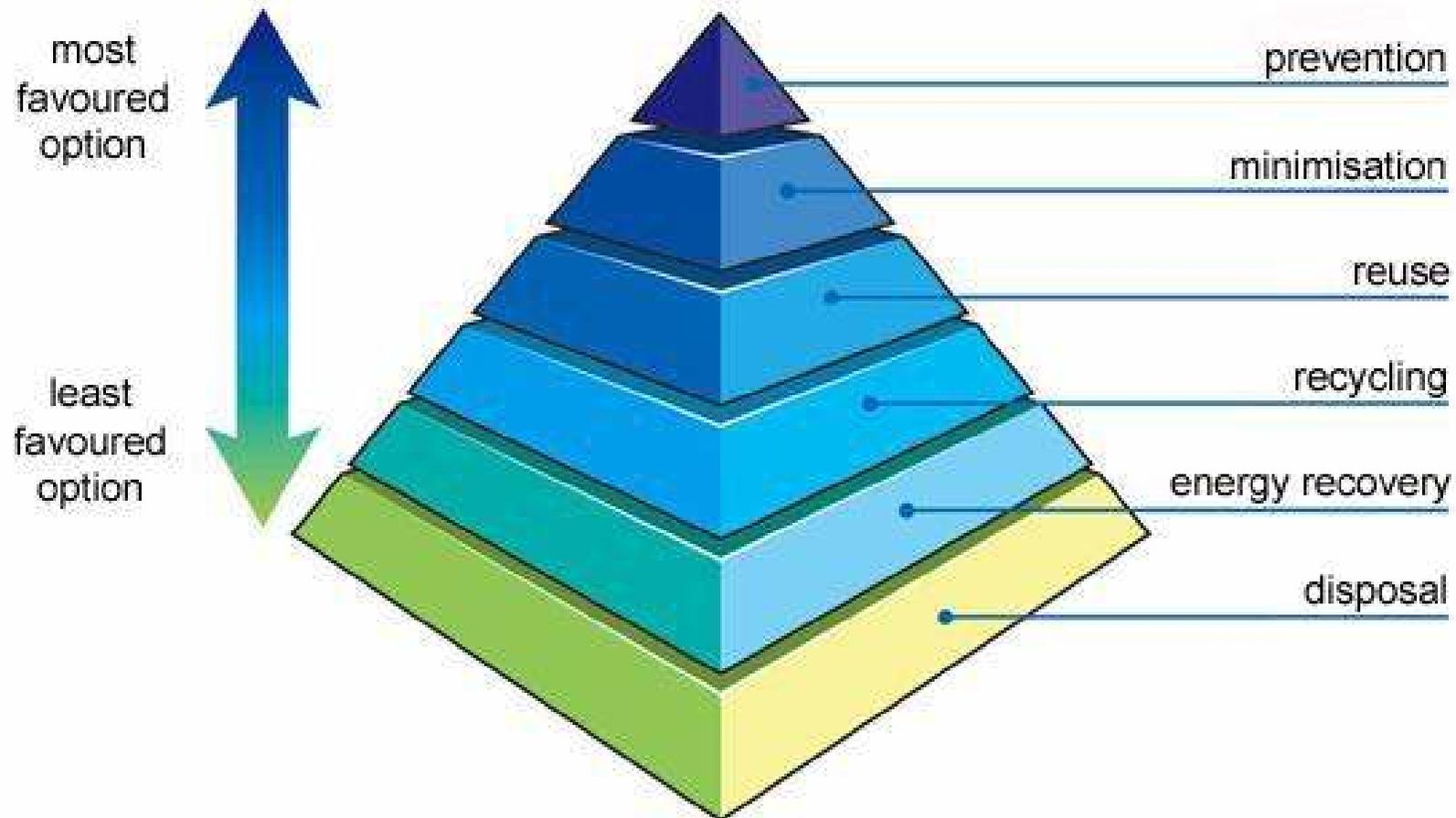
Ensure expansion capacity in data centres and switch rooms for thin client Laptop and PC expansion

Data centres to be “cold corridor”, restricting refrigeration needs even in large rooms

Cheap Cold Corridor



Waste Hierarchy



Waste Hierarchy

Regulation 12 of the Waste (England and Wales) Regulations 2011 says that businesses who import or produce, collect, transport, recover or dispose of waste, or who operate as dealers and brokers, must take all reasonable measures to apply the waste hierarchy when the waste is transferred.

We all like these?



So we accept this?



And Finally

Large savings can be achieved through fairly simply design and behavioural changes

Lifetime costs and “real” performance need close investigation, as does the global picture

It’s not enough to read the company’s green statement and WEEE compliance

It's easy to change behaviour?

