



The Prince's
Responsible
Business Network



Fit for the Future

THE CIRCULAR OFFICE GUIDE

Fit for the Planet



INTRODUCTION

Business in the Community's **Circular Office Initiative** aspires to create a movement of like-minded organisations coming together to learn, share and try out new ideas to bring the circular economy to life in their offices. Participants are asked to commit to taking at least one step towards greater circularity in their offices and to share their stories along the journey.

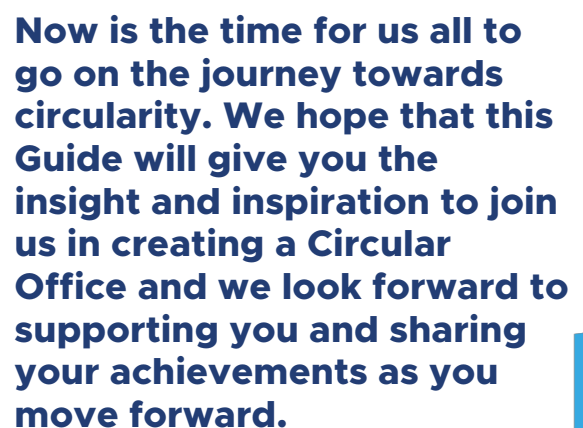
The Circular Office Initiative was inspired by PwC's ten-year Going Circular Programme. Since we launched in 2017, PwC has continued to provide invaluable support and leadership, working closely with Interface, JLL, Lloyds Banking Group, Premier Sustain, Recycling Lives, Ricoh and other members of Business in the Community's Circular Economy Taskforce.

The **Circular Office Guide** draws on the expertise of the Circular Economy Taskforce as well as the experiences of the wide range of over 80 organisations already signed up to the Circular Office Initiative.

It aims to help everyone involved with offices – landlords, tenants, property managers, facilities managers, procurement teams and employees – to identify opportunities and turn these into practice. It is relevant to all organisations, large and small, and from all sectors – from professional services to retailers and manufacturers.

The Guide describes the range of opportunities for greater circularity in offices and the processes needed to realise these, including:

- **Identifying opportunities**, from reducing resource consumption, to procuring circular products and services, and eliminating or reusing waste
- **Establishing your starting point**, prioritising actions and deciding on your level of ambition
- **Engaging** internally and externally with senior management, staff, suppliers and other stakeholders



Now is the time for us all to go on the journey towards circularity. We hope that this Guide will give you the insight and inspiration to join us in creating a Circular Office and we look forward to supporting you and sharing your achievements as you move forward.

Libby Sandbrook, Head of Circular Economy, Business in the Community

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SETTING THE SCENE

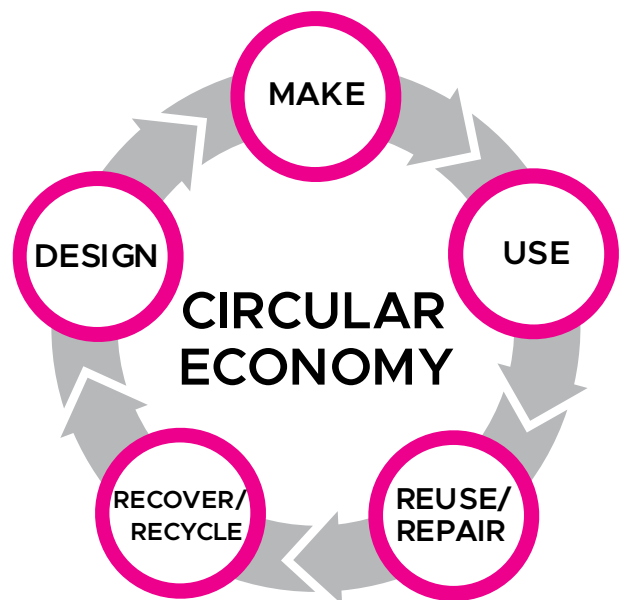
Circular economy – a route to opportunity

Until now, our global economy has largely depended on a linear ‘take-make-use-dispose’ system in which valuable natural resources are extracted, turned into products and then discarded at the end of their service life.

As the limitations and damaging consequences of this system become glaringly apparent, so too does the urgent need to rethink it. The economy of the future must meet the needs of a growing population within the confines of diminishing critical resources, supply chains made vulnerable by climate change and political instability, tightening environmental regulation and the urgent need to reduce greenhouse gas emissions to net zero.

Within this context, the circular economy has caught the imagination of thought leaders across the world, and is taking shape as a viable, practical alternative to the current linear economic model. The economic case is compelling. As an alternative to our traditional ‘linear’ economy, a more ‘circular’ approach in the UK could increase resource productivity by 3% annually – giving a much-needed boost to productivity – generate £10bn GVA and 200,000 jobs by 2030, provide new market opportunities for SMEs as well as larger businesses, and improve the UK’s balance of trade by 1 to 2%.¹

A circular economy provides an alternative to a traditional linear economy, in which resources retain long-lived value within the economy system, by being designed for longer lifetimes, repair, post-use recovery, reuse and reprocessing.



Thinking circular is a logical solution in a resource-constrained world. At JLL we’ve set ourselves a high-level target that, by 2020, we will support the UK’s transition to a circular economy through our services, our workforces and our public affairs activities.

Sophie Walker, Head of UK Sustainability, JLL

THE CIRCULAR OFFICE

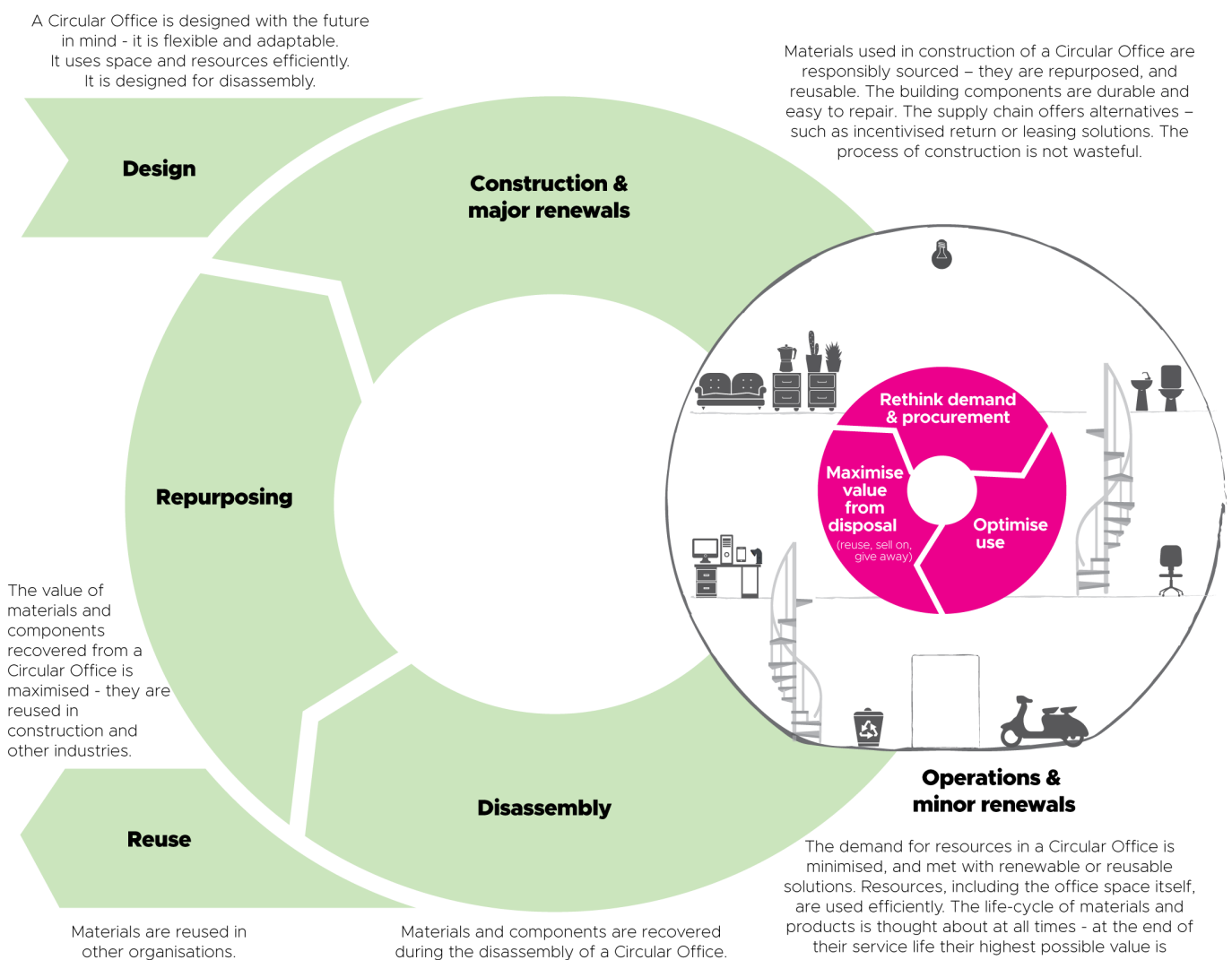
What is it all about?

