

# UKGBC Circular economy policy roundtable discussion

December 2018

## Introduction

A roundtable was set up to bring together officials from Department for Environment, Food & Rural Affairs (Defra) and Department for Business, Energy & Industrial Strategy (BEIS) to meet with UKGBC members (see Appendix for a list of contributors) and discuss opportunities for policy and regulation to drive circular principles in the built environment.

A UKGBC briefing paper was circulated and a presentation given from UKGBC and Defra. These will be made available.



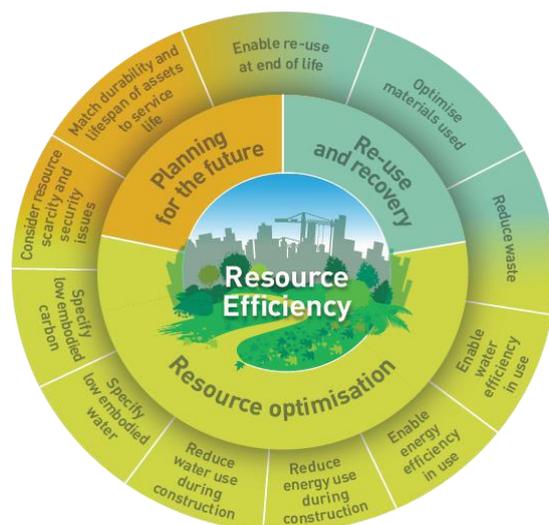
The discussion looked to develop suggestions for future policy and were categorised under:

- Data
- Fiscal
- Regulation
- Public procurement

## Summary

The overall message from industry is that clarity, certainty and consistency is needed from government. The following areas were seen to be key opportunities for Government to lead around circular economy:

- Accelerate better resources and waste data
- Implement taxes that prevent resource going to landfill or incineration and instead generate fiscal incentives to encourage reuse
- Implement regulation to encourage greater reuse and opportunities for circular principles such as emulating the EU Circular Economy Package and ideally going further than those intentions
- And finally, Government should show leadership and drive circular principles through their own public procurement processes



This diagram sets out the principles for a resource efficient built environment.

## Data

To understand and track resource flows across the built environment, greater access to more robust data in a centralised location is required. Government could look to fund, support and endorse a means of centrally collecting consistent and robust data.

Digitalisation of data would be a positive step forward. Currently the collection of data at the construction stage is not accurate – often categories of materials in mixed waste skips are estimated and the required paper-based waste transfer notes (WTN) are inefficient and poorly controlled and managed. Similarly waste and recycling sites should work to report in a consistent format confirming end destination.

Technological solutions are required to enable digital copies of WTN (including waste type, condition, source) to store real time data centrally, which can be a key driver towards regarding waste as a resource. BRE currently holds extensive construction waste data which is available, government should look to use and improve on this data. At the pre-demolition stage of a project, circular economy ‘mapping’ of projects, using for example BRE construction data, could promote a material-based approach through calculating material available and value.

Construction projects measure waste and resource flows in different ways and a consistent set of metrics would enable better measurement and reporting of progress in the area of resource management. This could also be driven through public procurement i.e. Government could ask for measurement of waste in a consistent way. Voluntary waste reporting by the Welsh government offers a relevant model, which, however, did not achieve sufficient reach due to its voluntary nature. The BREEAM Netherlands framework (see appendix) includes circular indicators, making it a useful place to start.

Waste audits and data collection would aid in regulating waste contractors in line with strengthened obligations and ensure resource flows are correctly understood.

BRE and others are involved in the Buildings as Material Banks (BAMB) project, which is looking to increase the value of materials. It is also looking to develop tools that enable transparent information and digital data of materials. Government should look to align with this project and possibly test the tools through public procurement projects. Expanding data is essential for substantiating any ‘whole life’ circular economy approach. This could build on the model of the RICS Whole Life Carbon document which implicitly includes circular economy principles. It may be possible to create an addendum, to expand on the aspects relevant to the circular economy and make them more explicit. An accompanying environmental metric would be desirable, as used in the Netherlands. In order for this to be successful, extensive supporting data would be essential. Government could look to drive a set of sector wide targets relating to waste prevention for construction across the UK based on tonnes of waste saved.

In many built asset cases there are materials that can be reused but there is no means of facilitating wider exchange and usage. A centrally managed and funded database and storage system would help to encourage this.

