ASBP The Alliance for Sustainable Building Products

Reducing Plastics in Construction – An introduction to the ZAP Project

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REDUCING PLASTICS in construction group

“A collaborative stakeholder group seeking to identify solutions and alternatives that can help to reduce the over-use of plastic building products and packaging in the construction industry.”

Plastics in Construction Group - Context

- Continued the momentum from our 2019 ‘Plastics in Construction’ Healthy Building Conference and Expo
- Collaborative, cross-supply chain network
- Identify challenges facing industry and propose solutions/outputs/guidance
- Connect with other initiatives & recruit members that can help provide solutions
- Identify funding opportunities
- 4 quarterly meetings each year

HEALTHY BUILDINGS
CONFERENCE & EXPO 2019
PRODUCTS • PEOPLE • PLANET

Members’ interests

Microplastics & nurdles

Product packaging

Robust alternatives

Plastic waste/recycling

The ZAP Project

ZAP Project - Zero Avoidable Packaging Waste in Construction.

We are delighted that our ZAP Project bid was one of 4 successful projects in the second phase of the Ecosurety Exploration Fund!

Research project runs throughout 2022 with partners ASBP, Cullinan Studio, Bankside Open Spaces Trust, Mace and Morgan Sindall.

"To generate a better understanding of and reduce packaging waste in the construction industry, minimise contamination and explore end of life scenarios and innovative solutions."

https://www.ecosurety.com/impact/education/zap/ https://asbp.org.uk/project/zap-project

BANKSIDE OPEN SPACES TRUST

CULLINAN STUDIO

mace

MORGAN SINDALL CONSTRUCTION

ASBP The Alliance for Sustainable Building Products

Key tasks

Task 1: Data collection on key products and packaging, waste management routes, barriers and enablers and current best practice

Literature review, data collection and interviews

Task 2: Assess the opportunities for improvement and the associated benefits

identify opportunities and solutions (5) with supply chain and undertake a feasibility assessment

Task 3: Evaluation of the opportunities identified

Environmental and cost assessment. What works when and key factors for success

Task 4: Dissemination

Creation of guidance and related case studies and development of checklists (site, client and designer) based on above tasks findings

Why is this needed?

- No overall understanding of the types and amounts of packaging used for construction products
- A lack of granularity in terms of the polymer type
- A lack of understanding of how it is managed on site and disposed of
- Lack of knowledge on what manufacturers are doing and can do

All of the above means its very hard to put in any interventions in and know what the outcome will be!

Exporting of plastic packaging

Combatting the illegal export of construction and demolition waste plastic film and wrap

Posted by: elenaholmes, Posted on: 29 July 2021

The EA's Illegal Waste Exports Team (IWE) have identified an emerging issue in the illegal export of highly contaminated plastic film and wrap from the construction and demolition (C&D) sector.

Following Intelligence led targeting, an increasing number of shipments of contaminated C&D waste plastic film and wrap are being stopped by our officers. This material is increasingly being exported from England under 'low risk' Green List waste controls when the level of contamination we are observing means those exporting such waste actually require prior consent from us and overseas regulators. When they don't obtain consent, the export is illegal!