The office is home to a vast range of resources, from the fabric of the building (ceiling tiles, plasterboard, glass, etc.), to the fittings and furnishings (carpets, desks, chairs, IT equipment, etc.) and items used on a regular basis (paper, food, drinks, uniforms, etc.).

The Circular Office Initiative is about changing the way we design, use and operate in these areas to eliminate waste and create more efficient, resilient spaces which contribute to the long-term sustainability of businesses and the wider economy, and to the wellbeing of occupants. It is a change in mindset from sourcing products

from virgin resources to sourcing circular solutions, and from throwing things away after we have made use of them to looking for opportunities to regenerate items at the end of their life.

In a Circular Office, decision-making should seek to design out waste entirely and retain the maximum possible value of resources for as long as possible. The life-cycle of products and materials should be considered from the outset, with awareness of how the resources flow from procurement, through usage, to the end of service life.



Why start with the office?

Transitioning to a more Circular Office provides a perfect starting point for organisations keen to drive change towards a circular economy:

- Most organisations have an office, so starting here helps to translate the 'circular economy' into something that we can all relate to.
- Transitioning to a circular economy requires systems-level change, involving collaboration along supply chains and between sectors. The office provides a perfect environment for this: it is home to a diverse range of products and services and involves multiple complex supply chains.
- The circular principles applied in our workplaces have the potential to reach far beyond the office walls through engaging landlords and other tenants, suppliers and their production lines, and employees in their homes.



Used office carpet tiles ready for a second owner (Photo: Interface)

60%

Of European offices are not used in working hours

£15bn per year

The estimated costs of office waste to UK businesses per year

1%–4% of turnover

The difference in office waste costs between poorly managed and well-managed offices

£400–£1,000

The amount reducing waste can save your organisation per year for every employee

How will you benefit from creating a Circular Office?

Creating a more Circular Office can bring a wide range of financial, environmental and social benefits to your organisation:

Cost savings. A Circular Office focuses on creating value in a resource-efficient manner. It can increase profitability and competitive advantage by reducing procurement and operational costs through, for instance, purchasing refurbished/remanufactured goods, purchasing fewer materials and lower waste management fees.

Additional revenue. Some products and materials, instead of being disposed of, can generate extra revenue at the end of their service life, bringing financial benefits to landlords, tenants, suppliers or contractors. A Circular Office offers the opportunity to turn what would be waste into income streams.

IMPACT STORY

Enviromate is an award-winning, closed-loop online marketplace established to tackle over £1.5 billion worth of surplus building materials entering the waste stream every year in the UK. It aims to keep reusable materials in circulation for longer by providing a platform for buying, selling or donating leftover building materials. This enables businesses to reduce waste and make ethical, sustainable choices, and to create new revenue streams by selling leftover construction materials.

Environmental value. Optimising the use of materials by keeping them in closed loops greatly reduces environmental impacts associated with resource extraction, manufacturing and waste generation. A Circular Office will also be more energy and water efficient and will significantly reduce CO₂ emissions.

IMPACT STORY

The **UK Green Building Council** worked with **Rype Office**, a specialist in remaking furniture, on its retrofit which included reused desks and chairs, remanufactured soft seatings and tables. Rype Office ensures that remanufactured furniture looks and performs as new, but at least 50% lower cost and 80% reduction in GHG emissions compared to new furniture.²

Social value. Through moving towards a Circular Office, you may support job creation in, for example, furniture remanufacturing and IT refurbishment. These jobs often help those who struggle the most with employment. Boosting the secondary market for used office products also supports charities and social enterprises to improve their bottom line and dedicate more resources to their activities.

IMPACT STORY

Recycling Lives' HMP Academies programme enables participants to 'earn and learn', undertaking useful and well-paid work, primarily in the recycling of electrical equipment, whilst also learning valuable life and work skills ahead of release. Recycling Lives' current reoffending rates are only 6% compared to the national average of 67%, with an estimated saving of £100,000 for every offender rehabilitated. As part of this programme, Recycling Lives and **Amey** have developed a partnership at HMP Dovegate where a dedicated recycling academy has been set up providing an opportunity for up to 40 offenders to develop skills, stripping out glass, plastics, circuit boards and wiring from the televisions for recycling. The television sets are sourced from Household Waste Recycling Centres operated by Amey on behalf of local authority clients.³



Photo: Recycling Lives, HMP Prison Academy

Increased engagement. Introducing circularity into offices requires bringing together a range of stakeholders – senior management, employees, suppliers and clients. This engagement creates a sense of a common purpose, engenders a sense of pride and can help build relationships.

IMPACT STORY

JLL is a leading professional services firm that specializes in real estate and investment management. With a vision to build a better tomorrow for clients, people and communities, JLL is a pioneering supporter of the circular economy. In 2014, JLL UK was printing over 21m pages at a cost of over £500,000 per year. Much of this paper was for single use and disposed of (£75,000 per year), or was filed, stored and sent to archiving (£500,000 per year). To address this challenge, JLL UK ran an engaging campaign to increase awareness of the company's printing habits, and their financial and environmental implications.

Team and individual level printing figures were shared and teams then competed to reduce their paper use. Employees were also trained on document editing software tools. These simple solutions have helped to avoid over 18m printed pages – saving over 180,000,000 litres of water, 576 tonnes of carbon and 2,160 trees. In addition, over 40% of respondents to a post-campaign survey felt they were more productive, and over 75% felt they made better use of technology.

Going Circular has multiple benefits: it cuts costs, demonstrates our commitment to be a responsible business in the marketplace and builds pride amongst our people.

Bridget Jackson, Corporate Sustainability Director, PwC UK

Demonstrating that you are a responsible business is more important than ever and brings brand benefits. Employees, customers and investors increasingly scrutinise how companies operate. Resource use and waste are firmly set in public consciousness. Contributing to the circular economy sends a powerful message. It shows that a company assumes responsibility for the resources it uses and demonstrates leadership and forward-thinking.

IMPACT STORY

Since 1994, **Interface** has been on a journey from a petroleum-intensive manufacturer into the world's first sustainable, and ultimately restorative, company. Rejecting the notion of a linear *take-make-waste* economy, Interface created flooring products from recycled materials and offers to close the loop by taking its customers' flooring products back at end of life. Across its portfolio, 60% of Interface's raw material usage is now sourced from recycled or bio-based sources.

Through ReEntry, Interface's products enjoy a second life where most needed, backing materials gain new life within our products, or are used to recover energy. In 2016 and 2017 Interface prevented more than 2 million m² of carpets going into landfill globally. In the UK we are proud to partner with Greenstream, Spruce, and CTR to not only divert carpets from landfill but also create social impact.

Interface's floors and services make offices circular. In 2016 Interface launched a new mission, Climate Take Back, a commitment to run its business in a way that will create a climate fit for life. Last year, Interface unveiled a prototype product, Proof Positive, the world's first carbon negative carpet tile that in its manufacture, emits less carbon dioxide into the atmosphere than if it had not been manufactured in the first place. Interface has committed to be carbon negative by 2040.

And by doing good Interface does well. Some of the benefits have been: cost savings, innovation and design that attracts talent, customers and investors, resource scarcity mitigation and a purposeful culture.

Resilience. A key driver behind moving towards a Circular Office is to reduce organisational dependence on non-renewable natural resources. Organisations whose operations are not jeopardised by the volatility in price and availability of resources will be more resilient and fare better longer term.