It was suggested the Waste & Resources Action Programme (WRAP) Buildings and Construction team which was disbanded, be reinstated with funding, this group had a remit for driving resource efficiency in the built environment and acted as advisor on issues relating to resource efficiency to the UK Government. A UK-wide hub (with oversight from Government or organisations such as WRAP) to allow for sharing of materials would encourage reuse. See practical examples of material reuse schemes in place, including Rotor in Brussels<sup>i</sup>, Freegle<sup>ii</sup> and the Waste House in Brighton, although these remain small in scale.

## Fiscal

There should be further investment in grants alongside VAT exemptions and capital allowances. Consideration should also be given to a higher tax rate on waste sent to landfill or incineration.

Research by the McCarthy Foundation found that most stakeholders understood the circular economy principles and benefits, but needed more evidence on the business case. Currently it is still cost-effective to procure virgin materials and send the waste products to landfill or for incineration, but this material is often good quality and could be reused. Fiscal incentives and tax restrictions could be imposed that encourage greater efficiency of materials, procurement of innovative and circular materials and fewer materials going to landfill or for incineration. Industry can lead through best practice by designing for deconstruction but if regulation does not drive waste away from landfill then ultimately these approaches will be in vain and buildings won't be deconstructed as design but instead demolished for landfill.

The landfill tax has clearly been a positive step in reducing waste to landfill. It has also unfortunately meant an increase in illegal disposal of waste. However a positive step could be a review of increasing landfill tax to further deter waste going to landfill or incineration, making it commercially unviable. For example, mixed waste skips should incur increased tax burden. To prevent mismanagement of waste once it has left the construction site, there should be a greater enforcement of penalties on unlicensed operators. And clients should be required to report who took waste from the site and where it was taken to – this will make it clear if it has gone to an unlicensed site and not encourage clients to go for cheapest option.

There should be grants available to test and mainstream innovative and circular products. In addition, capital allowance savings could be made through specifying circular products to drive interest in procuring such products that encourage a circular economy. Equally tax benefits could prove to be an incentive for specifying and enabling reuse of products and materials, e.g. reuse products that are purchased could be VAT exempt.

Each person in the value chain needs to benefit from the continual reuse of materials and products. This includes the customer, product supplier, demolition contractor etc. Each needs to have a financial incentive to reuse rather than send to landfill/incineration.

The Environmental Services Association and National Resources Council are already involved in terms of working with waste management companies to incentivise the reuse of resources. It would be useful to involve these organisations and demolition contractors, waste management companies and regulators in these conversations.

A greater sharing of case studies with beneficial cost data would be helpful – UKGBC is willing to coordinate this but clearly it would help if Government provided a platform to further share this information and indeed contribute from their own procurement perspective.

## Regulation and standards

Regulations across Government departments should promote consistent outcomes. Regulation is seen as a positive step to take the wider market forward in an area where progress is stalling. Government can play a valuable role as a facilitator, alongside setting clear requirements to ensure clear market direction and the percolation of circular economy principles throughout supply chains.

The Construction Product Regulation (CPR) does not support reuse and therefore does not support the ambitions of Defra. Both Ministry of Housing, Communities & Local Government (MHCLG) and Defra should discuss how regulations can promote reuse and achieve safe materials as per the CPR. There is also an opportunity, post Brexit, to look at changing the definition of waste – the current definition in the CPR prohibits the repurposing of materials, therefore rendering it as waste (e.g. it must be used as originally intended).

In addition to regulation, enforcement is critical and there is a key role for Government to enforce regulations to ensure they are met and impactful, whilst also taking a lead through public procurement.

There is positive support for going beyond the EU Circular Economy Package post-Brexit. However, any circular targets should be product-based rather than tonnage-based as per the Circular Economy Package, i.e. not focusing on tonnage for lightweight products. There should be further measures to promote selective demolition of wood and reuse of minerals, e.g. gypsum and not plasterboard in general. Brexit allows us to redefine 'waste' but also look at liability and enforcement.

Government should ensure that their strategic aim is consistent across departments, for example encouraging circular principles as well as reducing carbon. Regulation should allow for and encourage circular principles such as reuse of materials and deconstruction of materials for future reuse.