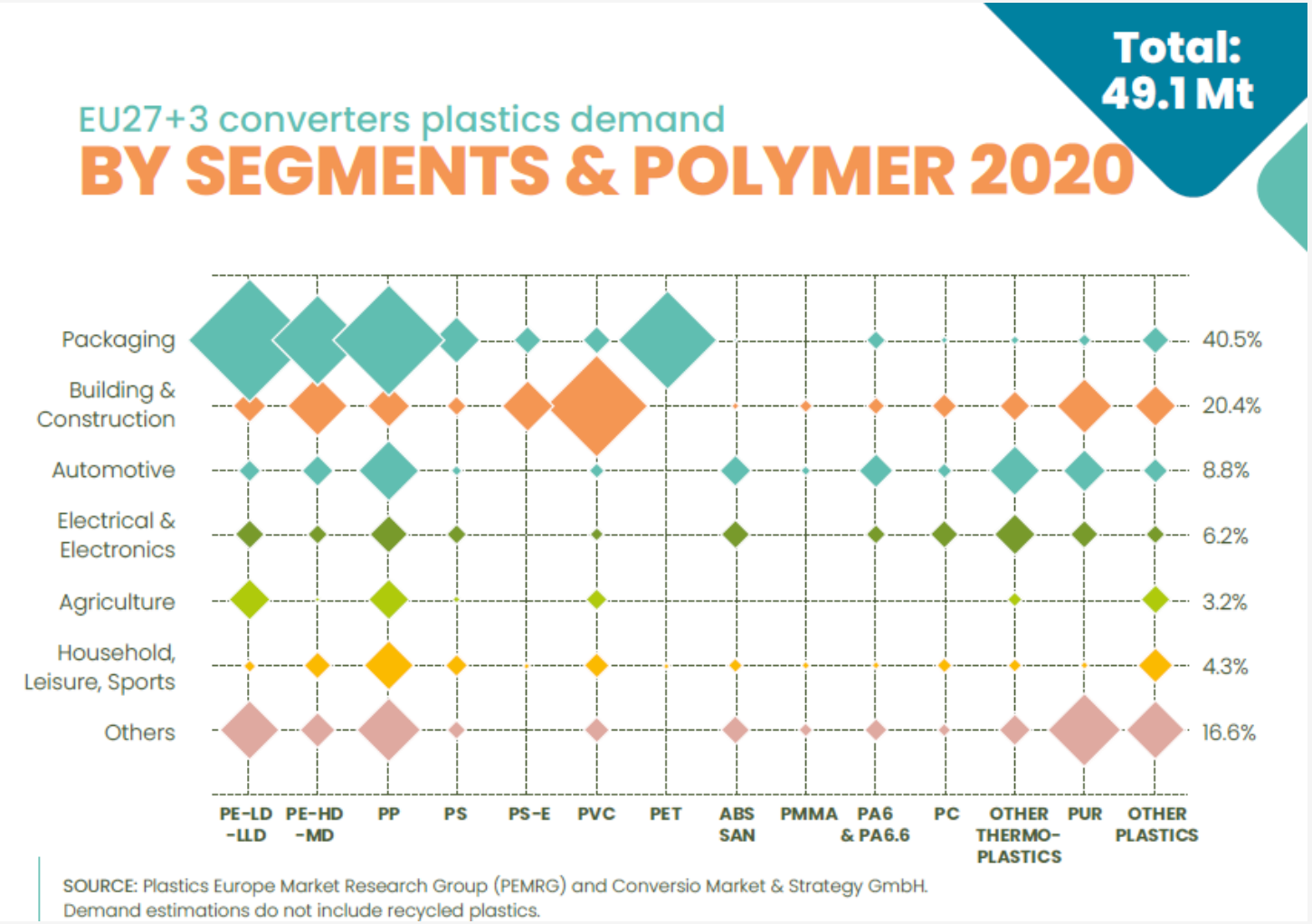
The plastic is often dirty and contaminated with materials such as mud, sand, rubble, and bricks which means the waste will require further treatment after export.

https://environmentagency.blog.gov.uk/2021/07/29/combatting-the-illegal-export-of-construction-and-demolition-waste-plastic-film-and-wrap/

