



Design for Recycling

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World Materials Forum
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A challenge of modern production is sustainability

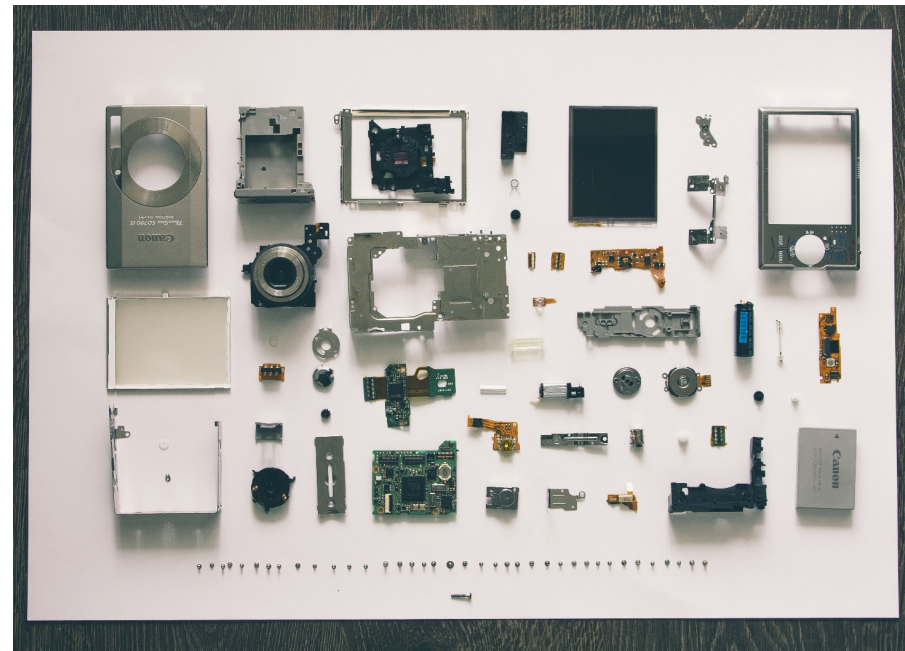


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We need to design and produce with the circular economy in mind

- Too many products cannot be recycled
- Too many products cannot be taken apart or at high cost
- The mixed material dilemma
- The change of properties dilemma
- But who owns the problem?



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Sapa: Shaping a sustainable future through innovative aluminium solutions



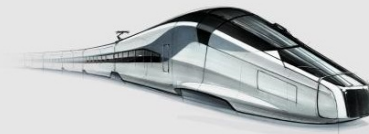
At home



In your car



At the office



When travelling

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Meeting Sustainable Development Goal #12 – Responsible consumption & production

- Solving the environmental challenge through:

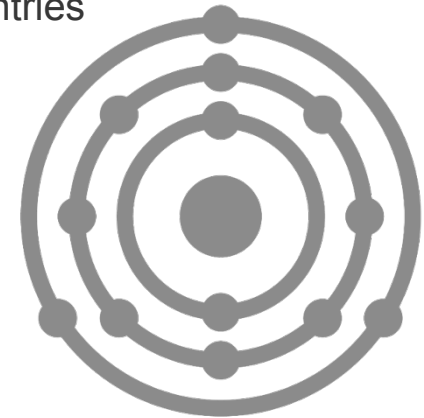
Substantially reduce waste generation through prevention, reduction, recycling and reuse