There could be a review of stronger licensing and regulating of developers to ensure better practice. One suggestion was that developers could be licensed, and the licence rescinded if regulations (such as Greater London Authority (GLA) circular economy statements) are flouted. This would internalise the risk and ensure developers are accountable.

Regulation should percolate the whole supply chain and asset life – to ensure a robust approach is taken to incentivise and drive truly circular solutions. Responsibility for waste is currently unclear across the supply chain and lifecycle - this includes fit-outs and refurbishment which should be within the scope of a circular economy approach. Regulation clarifying responsibility for waste at each stage of the lifecycle would be welcome. And a mandatory requirement to look at whole life cost not just capex would help to drive the right outcomes for those at the end of the supply chain i.e. the end consumer who is left to deal with the resource at the end of the buildings life.

Assessments linked to the circular economy should begin at the earliest possible stage, i.e. being tied to due diligence and planning permission, for maximum effect. There are some examples of interventions at the local level, during planning, to incentivise circular principles e.g. adaptability and recognition of long-term future use of the space in relation to demographic trends. Examples of models in use include London and Wales.

These assessments should encourage 'design for deconstruction' as opposed to demolition. Site Waste Management Plans and pre-demolition surveys should be brought back as mandatory requirements for projects. Pre-demolition circular economy surveys should be made mandatory, alongside circular economy statements in relation to planning, to create a level playing field. Islington Council provides an example of a 'site waste management plan' associated with development. However, this suffered from practical difficulties in not allowing adequate time for sufficient salvage to take place.

Government should ensure that regulation does not penalise buildings that are not well set up for circular economy to avoid unintended consequences and cause large stocks of buildings to become obsolete and

have further negative impacts on communities. It is therefore important to ensure a programme of improvement is set up to drive the right intended outcomes in the first instance.

Government need to ensure that policy and regulation across departments is consistent, it should encourage reuse and refrain from creating unintended consequences. For example, incentivising a high recycling target could lead to an overall increase in waste. Likewise requiring increased recycled content or secondary materials does not incentivise reuse. For instance, there is a growing lack of secondary aggregate but rather than encourage demolition of good aggregate it is better to encourage reuse.

It is important to understand the whole life impacts of materials being specified, i.e. they might be renewable but being shipped from China will mean a high level of embodied carbon. In order for building specifiers, e.g. architects, to make informed decisions, it would help if material suppliers were required to produce Environmental Product Declarations (EPDs) and include details of the end of life of the product to ensure a 'cradle to grave' or ideally 'cradle to cradle' approach rather than cradle to gate when the material is in situ. However, this should not prohibit innovators and SMEs who have sustainable products but don't have the financial support to produce the certificates.

A significant challenge is the percolation of circular economy principles throughout smaller businesses, sub-contractors and similar organisations throughout the lifecycle. Alongside clear legislation and guidance on waste responsibility, education and efforts to help these principles percolate will be essential. This could be achieved through working through trade bodies and standards, such as RICS, alongside workshops and similar programmes.

Innovation in the Netherlands - with 'regulation free experimental zones' e.g. Delft University, to encourage innovation and build case studies could be emulated.

## Public procurement

Government should lead through applying circular economy principles and guidance to its own public procurement projects. This would provide a valuable incentive for these approaches to develop further, alongside testing various standards. The use of public-private partnerships would help alleviate the risks associated with trialling such approaches, whilst also matching initiatives in other countries such as the Netherlands<sup>iiiiiv</sup>.

Government, through public procurement, could look to incentivise recycled content where appropriate. Requirements and definitions for recycled content can vary. ISO 1421 was suggested to provide a good basis for reporting, or connecting to a further mandatory requirement. Practical limits to recycled content, in terms of feasibility, should be considered when setting any incentives structure. Securing sustainable markets for aggregates and recycling long-term must be considered within the context of policies also related to durability and reuse, which will impact this sector.

It should be noted that clauses in public procurement tender documents are outdated e.g. the WRAP halving waste to landfill. It would also help if Government tracked where targets have been implemented and evaluate when it has been successful.

There are examples of successful policies working at an international level to encourage resource efficiency and circular principles for example the city of Seattle grants early planning permission for sites with a deconstruction plan.

There is a need to create an evidence base for learning (which could be a joint Government and industry initiative) to create test beds and generate an evidence base in practice.