Task 1: Data collection

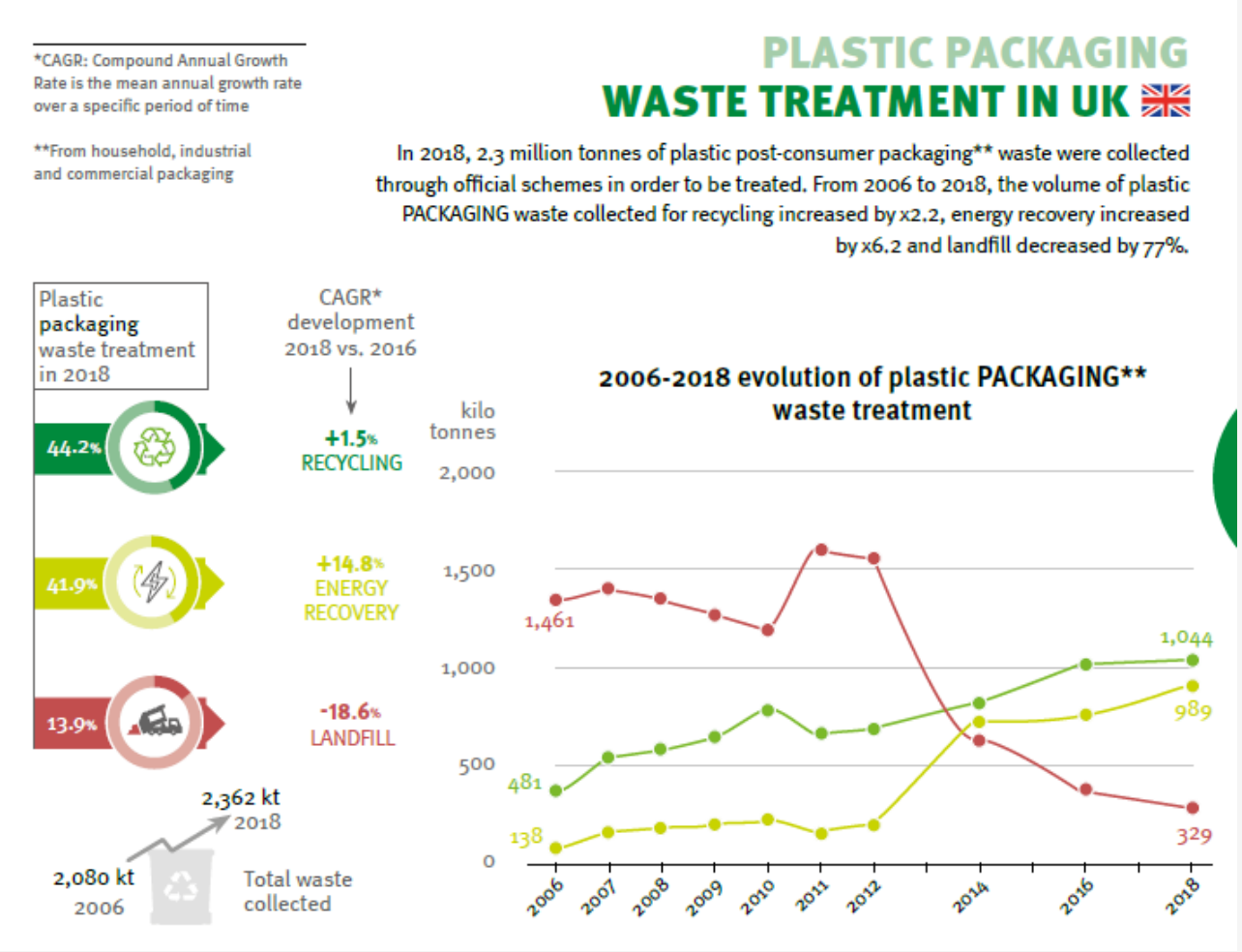
- Review of existing datasets and reports
- Review of Environmental Product Declarations
- Review of surveys (e.g. Valpak and Zero Waste Scotland); and databases e.g. Waste Data Interrogator, National Packaging Database and company's data/compliance scheme data
- Collection of best practice case studies
- Interviews:
  - 20 Suppliers
  - 5 Building Merchants
  - 5 Waste management Contractors
  - Other key stakeholders

How much packaging is there - European



Source: Plastics Europe, The Facts 2021

Packaging in the UK



- But around 0.5 million tonnes exported (21%)

Source: Plastics Europe, The Facts 2020

How much packaging is there - UK

- 2.3 million tonnes of packaging placed on the market in 2017 (WRAP)
- Of this: construction packaging is 62,000 tonnes +/- 21% (i.e. it could range from 48,890 tonnes to 75,020 tonnes).
  - PE Film is 86% (54,000 tonnes)
  - PP (pots) is 10% (6,000 tonnes)
  - HDPE (pots and bags) is 4% (2,000 tonnes)
- It may also be that some of the manufacturing packaging is from construction - 409,000 tonnes (at +/- 21%)

How much packaging is there - Construction sites

- An old BRE Study found that that packaging wastes accounted for between 5% and 50% by volume of a construction project's total waste, with an average of 34% by volume.
- A further study by WRAP in 2005 found that packaging accounted for an average of 26% by volume of waste from a construction project.
- Plastics was about 16% by tonnage of the packaging waste
- BRE Smartwaste - packaging materials accounted for 2% by tonnage of all waste produced; though it should be noted that mixed C&D waste accounted for 22% by tonnage (in 2017)
- One contractor found that packaging materials are 11% by volume; 7% by tonnage; plastic (could include packaging) is 20% by volume and 6% by tonnage; Mixed C&D waste is 6% by volume and 22% by tonnage.