IMPACT STORY

Derwent London's White Collar Factory, developed with **AHMM Architects, Arup** and **AKT II**, was inspired by well-built and adaptable industrial buildings of the past. The design of the building was focused on longevity and flexibility, offering the users greater choice in the way they occupy and adapt their working environment. The goal was to create a resilient building by anticipating future needs from London's office tenants, rather than simply responding to established trends. Some of the solutions applied in the building include high ceilings, flexible floorplates and exposed services. All of these features enable White Collar Factory to adapt to a variety of future uses.⁴

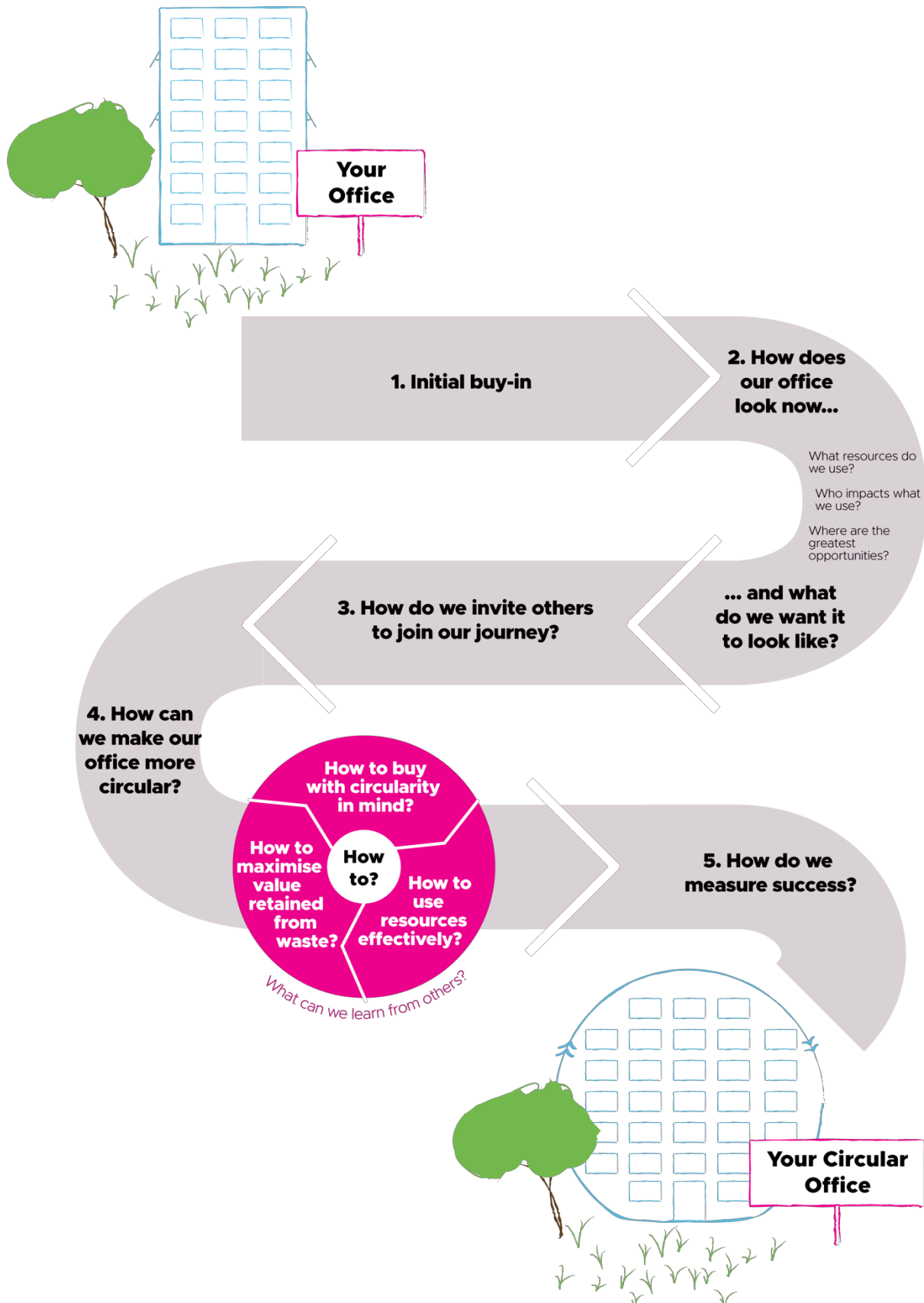
Agility. Circularity in offices is as much about thinking *how the space is used* – making sure it is used optimally – as what is used in it. One of the most transformational current trends is the concept of 'agile working', involving a rethinking of the office space and its contents. The development of technology means that work no longer depends on a single place and employees expect increasing choice in how and where they work. Research shows that 79% of employees want the option of flexible working at their current company.⁵ Taking a flexible approach to working patterns and the workspace can bring significant productivity gains and cost savings, and allows the office to evolve with changing business needs.

IMPACT STORY

Ricoh established The Comet Circle™ in 1994 as a process model for resource recirculation throughout its range of hardware products, through the re-use and recycling of products, parts and components in order to embed sustainability into all aspects of manufacturing. In 2013 Ricoh took this onwards to the office space, creating the Ricoh New Ways of Working (NWoW), using sustainable office design, technology and change management to fully leverage the effectiveness of their workplaces to drive new behaviours and create flexible Work-styles fit for the future. Full enablement of technology, digitisation (de-papering) of information and workflows, in conjunction with a collaborative culture based on trust and empowerment, has speeded up decision making and action taking. NWoW enables mobile and flexible working, creating business resilience and agility, and significant reductions to travel impact. Since deploying NWoW, Ricoh has yielded many benefits including an 8% year-on-year reduction in business travel, reduced paper consumption and substantially reduced office footprint. Ricoh now offers NWoW – marketed externally as Workplace Services – on a consultancy basis to deliver all aspects and benefits to its customers.⁶

Innovation. An organisation committed to circularity is innovative, and this approach permeates through from the workplace to how the business is run. A Circular Office has the potential to strengthen the services or products that a company provides, bringing competitive advantage and supporting others – for instance smaller businesses – with innovative solutions.

THE ROUTE TO A CIRCULAR OFFICE



TIPS FOR GETTING STARTED

Since each organisation differs, so too will the opportunities brought by a Circular Office. At the beginning of your journey, it can be helpful to explore where these opportunities lie. Set out below are tips to help you prioritise actions and focus your efforts to maximise their impacts and the benefits for your organisation.

Understanding your resource use and impacts

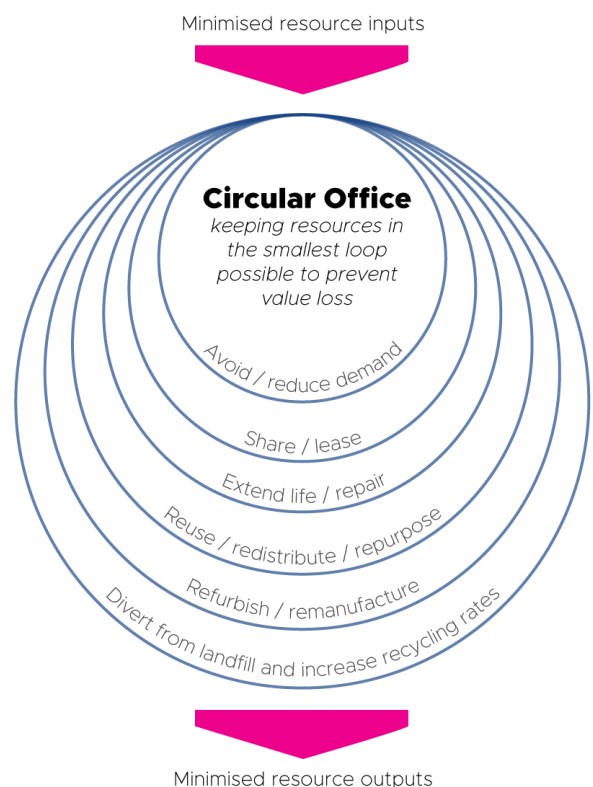
- 1. Find out where your waste comes from and why it is generated.** Start with your office's waste data and find out which waste streams are the most significant ones in terms of weight, volume and cost. If you have concerns about the accuracy of data, it can be helpful to conduct on-site waste audits.
- 2. Find out what you spend most on and buy most often.** Products and materials that form a large part of your procurement can be a great starting point for circular initiatives, for example office furniture and IT technology. This will target key impact areas and opportunities for substantial savings.
- 3. Find out where your biggest sustainability impacts and objectives are.** A Circular Office can be a great way to address wider sustainability issues, such as greenhouse gas emissions and creating social value.
- 4. Identify the most 'visible' products and materials.** To maximise the level of engagement from your employees and other stakeholders, target the resources that they interact with most often. For instance, turning disposable coffee cups into pens might not address your largest environmental impacts, but it can help to translate the idea of a Circular Office into something very tangible to your employees. Similarly, to capitalise on the brand benefits, think of initiatives that can grow into inspiring stories to share.
- 5. Find out what level of influence you have over a given resource.** At first, target products and services that you have direct control of. It is important to know who has the responsibility for the contracts and the ease of introducing changes.
- 6. Understand what the current waste facilities include.** Location, provision and access to waste collection facilities will determine how users deal with waste, for example are adequate recycling bins located throughout offices? Does the building waste service include recyclables and separate waste streams? Is a private waste management company suitable?
- 7. Make sure that the time is right.** Identify the upcoming changes that can be a gateway to circularity. Contract renewals, equipment replacements or office moves provide opportunities for introducing circular alternatives.
- 8. Identify the solutions that will best fit company culture and budget.** Building a business case is key. Consider starting with the circular initiatives that imply similar or lower upfront costs than the standard option. This approach will help you to secure internal buy-in. If the upfront cost of the circular alternatives is higher, the long-term benefits need to be carefully considered. It is also important to consider the implication of circular initiatives on your organisation's timelines and business planning.