## Appendix

A summary below of those international ‘circular’ policies considered to be most relevant:

### 1. Act for the Promotion of Long-life Quality Housing 2009 (Japan)

The Japanese Act for the Promotion of Long-Life Quality Housing is designed to support the development of housing stock which has an extended useful life. According to the Japanese government, the average age of a house at demolition in Japan is just over 30 years, compared to nearly 67 in the USA and 80 in the UK. The Long-life Housing Law was therefore implemented to encourage the construction of high quality housing which can be easily maintained, “Long-Life Quality Housing”.

### 2. Be.circular / PREC

This policy programme, the Regional Programme for Circular Economy (PREC), applies to the Brussels Capital Region of Belgium and runs from 2016 to 2020. It has 3 overall objectives:

- Turn environmental objectives into economic opportunities.
- Anchor the economy in Brussels – to produce locally when possible, reduce transport distances, optimize land use and create added value for Brussels.
- Support job creation.

In order to reach these objectives 111 measures have been defined within 5 sectors: Construction, resources and waste, logistics, retail and food.

### 3. Rijkwaterstaat Purchasing and Procurement (Rijkwaterstaat – Inkoopbeleid en aanbestedingen)

The Purchasing and Procurement Rules of the Rijkwaterstaat (the Ministry of Infrastructure and Water Management) is a national policy adopted by the ministry responsible for the design, construction, management and maintenance of all Dutch infrastructure, including roads, canals and water systems, such as dykes.

The Purchasing and Procurement rules reflect three pillars of sustainability: environmental, economic and social. The scoring is set so that higher positive scores for environmental and social aspects of a contract reduce the weighting factor for the cost.

### 4. Circular Buildings Green Deal

The Circular Buildings (CB) Green Deal in the Netherlands is one of a number of Green Deals in the construction sector. Initiated by the ‘Rijksdienst voor Ondernemend Nederland’, an executive department of the Dutch Ministry of Economic Affairs, this CB Green Deal lasted three years, from January 2015 to December 2017. It engaged 59 Dutch organizations (governments, knowledge institutes and businesses) to conceive circular buildings:

- using the smallest possible amount of new resources and products.
- retaining products and resources within the chain (for high-quality applications) for as long as possible. This also involves extending the life of buildings by making them as adaptable as possible.

### 5. Level(s)

Level(s) is a Europe-wide voluntary reporting framework designed to improve the sustainability of buildings. Using existing standards, Level(s) provides a common EU approach to the assessment of environmental performance in the built environment.

### 6. BREEAM

BREEAM stands for BRE Environmental Assessment Method. Established in 1990, it is the world's first and the world's leading commercial sustainability assessment method for masterplanning projects, infrastructure and buildings. In 2017, BRE published a report which mapped the resource efficiency related criteria in BREEAM Schemes (see <https://www.brebookshop.com/samples/327792.pdf>). Changes were made to this scheme (2018) that will further enhance Design for Disassembly and Adaptability (Wst 06). Other relevant categories include those such as: Elemental and component level life cycle costs options appraisal (Man 02); Environmental Impacts assessment (Mat 01); Sustainable procurement plan (Mat 03); and Adaptation to climate change (Wst 03). In October 2018, the Dutch Green Building Council (the DGBC, who manage the BREEAM NL scheme) launched a publication called *A Framework for Circular Buildings: Indicators for possible inclusion in BREEAM*.

#### 7. Design for Change

The Design for Change (DfC) assessment and transitional framework has been developed in the Flemish region of Belgium encouraging an alternative way of designing buildings, neighbourhoods and building elements, in order to create a built environment that supports change in a more efficient and effective way, eg by extending the life time of high-quality buildings and using building components multiple times. The assessment framework includes a qualitative and quantitative part, assisting decision-makers.

#### 8. Circular Peterborough

The aim of the Circular Peterborough Commitment is to transform the city of Peterborough in the UK into a truly circular city by 2050. It is part of the Future Peterborough programme, delivered in joint partnership by Opportunity Peterborough and Peterborough City Council. The commitment was developed taking a collaborative approach and enables individuals, communities and businesses to pledge their support to the initiative.

#### 9. The Procura + Manual

The Procura + manual provides guidelines to implement sustainable procurement. It provides suggestions for procurement in general, not exclusively public procurement. It builds on the EU 2014 Procurement directive. 16 Case studies presenting best practices in sustainable (public) procurement are presented on the Procura + website. Each best practice report contains a summary, background, development of the approach, implementation of the approach, results and lessons learned. The Case studies cover different sectors as well as different aspects of sustainability and provide exemplary innovative approaches for public procurement.