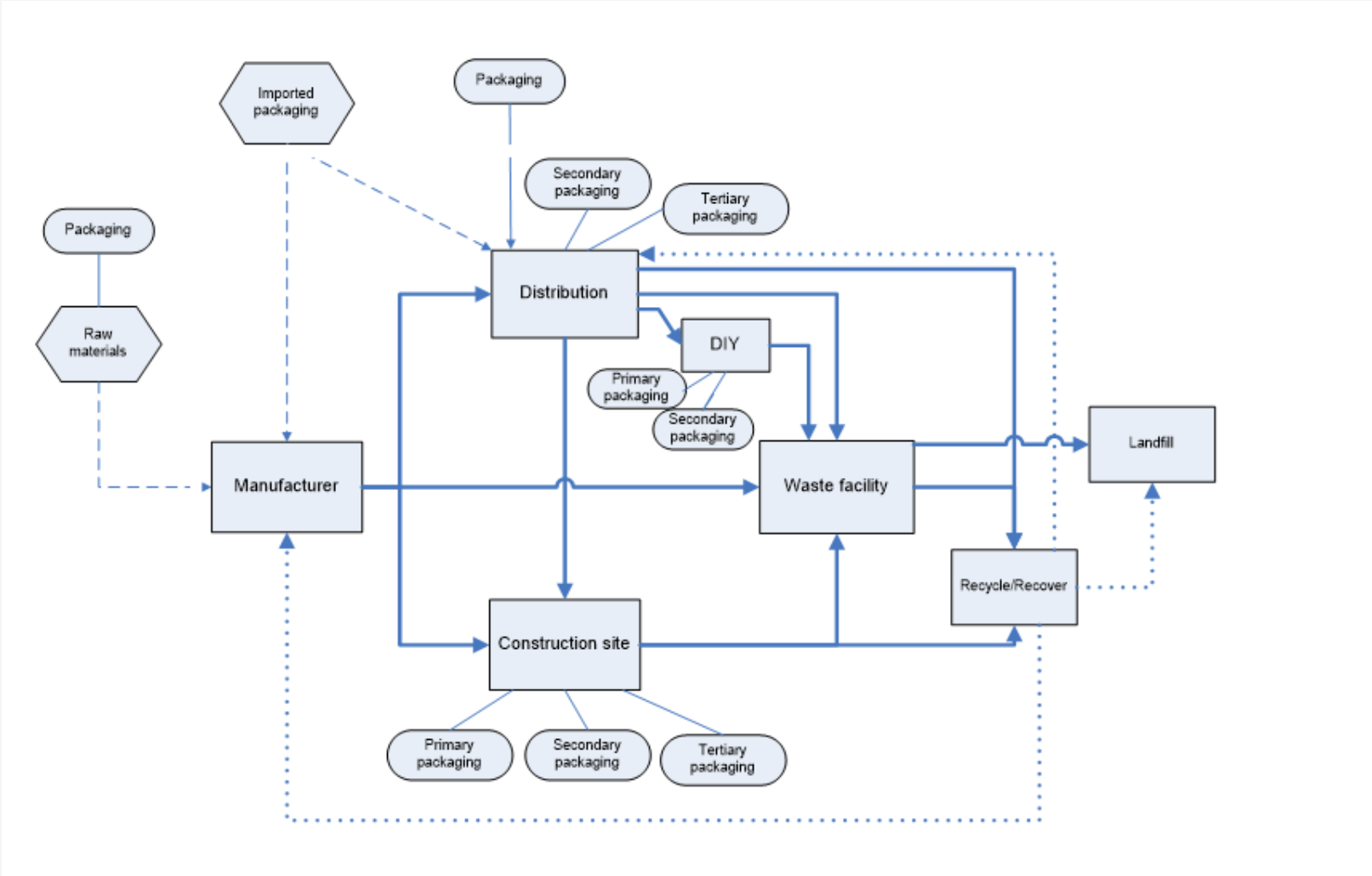
Type of packaging

Type	Function	Example	
Primary	To primarily contain, protect and identify the product. An example of this is the	Use of paper/plastic bags for cement. Plastic bags that may be used for ironmongery to separate items from each other which could be stored in a cardboard box. Paint pots	
Secondary	For grouping, separating or binding more than one item together.	Use of banding and/or shrink wrap Strapping heavy materials to pallets Hold board products together through polyethene wrapping	
Tertiary	Protects and supports specifically during transit of the product (this includes storage and handling).	Different shapes and parts on a pallet, which are shrink wrapped to provide stability Pallets	

Packaging types in construction

	Plastic packaging					
Plastic types	Shrink Wrap	Strech Wrap	Buckets	Bandings	Hoods	Bags
LDPE– (low density polyethylene) 	X	X		X	X	X
PP (Polypropylene) 			X	X		
Other (Woven Polypropylene) 						X

Packaging flows



Interventions

Considerations

- Health and safety
- Storage
- Cost
- Product compression
- Branding and labelling

Common findings: manufacturers and merchants

Interviews

- Focus on increasing recycled content
- Lack of alternatives for some products (e.g. wrap and banding)
- Already some optimisation work has been undertaken
- Some switching from plastic to cardboard
- Segregation of plastics (wrap) for recycling (merchants)
- Most say its recyclable!