Understanding your stakeholders and their priorities

- 1. Identify your key stakeholders.** Change will require buy-in from stakeholders, and implementation of a Circular Office particularly relies on collaboration. It is essential to understand who will have an impact on your Circular Office and who you need on board to be successful. Internally, it can be colleagues, procurement, facility management or finance teams. Externally, key stakeholders may include your clients, landlords and other tenants, suppliers, contractors or waste management companies.
- 2. Identify the decision makers and understand what drives them.** To maximise impact, you need to secure the buy-in of decision makers in your organisation, be this your board of directors, chief executive, or heads of teams. Your actions and priorities will depend on what drives them: for example, employee expectations, reduction in operational costs, long-term business resilience, external reputation and/or pressure from non-governmental organisations. The circular initiatives need to fit with your business' strategy. It can be helpful to find out what your peers are doing – it will give the senior leaders the reassurance that they are not embarking on this journey on their own.
- 3. Understand and leverage the relationships between stakeholders.** Sometimes you cannot involve one stakeholder without engaging with others – for example, your landlord might hold the contract the waste management company. You might want to initially target stakeholders that you hold direct relationships with.

- 4. Start with stakeholders most adaptable to change.** Identify the innovators – it could be managers, colleagues or suppliers who are open to new ideas. Look for the best partners in the industry – these will be your allies in building the momentum and inviting others to become a part of your Circular Office.

Prioritising actions for maximum value





Derwent London's White Collar Factory
(Photo: Derwent London/Tim Soar)

TOWARDS YOUR CIRCULAR OFFICE: QUESTIONS, ACTIONS AND STORIES

Within the life-cycle of your office, there will be three key stages of opportunity for introducing circularity:

1. **Relocation** to a new office and choosing a suitable space for your business;
2. **Renovation** of an existing office, or fitting out a new office; and
3. **Day-to-day operations.**

At each of these stages, your organisation will have different requirements for products and materials, presenting specific opportunities for circular initiatives.

The opportunities for you to work towards a Circular Office will also depend on various other factors including: whether you own or rent the building, how big your office is and what steps you've already taken. It is therefore useful to ask yourself and others some questions to help you to decide what to focus on.

The following sections go into detail about these stages and suggest questions to consider to guide your thinking, along with explanations as to why the answers to these matter.

There is a whole range of actions that you can take towards greater circularity in your offices. For each stage of the office life-cycle, we draw on the experiences shared by different organisations to help bring the Circular Office to life and provide food for thought for the types of activities you might get involved in.

1. Relocation

Stage 1: Relocation

Relocating to a new office can offer a very significant window of opportunity to introduce circularity to your office – from your choice of office to the furnishings and fittings. The space you occupy can have a major influence on the circular solutions you are able to introduce so it is important to think about how your new office fits with your ambition.

Design

Does the office design encourage a flexible and efficient use of space?

A Circular Office should be able to adapt to the evolving needs of your business and to change its function in the future, requiring as few products and materials as possible for the required changes and creating as little waste as possible. For this, partitions, ceilings and floors need to be deconstructable and reconfigurable. You could also consider which of your functions need private/fixed space and which might fit into a more flexible arrangement. Is there potential for space sharing or optimising, through, for example, co-location or different uses of space as a venue for conferences or other activities out-of-hours?

Is it a new or a refurbished building?

According to WRAP, a new construction creates 83% more waste per 100m² than a refurbishment project. If so, can it be designed for a longer life and disassembly, using low impact and reused materials.

If you are the main or anchor tenant for the building, you could explore with the landlord servitisation models for lighting, heating and cooling. This will ensure that services are less fragmented and incentives for minimising energy use and maximising equipment life are aligned.

Can existing resources (furniture, fixtures and/or fittings) be incorporated or refurbished/re-manufactured to new design standards?

The cost and carbon embodied in existing furniture, fixtures and fittings is significant. There are sustainable options for resizing, re-topping or refinishing existing storage units, reception furniture, soft seating, office desks and chairs and even meeting room partitions. Incorporating reuse into the design can help achieve cost and carbon savings and leave budget for other investments.

1. Relocation

Relocation process

Have you got a strategy for the items you are not taking with you to the new office?

The preference, from a circular and financial perspective, will be to reuse as many existing items as possible. Planning and conducting an audit of items that you do not need in the new office can form the base of a strategy to divert them from landfill. To ensure that items can be reused, they need to be taken from their position of use, rather than be treated as a waste and left where their quality will start to diminish. It's worth noting that soft furniture, such as seating or 'booths' can only be reused if the fire labels are still attached, so don't remove those when first placing furniture on floors. There are reuse networks, online platforms and service partners that can help facilitate donation and resale effectively. Early planning delivers the best outcomes.

Decisions impacting future operations

Is it a single-let or a multi-let office?

Your options for introducing circular initiatives into your office will be affected by whether you own the building, or whether it is a single- or multi-let. Owning your office or being a sole tenant provides more decision-making power, while occupying a multi-let office means that some issues, e.g. waste management, will have to be discussed and agreed with the landlord and other tenants. Working together with the owners and/or occupiers of the building presents an opportunity to influence others and increase the circularity of your office.

Does the building enable renewable energy use?

Using renewable sources to meet your office's energy needs is a great way to close the loop. Investigate whether your new office has/could have on-site renewable energy generation. If this is not feasible, find out whether you could switch to a fully renewable tariff.

Does the building enable water reuse?

Capturing rain water or grey water can significantly reduce your demand for mains water. In addition, Sustainable Drainage Solutions (SuDS) can improve water management in your office as they incorporate a range of tools and techniques to collect, treat, store and then release storm water slowly into where it is needed, for example your landscaped areas.

Have you got any outdoor areas that could be useful 'green' spaces?

Increasing urbanisation is threatening biodiversity. Does your office have any outdoor space that you could dedicate to supporting city wildlife, with a focus on protected species? Working with biodiversity experts or local ecological charities can help create spaces that provide valuable habitats for nature, and ultimately connect to one another, creating green grids and corridors for flora and fauna. Moreover, sedum roofs can also help hold rain water during intense downpours, helping to alleviate flooding.

1. Relocation

Will you have a direct impact on waste management contractors?

Ask your prospective landlord about waste management at your new office – having direct impact and the ability to introduce changes will support you in working towards a Circular Office. If you have waste-related targets in place already, make sure that contractual agreements in the new office will support them.

Get facilities management staff up to speed so that you can set targets and work with contractors to carry out Circular Office commitments.

Is it possible to segregate recyclable material on site?

The more you can segregate individual recyclable waste streams on site, the lower the contamination and higher the recycling rates will be.



London Waste and Recycling Board creates a Circular Office by design⁷

London Waste and Recycling Board's (LWARB) new office puts circular economy principles into action. The new space in Shoreditch is home to 25 employees as well as a pioneering accelerator programme for circular economy start-ups. Fitted out in just four weeks, the result is a great working environment that showcases circular economy principles, bringing together best practice and new innovations, delivered for the same price as a traditional low spec fit-out.

The brief was to retain, use refurbished and recycled, and to consider open source design or leasing where appropriate. This meant understanding what would happen to items at the end of their life too. It also provided an ideal opportunity to showcase some of the innovative circular businesses that are part of LWARB's business support programme.

LWARB carried out a detailed review of existing materials and their condition and retained and re-used as much as possible including carpets, to blinds, kitchen cabinets and network cabling.

Where new materials were needed these were procured based on circular principles. For example, refurbished furniture was sourced from **Premier Sustain** and **Rype Office**; carpets from **Interface's** net effect, **Desso's** cradle2cradle and **Miliken's Econyl**; reclaimed timber floor from Royal College of Surgeon's Lincoln's Inn site, and plasterboard alternatives from **Ecor** and **Adaptavate**.