#1 Choose a sustainable material

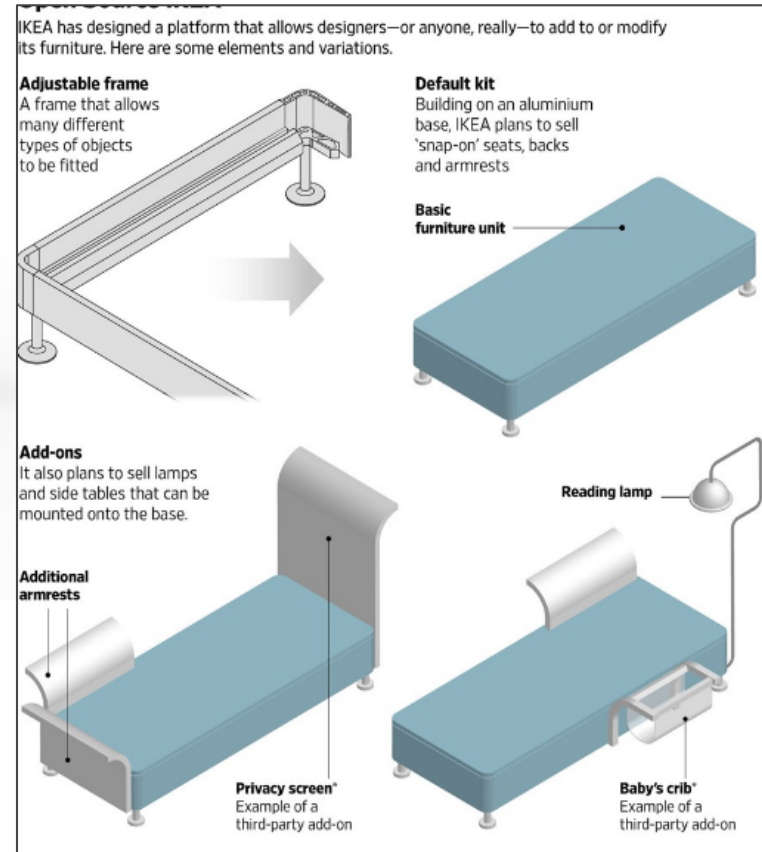
– Why aluminium?

- Infinitely recyclable in principle, however, vulnerable to impurity contamination
- 3rd most abundant element, 8% of the Earth's crust and mined in several countries all over the globe
- More than 70% of all aluminum ever produced is still in use
- Recycling aluminium can reduce energy consumption by as much as 95%
 - ~70% for plastics
 - ~60% for steel
 - ~40% for paper
 - ~30% for glass



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#2 Design so you can repair and re-use



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Photo: Tom Dixon Studio

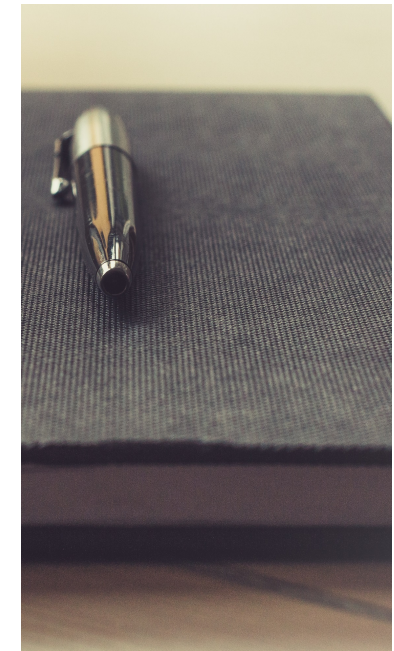
#3 Know how to join the materials

- Ideally a joint is strong in service, but weak upon dismantling or shredding
- At best, it will not introduce additional materials
- Neither should it affect the base materials
- Extrusions allow for substantial function integration including different types of mechanical joints
- Generally, fusion welding is used too much



What can authorities do to drive the sustainability agenda?

- Integrating environmental, social and governance considerations into financial decisions such as large investments
- Make sustainability a mandatory requirement for all state-owned companies
- Incentivize recycling and make it easier for society to recycle
 - Offerings of recycling agreements at time of purchase
 - Scale is needed to make it profitable to recycle
- Information and education



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What are we doing at Sapa?



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Scrap sorting line in the UK – a step towards increasing post-consumer scrap



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Sapa light poles – solar powered and cradle-to-cradle



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Cradle to cradle in windows from Wicona



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Educating our customers and other stakeholders



- Sapa held the first "profile academy" in 1996 and over 10,000 attendees to date
- Last year we held academies in 19 countries in 14 languages
- ~30 academies planned for 2017

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Working together for greener designs

#1

Selecting a sustainable material



#2

Design so you can repair and reuse



#3

Joining to facilitate recycling



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The Aluminium
Design Knowledge
Hub.

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