Common findings: waste management companies

Interviews

- Contamination issues
- Too many plastic types
- Lack of market and infrastructure in the UK
- Difficult if material does not fall into main material streams for recycling; Will segregate ‘hard/rigid’ plastics
- Labelling can be an issue
- Compostable packaging is also an issue

Wienerberger case study

Best practice

Our starting point

In the UK we were using:

- Both stretch hoods and shrink wraps
- Both printed and unprinted
- More than 10 plastic specifications
- Thickness range from 60mu to 150mu

Wienerberger

Quick wins

11

Reduction by standardisation of specifications:

- Thickness
- Length of foil
- UV protection
- Branding will be removed
- Label redesign

End game: no single use plastic

Wienerberger

Travis Perkins case study

'As a supplier, you commit to reducing waste by removing unnecessary packaging, eliminating avoidable single use plastic and working towards making your products and packaging reusable, as recyclable as possible, simple for our customers to recycle and compatible with the UK recycling infrastructure.'

The concept of 'making more while using less raw material' lies at the heart of a circular economy (see link below). Applying circular thinking to the key areas of a product's life cycle will make the product more efficient and resilient, whilst reducing its environmental impact.

As our supplier, we need your help to put a circular economy into practice. Specifically, we want you to consider some key actions at different stages of the product and packaging life cycle:

Design

- Review the type and quantity of packaging used.
- Make recycled materials your first choice, avoid the use of raw materials where possible.
- By April 2022, where you supply us plastic packaging it must contain a minimum of 30% recycled content and this must be fully evidenced.
- Design your products and packaging to be reusable where possible and always recyclable at the end of life.
- Provide packaging which meets product integrity, essential legal requirements, recycling criteria whilst limiting waste for our customers.

Manufacture

- Ensure that manufacturing sites can evidence recycled plastic content in any plastic packaging you supply to us. Evidence must meet HMRC requirements.
- Make sure your manufacturing site can demonstrate an improvement programme to reduce, eliminate, reuse and recycle manufacturing waste.

Recycle

- Provide advice and guidance to our customers on how your products and packaging should be handled at end of life:
  - Clearly label each material with recycle symbols.
  - Ensure that the polymer of each plastic is clearly marked.

→ Useful Links

- What is circular thinking?
- Packaging (Essential Requirements) Regulations

Case studies

Best practice (Considerate Constructor Scheme case studies)

- Brickwork contractor has swapped all timber pallets for those made of recycled, robust plastic and reusable.
- ‘Foil sausages’ or ‘chubs’ can be used on sealant applications and can reduce waste by up to 95%; foil waste is 24 times smaller than the plastic waste
- Use of rock-climbing chalk bags on our work belts, to put offcuts from stripping small sections of UPVc coating off our lightning protection tapes into as they work and sent for recycling
- Spray on window protection which has reduced material usage and waste generation
- Reusable, collapsible boxes for M&E, flatpacked and reused

Opportunities

Design and procurement

- Use of packaging reduction, reuse and recycling targets and clauses in procurement and specifications
- Assessing the opportunities for increasing recycled content in plastic-based construction products (using recyclate from construction plastic packaging)

Manufacture

- Continued reduction of packaging through film thickness, length etc
- Increasing the recycled content, especially in LDPE products
- More take back of packaging from manufacturers/merchants (learning from other take back schemes)
- Use of bulking to reduce packaging use for approximate materials
- Consistent and appropriate labelling

Construction

- Increasing segregation of plastics on construction sites
- Looking at how plastic packaging could also be treated with other plastics from construction sites (increasing the volume)
- Use of balers on site at appropriate points in the construction programme

Resource management

- How plastic packaging could also be treated with other plastics from construction sites
- Bulking up of plastics
- Specification for recycling
- Agree reporting

Next steps

- Publication of report and summary – next week
- Agree 5 interventions to focus on
- Hold workshops, trials etc
- Feasibility assessment including environment and cost assessments
- Key decision making points by whom
- Case studies, guidance, training material etc.
- Do get involved! Contact Katherine@asbp.org.uk or Larry@asbp.org.uk

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