#### 10. Tracimat – VLAREMA

To stimulate the practice of selective demolition in Flanders, Tracimat (TRACing MATerials), a voluntary demolition tracing system, was set up. Tracimat is a non-profit neutral construction and demolition waste (CDW) management organisation that certifies the selective demolition process by issuing a "certificate of selective demolition" for demolition waste that has been selectively collected and subsequently gone through a tracing system, thereby assuring the processing company of the quality of the recycled demolition waste.

#### 11. ISO 20887 Design for Disassembly and Adaptability of buildings and civil engineering works – principles, requirements and guidance (DRAFT)

ISO 20887 is an international standard currently under development by the International Organization for Standardization (ISO), a federation of national standards bodies. Based on the Canada Code of Practice, ISO 20887 is intended to provide a framework for the Design for disassembly and adaptability (DfD/A) principles and the key issues that should be considered by those involved in a project. The ISO will provide guidance for decision making and illustrative examples.

#### 12. London Plan - Circular Economy Statement

The Circular Economy Statement applies to 'Referable' planning applications in London.

The London Plan is a strategic policy instrument which sets out the spatial development strategy for London. The draft new London Plan, currently under consultation, will require planning applications of a certain size to promote circular economy outcomes and aim to be net zero-waste. Applications will be required to include a Circular Economy Statement, demonstrating how they will meet the required criteria

### 13. Leading the cycle - Finnish road map to a circular economy 2016-2025

The target of the Finnish government and the road map is to make Finland a global leader in the circular economy by 2025. The road map was drafted under the direction of Sitra, the Finnish innovation fund, in co-operation with the Ministry of the Environment, the Ministry of Agriculture and Forestry, the Ministry of Economic Affairs and Employment, the business sector and other key stakeholders in Finland.

The upper level targets; Economy: The circular economy will be a new cornerstone for the Finnish economy; Environment: Finland as a model country for the challenge of resource scarcity; Society: From adapter to pioneer

### 14. Demolition and Deconstruction Permits

In Seattle, USA, a permit system has been implemented which allows deconstruction of a domestic building to begin before a building permit has been issued. If a building is to be demolished, work can only start once the building permit has been issued. Minimum reuse and recycle rates for deconstruction are set by the city and all asphalt, brick, and concrete is required to be reused or recycled in order to be compliant.

A recent update has tightened the requirements for reuse to require a minimum (20%) reuse by weight, excluding certain materials. This is a positive step towards more circular economy thinking.

### 15. Green Demolition Byelaw

In Vancouver, Canada, demolition permits for domestic buildings constructed before 1940 include recycling requirements. The system is enforced through the requirement for a \$14,650 deposit, paid when applying for a demolition permit. There is a sliding scale for return of the deposit depending on the recycling rate achieved. For houses not designated by the city as 'Character houses', 75% of the waste (measured by weight) must be reused or recycled for full return of the deposit. Guidance on salvaging and reusing materials is provided by the city authorities.

From January 2019, this law will cover all homes pre 1950 – which account for around 70% of demolition. In addition, pre 1910 homes will have to reuse at least 3 tonnes of timber. Support for a deconstruction hub is also sought.

See link for report addressing management of waste:

[http://ec.europa.eu/environment/waste/studies/pdf/CDW\\_Final\\_Report.pdf](http://ec.europa.eu/environment/waste/studies/pdf/CDW_Final_Report.pdf)

And a UK specific report:

[http://ec.europa.eu/environment/waste/studies/deliverables/CDW\\_UK\\_Factsheet\\_Final.pdf](http://ec.europa.eu/environment/waste/studies/deliverables/CDW_UK_Factsheet_Final.pdf) .

## Contributions from

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<sup>i</sup> <http://rotordb.org/>

<sup>ii</sup> <https://www.ilovefreegle.org/>

<sup>iii</sup> <https://www.pianoo.nl/en/sustainable-public-procurement/spp-themes/circular-procurement/public-procurement-circular-economy>

<sup>iv</sup> <https://www.pianoo.nl/sites/default/files/documents/documents/rebusharnessingprocurementtodeliverycirculareconomybenefits-dec2017.pdf>