Finally, to complete the story, Circular Office operation was considered too. This includes food waste collection from First Mile, flexible working (75% desk ratio), flip-top desks (flexible event space), an eco-cleaning contract and organic milk delivery in re-usable glass bottles.⁸

"This project has been invaluable experience in putting our circular principles into practice. We wanted to make it affordable and replicable and we're keen to share our experience and learning with others." Wayne Hubbard, CEO of LWARB



2. Renovation

Stage 2: Renovation

Renovation and fit-out provide great opportunities for introducing circular solutions, not least because they involve large inputs of, and decisions about, materials and products.

Design

Have Circular Office objectives been included in the design brief (with a weighting and criteria)?

Circular Office requirements should be captured in the design brief so that all parties understand and respond to these. If it is purely included as a 'nice to have' then time and logistical constraints may take over and the circular solutions may be overlooked.

Does the fit-out design encourage a flexible use of space?

Your office space is a resource – flexible design allows for the space to be used efficiently and adapt to future needs. Flexible design also improves productivity by accommodating different working types. For example, it can include moveable walls, standalone meeting pods or rooms built out of prefabricated components that can be easily disassembled and relocated. Make sure that the spaces are multi-functional – for instance, a collaborative space could be turned into an auditorium when the need arises.

Can the elements of the fit-out be manufactured off-site?

Off-site construction, as opposed to site-built methods, is a waste-efficient way to manufacture the elements of your fit-out.

How can technology support your Circular Office?

Careful choice of technology (such as different types of screens or video conferencing facilities) can have a significant impact on the resource consumption of your office – reduce the amount of printing, stationery and business travel.

Procurement

Can you reduce the amount of materials and products you need to renovate or fit-out your office?

A considered review of what items are truly necessary and what quantities are really required is a simple but effective way to increase resource efficiency and cut costs.

Can you find circular solutions for the materials and products you require?

To maximise the use of materials and products, and to reduce the demand for raw materials consider alternatives to the standard fit-out elements. Look for materials and products that are:

- Reused, repurposed, remanufactured or recycled
- Fully recyclable, reusable and easy to repair/upgrade
- Bio-based
- Leased/shared rather than owned by your business

Have you considered what will happen to the materials and products you procure at the end of their service life?

Applying the life-cycle approach, ensure that the fit-out elements can be easily disassembled, repurposed, reused or recycled at the end of their service life. This will help you avoid shifting the 'burden' of waste to a different stage of life-cycle.

2. Renovation

Renovation process

How can you minimise waste during the renovation/fit-out process?

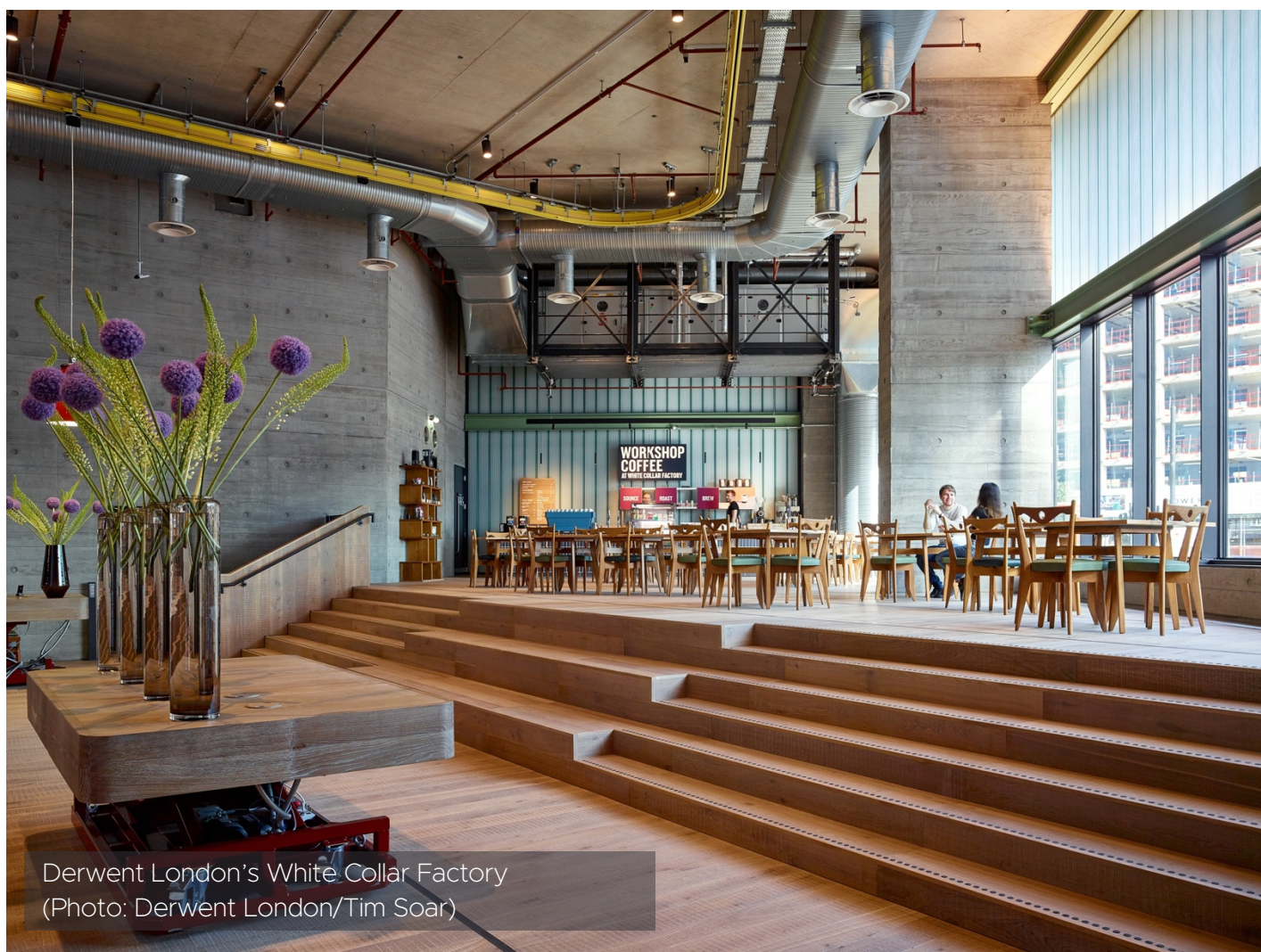
Much attention is given to fit-out design and the products that form a part of it, but it is important not to lose sight of the fit-out process itself – it can be a wasteful exercise if not managed carefully. Undertaking “Designing out waste” workshops and/or a pre-refurbishment audit and creating a Resource Management Plan should occur during the design process and include all members of the project team.

Have you got a clearance strategy for the items already in the office space that you are not going to keep?

The preference, from both a circular and financial perspective, will be to reuse as many existing items as possible, which may involve repairing or refurbishing items already in the office. Producing an inventory of unwanted items can support diversion of these items from landfill by highlighting alternative uses.

Consider whether you can offer furniture to local charities, working with your volunteering team to identify third parties that might welcome a free upgrade to their existing office furniture.

See the Appendix for detailed questions to ask suppliers and contractors.



Derwent London's White Collar Factory
(Photo: Derwent London/Tim Soar)

2. Renovation

Actions and stories

Design an adaptable workplace

Plan for multi-use spaces. Adaptable fittings and partitions will allow different areas of your office to be easily modified to perform a variety of functions. Such flexibility allows the space to be used more efficiently, and the same services are provided by an office with fewer resources. For example, **London Waste and Recycling Board**'s office has a collaborative space that can be used for events.

Introduce modular components. Base the design of your fit-out on flexible and durable parts that can be easily maintained, replaced and disassembled. Modular components retain their value at the end of life as they can be easily reused.

Plan ahead with cabling. Cabling the building so that you can move furniture around can facilitate remodelling of space within buildings without having to take up floors or take down ceilings.

IMPACT STORY

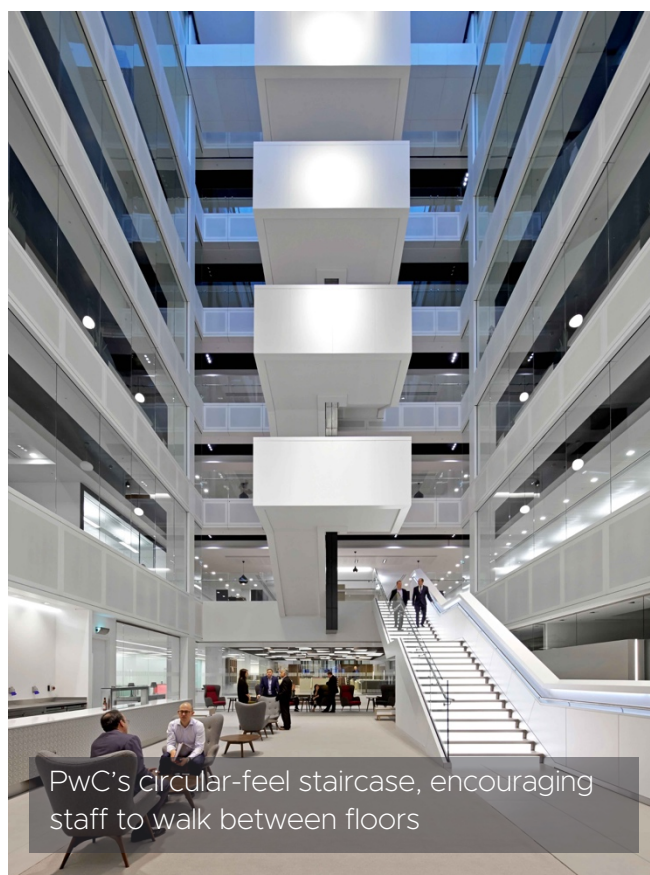
PwC

Knowing that having colleagues across the business on board can accelerate the pace of change, PwC's Corporate Sustainability team organised several workshops for key decision-makers in the facilities and procurement team. To bring to life the challenge in recovering materials, they ran 'tear-down' workshops, inviting colleagues to don protective glasses and pick up tools, before engaging in a hands-on exercise to take apart a wide variety of products used in the business, such as laptops, staplers, golfing umbrellas and other composite items. This was a fun and informative way to educate around 50 people about the principles of the circular economy, and had lasting effects. Since this intervention, colleagues have gone on to seek out, evaluate and introduce more circular alternatives on a rolling basis.

Avoid waste during the renovation process

Reuse as many elements as possible. Conduct an inventory of all materials and products in your current office and identify reuse or repurposing opportunities. If you are taking over from an existing tenant, engage with them to understand what materials and products they may leave behind and which ones you could reuse or repurpose. When **Swansea Civic Centre** decided to renovate their office, they worked with a local social business, **Ministry of Furniture**, to refurbish the majority of their existing furniture for reuse.

Find new uses for the surplus materials. There are multiple platforms which connect materials and products leftover from renovations with those who need them. You can use **Reyooz** for office furniture and business equipment, or **Enviromate** for building materials.



PwC's circular-feel staircase, encouraging staff to walk between floors

2. Renovation

Rethink the elements of the fit-out

Flooring. There are numerous circular options for the flooring in your office. **Interface** uses recycled and bio-based materials, such as discarded fishing nets which are transformed into nylon yarn through the Net-Works programme.⁹ Interface also offers customers a take-back scheme to enable the reuse or recycling of their carpet. **Greenstream Flooring** works in partnership with Interface and others to provide affordable used flooring to low-income Housing Association tenants.

Ceilings. Exposed services do not require ceiling tiles, and they are easy to repair, maintain and adjust. Where ceiling tiles are needed, **Armstrong** recovers old ceiling tiles from buildings and upcycles them into new ones. Their mineral fibre tiles are also fully recyclable.

Lighting. Purchasing light as a service shifts the responsibility for the performance of the lighting fixtures to the manufacturer, encouraging their longevity and recyclability. **Philips** offers the 'pay per lux' solution which allows it to retain control over products, enabling better maintenance, reconditioning and recovery.

Furniture. Refurbishing your existing furniture or purchasing remanufactured items is a great way to minimise the demand for new resources and deliver cost savings. Companies such as **Premier Sustain** and **Rype Office** reuse, repair and remanufacture furniture, and support businesses with office clearances and designing new spaces. **Lloyds Banking Group** identified around 580 'end of life' chairs from a London office undergoing refurbishment, and worked with its furniture supplier to remanufacture and direct them to new markets – both public sector and homeworkers. The supplier also donated 5% of remanufactured stock for delivery to Lloyds Banking Group supported charities and community groups.

Paint. **Paint360** uses waste paint to manufacture a high-quality emulsion, saving up to 70% of raw energy and offering a minimum 90% recycled content. To date, **Amey** has bought 9385 litres of Paint360 product, saving the equivalent of 12.3 tonnes of CO₂ emissions. **Newlife Paints Ltd** also reprocesses waste paint to offer an alternative to traditional paints.

2. Renovation

IMPACT STORY

Premier Sustain work with Tesco to create circular solutions for the consolidation of their estates

In 2015 **Tesco**, working with **Premier Sustain**, began consolidating their UK and Ireland estate, migrating HQ operations to Welwyn Garden City and facilitating a move to agile working. Tesco was committed to embracing circular service provision and delivering social value.

Key elements included: refurbishment of 20,000m² of HQ office space in Welwyn Garden City, relocation of over 5,300 staff from 45 departments and refurbishment of offices in five key cities.

Premier's team worked in close collaboration with Tesco's FM department to undertake a detailed

initial planning phase, logging all desking, seating, meeting room furniture, filing, IT and electrical items.

Clearances of vacated buildings, including a hotel and conference centre, provided furniture that was then remanufactured for Tesco. Existing furniture was relocated and reused across the estate, and items needing renovation were remanufactured in Premier's Renew Centre to avoid waste and create furniture required for agile working. Over 2,000 items were remanufactured for reuse, saving Tesco over £380,000. Excess items – 20 tonnes of furniture – were donated to charity partners via Premier's Giving Back Project and 30 tonnes were sold to third parties. The circular initiatives are estimated to have saved over 60 tonnes of CO₂ equivalent.



Premier Sustain remanufacturing office chairs

PwC's Going Circular programme

Opportunity – As a professional services firm, PwC's reputation as a responsible business is key to success in the marketplace. It needs to attract a large number of young people each year, many of whom now include sustainability as a criterion in choosing their employer. And, its corporate purpose is to 'build trust in society and solve important problems,' a part of which is using its spending power to accelerate the transition to a low-carbon and circular economy. These drivers made it a no-brainer to apply the principles of the circular economy to its business and since 2007, they have been doing precisely that.

Solution – PwC's Going Circular programme encompasses collaboration to deliver circular buildings and circular operations, as well as encouraging circular lifestyles amongst employees. It also includes supporting businesses that are creating new, circular solutions – helping to prove their concepts are commercially viable and giving them a route to market. For example, PwC worked with architects, engineers and designers to deliver the first BREEAM new-build office in London, introducing a biofuel made of recycled chip fat for their combined heat and power generators. PwC introduced new technologies such as perimeter and motion sensors to reduce the power needed to light its office space. It also used 80% recycled aggregate in the concrete used to build the office, to reduce its carbon footprint.

It eliminated as much waste as possible, simplifying the portfolio of products procured. Centralised, segregated waste hubs were introduced to enable PwC to recycle paper, cardboard, metals, glass, food waste and compostable cups. Recycling, reuse or remanufacturing options were found for old office furniture, laptops and smart phones, support staff uniforms and even hard-to-treat composite materials, such as stationery.

PwC extended its operational programmes to allow employees to recycle personal items such as laptops, phones and smart work-wear, at the office. And it integrated circular design principles into the tender process for relevant suppliers, asking them to identify, design and source more circular products PwC could help bring to market.

Value – PwC measured their impact so that others can use it to baseline or benchmark their own performance, as well as building a business case for change. For example, switching end-of-life treatment from landfill to best-in-class delivers carbon footprint savings for society of between 20% and 110% depending on the waste stream. It also delivers up to £75 per person per annum in cost savings or new revenues, with refurbishment of laptops or smart phones for resale in the market generating significant returns. Remanufacturing furniture is also very cost effective. Moreover, employee pride and advocacy are boosted when there are visible improvements in green performance, particularly sustainable buildings.

Between 2007-2017, PwC saved over £20m in energy and offset costs, £4m in paper cost avoided, and generated £500m in one year on laptop resale. By remanufacturing task chairs, the cost was reduced by around 60%, whilst also cutting the carbon footprint of the items by 61%.¹⁰



PwC waste hubs with segregated waste streams

3. Operations

Stage 3: Day-to-day operations

There is a whole host of opportunities to embed circular principles into the daily functioning of your office – from procuring, using and disposing of products/services to engaging staff in behavioural change.

Supplier engagement and procurement

Who are your main suppliers, and how complex is their supply chain?

Starting with your most strategic suppliers and progressively extending coverage will help you to build on existing relationships and maximise the impact of the changes you make.

Recognise the complexity of your Tier 2 supply chain to understand the ability of your key suppliers to offer circular alternatives. If your Tier 2 supply chain is very complex, ask your Tier 1 suppliers how you can work with them to influence Tier 2. It can be a great opportunity to increase the impact of your Circular Office and involve a larger number of suppliers.

What are the key criteria that you want your suppliers to meet?

Set your key criteria. You can split them into minimum, preferred and desired standards (must-haves, should-haves and nice-to-haves). The criteria will depend on each organisation's context – minimum standards may include zero-to-landfill policy, preferred standards may include 100% recyclable packaging and desired standards might be offering leasing as an alternative to purchasing a product.

How do you make sure suppliers keep meeting the circular criteria?

It is important to keep your suppliers engaged. You can ask them to regularly report on your circular criteria by filling in a questionnaire or by organising regular meetings.

Can your current suppliers meet the criteria?

Map out your key suppliers against the criteria and identify where your organisation is already achieving and where there are opportunities for improvement. Ask your suppliers how you can work together to meet all minimum standards and as many preferred/desired standards as possible. Create an action plan. If your suppliers are reluctant to make changes, investigate whether you can work with them to support the process and provide advice.

If not, where can you look for alternatives?

If your existing suppliers are unable to make changes to meet your criteria, look for alternatives to cover the gaps identified. Your criteria for new suppliers may change with the duration of the contract: you can ask suppliers to cover the minimum standards at the beginning and discuss how they are going to meet your preferred and desired standards going forward. Ensure you include sustainability clauses in all new contracts.

Talk to your peers and other organisations who have who have gone through a similar process.

What are the financial implications of the suppliers meeting the criteria?

Building a strong business case is key for engaging senior decision-makers. If your current suppliers do not meet your criteria already but are willing to adapt, ask them about the financial implications. If you are engaging with new suppliers, understand how their prices compare to those of your current suppliers. Think about the entire life-cycle – even if the cost is higher upfront, more durable products or shifting the maintenance responsibility onto the supplier lead to cost savings.

3. Operations

Waste management

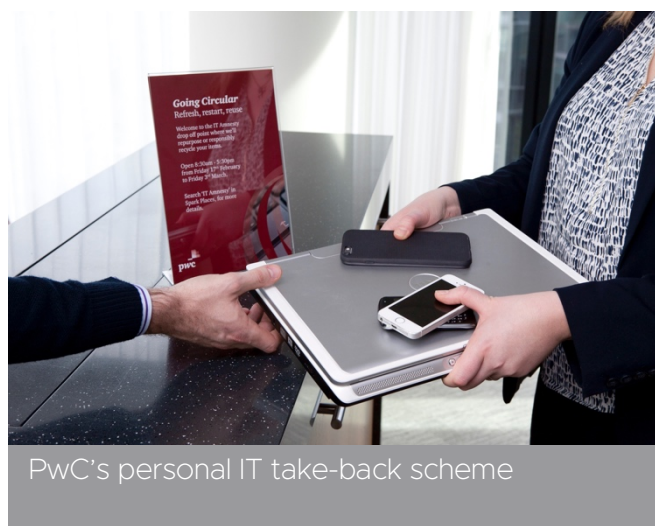
Do you have a sustainable clearance policy in place?

Over time, it is likely that some of the fixtures and fittings will become redundant. It is helpful to have existing arrangements to support circular solutions for redundant items, so they are the default option. This might include arrangements to refurbish items and/or redistribute them to organisations with social purpose.

Usage

How can you extend the service life of your office equipment?

Consider providing on-site repair services or ask the providers if they can offer such services. Leasing instead of owning equipment is often a good way of making sure that a long service life is in the provider's interest.



PwC's personal IT take-back scheme

Employee engagement and behaviour

Who do you need to engage internally?

Employee engagement is key for delivering systems change – working towards a Circular Office will be most impactful if all functions, from facilities management to procurement, are involved. If employees understand the opportunities presented by moving towards a Circular Office, you are likely to get their full support.

What elements of a Circular Office are the key priorities for the employees?

If your employees' views are included in prioritising circular initiatives at your building, they are more likely to respond positively to change. Find out what matters to them – it could be offering flexible use of space, eliminating single-use plastics or food waste. You could organise a workshop for staff to discuss your ambitions to create a more Circular Office, hear their priorities/ideas and discuss how they might be able to get involved.

What are the existing channels for employee engagement?

Create a list all of your existing communication channels (e.g. intranet, notice boards or newsletters) and create a plan of how to use them to reach out to staff on Circular Office activities.

What are the new ways of engaging employees?

To increase employee engagement, explore new and innovative ways of communication. You can organise a campaign, a challenge, or introduce an app that encourages circular behaviour.

3. Operations

Actions and stories

Reduce resource use and improve waste management by changing behaviours

Run awareness campaigns. Awareness campaigns are a simple and cost-effective way to change behaviours through employee engagement. **PwC's** 'Let's talk rubbish' campaign, launched in 2016, aimed to tackle the confusion over how to dispose of certain items in a fun, light-hearted way. For instance, to address the problem of 'bundling' items together and putting those in a general waste bin, PwC created a 'Bertie Bundle' character who featured in the company's communication channels. The campaign has been well-received and helped PwC progress towards their reuse and recycling goal, achieving an all-time high recycling rate that year. **Anthesis** organised an 'anti-food waste week' across its UK offices, placing the spotlight on the quantities of packaging and food waste generated at lunch time.

Reward positive behaviours. Incentivising good habits can lead to long-term changes in behaviour. **Greenredeem** provides online platforms where employees can receive points for taking positive actions, such as avoiding or recycling waste. Accumulated points can be exchanged for rewards or donations to charities. Greenredeem has found that its platforms can double recycling rates.



PwC's Bertie Bundle, encouraging employees to segregate their waste

Keep the value of your electronic equipment

Repair broken equipment on site or locally.

Repairing equipment increases the lifespan of products and reduces the demand for resources, and can also create new job opportunities. **BITC** purchases its IT equipment from a specific brand and usually choose the same model which allows it, for example, to use parts from non-working laptops to prolong the life of laptops with minor faults. In addition, it has upgraded its old desktop PCs at a cost of less than £100 per machine by replacing hard drives and installing extra memory.

Remanufacture the equipment for others to use.

If your working equipment can no longer be used by your organisation (e.g. when it is out of warranty), there are numerous companies which can help you to securely remove the data and refurbish the equipment for reuse. **PwC** partnered up with **Tier 1** and **S2S** who refurbish its laptops and mobile phones to resell them, preventing the equipment from going to landfill and generating revenue. **Regent Street Management Direct**, a part of JLL, partnered with **Premier Sustain** to refurbish redundant computers and monitors to donate them to **Centrepont**, a charity providing support for young homeless people. **Reuse Technology Group Ltd** also specialises in refurbishing IT hardware with the aim to resell it.

Recycle the equipment that cannot be reused or repurposed.

Electronic equipment contains numerous valuable materials, such as gold, tin, tungsten and titanium.¹¹ The recycling process ensures that these materials are recovered and nothing is sent to landfill. Working with organisations like **Recycling Lives**, you can also ensure that your electronic waste creates social value through supporting offender rehabilitation and skills development programmes.

3. Operations

Avoid waste in your kitchens and cafes

Replace your disposables with reusables.

Equip your kitchenettes with glasses and ceramic mugs and plates, as well as metal cutlery. Make sure that the coffee machines and water dispensers allow staff to use reusable cups or bottles. If your office has an on-site café which serves take away food and drinks, encourage staff to use reusable cups, bottles and containers.

KPMG partnered with a social enterprise **GiveMeTap** to supply all employees with a metal water bottle, saving 3 million plastic cups a year. **DWF LLP** introduced reusable cups and bottles for their employees to purchase, with money going to charitable causes. When **Unilever** decided to phase out the disposable, biodegradable cups in their head office, and encourage their staff to switch to reusable mugs, they launched an engaging campaign including an eye-catching logo, a site wide note to employees, a local news article featuring Q&As, new signage and a series of reminders.

In addition, some organisations incentivise reusables financially: **Dwr Cymru Welsh Water** and **Unilever** offer discounts; the employees of **Thomas Cook Group** receive their 10th drink for free when a reusable mug is used; while **Lloyds Banking Group** introduced a 25p levy on drinks served in disposable cups.

Look for bio-based alternatives to your disposables. If it is not possible to eliminate all of your single-use catering items, look for bio-based, compostable products instead. Biodegradable solutions prevent food-contaminated disposables from going to landfill, being incinerated or impeding efficient recycling. It is important to know that many bio-based products can only be processed through industrial composting. An increasing number of companies use alternatives such as wood (e.g. cutlery and stirrers) and bio-based plastics (e.g. cups provided by **Vegware**).

Avoid excessive packaging. Choose suppliers who offer reusable or recyclable packaging. Ordering in bulk and selecting larger containers also helps. Providing tea, coffee, milk and sugar in individual packets creates a lot of waste.

Thomas Cook Group up-scaled its milk bottles leading to 15,000 less plastic items being consumed, a 13% weight reduction and estimated savings of £500.

Redistribute excess food. Whether it is food left over after a meeting, or surplus from your on-site café, there are ways to make sure it does not go to waste. Platforms like **OLIO** connect unwanted edibles with individuals from the neighbouring area who would like to have them.

Compost or repurpose any food waste. Ensure that your office is equipped with food waste bins, and that your waste contractor is able to take it away and process it. Explore different options to composting too. For example, **bio-bean®** recycle waste coffee grounds into biofuels, and **PwC** work with **Uptown Oil** to refine used cooking oil from their on-site restaurants and make biofuel which is used to generate heating, cooling and power for their buildings.

You can also ensure you provide an appealing range of food with plenty of plant-based options, which will help reduce the environmental impacts of your employees' diet, since red meat has a heavy carbon and water footprint, compared to vegetables.



3. Operations

Rethink your office supplies

Improve your stock controls. Implement an ordering system for stationery and other office supplies. This will allow you to monitor high-use areas. Regularly make an inventory of items already in stock and items requested, and make sure that before any new supplies are ordered, the items already in stock are used. Your unused supplies can also benefit other organisations.

Mid and East Antrim Borough Council works with **Invest NI** and **International Synergies NI Ltd** to match waste products, such as stationery and electrical items, with new users.

Buy remanufactured toner cartridges.

Recycled cartridges perform equally to new cartridges, but at a lower environmental and financial cost. Used toner cartridges can be returned for remanufacture to specialist companies. **Brother Industries**, a major supplier of toner cartridges in the UK, has reduced the amount of toner cartridge ending up in landfill by offering a return scheme.

Reduce the amount of office paper used.

Paper is one of the most common types of waste for offices.¹² Reducing paper use can be achieved through simple solutions, such as printing on both sides of a page, centralising printing stations in the office, allowing users to print only when they enter a personal access code and providing employees with training on using digital tools where possible.

Use 'closed loop' paper. As a default option, choose paper with the highest proportion of post-consumer, rather than pre-consumer waste (i.e. recycled paper rather than virgin off cuts and mill broke). Explore the feasibility of using 'closed-loop' paper. At **BITC**, all paper waste is shredded and collected twice a week by **Paper Round**, who process it locally and turn it into 100% recycled copier paper, which BITC repurchase. Similarly, a German paper mill, **Steinbeis**, turns **PwC**'s paper waste into new, office-grade paper which PwC buys back in, allowing it to be recycled around 20 times – around three times more than the industry average.



Reconditioned rack servers
(Photo: Premier Sustain)

3. Operations

Be smart about your corporate branding

Produce reusable marketing materials. Avoid making them date or event specific, and explore ways to digitalise your marketing where possible.

Recycle the uniforms. If you issue your employees with uniforms, introduce a take back system to make sure that they return the old uniform before they receive a new one, to facilitate reuse. Uniforms that can no longer be used should be recycled. For this purpose, **PwC** partnered with **JMP Wilcox**, specialist textile recyclers, who securely destroy the logos and convert the textile into automotive insulation.

Change the products you use for washing and cleaning

Revise the packaging and the contents of your products. Check the recycled content in packaging, and whether it is recyclable. Such brands as **Ecover**, **Delphis Eco** or **Soap Co** offer products in containers made from 100% recycled plastic. Delphis Eco products also use plant-based ingredients that biodegrade and have minimal environmental impact. Or, smarter water and microfibre cleaning systems can eliminate the need for detergent at all.

Replace paper towels with hand dryers.

Although hand dryers use more energy, they eliminate the need to use paper. Alternatively, install paper-towel dispensers which prevent over-use by allocating one sheet at a time.

IMPACT STORY

VClean

It's worth considering whether you want to install any additional services for your employees in your office. PwC, for example, offers its people a range of services that make it quick and easy to do chores related to their working lives, and seeks to ensure these solutions are sustainable. One such example is the recently installed VClean 'wet-cleaning' unit. This allows employees to drop off suits for cleaning, within a 24-hour period, using a technology that has replaced toxic solvents with just water and biodegradable soap and which uses the latest machinery to significantly reduce its carbon and water footprint, versus traditional dry cleaning. This encourages employees to switch to more circular lifestyles whilst simultaneously providing a service that enhances engagement and loyalty.



VClean sustainable wet-cleaning unit

APPENDIX: QUESTIONS FOR SUPPLIERS & CONTRACTORS

General questions

- How can you work with us to introduce circular solutions to our office, minimise the materials required, increase our reuse and recycling rates and reduce our environmental impacts?

Waste contractors

- What do you do with waste you collect?
- What is your diversion from landfill rate and how do you achieve it?
- How many types of waste do you recycle?
- How can you work with us to increase our recycling rates? Are there incentives offered to maximise recycling?
- Do your services include staff training?
- Are you able to provide any communications materials, such as bin signs?

Fit-out contractors

- How do you maximise reuse of existing assets?
- How do you work with product manufacturers to minimise waste?
- Do you carry out an audit of resources on site and provide a reuse and recycling plan for them in advance?
- What is your waste management policy and what are your diversion from landfill rates? How do you achieve that?
- Are you committed to increasing the flow of materials through reuse and recycling?
- What do you do to avoid excess ordering?
- How can you minimise the amount of packaging and support us with recycling as much packaging as possible?

Product providers

- If the product is difficult to manage at end-of-life, how can you work with us to find circular alternatives?
- Do you offer a refurbished or remanufactured option?
- Do your products facilitate reuse?
- Can you offer a take-back scheme and take responsibility for the recycling/reuse of your product at end-of-life?
- Can you offer us access to your products, as opposed to ownership (product as a service)?
- What are the sustainable alternatives to the packaging of your products?
- What is your approach to sourcing sustainable materials for your products?
- Where are the products and/or materials sourced from? Are there local alternatives?
- What is the proportion of recycled or bio-based content in your products?
- What is the total, life-cycle cost of ownership of the product?
- Have you considered innovating your products?

Catering providers

- How can you help us reduce our impacts related to non-recyclable food packaging?
- How can you work with us towards eliminating food waste?
- Can you source food locally?

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Contributors

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The Circular Economy Taskforce

The Circular Office Initiative is driven by Business in the Community's Circular Economy Taskforce, a group of CEOs and other senior executives committed to delivering a high impact programme to bring the circular economy to life. Taskforce members include: Amey, Anglian Water, Anthesis, Arup, The Cooperative Bank, Environment Agency, European Metals Recycling, Interface, JLL, Lloyds Banking Group, Premier Sustain, PwC, Recycling Lives, Ricoh, Unilever, Veolia, Viridor, Walgreens Boots Alliance and WRAP.

The Taskforce is drawing on the strength of the BITC network to implement an action plan focused on leadership, collaboration and practical action. The action plan is centred around three core areas of activity:

- Raising awareness and inspiring action;
- Building a programme of practical collaborative action and innovation; and
- Promoting the policy frameworks and support needed to unleash opportunities.

ENDNOTES

¹ https://www.bitc.org.uk/sites/default/files/resource_productivity_and_the_circular_economy_opportunities_for_the_uk_economy-compressed_2.pdf

² <http://www.rypeoffice.com/project/uk-gbc-2/>

³ Recycling Lives is a recycling and waste management company with a social welfare charity that provides vulnerable and marginalised people with skills and training in recycling and remanufacturing activities
<http://www.recyclinglives.com/about/>

⁴ <https://www.arup.com/projects/white-collar-factory>

⁵ <https://www.instantoffices.com/blog/instant-offices-news/agile-working-environment-can-benefit-business/>

⁶ <https://www.ricoh.com/environment/management/concept>.

⁷ <https://circularlondon.org/a-circular-office-in-the-city/>

⁸ Full case study <https://circularlondon.org/a-circular-office-in-the-city/>

⁹ <http://net-works.com/about-net-works/>

¹⁰ Full details are available at www.pwc.co.uk/goingcircular

¹¹ <https://www.pwc.co.uk/who-we-are/corporate-sustainability/thinking-sustainability-video.html>

¹² http://www.wrap.org.uk/sites/files/wrap/WRAP_Green_Office_Guide.pdf



The Prince's
Responsible
Business Network



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